Financial Management Strategies and Data Driven Decision Making

FORECASTING DEMAND/PLANNING

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Baldwin County

Forecasting, Planning, and Asset Replacement Schedule

- An asset management plan defines the activities that will be implemented and the resources that will be applied towards meeting the asset management objectives and the board overall objectives.

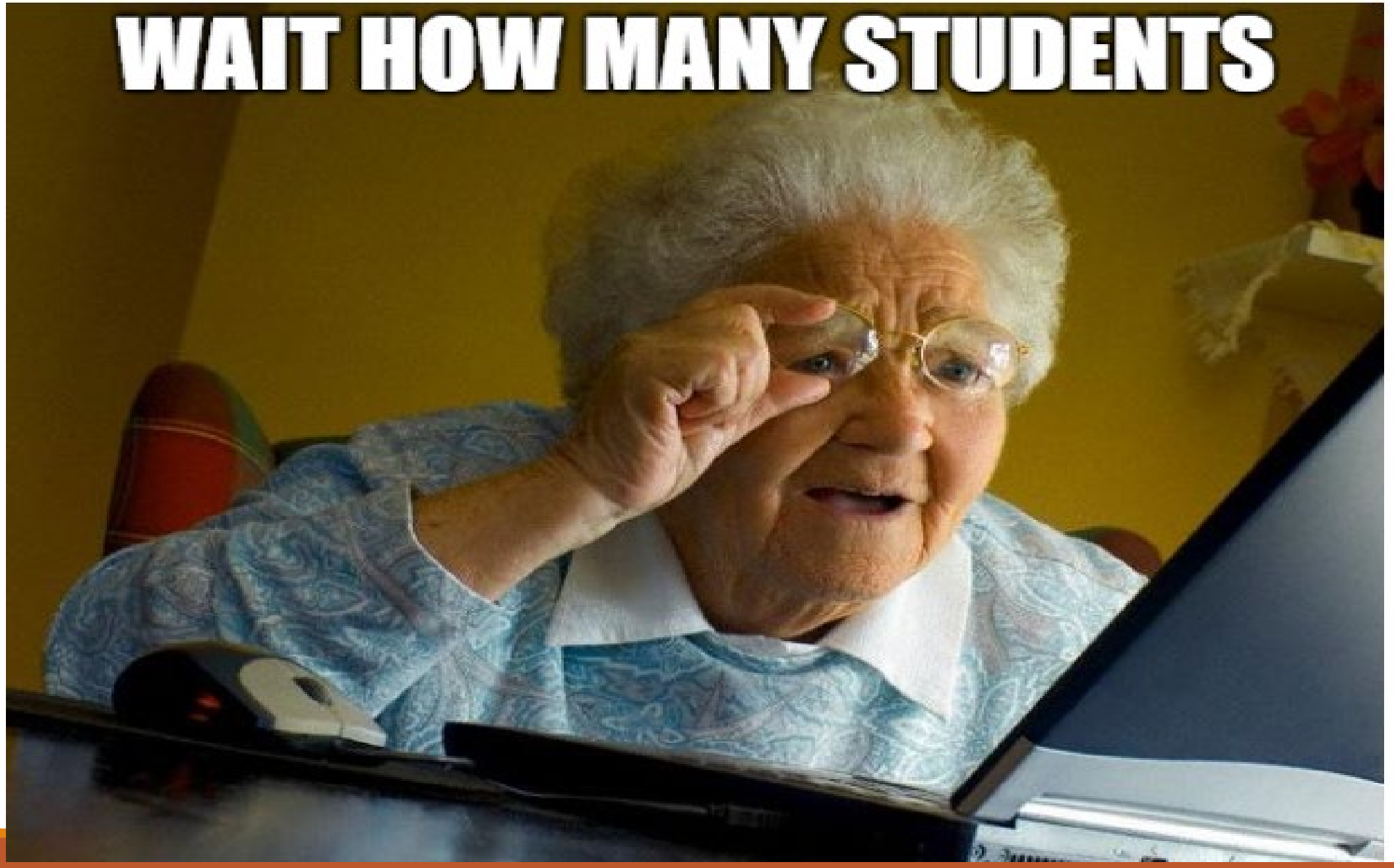
- As a basic rule, all boards should adopt policies that direct all assets will be maintained at a level that protects capital investment and minimizes future maintenance and replacement cost.

