

Projecting School Enrollment

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Importance of Projecting Enrollment

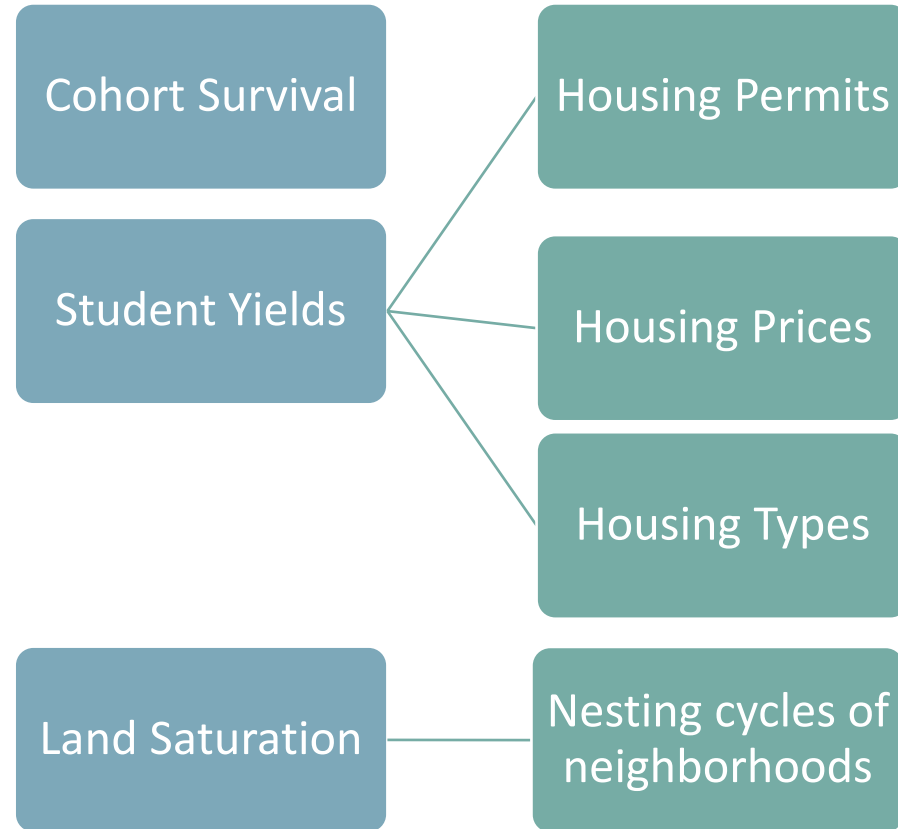
Revenue – Average Daily Attendance & Weighted Average Daily Attendance

- State Foundation Formula Funds are based on WADA
- Proposition C Funds are distributed on the Prior Years WADA
- Community Trust Funds are Distributed on ADA

Expenditures

- Class Size is dependent on Enrollment
- Personnel Additions/Reductions are based on Enrollment

Forecasting Models



Cohort Survival



Easy method of projecting future enrollments.



Most effective when the school experiences a gradual increase or decrease in students over a number of years.



During periods of significant growth or decline the use of prior year enrollments needs to be modified to include student yield data. (ex. 3 years previous)

What is a Cohort?

- A cohort is a group of students.
- Uses historic live birth and student grade level enrollments.
- A survival ratio is calculated each year as students move from grade level to grade level.
- Most commonly used method of projecting enrollments.

Cohort Survival Method of Projecting Enrollment

Five Components

Births

Current/Past
Enrollment

Survival
Rates

Typical Break
Points

Trends

STEP1

BIRTH DATA

Births by Zip Code

City of St. Louis

Zip Code	2011	2012	2013	2014	2015	2016	2017	2018	Total
63101	32	34	29	48	33	44	29	49	298
63102	14	6	11	20	21	8	10	10	100
63103	76	67	65	66	65	50	58	67	514
63104	303	283	261	289	289	275	266	252	2,218
63105	121	98	113	131	108	111	103	113	898
63106	272	277	216	261	228	240	196	202	1,892
63107	220	211	193	167	204	141	147	140	1,423
63108	177	172	187	208	192	174	186	188	1,484
63109	413	383	431	414	409	386	379	343	3,158
63110	213	214	221	228	221	213	229	231	1,770
63111	358	341	346	301	324	351	344	349	2,714
63112	314	291	279	278	289	263	257	263	2,234
63113	187	166	189	184	176	167	168	159	1,396
63115	308	302	310	299	286	277	233	258	2,273
63116	754	698	713	725	673	649	612	600	5,424

