

# Enrollment Projections for ORCSD, 2019-2030

## Long Range Planning Committee

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# Summary of LRPC Goals

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- 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.

# Enrollment Will Decline

(Tuition Students Will Not Rise to Offset The Decline)

- Peak enrollment was 2,393 in 2000.
- 2019-20 enrollment is 2,173.
  - (2,003 plus 170 tuition students).
- *Decline over 19 years was 220.*
- **Projected 2029-30 with Barrington tuition students 1,915 (1,758 plus 157 tuition).**
- *Projected ten year decline of 245 native students and 13 tuition students.*

# Methodology

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- First Grade

Historical births and enrollment trends are used to project the number of students (using linear regression).

- Grades 2 – 12

Grade Progression Ratios (GPRs) are used to forecast the number of students.

# First Grade Methodology

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- Linear Regression Model coefficients updated annually.
- Primary independent variable is births 6 years prior.
- Some autocorrelation components.
- Looking at other independent variables:
  - Employment
  - Real Estate transactions

# Kindergarten Methodology

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- Forecasting methodology is transitional because there are not enough years of full day Kindergarten to use as basis of prediction. (Full day K began in 2016.)
- First Grade forecasts are the starting point.
- Grade Progression Ratios are used to estimate kindergarten enrollment based on forecast for the following year's first grade.

# Projections for Grades 2-12

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- Calculate GPR's for each grade and year.
- Find the 5-year average GPR by grade.
- Apply average GPRs 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.

# 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:

159 students in 6<sup>th</sup> grade in October 2017

+ 6 new students join ORSD who will be in 7<sup>th</sup> grade for 2018

-4 students leave ORSD before 7<sup>th</sup> grade

Net change is +2 students

= 161 students in 7<sup>th</sup> grade in 2018

GPR (6<sup>th</sup> to 7<sup>th</sup> =  $161/159 = 1.0125$ )



# GPRs Account for Net New Students

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- More families with children moving in than moving out. (5 year average used)
- All GPRs for grades 2-12 are in the range of 1.00 – 1.05 except grade 8-9, 9-10 and 10-11, which are impacted by tuition students coming in and native students going to private schools. High School GPR very close to 1.00.

# Elementary School Split

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- Historical ratios (four year average) used to estimate First Grade split between the schools. (54.7% Mast Way, 45.3% Moharimet)
- GPR for each elementary is used to project grades 2-4 based on projections for prior year grades 1-3 at that school.
- Different GPRs used for Moharimet and Mast Way.

# Projection Range (Plus and Minus)

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- Historical LRPC Projections 1994 – 2019 (25 years of forecasts, each predicting 10 future years).
- Take the difference between Predicted and Actual Enrollment for each predicted year.
- Take the absolute value of the difference and divide by the actual enrollment figure to get a percentage.
- Find the average percentage difference for each forecast horizon (1 to 10 years out).

# The Projections



**Enrollment Projections Summary  
For Oyster River School District  
Preliminary October 1, 2019-20 Actual to 2029-30 Projected**

<u>Year</u>	<u>K</u>	<u>1-4</u>	<u>5-8</u>	<u>9-12</u>	<u>Total</u>	Average Absolute Error of Estimate		<u>HS Without</u>	<u>Total Without</u>
						<u>Percent Error +/-</u>	<u>To Total</u>		
2019-20	120	551	665	837	2,173	<b>Actual Year</b>		667	2,003
2020-21	96	545	667	829	2,136	One Year Out	1.6%	656	1,963
2021-22	110	515	652	837	2,115	Two Years Out	2.5%	669	1,947
2022-23	101	491	667	816	2,076	Three Years Out	3.6%	661	1,921
2023-24	111	503	627	813	2,055	Four Years Out	5.3%	656	1,898
2024-25	106	495	621	815	2,038	Five Years Out	6.9%	658	1,881
2025-26	110	505	586	801	2,002	Six Years Out	8.2%	644	1,845
2026-27	107	501	562	817	1,986	Seven Years Out	9.6%	659	1,829
2027-28	108	506	574	775	1,963	Eight Years Out	10.4%	618	1,806
2028-29	105	501	566	769	1,942	Nine Years Out	11.3%	612	1,785
2029-30	103	501	576	736	1,915	Ten Years Out	12.5%	579	1,758

