

COMPATIBLE-SCALE INFILL HOUSING
(R-2 ZONES) PROJECT

EXHIBIT A, APPENDIX A-1

MARCH 4, 2019

PUBLIC HEARING DRAFT

ANALYSIS OF FLOOR AREA RATIOS FOR ALL EXISTING BUILDINGS IN THE R-2 ZONES

Summary:

In order to arrive at the Floor Area Ratio limits proposed in the Public Hearing Draft of this amendment, Planning Department staff analyzed the property information of every structure in the R-2 Zone. From the information, staff calculated the FAR for each structure by totaling the applicable (not including basements, attics, etc.) gross floor area of the primary structures and any accessory structures, then dividing the sum by the lot area. To make sense of these hundreds of data, staff broke the data into subsets: zoning district, era, land use type, and lot size. The goals of the research were:

1. Understand the range of FAR for all existing development in the R-2 zoning districts.
2. Identify trends in construction over the last century of development.
3. Determine the minimum, median, 85th Percentile, 95th Percentile, maximum, average, and mode FAR for each subset.
4. Select FAR limits that would accommodate most recent development and be compatible with historic values.

To establish the basis for historic years and recent years, staff identified 1970 and 2008 as significant dates. As the analysis occurred in late 2018, the last decade seemed appropriate for understanding recent trends. With the first oil leases occurring in 1969, researching developments before 1970 to understand historic trends was best. The new oil wealth and rapidly increasing population of the 1970s and early '80s significantly changed the methods of construction, and types of buildings. The analysis looked at the aggregate of all years as well.

Each land use reflects the current uses allowed under Title 21. These were single-family detached, single-family attached, townhouse, two-family, multifamily up to 8 units, and multifamily with single- or two-family style construction of multiple buildings on a lot. It was important to separate these as staff intended to propose FAR limits that differed from one use to another.

Lot size was an additional variable that the analysis incorporated after receiving comments suggesting exemptions for certain lot sizes or different dimensional standards for different ranges of lot size. The analysis broke the lots into five categories: less than 6,000 sf, 6,000 sf to 8,499 sf, 8,500 sf to 13,999 sf, greater than or equal to 14,000 sf, and all lot sizes.

In addition to developing statistical analysis, the data created interesting graphs. The first graph in this appendix, "Residential Permits: FAR Values for All Years", shows the complete data plotted for FAR values and the development year. Some significant findings from this graph are the steady increase of FAR over the years, the high rate of construction during the Oil Boom years, especially in the early 1980s, the effect of the recession of the late 1980s on housing construction, and the decreasing number of units constructed from 2000 on-ward.

The next graph, "Residential Permits: Number for Each FAR Value", highlights the number of buildings with a given FAR for the two extreme eras. As the graph illustrates, even though there were far fewer developments after 2008 than before 1971, most had greater FAR. The peak of the data is nearly 0.2 FAR greater, and the descent from the peak is shallower than the historic curve.

The final graphs break these data into use and zone. Showing the data for all years, the first of these graphs, "Residential Permits: Frequency of FAR Values for all Years on Record, by Land Use and Zone",