LIVE BIRTHS BY SCHOOL DISTRICT

**AVAILABLE FROM THE MISSOURI
HEALTH AND SENIOR SERVICES
FOR A FEE**

STEP 2

CURRENT AND PAST ENROLLMENT

Enrollment

DESE Data Portal

School Records

Actual
September
Enrollment

Year	Code	District/School	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-8	9-12	K-12	PK-12
2010	096091	ROCKWOOD R-VI	275	1396	1488	1580	1570	1761	1714	1749	1777	1762	2044	1869	1837	1835	14797	7585	22382	22657
2011	096091	ROCKWOOD R-VI	255	1441	1509	1581	1652	1678	1823	1756	1805	1809	1975	1937	1812	1790	15054	7514	22568	22823
2012	096091	ROCKWOOD R-VI	236	1292	1507	1577	1575	1710	1684	1818	1778	1828	1962	1887	1883	1767	14769	7499	22268	22504
2013	096091	ROCKWOOD R-VI	226	1258	1400	1562	1585	1609	1749	1675	1848	1794	1980	1867	1862	1829	14480	7538	22018	22244
2014	096091	ROCKWOOD R-VI	270	1189	1360	1424	1581	1618	1645	1771	1696	1854	1947	1867	1857	1800	14138	7471	21609	21879
2015	096091	ROCKWOOD R-VI	784	1281	1287	1407	1478	1618	1648	1692	1792	1680	1955	1908	1800	1814	13883	7477	21360	22144
2016	096091	ROCKWOOD R-VI	791	1345	1369	1367	1451	1499	1639	1693	1693	1787	1785	1877	1865	1770	13843	7297	21140	21931
2017	096091	ROCKWOOD R-VI	792	1278	1414	1410	1430	1492	1542	1707	1697	1735	1861	1772	1803	1811	13705	7247	20952	21744
2018	096091	ROCKWOOD R-VI	758	1375	1360	1484	1490	1487	1541	1599	1726	1703	1841	1839	1725	1794	13765	7199	20964	21722
2019	096091	ROCKWOOD R-VI	717	1378	1420	1417	1524	1531	1533	1600	1621	1747	1866	1791	1767	1702	13771	7126	20897	21614
2020	096091	ROCKWOOD R-VI	729	1277	1470	1474	1465	1592	1552	1609	1649	1661	1885	1823	1745	1796	13749	7249	20998	21727
2008	115906	CONFLUENCE ACADEMIES	0	429	466	386	274	237	137	113	116	61	0	0	0	0	2219	0	2219	2219
2009	115906	CONFLUENCE ACADEMIES	0	378	475	468	380	292	263	134	132	126	84	0	0	0	2648	84	2732	2732
2010	115906	CONFLUENCE ACADEMIES	0	375	389	421	429	349	267	257	148	124	147	86	0	0	2759	233	2992	2992
2011	115906	CONFLUENCE ACADEMIES	0	361	398	355	371	366	311	222	226	147	168	158	99	0	2757	425	3182	3182
2012	115906	CONFLUENCE ACADEMIES	0	373	342	376	304	337	329	272	183	197	144	134	128	98	2713	504	3217	3217
2013	115906	CONFLUENCE ACADEMIES	0	323	361	318	324	290	315	277	241	160	153	115	104	94	2609	466	3075	3075
2014	115906	CONFLUENCE ACADEMIES	0	295	340	299	298	291	251	263	251	220	139	157	92	85	2508	473	2981	2981
2015	115906	CONFLUENCE ACADEMIES	20	268	320	315	301	255	273	222	224	214	138	114	122	74	2392	448	2840	2860
2016	115906	CONFLUENCE ACADEMIES	20	258	292	322	307	292	244	266	220	224	147	138	97	111	2425	493	2918	2938
2017	115906	CONFLUENCE ACADEMIES	60	228	254	275	314	285	251	208	233	202	155	145	115	86	2250	501	2751	2811
2018	115906	CONFLUENCE ACADEMIES	57	172	186	202	220	242	220	212	164	195	127	141	125	112	1813	505	2318	2375
2019	115906	CONFLUENCE ACADEMIES	98	182	180	186	199	224	228	287	283	273	206	216	219	198	2042	839	2881	2979
2020	115906	CONFLUENCE ACADEMIES	100	169	185	193	191	186	208	255	280	283	192	201	207	205	1950	805	2755	2855

