

# Data Analytics for School Districts

Michigan School Business Officials

Wednesday, May 3, 2017

Grand Rapids, Michigan

# Presentation Topics

- Data Analytics
- Development and planning concepts
- Peer group construction
- Enrollment
- Revenues & Expenditures
- Fund Balance
- Employee costs
- MDT – Early Warning – Fiscal Stress
- Curriculum and Instruction

# Data Analytics

- Know your district – Be the expert
- No one knows more about the district
- Analyze your district
  - Enrollment
  - Financial
  - Staffing levels
  - Demographic

# Data Analytics

- Data Analytics is here to stay
  - Not going away
- Moving from a transactional orientation to an analytical orientation
- Pro-active vs reactive
  - Analyze your own data or have someone else analyze it
  - Analyzer vs analyzee

# Data Analytics

- Performance is the point
  - Data Analytics is a means to an end
- All data is not equal
  - Avoid getting lost in the weeds of data
  - “The cost of everything – the value of nothing.”
- Data messaging
  - Employees and Employee Association
  - Board and community

# Types of Data Analytics

- Descriptive – Insight based on past information
- Diagnostic – Examines cause of past results
- Predictive – Identify patterns in historical data
- Prescriptive – Identifying the best options

Source: Journal of Accountancy, August 2016

# Development and Planning Concepts

- Peer groups for comparison
- Trends
- Comparable – Analysis of Data
  
- Focus – Time, energy and resources
- Not focus – Reallocate time, energy and resources
  
- Context – Context - Context

# Data Potential

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- Academic
- Demographics
- Financial
- Other



# Data Potential

Financial and  
Demographic

- Peer Group for comparison
- Enrollment
- Revenues
- Expenditures
  - Employee Costs – Salary + Benefits
  - Other

# Peer Group

- Seldom stand alone with no context
- Compare with other districts
  - Goal - Similar districts to compare against
  - Address: Selective “cherry picking” of data
- Know your district
- Times and technology have changed
  - Lansing SD – Middle Cities
  - Data analytics

# Peer Group Potential

- Peer – Who do you compare against?
- ISD
- Enrollment and Free Reduced %
- Other
  - SES Peers – Comparable Socio-economic status
  - School of Choice – In or out of district
  - NSD – Notably Successful Districts (State Study)
- Custom

# Peer Group

Using the  
ISD

District	Enrollment	Free-Reduced %
Climax-Scotts	488	44%
Comstock Public	1,885	75%
Galesburg-Augusta	1,028	53%
Gull Lake	3,122	21%
Kalamazoo Public	12,516	62%
Parchment	1,654	56%
Portage Public	8,634	23%
Schoolcraft	1,068	24%
Vicksburg	2,670	32%
Average	3,674	43%

# Peer Group

Enrollment &  
Free-Reduced  
%

District	Enrollment	Free-Reduced %
Clarkston	7,665	19%
Farmington	9,909	22%
Grand Blanc Community	8,319	28%
Grosse Pointe	7,896	13%
Huron Valley	9,336	23%
Lake Orion	7,521	18%
Midland Public	7,699	29%
Rockford	7,795	14%
South Lyon	7,990	14%
Traverse City Public	9,553	31%
Average	8,368	21%

# Peer Group

Custom

- Enrollment
- Free & Reduced %
- Staff FTE
- Square Miles
- Foundation Allowance
- ACT Average – M-Step Proficiency
- District Type – LEA vs PSA
- Locale Type – City – Suburb - Rural

# Peer Group

Custom

District	Enrollment	Free-Reduced %
Anchor Bay	6,015	22%
Clarkston	7,665	19%
Grand Blanc Community	8,319	28%
Grand Haven	6,226	34%
Howell	7,304	31%
Hudsonville	6,396	20%
Huron Valley	9,336	23%
Portage Public	8,634	23%
Traverse City Public	9,553	31%
Average	7,716	26%

**Filter:**

Enrollment	6,000	10,000
Free Reduced %	15%	35%
Foundation Allowance	\$7,391	\$7,700

# Academic Data

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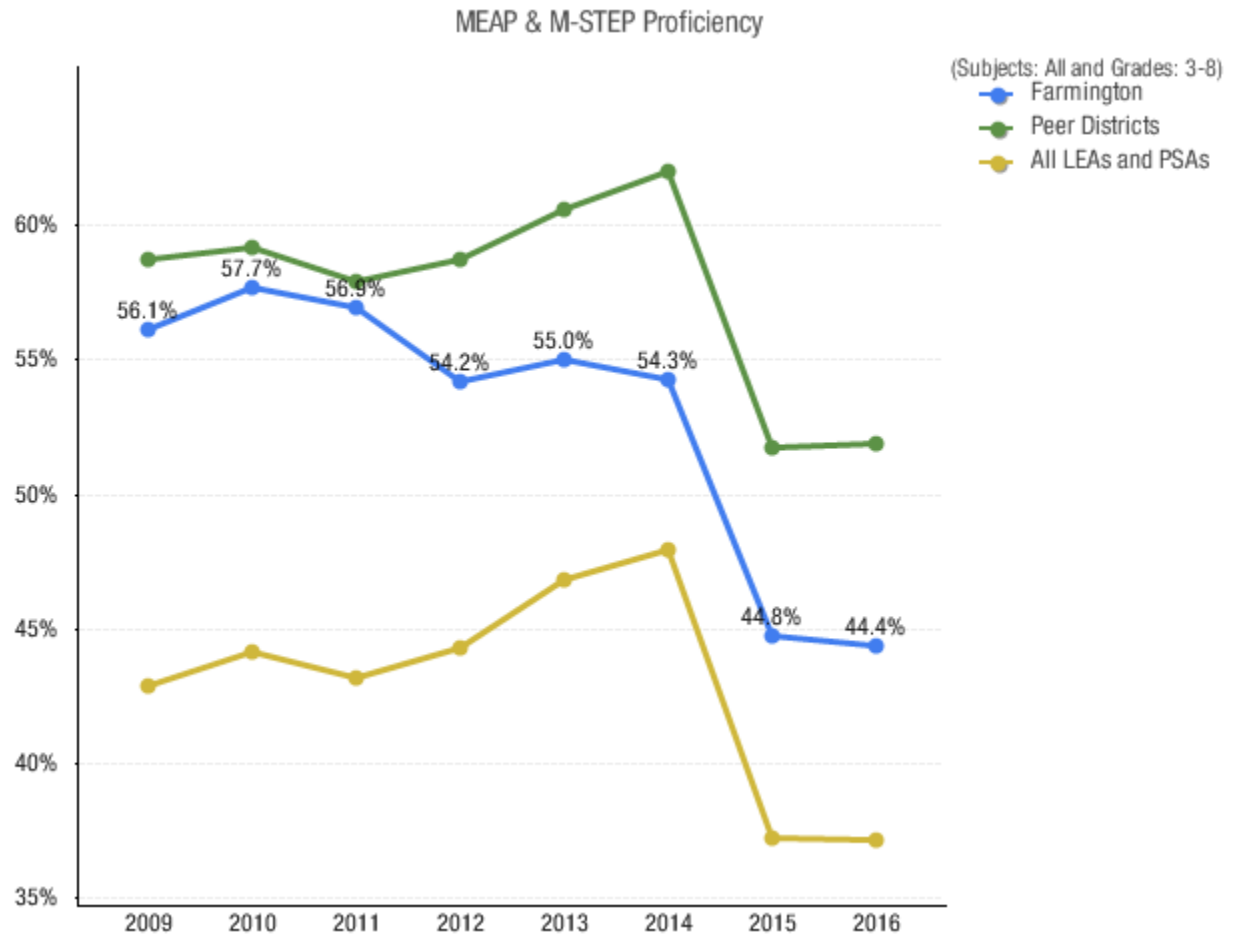
- Student Assessment Data
  - 3-8 M-Step
  - HS M-Step
  - SAT
  - NWEA
- Achievement
  - Graduation
  - Dropout



