Planning for the Future

McKenzie County School District #1

Enrollment Analysis

February 2023

Expectations

Thank you to McKenzie County School District, McKenzie County, City of Watford, USGS, ND GIS Hub, and Census Bureau/Esri for making this happen!

Timeline – Project timeline is a result of ensuring student data could represent as close as possible to the Official County Data with attributes that would allow RSP to forecast enrollment at a parcel level geography.

Findings – The findings were not focused on supporting or contradicting any past internal or outsourced studies. This analysis is based on data, data, and more data.

Study – This study factored in many different data sets to provide data driven analysis that is the foundation to the RSP Statistical Forecast Model (SFM).

Change – Enrollment change in the community is influenced by, but not limited to, the birth rate, demographics, types of development and/or housing affordability.

Facts:
1) The study does not provide specific information about which site would be best suited for a new facility or for that matter should the district build any new facility – this analysis is one portion of how to make that decision
2) This analysis is based on the same grade configuration and educational programming expectations the patrons have for each student
3) Projecting enrollment is not a science – like life in general some assumptions happen that may lead to greater enrollment while others toward a smaller enrollment

The goal of this study is to help the board, administration, and public understand how to make the best decision for the students at the classroom level.

RSP & Associates

RSP Quick Facts:

Founded in 2003
Professional educational planning firm
Expertise in multiple disciplines (GIS, Planning, Facilitation)
Over 20 years of planning experience
Over 80 years of education experience
Over 20 years of GIS experience
Projection accuracy of 97% or greater

RSP Clients:

RSP was started with the desire and commitment to assist school districts in long-range planning.
RSP has served over **130** clients in:

Arkansas	Minnesota	South Dakota
Colorado	Missouri	Tennessee
Iowa	Nebraska	Wisconsin
Illinois	North Dakota	
Kansas	Oklahoma	

RSP Planning Team:

Robert Schwarz, AICP, CEFP
Military, County, City, and School District Planner
University of Kansas – Master of Urban Planning (MUP)
American Institute of Certified Planners (AICP)
Certified Educational Facility Planner (CEFP)

Ginna Wallace, Planner
University of Kansas – Master of Urban Planning (MUP)

RSP Recent Projects:

Dickinson Public Schools
- Enrollment Analysis, 2021/22

Williston Public Schools
- Enrollment Analysis, 2022/23
  - Public Survey, 2022/23
- Boundary Analysis, 2022/23

Bismarck Public Schools
- Enrollment Analysis, 2021/22

Our Partners: esri Partner Network Silver | Poll Everywhere | GEOMARVEL | MetroQuest

Discussion Items

PART 1
ENROLLMENT &
DEMOGRAPHICS

PART 2
DEVELOPMENT

PART 3
PROJECTIONS

PART 4
NEXT STEPS

APPENDIX

Helpful Hints to Read the Report:

o Slides that have the flagged star symbol are SIGNATURE SLIDES and are the most important variables in this unique analysis

o Each variable is analyzed as an indicator of future student population.

o Click the APPENDIX symbol on a page to reference additional analysis on this topic

Part 1
Enrollment & Demographics

- Things to Consider
- Student Analysis Maps & Data
- Sophisticated Forecast Model
- Demographics
- Past Enrollment & Change

100,000 Foot Perspective

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

Enrollment

District wide enrollment forecasted to increase over the next ten years to enroll 1,765 students by 2032/33

- **Elementary forecasted to enroll 1,363 students by 2032/33**
- **Middle School forecasted to enroll 598 students by 2032/33**
- **High School forecasted to enroll 804 students by 2032/33**

Capacity

Capacity was provided by the district and analyzed in regard to projected enrollment for schools. Capacity challenges can be excepted at:

- Badlands Elementary School in the next five years
- Fox Hills Elementary School in the next ten years
- Watford City Middle School in the next ten years

Development

There has been a lack of new residential inventory the past two years – more housing development is a key factor to future enrollment growth

- 8 single-family and 10 multi-family units were built in 2022
- Almost 8,900 total potential units could be added to the district in the next ten years
- Most growth potential is located north of 4th Avenue

District Boundary

Map Details

o   District Boundary: **Purple Line**

o   City Limits: **City of Watford City**

o   School Points:

    1.   **Badlands Elementary**

    2.   **Fox Hills Elementary**

    3.   **Watford City Middle School**

    4.   **Watford City High School**

    5.   **Wolves Center Academy**

Bakken Area Skills Center is currently under construction and is planned to open in fall/winter 2023.
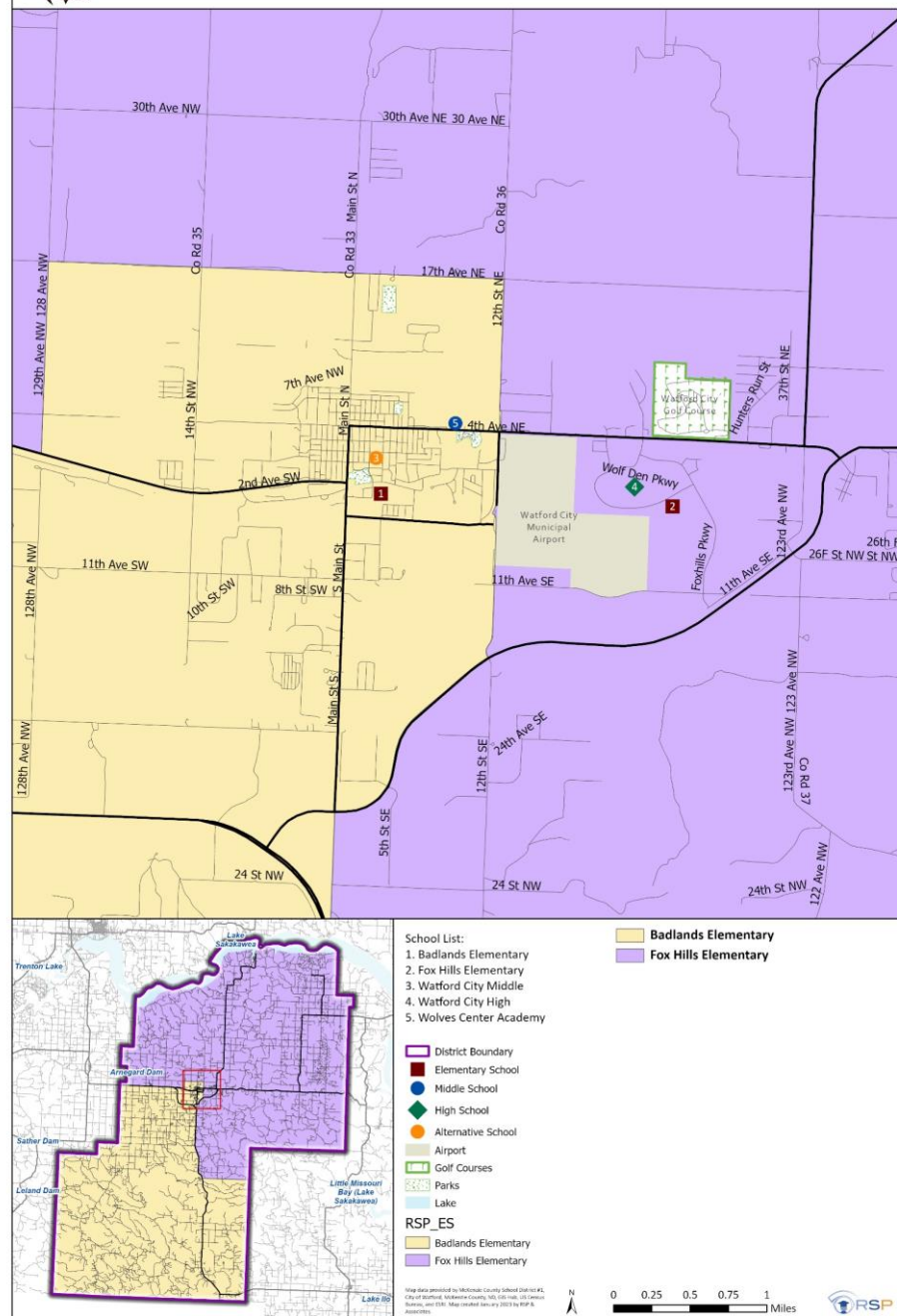

McKenzie County School District #1 — District Boundary
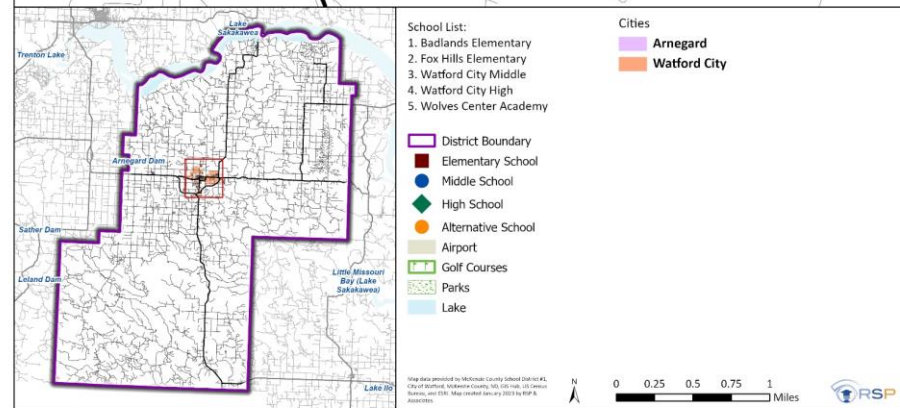
Elementary Boundaries

