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Spring 2023

Frankenpop

Elliott Windrope

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Frankenpop

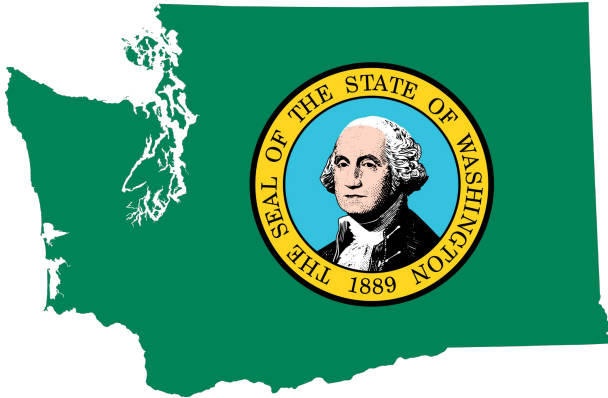


Presented By Elliott Windrope

Advised by Liz Mogford and Morris Arthur

Population Estimates

- US Census Bureau
- OFM



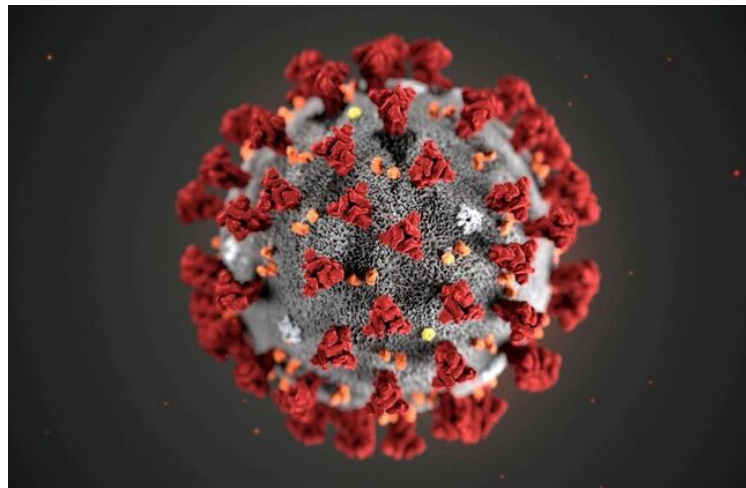
Uses of Population Data

- Apportionment for the US House of Representatives
- Allocation of funding



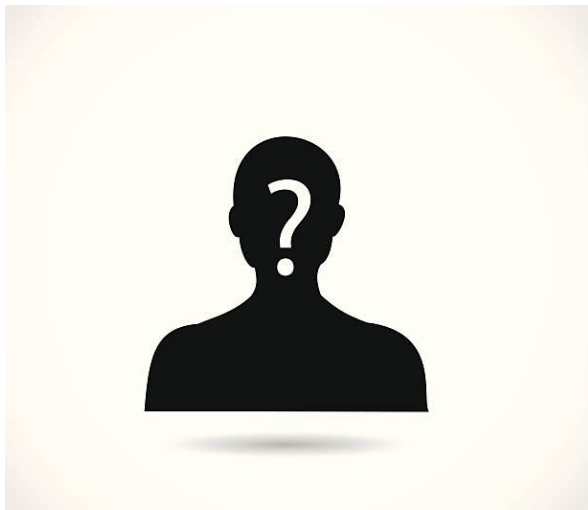
Data Collection Problems

- Hard to Count populations
- Interference



My Project

- Two data sources
- Are they different?



