Enrollment Projections for ORCSD, 2010-2020

Long Range Planning Committee

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Summary of LRPC Goals

- Provide the School Board with enrollment projections for each of the next 10 years.
- Make every effort to provide projections for the following school year in the fall when they can be used in the budgeting process.
- Continually improve and refine the model used to make enrollment projections.

Methodology

- Multiple linear regression equations based on historical births and enrollment trends are used to project students in kindergarten and grade 1.

- Grade Progression Ratios are used to forecast the number of students in grades 2 through 12.

Projections for Grades 2-12

- Calculate GPR's for each grade and year
- Find the 5 year average GPR for each grade.
- Apply 5-year average GPR's to actual and predicted enrollments to predict enrollments into the future.
- Takes into account the net migration (in-migration and out-migration) over time and by grade (different GPR for each grade).

What is a "Grade Progression Ratio?"

Number of students in grade J and year t

\+ Add students who move to ORSD in grade J+1 and year t+1

\- Subtract students who leave ORSD before grade J+1 and year t+1

= Number of students in grade J+1 and year t+1

A numerical example:

200 students in 5th grade in 2009

+ 10 new students join ORSD at the 6th grade for 2010

-15 students leave ORSD before 6th grade in 2010

= 195 students in 6th grade in 2010

GPR (5th to 6th = 195/200 = .975

Recent Innovations

- Model rewritten and simplified in 2009-2010.
- HS tuition students, a growing component of enrollment, now included in the model's enrollment estimates.
- Separate enrollment estimates for Mast Way and Moharimet schools also are provided.

Elementary School Split

- Historical ratios used to estimate Kindergarten split between the schools
- District-wide GPR used to project grades 2-4 based on projections for grades 1-3 at each school

How Accurate Are the Projections?

- Backcasting (running today's model against historical data to "predict" historical enrollment) shows the model to be highly accurate in the near term with average error of estimate less than 2% one year out.
- The average error of estimate increases as we project further out in time, reaching about 10% when projecting ten years into the future.

The Projections

Old Model Enrollment Projections For Oyster River School District 2010 Actual to 2020 Projected

Year	K	1-4	5-8	9-12	Total	Average Absolute Error of Estimate Percent Error To Total	
2010-11	128	608	628	675	2039	Actual Year	
2011-12	110	629	622	668	2028	One Year Out	1.6%
2012-13	114	617	643	672	2047	Two Years Out	2.8%
2013-14	104	587	647	678	2016	Three Years Out	3.2%
2014-15	104	566	654	678	2002	Four Years Out	3.4%
2015-16	96	524	677	670	1967	Five Years Out	4.0%
2016-17	93	498	664	694	1948	Six Years Out	4.5%
2017-18	90	485	632	698	1904	Seven Years Out	5.7%
2018-19	88	462	610	706	1865	Eight Years Out	7.0%
2019-20	86	453	564	730	1833	Nine Years Out	8.5%
2020-21	85	438	535	716	1775	Ten Years Out	9.5%

Highlights: Current to 2020-21

(1) Total enrollment drops by about 250 or 12% over 10 years.

(2) High School enrollment actually increases, due to tuition students, reaching over 700, from 675 now.

(3) Middle School enrollment declines by 93.