Map Details

○ District Boundary: **Purple Line**

○ School Boundaries:

1. **Badlands Elementary**

2. **Fox Hills Elementary**

McKenzie County School District #1
Elementary School Attendance Areas

Planning Areas

Map Details

o District Boundary: **Purple Line**

o Planning Areas: **Green Line**

- Planning Areas are created from: Land Use, Residential Density, Natural Features, Manmade Features, Attendance Areas

Notes

o Statistically analyzing data with this number of geographic based polygons will provide a deeper context to how change is happening resulting in a reliable tool to make credible planning decisions

o Each planning area had a different outlook based on indicators such as value of housing, square footage of housing unit, when the housing product was constructed, as well as access to amenities such as shopping, parks, trails, and roads
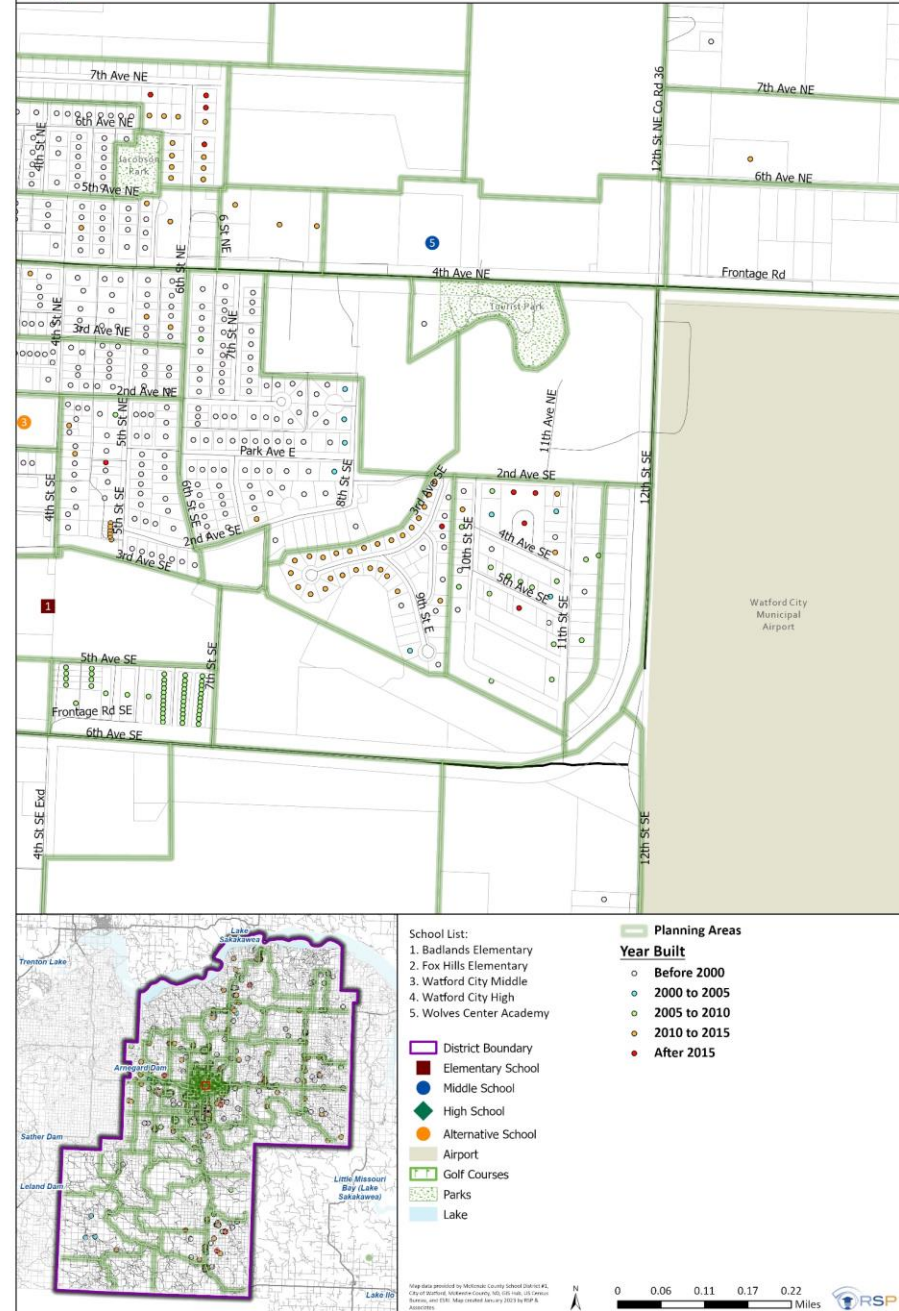
Sophisticated Forecast Model Methodology

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

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

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

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.

The SFM is…
- o a social science… not an exact science; it identifies behavior trends to determine the propensity of them to be recreated
- o 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…
- o natural cohort (district data)
- o planning area subdivision lifecycle (a RSP variable)
- o the value of homes (county assessor data)
- o type of residential units like single-family, multi-family, townhome, mobile home, etc. (county assessor data)
- o year units were built
- o estimated female population (census data)
- o estimated 0-4 population (census data)
- o existing land use (county and city data)
- o future land use (county and city data)
- o capital improvement plan (county and city data)
- o future development (county and city data)
- o in-migration of students (district data) & out-migration of students (district data)

Birth Rate Information

McKenzie County Live Births and McKenzie County School District Kindergarten 5-Years Later

Calendar Year	# Live Births	Birth Change	% Birth Change	School Year	# Kdg	%Kdg of Live Births
2005	60			2010/11	44	73.3%
2006	64	4	6.7%	2011/12	65	101.6%
2007	60	-4	-6.3%	2012/13	78	130.0%
2008	80	20	33.3%	2013/14	125	156.3%
2009	91	11	13.8%	2014/15	132	145.1%
2010	53	-38	-41.8%	2015/16	128	241.5%
2011	109	56	105.7%	2016/17	123	112.8%
2012	114	5	4.6%	2017/18	145	127.2%
2013	176	62	54.4%	2018/19	194	110.2%
2014	228	52	29.5%	2019/20	186	81.6%
2015	228	0	0.0%	2020/21	164	71.9%
2016	245	17	7.5%	2021/22	176	71.8%
2017	253	8	3.3%	2022/23	192	75.9%
2018	237	-16	-6.3%	2023/24	170	237
2019	278	41	17.3%	2024/25	200	278
2020	247	-31	-11.2%	2025/26	177	247
2021	224	-23	-9.3%	2026/27	161	224
2022	187	-37	-16.5%	2027/28	134	187
3-Year Average	219.3	-30.33				
3-Year Weighted Average	209.3	-31.33				

Source: North Dakota Department of Health Division of Vital Records and McKenzie County School District

Live Birth Observations

o Tracks the number of live births and the corresponding number of kindergarten students in five years later

o The number of live births peaked in 2019 and has decreased the past three years

o 3-year average of 30 less live births per year

o Kindergarten enrollment exceeded live births from 2011/12 to 2018/19 as migration into the area peaked – the past three years the district enrolled around 70-75% of live births

o The kindergarten classes moving forward are forecasted to be between 134 - 200 students on the low end and 187 - 278 students on the high end

Main Takeaway: The decline of live births in the county can potentially result in smaller kindergarten classes.

Past Enrollment by Grade

Enrollment By Grade

Year	K	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	Total	Change
2005/06	26	33	26	43	34	43	30	62	44	52	43	57	49	542	
2006/07	37	28	30	28	44	29	45	32	63	47	54	43	55	535	-7
2007/08	38	39	30	33	32	41	34	48	34	60	43	55	44	531	-4
2008/09	38	40	35	30	29	36	41	36	50	36	63	39	48	521	-10
2009/10	40	40	41	39	34	34	39	43	37	49	42	59	40	537	16
2010/11	44	48	41	39	45	37	32	43	47	45	55	43	62	581	44
2011/12	65	51	65	54	50	59	49	45	57	45	51	63	44	698	117
2012/13	78	79	67	72	69	67	65	67	53	73	61	57	59	867	169
2013/14	125	109	91	91	84	94	74	84	87	66	81	64	55	1,105	238
2014/15	132	135	128	101	104	102	105	89	90	96	68	81	71	1,302	197
2015/16	128	145	133	121	102	99	99	105	85	82	84	65	68	1,316	14
2016/17	123	127	121	133	123	106	107	103	111	85	96	82	62	1,379	63
2017/18	145	127	146	129	141	123	98	113	109	119	94	96	75	1,515	136
2018/19	194	164	155	171	140	161	146	121	123	136	113	98	92	1,814	299
2019/20	186	179	165	159	172	154	148	145	117	153	118	112	84	1,892	78
2020/21	164	141	147	124	128	147	134	140	127	124	124	96	96	1,692	-200
2021/22	176	165	146	152	132	134	142	140	139	139	119	98	92	1,774	82
2022/23	192	202	185	162	172	154	149	154	147	160	127	105	106	2,015	241

