

Planning for the Future

Lawrence Public Schools

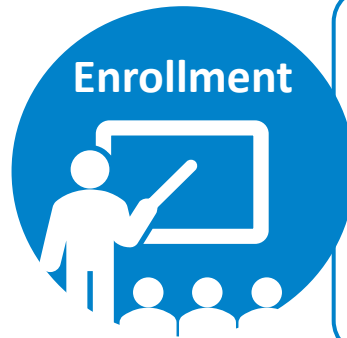
Futures Planning
Committee Homework

November 30, 2022



100,000 Foot Perspective

An overview of what is most notable for your school district, students, and community.



District wide enrollment forecasted to decrease by about 300 students to continue to be under 10,000 students

- Elementary forecasted to decrease by about 20 students and enroll about 4,300 total ES students
- Middle School forecasted to decrease by over 100 students and enroll about 2,000 total MS students
- High School forecasted to decrease by over 150 students and enroll about 3,200 total HS students



Capacity

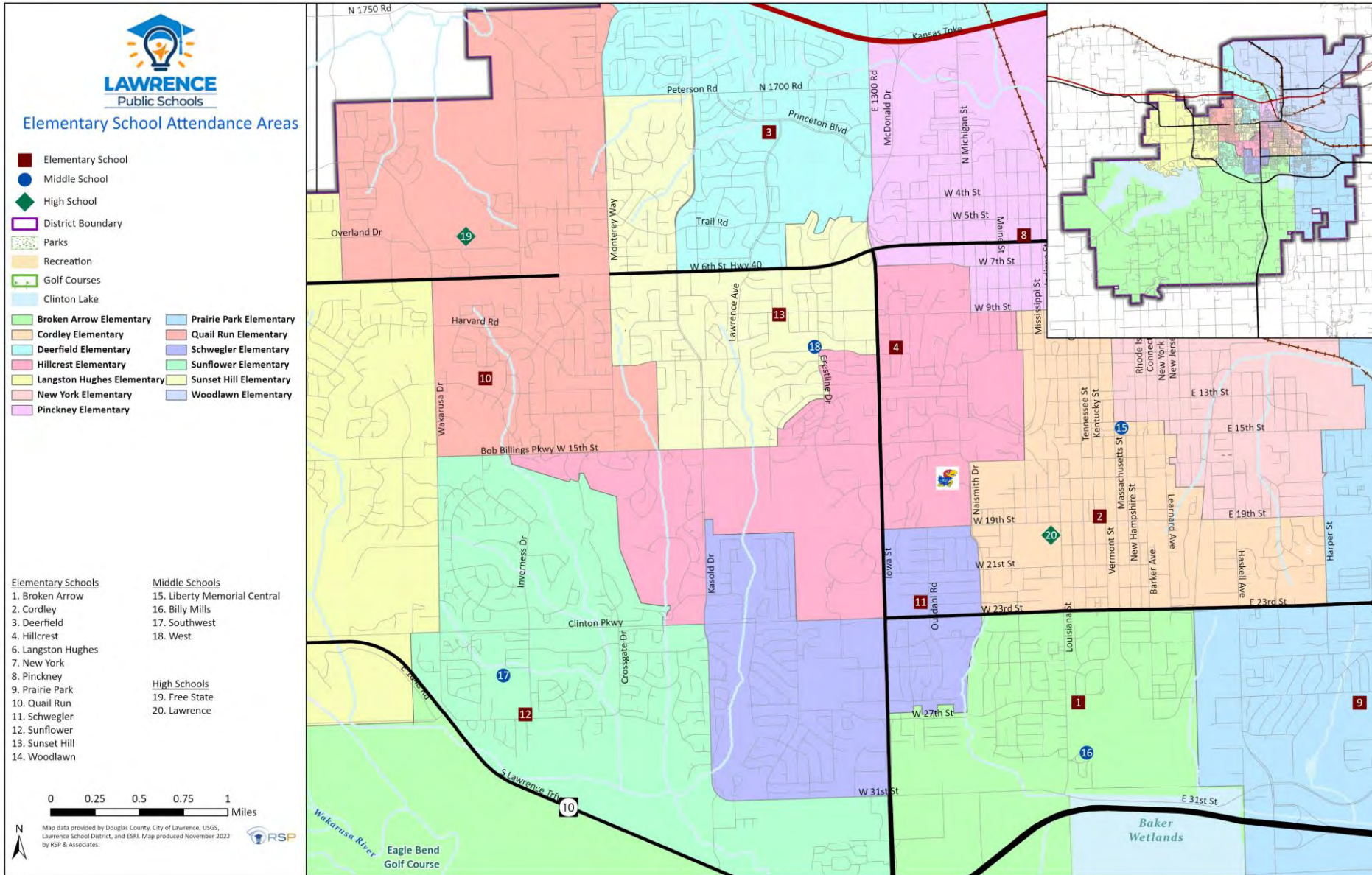
- Building Capacity is being examined by the district
- The analysis will help determine which schools will have capacity challenges



