

# Visualizing Success

## *Planning Baldwin's Future:*

### *Capacity Quality or Quantity*



# RSP & Associates

## **RSP and the Success Factor**

Founded in 2003

Professional planning and educational firm

Over 20 years of planning experience

Over 30 years of GIS experience

Clients in Iowa, Kansas, and Missouri

Projection accuracy of 98% or greater



# Vision

## **Innovative Methodology & Technology**

RSP assists educational institutions in making sound decisions for the benefit of each student by utilizing proven Student Forecast Modeling (SFM) methodologies and Geographic Information Systems (GIS) technology.

# Purpose

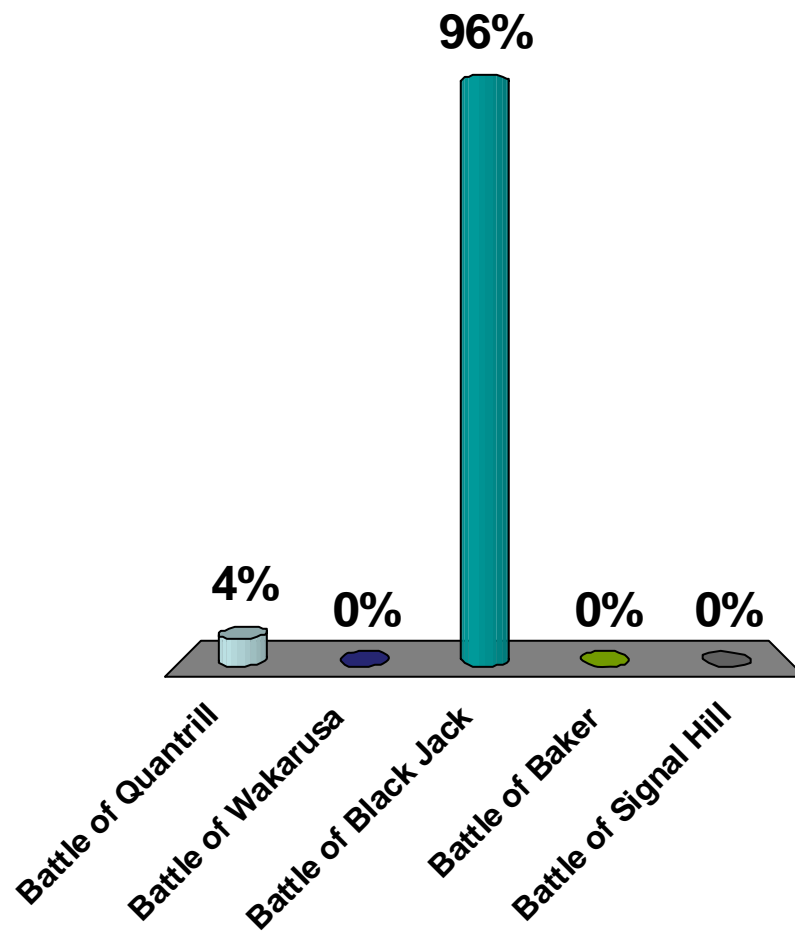
## **Provide Accurate Planning Information**

RSP provides credible, accurate information so school districts can make decisions on how to utilize a facility, plan for staffing resources, modifications and enhancements to existing facilities, site acquisition, timing of new facilities, and bond referendums.

# Discussion Points

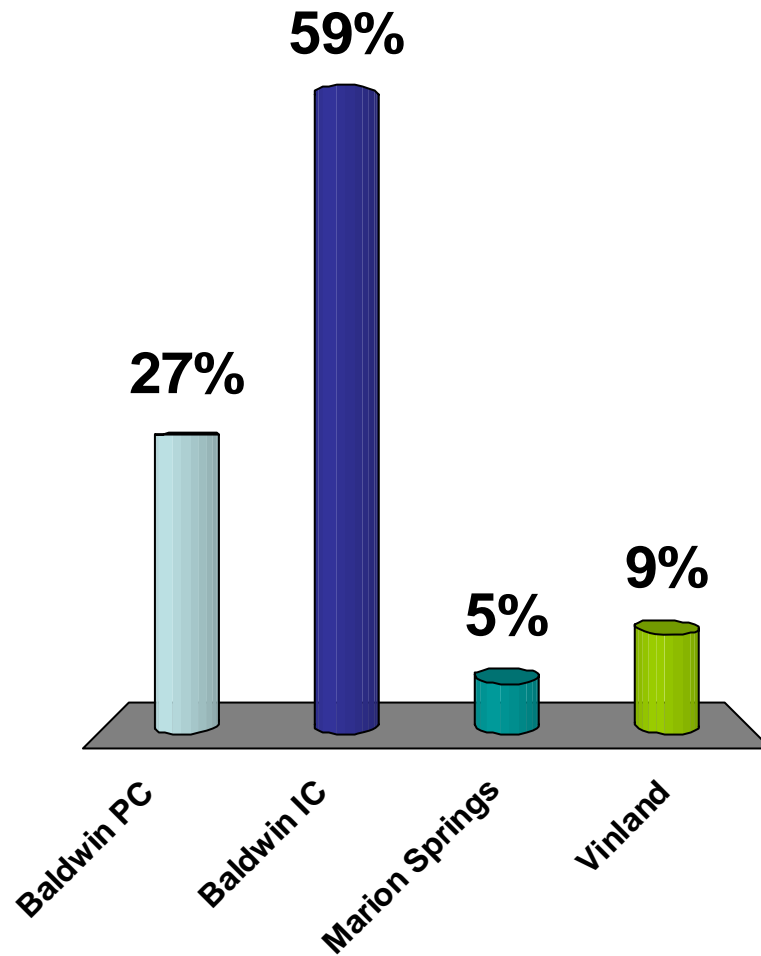
- The Test
- Explanation of Student Forecast Model
- Development Trends
- Enrollment Forecast
- Questions / Comments