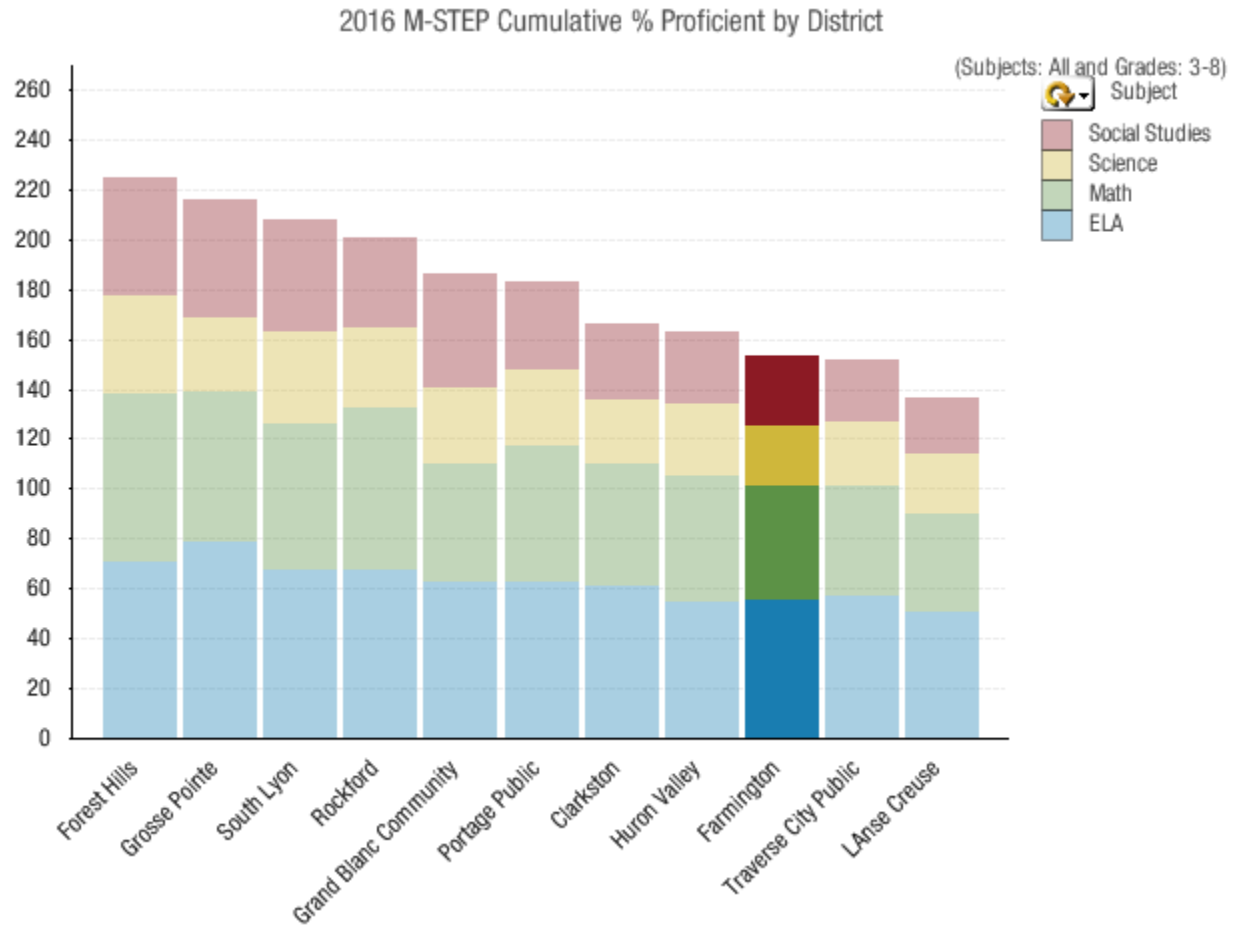
# Academic Data

- Trend over time
- Comparison to peer groups
  - District
  - Building
  - Grade Level
  - Teacher
- Outcomes to dollars spent
- Sub-population comparison
  - Gender
  - Ethnicity
  - Economics
  - Students with disabilities
- Achievement
  - Graduation