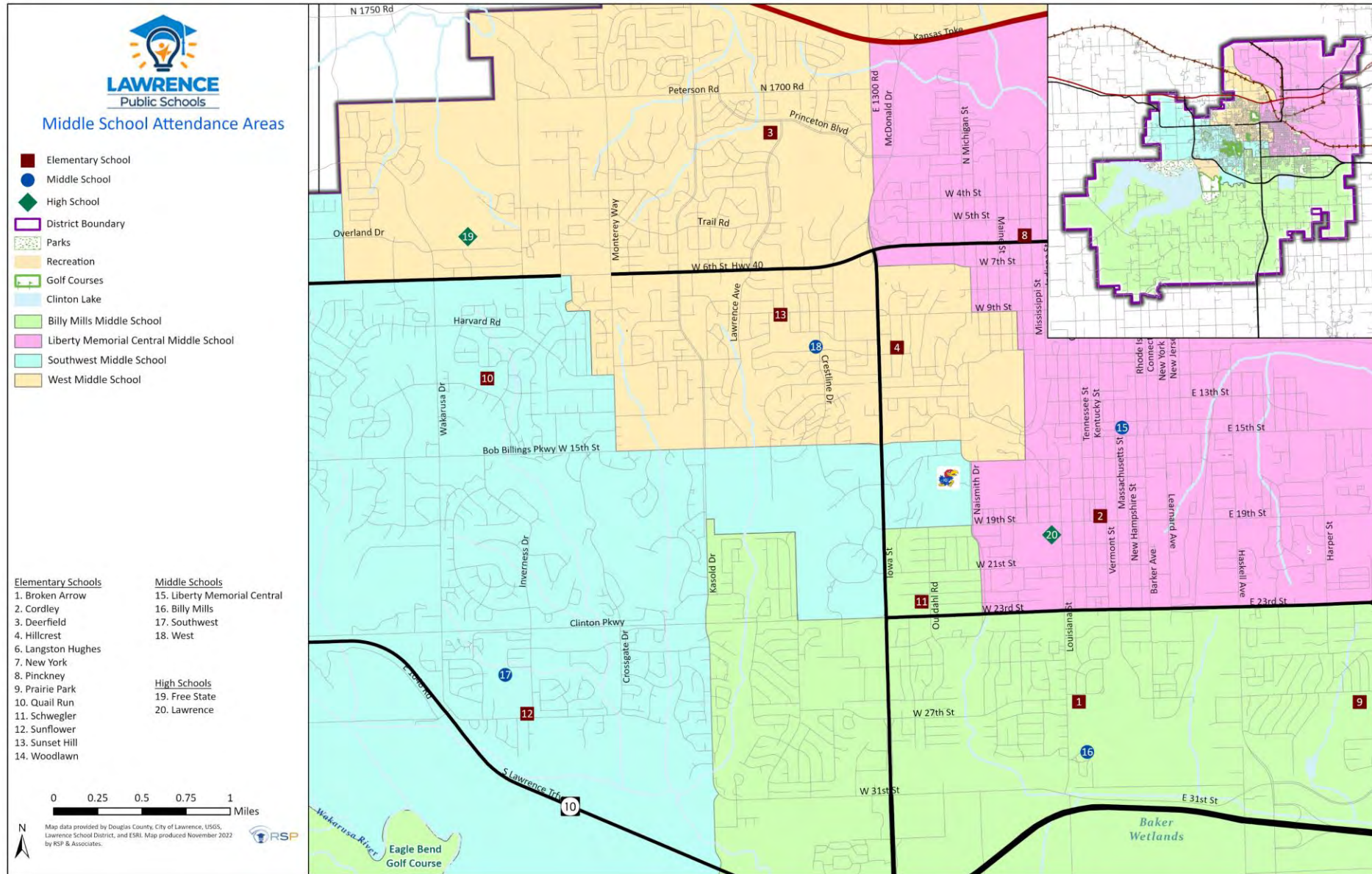
There is potential for residential development and economic growth in the district for the next ten years

- New Panasonic Industries has potential to bring jobs and spur regional growth
- 70 single-family and 16 multi-family units were built in 2022 so far
- Almost 1,800 total potential units could be added to the district in the next ten years

