DEMOGRAPHIC STUDY FOR THE WEST ORANGE PUBLIC SCHOOLS

August 28, 2017

STATISTICAL FORECASTING LLC

STATISTICAL FORECASTING

- Provide demographic services for school districts in the New York-New Jersey metropolitan area since 1998.
- Performed demographic studies for approximately 100 school districts in NY & NJ.
- Demographic consultant for the NYC Public Schools since 2006.

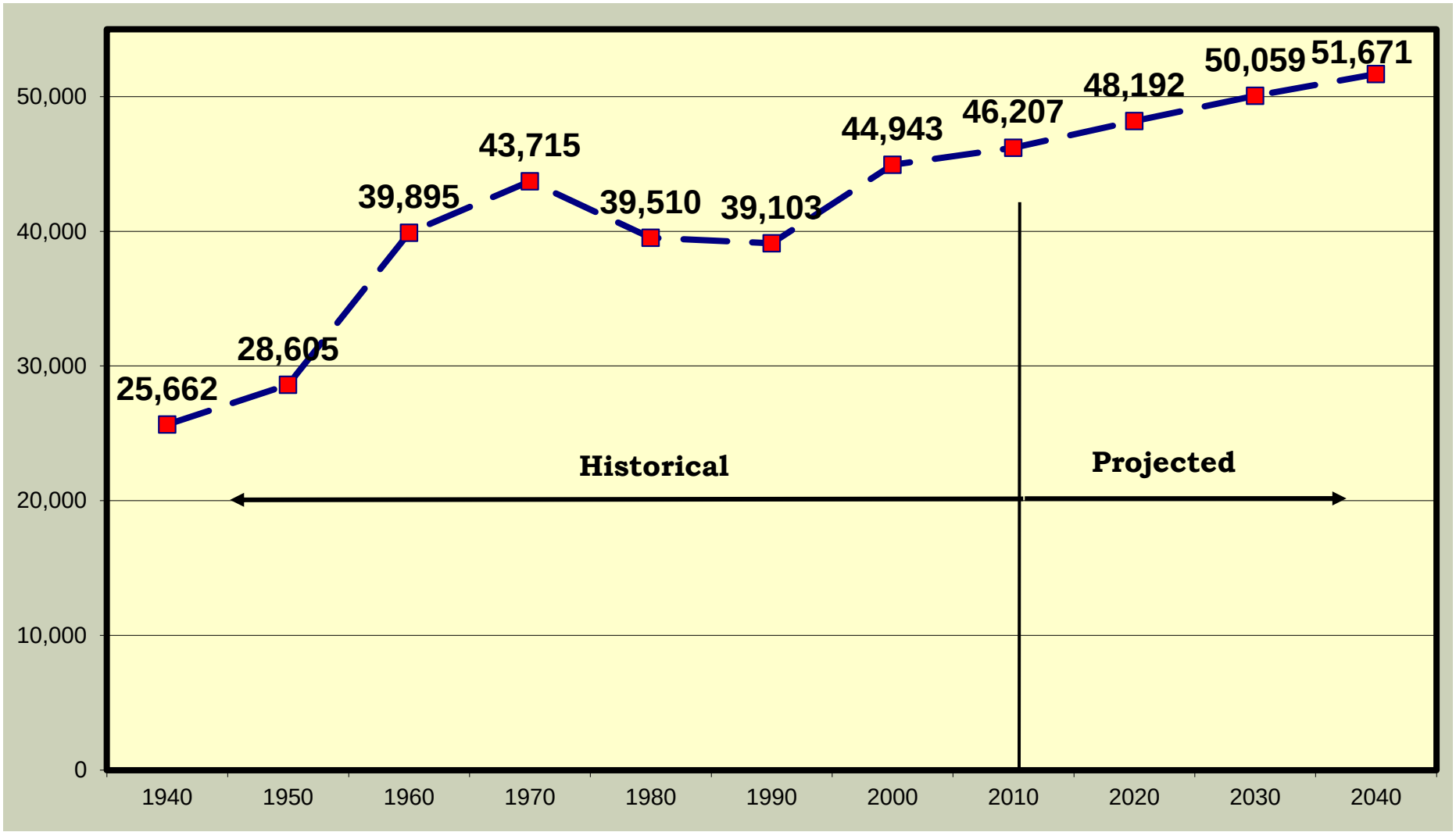
RICHARD S. GRIP ED.D.

- Executive Director
- Doctorate from Rutgers University Graduate School of Education in Educational Statistics and Measurement
- Numerous publications on school demography and presentations nationally
- Testified as an expert witness in school demography in several Administrative Law court hearings.

PURPOSE OF THE STUDY

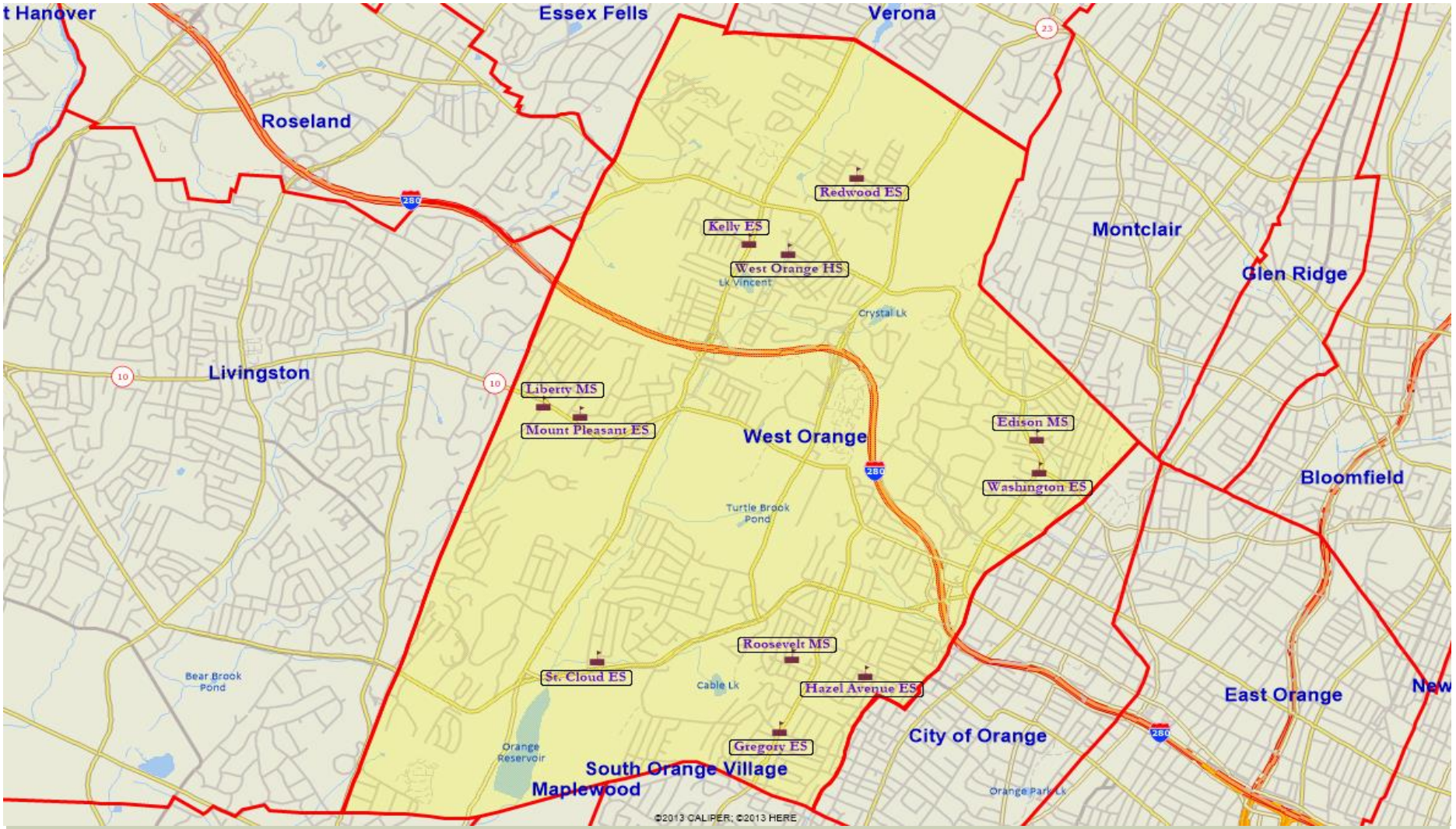
- Project grade-by-grade enrollments from 2017-18 through 2021-22
- Analyze district's historical enrollments, birth and fertility rates, community population trends, and age structure
- Impact of new developments on enrollment
- Compute student yields (children per housing unit) by property type

WEST ORANGE HISTORICAL AND PROJECTED POPULATIONS 1940-2040

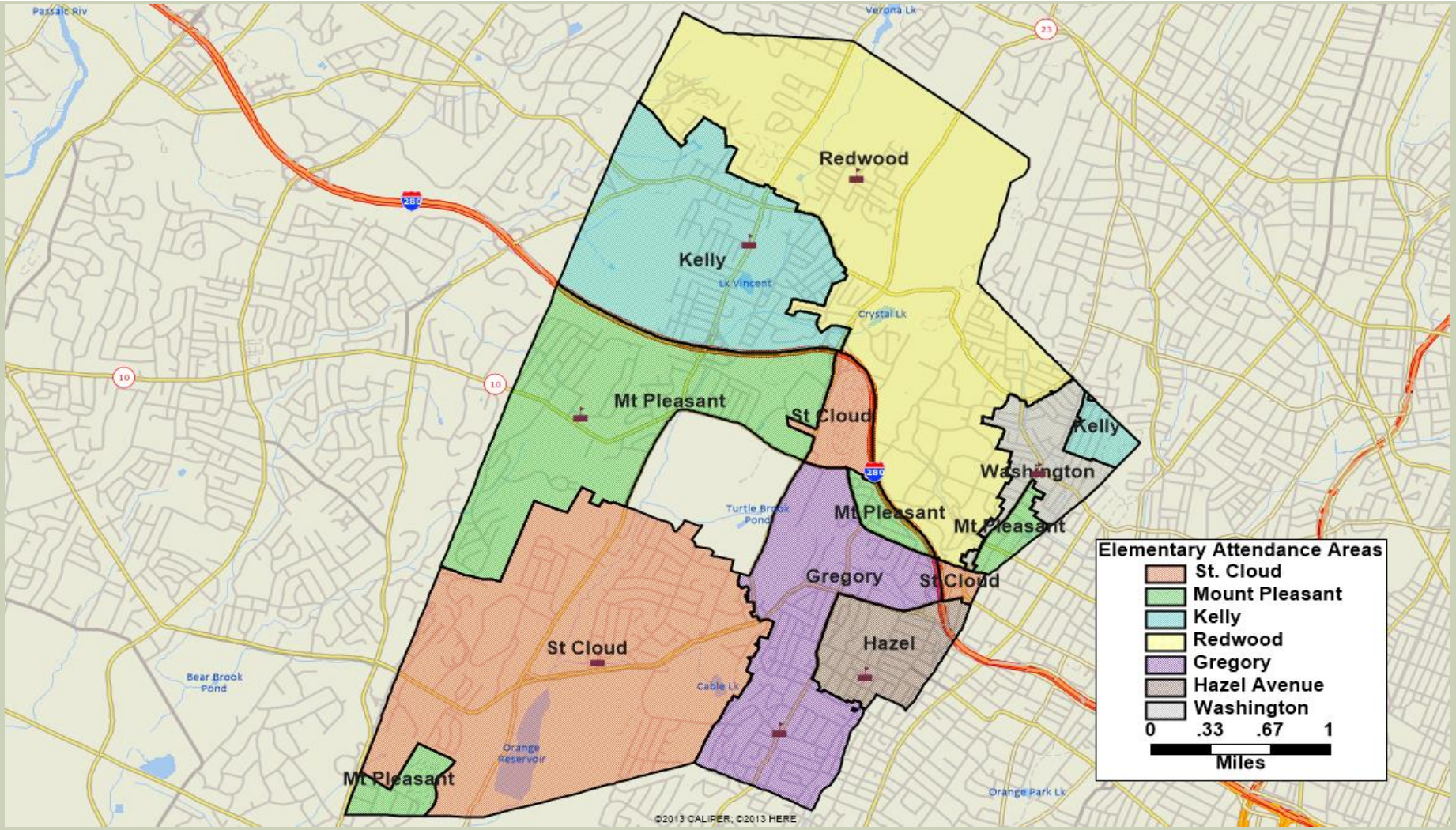


West Orange Demographic Characteristics	2000 Census	2010 Census 2011-2015 ACS
White	67.6%	57.1%
Black or African American	17.5%	26.6%
American Indian and Alaska Native	0.1%	0.4%
Asian	8.1%	8.0%
Native Hawaiian and Other Pacific Islander	0.0%	0.0%
Other Race	3.5%	4.8%
Two or more Races	3.2%	3.1%
Hispanic Origin	10.0%	16.2%
Foreign-Born	25.6%	28.1%
Median age	39.4 years	40.6 years
Bachelor's degree or higher	43.1%	48.4%
Graduate or professional degree	19.0%	20.5%
Median family income	$83,375	$110,919
% of Persons in Poverty aged 5-17	6.4%	6.7%
Housing Units	16,901	17,612
Owner-occupied units	11,601 (70.4%)	11,698 (69.7%)
Renter-occupied units	4,879 (29.6%)	5,092 (30.3%)
Median value of an owner-occupied unit	$209,200	$353,500
1-unit, attached or detached	11,223 (66.7%)	11,235 (65.3%)
Two units	1,794 (10.7%)	2,309 (13.4%)
Three or four units	1,243 (7.4%)	1,257 (7.3%)
Five to nine units	719 (4.3%)	434 (2.5%)
10 to 19 units	400 (2.4%)	364 (2.1%)
20 or more units	1,440 (8.6%)	1,591 (9.2%)
Mobile home, Boat, Van, RV, etc	6 (0.0%)	27 (0.2%)