Source: McKenzie County School District #1

Observations:

o   Largest K-12 class in 2022/23 – 1st grade with 202 students

o   Smallest K-12 class in 2022/23 – 11th grade with 105 students

o   Graduating senior class is smaller than the incoming Kindergarten class which will increase total enrollment

o   The district increased by 241 students from last year enrolling over 2,000 students for the first time

o   2022/23 has the largest grades since 2005/06 in: 1st grade, 2nd grade, 6th to 10th grade, and 12th grade

Cohort Student Change

Change By Grade from the Previous Year

From	To	K	K 1st	1st 2nd	2nd 3rd	3rd 4th	4th 5th	5th 6th	6th 7th	7th 8th	8th 9th	9th 10th	10th 11th	11th 12th	Total Change	Total Percent
2005/06	2006/07	11	2	-3	2	1	-5	2	2	1	3	2	0	-2	-7	-1.3%
2006/07	2007/08	1	2	2	3	4	-3	5	3	2	-3	-4	1	1	-4	-0.7%
2007/08	2008/09	0	2	-4	0	-4	4	0	2	2	2	3	-4	-7	-10	-1.9%
2008/09	2009/10	2	2	1	4	4	5	3	2	1	-1	6	-4	1	16	3.1%
2009/10	2010/11	4	8	1	-2	6	3	-2	4	4	8	6	1	3	44	8.2%
2010/11	2011/12	21	7	17	13	11	14	12	13	14	-2	6	8	1	117	20.1%
2011/12	2012/13	13	14	16	7	15	17	6	18	8	16	16	6	-4	169	24.2%
2012/13	2013/14	47	31	12	24	12	25	7	19	20	13	8	3	-2	238	27.5%
2013/14	2014/15	7	10	19	10	13	18	11	15	6	9	2	0	7	197	17.8%
2014/15	2015/16	-4	13	-2	-7	1	-5	-3	0	-4	-8	-12	-3	-13	14	1.1%
2015/16	2016/17	-5	-1	-24	0	2	4	8	4	6	0	14	-2	-3	63	4.8%
2016/17	2017/18	22	4	19	8	8	0	-8	6	6	8	9	0	-7	136	9.9%
2017/18	2018/19	49	19	28	25	11	20	23	23	10	27	-6	4	-4	299	19.7%
2018/19	2019/20	-8	-15	1	4	1	14	-13	-1	-4	30	-18	-1	-14	78	4.3%
2019/20	2020/21	-22	-45	-32	-41	-31	-25	-20	-8	-18	7	-29	-22	-16	-200	-10.6%
2020/21	2021/22	12	1	5	5	8	6	-5	6	-1	12	-5	-26	-4	82	4.8%
2021/22	2022/23	16	26	20	16	20	22	15	12	7	21	-12	-14	8	241	13.6%
3-Yr Avg		2.0	-6.0	-2.3	-6.7	-1.0	1.0	-3.3	3.3	-4.0	13.3	-15.3	-20.7	-4.0	41.0	2.6%
3-Yr Wavg		8.3	5.8	6.3	2.8	7.5	8.8	2.5	6.7	0.2	15.7	-12.5	-19.3	0.0	114.5	6.6%

Source: McKenzie County School District #1

Observations:

o Largest 3-year average K-12 class cohort increase – 8th to 9th grade **(+13)**

o Largest 3-year average K-12 class cohort decrease – 10th to 11th grade **(-21)**

o Overall percent change from previous year of 13.6% - increase of 241 students

o Instructional Modality will have to be monitored to determine if the students who are not attending the district still reside in the district and if or how many return to receive services in the future years

o Cohort recovery from previous year in all grades except 9th to 11th grade

All past student data is exported from the district student database allowing the ability to do robust statistical analysis by student geography The student database export will not always align perfectly with the Official Counts (Statistically 99% greater match by grade)

3-Year Student Migration Trend

Out-Migration *(students leaving the district)*   **In-Migration** *(students entering the district)*

Source: McKenzie County School District, RSP

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

o   2020/21 lost 524 students and gained 249 students; **NET: -275**

o   2021/22 lost 233 students and gained 239 students; **NET: +6**

o   2022/23 lost 252 students and gained 399 students; **NET: +147**

Main Takeaway: The district had a positive net gain of transfer students the last two years.

Student Count Change Map

Map Details

- Depicts student movement at each Planning Area from **2018/19** to **2022/23**

- **Orange:** student increase year to year

- **Green:** student decrease year to year

- **White:** no net change of students

Notes

- New developments have a greater propensity to have more students in future years

- Current colors do not indicate area will continue to increase or decrease

- Each of these planning areas are fluid with respect to change – the visual shown is a snapshot: Areas shown as increasing will not always increase just like areas shown as decreasing will not always decrease

Main Takeaway: Areas of student increase are on the east side of the district.

McKenzie County School District #1
Student Count Change from 2018/19 to 2022/23 in Grades K-12

Heat Map

Map Details

- Visual shows the location of students in proximity to other students for a "heat affect" in the district.
- **Red:** highest student density
- **Gray:** lowest student density

Notes

- Overlapping points (2 or more students) are handled using a weighting of coincident points
- Newer developments and/or most affordable areas tend to have the greatest density
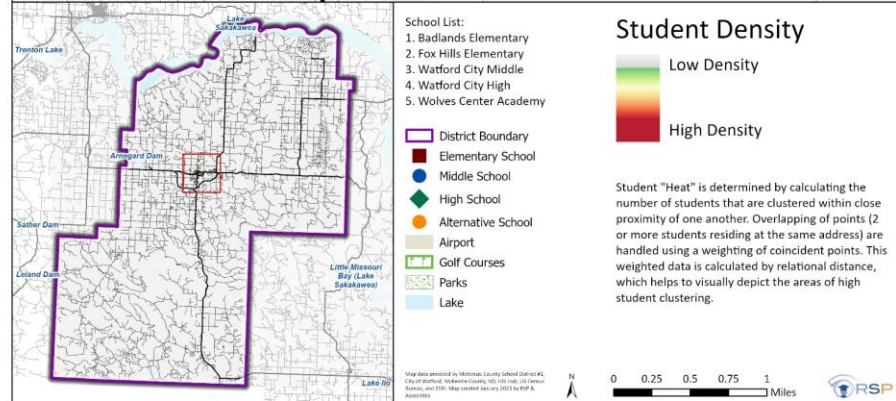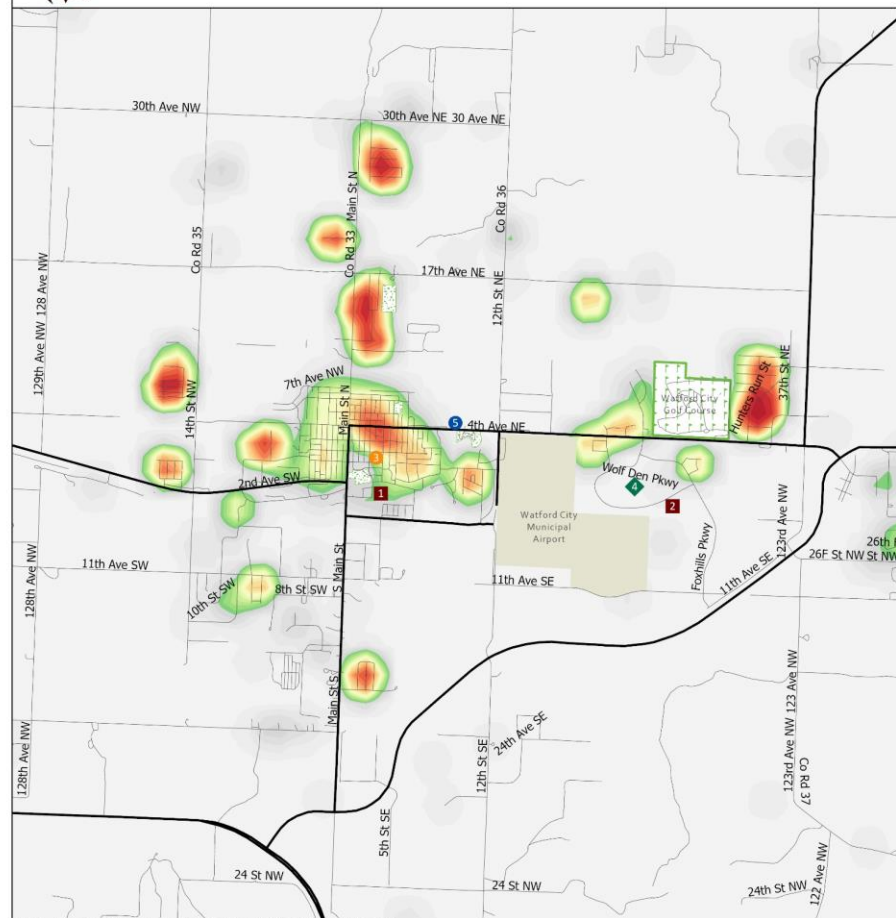
Main Takeaway: Areas of highest student density are north of 4th avenue.