# What was the Civil War battle east of town called?



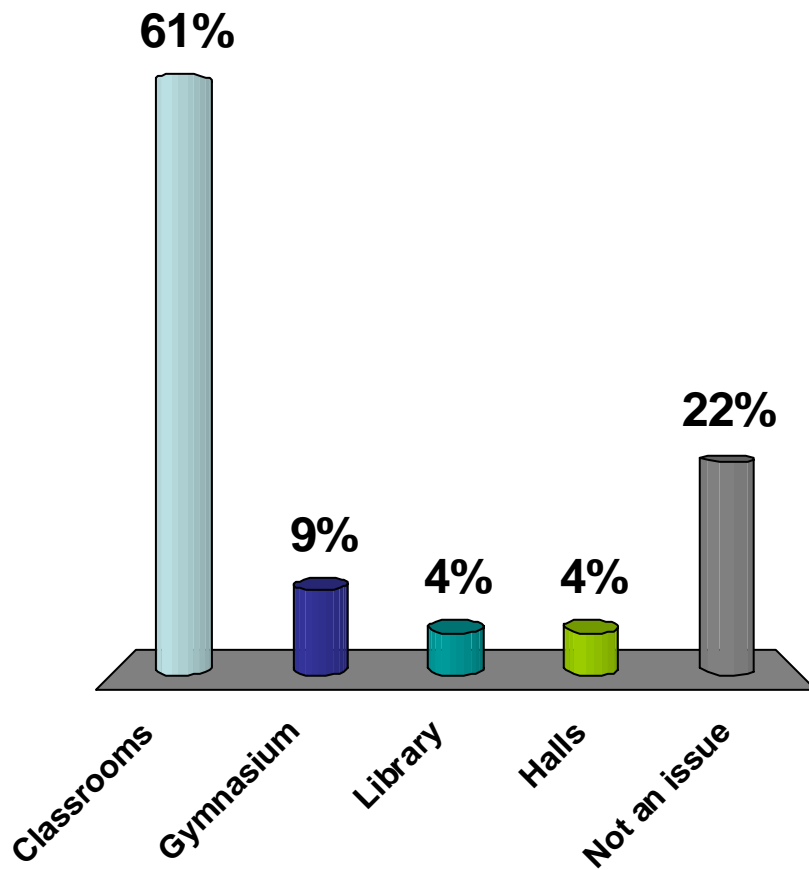
1. Battle of Quantrill
2. Battle of Wakarusa
3. Battle of Black Jack
4. Battle of Baker
5. Battle of Signal Hill

# Which Elementary facility feels fullest?



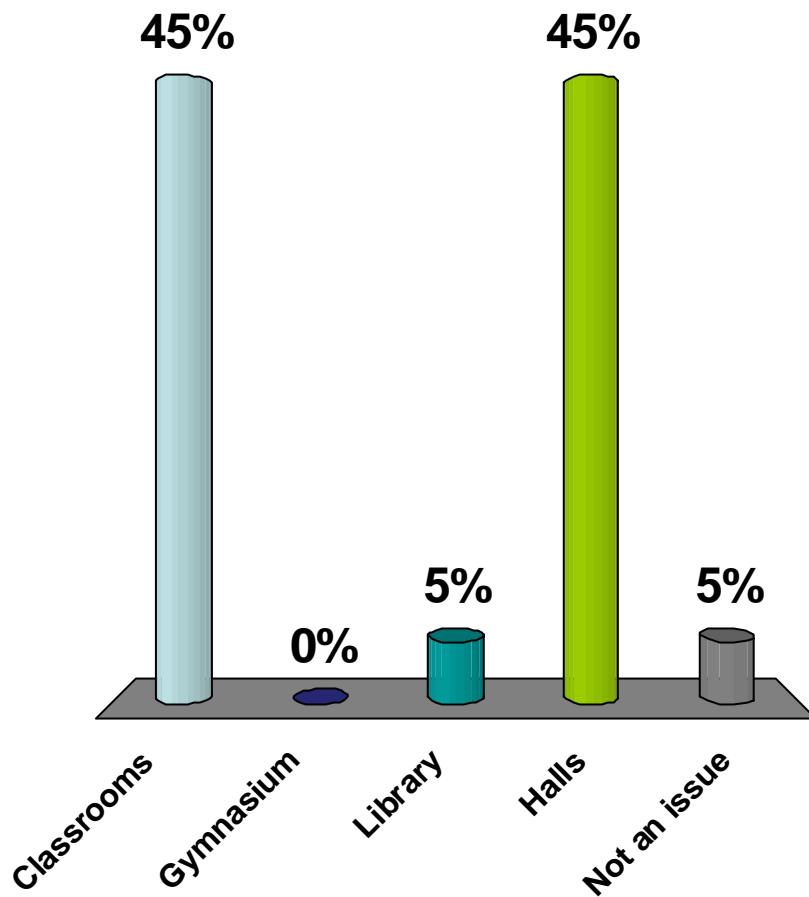
1. Baldwin PC
2. Baldwin IC
3. Marion Springs
4. Vinland