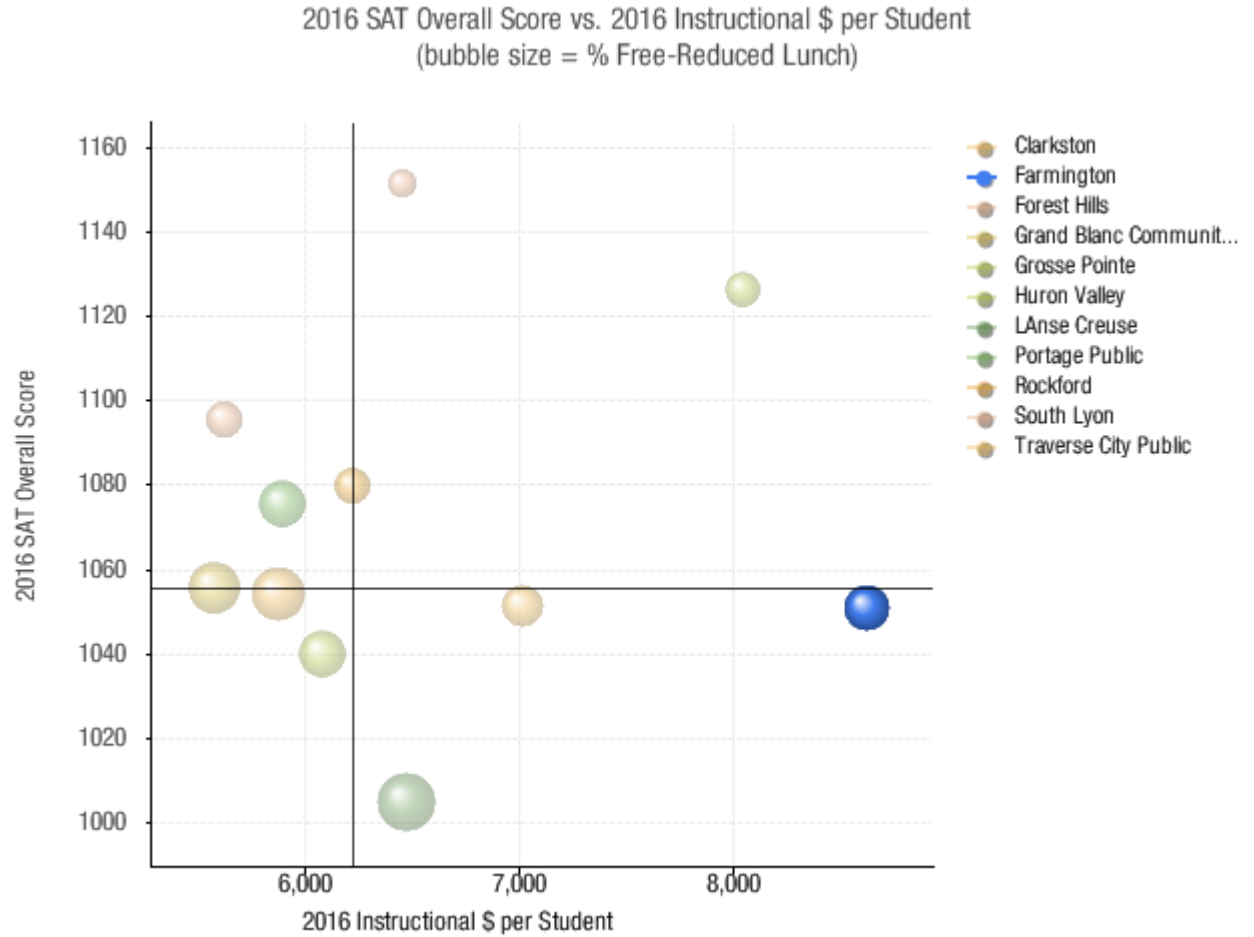
# Trend over time



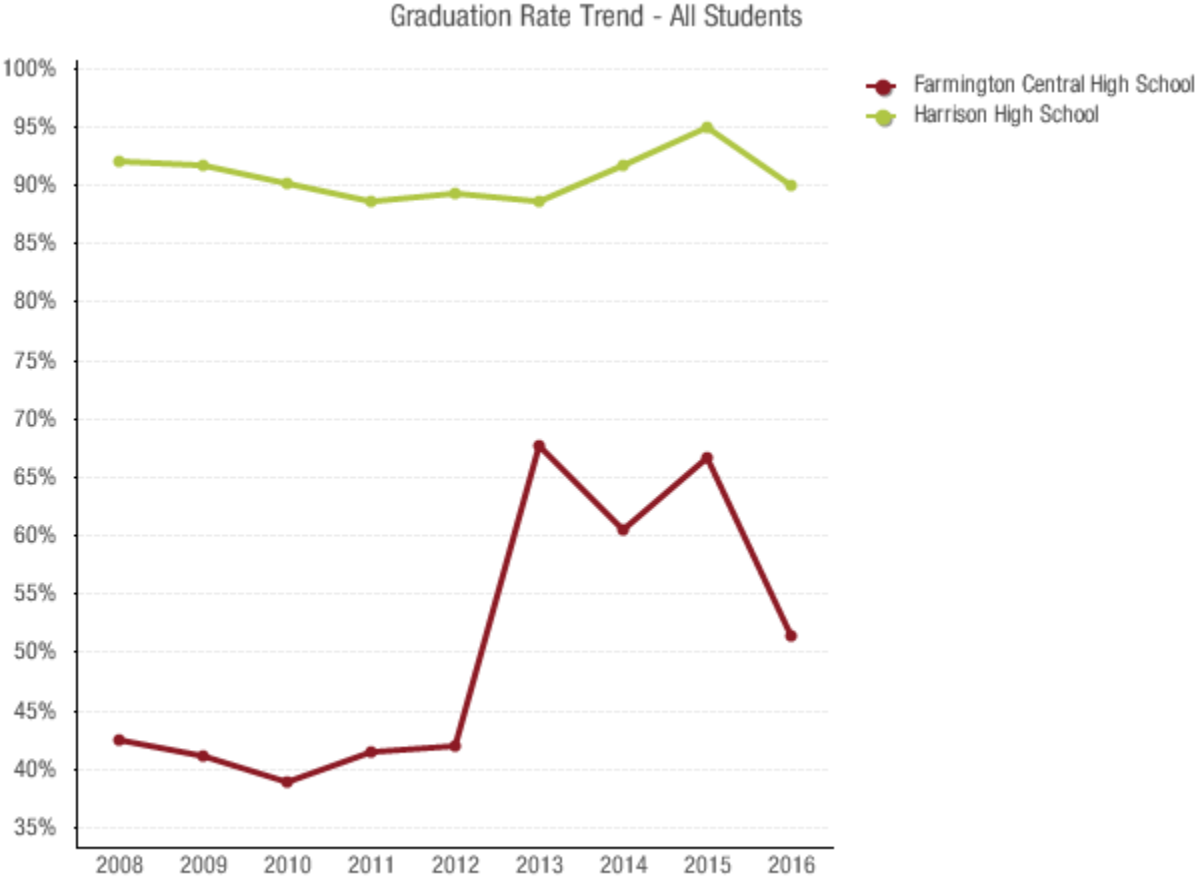
# Compare to peer group



# Outcome to dollars spent



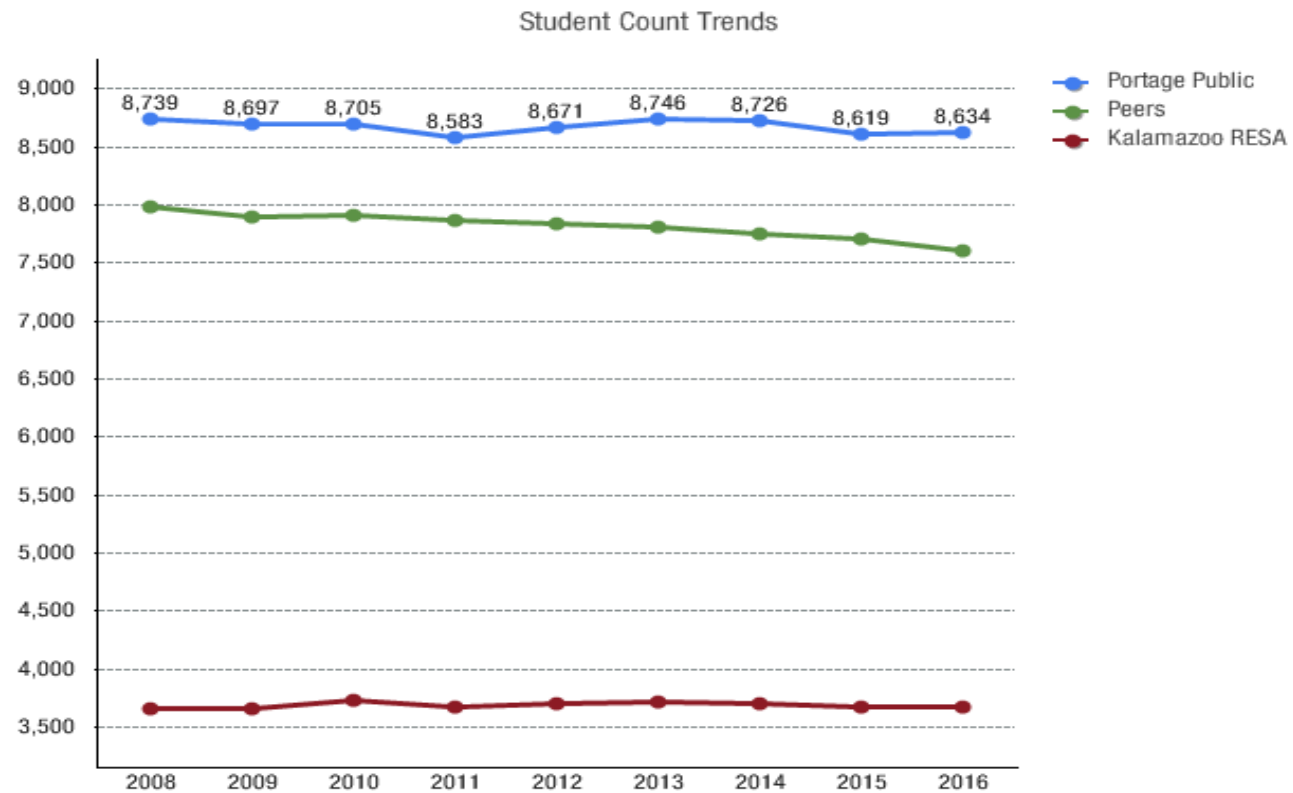
# Achievement Graduation



# Enrollment Concepts

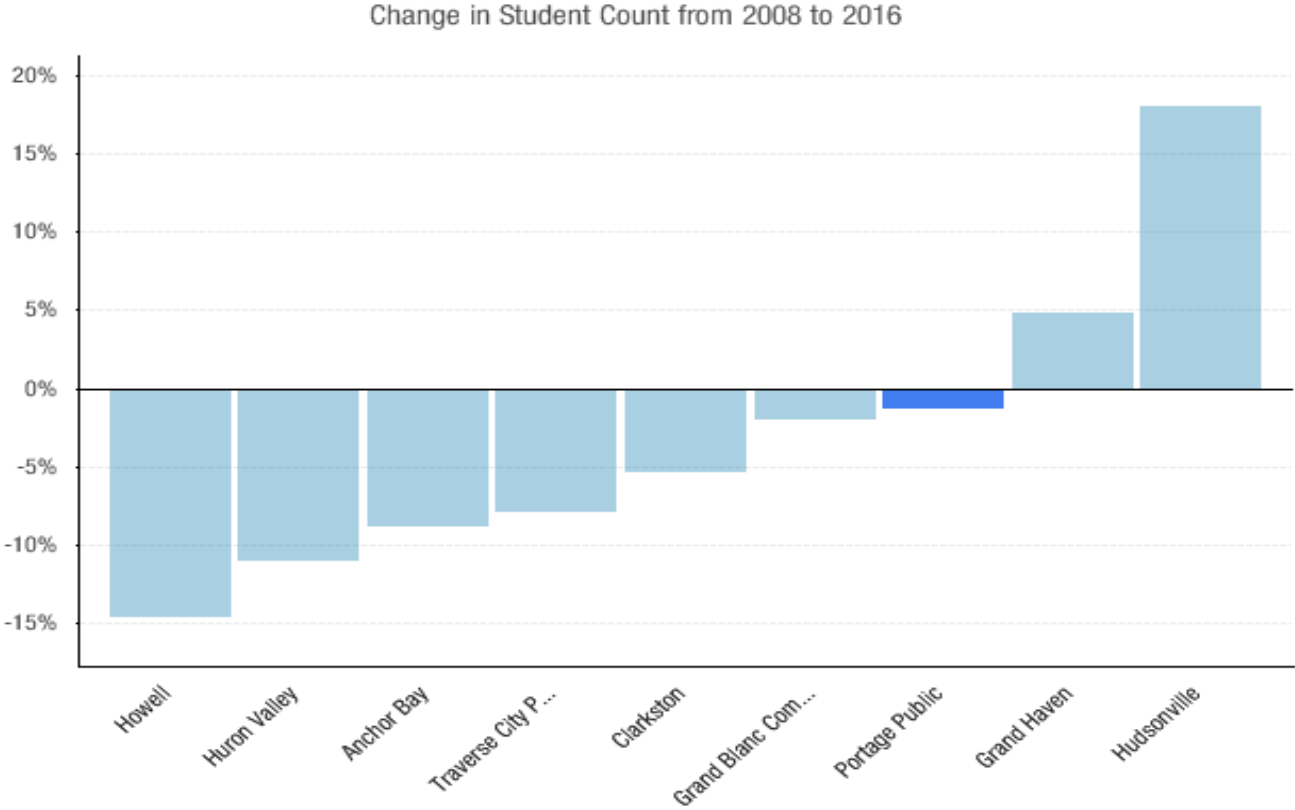
- Forecast – External source
  - StanFred
  - Middle Cities
  - Other
  - Eidex enrollment forecasting tool in development
- Forecast – Internal
  - Know the reality of your numbers
  - Multiple looks
  - Context