McKenzie County School District #1
Student "Heat" Density in 2022/23 in Grades K-12

Enrollment Observation and Conclusion

RSP & Associates monitors over 250 planning areas for demographic, development, and enrollment data sets

Live births in McKenzie County have decrease the past three years

District enrollment increased by 241 students from last year
- First year district enrollment surpassed 2,000 students
- Cohort increase from previous year in all grades except 9th to 11th grade

Graduating senior classes are smaller than incoming kindergarten classes

District has had a positive migration trend for the past two years

Greatest student density is north of the 4th Avenue
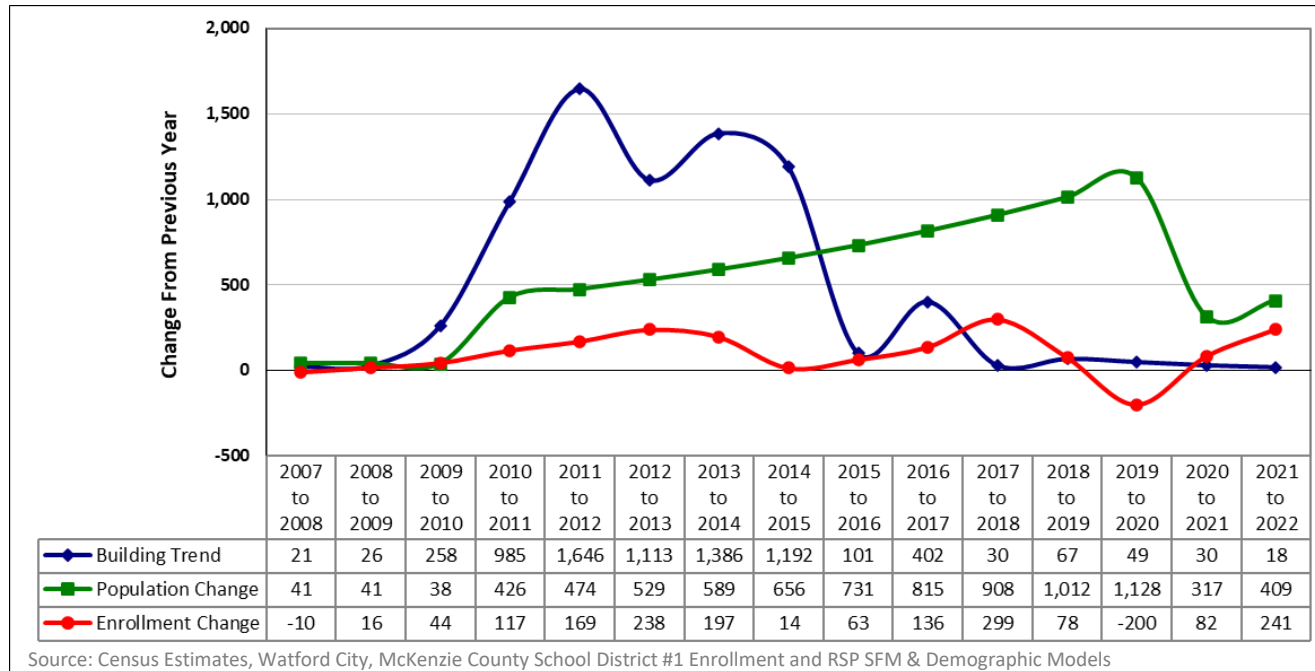
PART 2
DEVELOPMENT

Population, Development, & Enrollment Trends

Yield Rate

Housing Market Maps & Data

Potential Growth Analysis

Population, Development, & Enrollment

	2007 to 2008	2008 to 2009	2009 to 2010	2010 to 2011	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016	2016 to 2017	2017 to 2018	2018 to 2019	2019 to 2020	2020 to 2021	2021 to 2022
Building Trend	21	26	258	985	1,646	1,113	1,386	1,192	101	402	30	67	49	30	18
Population Change	41	41	38	426	474	529	589	656	731	815	908	1,012	1,128	317	409
Enrollment Change	-10	16	44	117	169	238	197	14	63	136	299	78	-200	82	241

Source: Census Estimates, Watford City, McKenzie County School District #1 Enrollment and RSP SFM & Demographic Models

Benchmark data to determine if there is a correlation between:

- Population change
- Building activity
- School enrollment

Graphic Explanation

o   **BLUE LINE:** Building activity increased from 2010 to 2017, since then, new building activity has been minimal in the district

o   **GREEN LINE:** Census data indicates an increasing population
   - Population shows the estimate growth of the whole decade
   - New decennial census often affect year-to-year change

o   **RED LINE:** Student enrollment has been generally increasing year to year
   - 2019 to 2020 saw a decrease in students, likely due to COVID-19 pandemic

Table Legend

🟧 Greater than 3 from District Average

🟩 Less than 3 from District Average

Single-Family Yield Rate	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Avg
Badlands Elementary	13	12	12	12	13	12	12	14	11	12	12	13	12	12	13	13	12	12	14	12.42
Fox Hills Elementary	27	26	26	24	19	20	16	15	11	17	16	17	16	16	19	19	19	20	21	19.16
District (K-5):	16	16	15	15	15	14	13	14	11	14	14	15	14	14	16	16	15	15	17	14.68

Source: McKenzie County School District, McKenzie County, RSP

Single-Family Yield Rate Observations

- Table shows the number of students per 100 single-family (SF) units by year and by elementary boundary
- District sees on average 15 K-5 students per 100 single-family households
- Fox Hills Elementary has a larger SF yield rate than Badlands Elementary
- Adding new housing inventory can increase the yield rate – **There were 1,803 single-family homes built in the last decade**

Multi-Family Yield Rate	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Avg
Badlands Elementary	9	7	6	7	6	8	8	5	5	8	8	7	6	7	8	9	7	7	10	7.26
Fox Hills Elementary	46	28	22	24	22	24	19	8	6	8	6	5	7	8	11	10	8	8	9	14.68
District (K-5):	13	10	8	10	8	10	9	6	5	8	7	6	6	7	10	10	7	8	10	8.32

Source: McKenzie County School District, McKenzie County, RSP

Multi-Family Yield Rate Observations

- Table shows the number of students per 100 multi-family (MF) units by year and by elementary boundary
- District sees on average 28students per 100 multi-family households
- Both elementary school yield similar amounts of students from multi-family housing
- Adding new housing inventory can increase the yield rate – **There was 4,231 multi-family homes built in the last decade**

Average Year Built Map

Map Details: Depicts planning areas by average year built in

- Year built data provided by McKenzie County
- Colors to show decade units were built
  - **White – no data**
  - **Blue – before 1980**
  - **Green – 1980 to 1990**
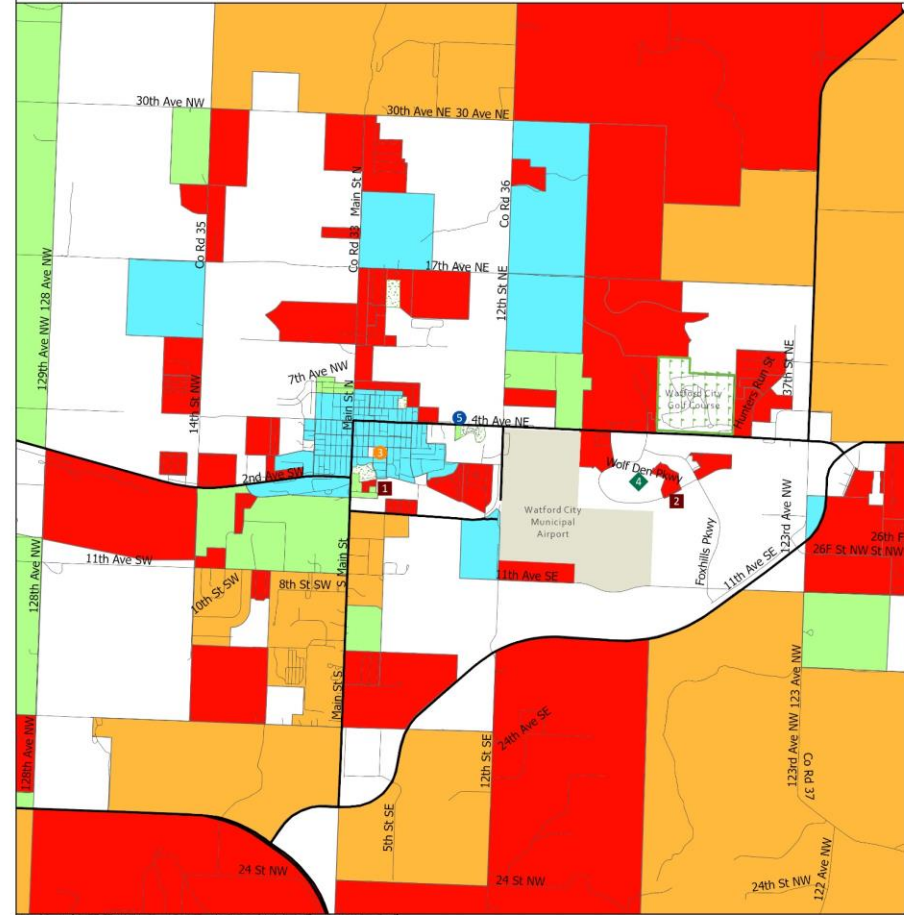 - **Orange – 1990 to 2000**
  - **Red – After 2000**