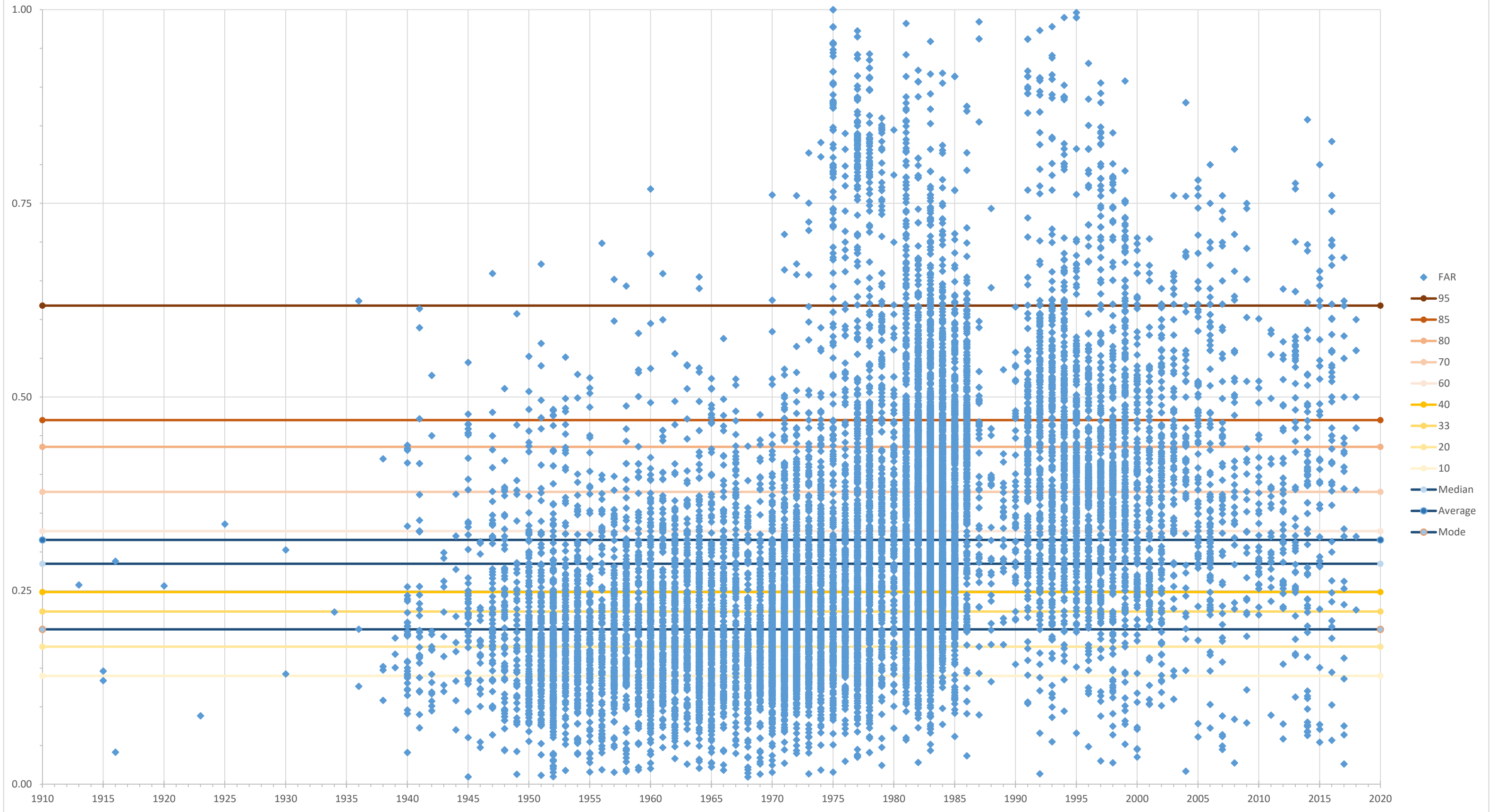
produces a much more comprehensive view of the distribution of housing within the R-2 zoning districts. Clearly, single-family houses still dominate the zones. Each color represents a different FAR, so that the graph illustrates both the number and FAR of each use type.

The last graph, “Residential Permits: Frequency of FAR Values after 2008, by Land Use and Zone”, shows the same type of data for the last decade. Although single family is still very prominent, the data show a shift toward more new duplexes in all the zones. This could suggest that there is demand for more housing in these zones, and if the trend continues, the zones could achieve the housing numbers projected in the *Anchorage 2040 Land Use Plan*.