Board Objectives and Strategic Prorities

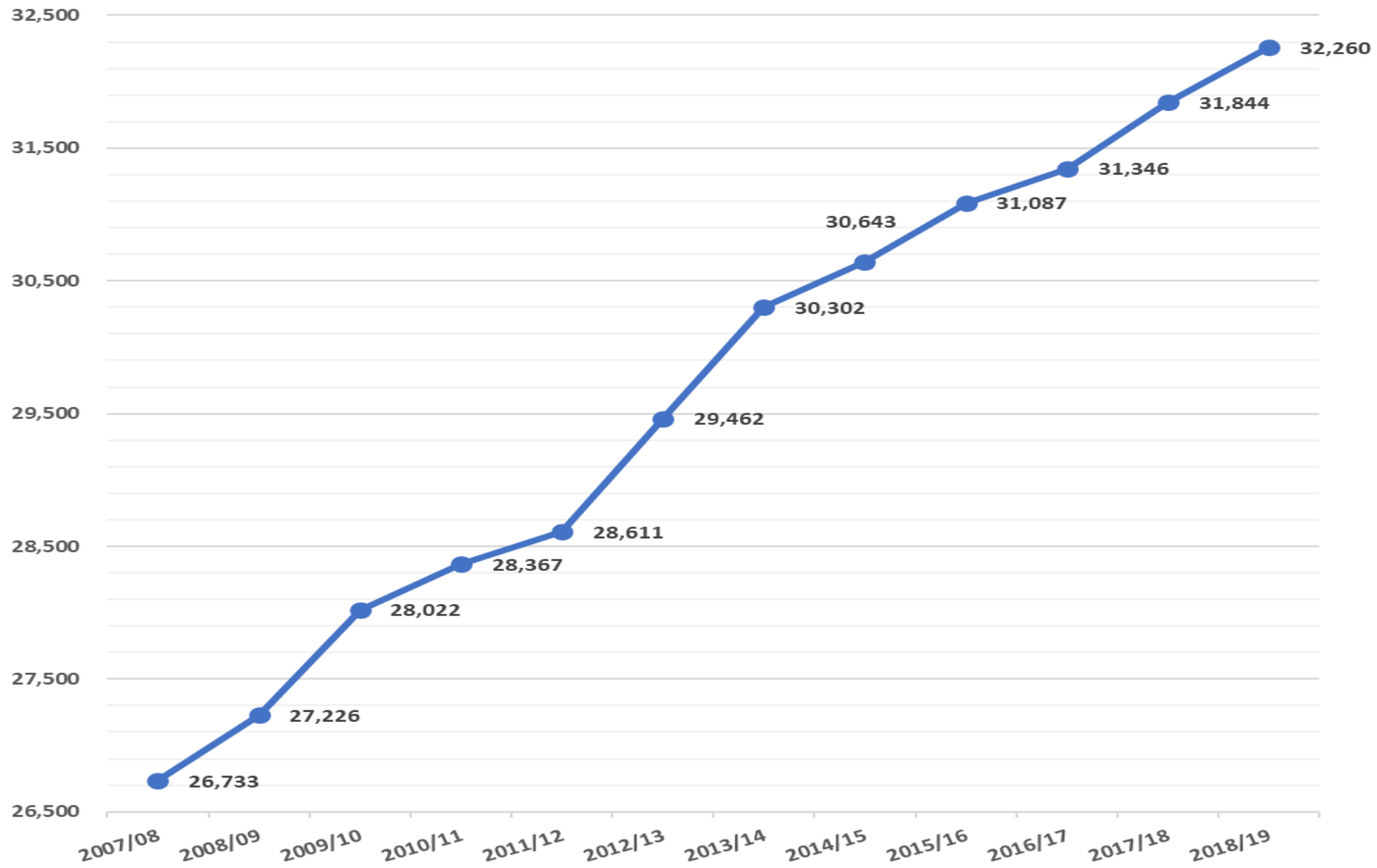
1) The system ensures leader and teacher effectiveness and student learning across all grades and courses.
2) The system implements a comprehensive assessment system that generates a range of data and student learning and system effectiveness and uses the results to guide continuous academic improvement.
3) The system leadership, staff, and community maintain and communicate a culture of high expectations for learning as well as shared values and beliefs.
4) The system maintains facilities, services, and equipment to provide a safe, clean, and healthy environment for all students and staff.