Notes

- Averages based on RSP Planning Areas and the units built in them
- Based on a planning area and could be influenced by the number of units prior to new units being built

McKenzie County School District #1 — Average Year Built

Median Home Value Map

Map Details: Depicts planning areas by average Median Home Value

- **Orange** to **Red:** greatest Median Home Value
- **Green** to **Blue:** greatest affordability

Notes

- Based on assessed Home Value as provided and maintained by McKenzie County assessor's office
- Depicted by Median Value in each Planning Area - Based on a planning area and could be influenced by the number of units prior to new units being built
- Home values likely correlated to socio-economic status – new areas tend to be the least affordable
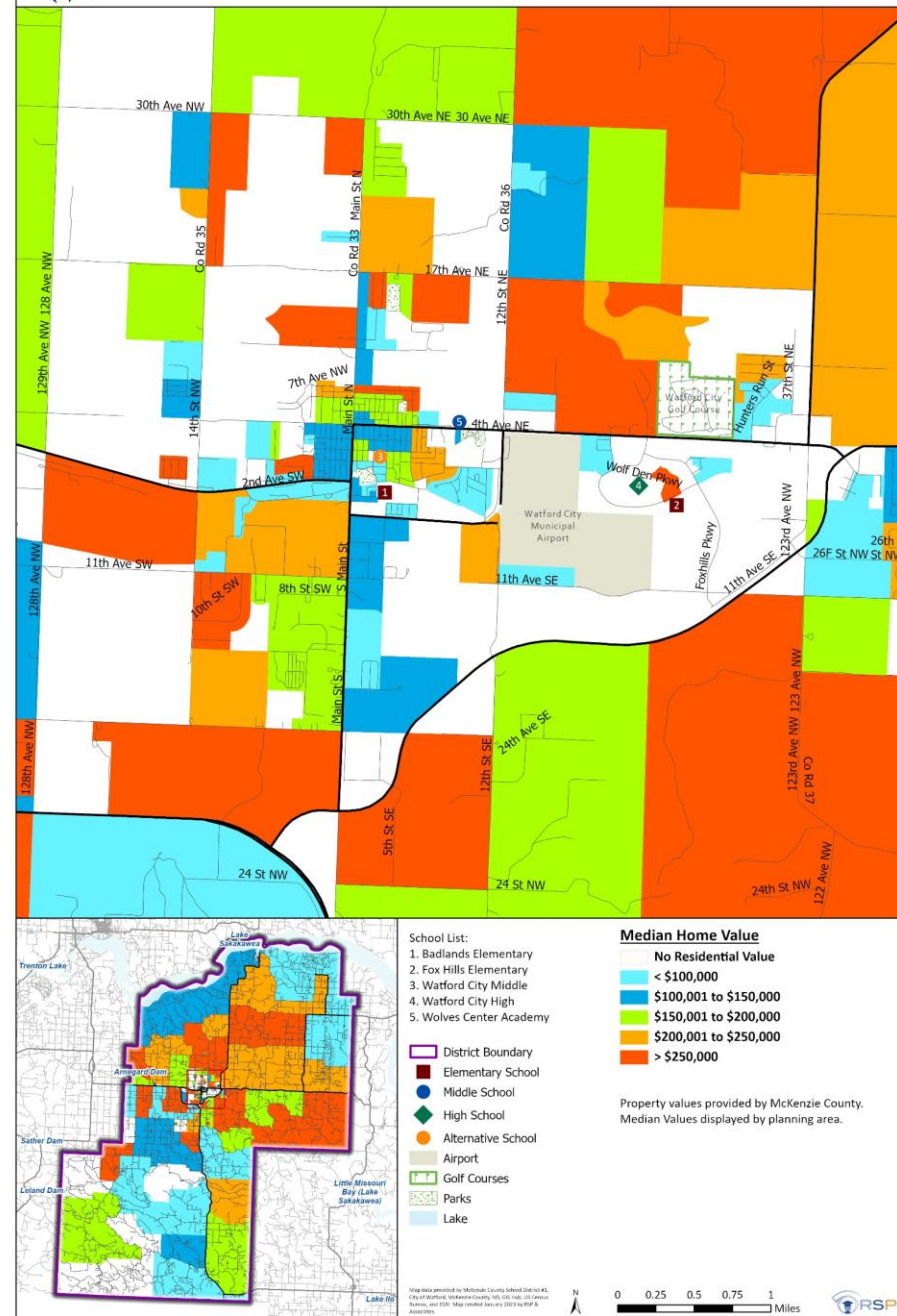
Recent Year Built Map

Map Details: Reveals the clusters of where recent residential development has occurred
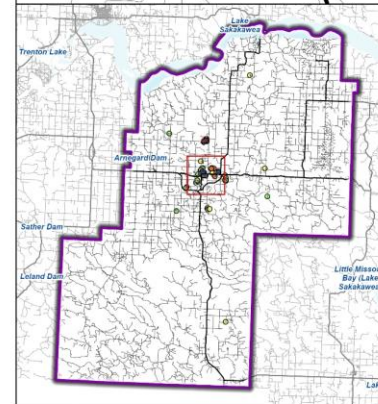
- Some new areas do not necessarily lead to similar yield rates of like developments
- Colors of dots represent a specific year according to the county assessor's office
  - Red: 18 units built in 2022
  - Orange: 30 units built in 2021
  - Yellow: 49 units built in 2020
  - Green: 67 units built in 2019
  - Blue: 30 units built in 2018

Notes

- Type of housing is monitored as some planning areas (single-family or multi-family) do not necessarily lead to similar yield rates and may change from year to year
- Only partial record for 2022

Development Activity Over Time

Development Activity by Decade

	1939 or Earlier	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2019	2020-2022
■ Number of Units in Time Period	202	126	143	122	266	226	77	130	7,180	97
■ Number of Units		202	328	471	593	859	1,085	1,162	1,292	8,472

Source: McKenzie County and ESRI

■ Number of Units   ■ Number of Units in Time Period

Observations:

o Table has been created to illustrate the number of units by year built

o Development activity increased rapidly from 2010 to 2019 building over 7,000 units in this decade

o Since 2020, development in the district has been minimal with only 97 new units

o The average year built of residential inventory is 1994 while the median year is 2012

Growth Area Map

Map Details: Growth areas are created from existing land use, future land use, capital improvement plan, zoning, and city staff input

Green: identifies where development activity is happening

Yellow: identifies possible areas that could develop within a 5-year range

Purple: identifies possible areas that could develop within a 10-year range

Notes

○ The market demand and property owners desire to build guides the timing and type of development

○ Some growth areas may require infrastructure improvements

○ There is no guarantee any of these growth areas will develop or that other areas not shown as a growth area will develop

McKenzie County School District #1
Growth Areas

School List:
1. Badlands Elementary
2. Fox Hills Elementary
3. Watford City Middle
4. Watford City High
5. Wolves Center Academy

Growth Areas
- Current
- 5 Year
- 10 Year

- District Boundary
- Elementary School
- Middle School
- High School
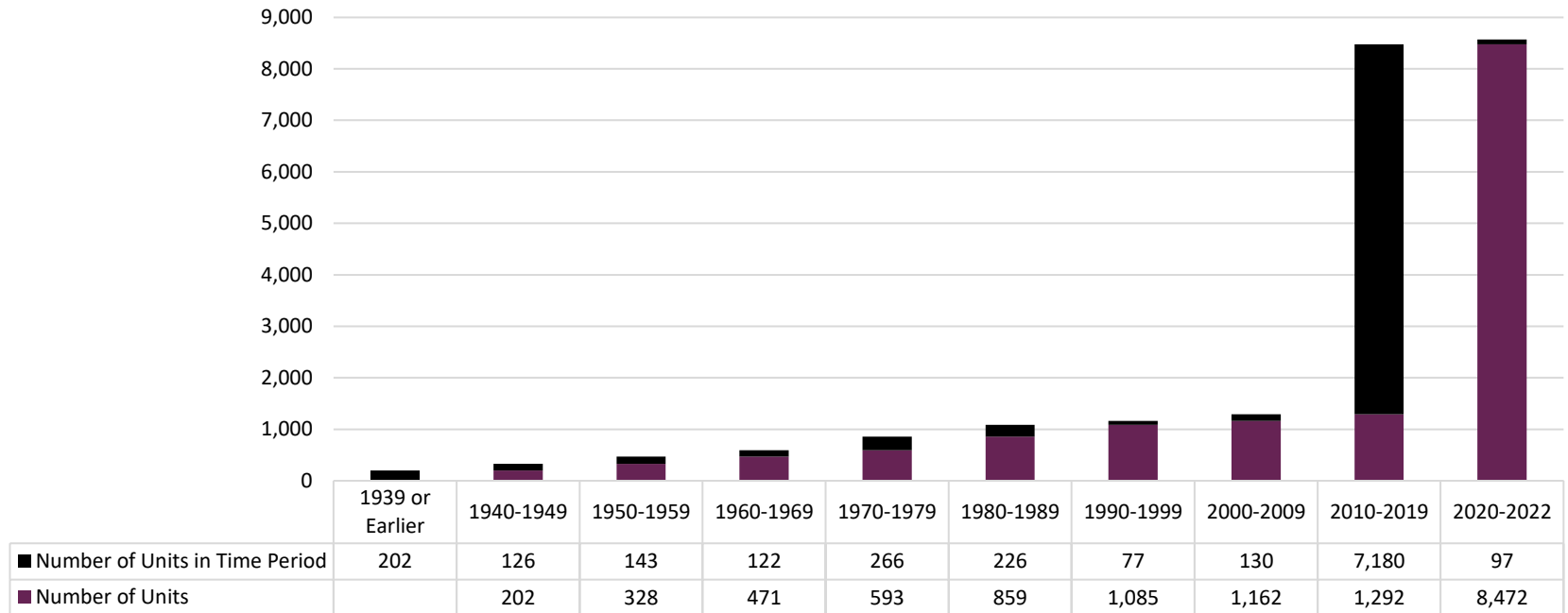- Alternative School
- Airport
- Golf Courses
- Parks
- Lake