# Elementary School Projections

ACTUAL	Mast Way Projections						Moharimet Projections						Total
	K	1	2	3	4	Total	K	1	2	3	4	Total	
2017-18	70	72	76	63	71	352	49	63	64	86	81	343	695
2018-19	51	84	82	82	66	365	41	54	65	66	90	316	681
2019-20	64	53	87	80	89	373	56	48	63	69	62	298	671
2020-21	53	69	58	90	86	355	42	57	50	66	70	285	640
2021-22	62	58	75	60	96	350	49	48	60	53	66	275	626
2022-23	56	66	63	77	64	327	45	55	50	62	53	265	592
2023-24	62	60	72	65	83	342	49	50	58	53	63	272	614
2024-25	59	66	65	75	70	335	47	54	52	60	53	267	602
2025-26	62	62	71	68	80	343	49	52	57	55	61	272	615
2026-27	60	65	68	74	72	338	47	53	54	59	55	269	607
2027-28	60	63	70	70	79	342	48	52	56	56	60	272	614
2028-29	59	63	68	73	75	338	46	52	54	59	57	269	607
2029-30	57	62	69	70	78	336	45	51	55	57	59	267	603

# Middle School Projections

Year	Fifth	Sixth	Seventh	Eighth	Total
2019	162	159	183	161	665
2020	157	167	160	182	667
2021	162	162	168	160	652
2022	169	167	164	168	667
2023	122	175	168	163	627
2024	152	125	176	167	621
2025	128	156	127	175	586
2026	146	132	158	126	562
2027	133	151	133	157	574
2028	145	137	152	133	566
2029	137	149	138	151	576

# HS Tuition Students in Projection

Year	9th	10th	11th	12th	Total Tuition
2019	38	52	44	36	170
2020	40	37	51	45	173
2021	40	39	36	52	168
2022	40	39	38	37	155
2023	40	39	38	39	157
2024	40	39	38	39	157
2025	40	39	38	39	157
2026	40	39	38	39	157
2027	40	39	38	39	157
2028	40	39	38	39	157
2029	40	39	38	39	157



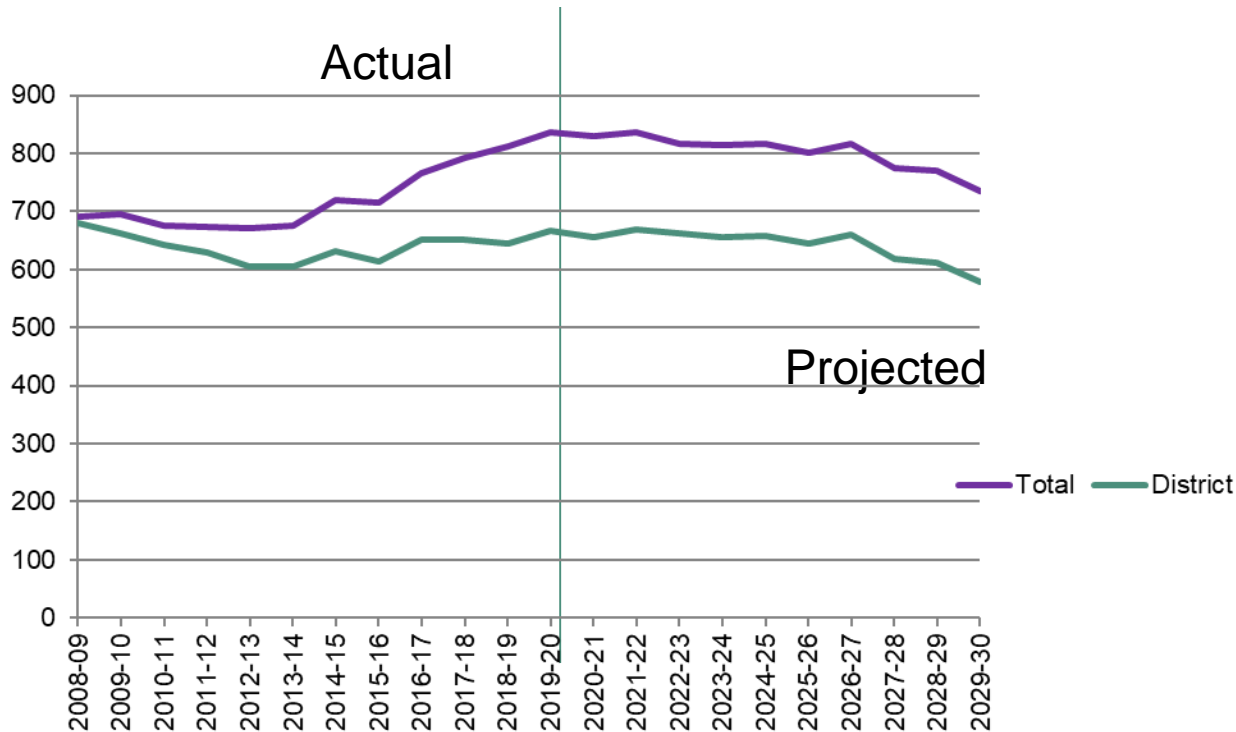
# HS Enrollment From District

Year	9th	10th	11th	12th	Total District
2019	172	165	161	169	667
2020	161	169	160	165	656
2021	182	158	165	164	669
2022	159	179	154	169	661
2023	167	157	174	158	656
2024	162	165	153	179	658
2025	167	160	160	156	644
2026	175	165	156	164	659
2027	126	172	160	160	618
2028	157	124	168	164	612
2029	132	154	120	172	579