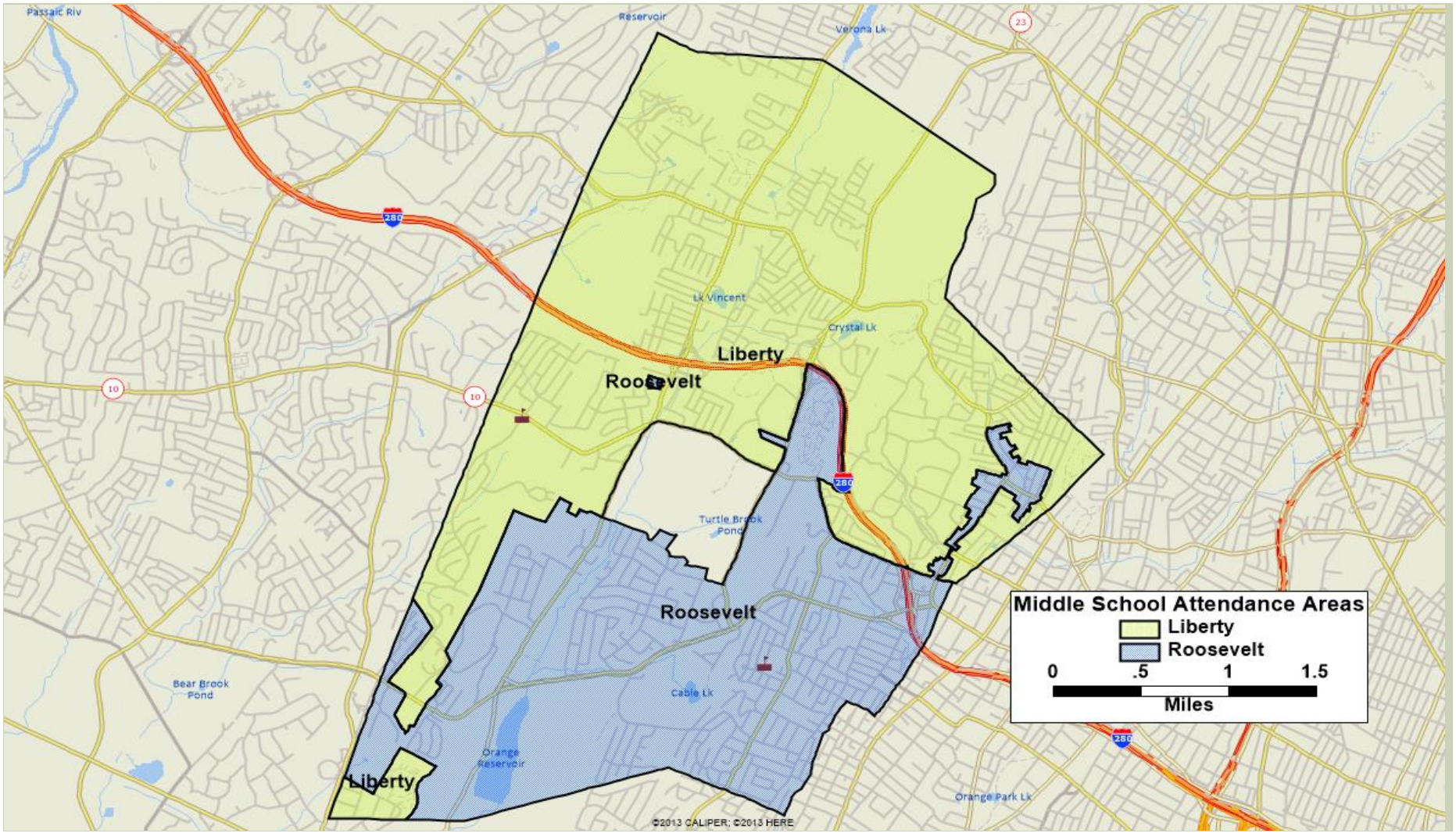
SCHOOL LOCATIONS



ELEMENTARY ATTENDANCE AREAS



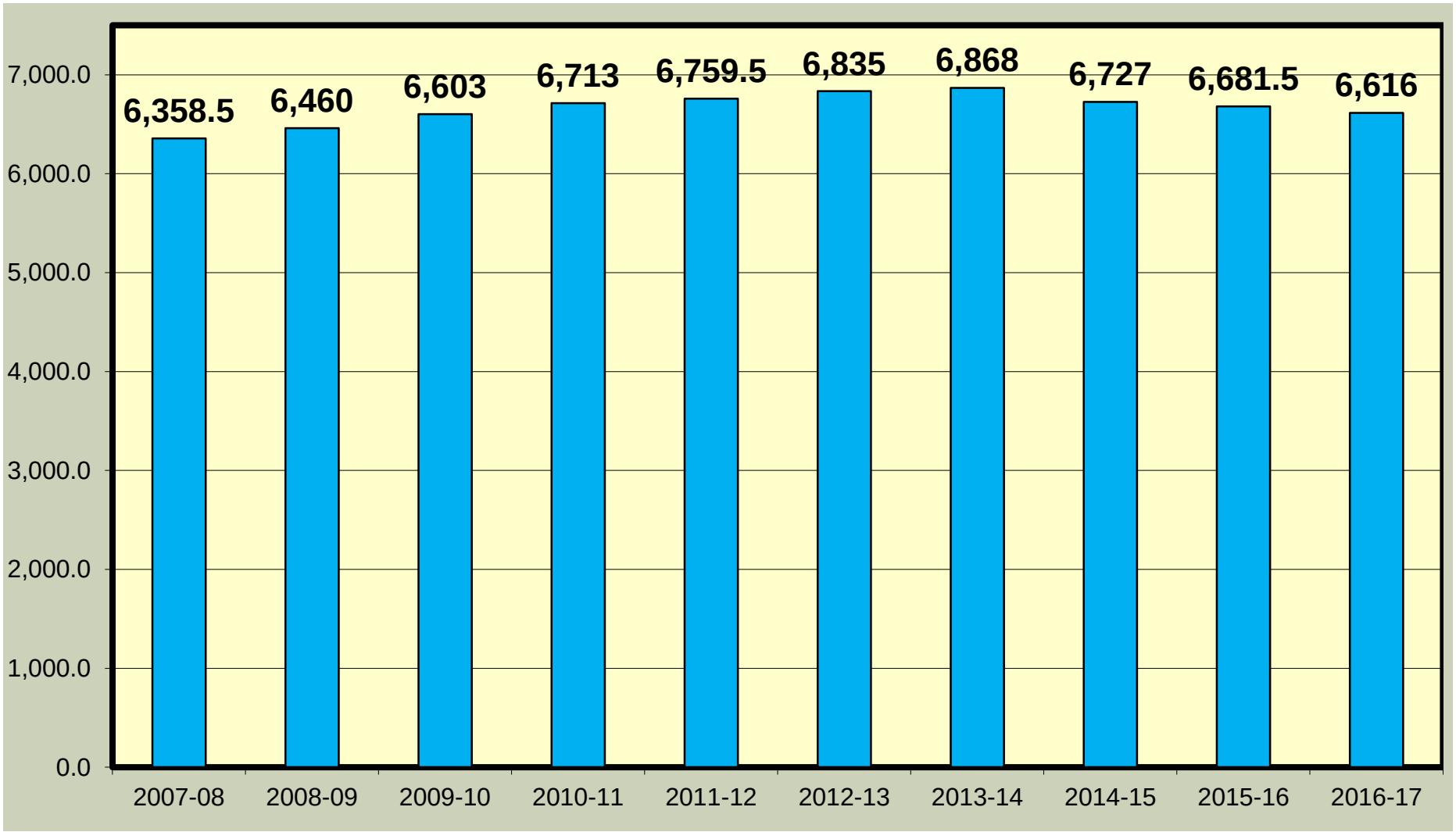
GRADE 7-8 ATTENDANCE AREAS



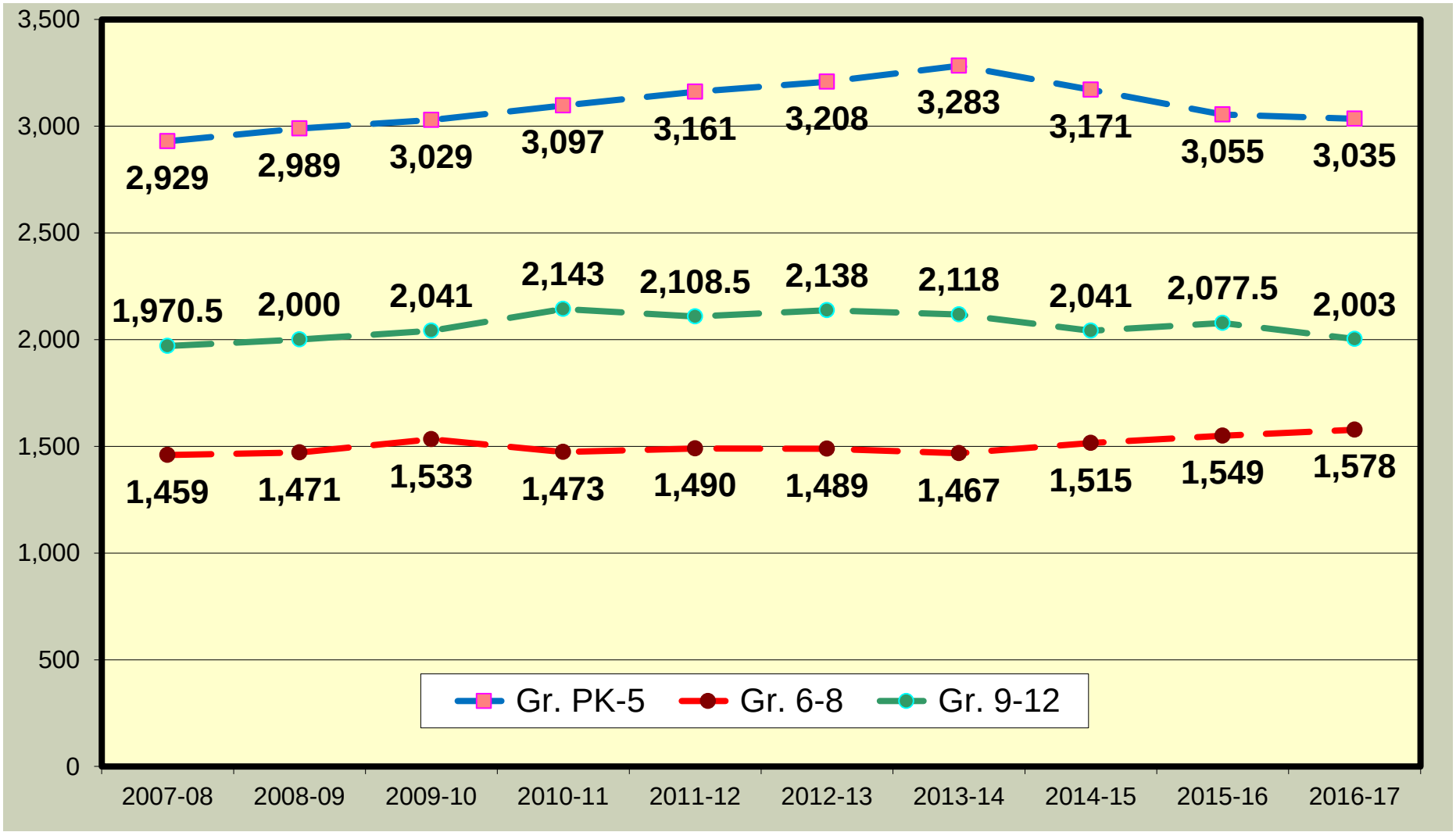
HISTORICAL ENROLLMENT TRENDS

- District's 2016-17 enrollment is 6,616.
- District has lost 252 students in last 3 years after a period of increasing enrollment.
- Cohort-Survival Ratio Method (CSR) was used to project enrollments five years into the future.

HISTORICAL ENROLLMENTS 2007-08 TO 2016-17



HISTORICAL ENROLLMENTS BY LEVEL 2007-08 TO 2016-17



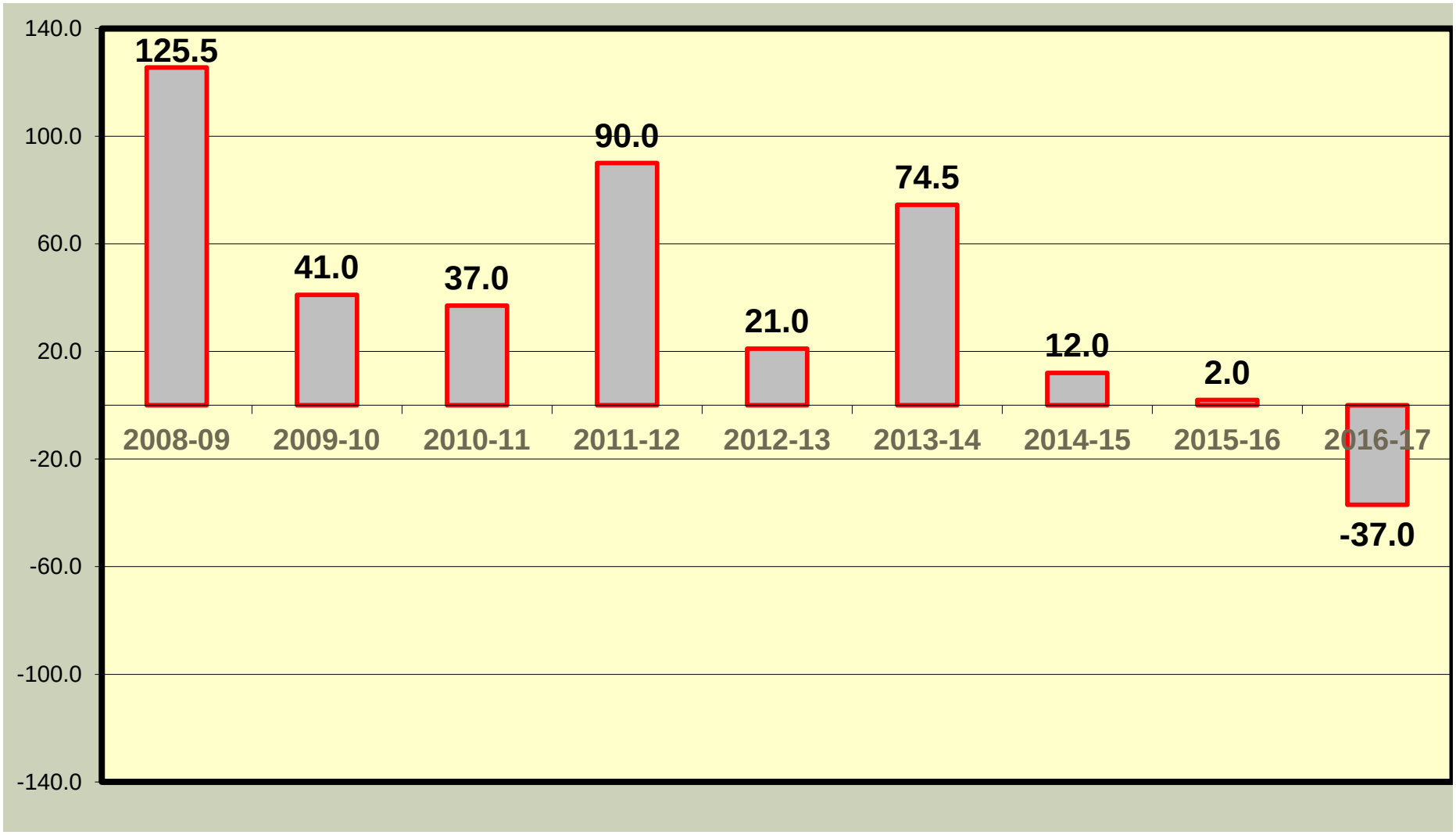
ENROLLMENT PROJECTION METHOD COHORT SURVIVAL RATIO

- Ratios are calculated for each grade progression. (Ex. 100 1st graders in 2015-16 become 95 2nd graders in 2016-17 = 0.95)
- Survival ratios were computed for ten historical years.
- 9 of 13 average ratios were below 1.000 indicating net outward migration.
- Averages were then computed and used to project future enrollments.