# Where does the ES feel fullest?



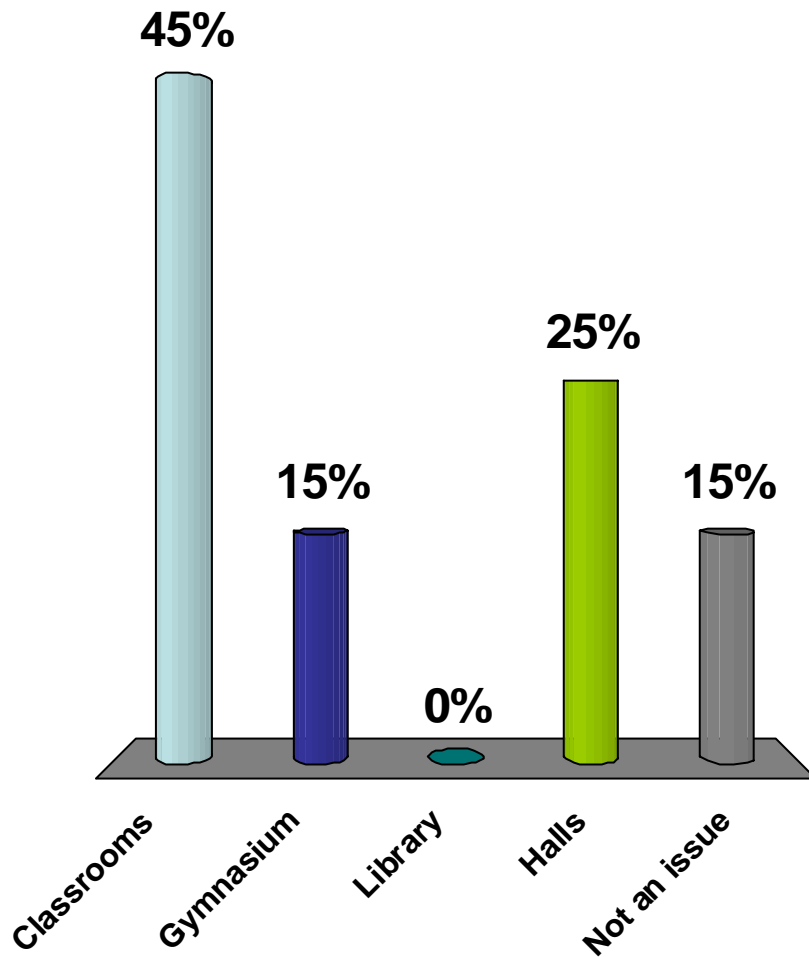
1. Classrooms
2. Gymnasium
3. Library
4. Halls
5. Not an issue