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

Development Table

Growth Area Name	Type of Development	Timing of Growth	Existing Units	Potential Units
Lot 3 at the Homested	Agriculture	Current	5	171
The Crossings	Multi-Family	Current	0	28
Waterford Square	Multi-Family	Current	14	130
Stepping Stone GC Community	Multi-Family	Current	3	97
Bison Blue and Hawk Creek	Mixed-Use	Current	225	60
Stepping Stone GC Community	Single-Family	Current	35	178
Longview Subdivision	Single-Family	Current	61	62
Countryside Estates	Single-Family	Current	8	65
Fox Hills Golf Estates	Single-Family	Current	38	104
Sandy and Sade Street	Single-Family	Current	33	249
Buffalo Hills Drive	Single-Family	Current	0	27
Prairie Woodlands Subdivision	Single-Family	Current	25	75
Fox Hills Village Stenehjem	Single-Family	Current	6	52
Silver Springs	Townhomes	Current	90	39
Tara Estates	Townhomes	Current	38	45
Fox Hills Village Stenehjem	Townhomes	Current	0	25
North of Future Halm Drive	Agriculture	5 Year	0	73
Pheasant Ridge Sub	Agriculture	5 Year	0	128
East of Pheasant Ridge Sub	Agriculture	5 Year	0	120
South of Waterford City Limits	Agriculture	5 Year	0	336
Cherry Ridge	Agriculture	5 Year	0	500
Emerald Ridge	Multi-Family	5 Year	216	86
The Badlands	Multi-Family	5 Year	168	84
The Crossings (Phase 2A)	Multi-Family	5 Year	55	100
McKenzie Park	Multi-Family	5 Year	60	180
McKenzie Point + Villiage	Multi-Family	5 Year	0	200
Stepping Stone GC Community	Multi-Family	5 Year	0	100
The Highlands	Mixed-Use	5 Year	0	105
Future growth near The Badlands	Mixed-Use	5 Year	0	115
South of Tara Estates	Rural	5 Year	0	122
West of Hunter's Run	Rural	5 Year	0	388
NE of Watford City Golf Course	Rural	5 Year	0	191
North of water treatment	Rural	5 Year	1	160
West of Buffalo Hills Drive	Rural	5 Year	1	415
Golf Course Ponds Subdivision	Single-Family	5 Year	0	96
Emerald Ridge	Townhomes	5 Year	61	60
Badlands Development LLC	Vacant	5 Year	0	22
Hospitality Assoc LLC	Vacant	5 Year	0	65
Emerald Ridge	Vacant	5 Year	0	177
South of Fox Hills Village	Agriculture	10 Year	0	200
Cherry Ridge	Agriculture	10 Year	0	500
Emerald Ridge and the Highlands	Agriculture	10 Year	0	195
North Highlands, West Watford Square	Agriculture	10 Year	0	166
Lot 25 Homested at Waterford City	Agriculture	10 Year	0	17
Lot 20 Homested at Waterford City	Agriculture	10 Year	0	118
Lot 22 Homested at Waterford City	Agriculture	10 Year	0	114
North of Watford City PD	Agriculture	10 Year	0	263
Bison Blue and Hawk Creek	Mixed-Use	10 Year	0	190
South of 17th Ave NE	Rural	10 Year	2	110
West of 12th St NE	Rural	10 Year	0	100
Lot 36 Homested at Waterford City	Rural	10 Year	0	210
Bison Blue and Hawk Creek	Rural	10 Year	0	370
Bison Blue and Hawk Creek	Rural	10 Year	7	300
Bison Blue and Hawk Creek	Rural	10 Year	0	230
North of Homested at Waterford City	Rural	10 Year	0	140
West of the Highlands	Single-Family	10 Year	0	50
Lot 24 Homested at Waterford City	Single-Family	10 Year	0	47
Lot 26 Homested at Waterford City	Single-Family	10 Year	0	44
South of Fox Hills Village	Single-Family	10 Year	0	200
NW 11th Ave SE at 123rd Ave NW	Vacant	10 Year	0	106

Source: City of Watford and McKenzie County, ND

Timing of Growth	Existing Units	Potential Units
Current	581	1,407
5 Year	562	3,823
10 Year	9	3,670
TOTAL	1,152	8,900

o Table has been created to illustrate the type and amount of potential development

o The speed in which any developments are built are influenced by who owns the property, access to infrastructure, and economic indicators
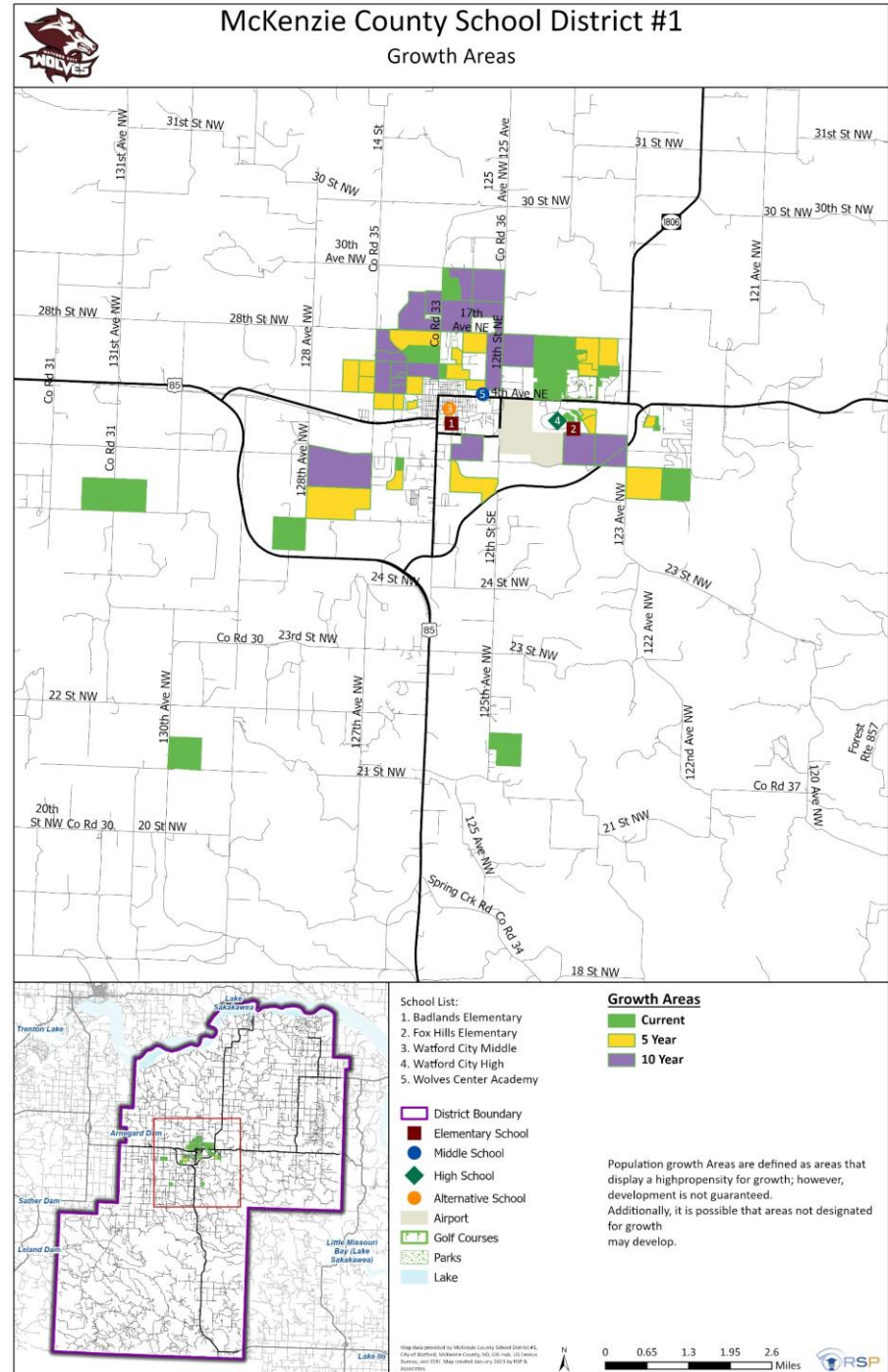
o Growth Areas are created from existing land use, future land use, capital improvement plan, zoning, and city staff input