Forecasting Assets With Future Demand

- The underlying driver of future demand in Baldwin County is forecasting student growth.
- Factoring in Pre-K through 12th Grade; Baldwin County saw an increase of 5,527 students since 2007/2008 school year.
- That represents a 21% increase in Student Enrollment.


WAIT HOW MANY STUDENTS

BCBE Student Growth



Forecasting Demand

- A huge factor in asset management is forecasting demand.
- Student Enrollment directly impacts demand for all asset classes.
- Facilities, School Buses, Furniture, Textbooks, Computers, Food Cost etc.

What Do We Use To Try To Get Out In Front of This Growth.

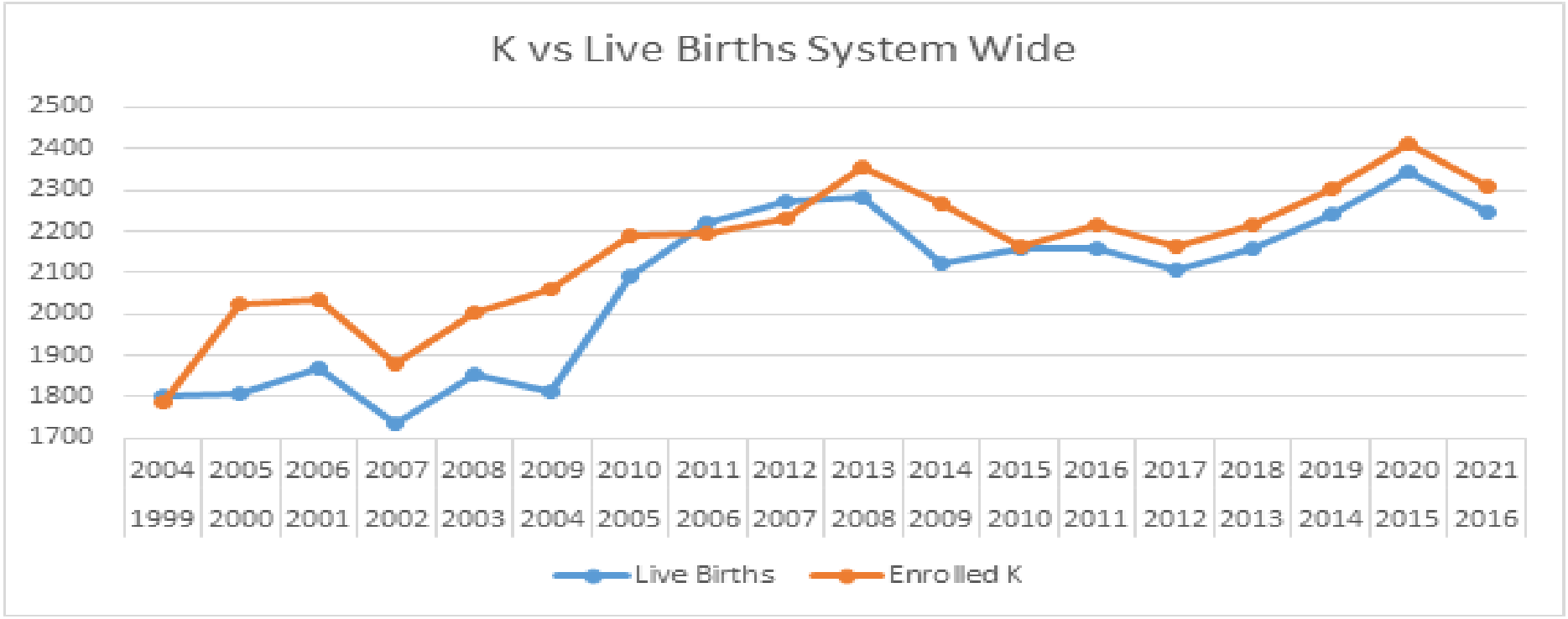
- Two different methods we use for forecasting student growth or declines in certain areas.
- Cohort (grade survivability) method is tied to reported enrollment by each school.
- SchoolSite Projections (commercial extension to our GIS ArcGIS software) method inputs housing and student point location data into the calculation.
- Cohort and SchoolSite projections are done for each school which rolls up into each feeder pattern and the District as a whole.