# Enrollment – Student Count Trends 2008 to 2016



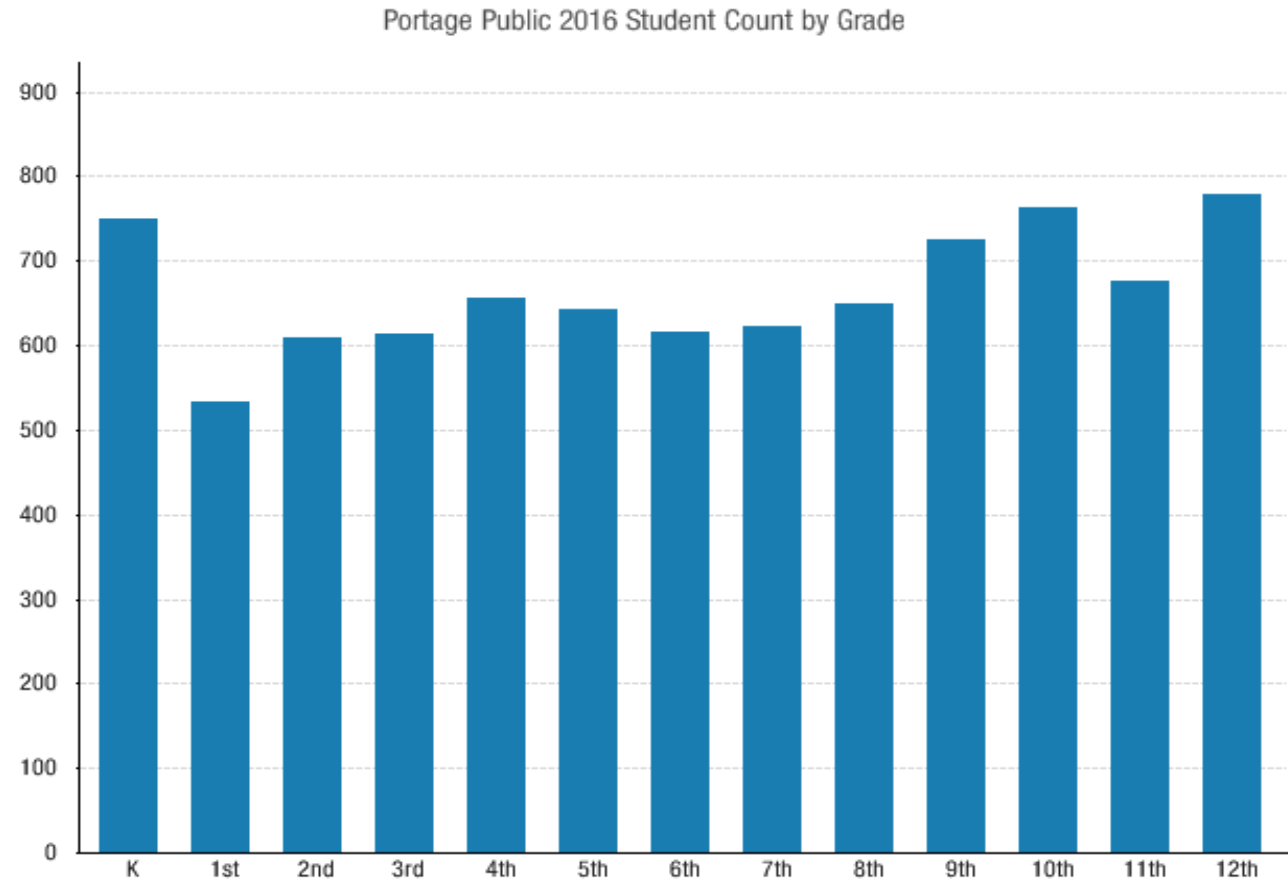
# Student Count Change

% Change from 2008 to 2016

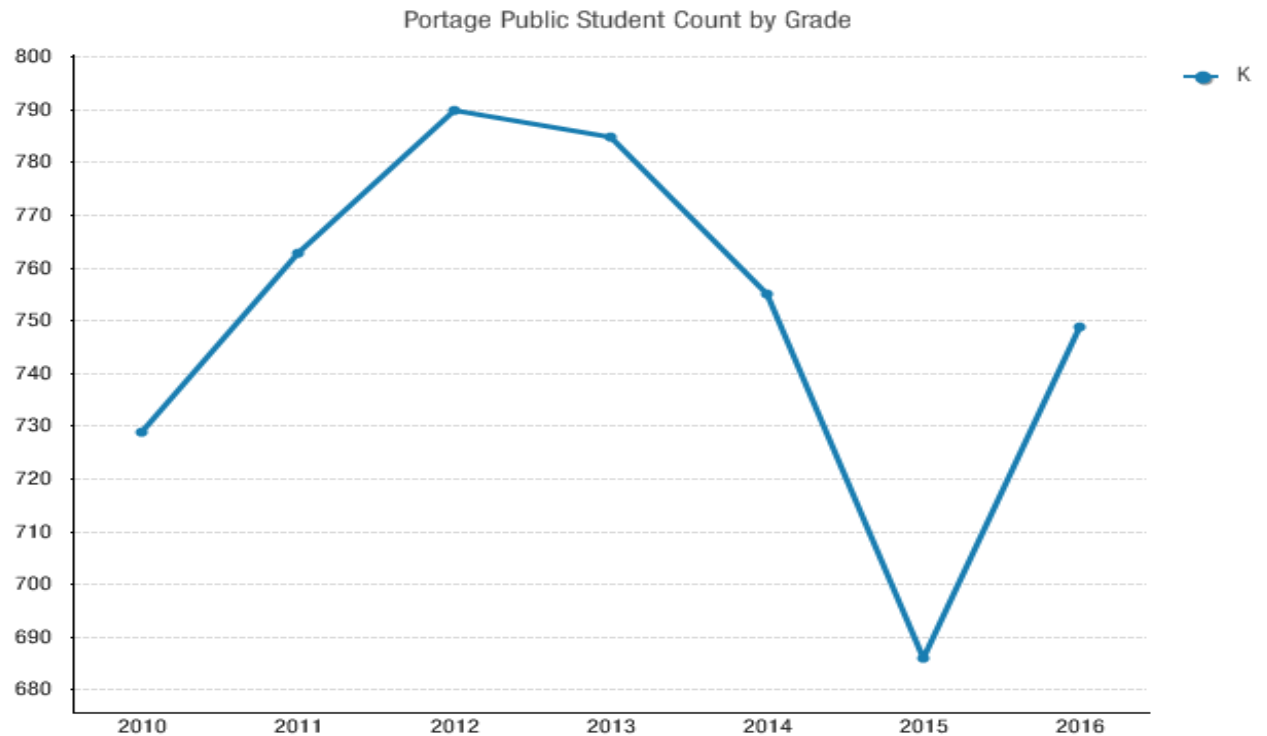




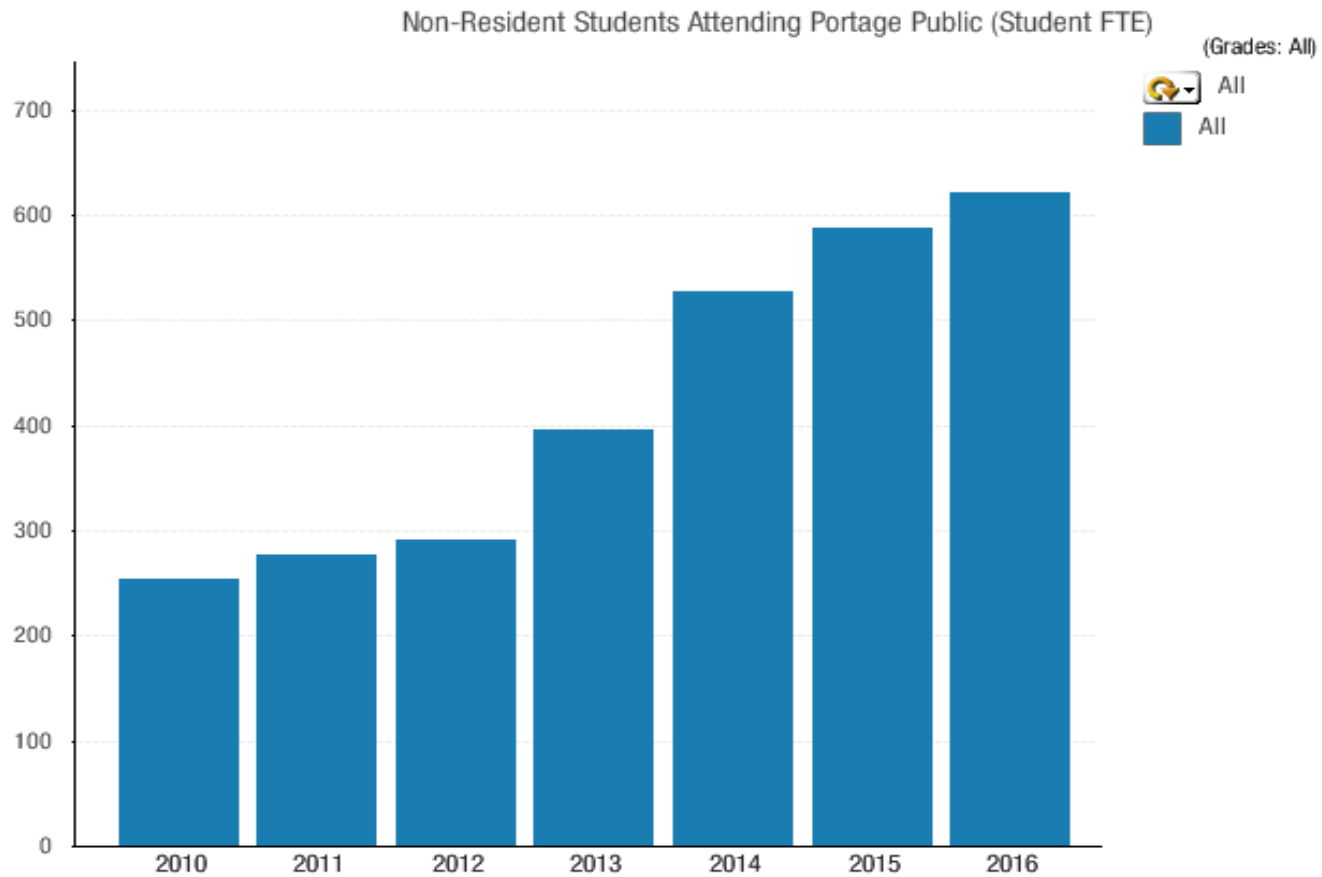
# Student Count by Grade



# Student Count Trend by Grade 2010 to 2016



# Non-Resident Reliance



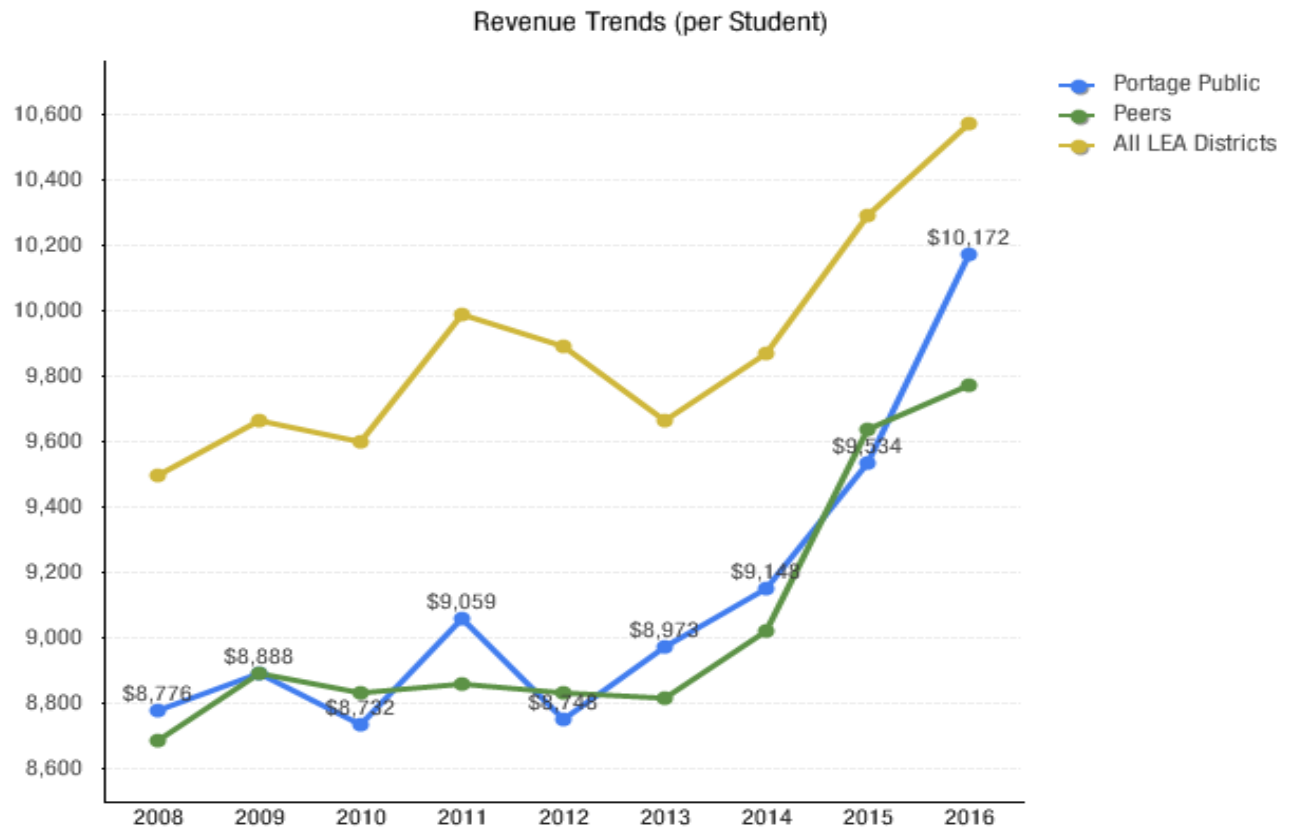
# Budgeting

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- Revenue trends
- Expenditure trends
- Function analysis
- Object analysis
- Focus
- Not Focus

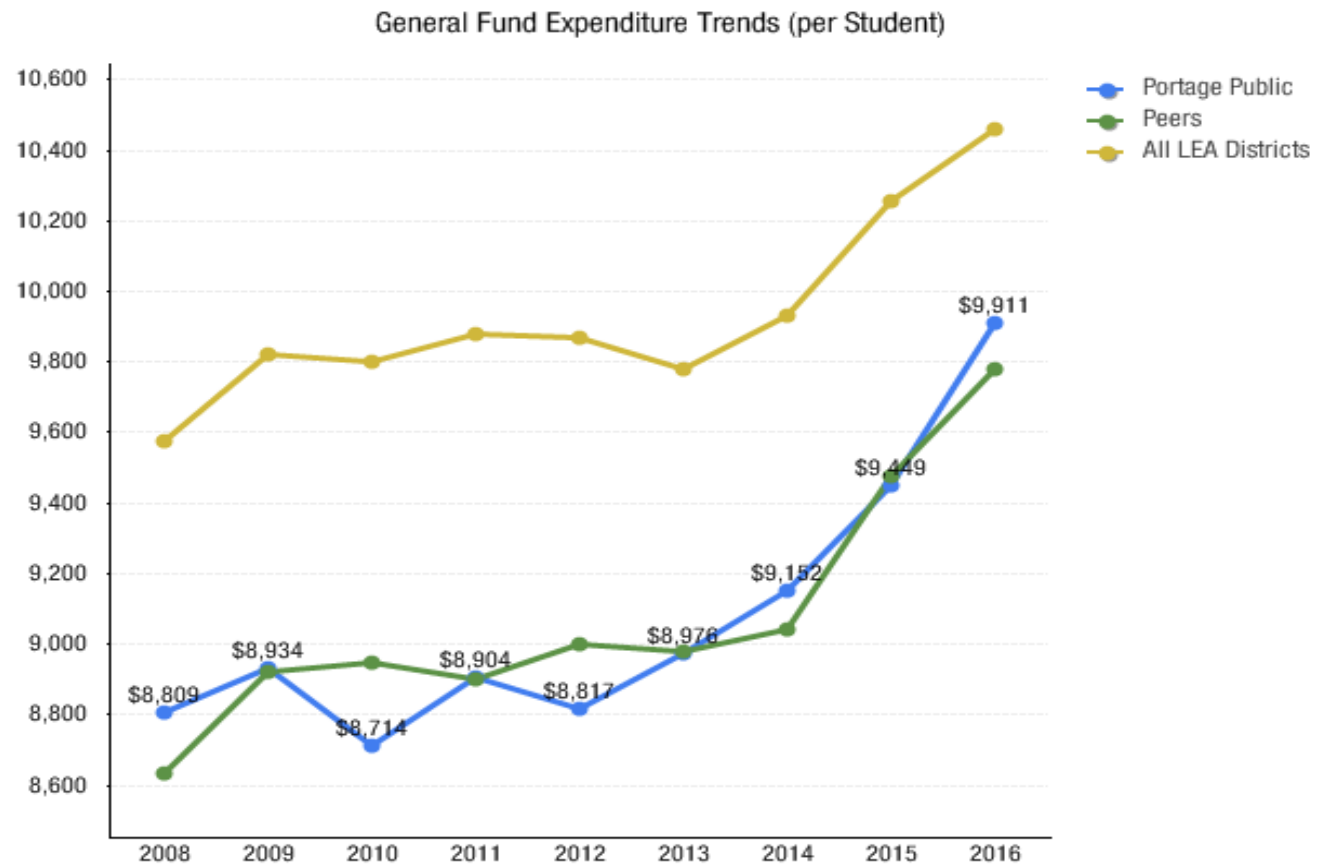
# Budgeting

## Revenue Trends



# Budgeting

## Expenditure Trends



# Budgeting

## Expenditures Function Analysis

Function	Portage Public Schools			Peers		Difference	
	FY-16 \$\$	% - GF	\$\$ PP	% - GF	\$\$ PP	PP	Potential
	\$85,575,584	100.00%	\$9,911		\$9,781	(\$130)	(\$1,126,509)
111 Elementary	21,482,906	25.10%	2,488	23.88%	2,336	(153)	(1,317,680)
112 Middle/Junior High	8,397,422	9.81%	973	11.32%	1,107	135	1,162,180
113 High School	13,637,701	15.94%	1,580	14.76%	1,444	(135)	(1,169,662)
118 Preschool	463,679	0.54%	54	0.63%	62	8	70,706
119 Summer School	12,913	0.02%	1	0.05%	5	3	26,818
122 Special Education	4,828,973	5.64%	559	9.55%	934	375	3,234,402
125 Compensatory Education	1,399,759	1.64%	162	2.20%	215	53	454,563
127 Career and Technical Education	685,567	0.80%	79	1.05%	103	24	204,300