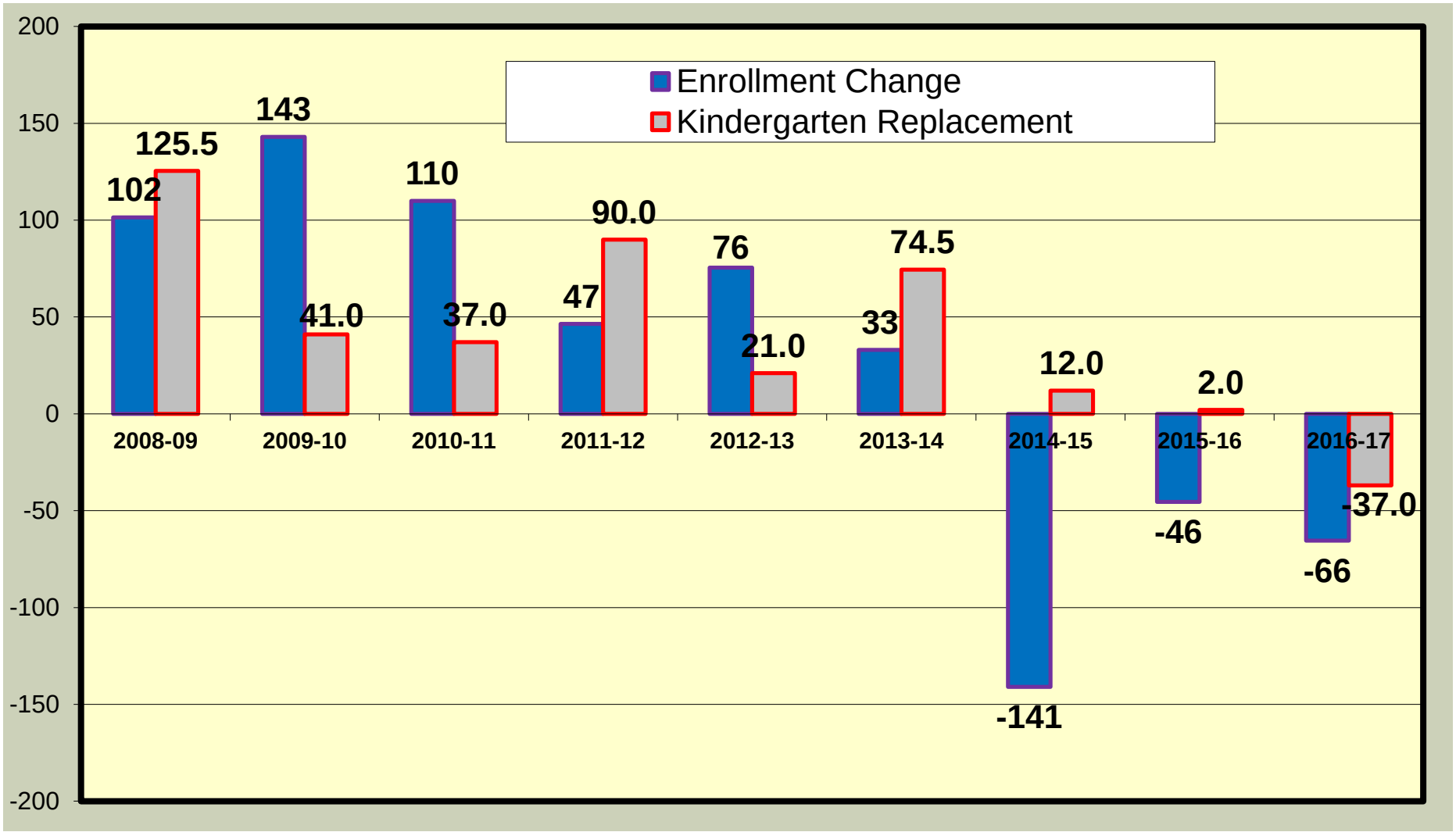
KINDERGARTEN REPLACEMENT

- Positive kindergarten replacement (KR) has occurred in 8 of last 9 years. Magnitude has been declining over time.
- Positive KR- Number of graduating 12th grade students is less than the number of kindergarten students replacing them in the next year.
- Negative KR was 37 students in 2016-17, as 485 12th graders graduated in 2015-16 and were replaced by 448 kindergarten students in 2016-17.

HISTORICAL KINDERGARTEN REPLACEMENT



TOTAL ENROLLMENT CHANGE VS. KINDERGARTEN REPLACEMENT



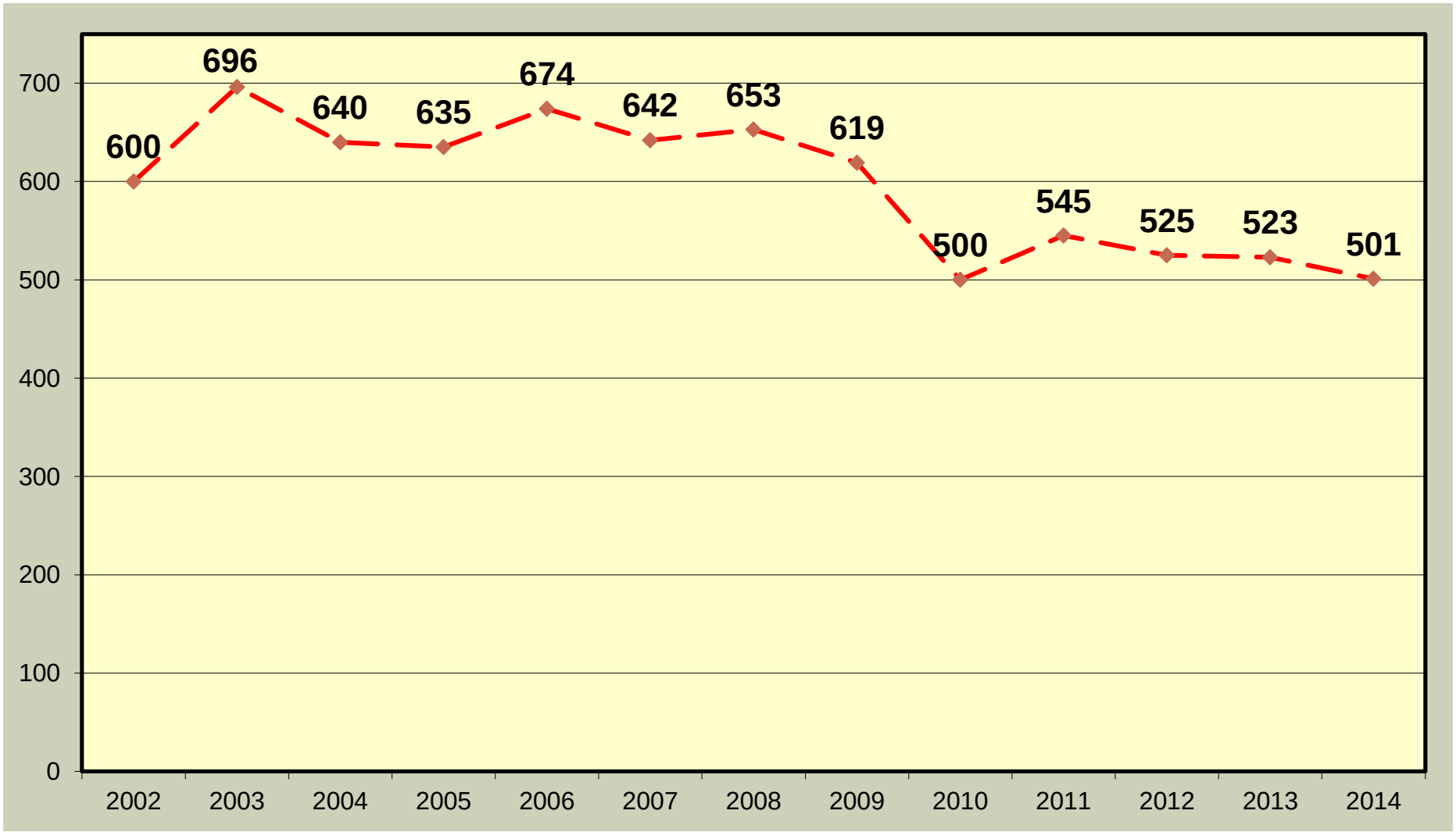
BIRTH COUNTS

- Births are used to project kindergarten students 5 years later.
- Births have been declining– 696 births in 2003, 501 in 2014 (28% decline).
- Fertility rates in West Orange are lower than those in Essex County and New Jersey.

BIRTH COUNTS AND BIRTH-TO-KINDERGARTEN SURVIVAL RATIOS

Birth Year	Number of Births West Orange	Kindergarten Students Five Years Later	Birth-to-Kindergarten Survival Ratio
2002	600	422	0.703
2003	696	533	0.766
2004	640	482	0.753
2005	635	479	0.754
2006	674	517	0.767
2007	642	492	0.766
2008	653	541	0.828
2009	619	501	0.809
2010	500	438	0.876
2011	545	448	0.822
2012	525	N/A	N/A
2013	523	N/A	N/A
2014	501	N/A	N/A

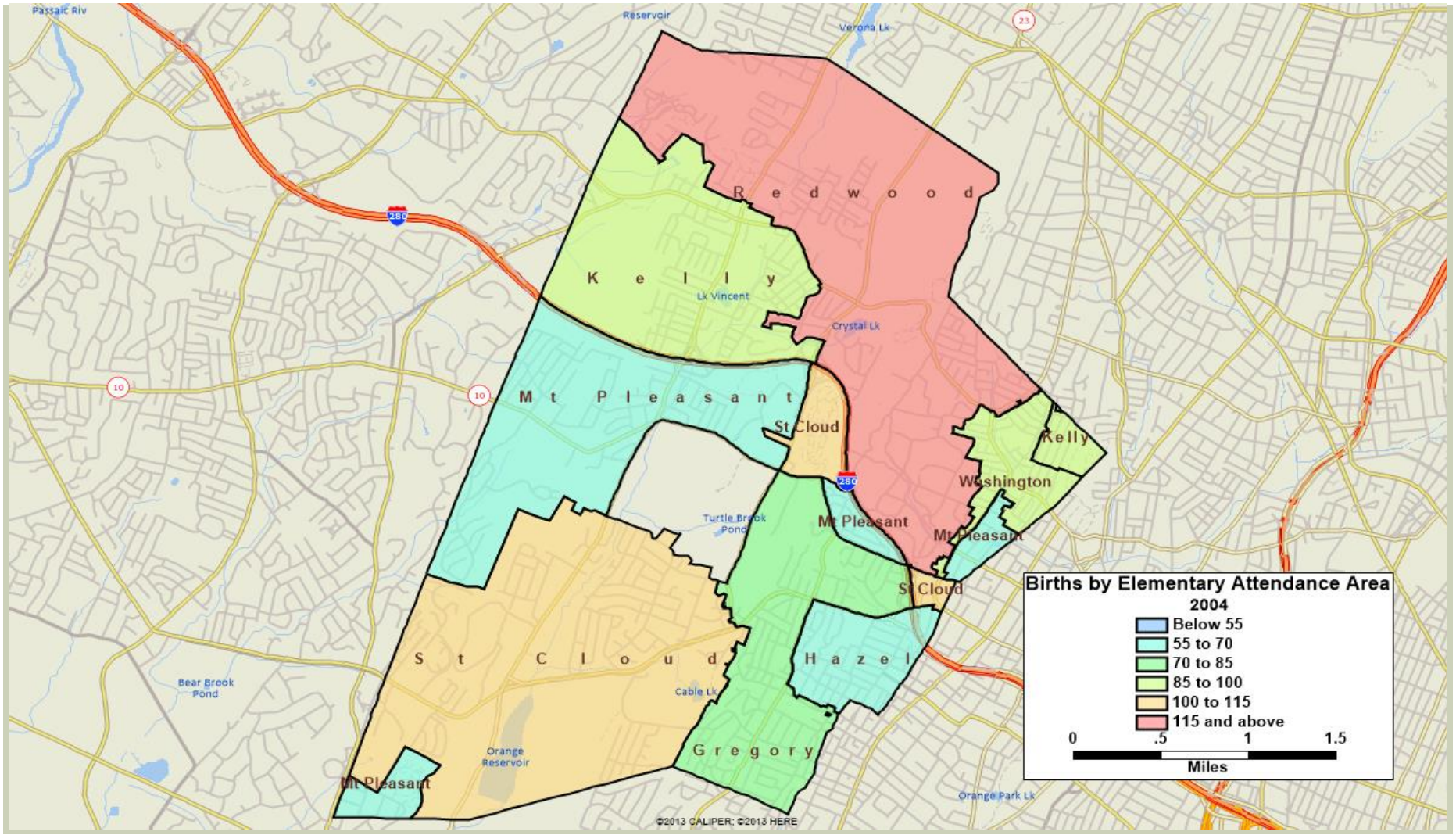
HISTORICAL BIRTH COUNTS 2002-2014



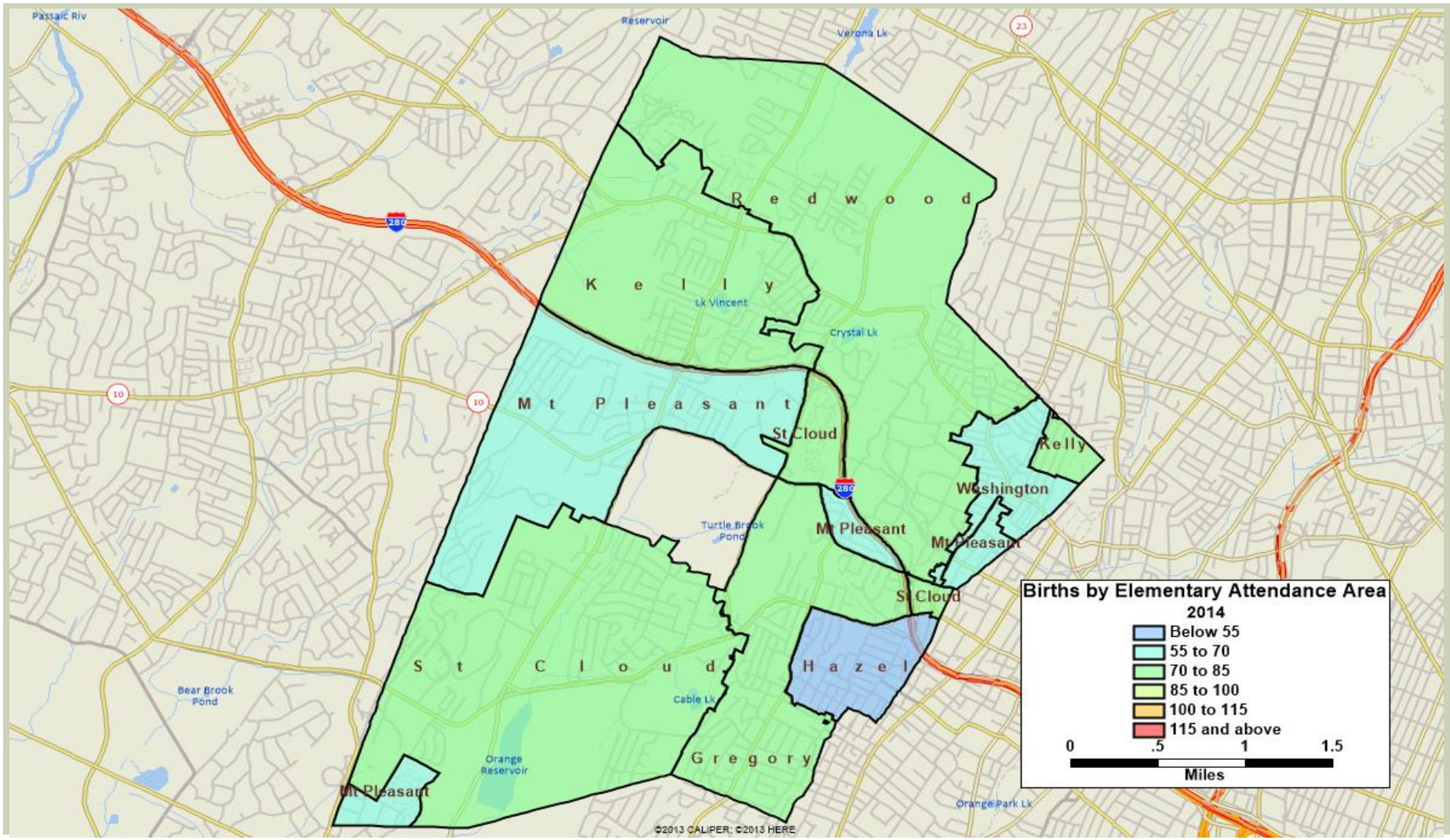
BIRTHS BY ATTENDANCE AREA 2004-2014

Birth Year	Gregory	Hazel Avenue	Kelly	Mt. Pleasant	Redwood	St. Cloud	Washington	Unknown
2004	84	69	96	59	137	100	86	9
2005	104	83	100	62	125	82	73	6
2006	110	72	97	90	130	91	77	7
2007	81	67	84	72	148	97	74	19
2008	92	66	109	78	118	94	70	26
2009	93	61	89	82	114	90	82	8
2010	66	68	73	57	106	69	41	20
2011	66	57	95	73	98	74	57	25
2012	62	63	74	79	94	66	62	25
2013	74	51	90	52	93	74	76	13
2014	72	53	70	59	84	81	57	13

