

DEMOGRAPHIC STUDY FOR THE EAST BRUNSWICK PUBLIC SCHOOLS

October 2, 2014



STATISTICAL FORECASTING

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

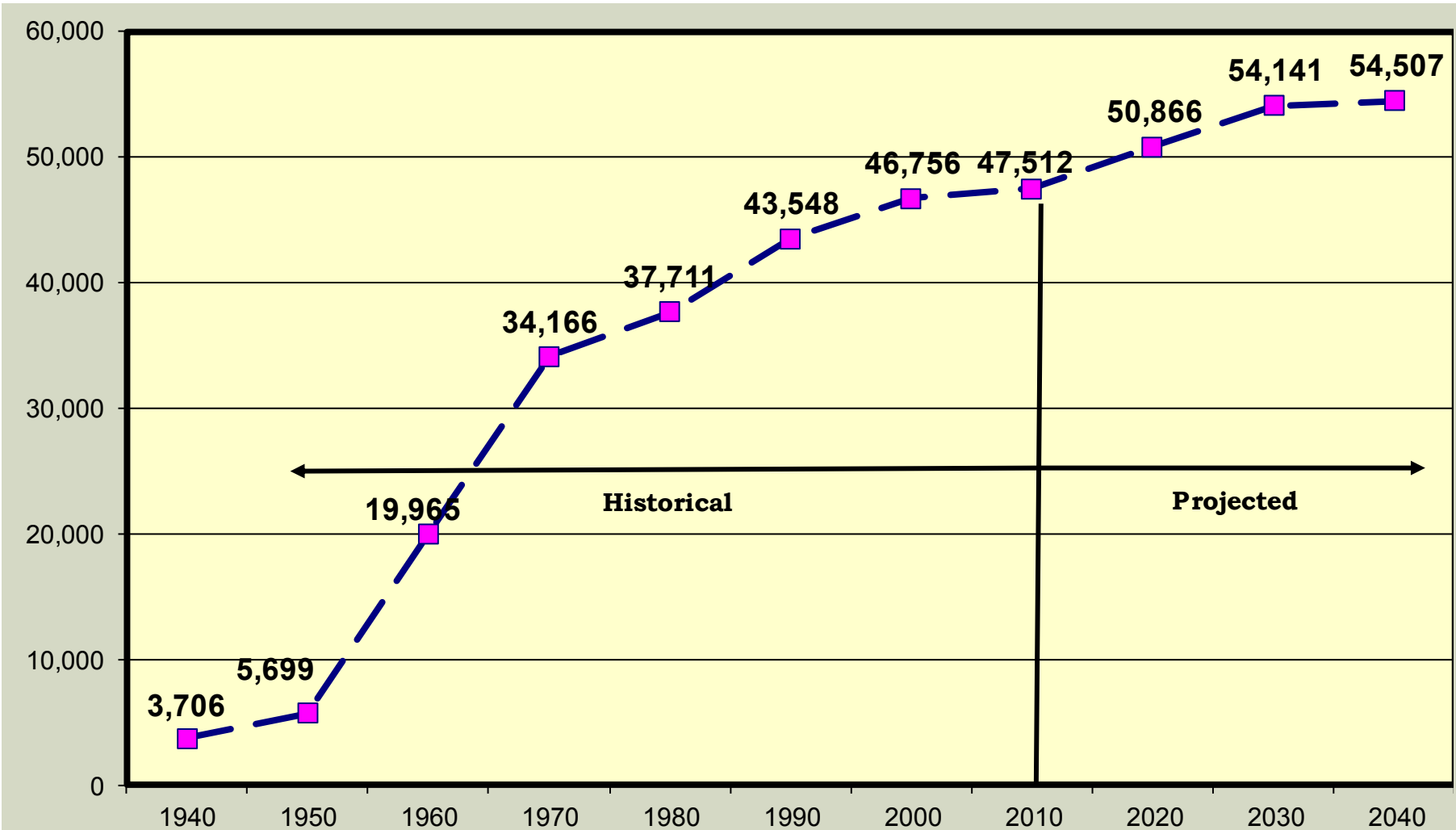
RICHARD S. GRIP ED.D.