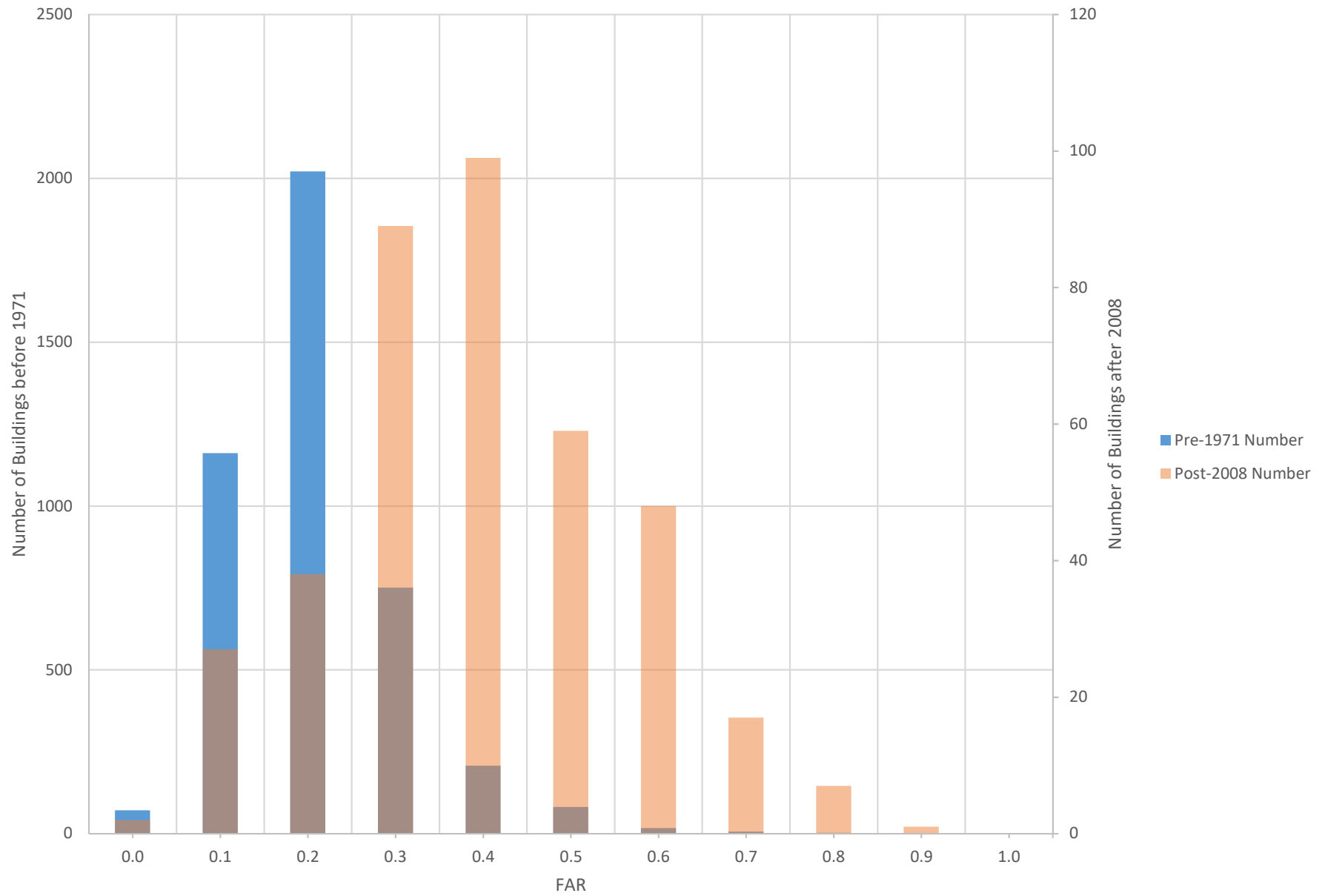
The tables following this introduction and the graphs provide the matrices of determined values. The data show very interesting trends. Among those are the effects of lot size on FAR. Smaller lots across all data points, including historic years, have higher FAR. This is because the same building, a 1965 kit house for example, can occupy two lots of different size, but will retain the same living space. In order to propose FAR limits, staff chose the 85th percentile values as the most representative. This number means that only 15% of buildings in each use category will be greater than that value. The data clearly illustrate that recent development have higher FAR values than do all years. However, new housing units currently in demand are larger than in previous years, and staff recognized it would be unreasonable to propose limits based only on the historic data. As a result, staff used the 85th percentile values for each use in each zone, and adjusted that number to be within an acceptable range of historic values.

The proposed FAR limits come from this research and analysis process. The Community Discussion Draft of this proposed amendment presented numbers that came from research that drew from FAR values in cities, the residential zones in Girdwood, and some limited analysis of select properties in Anchorage. The Public Hearing Draft values represent numbers exclusively drawn from the data analysis of existing conditions in the R-2 zoning districts, and reflect values that achieve the goals of this amendment project: to produce standards that allow for compatible-scale infill housing in the R-2 zones.

Residential Permits: FAR Values for All Years



Residential Permits: Number for Each FAR Value



Residential Permits: Frequency of FAR Values for all Years on Record, by Land Use and Zone