# Budgeting

## Expenditures Object Analysis

Object Name	Portage			Peers - Custom		Difference	
	FY-2016 \$\$	% of GF	Exp PP	% of GF	Peer PP	\$\$ PP	Potential
	\$85,575,584	100.00%	\$9,911	185.35%	9,781	(130)	(1,126,509)
1100 Administration Salaries	3,989,711	4.66%	462	4.26%	416	(46)	(395,247)
1200 Professional-Educational Salaries	31,973,343	37.36%	3,703	36.27%	3,548	(156)	(1,343,494)
1300 Professional-Business Salaries	647,494	0.76%	75	0.32%	31	(44)	(380,052)
1400 Professional-Other Salaries	691,114	0.81%	80	0.97%	95	15	125,973
1500 Technical Salaries	1,259,173	1.47%	146	1.56%	153	7	61,017
1600 Operation and Service Salaries	3,958,348	4.63%	458	7.55%	739	280	2,419,632
1700 Special Salary Payments	-	0.00%	-	0.10%	10	10	85,065
1800 Temporary Salaries	-	0.00%	-	0.38%	37	37	321,133
1900 Overtime Salaries	83,019	0.10%	10	0.32%	31	22	186,918
	42,602,203	49.78%	4,934	51.73%	5,059	125	1,080,945
2100 Employee Insurance	6,940,799	8.11%	804	9.78%	956	153	1,317,147
2200 Special Leave Payments	248,647	0.29%	29	0.15%	15	(14)	(118,881)
2300 Special Allowances	146,031	0.17%	17	0.06%	6	(11)	(95,038)
2400 Professional Services, EE Benefits	-	0.00%	-	0.00%	0	0	2,323
2800 FICA, Retirement, WC, Unemployment	18,965,463	22.16%	2,197	23.05%	2,254	58	499,754
2900 Other Employee Benefits	8,759	0.01%	1	0.58%	57	56	481,482
	26,309,698	30.74%	3,047	33.63%	3,289	242	32,086,787