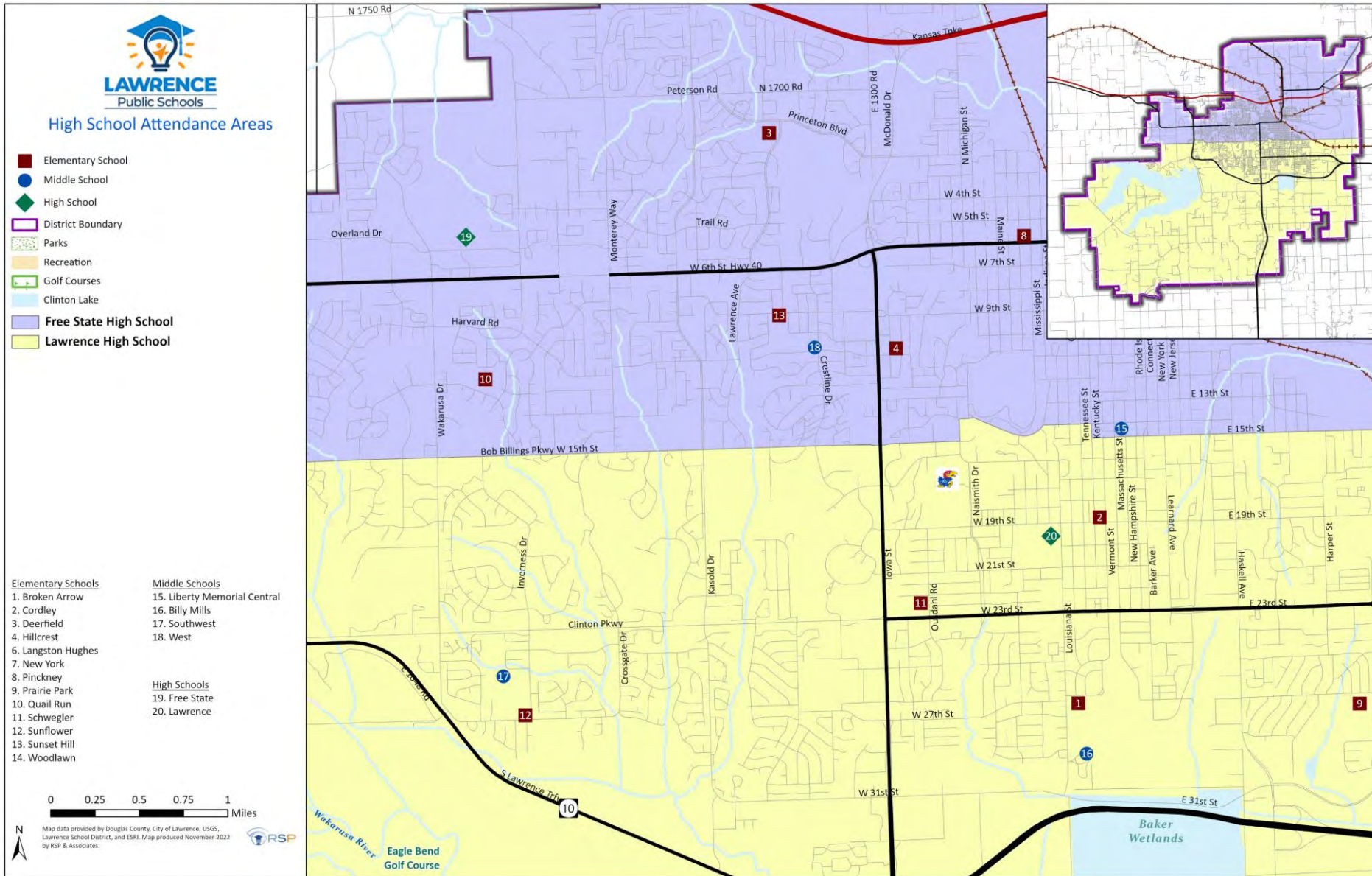
Elementary School Boundaries



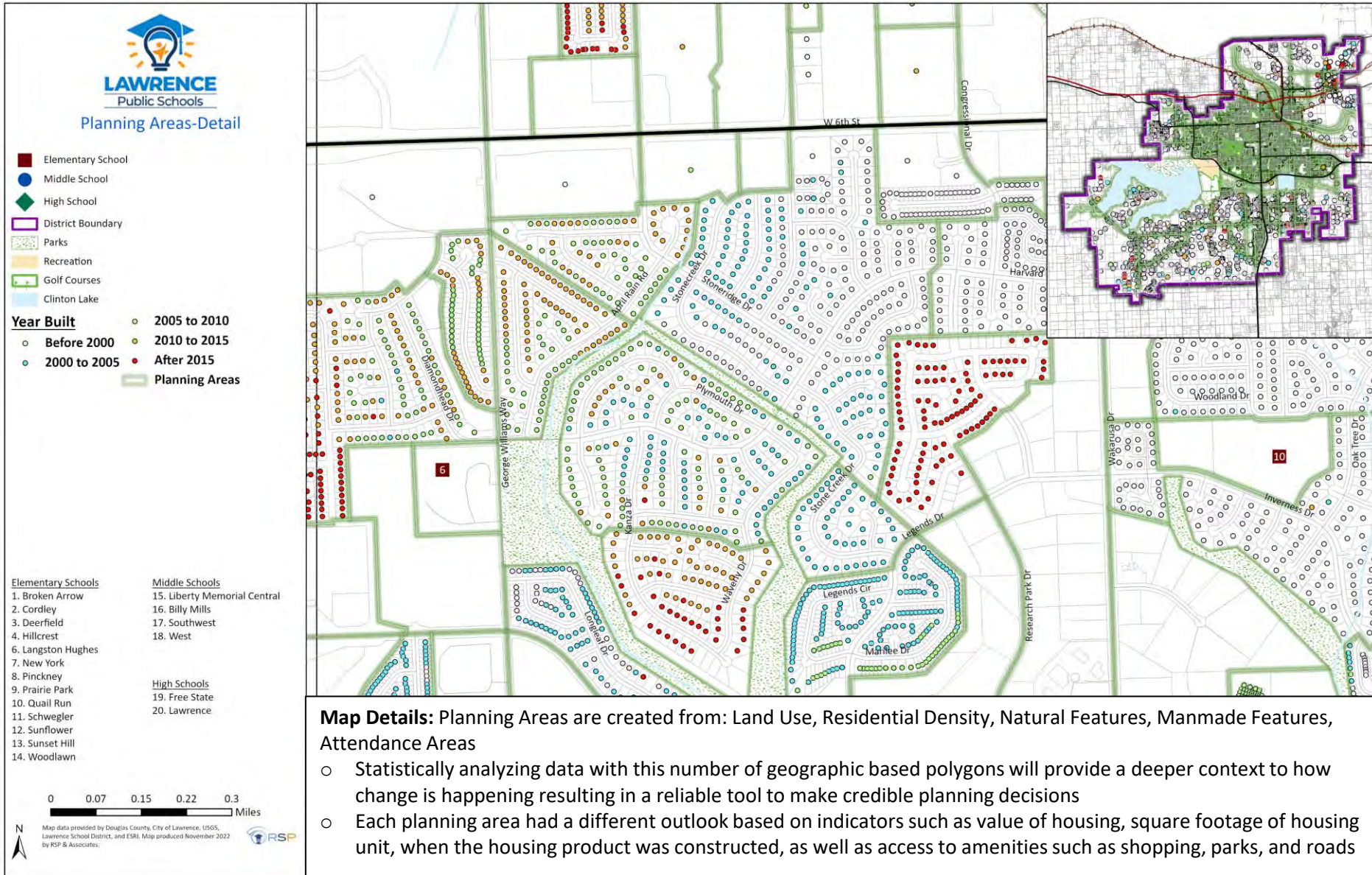
Middle School Boundaries



High School Boundaries



Planning Areas



Sophisticated Forecast Model

Built-Out

$$S_{c, t, x} = S_{c-1, t-1, x} * GC$$

Let:

- S = The number of students, either an actual count or a projected count
- x = A subscript denoting an attendance area in the School District
- c = Grade level
- t = Time (years)
- GC = Growth component either modeling enrollment increase or decrease based on historical information, expressed as a real number

Developing

$$S_{c, t, x} = S_{c-1, t-1, x} + (BP_{t, x} * R_{c, x})$$

$$\text{Where: } BP_{t, x} = \left(\frac{(CP_x) (BT_x) (A_x)}{\sum_x (CP_x) (BT_x) (A_x)} \right) * CT$$

Let:

- S = The number of students, either an actual count or a projected count
- x = A subscript denoting an attendance area in School District
- c = Grade level
- t = Time (years)
- BP = Building permit forecast as given by the Building Permit Allocation Model (BPAM) model
- R_{c, x} = Student Enrollment ratio of cohort c in planning area x
- CP = Capacity of a planning area as expressed by available housing units
- BT = Building history trend of planning area
- A = An index which models the likelihood of development
- CT = Building permit control total forecast

The SFM is...