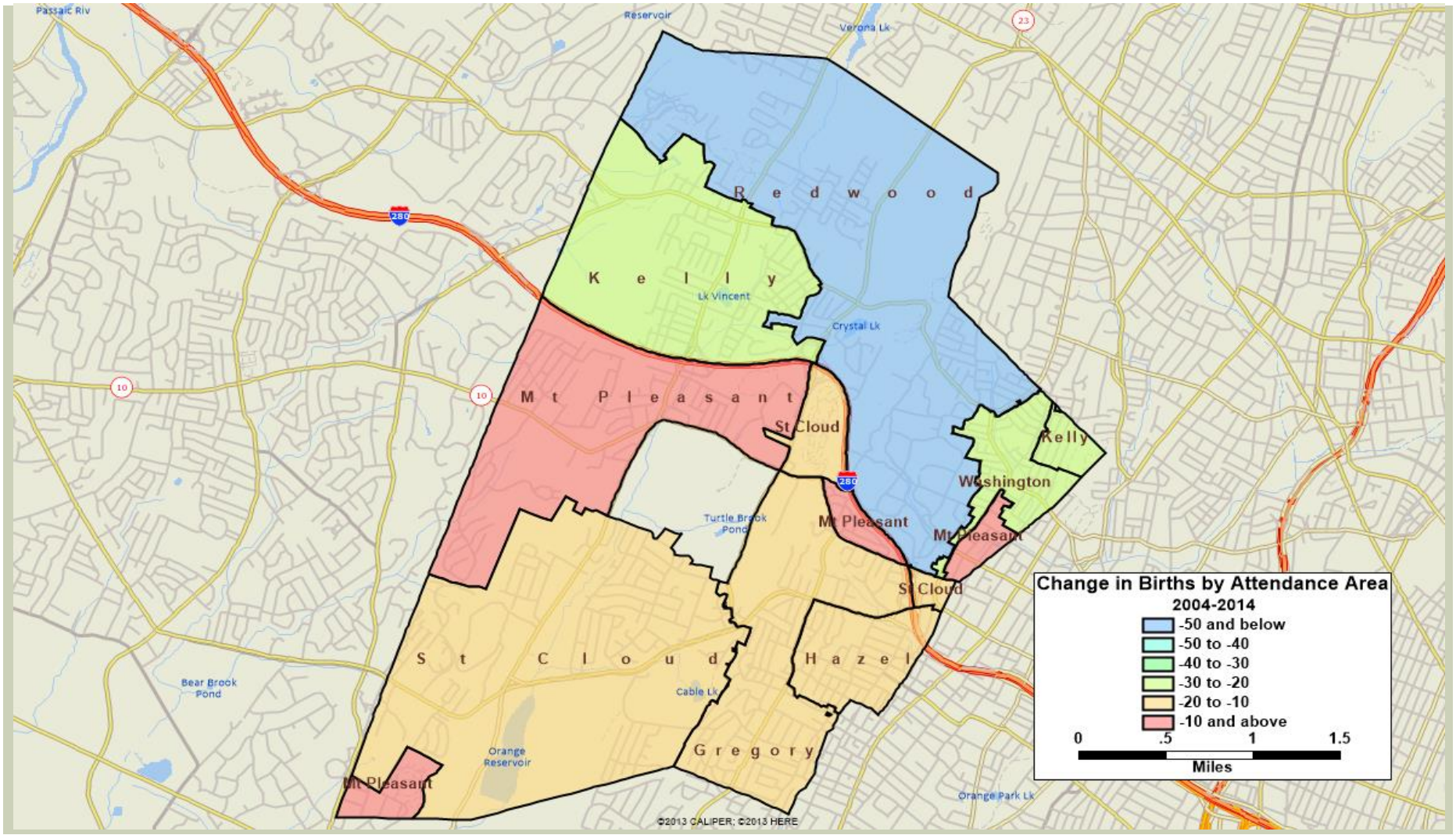
BIRTHS BY ATTENDANCE AREA 2004



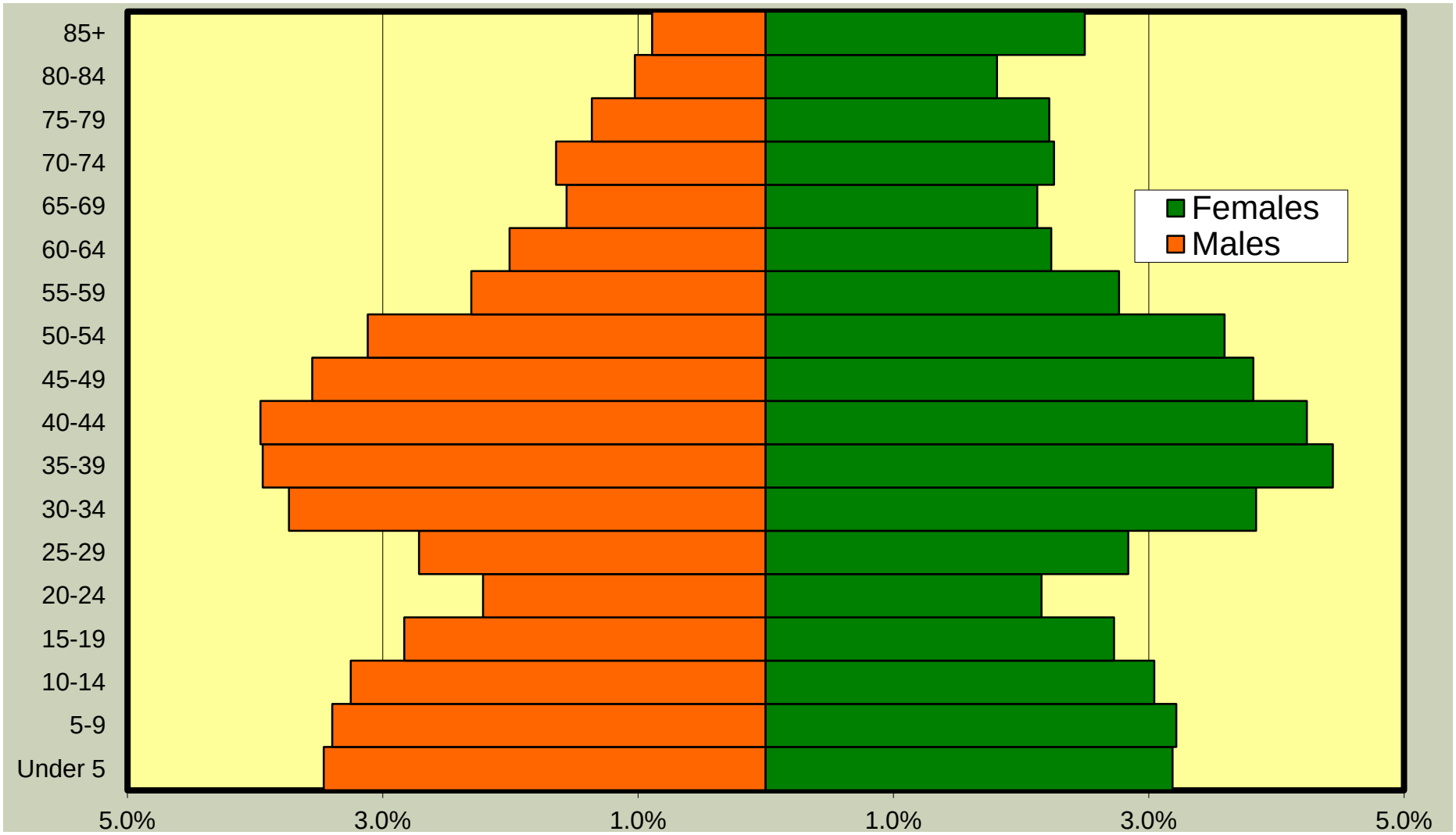
BIRTHS BY ATTENDANCE AREA 2014



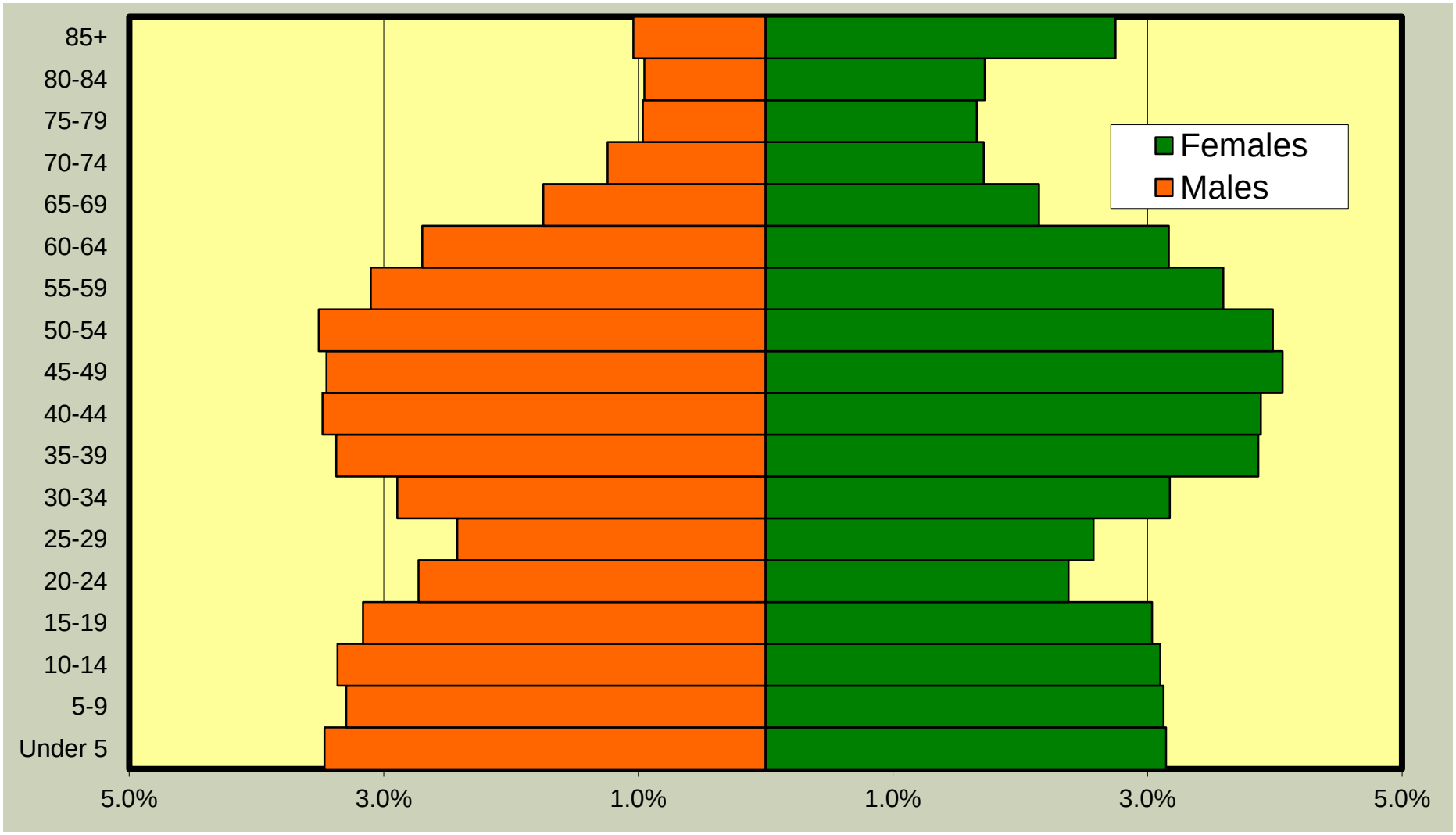
CHANGE IN BIRTHS BY ATTENDANCE AREA 2004-2014