# Where does the MS feel fullest?



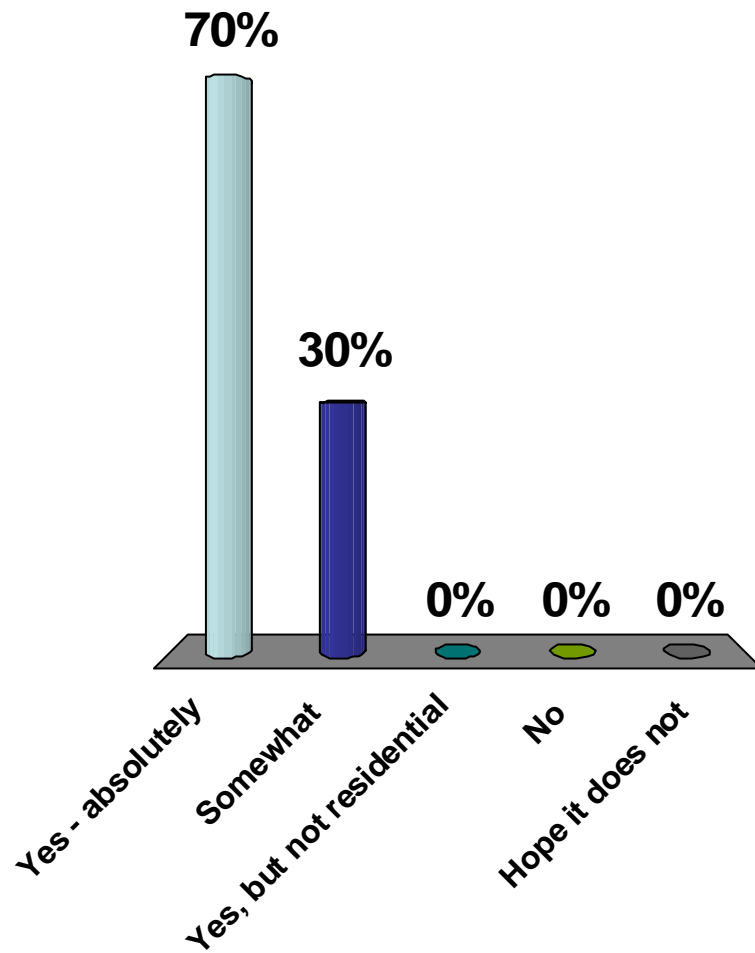
1. Classrooms
2. Gymnasium
3. Library
4. Halls
5. Not an issue

# Where does the HS feel fullest?



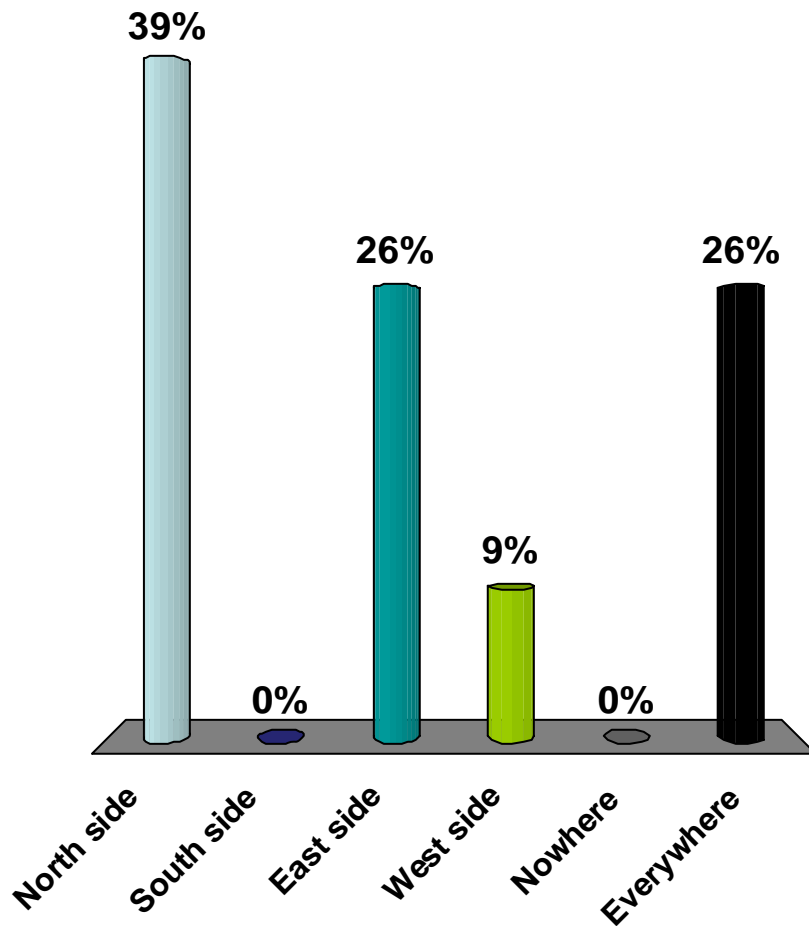
1. Classrooms
2. Gymnasium
3. Library
4. Halls
5. Not an issue