STEP 3

CALCULATE SURVIVAL RATE

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ENROLLMENT PROJECTIONS

PK-12

K-12

Cohort Survival Example PK-12																	
Year	Births	Fall Enrollment	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12
2012	330	2016	301	377	335	354	313	356	297	303	295	291	334	296	264	257	4,072
2013	215	2017	299	330	368	338	355	321	324	305	308	288	351	268	248	265	4,069
2014	254	2018	275	328	337	343	325	343	298	322	319	305	326	294	230	250	4,020
2015	243	2019	350	311	334	330	322	308	322	295	315	317	353	282	246	230	3,965
2016	248	2020	397	349	317	331	321	319	318	318	302	323	357	299	260	241	4,055
2017	250	2021	191	350	349	311	337	318	319	346	336	306	361	308	258	258	4,157
Cohort Survival Ratios																	
		Cohort Survival	B-PK	PK-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	
		2016-17	0.9121														
		2017-18	1.3907	1.10	0.976	1.009	1.003	1.026	0.910	1.027	1.017	0.976	1.206	0.802	0.838	1.004	
		2018-19	1.0827	1.10	1.021	0.932	0.962	0.966	0.928	0.994	1.046	0.990	1.132	0.838	0.858	1.008	
		2019-20	1.4403	1.13	1.018	0.979	0.939	0.948	0.939	0.990	0.978	0.994	1.157	0.865	0.837	1.000	
		2020-21	1.6008	1.00	1.019	0.991	0.973	0.991	1.032	0.988	1.024	1.025	1.126	0.847	0.922	0.980	
		2021-22	0.764	0.88	1.000	0.981	1.018	0.991	1.000	1.088	1.057	1.013	1.118	0.863	0.863	0.992	
		Average	1.198	0.867	1.007	0.978	0.979	0.984	0.962	1.017	1.024	1.000	1.148	0.843	0.864	0.997	
Projection																	
Year	Births	Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12
2018	241	2022	289	166	352	341	304	332	306	325	354	336	351	304	266	257	3,995
2019	231	2023	277	250	167	345	334	300	319	311	332	354	386	296	263	265	3,922
2020	245	2024	294	240	252	163	338	329	288	325	319	332	407	325	256	262	3,835
2021	262	2025	314	255	242	247	160	332	316	293	332	319	381	343	281	255	3,755
2022	256	2026	307	272	256	237	242	157	320	322	300	332	366	322	296	280	3,701