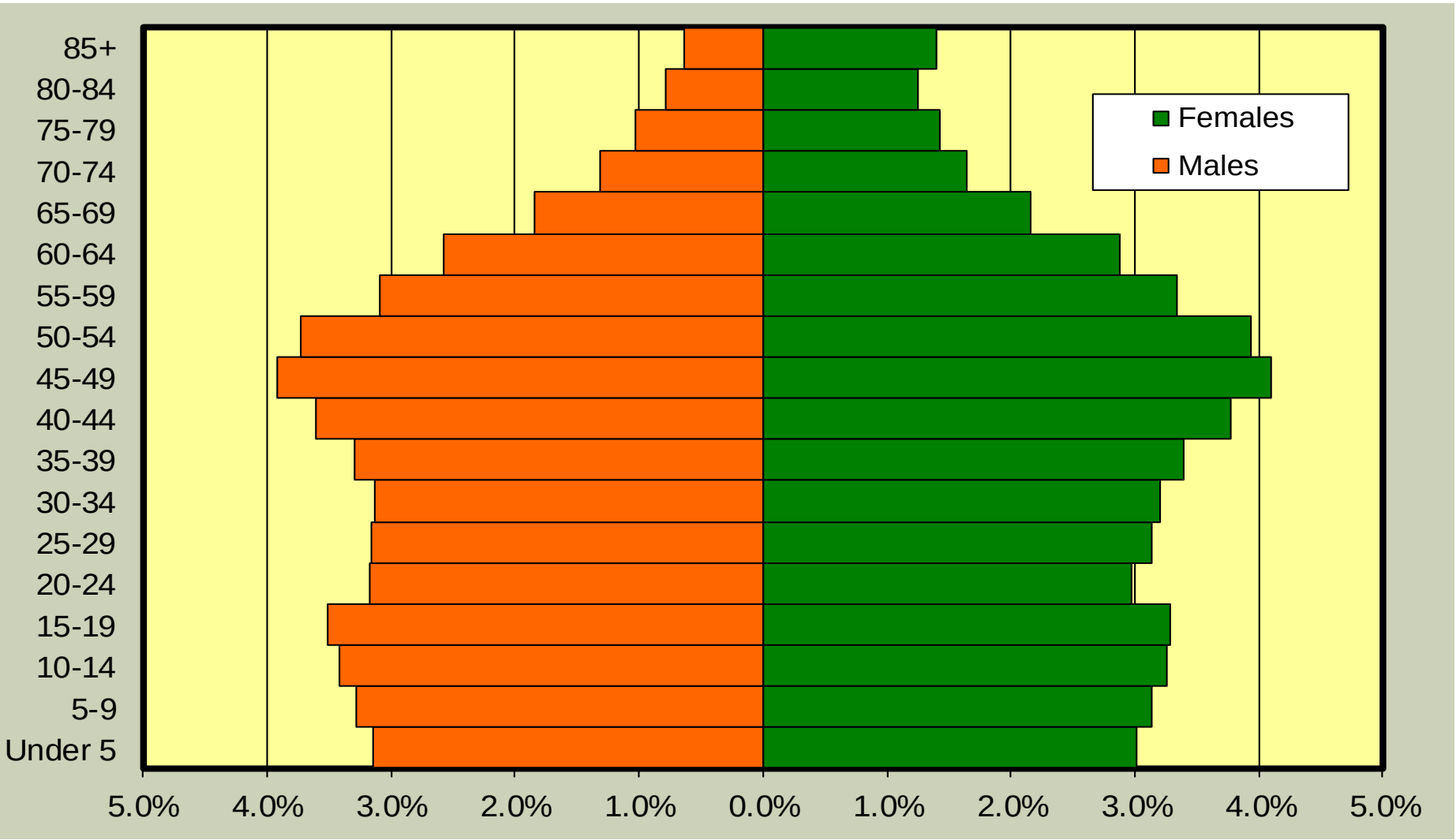
AGE PYRAMID
WEST ORANGE
2000



AGE PYRAMID
WEST ORANGE
2010



AGE PYRAMID
NEW JERSEY
2010



CHANGE IN MALES AND FEMALES 2000 TO 2010

	Males		Females	
Age Group	Numerical Change	Percentage Point Change	Numerical Change	Percentage Point Change
Under 5	+46	0.0	+22	0.0
5-9	-3	-0.1	0	-0.1
10-14	+93	+0.1	+65	+0.1
15-19	+189	+0.3	+177	+0.3
20-24	+265	+0.5	+129	+0.2
25-29	-102	-0.3	-86	-0.3
30-34	-342	-0.8	-259	-0.7
35-39	-212	-0.6	-208	-0.6
40-44	-170	-0.5	-107	-0.3
45-49	-3	-0.1	+160	+0.2
50-54	+221	+0.4	+226	+0.4
55-59	+397	+0.8	+418	+0.8
60-64	+345	+0.7	+459	+0.9
65-69	+106	+0.2	+36	0.0
70-74	-164	-0.4	-223	-0.5
75-79	-166	-0.4	-232	-0.6
80-84	-21	-0.1	-19	-0.1
85+	+80	+0.1	+147	+0.2

PLANNED NEW HOUSING WEST ORANGE

Subdivision/ Developer	Elementary/ Middle School Attendance Areas	Location	Number of Units	Housing Type
Main Street Development Edison Lofts Phase I	Washington or Redwood/Liberty	175-177 Main Street	333	Apartments
Main Street Development Phase II	Washington or Redwood/Liberty	Lakeside Avenue, Babcock Place, and Watchung Avenue	296	Townhouse
Colonial Woods	Mt. Pleasant/Liberty	Colonial Woods Drive	27	Single-Family
Valley Road Residential	Hazel Avenue/Roosevelt	Mitchell Street and Joyce Street	100	Market-rate and affordable Apartments
Total		756 Housing Units		

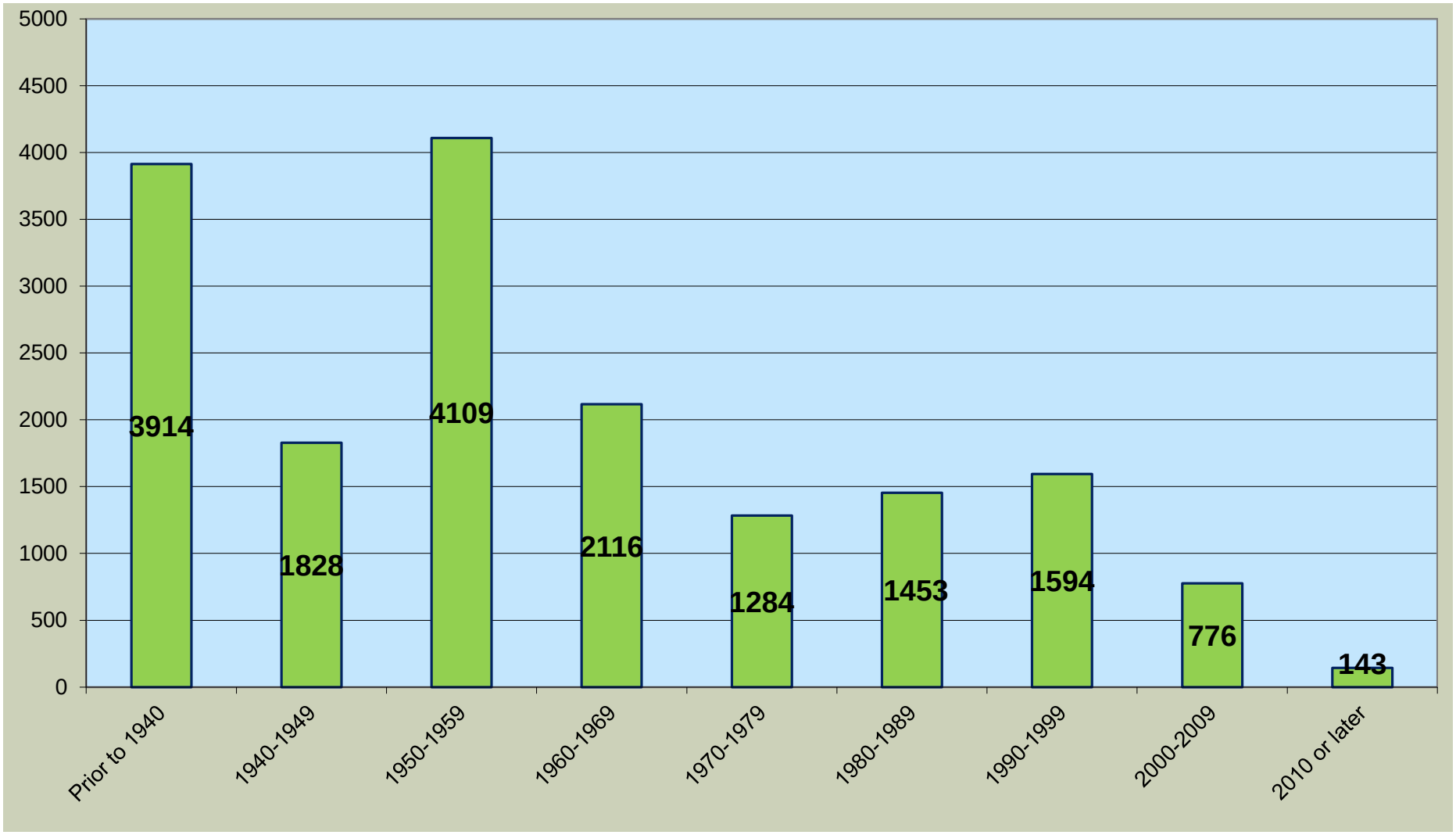
POTENTIAL RESIDENTIAL DEVELOPMENTS WEST ORANGE

Subdivision/ Developer	Elementary/ Middle School Attendance Areas	Location	Number of Units	Housing Type	Notes
Highlands Tract	Kelly or Redwood/ Liberty	Sullivan Drive, Marmon Terrace, Nestro Road, Mayfair Drive, and Rosemont Terrace	Land approved for roughly 60 Single-Family homes/ Developer wants 782 rental units	Town wants single family units, Developer wants Market-rate and affordable Apartments	Land approved for roughly 60 single-family homes. Developer wants 782 rental units. Continued litigation likely.
The Redwoods	Redwood/Liberty	Pleasant Valley Way	Approved for 68, Developer wants 128	Market-rate and affordable Apartments	The approval on record is for condo sales. The application before the Zoning Board that was postponed is for rental apartments.
Valley Road Residential	Hazel/Roosevelt	Mitchell Street and Joyce Street	100	Market-rate and affordable Apartments	100 units have been informally discussed but really too early to say for sure. Any project may be contingent upon additional property. The town wants to build but there are a lot of factors involved. 100 units is only speculative at this point.
Executive Drive	Redwood or Mt. Pleasant/Liberty	Rooney Circle	Unknown	Market-rate and affordable Apartments	New ownership intends to redevelop site.
Essex Green Shopping Center	Redwood or Mt. Pleasant/Liberty	Prospect Avenue	Unknown	Unknown	New ownership intends to redevelop site.

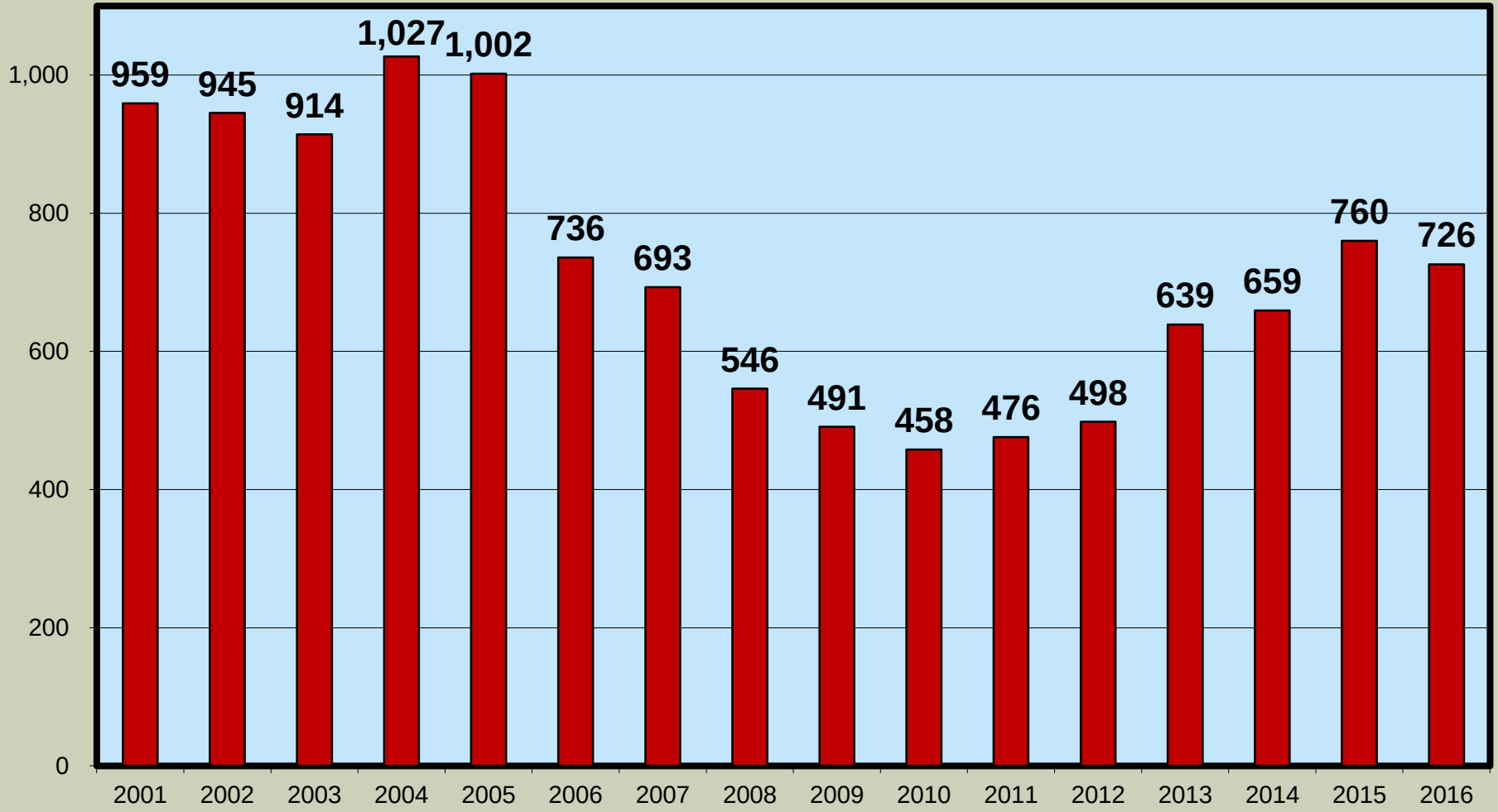
STUDENT YIELDS

- Student yields were computed by housing type to determine impact of new developments.
- Student addresses were joined to West Orange property database.
- 1-4 Family homes: 0.53
- Townhouses/Condos: 0.11
- Apartments: 0.21
- 148 public school children (K-12) projected from new housing

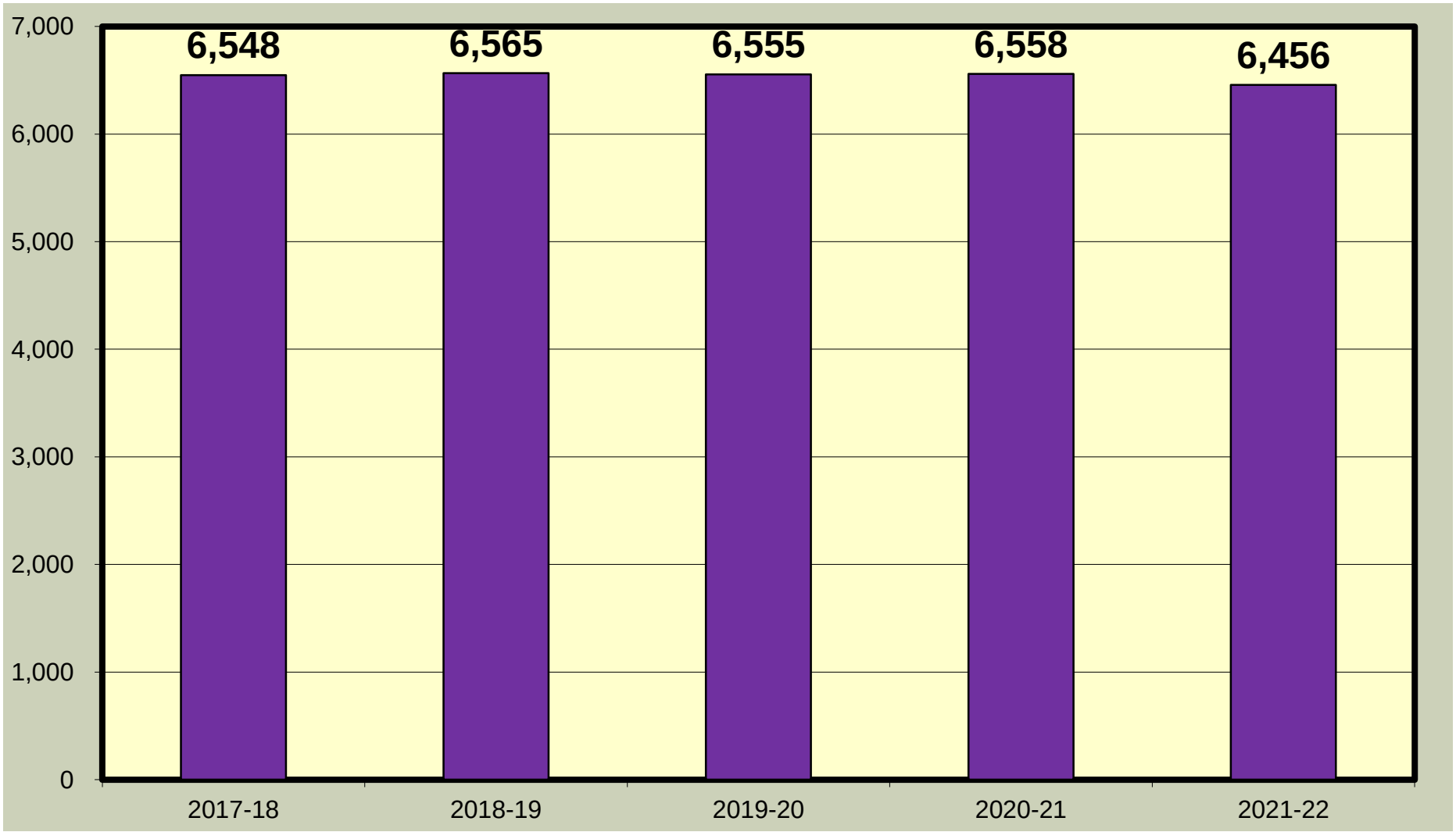
HOMES BUILT BY DECADE
WEST ORANGE



WEST ORANGE HOME SALES 2001-2016



ENROLLMENT PROJECTIONS



ENROLLMENT PROJECTIONS BY CONFIGURATION

Historical	PK-5	6-8	9-12
2016-17	3,035	1,578	2,003
Projected	**PK-5**	**6-8**	**9-12**
2017-18	2,970	1,525	2,053
2018-19	2,969	1,518	2,078
2019-20	2,921	1,546	2,088
2020-21	2,816	1,584	2,158
2021-22	2,816	1,537	2,103
5-year Change	-219	-41	+100