- a social science... not an exact science; it identifies behavior trends to determine the propensity of them to be recreated
- valuable in how our team created and analyzes the geography at a planning area level for any commonality which while help produce an accurate forecast

Some variables examined for each planning area (but not limited to) are...

- natural cohort (district data)
- planning area subdivision lifecycle (a RSP variable)
- the value of homes (county assessor data)
- type of residential units like single-family, multi-family, townhome, mobile home, etc. (county assessor data)
- year units were built
- estimated female population (census data)
- estimated 0-4 population (census data)
- existing land use (county and city data)
- future land use (county and city data)
- capital improvement plan (county and city data)
- future development (county and city data)
- in-migration of students (district data) & out-migration of students (district data)

This is the **central focus** of everything RSP does.

The model is based on what is happening in a school district. The best data is statistically analyzed to provide an accurate enrollment forecast. The District will be able to use RSP's report and maps to better understand demographic trends, school utilization, and the timing of construction projects.

Each variable is analyzed as an indicator of the future student population:



Indicator of Student Growth



Indicator of Student Loss

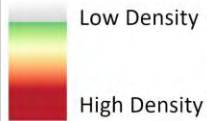
Heat Map



Student "Heat" Density in 2022/23 in Grades K-12

- Elementary School
- Middle School
- ◆ High School
- District Boundary
- Parks
- Recreation
- Golf Courses
- Clinton Lake

Student Density



Student "Heat" is determined by calculating the number of students that are clustered within close proximity of one another. Overlapping of points (2 or more students residing at the same address) are handled using a weighting of coincident points. This weighted data is calculated by relational distance, which helps to visually depict the areas of high student clustering.

Elementary Schools

1. Broken Arrow
2. Cordley
3. Deerfield
4. Hillcrest
6. Langston Hughes
7. New York
8. Pinckney
9. Prairie Park
10. Quail Run
11. Schwegler
12. Sunflower
13. Sunset Hill
14. Woodlawn

Middle Schools

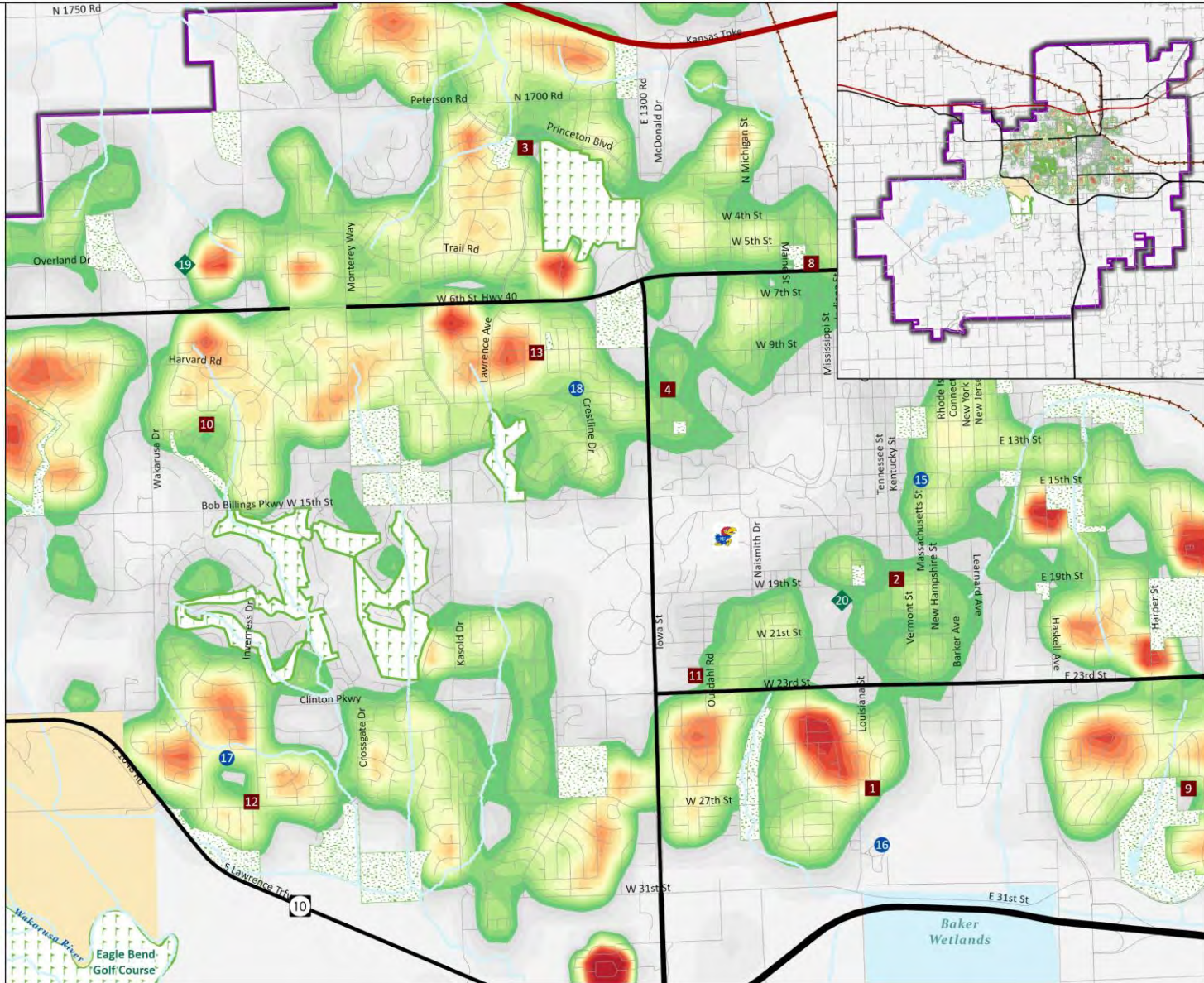
15. Liberty Memorial Central
16. Billy Mills
17. Southwest
18. West