Frankenpop

- Built on the most current population estimate
- Produced by a single guy in King County
- Meets gold standard of data granularity



GEOID20 ▾	Year ▾	RaceMars97 ▾	Hispanic ▾	AgeGroup ▾	Gender ▾	Race_long ▾	Race ▾	Population ▾
53073	2005	10100	0	75	M	White,AIAN	Multiple race	0.7363187926
53073	2005	10100	0	76	M	White,AIAN	Multiple race	1.4849514566
53073	2005	10100	0	78	M	White,AIAN	Multiple race	2.6149223449
53073	2005	10100	0	77	M	White,AIAN	Multiple race	1.5647803912
53073	2005	10100	0	80	M	White,AIAN	Multiple race	1.5519897747



- Race or Sex, not both

Area Name	Area ID	Age Group	2010 Total	2010 Male	2010 Female	2020 Total	2020 Male	2020 Female
Washington	53	0-4	439,657	225,088	214,569	447,807	229,258	218,549
Washington	53	5-9	429,877	219,702	210,175	475,070	243,235	231,835
Washington	53	10-14	438,233	224,717	213,516	486,192	249,255	236,937
Washington	53	15-19	462,128	237,577	224,551	465,069	237,445	227,624
Washington	53	20-24	461,512	238,131	223,381	495,495	255,595	239,900
Washington	53	25-29	480,398	245,014	235,384	563,840	290,237	273,603

	Total	White	Black	AIAN	Asian	NHOPI	Two or More Races
Washington	7,766,975	5,646,350	336,826	152,028	771,995	71,705	788,071
Adams	20,900	16,369	188	949	228	17	3,149
Asotin	22,500	20,386	132	319	234	45	1,384
Benton	209,400	173,764	3,523	2,832	7,007	755	21,519
Chelan	80,000	69,155	437	1,425	945	182	7,856
Clallam	77,750	64,321	726	4,715	1,348	139	6,501

Disparate Sources Disparate Formats

GEOID20 ▾	Year ▾	RaceMars97 ▾	Hispanic ▾	AgeGroup ▾	Gender ▾	Race_long ▾	Race ▾	Population ▾
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Success!! (?)

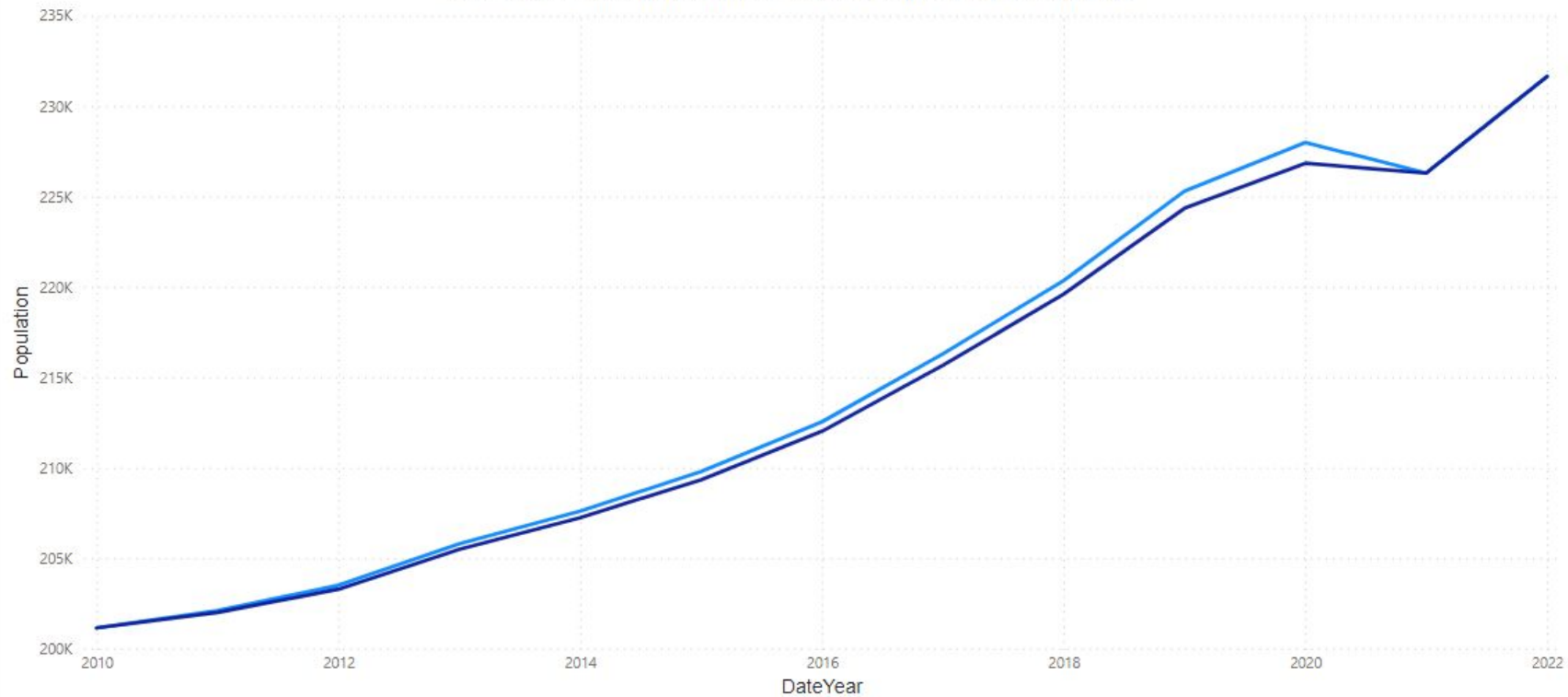
Year ▾	Area ID ▾	Race ▾	Franken Pop ▾	full_ofm_race.ofm_population ▾
2022	53073	Pacific Islander Only-NH	717.999981402979	718
2020	53073	Hispanic as Race	23624.9989585491	22176.02
2012	53073	Pacific Islander Only-NH	486.388449974799	479.01
2019	53073	Hispanic as Race	22895.3490332847	21492.99
2014	53073	Pacific Islander Only-NH	529.844010292689	511.99