How Cohort Projections Are Done

- Cohort Projection are not just useful for projecting student growth but also for projecting student declines per school.
- How the projections are done:
  - Birth data is used to project the kindergarten class.
  - Student enrollment data (ADM) is used to determine cohort factors for grade survivability.
    - A factor is generated for each grade except kindergarten.
    - Then the cohort factor is applied for each grade to yield a projection.

County Birth Data

- Alabama Department of Public Health Can Provide Birth Data by Zip Code.



Example of How to Compute Cohort Projections

	SPANISH FORT ELEMENTARY SCHOOL	RPT_PERIOD	PreK	GR0	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8	GR9	GR10	GR11	GR12	REPORTED ENROLLMENT K-5	ENROLLMENT NET	PROJECTED COHORT K-5	PROJCOHORT ERROR	% COHORT ERROR	3Yr Moving Avg Enrollment
1019		0-22	21	115	123	147	131	131	135										782			
1020		0-21	21	115	146	124	123	130	118										756			
1021		0-20	21	137	123	116	122	114	125										737			
1022		0-19	21	115	115	115	107	121	125										698			
1023		0-18	21	108	114	101	113	121	128										685			
1024		0-17	21	107	100	107	113	124	125								676	-12	681	5	0.71%	
1025		0-16	26	97	113	104	118	124	132								688	18	675	-13	1.94%	682
1026		0-15	7	101	101	107	105	125	131								670	-19	669	-1	0.13%	693
1027		0-14	7	95	103	108	124	125	134								689	-32	691	2	0.29%	709
1028		0-13	5	97	106	121	121	130	146								721	5	713	-8	1.11%	723
1029		0-12	6	100	106	113	128	137	132								716	-15	698	-18	2.46%	729
1037					1.07	1.01	1.06	1.07	1.04													

124 x 1.04= 128 (Fifth Grade Projection)

Cohort Projection Rate

Difference between Projection and Actual Enrollment

Cohort Rate factors in the "survivor rate" (for example how many kids from 1st Grade make it to 2nd Grade factoring in students that move in and out). Above 1.00 represents growth; below 1.00 represents a decline grade over grade