High Schools

19. Free State
20. Lawrence

0 0.25 0.5 0.75 1 Miles

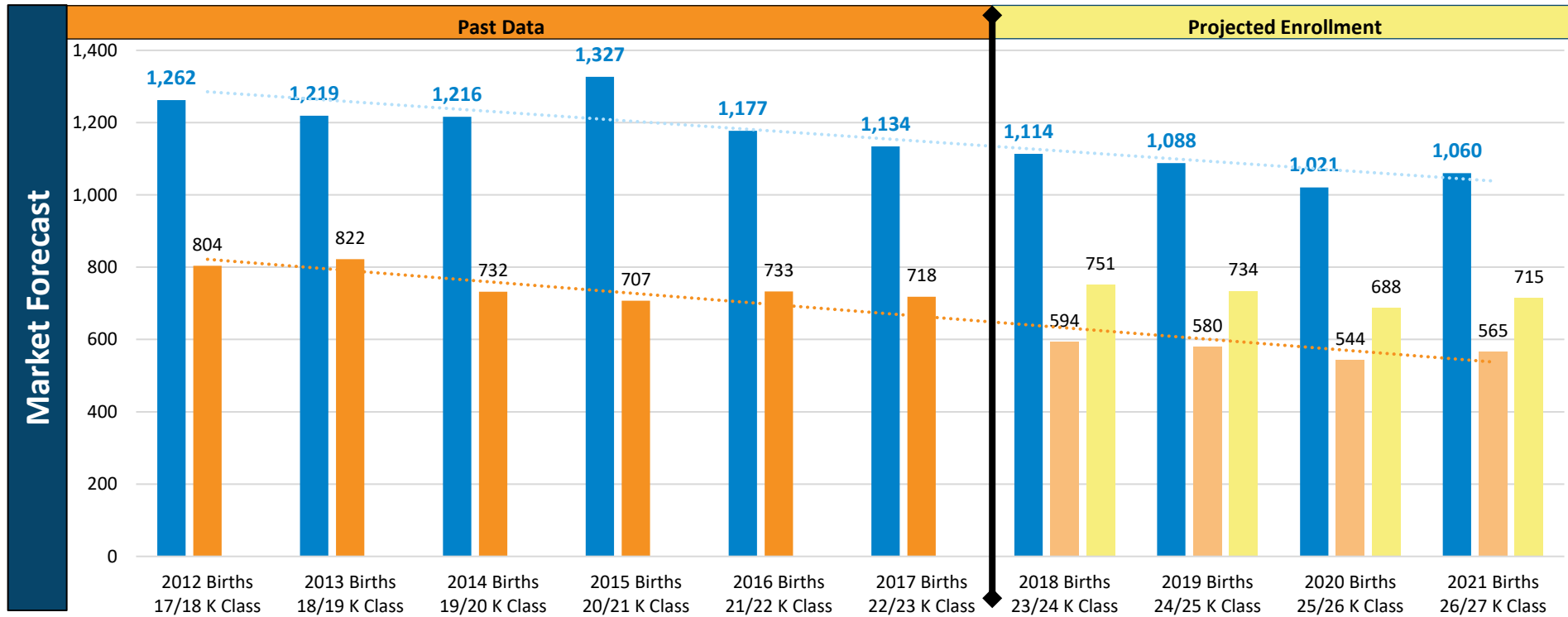
Map data provided by Douglas County, City of Lawrence, USGS, Lawrence School District, and ESRI. Map produced November 2022 by RSP & Associates.



Birth Rate Information



Live Births per year V Kindergarteners 5 Years Later



Source: Douglas County and ESRI

Live Births per Year

Past Kindergarten students

Projected Low Range

Projected High Range

Live Birth Observations

- The number of Douglas County live births and corresponding kindergarten classes have been decreasing
- 3-year average of 38 less live births per year
- The kindergarten classes moving forward are forecasted to be between:
 - Low End: 540 – 590 students
 - High End: 690 – 750 students

Main Takeaway:

- The decline of live births in the county is an indicator of student loss
- To increase kindergarten enrollment, a larger percentage of Douglas county live births needs to enroll in Lawrence Public Schools (over 65%)