# Do you think Baldwin is growing?



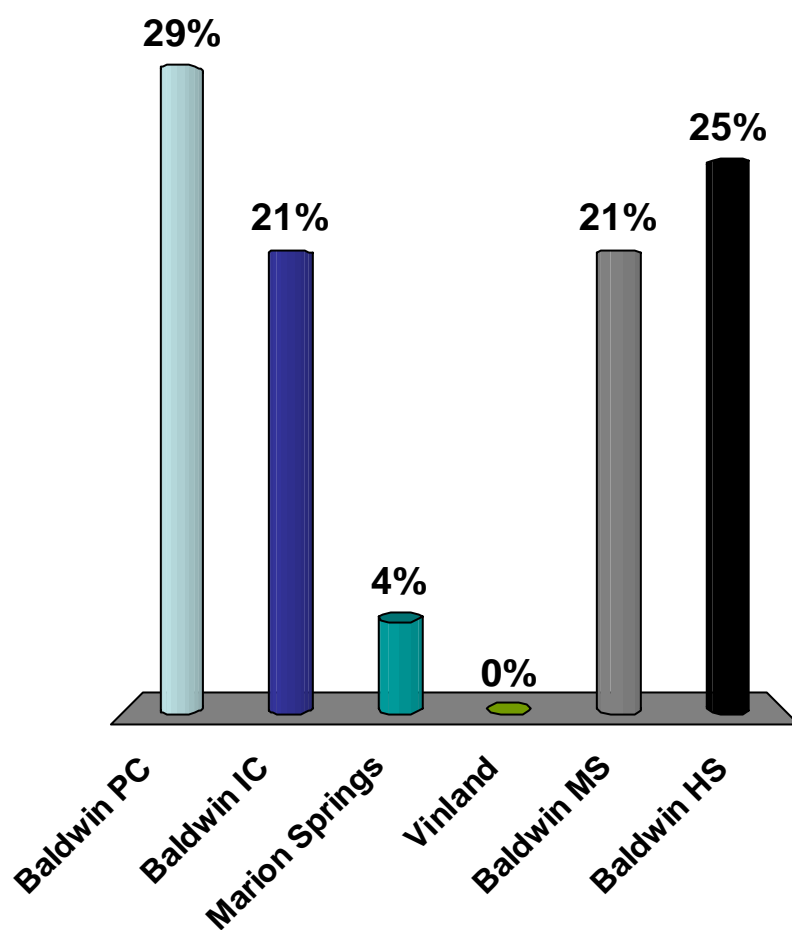
1. Yes - absolutely
2. Somewhat
3. Yes, but not residential
4. No
5. Hope it does not

# Where do you think growth is and will be in the future?



1. North side
2. South side
3. East side
4. West side
5. Nowhere
6. Everywhere

# What facilities do you feel have potential capacity issues?



1. Baldwin PC
2. Baldwin IC
3. Marion Springs
4. Vinland
5. Baldwin MS
6. Baldwin HS

# Assembling the Information

## Who is the Team?

### **RSP & Associates, LLC**

Robert Schwarz, AICP  
Bert Meier

### ***School District***

Administration

### **Government Entities**

Douglas County  
Franklin County  
City of Baldwin

### **Architect**

DLR Group





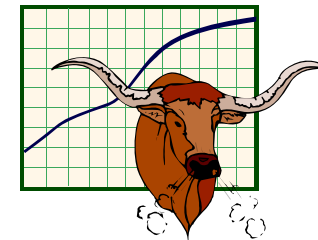
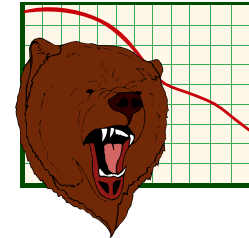
## Sophisticated Forecast Model

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



## What Makes the Model Accurate?

- Cohort Growth
- External Growth
- Kindergarten Growth
- Economic Scenarios





## SFM – Built-Out Model Areas

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

- S = The number of students, either an actual count or a projected count
- x = A subscript denoting a planning area
- c = Grade level
- t = Time
- GC = Growth component, either modeling enrollment increase or decrease based on historical information, expressed as a student enrollment ratio of cohort c in planning area x



## SFM – Developing Areas

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

Where

$$BP_{t,x} = \frac{CP_x \times BT_x}{\sum CP_x \times BT_x} \times CT$$

- S = The number of students, either an actual count or a projected count
- x = A subscript denoting a planning area
- c = Grade level
- t = Time
- BP = Building permit forecast as given by the 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 a planning area
- CT = Building permit control total forecast



# Geographic Information Systems

GIS is the planning tool that takes the two dimensional elements of the data gathered and depicts it in a manner that has geographic reference to a specific area (School District, City, Parcel, student). This element will take the technical complexity of the analysis and visually depict it to support the trends.