Sex ▾	Area ID ▾	Area Name ▾	Year ▾	Age Group ▾	ofm_population ▾	Franken Pop ▾
F	53073	Whatcom	2019	85+	2909.09	2600.88261650947
F	53073	Whatcom	2022	30-34	6505.376	6505.376
F	53073	Whatcom	2019	80-84	2529.82	2306.75394890975
F	53073	Whatcom	2022	25-29	7899.885	7899.885
F	53073	Whatcom	2019	75-79	3954.78	3693.70118512405
F	53073	Whatcom	2022	20-24	11223.19	11223.19

Race ? Ethnicity ?



OFM and Frankenpop Estimates With Collapsed Age Categories

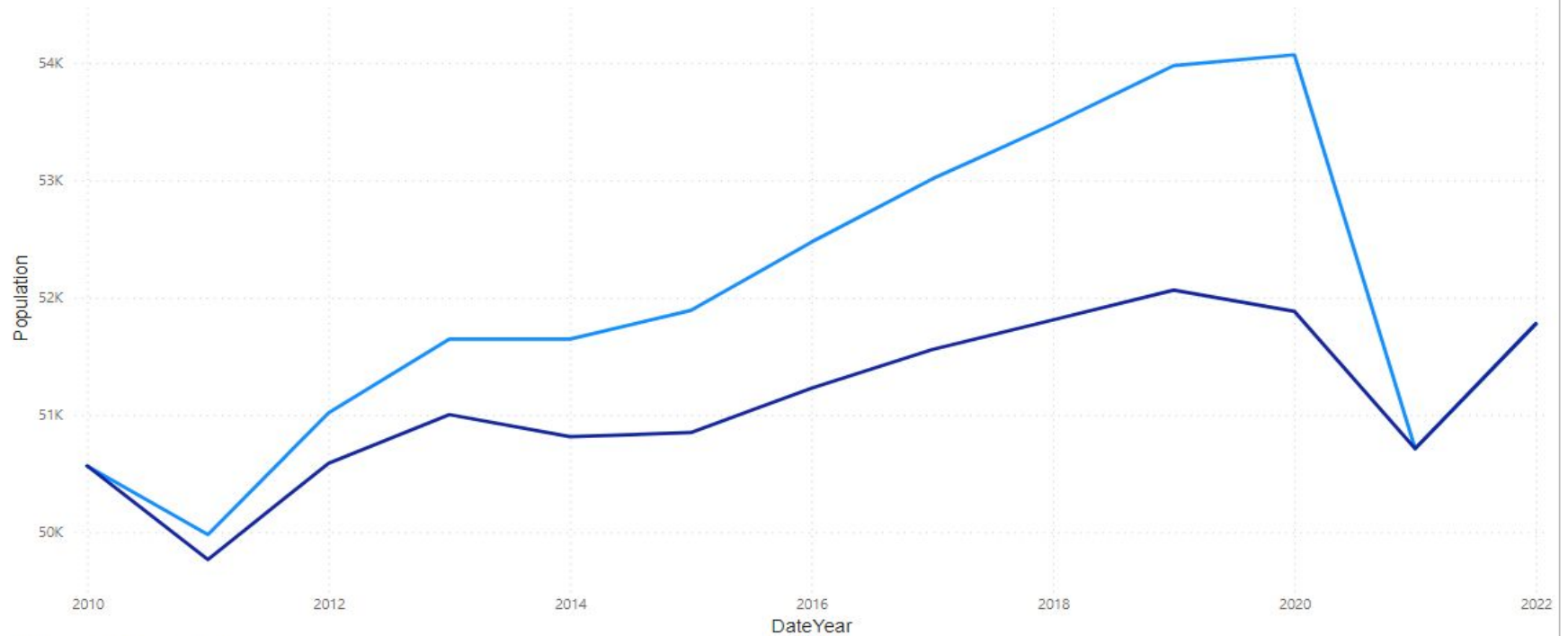