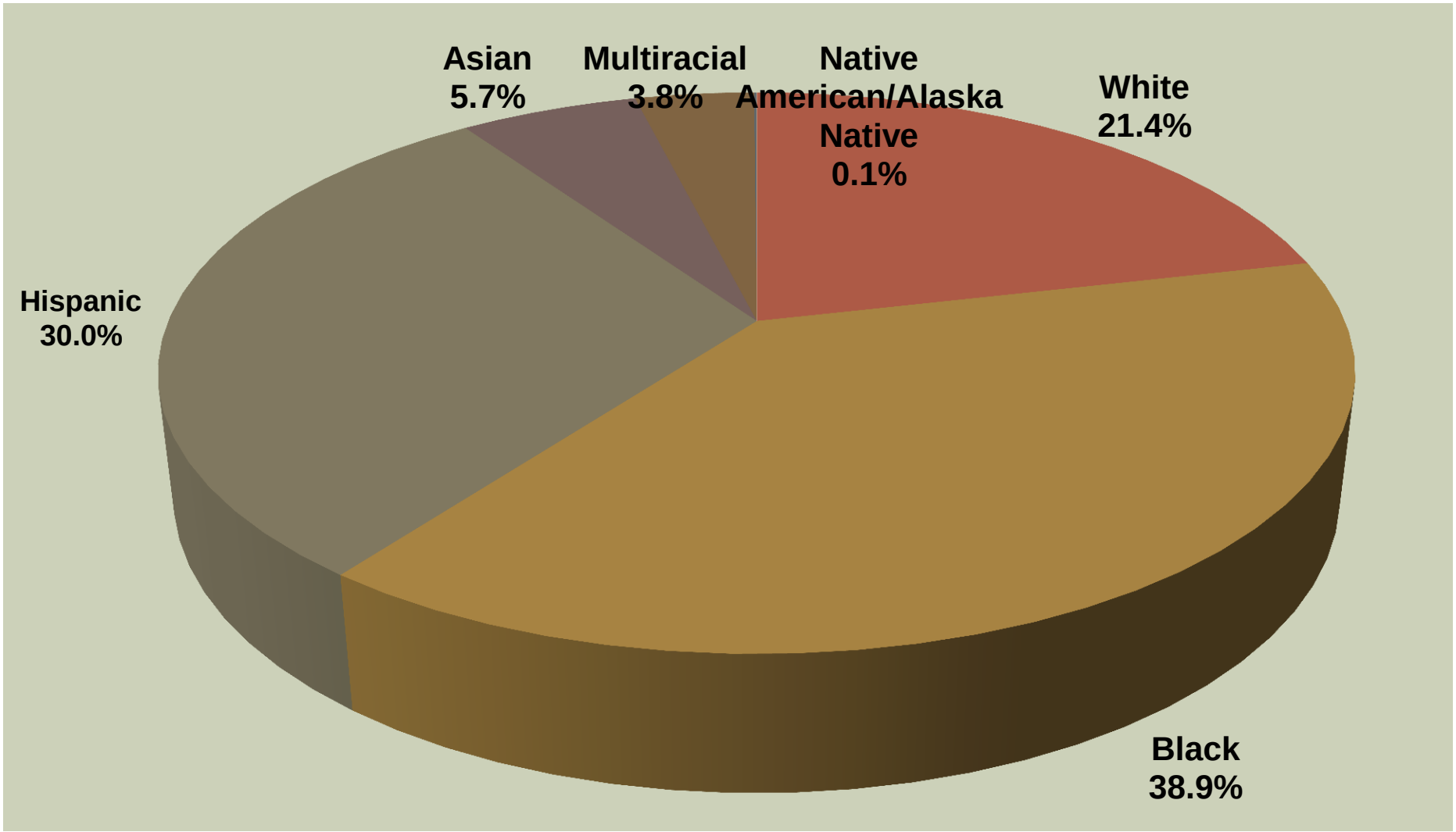
CAPACITY ANALYSIS

School	Capacity	Actual Enrollment 2016-17	Difference	Projected Enrollment 2021-22	Difference
Gregory (K-5)	481	504	-23	433	+48
Hazel Avenue (K-5)	332	337	-5	315	+17
Kelly (PK-5)	485	456	+29	453	+32
Mt. Pleasant (K-5)	348	365	-17	338	+10
Redwood (K-5)	498	573	-75	468	+30
St. Cloud (K-5)	362	367	-5	354	+8
Washington (K-5)	427	433	-6	455	-28
Edison Middle School (Grade 6)	475	487	-12	447	+28
Liberty Middle School (6-8)	540	533	+7	562	-22
Roosevelt Middle School (6-8)	625	558	+67	527	+98
West Orange H.S. (9-12)	2,646	2,003	+643	2,103	+543

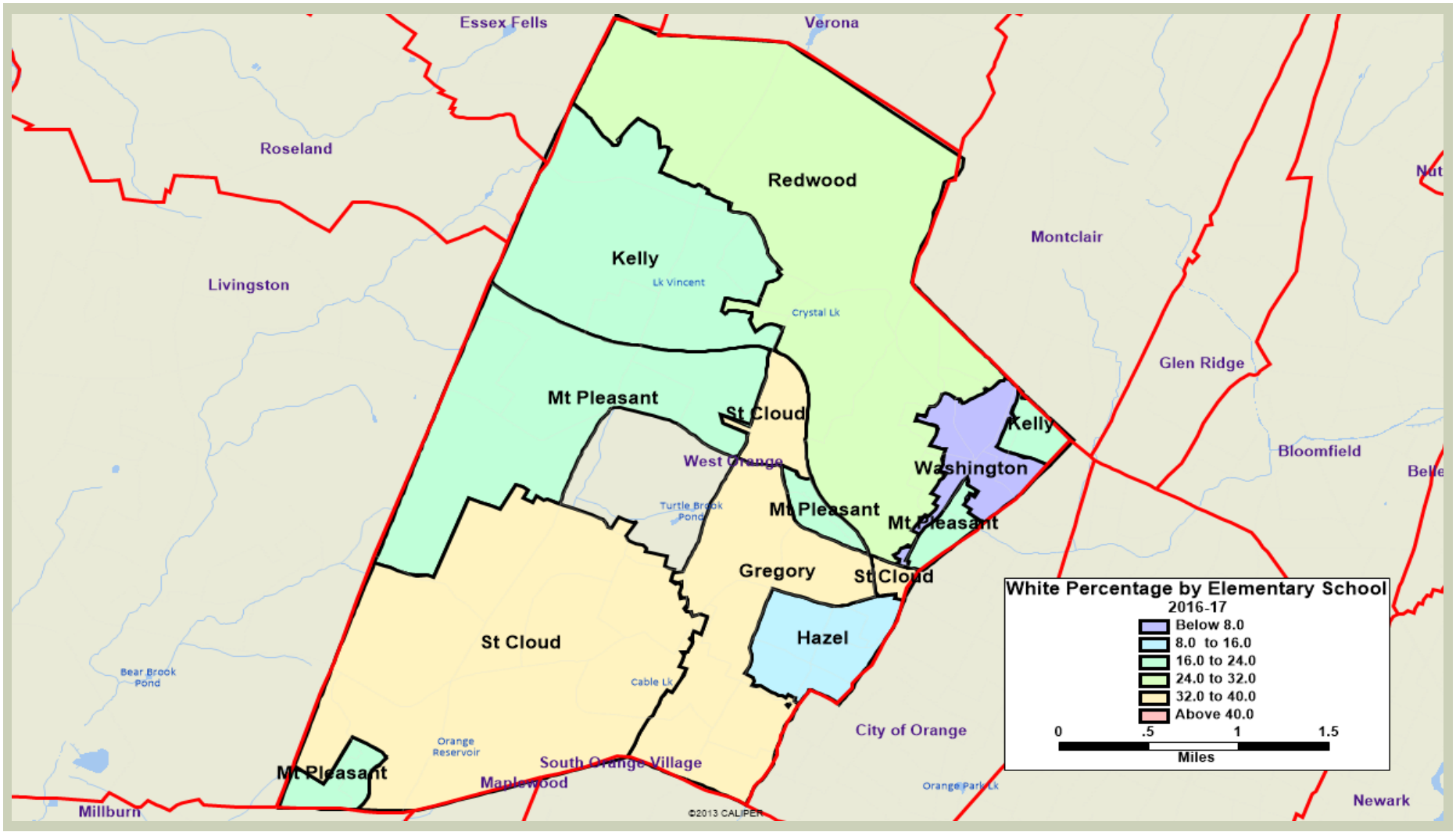
MAPPING

- Maps were created to compare different variables from 2011-12 to 2016-17.
- White, Black, Hispanic, Asian percentages by school
- Economically disadvantaged by school
- English Language Learners by school
- Special education students by school
- Student mobility by school
- Student density by census block
- Student yield by census block group