# What is GIS?



**STUDENTS/PEOPLE**

**DEVELOPMENT**

**STREETS**

**ATTENDANCE AREAS**

**CITY**

**COUNTY**



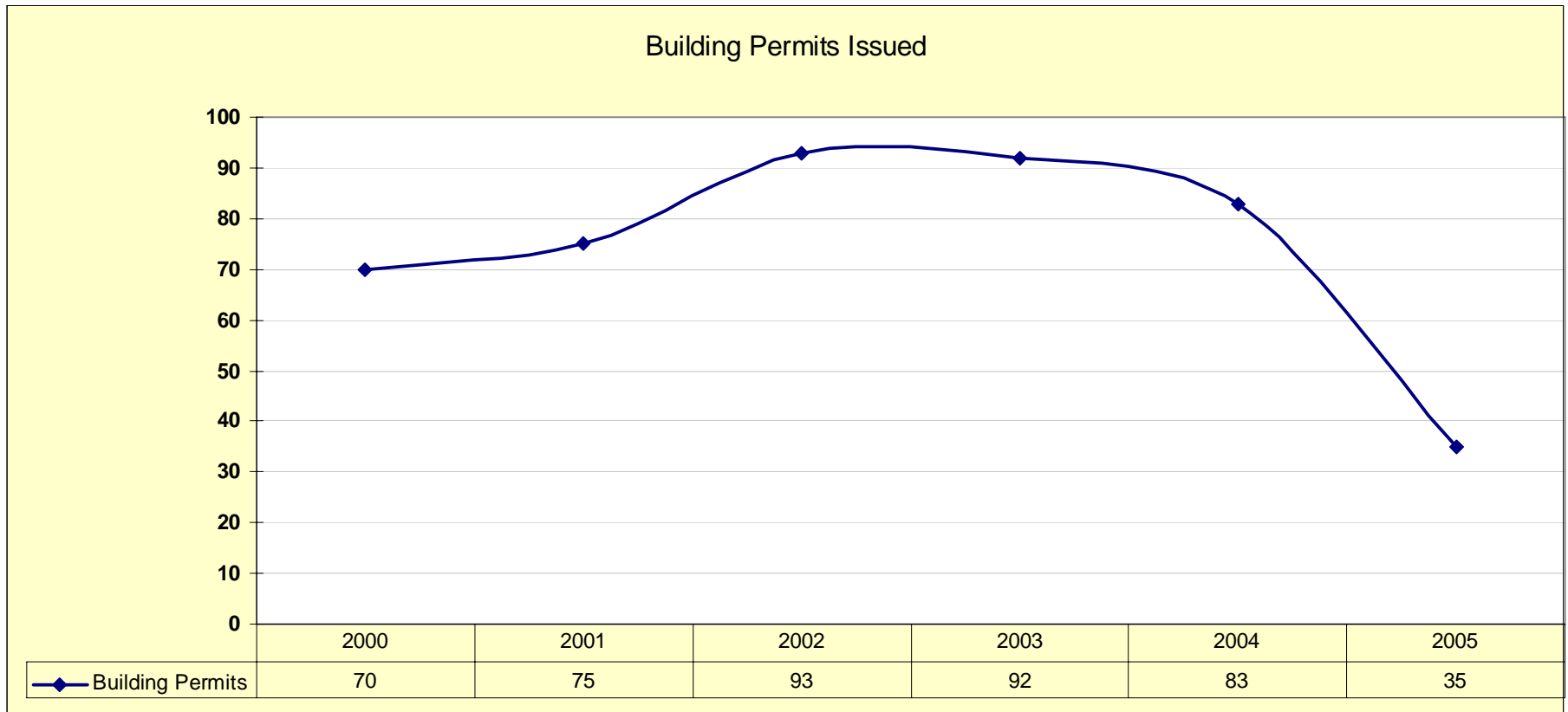
## What are Planning Areas?

- Natural Features
- Manmade Features
- Type of Development
- Planning Area Dwelling Units
- Existing Attendance Boundaries



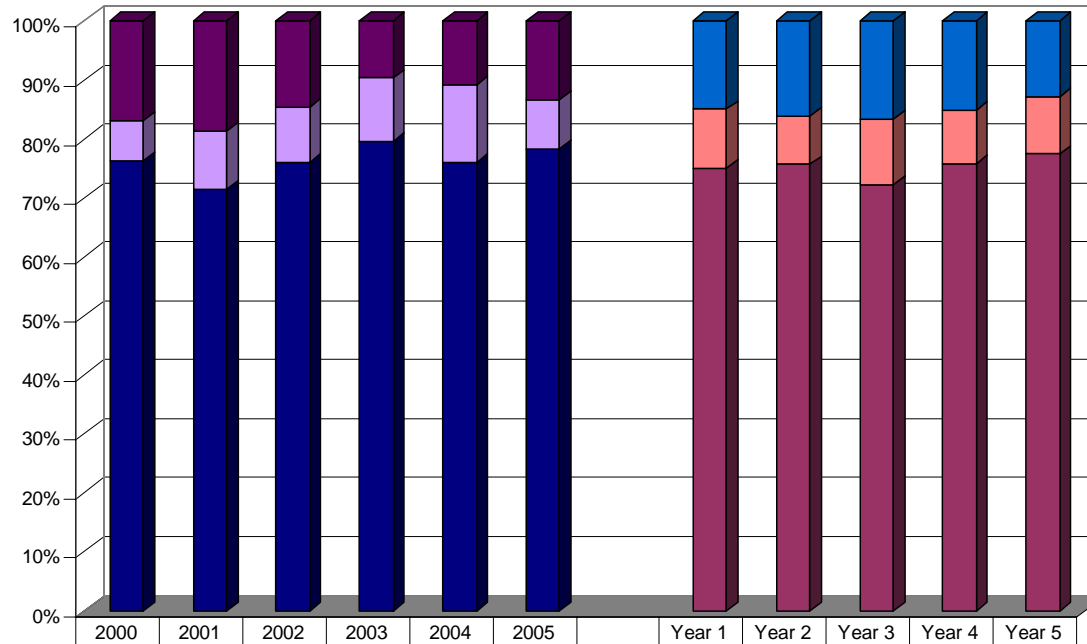


# Development Trends





# Development Trends



- Vinland Projection
- Marion Springs Projection
- Baldwin Projection
- Vinland Elementary
- Marion Springs Elementary
- Baldwin Elementary