● ofm_sex_pop ● fp_sex_pop

2010 2023



OFM and Frankenpop Estimates With Collapsed Age Categories



● ofm_sex_pop ● fp_sex_pop

2010 2023



Age Category

00-19

20-44

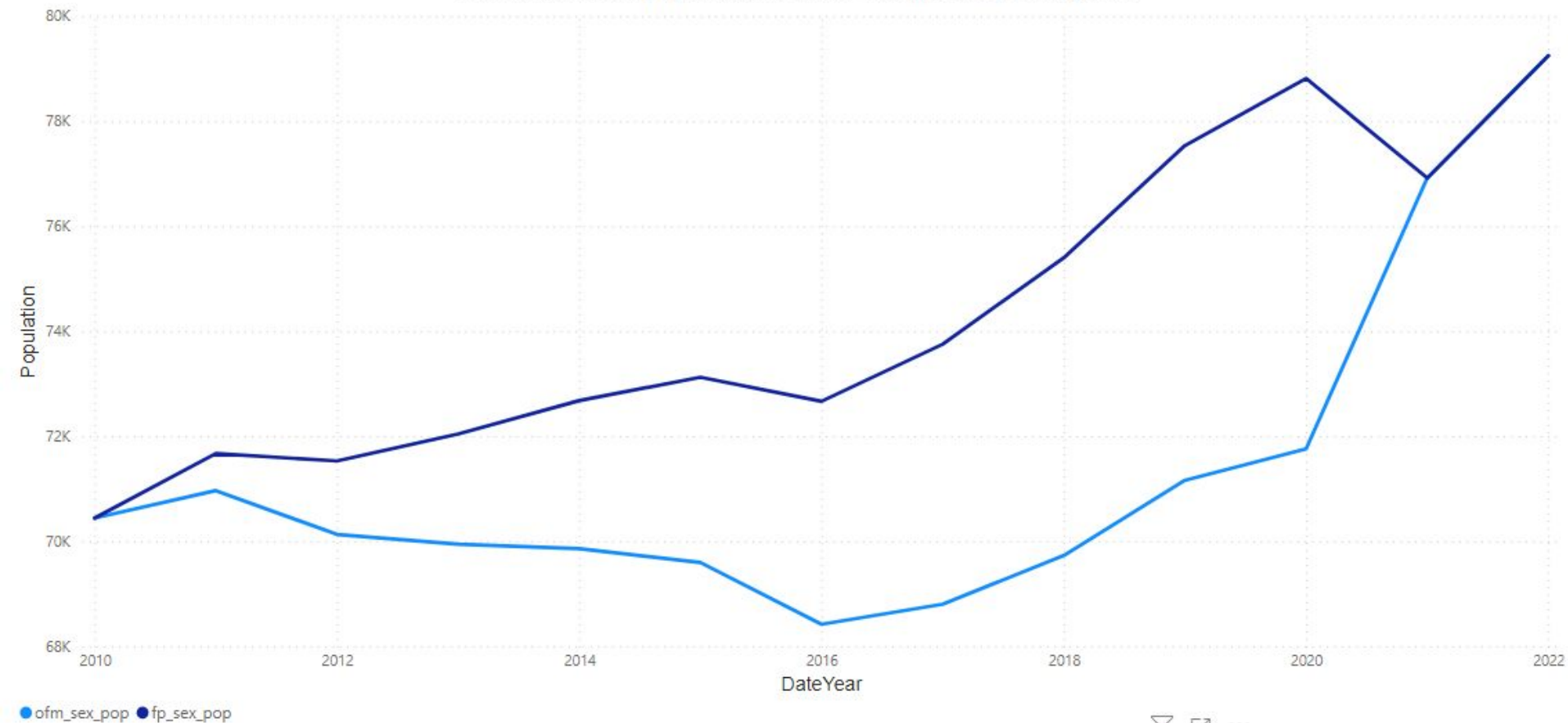
45+

Sex

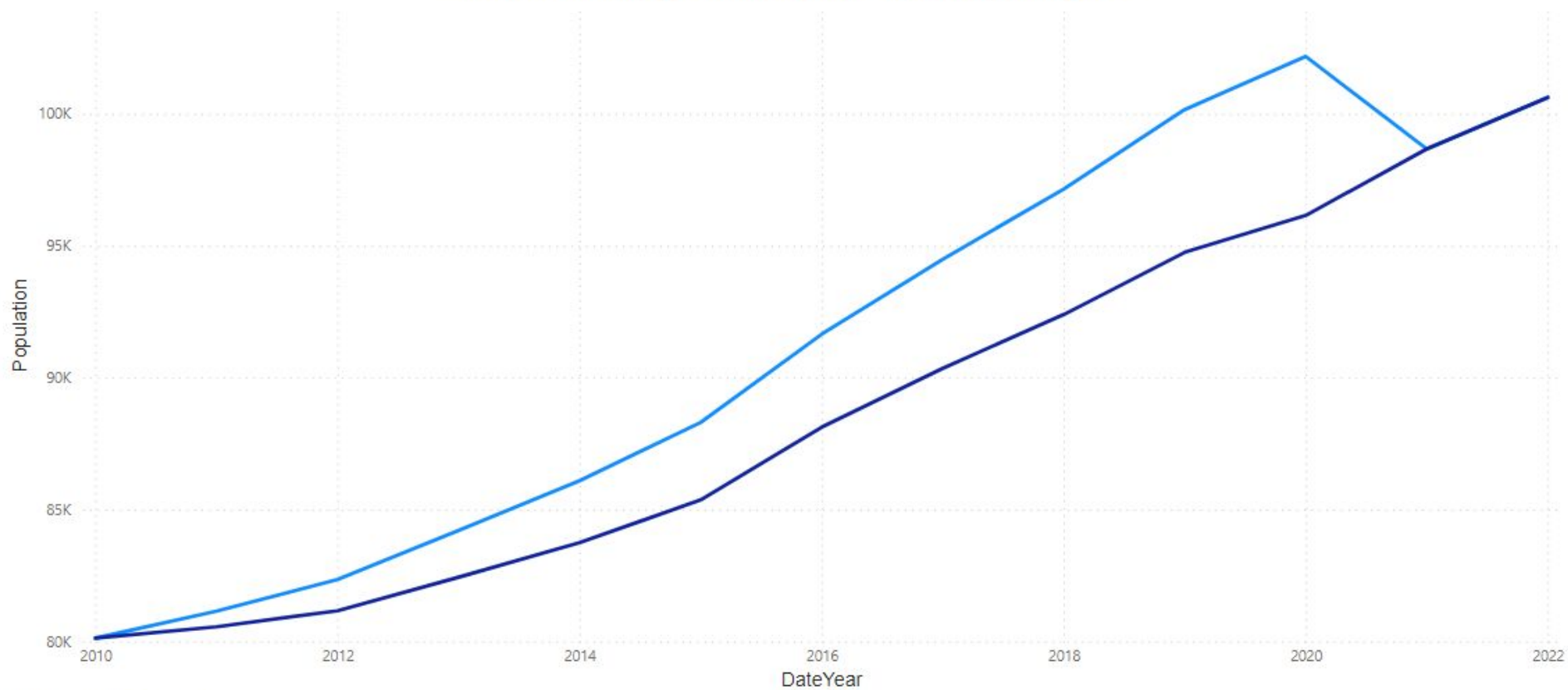
F

M

OFM and Frankenpop Estimates With Collapsed Age Categories



OFM and Frankenpop Estimates With Collapsed Age Categories



● ofm_sex_pop ● fp_sex_pop

2010 2023



Age Category

00-19 20-44 45+

Sex

F M

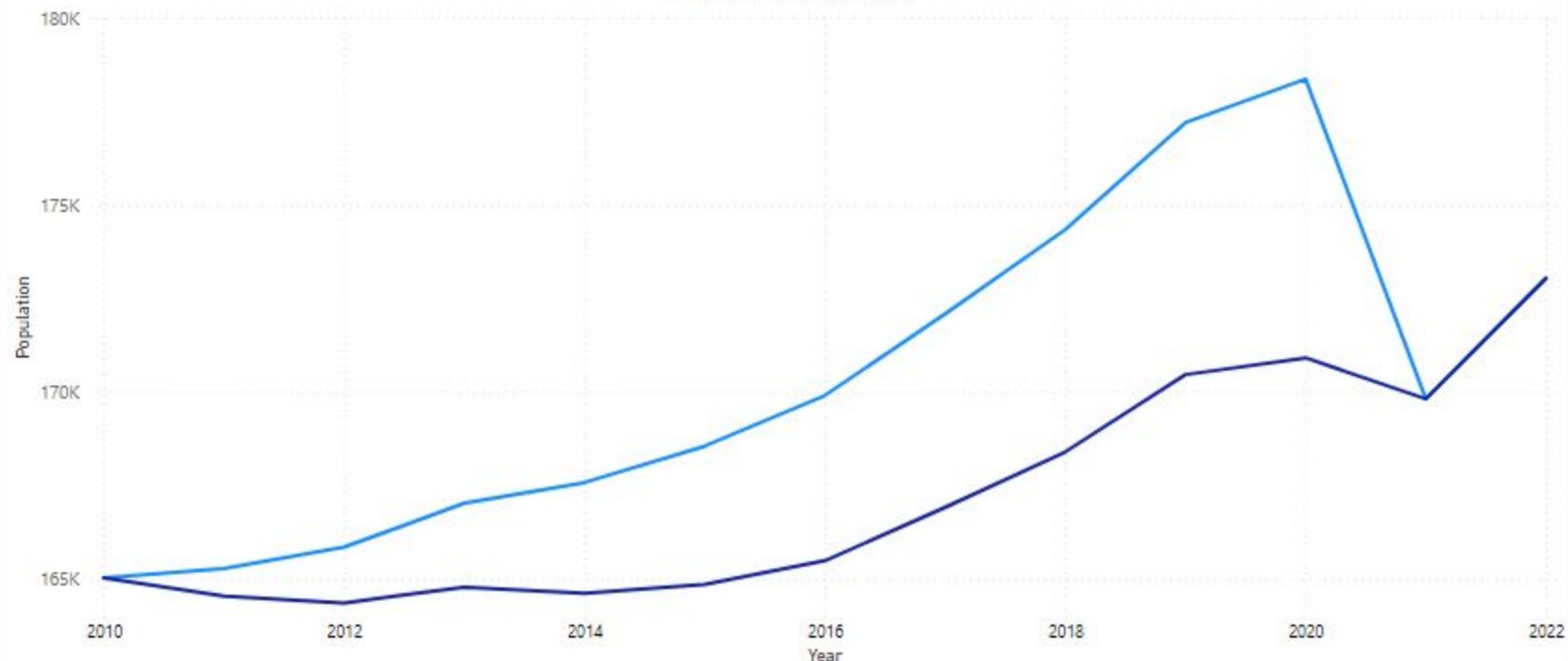