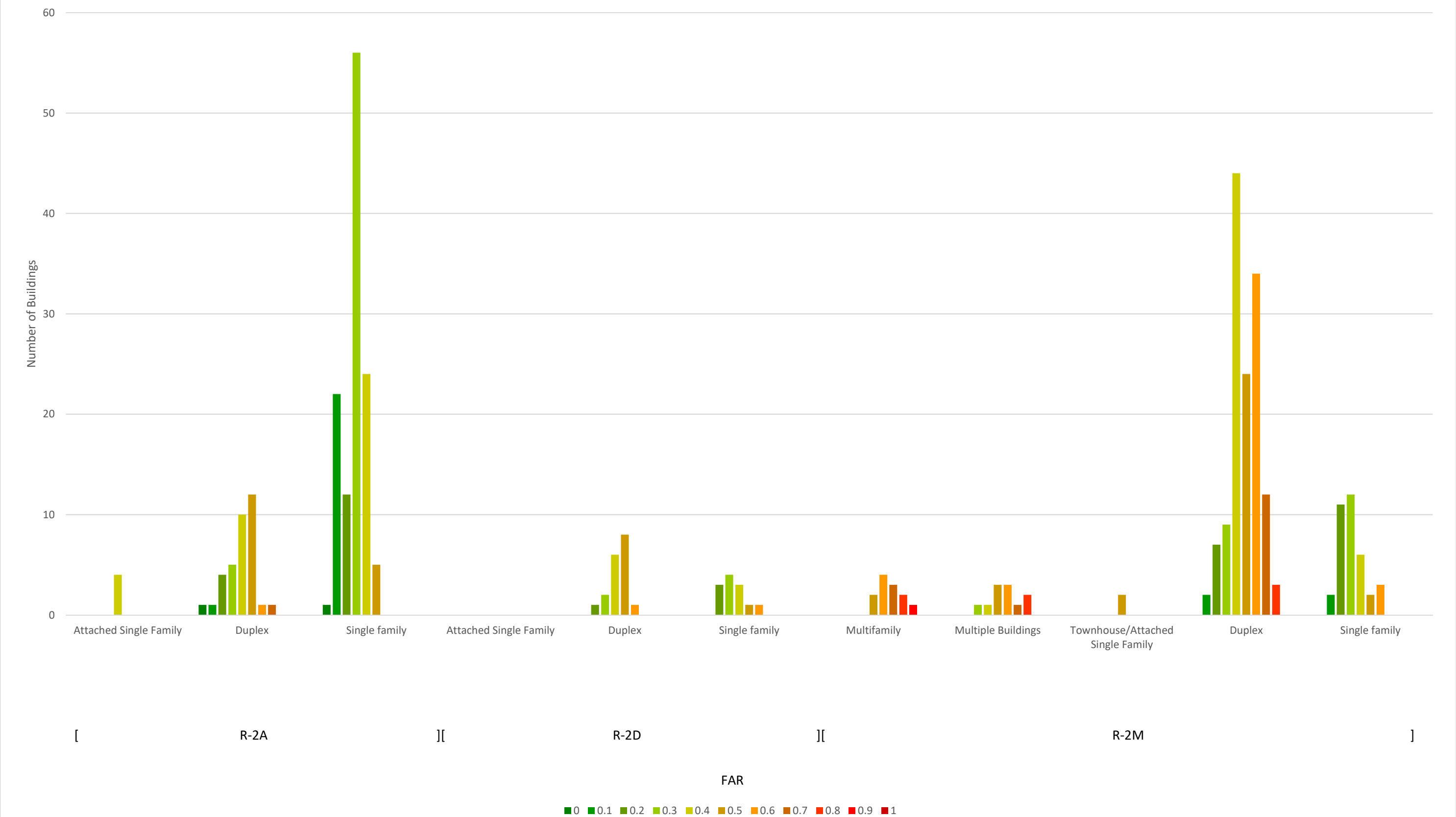
Number of Buildings

Land Use and Zone

FAR

Land Use	Zone	FAR 0	FAR 0.1	FAR 0.2	FAR 0.3	FAR 0.4	FAR 0.5	FAR 0.6	FAR 0.7	FAR 0.8	FAR 0.9	FAR 1.0	FAR 1.1	FAR 1.2	FAR 1.3	FAR 1.4	FAR 1.5
Attached Single Family	R-2A	20	240	330	290	380	140	90	70	40	20	10	5	2	1	0	
Duplex	R-2A	0	170	370	240	150	40	20	10	5	2	1	0	0	0	0	
Single family	R-2A	20	380	1040	910	610	390	140	40	20	10	5	2	1	0	0	
Attached Single Family	R-2D	0	20	30	70	150	40	20	10	5	2	1	0	0	0	0	
Duplex	R-2D	0	10	230	280	110	30	10	5	2	1	0	0	0	0	0	
Single family	R-2D	20	290	350	300	130	100	10	5	2	1	0	0	0	0	0	
Multifamily	R-2D	5	60	170	140	70	40	20	10	5	2	1	0	0	0	0	
Multiple Buildings	R-2D	0	10	10	10	5	2	1	0	0	0	0	0	0	0	0	
Townhouse/Attached Single Family	R-2M	0	130	410	460	310	130	70	40	140	110	30	10	5	2	1	
Duplex	R-2M	20	210	570	570	370	190	60	40	20	10	5	2	1	0	0	
Single family	R-2H	40	870	1790	840	440	280	120	30	10	5	2	1	0	0	0	