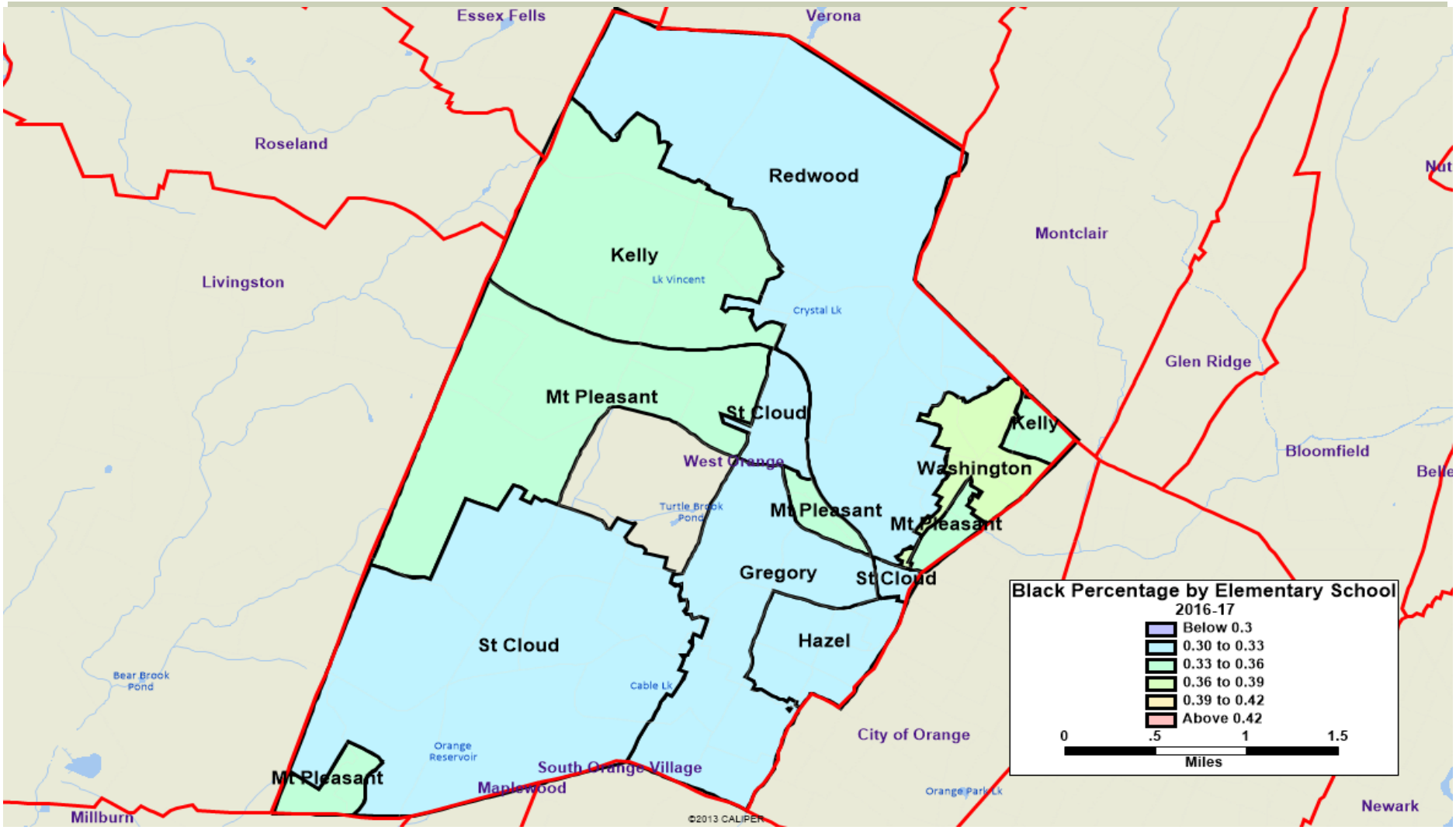
DISTRICT ENROLLMENT BY RACE 2016-17



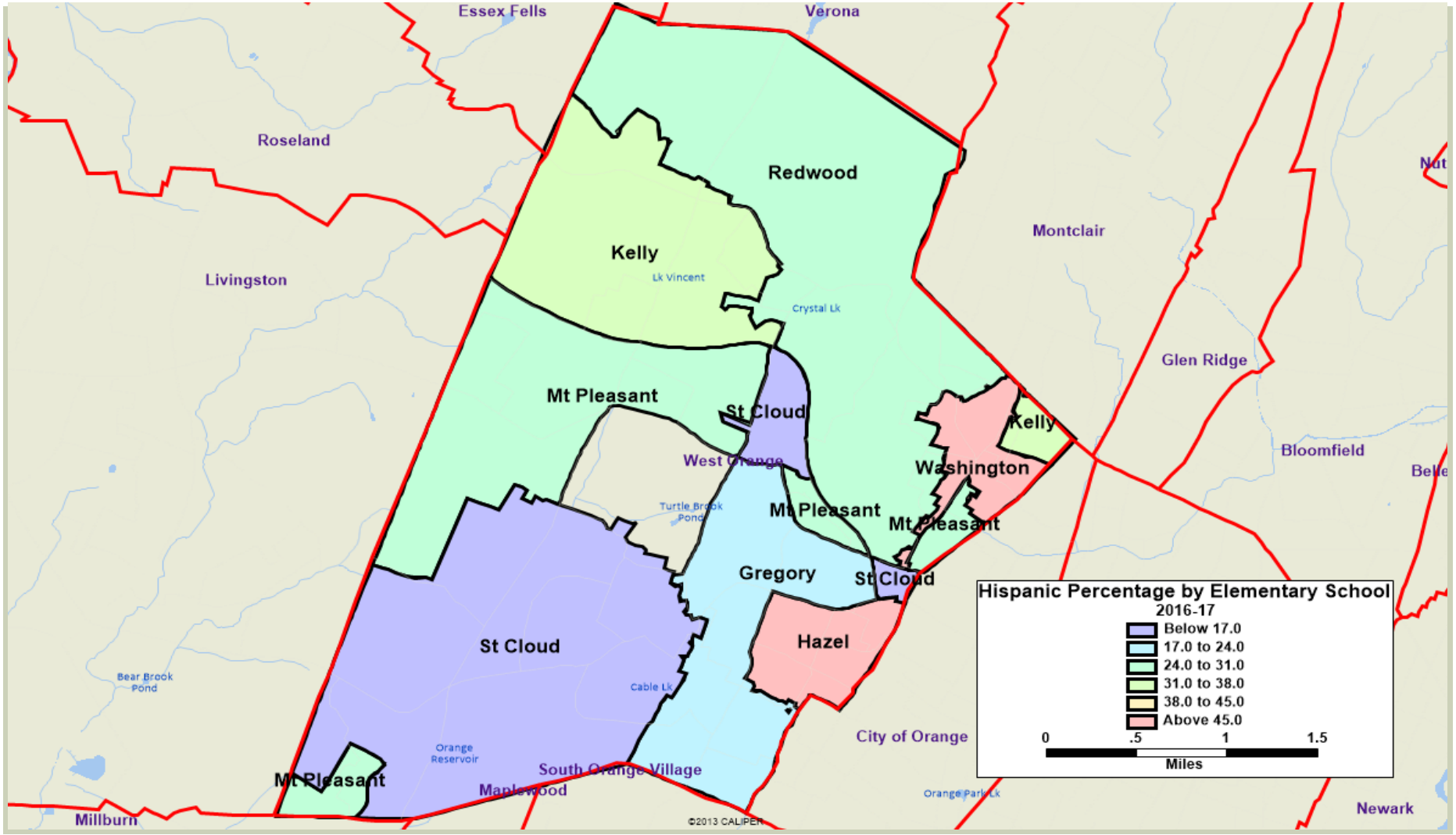
WHITE ENROLLMENT BY ELEMENTARY SCHOOL 2016-17



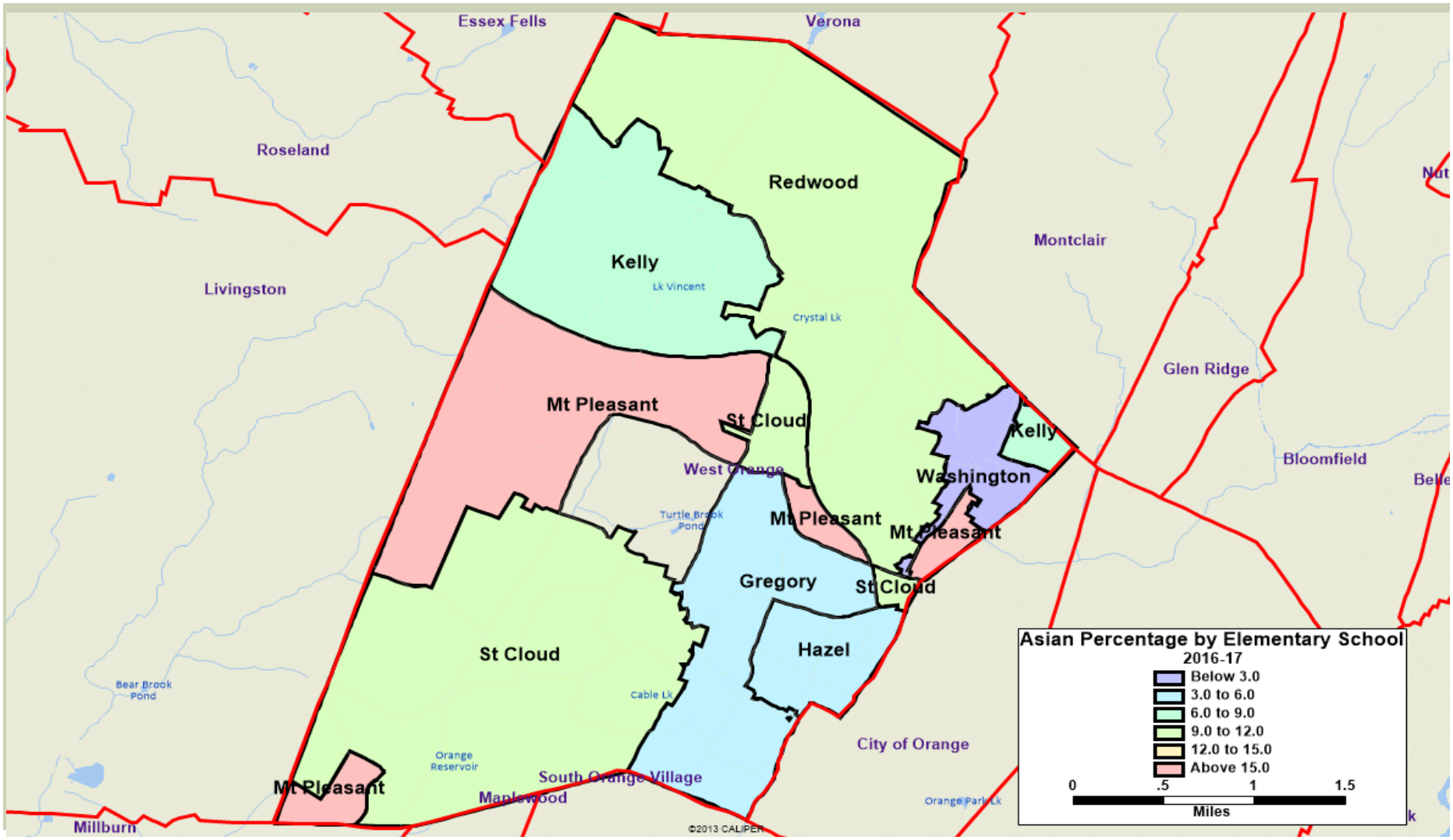
BLACK ENROLLMENT BY ELEMENTARY SCHOOL 2016-17



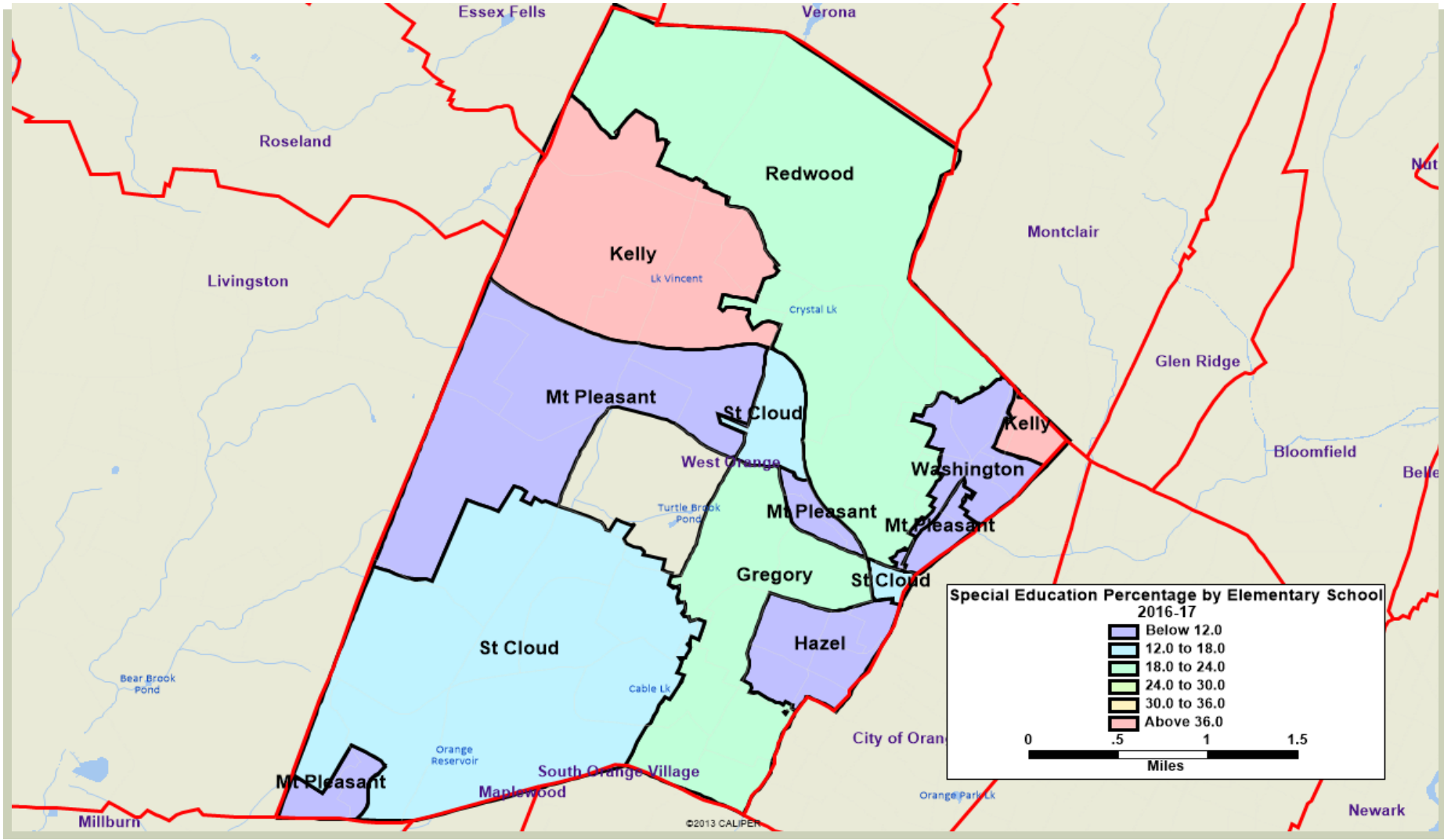
HISPANIC ENROLLMENT BY ELEMENTARY SCHOOL 2016-17



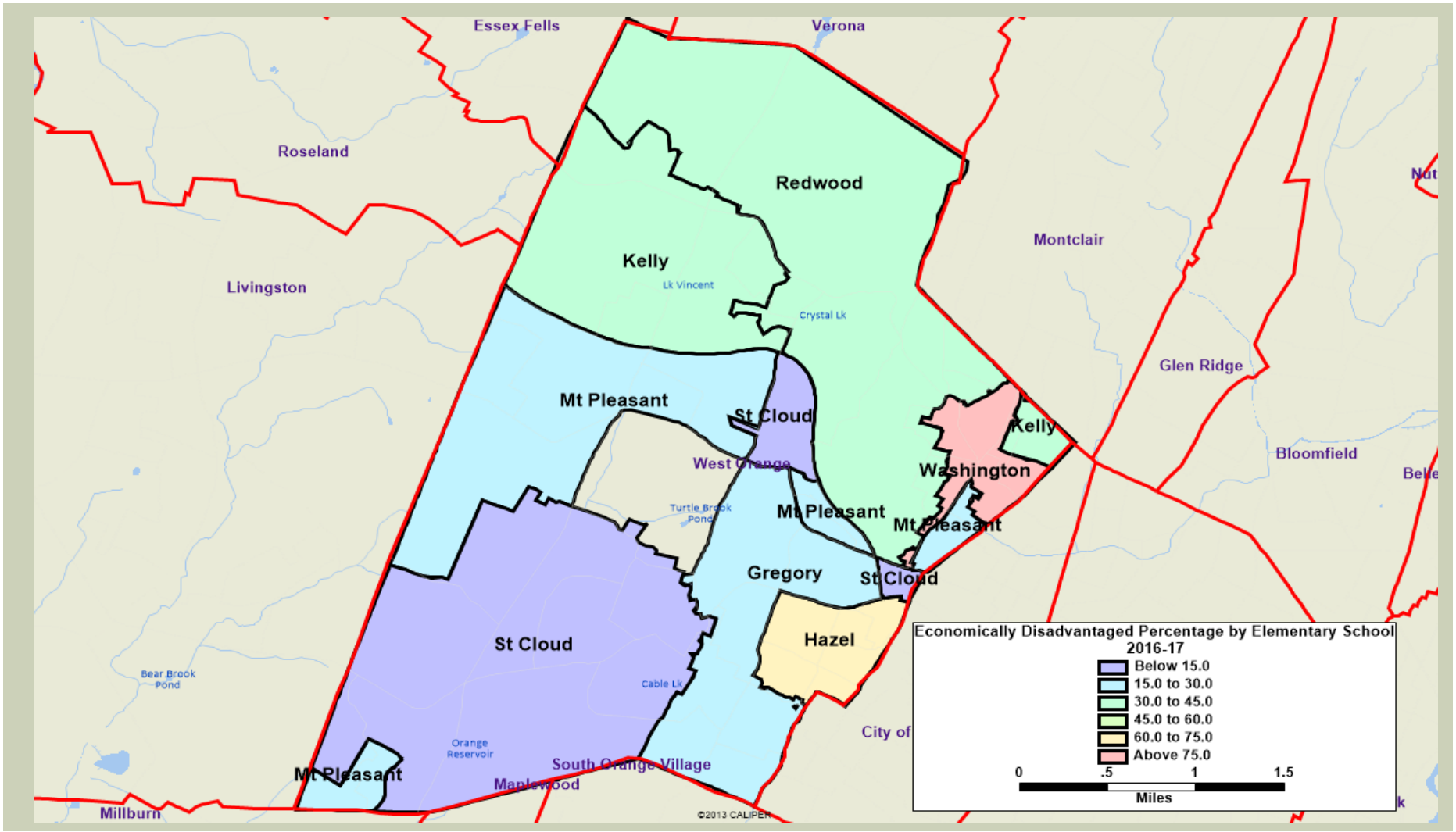
ASIAN ENROLLMENT BY ELEMENTARY SCHOOL 2016-17