Cohort Survival Example K-12																
Fall																
Year	Births	Enrollment	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12
2012	280	2016	281	268	268	220	227	262	220	193	160	171	167	163	164	2,764
2013	352	2017	300	277	276	276	279	242	261	200	195	155	165	163	157	2,946
2014	336	2018	256	306	281	274	278	281	245	248	195	201	150	160	154	3,029
2015	275	2019	317	268	309	274	282	278	283	243	234	194	207	153	151	3,193
2016	259	2020	294	319	274	310	292	283	281	275	239	221	190	206	149	3,333
2017	275	2021	262	300	324	283	316	297	286	283	271	237	207	183	213	3,462
							Cohort Survival Ratios									
		Cohort Survival	B-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	
		2016-17	1.00													
		2017-18	0.85	0.986	1.030	1.030	1.268	1.066	0.996	0.909	1.010	0.969	0.965	0.976	0.963	
		2018-19	0.76	1.020	1.014	0.993	1.007	1.007	1.012	0.950	0.975	1.031	0.968	0.970	0.945	
		2019-20	1.15	1.047	1.010	0.975	1.029	1.000	1.007	0.992	0.944	0.995	1.030	1.020	0.944	
		2020-21	1.14	1.006	1.022	1.003	1.066	1.004	1.011	0.972	0.984	0.944	0.979	0.995	0.974	
		2021-22	0.95	1.020	1.016	1.033	1.019	1.017	1.011	1.007	0.985	0.992	0.937	0.963	1.034	
		Average	0.976	1.016	1.018	1.007	1.078	1.019	1.007	0.966	0.980	0.986	0.976	0.985	0.972	
Projection																Total
Year	Births	Year	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12
2018	321	2022	313	266	306	326	305	322	299	276	277	267	231	204	178	3,571
2019	287	2023	280	318	271	308	352	311	324	289	271	273	261	228	198	3,684
2020	290	2024	283	285	324	273	332	358	313	313	283	267	267	257	221	3,776
2021	301	2025	294	288	290	326	294	338	361	302	307	279	260	263	250	3,852
2022	325	2026	317	299	293	292	352	300	340	349	296	303	272	256	255	3,924

STEPS 4 AND 5

BREAK POINTS AND TRENDS

Break Points and Trends

Break Points

- Decline in Birth Rate
- PK to K enrollment
- Middle School Break Points (6th or 7th Grade)
- High School Break Points (8th or 9th Grade)

Trends

- Migration to adjoining counties or schools.
- Economic Issues (Unemployment, Recession)

			Cohort Survival Example																					
Year	Births	Fall Enrollment	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	PK-12	PK	K-5	6-8	9-12	K-12	ADA	%
2009	329	2013	94	280	259	253	231	278	249	241	214	188	282	187	156	198	3110	94	1550	643	823	3016	2841	94.20%
2010	306	2014	116	225	272	271	236	238	275	237	243	207	199	251	210	163	3143	116	1517	687	823	3027	2731	90.22%
2011	329	2015	117	220	255	252	265	219	218	260	207	222	193	197	230	205	3060	117	1429	689	825	2943	2667	90.62%
2012	305	2016	112	209	218	235	243	259	219	209	230	198	210	204	202	225	2973	112	1383	637	841	2861	2565	89.65%
2013	295	2017	119	210	210	222	228	241	235	189	198	213	188	197	196	205	2851	119	1346	600	786	2732	2442	89.39%
2014	327	2018	123	222	236	208	218	229	217	212	187	193	199	191	190	195	2820	123	1330	592	775	2697	2411	89.40%
2015	301	2019	115	171	221	217	221	205	228	193	205	179	178	201	177	192	2703	115	1263	577	748	2588	2367	91.46%
2016	260	2020	130	176	174	214	210	206	207	201	197	192	173	190	182	186	2638	130	1187	590	731	2508	2321	92.54%
2017	264	2021	112	200	162	173	213	196	201	181	207	193	190	172	181	180	2561	112	1145	581	723	2449	2065	84.32%
2018	287	2022	118	171	207	175	175	211	185	185	189	186	189	175	159	187	2512	118	1124	560	710	2394	2100	87.72%
	-42																-598	24	-426	-83	-113	-622	-741	-6%
	-13%																-19%	26%	-27%	-13%	-14%	-21%	####	-7%
			Cohort Survival Ratios																					
		Cohort Survival	B-PK	PK-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12								
		2013	0.286																					
		2014	0.379	2.394	0.971	1.046	0.933	1.030	0.989	0.952	1.008	0.967	1.059	0.890	1.123	1.045								
		2015	0.356	1.897	1.133	0.926	0.978	0.928	0.916	0.945	0.873	0.914	0.932	0.990	0.916	0.976								
		2016	0.367	1.786	0.991	0.922	0.964	0.977	1.000	0.959	0.885	0.957	0.946	1.057	1.025	0.978								
		2017	0.403	1.875	1.005	1.018	0.970	0.992	0.907	0.863	0.947	0.926	0.949	0.938	0.961	1.015								
		2018	0.376	1.866	1.124	0.990	0.982	1.004	0.900	0.902	0.989	0.975	0.934	1.016	0.964	0.995								
		2019	0.382	1.390	0.995	0.919	1.063	0.940	0.996	0.889	0.967	0.957	0.922	1.010	0.927	1.011								
		2020	0.500	1.530	1.018	0.968	0.968	0.932	1.010	0.882	1.021	0.937	0.966	1.067	0.905	1.051								
		2021	0.424	1.538	0.920	0.994	0.995	0.933	0.976	0.874	1.030	0.980	0.990	0.994	0.953	0.989								
		2022	0.411	1.527	1.035	1.080	1.012	0.991	0.944	0.920	1.044	0.899	0.979	0.921	0.924	1.033								
		Average	0.388	1.756	1.021	0.985	0.985	0.970	0.960	0.910	0.974	0.946	0.964	0.987	0.967	1.010								
						</																		