Residential Permits: Frequency of FAR Values after 2008, by Land Use and Zone



Existing Floor Area Ratios for Residential Structures in R-2A Zoning District, by Use Type, Lot Size, and Era

Existing Floor Area Ratios for Residential Structures in R-2A Zoning District -- by Use Type, Lot Size, and Era																									
Use Type Lot Size (sq. ft.)		All Existing Development								Recent Development: 2008-2018								Historical Development: Pre-1971							
		Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR	Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR	Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR
Single-family detached	< 6,000	853	0.17	0.43	0.40	0.50	0.52	0.56	0.69	0								2	0.34	0.38	0.38		0.41	0.42	0.43
	6,000–8,499	1148	0.11	0.27	0.27	0.30	0.36	0.41	0.72	40	0.22	0.29	0.31	0.30	0.39	0.43	0.60	164	0.11	0.18	0.19	0.20	0.23	0.31	0.55
	8,500–13,999	1226	0.05	0.20	0.22	0.20	0.30	0.37	0.74	58	0.08	0.32	0.33	0.30	0.40	0.45	0.52	351	0.05	0.16	0.17	0.20	0.24	0.29	0.48
	≥ 14,000	360	0.01	0.10	0.12	0.10	0.18	0.26	0.61	24	0.03	0.08	0.09	0.10	0.11	0.15	0.16	141	0.01	0.09	0.10	0.10	0.15	0.19	0.33
	All Lots	3587	0.01	0.25	0.27	0.20	0.41	0.51	0.74	122	0.03	0.29	0.27	0.30	0.38	0.43	0.60	658	0.01	0.16	0.16	0.20	0.22	0.28	0.55
Two-family	< 6,000	2	0.37	0.40	0.40	0.40	0.43	0.44	0.44	0								1	0.37	0.37	0.37	0.40	0.37	0.37	0.37
	6,000 -8,499	191	0.11	0.31	0.35	0.30	0.51	0.62	1.03	2	0.50	0.51	0.51	0.50	0.52	0.52	0.52	84	0.13	0.27	0.29	0.20	0.40	0.51	0.64
	8,500–13,999	654	0.05	0.28	0.30	0.20	0.44	0.52	0.76	26	0.30	0.44	0.43	0.50	0.51	0.56	0.65	150	0.05	0.20	0.22	0.20	0.30	0.42	0.58
	≥ 14,000	157	0.02	0.15	0.17	0.10	0.28	0.35	0.44	7	0.03	0.23	0.19	0.20	0.26	0.32	0.35	35	0.02	0.09	0.11	0.10	0.18	0.25	0.36
	All Lots	1004	0.02	0.27	0.29	0.20	0.44	0.54	1.03	35	0.03	0.42	0.39	0.50	0.50	0.55	0.65	270	0.02	0.20	0.23	0.20	0.34	0.42	0.64
Single-family attached	< 6,000	1514	0.14	0.40	0.42	0.40	0.51	0.72	1.47	0								0							
	6,000–8,499	98	0.11	0.27	0.27	0.30	0.31	0.40	0.68	4	0.38	0.38	0.38	0.40	0.38	0.38	0.38	0							
	8,500–13,999	7	0.14	0.32	0.36	0.30	0.47	0.53	0.56	0								0							
	≥ 14,000	1	0.53	0.53	0.53	0.20	0.53	0.53	0.53	0								0							
	All Lots	1620	0.11	0.39	0.41	0.40	0.50	0.70	1.47	4	0.38	0.38	0.38	0.40	0.38	0.38	0.38	0							
Multifamily	< 6,000	0								0								0							
	6,000–8,499	2	0.27	0.32	0.32		0.36	0.37	0.38	0								2	0.27	0.32	0.32		0.36	0.37	0.38
	8,500–13,999	9	0.10	0.30	0.36	0.20	0.66	0.74	0.76	0								3	0.10	0.16	0.18		0.25	0.28	0.30
	≥ 14,000	11	0.08	0.27	0.28	0.10	0.44	0.47	0.49	0								5	0.08	0.13	0.20	0.10	0.32	0.37	0.40
	All Lots	22	0.08	0.28	0.32	0.10	0.46	0.70	0.76	0								10	0.08	0.21	0.22	0.10	0.35	0.39	0.40
All Residential Uses	< 6,000	2369	0.14	0.41	0.41	0.50	0.51	0.66	1.47	0								3	0.34	0.38	0.38	0.20	0.40	0.40	0.43
	6,000–8,499	1439	0.11	0.27	0.28	0.30	0.38	0.43	1.03	46	0.22	0.31	0.33	0.40	0.39	0.43	0.60	250	0.11	0.21	0.23	0.20	0.29	0.38	0.64
	8,500–13,999	1896	0.05	0.23	0.25	0.30	0.35	0.42	0.76	84	0.08	0.35	0.36	0.40	0.43	0.48	0.65	504	0.05	0.17	0.19	0.30	0.26	0.33	0.58
	≥14,000	529	0.01	0.12	0.14	0.20	0.22	0.30	0.61	31	0.03	0.11	0.11	0.20	0.15	0.19	0.35	181	0.01	0.10	0.10	0.10	0.16	0.21	0.40
	All Lots	6233	0.01	0.29	0.31	0.30	0.44	0.56	1.47	161	0.03	0.32	0.30	0.40	0.41	0.45	0.65	938	0.01	0.17	0.18	0.20	0.26	0.33	0.64