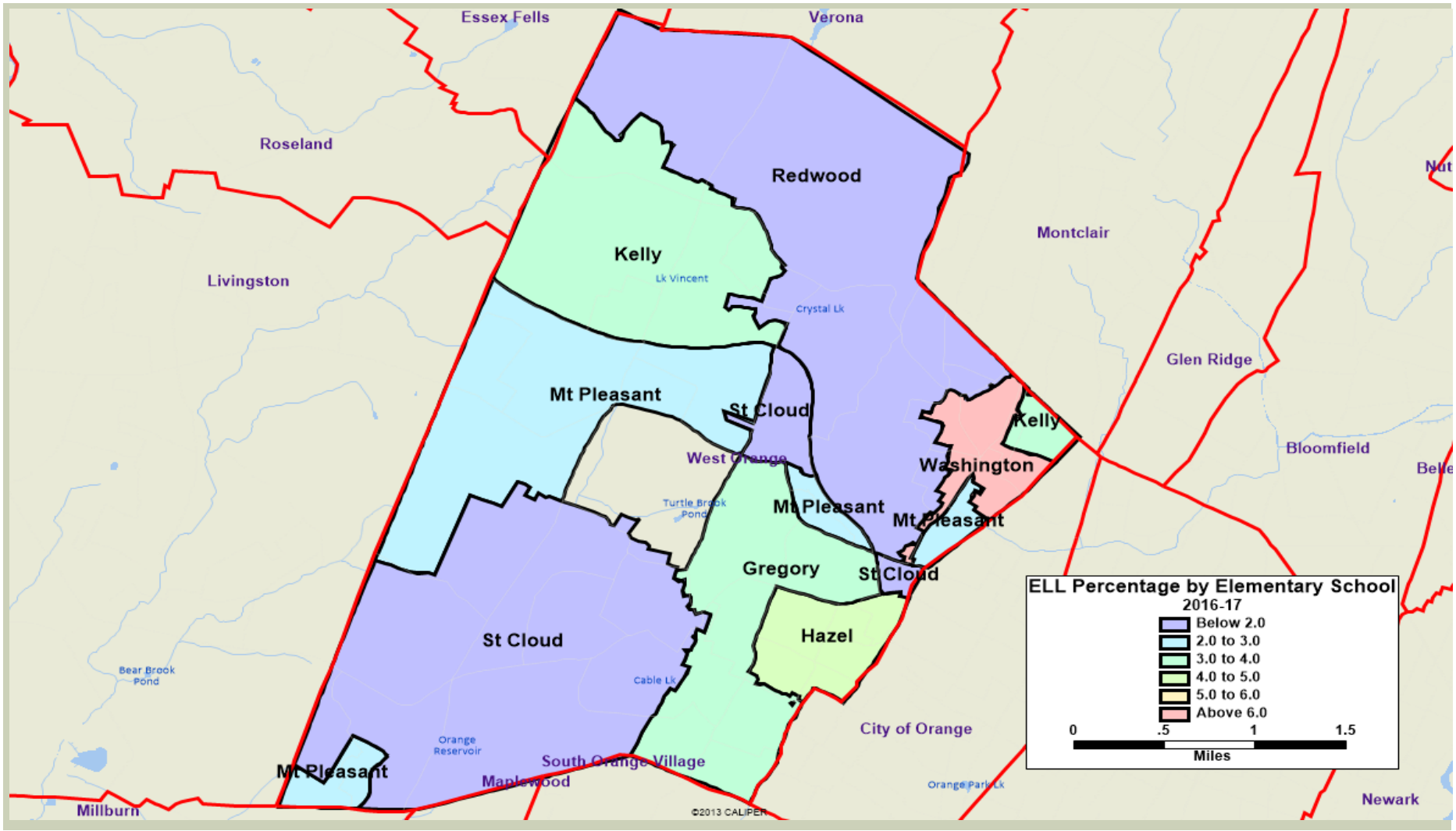
SPECIAL EDUCATION BY ELEMENTARY SCHOOL 2016-17



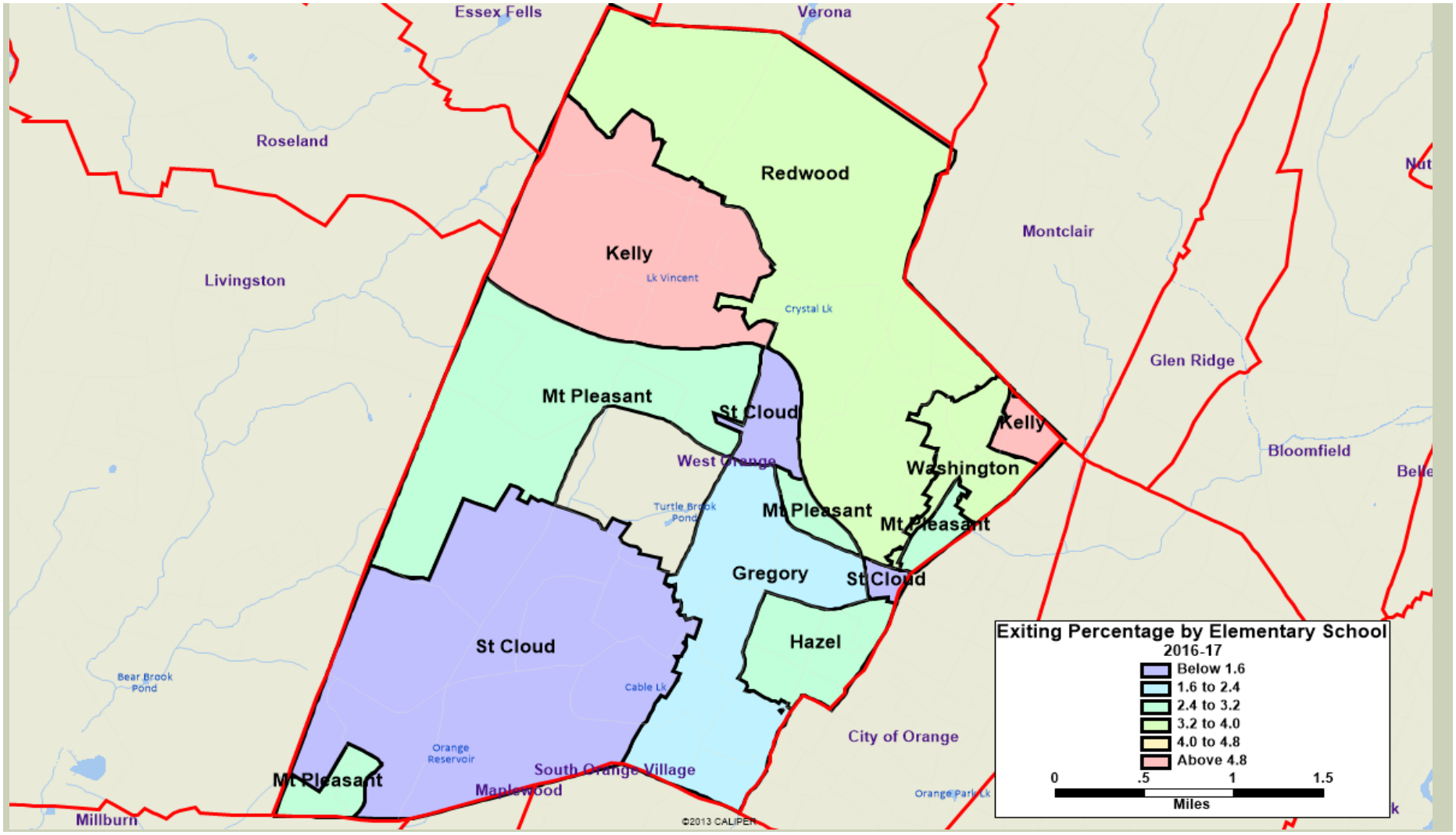
ECONOMICALLY DISADVANTAGED ELEMENTARY BY SCHOOL 2016-17



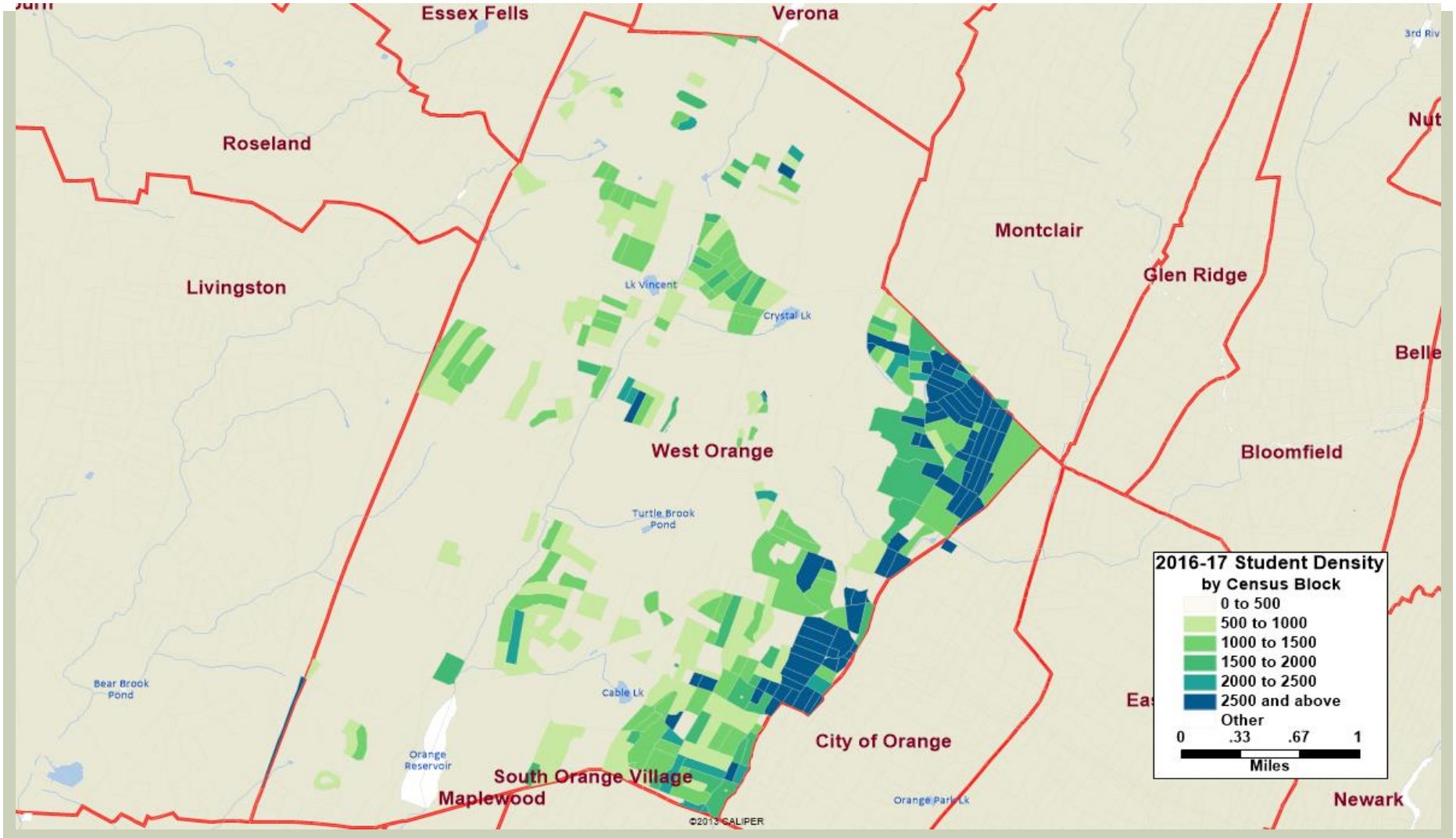
ENGLISH LANGUAGE LEARNERS BY ELEMENTARY SCHOOL 2016-17



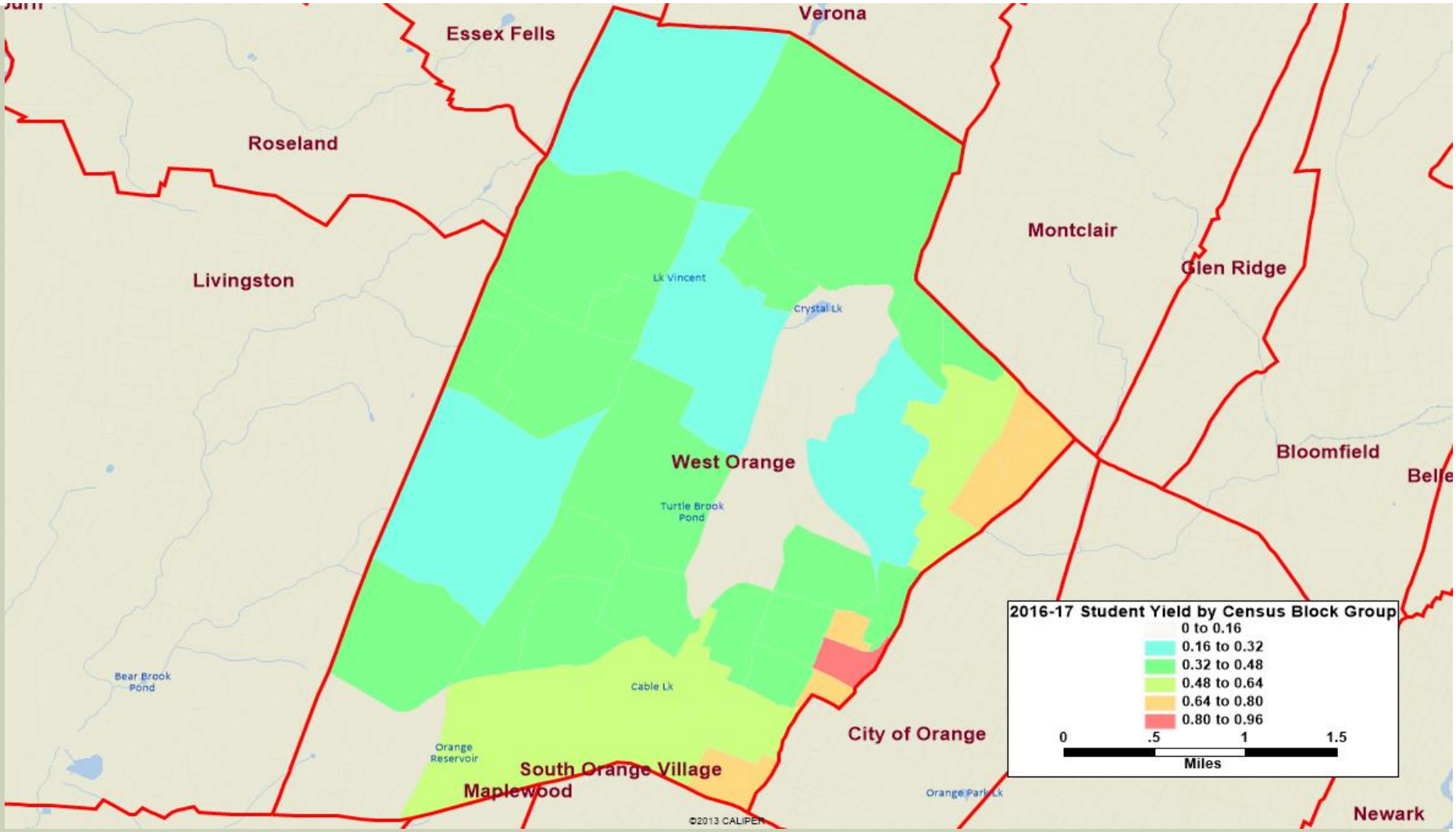
ATTRITION RATE BY ELEMENTARY SCHOOL 2016-17



STUDENT DENSITY BY CENSUS BLOCK 2016-17



STUDENT YIELD BY CENSUS BLOCK GROUP 2016-17



SUMMARY

- Enrollments are projected to be lower at the end of the 5-year projection period, particularly at elementary level.
- Declining birth rate has led to fewer children entering kindergarten.
- Multi-family homes have low student yields where new students is not enough to overcome West Orange's prevailing age structure and declining birth rate.

QUESTIONS