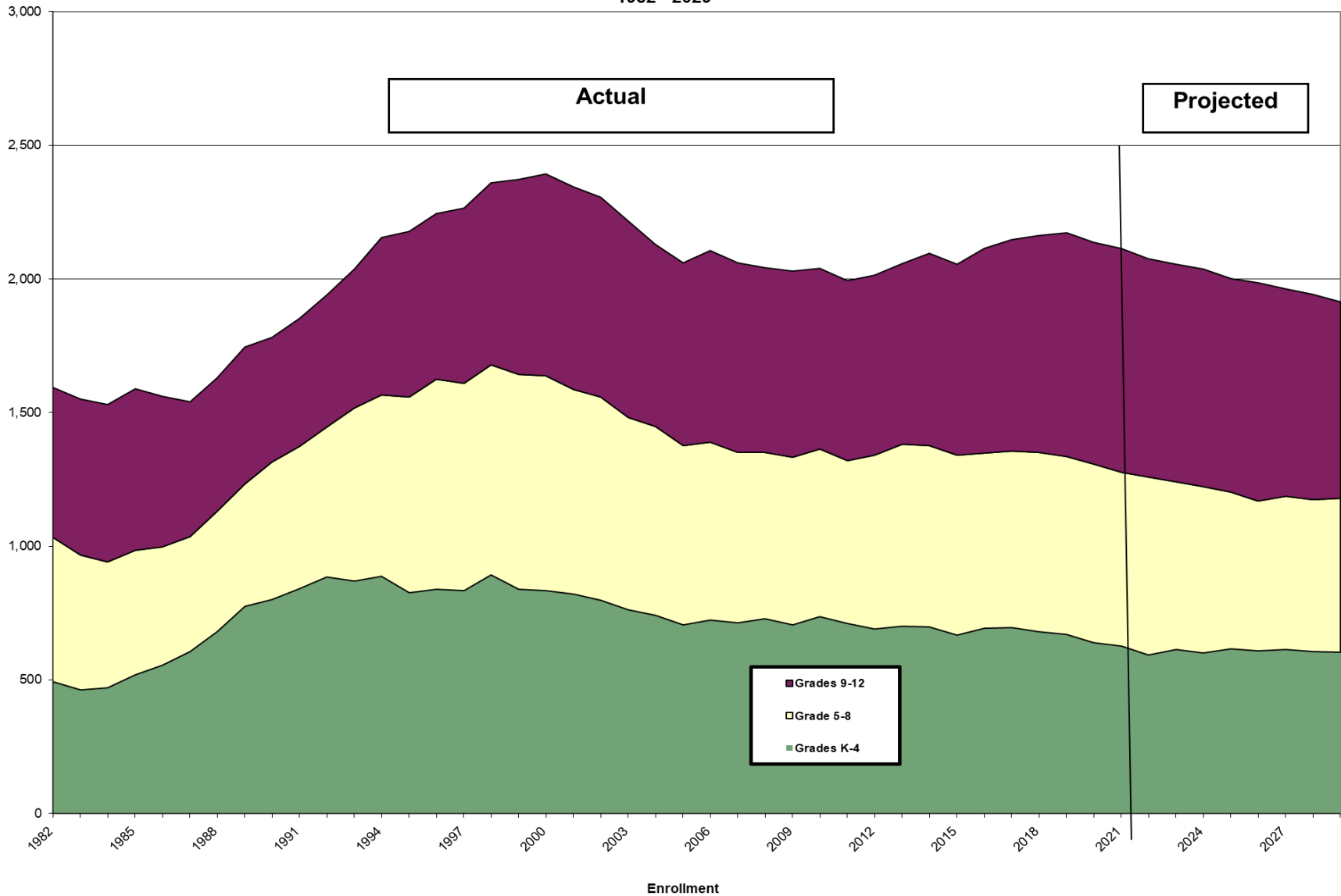
# HS Enrollment Total by Grade

Year	9th	10th	11th	12th	Total District
2019	210	217	205	205	837
2020	201	207	211	210	829
2021	222	198	201	216	837
2022	199	219	192	206	816
2023	207	196	212	197	813
2024	202	204	191	218	815
2025	207	199	199	196	801
2026	215	204	194	204	817
2027	166	212	198	199	775
2028	197	163	206	203	769
2029	172	194	159	211	736