Student Yield Models



HOME VALUES



TYPE OF HOUSING



OCCUPANCY PERMITS

Student Yields

1

Ability to track new developments and assess the nesting cycle of existing neighborhoods/subdivisions.

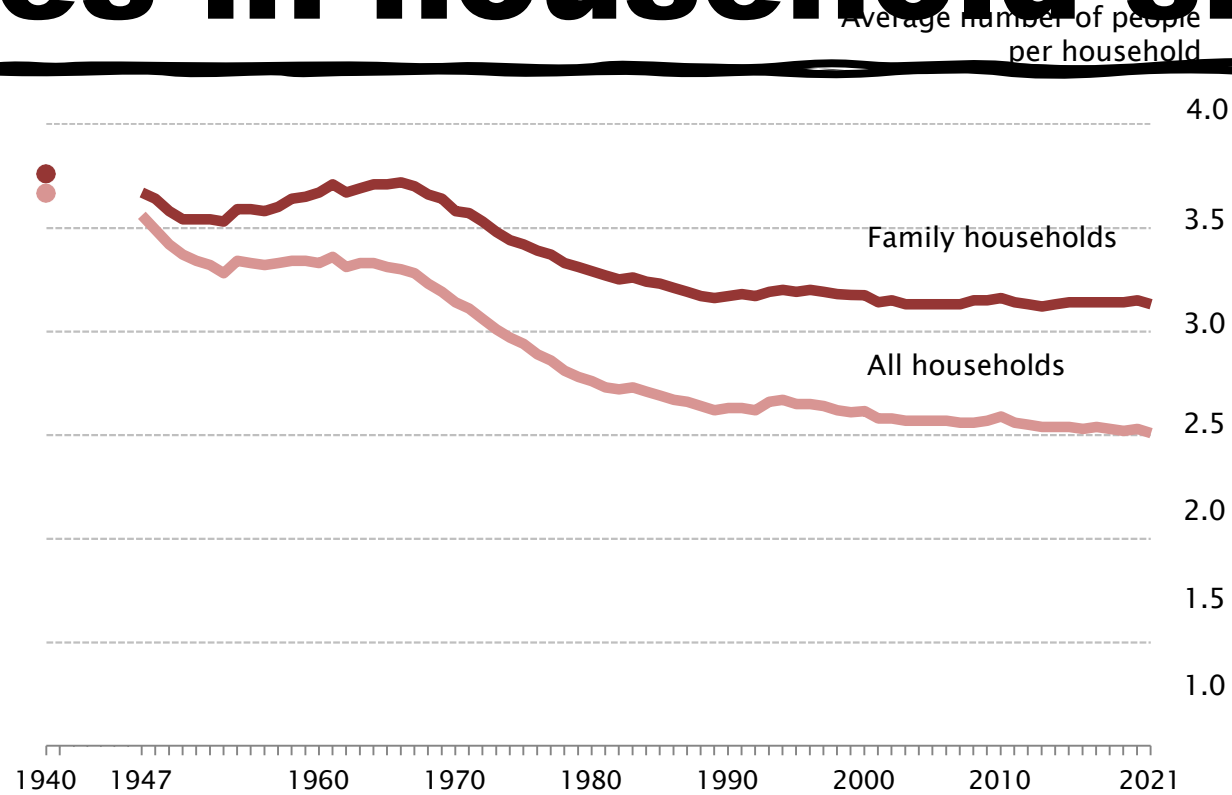
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Provides a means of projecting enrollment of new residential developments through analysis of:

- Projected number of years to complete construction
- Number of anticipated units by type
- Price of residential units by type

Figure HH-6

Changes in household size



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements, 1940 and 1947 to 2021.

Land Saturation and Use Models

Nesting Cycle of Neighborhoods and Subdivisions.

- Commercial Development
- Repurposing
- Aging Homeowners
- Younger Families
- Migration
- Crime
- Size of Home Properties.
- Units per Acres
- Multi-Family vs. Single Family Units.



District Data Base

The school district has the capability to develop its own data based on prior and current enrollment. School records contain the grade level and addresses of all students. This allows the district to calculate the student yields by grade level and housing type. This is particularly helpful if the district is growing with new single family and multi-family developments.

- **FY18-FY19 Countywide Generation Rates**
- *Number of MCPS students per unit, by unit type and school level, based on September 2016 enrollment*

	ELEMENTARY	MIDDLE	HIGH	K-12
Single Family Detached	0.201	0.111	0.150	0.465
Single Family Attached	0.234	0.111	0.147	0.491
Multi-Family Low to Med Rise	0.212	0.084	0.112	0.408
Multi-Family High Rise	0.072	0.029	0.038	0.1

Student Yield Models

Yield - Home Value

Home Value	Number of Residences	Number of Students	Student Yield	K-5 Yield	Yield Per Unit	6-8 Yield	Yield Per Unit	9-12 Yield	Yield Per Unit	Total	%
\$0-\$99,000	2428	1165	0.480	825	0.708	239	0.205	100	0.086	1164.91	1.00
\$100,000 - \$199,000	3900	1461	0.375	687	0.470	559	0.383	215	0.147	1461.85	1.00
\$200,000 - \$299,000	2119	1057	0.499	309	0.292	464	0.439	284	0.269	1057.73	1.00
\$300,000+	150	27	0.180	3	0.111	13	0.481	11	0.407	27.59	1.00
Total	8597	3710									

Yield - Housing Types

Home Type	Number of Residences	Number of Students	Student Yield	K-5 Yield	Yield Per Unit	6-8 Yield	Yield Per Unit	9-12 Yield	Yield Per Unit	Total	%
Single Family	7537	4296	0.570	2261	0.526	678	0.158	1357	0.316	4296.68	1.00
Condominiums											
Villas	265	53	0.200	21	0.396	17	0.321	15	0.283	53.72	1.00
Multi-Family	410	191	0.466	65	0.340	80	0.419	46	0.241	191.76	1.00
Multi-Family (Apartments)	1700	493	0.290	230	0.467	160	0.325	103	0.209	493.79	1.00
Mobile Home Parks	385	325	0.844	260	0.800	50	0.154	15	0.046	325.95	1.00
Total	10297	5358									

Yield - Housing Permits

Home Value	Number of Residences	Number of Students	Student Yield Per Residence	
\$0-\$99,000	200	107	0.480	
\$100,000 - \$199,000	350	175	0.375	
\$200,000 - \$299,000	225	150	0.499	
\$300,000+	375	90	0.180	
Total	1150	522	0.454	Average Yield