	2000	2001	2002	2003	2004	2005		Year 1	Year 2	Year 3	Year 4	Year 5
■ Vinland Projection								15.0%	16.2%	16.7%	15.2%	12.9%
■ Marion Springs Projection								10.0%	8.1%	11.1%	9.1%	9.7%
■ Baldwin Projection								75.0%	75.7%	72.2%	75.8%	77.4%
■ Vinland Elementary	17%	19%	15%	10%	11%	13%						
■ Marion Springs Elementary	7%	10%	9%	11%	13%	8%						
■ Baldwin Elementary	76%	71%	76%	80%	76%	78%						



# What do the Maps Show

- District Map
- Planning Area Map
- District Enrollment Change Map
- District Year Built Map
- District Growth Map



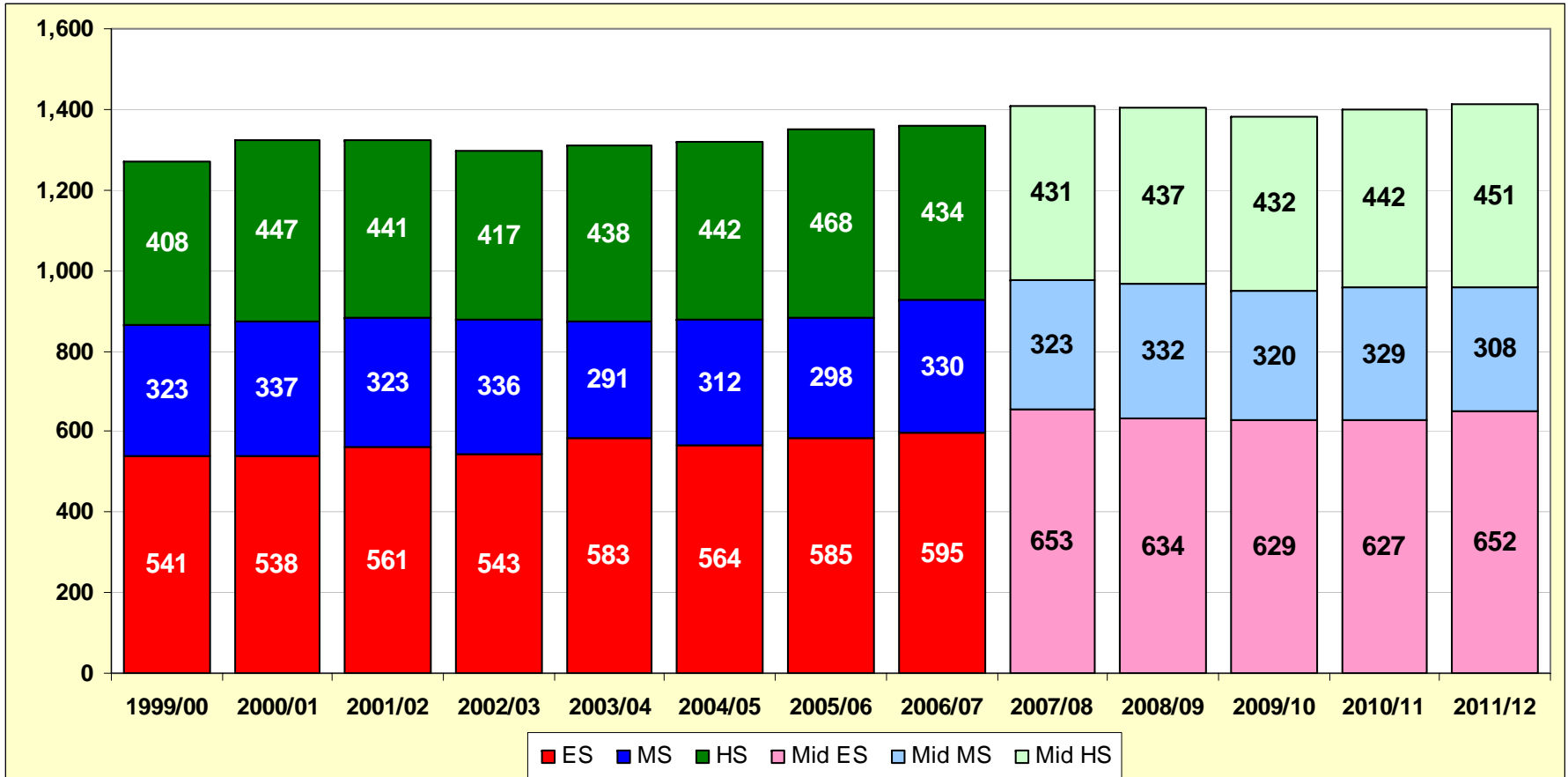
# Baldwin School Enrollment

Year	Kind	1	2	3	4	5	6	7	8	9	10	11	12
1992-93	99	91	79	81	107	82	86	100	91	81	82	74	72
1993-94	100	93	86	92	84	104	84	93	103	94	82	77	72
1994-95	106	90	97	82	91	84	114	88	99	104	108	84	76
1995-96	83	108	99	108	87	92	93	115	91	98	115	103	81
1996-97	99	78	106	92	107	89	90	95	114	90	107	100	91
1997-98	63	98	86	108	97	113	101	89	99	120	95	99	99
1998-99	87	59	101	83	110	97	112	107	94	102	123	88	101
1999-00	77	95	67	102	88	112	102	111	110	108	99	119	82
2000-01	78	92	100	74	105	89	123	102	112	119	110	102	116
2001-02	80	94	92	104	76	115	95	124	104	117	124	104	96
2002-03	77	88	96	98	106	78	115	96	125	104	108	108	97
2003-04	89	95	87	101	100	111	78	112	101	129	100	103	106
2004-05	88	84	101	87	99	105	111	83	118	108	131	104	99
2005-06	91	100	90	108	92	104	105	110	83	124	105	132	107
2006-07	87	92	103	98	116	99	110	110	110	92	120	103	119

Source: Baldwin Principal's Building Report



# Past, Current & Future Enrollment



Source: Baldwin School District Official Count and RSP SFM & Demographic Models





# Baldwin Enrollment Projections

School	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Baldwin Elementary PC Capacity 320	234	200	179	160	160	162	168	174	176	173	167
		229	230	233	236	241	252	260	264	259	252
		258	282	306	312	320	335	346	351	344	337
Baldwin Elementary IC Capacity 280	227	230	220	220	196	174	177	176	176	182	188
		231	221	222	219	219	231	232	235	246	255
		232	223	225	243	263	285	288	295	311	322
Marion Springs Elementary Capacity 140	123	101	94	83	78	73	72	74	70	74	72