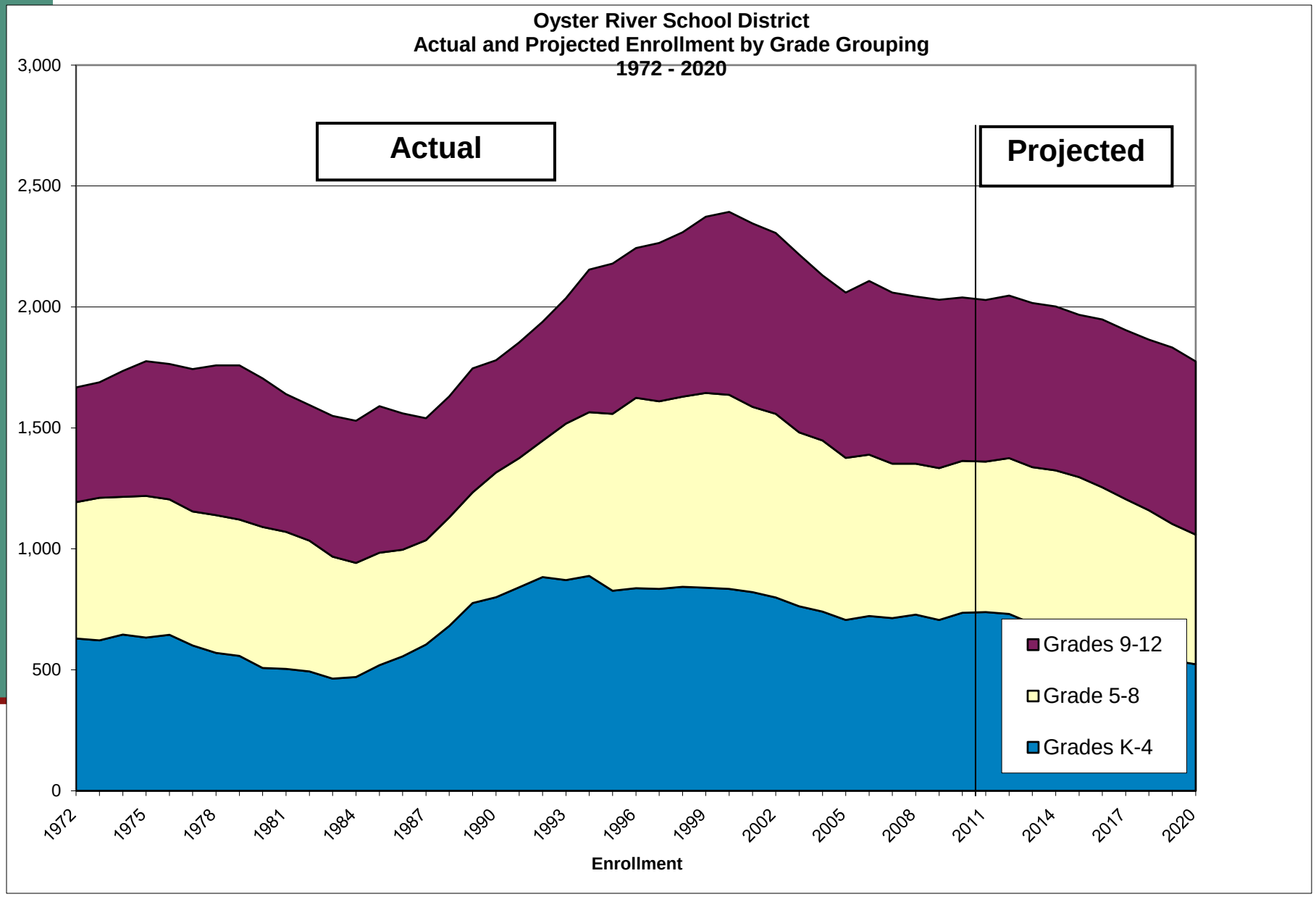
(4) Elementary school enrollment declines by about 200 students over 10 years.