Percent Difference Frankenpop to OFM

DateYear	00-19	20-44	45+	Total
2010	0.00%	0.00%	-0.00%	0.00%
2011	-0.43%	0.99%	-0.73%	-0.05%
2012	-0.84%	2.00%	-1.44%	-0.11%
2013	-1.25%	3.01%	-2.10%	-0.15%
2014	-1.61%	4.04%	-2.73%	-0.17%
2015	-2.01%	5.07%	-3.33%	-0.22%
2016	-2.37%	6.20%	-3.84%	-0.25%
2017	-2.74%	7.20%	-4.37%	-0.29%
2018	-3.12%	8.13%	-4.89%	-0.34%
2019	-3.54%	8.96%	-5.40%	-0.42%
2020	-4.05%	9.84%	-5.90%	-0.51%
Total	-2.03%	5.04%	-3.31%	-0.23%

Numerical Difference Frankenpop to OFM

DateYear	00-19	20-44	45+	Total
2010	0.00	0.00	0.00	0.00
2011	-212.68	705.11	-595.86	-103.42
2012	-430.03	1,399.36	-1,184.49	-215.16
2013	-644.34	2,101.93	-1,772.57	-314.98
2014	-832.58	2,823.04	-2,348.32	-357.85
2015	-1,041.57	3,528.47	-2,939.71	-452.80
2016	-1,245.42	4,244.76	-3,523.69	-524.35
2017	-1,455.13	4,954.34	-4,132.78	-633.57
2018	-1,666.61	5,670.53	-4,752.43	-748.51
2019	-1,913.22	6,377.14	-5,411.47	-947.55
2020	-2,187.36	7,057.46	-6,023.16	-1,153.06
Total	-11,628.93	38,862.15	-32,684.48	-5,451.26