- **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 2014-15 through 2023-24 (10 years).
- ❑ Analyze district historical enrollments, birth and fertility rates, community population trends and age structure, new housing starts, and student yields by housing type.
- ❑ Geocode student addresses at two time points: 2008-09 and 2013-14
- ❑ Complete housing turnover analysis and project impact on future enrollment trends

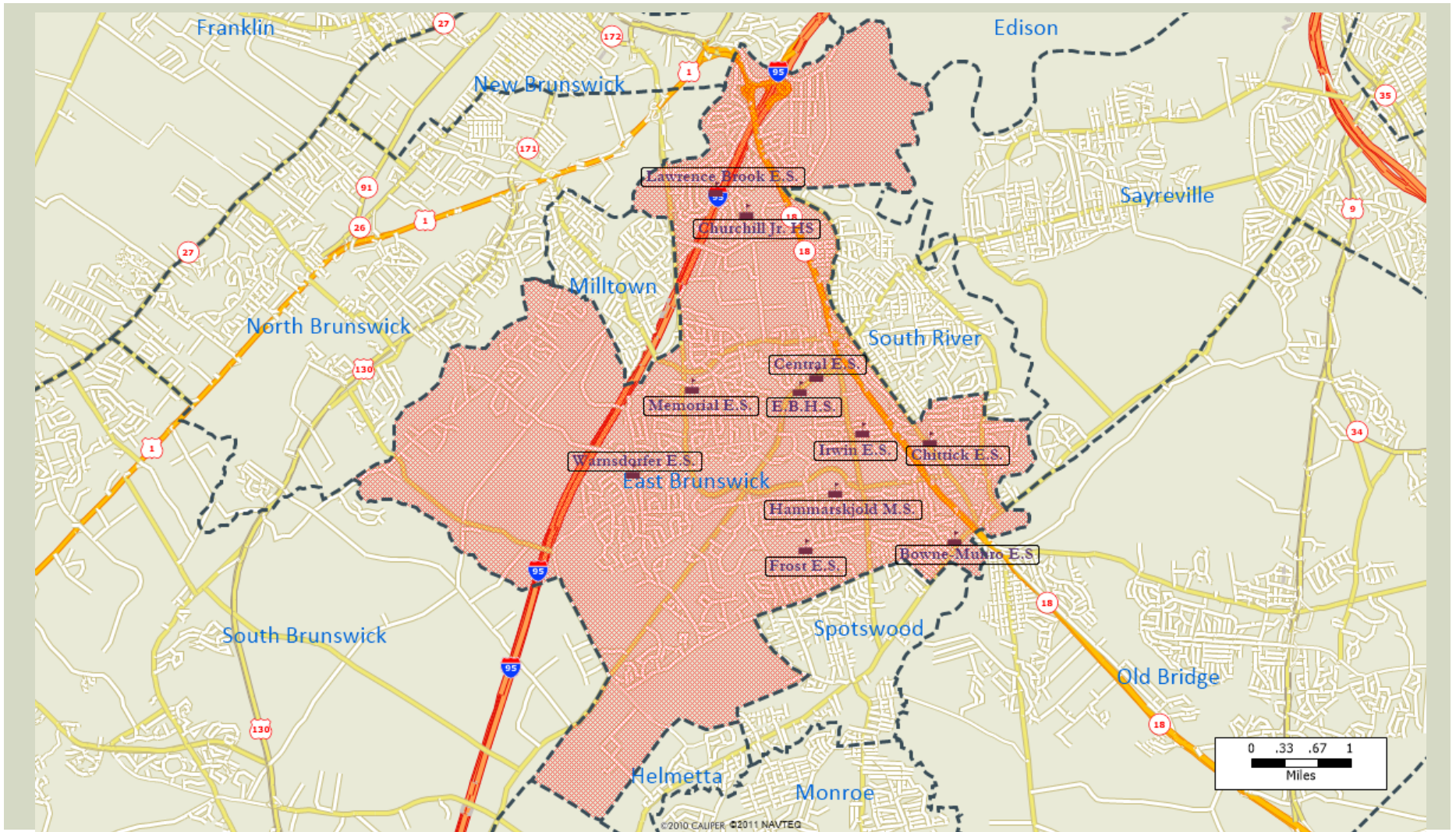
HISTORICAL AND PROJECTED POPULATIONS FROM 1940-2040



EAST BRUNSWICK DEMOGRAPHIC PROFILE

- ❑ 69.4% White, 22.8% Asian, 6.7% Hispanic
- ❑ Median age = 42.5 years (NJ = 38.9 years)
- ❑ Nearly 1/3 of population is foreign-born (NJ=21.0%). China and India are largest sources.
- ❑ Bachelor's Degree or Higher = 54.8%
- ❑ Median family income = \$108,267
- ❑ 17,367 housing units, of which 82% are 1-unit homes (attached or detached).
- ❑ Nearly 15% of housing units are renter-occupied.
- ❑ Median value of owner-occupied unit = \$368,500.