Past Enrollment by Grade



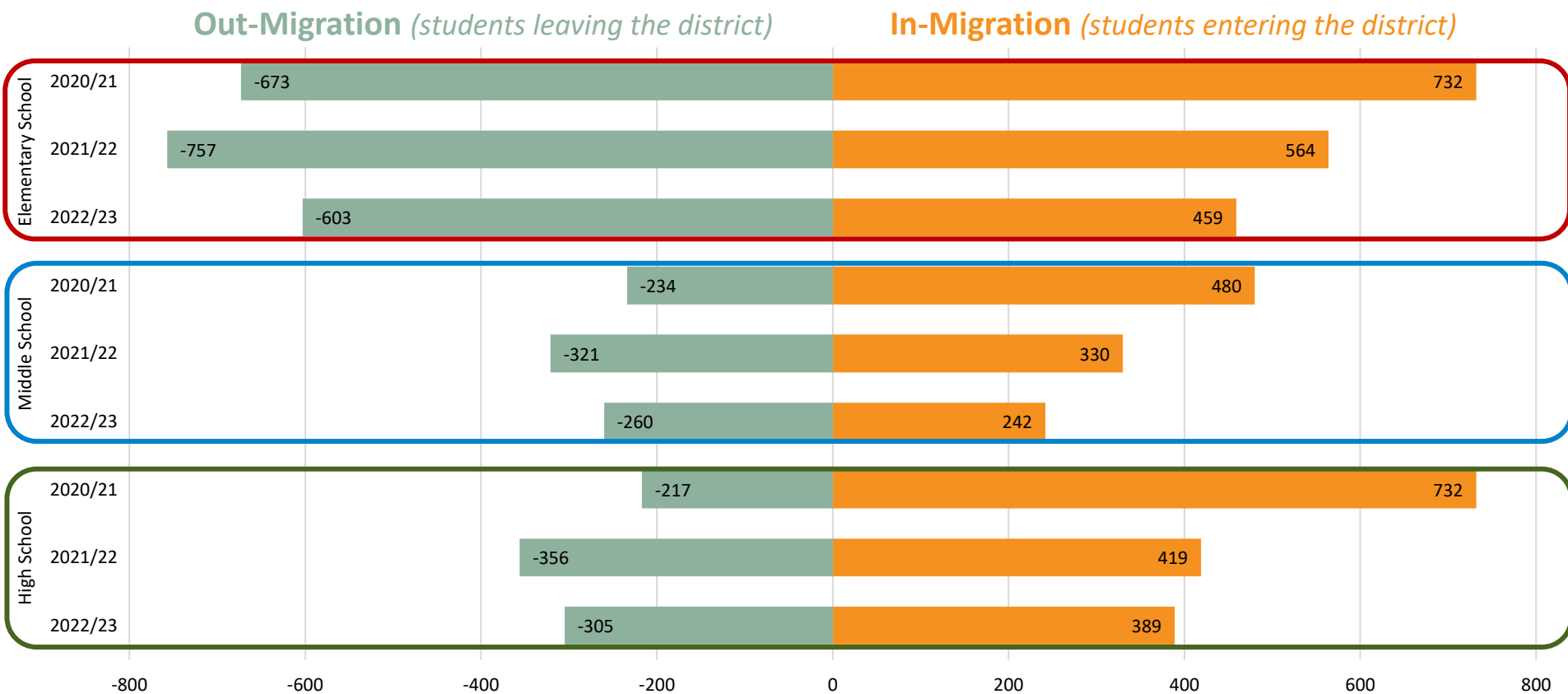
Enrollment By Grade															K-12			PK-12		
Year	PK	K	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	Total	Change	% Change	Total	Change	% Change
2000/01	0	660	755	766	777	819	786	835	809	822	833	857	819	746	10,284			10,284		
2001/02	0	664	728	754	746	766	812	829	819	795	828	872	854	773	10,240	-44	-0.43%	10,240	-44	-0.43%
2002/03	0	615	718	700	729	749	766	822	829	797	814	846	845	794	10,024	-216	-2.11%	10,024	-216	-2.11%
2003/04	0	708	712	705	697	742	769	698	768	716	854	862	846	813	9,890	-134	-1.34%	9,890	-134	-1.34%
2004/05	0	684	654	634	710	678	713	705	767	782	822	839	818	798	9,604	-286	-2.89%	9,604	-286	-2.89%
2005/06	0	638	739	655	629	715	691	689	729	756	805	832	854	777	9,509	-95	-0.99%	9,509	-95	-0.99%
2006/07	132	736	670	728	648	611	736	694	727	733	794	825	856	810	9,568	59	0.62%	9,700	191	2.01%
2007/08	151	710	792	688	726	663	623	706	745	773	772	788	809	729	9,524	-44	-0.46%	9,675	-25	-0.26%
2008/09	157	729	747	794	690	749	671	641	742	746	812	761	768	727	9,577	53	0.56%	9,734	59	0.61%
2009/10	174	716	772	745	785	693	734	671	710	762	742	829	732	709	9,600	23	0.24%	9,774	40	0.41%
2010/11	7	693	776	772	744	782	695	731	727	692	750	771	811	665	9,609	9	0.09%	9,616	-158	-1.62%
2011/12	181	790	728	775	781	749	787	710	789	737	719	757	755	767	9,844	235	2.45%	10,025	409	4.25%
2012/13	219	808	849	747	787	787	751	818	738	789	764	712	759	729	10,038	194	1.97%	10,257	232	2.31%
2013/14	226	856	836	835	755	774	800	735	859	753	799	758	732	758	10,250	212	2.11%	10,476	219	2.14%
2014/15	163	781	862	816	822	742	773	807	760	852	768	810	757	667	10,217	-33	-0.32%	10,380	-96	-0.92%
2015/16	187	850	773	822	821	824	739	812	830	778	894	789	808	736	10,476	259	2.53%	10,663	283	2.73%
2016/17	89	780	847	761	831	820	821	733	800	813	835	892	794	822	10,549	73	0.70%	10,638	-25	-0.23%
2017/18	254	804	771	849	764	824	822	824	740	810	882	826	874	777	10,567	18	0.17%	10,821	183	1.72%
2018/19	171	822	832	786	838	765	844	816	820	755	889	881	802	850	10,700	133	1.26%	10,871	50	0.46%
2019/20	191	732	795	785	757	799	750	802	821	810	821	880	855	789	10,396	-304	-2.84%	10,587	-284	-2.61%
2020/21	152	646	692	735	763	695	745	678	794	778	865	814	851	846	9,902	-494	-4.75%	10,054	-533	-5.03%
2021/22	184	704	680	696	726	751	694	760	696	794	877	877	795	866	9,916	14	0.14%	10,100	46	0.46%
2022/23	215	708	712	705	697	742	769	698	768	716	854	862	846	813	9,890	-26	-0.26%	10,105	5	0.05%