# Budgeting

## Expenditures Function - Focus

Function Detail	Portage			Peers		Diff PP	Potential
	My Exp. \$'s	% of GF	Exp PP	% of GF	Peer PP		
	85,575,584	100.00%	9,911	100.00%	9,781	(130)	(1,126,509)
351 Custody and Care of Children	2,212,026	2.60%	256	0.44%	43	(214)	(1,844,666)
111 Elementary	21,482,906	25.10%	2,488	23.88%	2,336	(153)	(1,317,680)
113 High School	13,637,701	15.90%	1,580	14.76%	1,444	(135)	(1,169,662)
284 Non-Instructional Tech	2,134,013	2.50%	247	1.56%	153	(95)	(816,845)
212 Guidance Services	2,073,015	2.40%	240	1.74%	170	(70)	(601,351)
222 Educational Media Services	1,168,770	1.40%	135	0.94%	92	(44)	(376,225)
293 Athletic Activities	1,540,391	1.80%	178	1.40%	137	(41)	(357,996)
226 Superv- Direct Instruc Staff	1,164,618	1.40%	135	0.97%	95	(40)	(346,001)
215 Speech Path- Aud Serv	1,087,891	1.30%	126	0.89%	87	(39)	(335,126)
214 Psychological Services	774,217	0.90%	90	0.55%	54	(36)	(310,906)

# Budgeting

Expenditures  
Not Focus

	Portage			Peers			
Function Detail	My Exp. \$'s	% of GF	Exp PP	% of GF	Peer PP	Diff PP	Potential
	85,575,584	100.00%	9,911	100.00%	9,781	(130)	(1,126,509)
219 Other Pupil Support Services	394,481	0.50%	46	0.58%	57	11	94,653
620 Fund Modifications	-	0.00%	-	0.14%	14	14	117,359
231 Board of Education	77,339	0.10%	9	0.27%	26	17	145,184
127 Career and Technical Education	685,567	0.80%	79	1.05%	103	24	204,300
213 Health Services	9,967	0.00%	1	0.29%	28	27	229,527
218 Teacher Consultant	338,534	0.40%	39	0.70%	68	28	244,787
271 Pupil Transportation Services	3,486,207	4.10%	404	4.65%	455	52	445,190
125 Compensatory Education	1,399,759	1.60%	162	2.20%	215	53	454,563
112 Middle/Junior High	8,397,422	9.80%	973	11.32%	1,107	135	1,162,180
122 Special Education	4,828,973	5.60%	559	9.55%	934	375	3,234,402

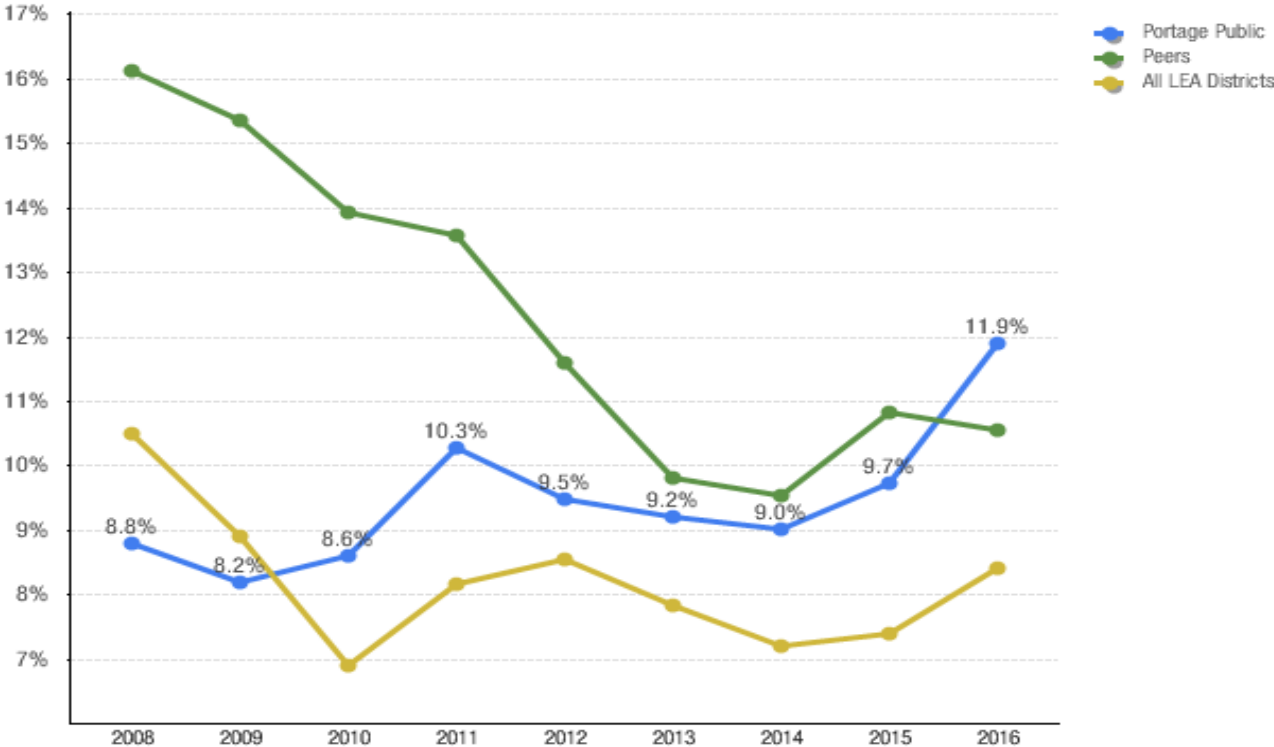
# Fund Balance

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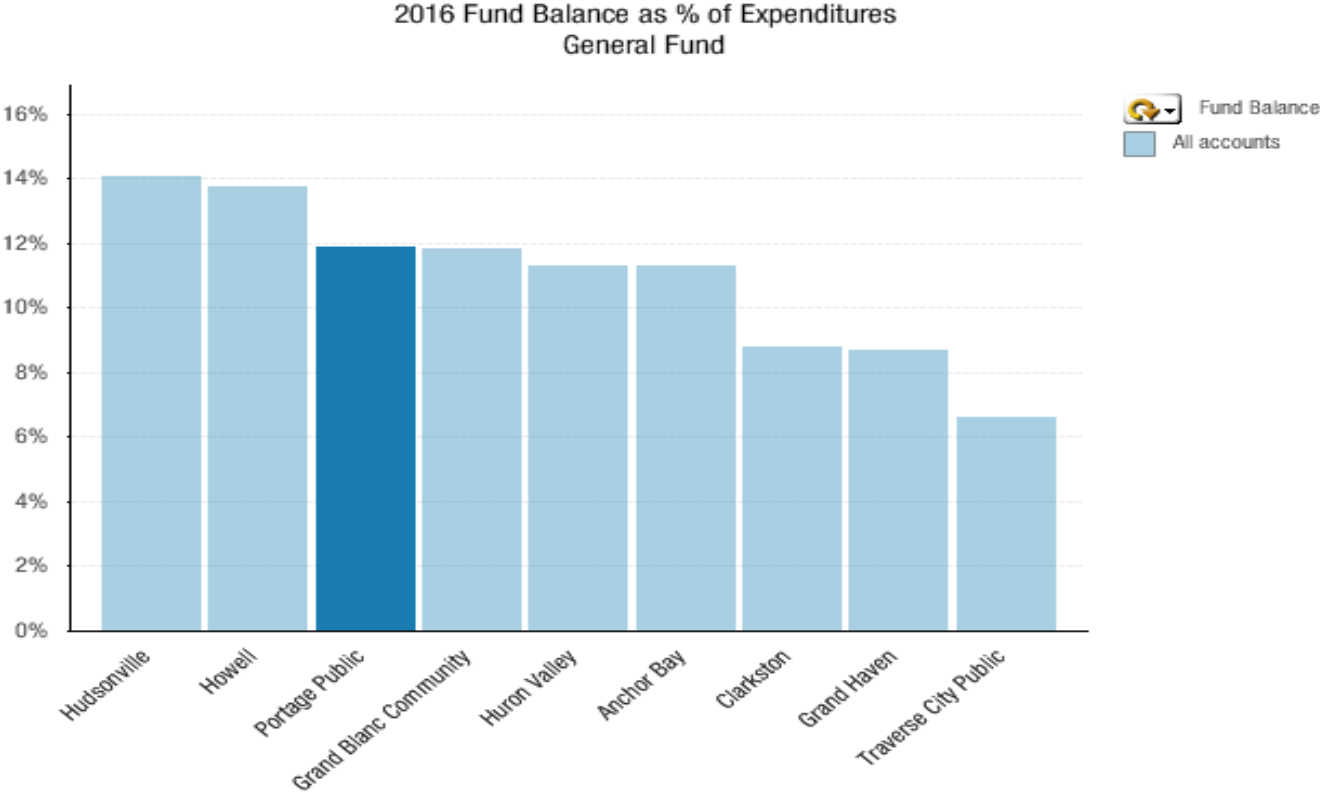
- Trend
- Comparison to Peers
- Sustainability