HS Tuition Students in Projection

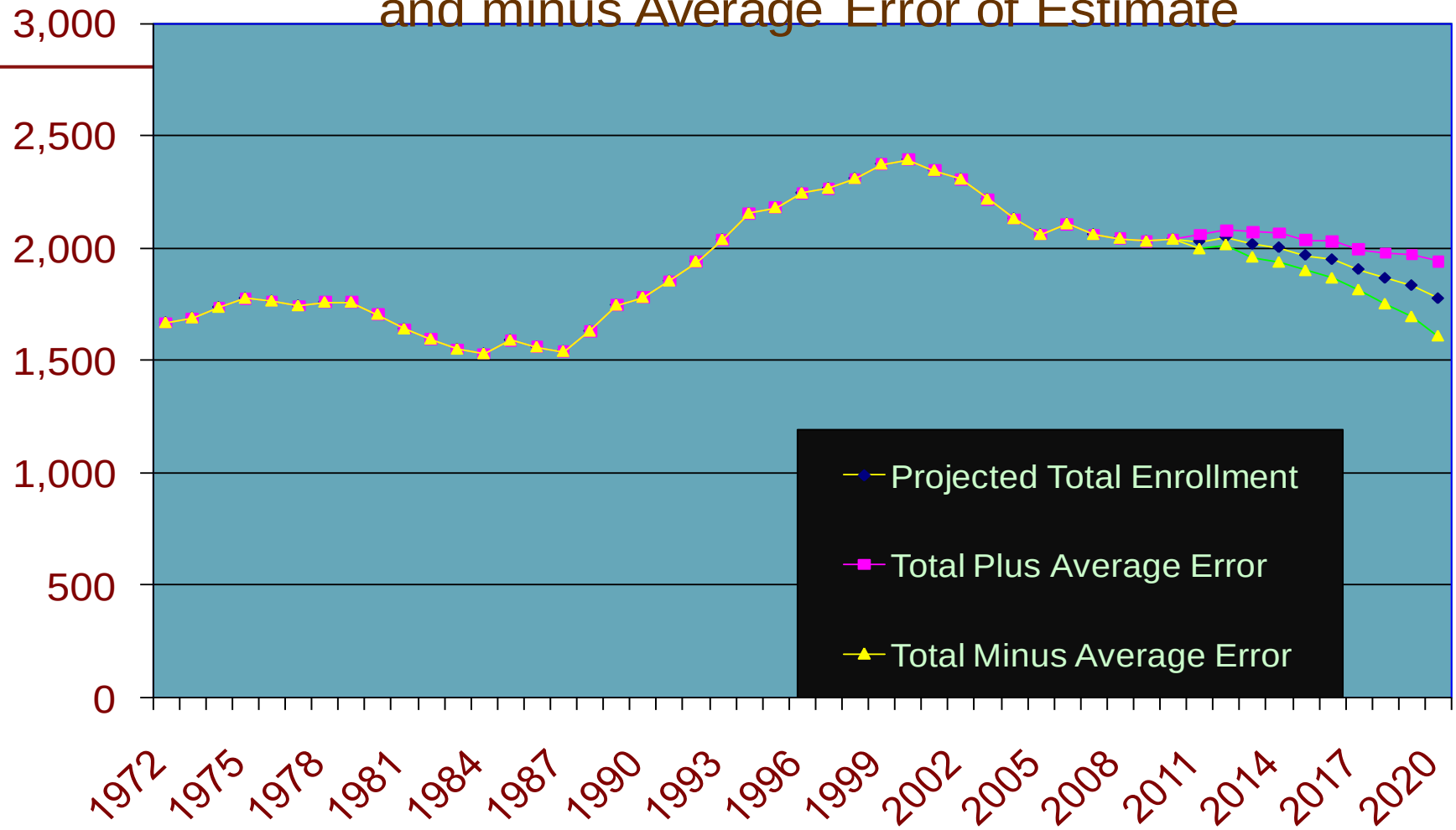
Year	Grade 9	Grade 10	Grade 11	Grade 12	Total		HS Total Without Tuition
2010	12	8	7	5	32		643
2011	11	13	8	7	39		629
2012	11	12	12	8	43		629
2013	12	11	12	13	48		630
2014	11	13	11	12	47		630
2015	11	12	12	11	46		624
2016	12	12	11	12	47		646
2017	12	13	11	13	49		649
2018	12	13	12	12	49		657
2019	12	12	12	14	50		679
2020	11	13	12	13	49		667

Elementary School Projections

	Mast Way Projections						Moharimet Projections						
													Total
	K	1	2	3	4	Total	K	1	2	3	4	Total	Both
2010-11	67	66	86	67	69	355	61	83	71	94	72	381	736
2011-12	53	75	68	88	67	351	57	79	86	72	94	388	739
2012-13	55	69	77	70	88	359	59	72	81	88	72	372	731
2013-14	50	59	71	79	70	329	54	62	75	83	88	362	691
2014-15	50	63	61	73	79	326	53	66	65	77	83	344	670
2015-16	46	55	65	63	73	302	50	58	69	66	76	319	621
2016-17	45	56	57	66	63	287	48	59	60	70	66	303	590
2017-18	43	53	58	58	66	278	46	56	61	61	70	294	572
2018-19	42	52	55	60	58	267	45	55	58	63	61	282	549
2019-20	42	51	54	56	60	263	44	53	57	59	63	276	539
2020-21	41	50	52	55	56	254	44	52	55	58	59	268	522


Oyster River School District
Actual and Projected Enrollment by Grade Grouping
1972 - 2020
Actual
Projected
3,000
2,500
2,000
1,500
1,000
500
0
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
Enrollment
Grades 9-12
Grade 5-8
Grades K-4

Actual and Projected Enrollment plus and minus Average Error of Estimate



Declining Enrollment Predicted in Statewide Studies

NH Center for Public Policy

"The population that is school-aged…is now expected to level off and decline slightly by 2020."

Western Interstate Commission for Higher Education

"The state's number of graduates will grow through 2007-08 before beginning a sustained and substantial decline…"

New Hampshire Housing study prepared by Applied Economic Research in Laconia

"Communities not adding many new housing units will likely see declining enrollment in the coming years"

Summary

- **Total ORCSD enrollments projected to decline significantly, by about 250 students over 10 years.**
- **Overcrowding at the elementary schools will ease, with each school's enrollment dropping by about 100 over 10 years.**
- **Middle school enrollment, now 628 is projected to rise and then drop but remain within the range of 530 to 670 throughout the projection period.**
- **High School enrollment will rise to over 700 as the current large cohorts in middle and elementary school move through and tuition students make up for any gaps.**