Averaging around a 1% Margin of Error

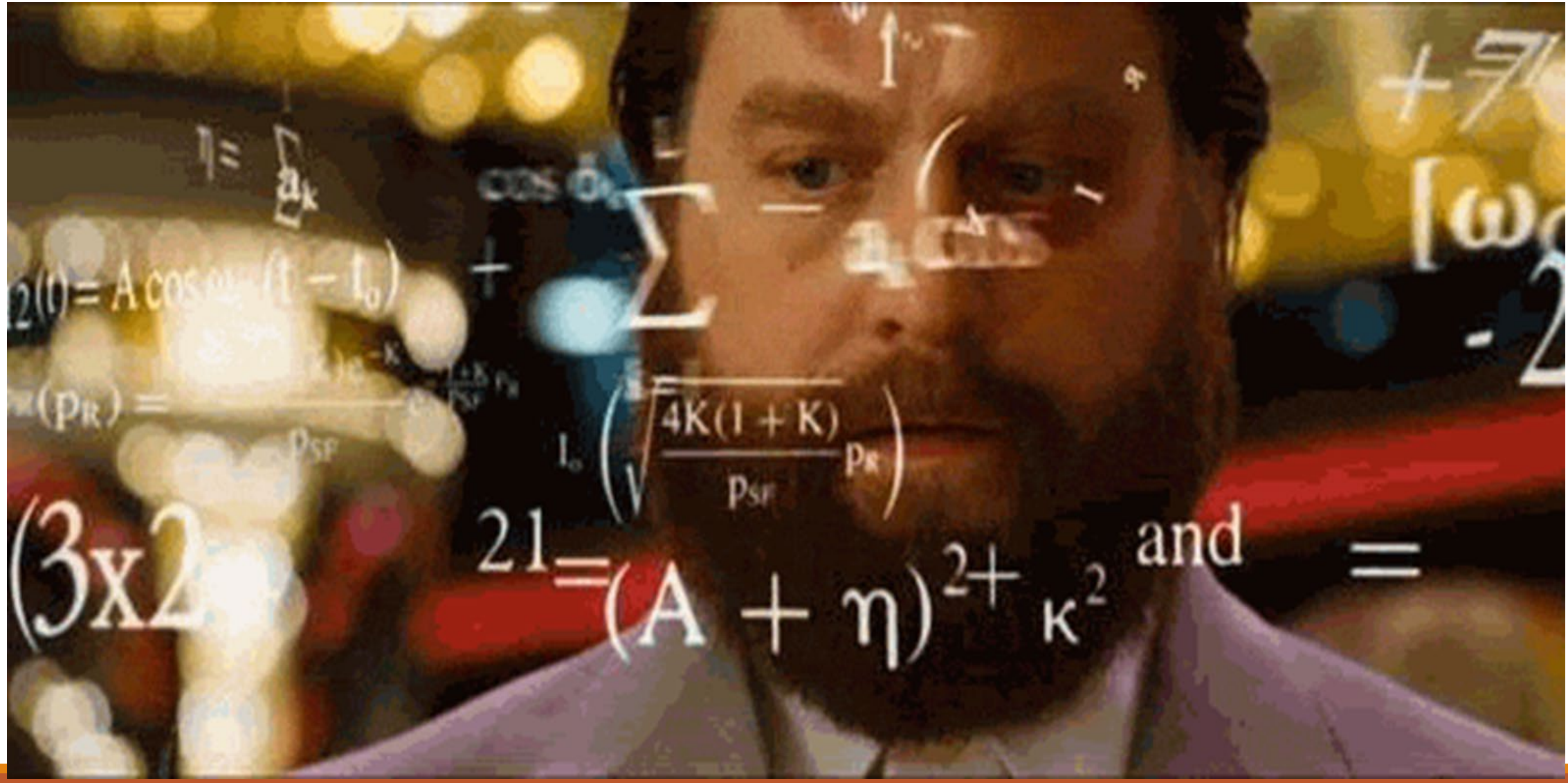
These cohort figures are extrapolated up from Kindergarten all the way to High School by grade, school, feeder pattern, and district.

How to Calculate The Cohort Factor

	SPANISH FORT ELEMENTARY SCHOOL	RPT_PERIOD	PreK	GR0	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8	GR9	GR10	GR11	GR12	ENROLLMENT K-
1019		O-22	21	115	123	147	131	131	135								
1020		O-21	21	115	146	124	123	130	118								
1021		O-20	21	137	123	116	122	114	125								
1022		O-19	21	115	115	115	107	121	125								
1023		O-18	21	108	114	101	113	121	128								
1024		O-17	21	107	100	107	113	124	125								6
1025		O-16	26	97	113	104	118	124	132								6
1026		O-15	7	101	101	107	105	125	131								6
1027		O-14	7	95	103	108	124	125	134								6
1028		O-13	5	97	106	121	121	130	146								7
1029		O-12	6	100	106	113	128	137	132								7
1037					=((E1024*5+E1025*4+E1026*3+E1027*2+E1028*1)/15)/((D1025*5+D1026*4+D1027*3+D1028*2+D1029*1)/15)												

Calculated using a 5 year exponential moving average, which is just a weighted average that give more weighting or importance to recent enrollment data than a simple moving average does.