# Fund Balance Trend

Fund Balance as % of Expenditures  
General Fund



# Fund Balance Comparison

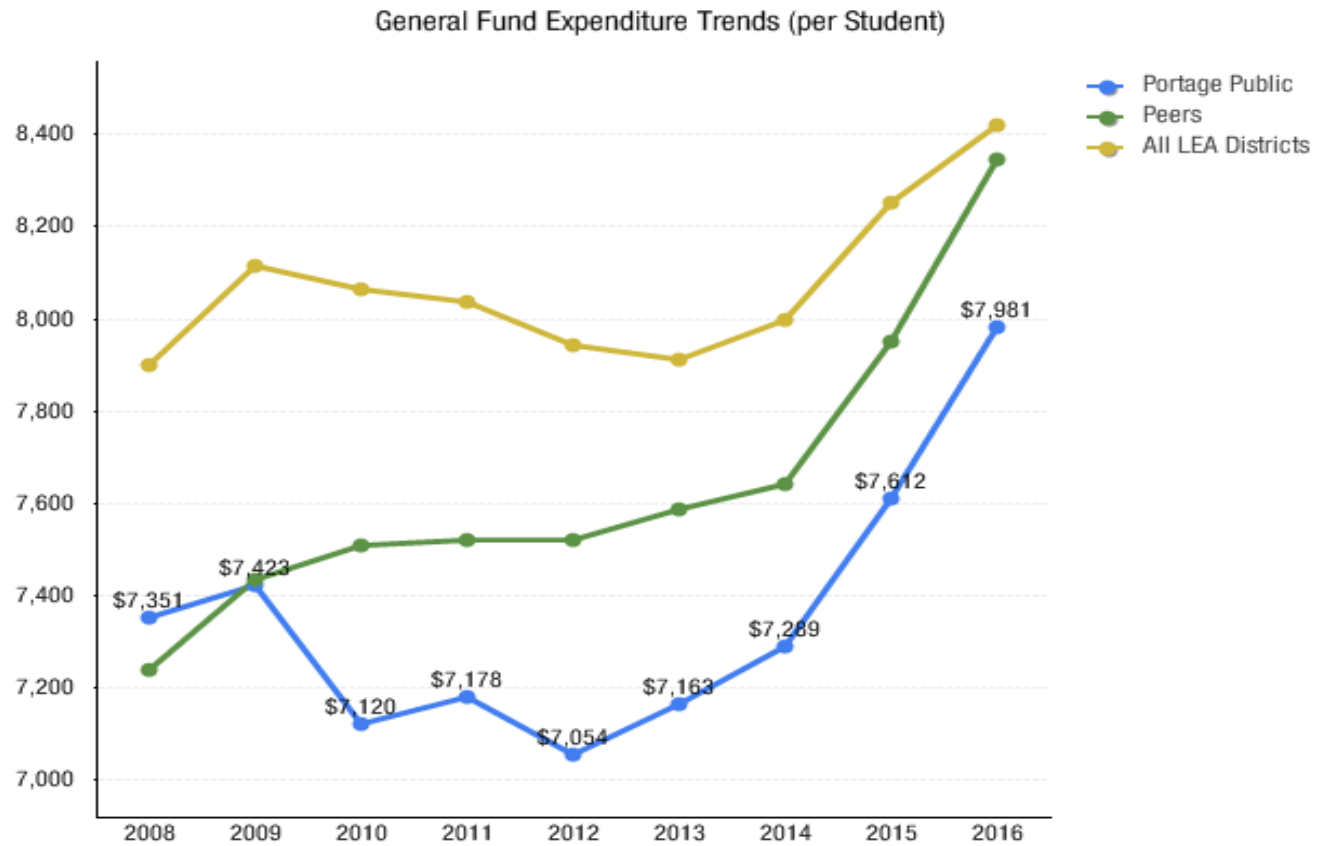


# Employee Costs

- Salaries and benefits
- Trend
- Comparison with peers
  - ISD
  - Custom
- Sustainability