Population by Race

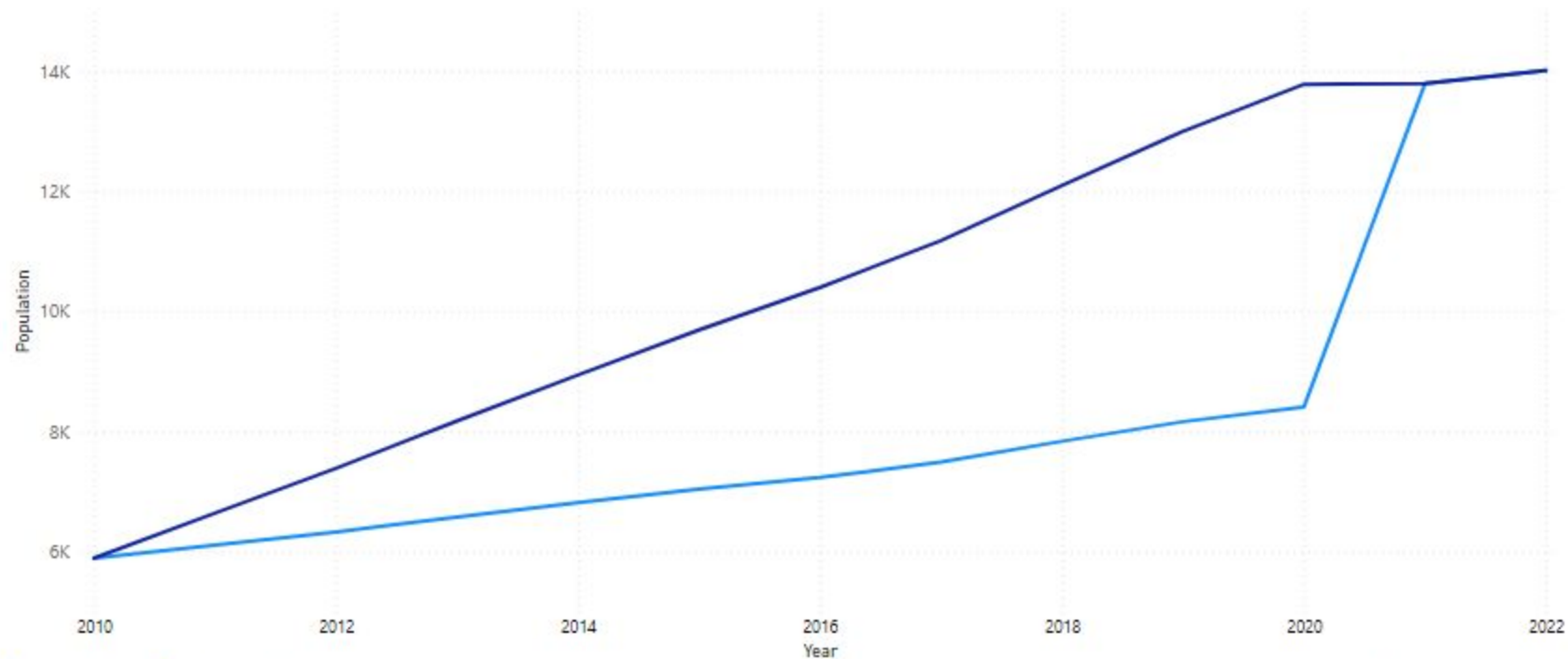


● Sum of ofm_race ● Sum of Franken Pop

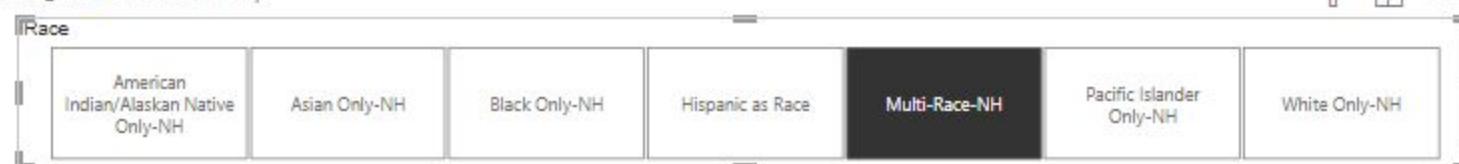
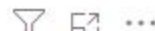
Race

American Indian/Alaskan Native Only-NH	Asian Only-NH	Black Only-NH	Hispanic as Race	Multi-Race-NH	Pacific Islander Only-NH	White Only-NH
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Population by Race



● Sum of ofm_race ● Sum of Franken Pop



Percent Difference Frankenpop to OFM

DateYear	Multi-Race-NH	White Only-NH	Total
2010	-0.00%	0.00%	0.00%
2011	8.73%	-0.45%	-0.12%
2012	16.80%	-0.90%	-0.25%
2013	24.26%	-1.34%	-0.37%
2014	31.20%	-1.77%	-0.48%
2015	37.66%	-2.19%	-0.59%
2016	43.71%	-2.60%	-0.71%
2017	49.18%	-3.01%	-0.83%
2018	54.31%	-3.41%	-0.92%
2019	59.20%	-3.80%	-1.03%
2020	63.79%	-4.18%	-1.12%
Total	37.58%	-2.18%	-0.59%

Numerical Difference Frankenpop to OFM

DateYear	Multi-Race-NH	White Only-NH	Total
2010	0.00	0.00	0.00
2011	533.08	-736.03	-202.95
2012	1,062.94	-1,491.79	-428.84
2013	1,596.72	-2,244.88	-648.16
2014	2,126.73	-2,959.33	-832.60
2015	2,651.74	-3,694.82	-1,043.09
2016	3,163.04	-4,418.79	-1,255.75
2017	3,686.52	-5,172.58	-1,486.07
2018	4,258.36	-5,942.96	-1,684.59
2019	4,835.16	-6,738.35	-1,903.19
2020	5,368.00	-7,458.03	-2,090.03
Total	29,282.29	-40,857.56	-11,575.27

Multiracial

- Who is multiracial?
- How do you analyze this group?



Now What?

- Frankenpop is current standard
- Analysis of past rates/estimates
- Hopefully the return of OFM



Thank You!