Source: KSDE 2000/01 to 2008/09, Virtual School not in Totals from 2004/05 to 2022/23

Observations:

- Largest K-12 class in 2022/23 –10th grade with 862 students
- Smallest K-12 class in 2022/23 – 3rd grade with 697 students
- Graduating senior class has been larger than the incoming Kindergarten class which will decrease total enrollment
- Largest total enrollment since 2000/01 was 2018/19

3-Year Student Migration Trend



Source: Douglas County and ESRI

Definition

Out-Migration: Shows number of students in grade K to 11th that were attending the District in 2021/22, but are not attending the District in 2022/23.

In-Migration: Shows number of students in grade 1st to 12th that are attending the District in 2022/23, but were not attending the District in 2021/22.

Observations

- 2020/21 lost 1,124 students and gained 1,944 students; **NET: +820**
- 2021/22 lost 1,434 students and gained 1,313 students; **NET: -121**
- 2022/23 lost 1,168 students and gained 1,090 students; **NET: -78**

Main Takeaway:

The district had a negative net gain of transfer students for the past two years.

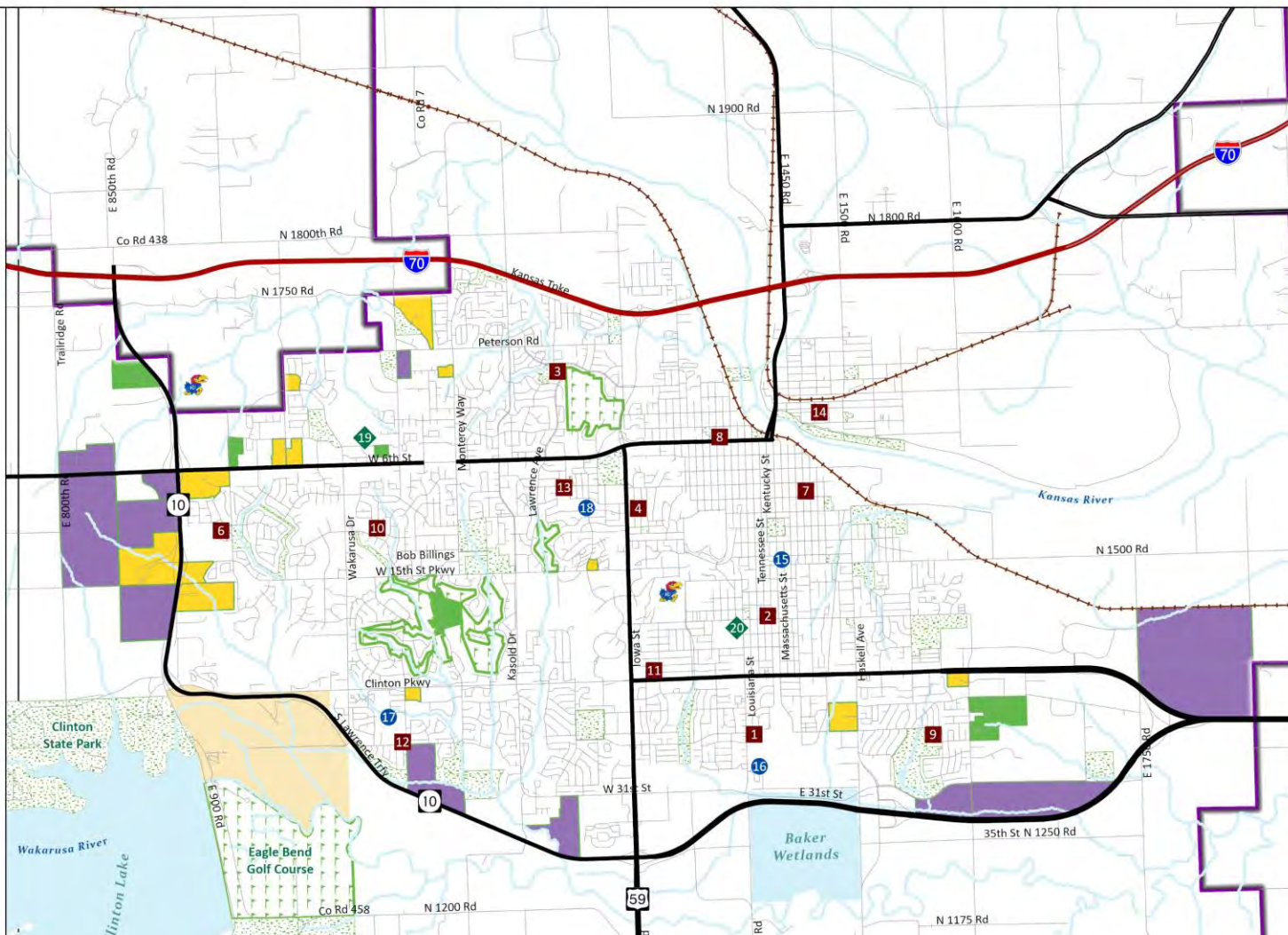
Growth Area Map



- Elementary School
 - Middle School
 - ◆ High School
 - ▭ District Boundary
 - ▨ Parks
 - ▨ Recreation
 - ▨ Golf Courses
 - ▨ Clinton Lake
- Growth Areas**
- Current
 - 5 Year
 - 10 Year

Population growth Areas are defined as areas that display a high propensity for growth; however, development is not guaranteed. Additionally, it is possible that areas not designated for growth may develop.