Student Yield Worksheet

Subdivision	Lot Sizes	Number of	Expected	Price	Student	Total	K-5	Total	6-8	Total	9-12	Total	
Yield-Home Value	Acres	Units	Time Frame	000's	Yield	Students	Yield	K-5	Yield	6-8	Yield	9-12	Total
Bluffs													
Single Family	1/4-1/2	392	4 Years	200-250	0.499	195.608	0.292	57	0.439	86	0.269	53	196
Condos (Attached)	NA	190	2 years	125-175	0.375	71.25	0.470	33	0.383	27	0.147	10	71
Yield-Housing Types													
Whitmoor Estates													
Single Family	1/4	75	5 years	300-400	0.570	42.75	0.526	22	0.158	7	0.316	14	43
Detached Villas	NA	50	2 years	150-200	0.20	10	0.396	4	0.321	3	0.283	3	10
Parkmoor Mobile Park	NA	300	1 year	Rental	0.84	252	0.800	202	0.154	39	0.046	12	252

St. Charles County-Wide Building Permits



	Cottleville			Dardenne Prairie			Lake St. Louis			O'Fallon			St. Charles City			* County			St. Paul			St. Peters			Wentzville			2022 Total County			2021 CUMULATIVE		
	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost	# Lots	# Units	Est. Cost			
July																																	
Single Family Detached		-	-		3	0.40		5	2.30		17	3.54		44	13.14		40	21.80		4	1.40		1	0.28		29	12.25		143	55.10		1048	306.92
Single Family Attached	-	-	-	-	-	-	-	-	-	8	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	1.66	24	32	6.22	
Multi-Family	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	195	27.69	
New Commercial	-	-	-	-	-	-	-	6	12	-	-	-	-	-	-	-	-	-	-	-	-	24	5	-	-	-	30	16.85	-	34	92.54		
August																																	
Single Family Detached	-	-	-		6	2		3	1		20	5		29	8		39	16		5	2		1	0		16	6		119	40.49		1151	341.31
Single Family Attached	-	-	-	3	6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	1.09	24	32	6.22	
Multi-Family	-	-	-	-	-	-	4	120	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	120	20.04	23	513	63.96	
New Commercial	-	-	-	-	-	-	-	2	2		1	1		2	1		-	-		-	-		-	-		-	-	5	4.11		36	93.83	
September																																	
Single Family Detached		-	-		9	2		-	-		16	4		26	9		22	13		2	1		1	0		11	5		87	33.50		1256	374.48
Single Family Attached	-	-	-	-	-	-	-	-	-	1	6	1	4	4	1	-	-	-	-	-	-	-	-	-	-	-	5	10	2.20	25	34	6.95	
Multi-Family	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	537	66.76	
New Commercial	-	-	-		1	0		-	-		1	2		1	2		1	0		-	-		-	-		2	6		6	10.79		41	109.78
October																																	
Single Family Detached	-	-	-		11	2		3	2		23	5		12	5		18	9		1	0		3	1		33	13		104	37.79		1385	413.00
Single Family Attached	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	34	6.95	
Multi-Family	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	745	85.46	
New Commercial	-	1	2	-	-	-	-	-	-		3	5		-	-		2	3		-	-		-	-		1	4		7	12.45		45	117.26
November																																	
Single Family Detached		-	-		-	-		-	-		-	-		-	-		-	-		-	-		-	-		-	-		-	-		1554	462.34
Single Family Attached	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	36	8.23	
Multi-Family	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	757	87.26	
New Commercial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	117.57		
Construction Cost:	Cost of construction, including labor and materials, excluding land and permit fees.																																
Single Family Detached:	Single-family detached houses, excluding manufactured / mobile homes.																																
Single Family Attached:	Townhouses / row-houses, privately owned units separated by a ground to roof wall having no unit above or below the other and separate heating systems and utility meters.																																
Multi-Family:	Buildings with multiple dwelling units in the same structure.																																
Single Family Attached:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	41	9.19	
Multi-Family	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	1205	147.24	
New Commercial	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	149.77		
Totals																																	
Single Family Detached		5	1.88		95	20.98		38	21.35		244	58.83		258	74.47		195	99.90		40	16.92		45	9.69		219	83.73		1,139	387.74			
Single Family Attached	-	-	-	11	14	2.54	-	-	-	13	18	4.08	4	4	1.01	-	-	-	-	-	-	-	-	-	1	2	0.82	29	38	8.45			
Multi-Family	-	-	-	-	-	-	4	120	20.04	5	145	14.33	1	246	35.50	-	-	-	-	-	-	12	304	24.31	-	-	-	22	815	94.18			
New Commercial	3	9.88		3	5.51		18	31.01		11	29.25		7	7.90		5	2.83		-	-		25	26.92		5	11.35		77	124.64				