		110	107	99	94	95	96	99	95	96	98
		119	120	114	110	117	119	123	119	118	123
Vinland Elementary Capacity 140	82	78	66	60	52	45	42	42	42	42	42
		83	76	75	73	72	73	73	73	72	72
		88	86	90	93	98	105	104	103	103	102
Baldwin Middle School Capacity 400	330	322	330	318	326	305	294	250	218	191	190
		323	332	320	329	308	295	296	296	281	284
		324	333	322	331	311	296	341	373	371	378
Baldwin High School Capacity 460	434	430	435	430	439	447	435	429	423	394	358
		431	437	432	442	451	438	433	425	413	406
		432	439	435	445	454	442	437	427	431	454
ELEMENTARY TOTAL Capacity 880	666	610	558	522	486	454	459	466	464	471	469
		653	634	629	622	627	652	664	667	673	677
		697	711	735	757	798	844	861	868	876	884
MIDDLE TOTAL Capacity 400	330	322	330	318	326	305	294	250	218	191	190
		323	332	320	329	308	295	296	296	281	284
		324	333	322	331	311	296	341	373	371	378
HIGH TOTAL Capacity 460	434	430	435	430	439	447	435	429	423	394	358
		431	437	432	442	451	438	433	425	413	406
		432	439	435	445	454	442	437	427	431	454
DISTRICT TOTALS Capacity 1,740	1,430	1,362	1,324	1,271	1,251	1,206	1,189	1,145	1,105	1,056	1,016
		1,407	1,403	1,381	1,392	1,385	1,386	1,393	1,388	1,367	1,367
		1,453	1,483	1,492	1,533	1,562	1,581	1,639	1,669	1,678	1,716

Source: RSP & Associates, LLC - June 2007

Over Program Capacity

- Note 1: Student Projections are based on the residence of the student.
- Note 2: The Enrollment Model is based on a Headcount of students by Planning Area at each facility
- Note 3: Transfers between Elementary Facilities are not factored into the Projections
- Note 4: School Capacity and timing of facilities provided by the Baldwin School District
- Note 5: PreKindergarten students are factored into the enrollment projections
- Note 6: Past Enrollment is Pre Kdg through 12th grade



# Questions

- Now is the time to ask questions or make comments about the enrollment forecast for the Baldwin School District
- Questions about planning should be directed to the City of Baldwin, Douglas County, or Franklin County
- Questions about enrollment forecasting should be directed to RSP & Associates

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