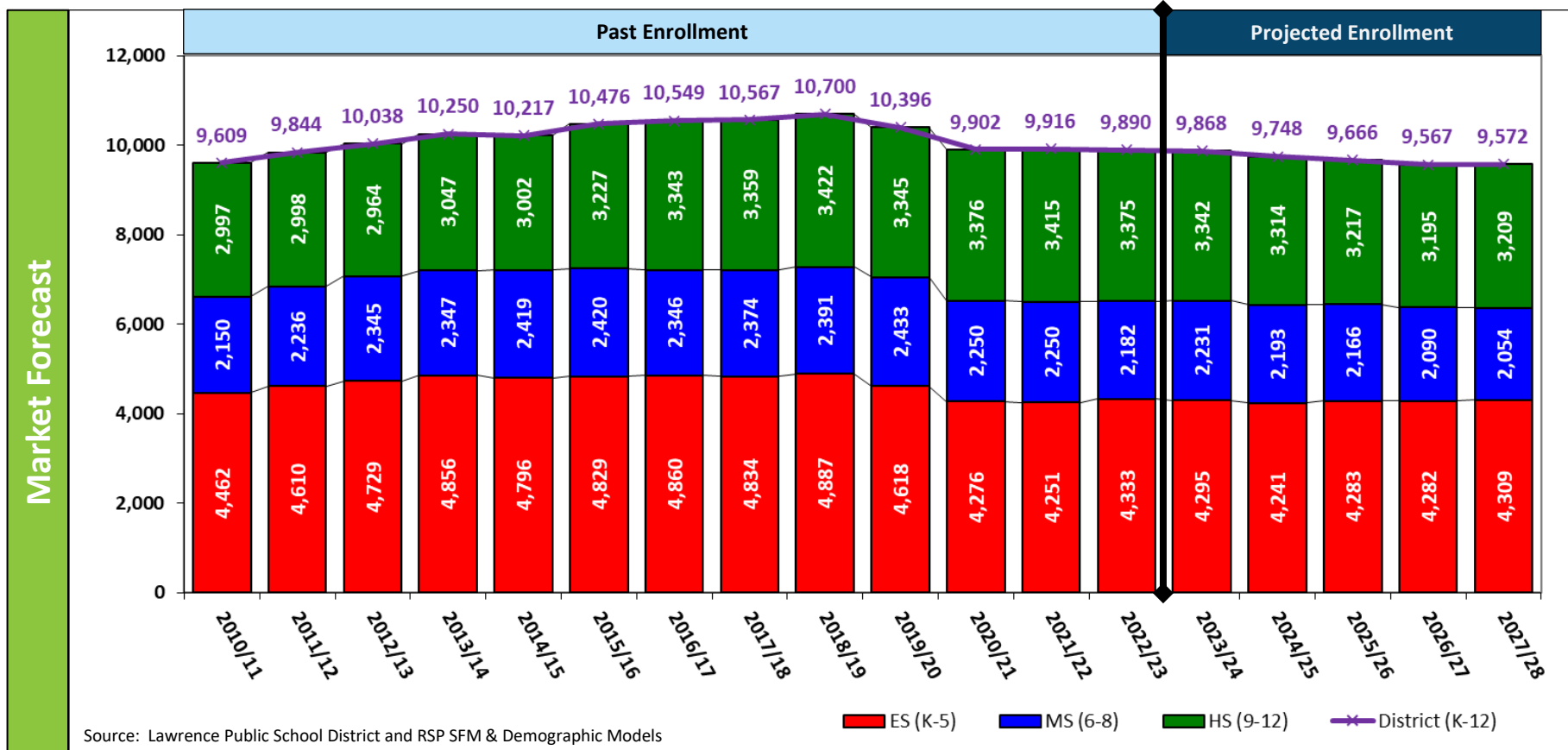
- | | |
|---------------------------|------------------------------|
| Elementary Schools | Middle Schools |
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| 12. Sunflower | |
| 13. Sunset Hill | |
| 14. Woodlawn | |
| | High Schools |
| | 19. Free State |
| | 20. Lawrence |



Main Takeaway:

There are almost 1,800 potential units identified in this study for the next ten years. Majority of units are in 5 to 10-yr stages which is a limiting factor in immediate enrollment growth.

Past, Current, & Future Enrollment



- Enrollment Change – Overall enrollment forecasted to decrease to be about 9,500 students by 2027/28
- District decreases by just over 300 students (-3.3%) (Annual Range: -1.2% to +0.1% a year)
- Elementary decreases by about 20 students (-0.5%) (Annual Range: -1.3% to +1.0% a year)
- Middle School decreases by about 130 students (-5.9%) (Annual Range: -3.5% to +2.2% a year)
- High School decreases by nearly 170 students (-5.0%) (Annual Range: -2.9% to +0.4% a year)

Enrollment Analysis Conclusion

Projection Overview:

District: Forecasted decrease of 300 students

- *Total 9,572 students in five years*

Elementary: Forecasted decrease of 20 students

- *Total 4,309 students in five years*

Middle School: Forecasted decrease of 130 students

- *Total 2,054 students in five years*

High School: Forecasted decrease of 170 students

- *Total 3,209 students in five years*

Driving Themes of Enrollment Forecast

2022/23 Student population

- *Smaller classes in current middle school grades*
- *Larger senior classes than kindergarten classes*
- *Lack of pandemic recovery from enrollment drops in 2019/20 to 2020/21*

Development Activity

- *Decreasing student yield rates for single-family units*
- *2020 to 2022 building trends – slowing of unit development*
- *Potential residential development outlook is 5-10 years out*
- *Regional growth from Panasonic Industries is 5 years out*

Live Birth and Migration Trends

- *Decreasing Douglas County live births corresponding with decreasing kindergarten classes*
- *Negative student migration for the past two years*
- *3-year trend of grade cohort loss year to year*