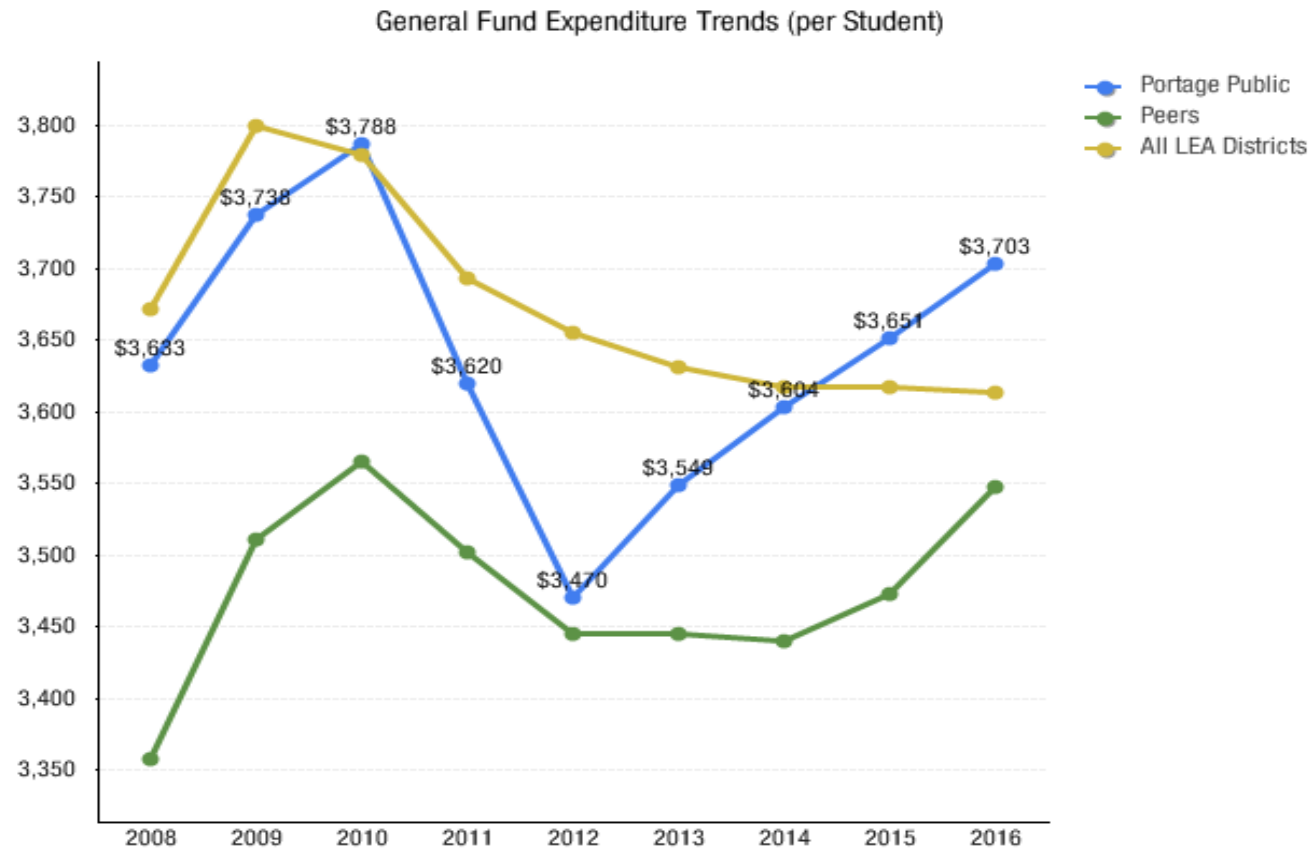
# Negotiations

## Salary & Benefits PP



# Negotiations

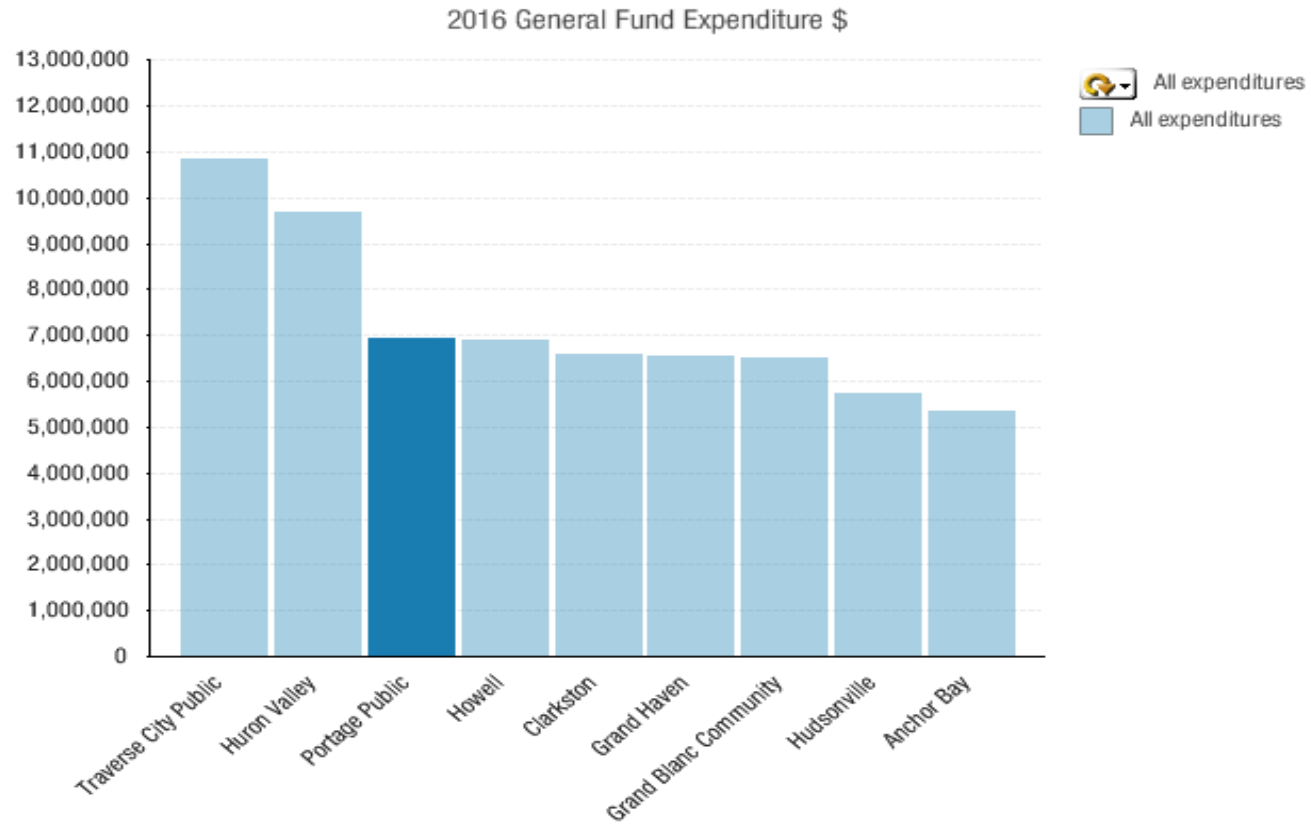
## 1200 Object





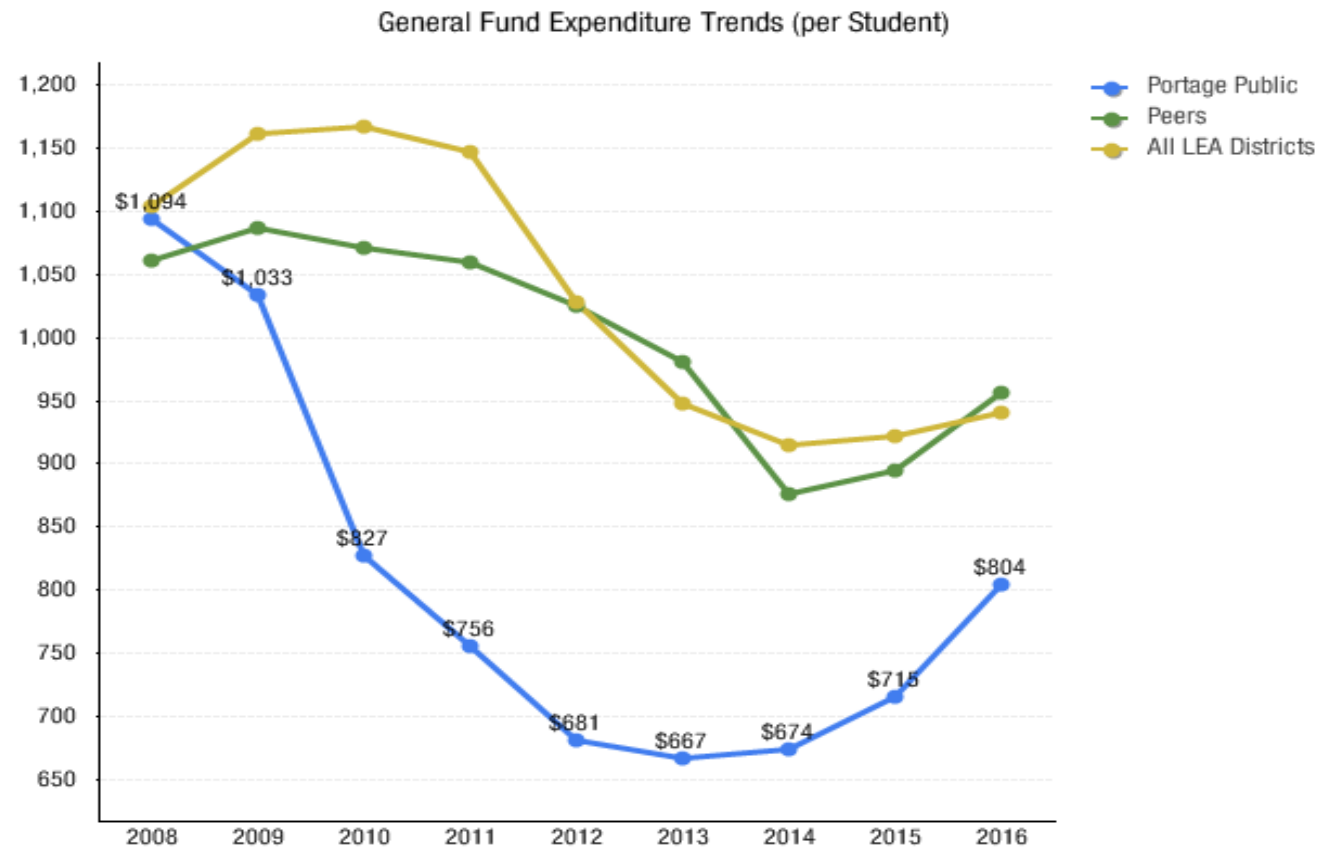
# Health Care

## Total Cost



# Health Care

## Per Pupil - Trend



# Health Care

Per Pupil - Trend

Object Name	Portage			Peers	
	\$\$	% - GF	\$\$ PP	% - GF	\$\$ PP
2100 Employee Insurance	\$6,940,799	8.1%	\$804	9.8%	\$956

# MDT Early Warning

## Fiscal Stress

- Fiscal Stress
- 5% threshold
- MDT trend forecast

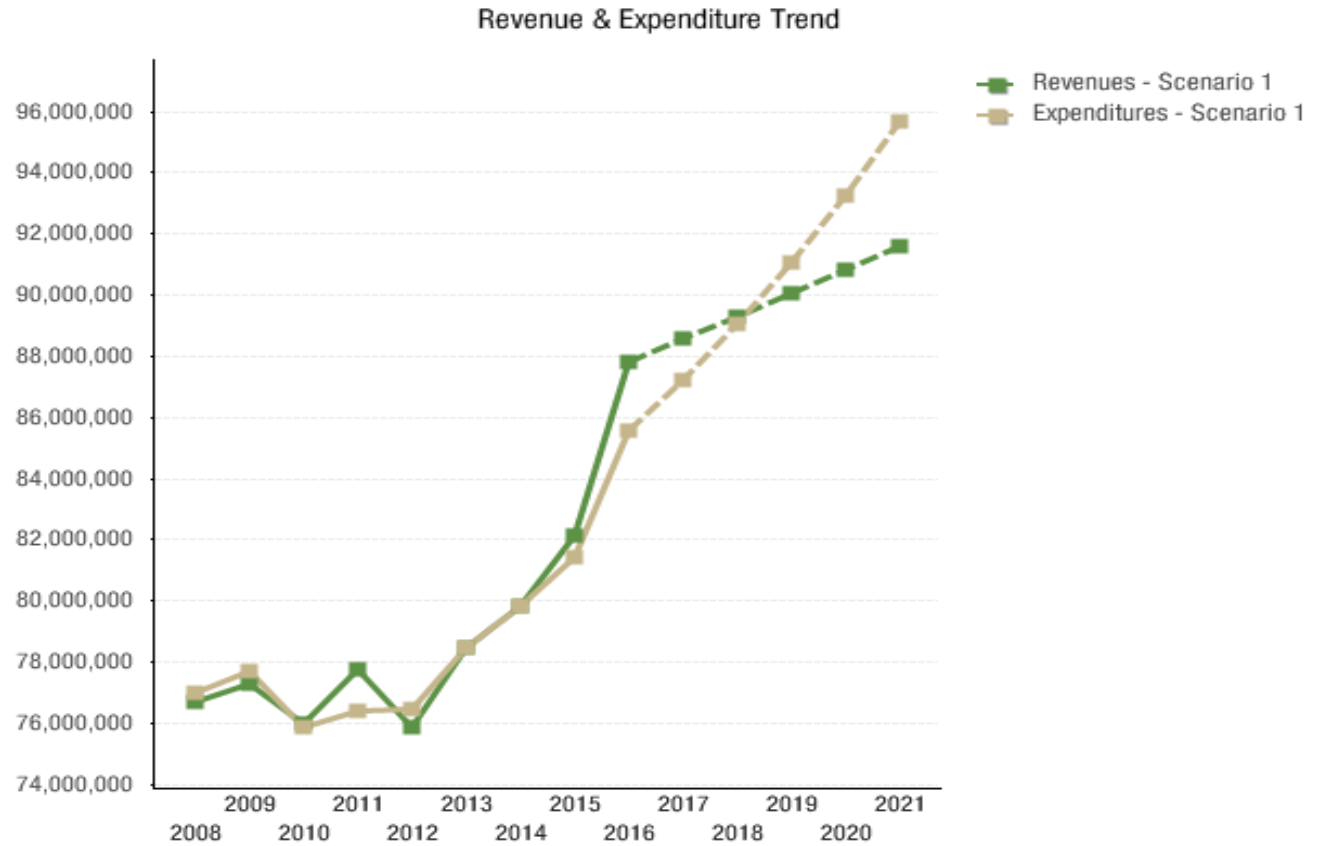
# Forecast

## Scenario Planning

- Impact – Multi year
- Basic Assumptions
  - Enrollment
  - FA Per Pupil
  - Employee costs
    - Salaries – Base + Step increase
    - Employee benefits

# Forecast

## Trend Lines



# Summary

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- Data selection
- Context
  - Multi-year trends
  - Peer comparison
- Focus – Not Focus
- Messaging

# Contact Eidex

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