Development Observation and Conclusion

Over 8,900 units identified for potential development within the next 10+ years

Building activity has decreased since the peak of activity from 2011 to 2017
- Opportunities of residential growth still exist, but the speed of the activity is forecasted to continue decreasing
- Monitor local factors that may affect development timing and economic outlook to gauge how the new decade of residential growth will play out

Single-family residential has the highest propensity to have school aged students
- Student yield rates increased this past year despite lack of new housing in the district
- Assumption can be made that previously vacant units in the community became occupied increasing the students per units for single and multi-family housing

Growth areas are mostly located north 4th Avenue – majority of potential units are in 5-year and 10-year potential timeframe

McKenzie County has been made different investments in the community to improve livability attractions;
- Wolfpup Daycare is expanding near Fox Hills Elementary School (modular facilities this spring; brick and mortar facility opening in 2025/26)

Residential development will continue if the housing product is affordable and have active residential projects – infrastructure connectivity also plays a role in the desirability and timing of residential development

As of February 2022, construction costs have increased over 100% from August 2020 and supply chain challenges impact the potential of new development and where new developments will occur in the district
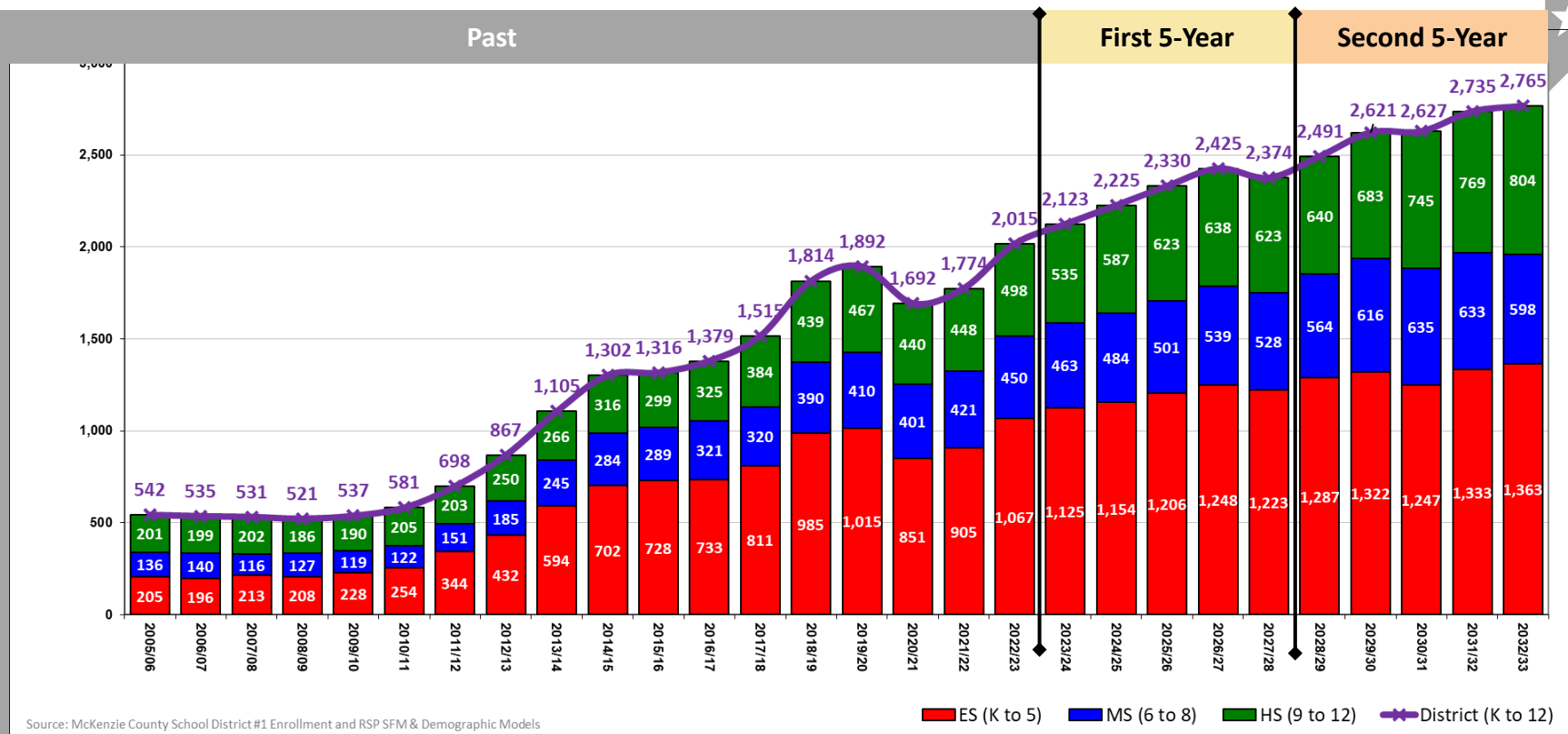
PART 3

PROJECTIONS

Past, Current, & Future Enrollment

Building Projections

Projection View

First 5-Year Projection Observations:	Second 5-Year Projection Observations
District forecasted to grow by 359 students; 2,374 students	District forecasted to grow by 391 students; 2,765 students
Elementary forecasted to grow by 156 students; 1,223 students	Elementary forecasted to grow by 140 students; 1,363 students
Middle School forecasted to grow by 78 students; 528 students	Middle School forecasted to grow by 70 students; 598 students
High School forecasted to grow by 125 student; 623 students	High School forecasted to grow by 181 student; 804 students

Notes: Overall enrollment increase anticipated through the 10-year projections
- A cycle is projected for enrollment to drop after about 5 years and then continue to increase
- Increases based on development opportunities within the district – if new housing can rebound, the projections will be under stated – if building is less than 50 units a year, the projections will be overstated

Past, Current, & Future Enrollment

Market Forecast

GRADE CONFIGURATION: K-5, 6-8, 9-12

School	Capacity Existing	Student Location	Past School Enrollment					Future Enrollment Reside & Attend Students									
			2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33
Badlands Elementary	600	Reside	513	530	408	428	551	584	598	624	654	642	663	678	655	712	730
Capacity 600 Grades K to 5 (19/20: K to 3)		Attend	513	530	427	462	573										
Fox Hills Elementary	600	Res/Att Reside	0	0	443	477	516	541	556	582	594	581	624	644	592	621	633
Capacity 600 Grades K-5		Attend	0	0	424	443	494										
Watford City Middle School	550	Reside	618	633	401	421	450	463	484	501	539	528	564	616	635	633	598
Capacity 550 Grades 6-8 (18/19: 3 to 6)		Attend	618	633	401	421	450										
Watford City High	800	Reside	683	729	440	448	498	535	587	623	638	623	640	683	745	769	804
Capacity 800 Grades 9-12 (19/20: 7-12)		Attend	683	729	440	448	498										
ELEMENTARY TOTAL	1,200	Reside	513	530	851	905	1,067	1,125	1,154	1,206	1,248	1,223	1,287	1,322	1,247	1,333	1,363
Capacity 1,200 Grades K to 5		Attend	513	530	851	905	1,067										
DISTRICT K -12 TOTALS	2,550	Reside	1,814	1,892	1,692	1,774	2,015	2,124	2,224	2,329	2,427	2,373	2,491	2,621	2,627	2,735	2,765
Capacity 2,550 Kdg to 12th		Attend	1,814	1,892	1,692	1,774	2,015										

By Grade	Capacity Existing	Past School Enrollment						Future Enrollment Reside & Attend Students									
		2013/14	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33
Kind		123	194	186	164	176	192	212	199	203	217	210	223	235	245	273	285
1st		127	164	179	141	165	202	193	213	201	206	218	215	228	196	237	258
2nd		121	155	165	147	146	185	202	192	215	204	199	221	219	211	190	228
3rd		133	171	159	124	152	162	183	200	194	216	198	201	223	208	206	182
4th		123	140	172	128	132	172	163	186	205	198	216	204	208	209	214	202
5th		106	161	154	147	134	154	172	164	188	207	182	223	209	178	213	208
6th		107	146	148	134	142	149	154	172	165	188	192	184	224	211	180	204
7th		103	121	145	140	140	154	154	157	178	171	179	199	190	232	218	178
8th		111	123	117	127	139	147	155	155	158	180	157	181	202	192	235	216
9th		85	136	153	124	139	160	157	167	167	170	184	169	195	217	207	251
10th		96	113	118	124	119	127	155	154	164	165	151	181	168	193	215	187
11th		82	98	112	96	98	105	122	148	148	158	145	146	176	162	187	193
12th		62	92	84	96	92	106	101	118	144	145	143	144	144	173	160	173
K to 5th	1,200	733	985	1,015	851	905	1,067	1,125	1,154	1,206	1,248	1,223	1,287	1,322	1,247	1,333	1,363
6th to 8th	550	321	390	410	401	421	450	463	484	501	539	528	564	616	635	633	598
9th to 12th	800	325	439	467	440	448	498	535	587	623	638	623	640	683	745	769	804
District	2,550	1,379	1,814	1,892	1,692	1,774	2,015	2,123	2,225	2,330	2,425	2,374	2,491	2,621	2,627	2,735	2,765
K to 5th Grade Change			252	30	-164	54	162	58	29	52	42	-25	64	35	-75	86	30
6th to 8th Grade Change			69	20	-9	20	29	13	21	17	38	-11	36	52	19	-2	-35
9th to 12th Grade Change			114	28	-27	8	50	37	52	36	15	-15	17	43	62	24	35
District K to 12th Grade Change			435	78	-200	82	241	108	102	105	95	-51	117	130	6	108	30