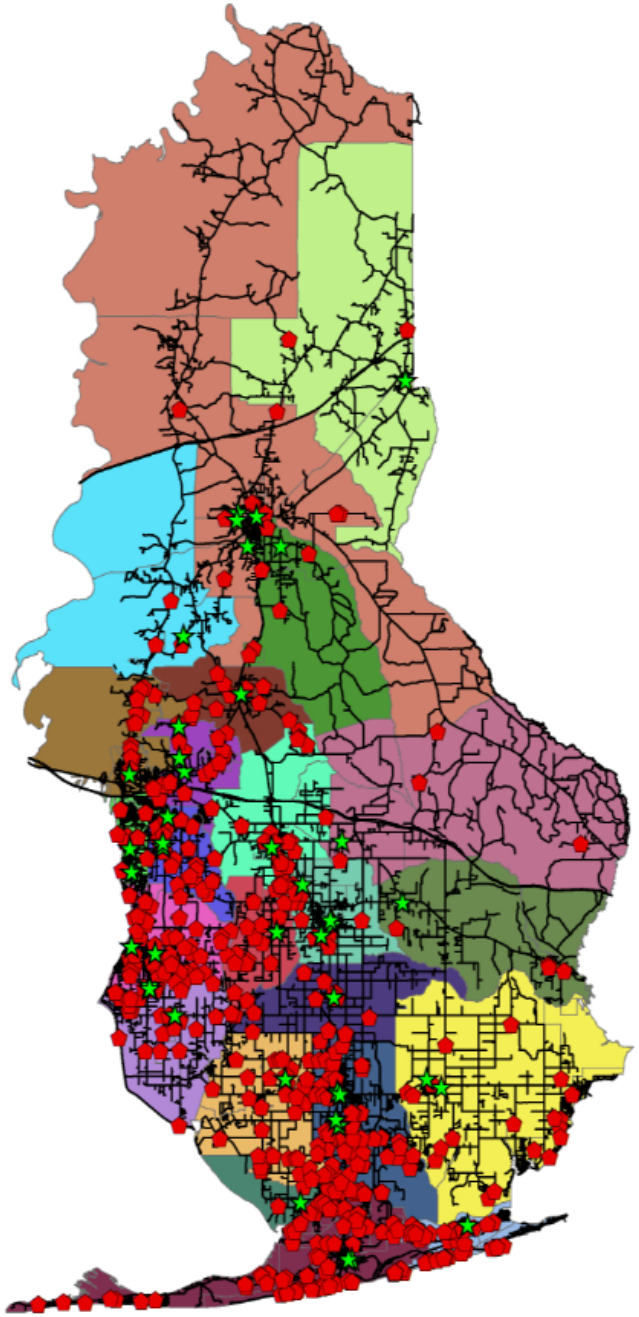
Let Excel To The Math



	BCBE SYSTEM WIDE	RPT_PERIOD	PreK	GR0	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8	GR9	GR10	GR11	GR12	REPORTED ENROLLMENT K-12	ENROLLMENT NET	PROJECTED COHORT K-12	PROJCOHORT ERROR	% COHORT ERROR	3Yr Moving Avg Enrollment
1083		O-22	1,005	2,511	2,486	2,629	2,536	2,478	2,473	2,500	2,529	2,623	2,808	2,485	2,397	2,350			32,804			
1084		O-21	970	2,390	2,623	2,480	2,430	2,427	2,469	2,457	2,613	2,716	2,600	2,487	2,427	2,185			32,304			
1085		O-20	925	2,522	2,475	2,377	2,380	2,423	2,426	2,539	2,706	2,514	2,602	2,519	2,257	2,102			31,842			
1086		O-19	908	2,379	2,372	2,328	2,376	2,381	2,507	2,629	2,504	2,517	2,636	2,342	2,172	2,137			31,280			
1087		O-18	853	2,280	2,323	2,324	2,335	2,461	2,596	2,433	2,507	2,549	2,450	2,254	2,208	2,291			31,011			
1088		O-17	818	2,233	2,319	2,284	2,413	2,548	2,403	2,436	2,539	2,370	2,358	2,291	2,367	2,172	30,733	223	30,732	-1	0.00%	30,501
1089		O-16	820	2,218	2,250	2,328	2,483	2,355	2,414	2,455	2,354	2,364	2,420	2,456	2,278	2,135	30,510	250	30,583	73	0.24%	30,239
1090	Done	O-15	708	2,168	2,359	2,443	2,328	2,376	2,403	2,300	2,366	2,308	2,541	2,364	2,204	2,152	30,260	313	30,384	124	0.41%	29,961
1091		O-14	750	2,266	2,434	2,296	2,333	2,352	2,275	2,303	2,287	2,384	2,408	2,288	2,228	2,093	29,947	271	30,299	352	1.18%	29,518
1092		O-13	626	2,357	2,315	2,296	2,313	2,262	2,298	2,222	2,395	2,349	2,418	2,300	2,102	2,049	29,676	744	30,129	453	1.53%	28,905
1093		O-12	530	2,233	2,257	2,277	2,202	2,208	2,179	2,324	2,322	2,233	2,556	2,203	2,058	1,880	28,932	826	28,566	-366	1.27%	28,274
1094		O-11	505	2,194	2,260	2,132	2,152	2,127	2,302	2,081	2,208	2,256	2,542	2,184	1,823	1,845	28,106	323	28,422	316	1.12%	27,800
1095		O-10	584	2,190	2,135	2,121	2,100	2,290	2,193	2,143	2,216	2,146	2,454	2,063	1,854	1,878	27,783	272	28,082	299	1.08%	27,357
1096		O-09	511	2,063	2,091	2,071	2,287	2,175	2,121	2,191	2,195	2,241	2,268	2,058	1,937	1,813	27,511	734	27,184	-327	1.19%	26,884
1097		O-08	449	2,006	2,018	2,126	2,106	2,078	2,164	2,105	2,180	2,092	2,312	2,110	1,822	1,658	26,777	413	26,360	-417	1.56%	26,400