Source: Municipality of Anchorage Planning Department analysis of Property Appraisal data

Existing Floor Area Ratios for Residential Structures in R-2D Zoning District, by Use Type, Lot Size, and Era

Existing Floor Area Ratios for Residential Structures in R-2D Zoning District -- by Use Type, Lot Size, and Era																										
Use Type		Lot Size (sq. ft.)	All Existing Development							Recent Development: 2008-2018								Historical Development: Pre-1971								
			Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR	Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR	Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR
Single-family detached	< 6,000	18	0.12	0.19	0.22	0.20	0.30	0.39	0.39	0								14	0.14	0.27	0.26	0.30	0.32	0.35	0.37	
	6,000 –8,499	813	0.08	0.21	0.23	0.20	0.30	0.40	1.15	9	0.17	0.37	0.36	0.40	0.52	0.57	0.59	496	0.08	0.21	0.22	0.20	0.30	0.36	0.60	
	8,500–13,999	317	0.05	0.17	0.19	0.10	0.28	0.34	0.82	2	0.28	0.28	0.28	0.30	0.29	0.29	0.29	238	0.05	0.17	0.18	0.20	0.30	0.34	0.45	
	≥ 14,000	81	0.04	0.41	0.40	0.10	0.65	0.73	0.80	1	0.34	0.34	0.34	0.40	0.34	0.34	0.34	58	0.04	0.11	0.12	0.10	0.17	0.21	0.35	
	All Lots	1229	0.04	0.20	0.23	0.20	0.31	0.46	1.15	12	0.17	0.33	0.35	0.30	0.48	0.56	0.59	806	0.04	0.19	0.20	0.20	0.29	0.35	0.60	
Two-family	< 6,000	7	0.21	0.30	0.37	0.30	0.54	0.65	0.70	0								3	0.23	0.39	0.34	0.40	0.40	0.40	0.40	
	6,000 -8,499	376	0.07	0.29	0.33	0.20	0.49	0.61	0.97	9	0.33	0.49	0.48	0.50	0.54	0.56	0.58	161	0.12	0.25	0.26	0.20	0.34	0.45	0.66	
	8,500–13,999	282	0.05	0.27	0.28	0.30	0.40	0.46	0.57	8	0.23	0.44	0.42	0.40	0.48	0.49	0.50	101	0.06	0.20	0.21	0.20	0.28	0.35	0.44	
	≥ 14,000	15	0.13	0.28	0.32	0.30	0.56	0.62	0.69	1	0.26	0.26	0.26	0.30	0.26	0.26	0.26	12	0.07	0.12	0.14	0.10	0.21	0.24	0.25	
	All Lots	690	0.05	0.28	0.31	0.30	0.44	0.57	0.97	18	0.23	0.45	0.44	0.50	0.52	0.54	0.58	277	0.06	0.22	0.24	0.20	0.31	0.40	0.66	
Single-family attached	< 6,000	318	0.17	0.41	0.43	0.40	0.58	0.67	1.01	0								0								
	6,000–8,499	14	0.29	0.45	0.44	0.50	0.52	0.55	0.56	0								0								
	8,500–13,999	2	0.29	0.32	0.32		0.33	0.34	0.34	0								0								
	≥ 14,000	0								0								0								
	All Lots	334	0.17	0.41	0.43	0.40	0.57	0.67	1.01	0								0								
Multifamily	< 6,000	0								0								0								
	6,000–8,499	19	0.19	0.23	0.27	0.20	0.35	0.52	0.61	0								15	0.11	0.25	0.28	0.30	0.36	0.48	0.53	
	8,500–13,999	16	0.19	0.26	0.31	0.20	0.45	0.49	0.58	0								5	0.32	0.40	0.39	0.30	0.45	0.47	0.48	
	≥ 14,000	4	0.13	0.15	0.16	0.10	0.18	0.20	0.21	0								3	0.13	0.15	0.15	0.20	0.17	0.18	0.18	
	All Lots	39	0.13	0.24	0.27	0.20	0.40	0.52	0.61	0								23	0.11	0.27	0.29	0.30	0.42	0.48	0.53	
All Residential Uses	< 6,000	343	0.12	0.39	0.42	0.40	0.56	0.65	1.01	0								17	0.14	0.29	0.28	0.40	0.33	0.36	0.40	
	6,000–8,499	1222	0.07	0.24	0.26	0.30	0.36	0.47	1.15	18	0.17	0.43	0.42	0.50	0.53	0.57	0.59	672	0.08	0.22	0.23	0.30	0.31	0.39	0.66	
	8,500–13,999	617	0.05	0.22	0.23	0.20	0.34	0.40	0.82	10	0.23	0.41	0.39	0.40	0.44	0.45	0.50	344	0.05	0.18	0.19	0.30	0.30	0.34	0.48	
	≥14,000	100	0.04	0.38	0.38	0.20	0.61	0.69	0.80	2	0.26	0.30	0.30	0.40	0.30	0.30	0.34	73	0.04	0.11	0.13	0.20	0.18	0.21	0.35	
	All Lots	2292	0.04	0.26	0.28	0.30	0.39	0.52	1.15	30	0.17	0.40	0.40	0.50	0.50	0.55	0.59	1106	0.04	0.20	0.21	0.20	0.30	0.37	0.66	