DENSITY BY HOUSING TYPE

APPENDIX A. HOUSING TYPE ILLUSTRATIONS

COMPARISON OF HOUSING TYPES AND DENSITIES

Housing Types	Net Density Dwellings/Acre	Design Characteristics	Locational Considerations
Single Family Detached Dwellings			
Estate Lots	1 or less	• Semi-rural character with extensive planting • Most of lot is open space • Buildings 1-2 story with privacy from street • May include golf course	• Hillside areas, areas adjacent to sensitive lands • Less accessible locations where major roads should be avoided • Adjacent to existing low-density communities
Conventional Lots	2-7	• Lot sizes 5,000 square feet to 1/2 acre with 60-100 foot frontages • Dwellings 2,000-4,000 square feet covering 1/3 of lot • Streetscapes should minimize visual impact of garages	• Level and gently sloping topography • Could be located in peripheral areas of higher density neighborhood cores
Small Lots (5,000 square feet)	8	• Lots conform to minimum City R-1 standard with 50-60 frontages • Dwellings 2,000-3,000 square feet in 1-2 story structures • Need to reduce visual dominance of garages on street	• Level and gently sloping topography • Peripheral areas of higher density neighborhood cores
Small Lots (3,300-5,000 square feet)	8-12	• Small “zero lot line” parcels with 40-50 foot frontages • Dwellings typically 1,800-2,500 square feet in 1-2 story structures • Need rear alley to improve streetscapes	• Level and gently sloping topography • May be mixed with attached and multifamily dwellings in neighborhood cores
Small Lots with Second Units	10-17	• Dwellings typically 1,800-2,500 square foot primary unit and secondary unit less than 1,000 square feet; 2-story structure • Previous small lot design issues apply	• Level and gently sloping topography • May be mixed with small lot single-family dwellings • Neighborhood cores and peripheral areas

COMPARISON OF HOUSING TYPES AND DENSITIES (continued)

Housing Types	Net Density Dwellings/Acre	Design Characteristics	Locational Considerations
Attached Dwellings			
Duplex, Triplex	12-18	• Lots 5,000 to 8,000 square feet with 50-75 foot frontages • Dwellings 1,500-2,500 square feet; 2-story • Small lot design issues apply	• Level and gently sloping topography • May be mixed with single-family houses, row houses and multifamily dwellings • Neighborhood cores
Townhouses arranged in Courtyards	15-25	• 1,200-2,000 square foot 2-level dwellings courtyards oriented to • Courtyards should open partially to streets	• Level and gently sloping topography • Neighborhood cores • Mix with small single-family detached and multifamily
Townhouses facing the street	15-25	• 1,200-2,000 square foot 2-level dwellings oriented to courtyards • Should have street-facing entrances and porches or stoops	• Level and gently sloping topography • Neighborhood cores • Mix with small single-family, duplex and multifamily • Streets with low traffic volumes
Multifamily Dwellings			
Courtyard Multifamily Buildings	25-50	• One or two story dwellings in 2-4 story buildings over garages • Designs must emphasize attractive streetscapes • Courtyards should partially open to street	• Level sites • Residential core areas • Appropriate for major arterial streets
Multifamily Buildings with Internal Corridors	40-75	• One story dwellings in 2-4 story buildings over garages • Design of street frontage is critical • Group units around circulation cores to minimize corridors	• Level sites • Residential core areas • Appropriate for major arterial streets



THANK YOU