1098		O-07	369	1,882	2,147	2,053	1,996	2,085	2,053	2,075	2,083	2,104	2,389	2,032	1,820	1,645	26,364	306				26,030
1099		O-06	331	2,035	2,055	1,980	2,065	2,014	2,045	1,996	2,115	2,108	2,394	1,978	1,769	1,504	26,058	391				25,445
1100		O-05	285	2,026	1,942	2,009	1,978	2,001	1,935	2,061	2,136	2,091	2,347	1,962	1,668	1,511	25,667	1,057				24,773
1101		O-04	155	1,788	1,924	1,852	1,877	1,864	1,932	2,031	2,088	2,085	2,129	1,882	1,652	1,506	24,610	569				24,038
1102		O-03	101	1,813	1,824	1,827	1,789	1,856	1,900	2,001	2,083	1,984	2,184	1,801	1,590	1,389	24,041	578		2280	2379	23,512
1103		O-02	90	1,722	1,777	1,673	1,799	1,839	1,902	1,976	2,037	1,877	2,184	1,731	1,549	1,397	23,463	430				23,055
1104		O-01	74	1,704	1,690	1,751	1,824	1,829	1,873	1,964	1,921	1,837	2,121	1,705	1,539	1,275	23,033	363				
1105		O-00	78	1,624	1,798	1,767	1,813	1,856	1,883	1,811	1,867	1,839	2,060	1,705	1,467	1,180	22,670					
1106					1.04	1.00	1.02	1.02	1.02	1.01	1.03	1.00	1.03	0.96	0.96	0.97						

School Site Projections

- This is an add on component to our existing GIS software through an subscription to Market Graphics.
- We track all approved subdivisions through Market Graphics which provide quarterly updates.
- This allows us to take updated housing data and implement into our projections.
- Once student addresses are mapped within the system this helps to provide data for calculating an estimated student yield factor per house for certain areas in the county.
- This data is also critical when evaluating rezoning options.
- This data is an important factor for growing systems, in our situation it is pretty overwhelming.



FR W2 Bay
141 Subs
17,285 Total Lots/5,500 Occ

STHWY 181 W2 FR
74 Subs
7,017 Total Lots/1,457 Occ

215 Total Subs, 24,302 Total Lots

Every red dot represents a new approved subdivision.

A red dot can represent a planned subdivision ranging from 10 homes to over 1,200 new homes.

215 subdivisions, 24,302 lots approved with only 6,957 currently occupied

Planning

Our student enrollment projections represents the underlying document that drives many of our countywide decisions.