Source: Municipality of Anchorage Planning Department analysis of Property Appraisal data

Existing Floor Area Ratios for Residential Structures in R-2M Zoning District, by Use Type, Lot Size, and Era

Existing Floor Area Ratios for Residential Structures (Including Commercial Multifamily) in R-2M Zoning District -- by Use Type, Lot Size, and Era																																			
Use Type		Lot Size (sq. ft.)	All Existing Development							Recent Development: 2008-2018								Historical Development: Pre-1971																	
			Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR	Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR	Parcel Count	Lowest FAR	Median FAR	Mean FAR	Mode FAR	85th Percentile	95th Percentile	Highest FAR									
Single-family detached	< 6,000		879	0.11	0.48	0.49	0.50	0.63	0.74	0.84	3	0.36	0.43	0.47	0.40	0.56	0.60	0.62	44	0.11	0.26	0.30	0.30	0.40	0.58	0.65									
	6,000–8,499		2288	0.05	0.24	0.26	0.20	0.37	0.42	0.77	15	0.21	0.25	0.32	0.20	0.49	0.56	0.56	924	0.05	0.20	0.22	0.20	0.30	0.37	0.66									
	8,500–13,999		1073	0.04	0.17	0.19	0.20	0.27	0.34	0.56	16	0.14	0.27	0.28	0.30	0.35	0.40	0.47	551	0.04	0.16	0.17	0.15	0.20	0.31	0.54									
	≥ 14,000		257	0.01	0.12	0.14	0.10	0.21	0.35	0.65	2	0.09	0.14	0.14		0.18	0.19	0.19	168	0.02	0.09	0.11	0.10	0.16	0.22	0.48									
	All Lots		4497	0.01	0.24	0.28	0.20	0.44	0.59	0.84	36	0.09	0.27	0.30	0.30	0.42	0.56	0.62	1687	0.02	0.18	0.19	0.19	0.27	0.35	0.66									
Two-family	< 6,000		27	0.09	0.44	0.43	0.50	0.53	0.83	0.88	2	0.64	0.67	0.67		0.69	0.70	0.70	17	0.09	0.38	0.35	0.50	0.45	0.46	0.47									
	6,000 -8,499		1266	0.06	0.32	0.35	0.30	0.49	0.61	1.05	71	0.19	0.56	0.56	0.60	0.67	0.73	0.78	389	0.06	0.24	0.26	0.20	0.36	0.49	0.77									
	8,500–13,999		665	0.06	0.25	0.27	0.20	0.40	0.45	0.91	57	0.14	0.40	0.40	0.40	0.43	0.51	0.64	207	0.06	0.19	0.20	0.20	0.29	0.34	0.70									
	≥ 14,000		99	0.01	0.13	0.14	0.10	0.24	0.28	0.37	5	0.06	0.20	0.18	0.20	0.22	0.24	0.25	52	0.01	0.10	0.11	0.10	0.18	0.21	0.37									
	All Lots		2057	0.01	0.29	0.31	0.20	0.46	0.56	1.05	135	0.06	0.48	0.48	0.40	0.62	0.70	0.78	665	0.01	0.21	0.23	0.22	0.34	0.46	0.77									
Single-family attached	< 6,000		1335	0.00	0.32	0.33	0.30	0.45	0.54	0.82	2	0.46	0.47	0.47	0.50	0.47	0.47	0.47	0																
	6,000–8,499		56	0.00	0.21	0.21	0.20	0.29	0.34	0.38	0								0																