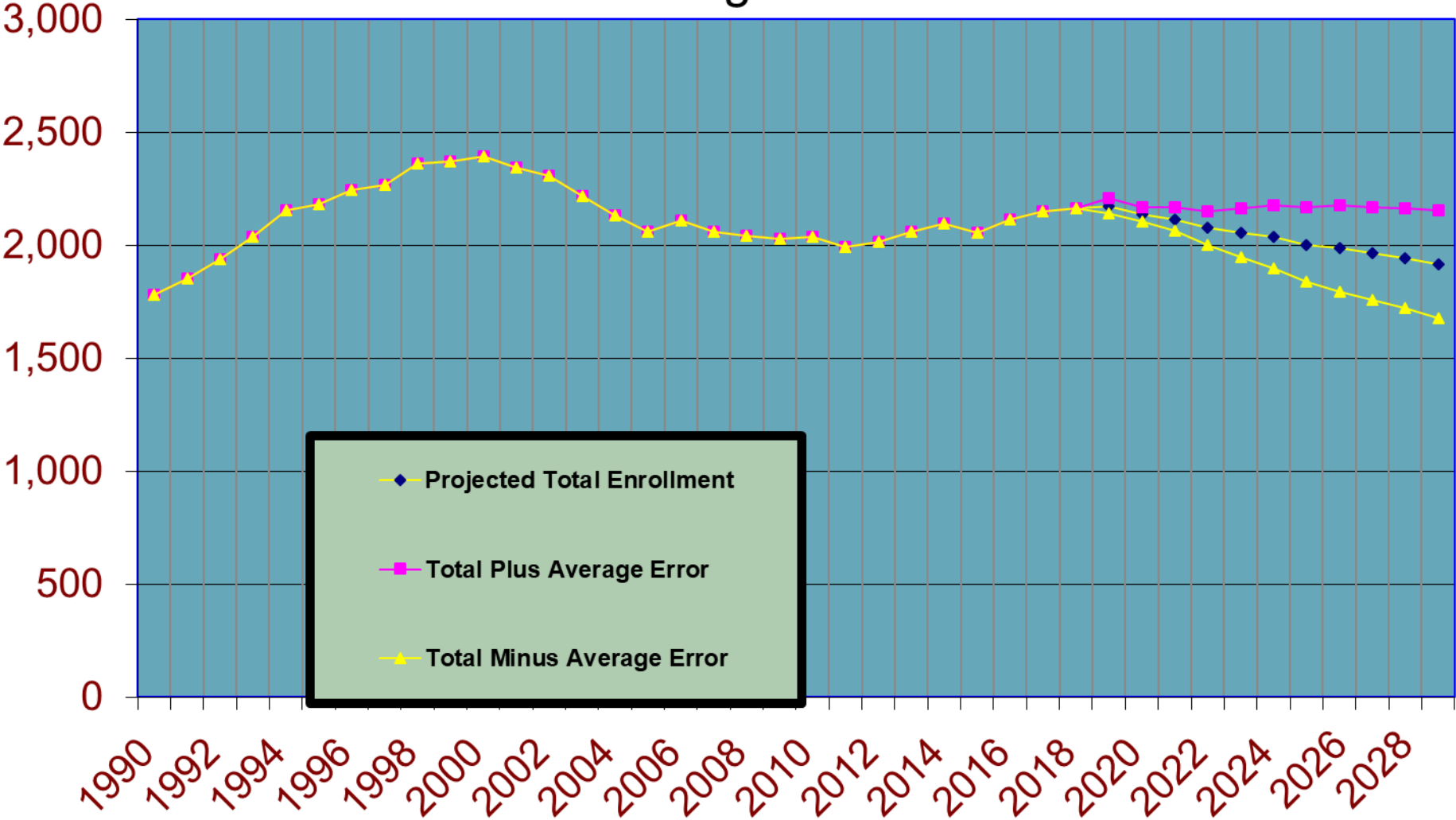
# HS Enrollment Projection with Current Barrington Tuition Arrangement



Oyster River School District  
 Actual and Projected Enrollment by Grade Grouping  
 1982 - 2029



# Actual and Projected Enrollment plus and minus Average Error of Estimate



# Summary

- **Total ORCSD enrollment is projected to remain close to 2,000 for the entire projection. Enrollment declines by 258 students, from 2,173 this year to 1,915 projected in 2029-30.**
- **Full day kindergarten is assumed. This year's kindergarten is 120, following 92 last year. In the projection years, kindergarten enrollment ranges from 96-111.**
- **The number of elementary school students will decrease 10%, or 68 students, from 671 now to 603 in 2029-30. Mast Way now has 75 more students than Moharimet. This difference will drop slightly, to 69 students at the end of the period. Both schools lose enrollment gradually.**
- **Middle school enrollment, now 665 stays flat through 2022-23, then drops to about 575 in the last 5 years of the projection.**
- **High School enrollment, now 837 (667 plus 170 tuition students) stays flat through 2023-24 (669 plus 157 tuition students) then drops to 736 in 2029-30 (579 plus 157 tuition students).**

# Any Questions?

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