Planning

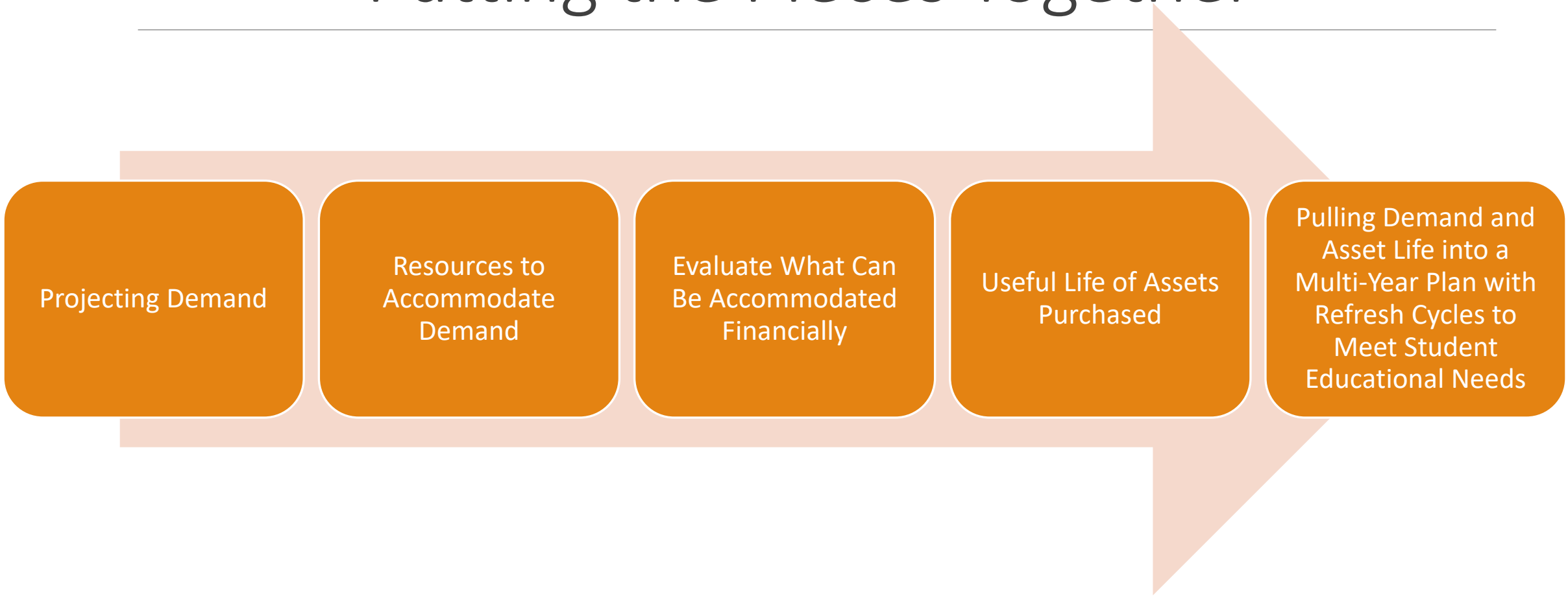
- You can create an estimate for what schools you need to prepare additional resources for.
- Everything from Class size Reduction Units, Computers, Furniture, School Buses, Textbooks, CNP purchases, Portable Classrooms, etc.
- Its better to be over prepared than to be surprised when school starts.
- Use it as a budget tool to be ready.

Useful Life of an Asset

Once demand is projected. In most cases follow your useful life estimates for depreciation purposes.

CATEGORY	DESCRIPTION	USEFUL LIFE (yrs)
Machinery and Equipment	Books and Multimedia Materials	5
Machinery and Equipment	Computer Equipment	5
Licensed Vehicles	General Automobile	8
Machinery and Equipment	Science and Engineering Equipment	10
Machinery and Equipment	Audiovisual Equipment	10
Machinery and Equipment	Athletic Equipment	10
Machinery and Equipment	Grounds and Maintenance Equipment	15
Land Improvements	Fencing	20
Machinery and Equipment	Playground Structures	20

Putting the Pieces Together



Questions??