	8,500–13,999		3	0.00	0.12	0.09	0.10	0.13	0.14	0.14	0																		0						
	≥ 14,000		0								0																			0					
	All Lots		1394								0.00	0.31	0.32	0.30	0.45	0.53	0.82	2		0.46	0.47	0.47	0.50	0.47	0.47	0.47	0								
Townhouse	< 6,000		449	0.38	0.79	0.76	0.80	0.91	1.00	1.14	0								0																
	6,000–8,499		1	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0										0														
	8,500–13,999		0								0											0													
	≥ 14,000		0																			0													
	All Lots		450	0.38	0.79	0.76	0.80	0.91	1.00	1.14		0		0																					
Multifamily	< 6,000		1	0.21	0.21	0.21	0.50	0.21	0.21	0.21	0								0																
	6,000–8,499		167	0.08	0.38	0.40	0.40	0.58	0.73	1.19	0										130	0.08	0.33	0.38	0.40	0.54	0.72	1.19							
	8,500–13,999		819	0.09	0.35	0.37	0.40	0.50	0.61	1.07	10										0.35	0.67	0.64	0.70	0.72	0.82	0.89	167	0.09	0.26	0.29	0.20	0.43	0.53	0.78
	≥ 14,000		372	0.01	0.33	0.36	0.40	0.54	0.74	1.01	19										0.10	0.62	0.59	0.60	0.82	0.83	0.86	66	0.01	0.16	0.19	0.20	0.25	0.41	1.01
	All Lots		1359	0.01	0.35	0.37	0.40	0.52	0.66	1.19	29	0.10	0.63	0.60	0.60	0.82	0.85	0.89	363	0.01	0.27	0.31	0.20	0.47	0.60	1.19									
Multifamily, with single- or two-family style construction of multiple buildings on a lot	< 6,000		0								0								0																
	6,000–8,499		0																																
	8,500–13,999		2																0.26						0.43	0.43		0.54	0.57	0.59	0		0		
	≥ 14,000		33																0.28						0.55	0.53	0.60	0.62	0.72	0.78	5		0.34	0.49	0.49
	All Lots		35	0.26	0.55	0.53	0.60	0.62	0.72	0.78		5	0.34	0.49	0.49	0.50	0.55	0.58	0.60	1	0.26	0.26	0.26	1.30	0.26	0.26	0.26								
All Residential Uses	< 6,000		2691	0.00	0.45	0.46	0.50	0.59	0.68	1.14	7	0.36	0.51	0.53	0.40	0.57	0.59	0.70	61	0.09	0.30	0.31	0.40	0.42	0.55	0.65									
	6,000–8,499		3778	0.00	0.27	0.29	0.30	0.42	0.49	1.19	86	0.19	0.51	0.52	0.60	0.63	0.70	0.78	1443	0.05	0.22	0.23	0.30	0.32	0.42	1.19									
	8,500–13,999		2562	0.00	0.23	0.25	0.30	0.35	0.42	1.07	83	0.14	0.40	0.40	0.50	0.44	0.51	0.89	925	0.04	0.18	0.19	0.20	0.24	0.33	0.78									
	≥ 14,000		761	0.01	0.21	0.23	0.30	0.34	0.48	1.01	31	0.06	0.46	0.44	0.50	0.58	0.59	0.86	287	0.01	0.10	0.12	0.20	0.17	0.23	1.01									
	All Lots		9792	0.00	0.30	0.32	0.30	0.47	0.60	1.19	207	0.06	0.46	0.46	0.50	0.60	0.68	0.89	2716	0.01	0.19	0.21	0.20	0.30	0.39	1.19									