Source: RSP & Associates, LLC - January 2023

Exceed Existing Capacity

All past student data is exported from the district student database allowing the ability to do robust statistical analysis by student geography The student database export will not always align perfectly with the Official Counts (Statistically 99% greater match by grade)

Projection Notes & Clarifications

Projections Clarification:

Past Enrollment is shown two different ways:

- Reside (Based on where a student Resides in relation to the attendance area – includes Open Enrollment)
- Attend (Based on what school the student is attending includes Open Enrollment)

Projections are shown one way:

- Reside (Based on where a student Resides in relation to the attendance area: Includes Open Enrollment)

Capacity

- Building capacity provided by district administration
- Light orange shading is where the capacity exceeds the building Capacity
- Should be annually examined to ensure appropriate education space is available

Other Items

- Enrollment Grade Configuration in Student Forecast Model (K-5, 6-8, 9-12)
- Open enrollment trends are assumed to follow district policy and will continue like those trends during the projection time frame
- Fox Hills Elementary opened in 2020/21 school year
- Integrated potential outcomes as a result of slowdown in new housing starts and challenges with the economy as it adapts to the "New Normal"
- National energy policy has and will continue to impact the economic drivers of the McKenzie County Region
- Integrated other statistical variables to adjust for regional and local impacts that influence enrollment
    - RSP has identified with limited new residential activity there has been swings with annual enrollment that appear to have a correlation to the vacancy rates (When lower than 75% fewer students and greater than 90% more students)

10-Year Projections by Building

KEY:
Color Bars: Projected Student Enrollment
Red Dash: School building capacity
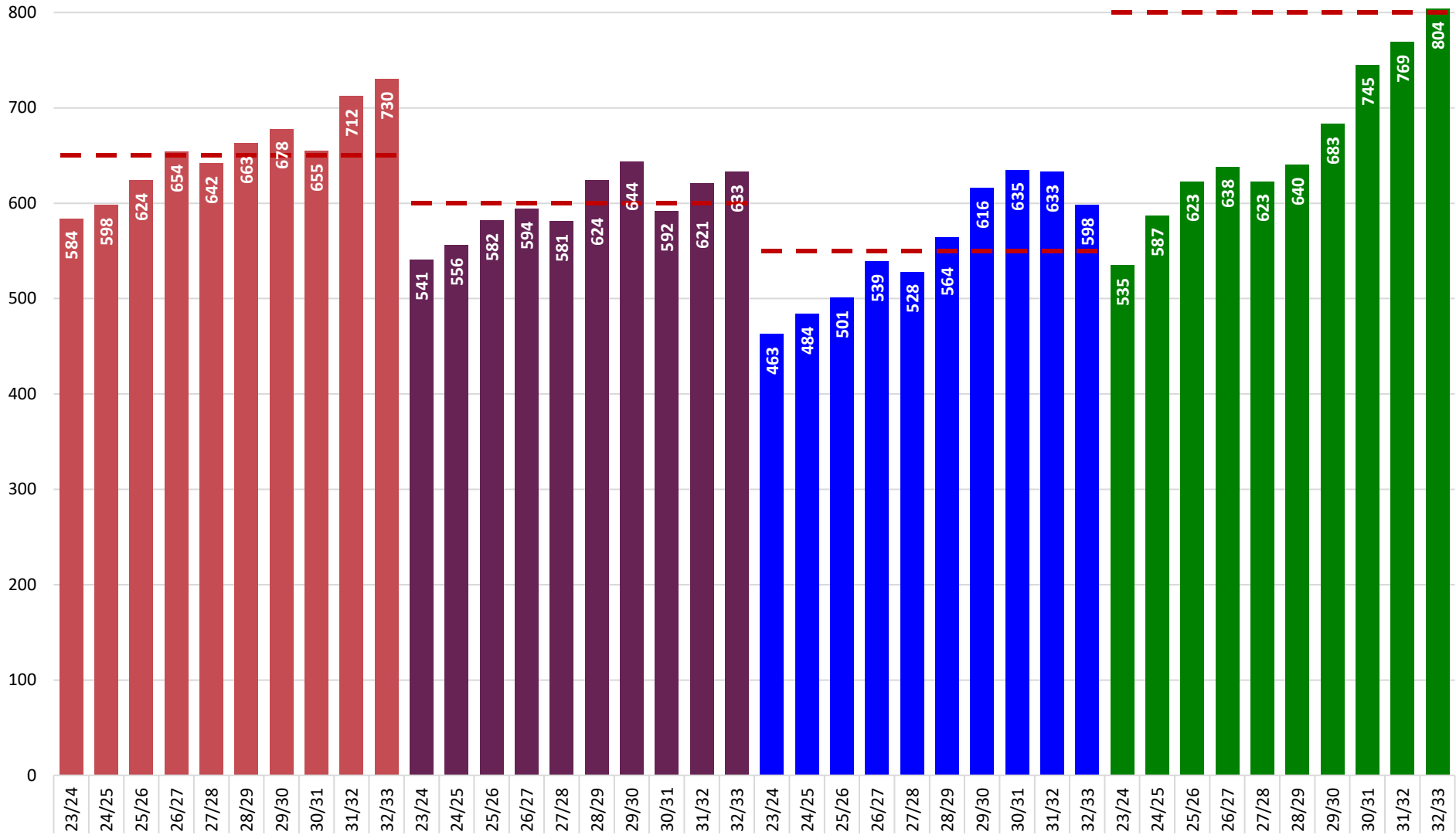
Source: RSP & Associates, LLC - January 2023

Projection Observations and Conclusion

10-Year Projection Overview

- ☐ **District enrollment to increase by around 750 students**
- ☐ **Elementary enrollment to increase by around 300 students**
- ☐ **Middle school enrollment to increase by around 150 students**
- ☐ **High school enrollment to increase by around 300 students**

Facility Challenges

- ☐ **Elementary forecasted above building capacity starting in 2025/26**
- ☐ **Middle School enrollment forecasted above building capacity starting in 2028/29**
- ☐ **High School enrollment forecasted above building capacity starting in 2032/33**

Future Facility Considerations

Elementary School #3
- ☐ *Consider timing of future facility investment*
- ☐ *Consider size of school by desired number of students per grade*
- ☐ *Secure land or utilize the 56 acres of land in the northeast portion of the district*
- ☐ *Potential for future expansion of county early childcare services at 3rd elementary site*

Middle School Phase 2
- ☐ *Consider timing of future facility investment*
- ☐ *Consider size of school by desired number of students per grade – Timing of Phase 2 which would increase capacity from 550 to 800*

High School
- ☐ *Consider timing and need for additional high school space*
- ☐ *Options to be considered:*
    - ▪ Skills Center (CTE) can be expanded
    - ▪ Addition to high school for 9th grade wing

Key Items to Monitor:

- ☐ Speed of housing development projects
- ☐ Occupancy rate of current residential inventory
- ☐ Demographic shifts in the community
- ☐ County investment in early childcare and CTE
- ☐ County infrastructure and livability improvements

PART 4
NEXT STEPS

Moving Forward

Next Steps & Key Considerations

Conclusion & Key Considerations

The following items will assist the district advance its educational goals:
- Annually review enrollment projections, demographics, and development trends
- District administration and the Board of Education further study the enrollment, demographic, and development information presented
- Utilize the enrollment model to assist with planning for staffing needs at each facility for the following school year which will address how quickly areas are "Regreening" and "Emerging"
- The type of residential development and how affordable it is will determine likely location and number of students
- Annually monitor the impact of future educational programming that will be integrated into each facility to ensure equitable and appropriate space is utilized in the building which will experience enrollment change
- RSP Enrollment forecasting is based on the best-known information at the time

Key Considerations:
1. Number of live births and kindergarten students in McKenzie County... *see page 11-12*
2. Size of outgoing senior class (smaller) compared to the incoming elementary classes (smaller)... *see page 12*
3. Migration trends (In-Migration tends to be more than Out-Migration)... *see page 14*
4. Development trends and timing of identified projects (1,400 units in current phases)... *see pages 26-27*

RSP Recommended to continually monitor the following indicators:

Enrollment may increase more than forecasted if…	Enrollment may decrease more than forecasted if…
Increasing share of county live births	Decreasing share of county live births
Housing market regreens and occupancy rate increases	Housing market does not re-green and occupancy rate decreases
Development and economic growth increases	Development and economy maintain minimal potential growth
Demographic shifts in population	Demographic shifts in population
Incoming kindergarten class larger than outgoing senior class	Incoming kindergarten class smaller than outgoing senior class

These factors are not all positive or negative. Each have a different impact on future outlooks. RSP modeling attempts to find the most likely outcome. It is important to continue to monitor these factors. **The goal of this study is to help the board, administration, and public understand how to make the best decision for the students at the classroom level.**