SCHOOL LOCATIONS

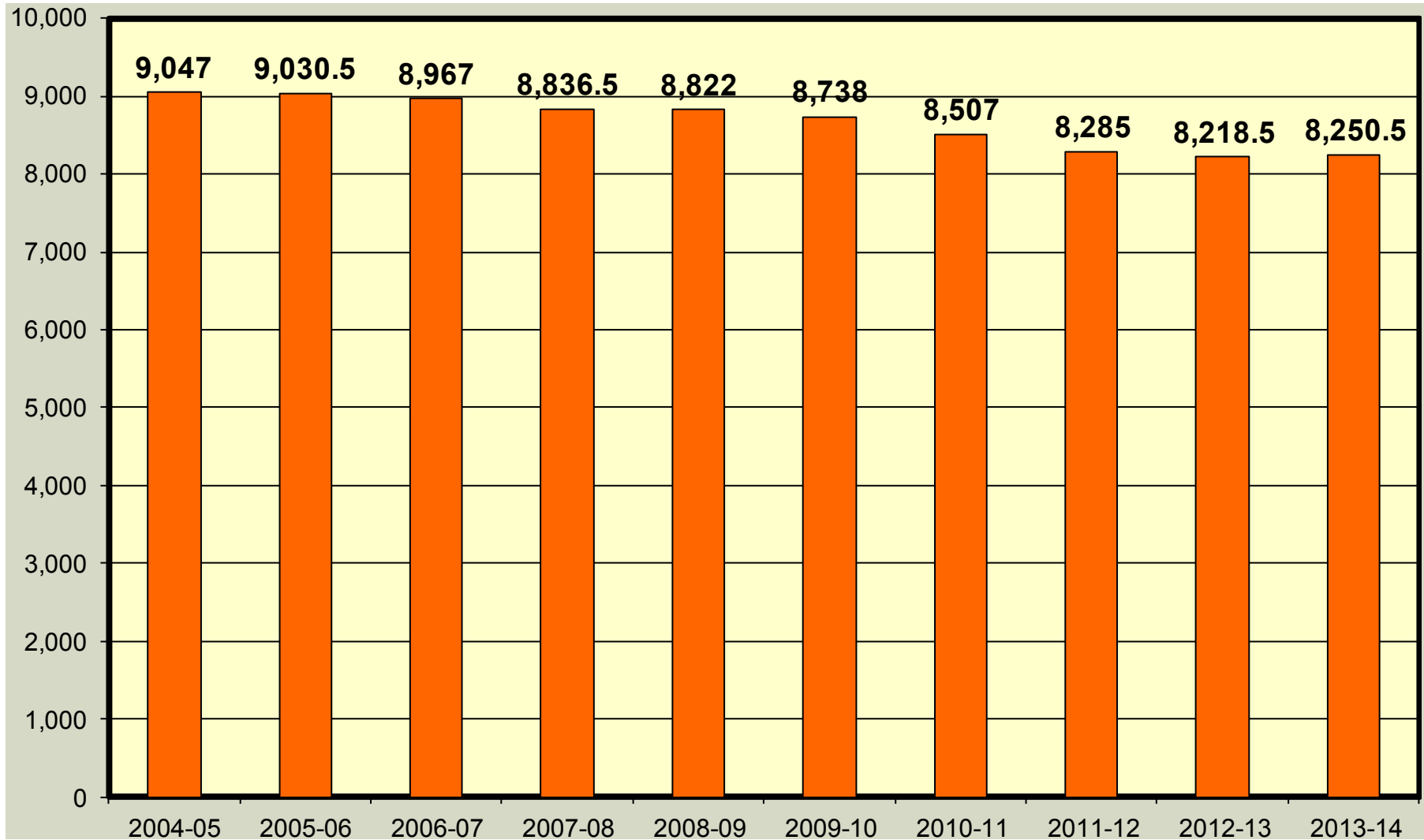


HISTORICAL ENROLLMENT TRENDS

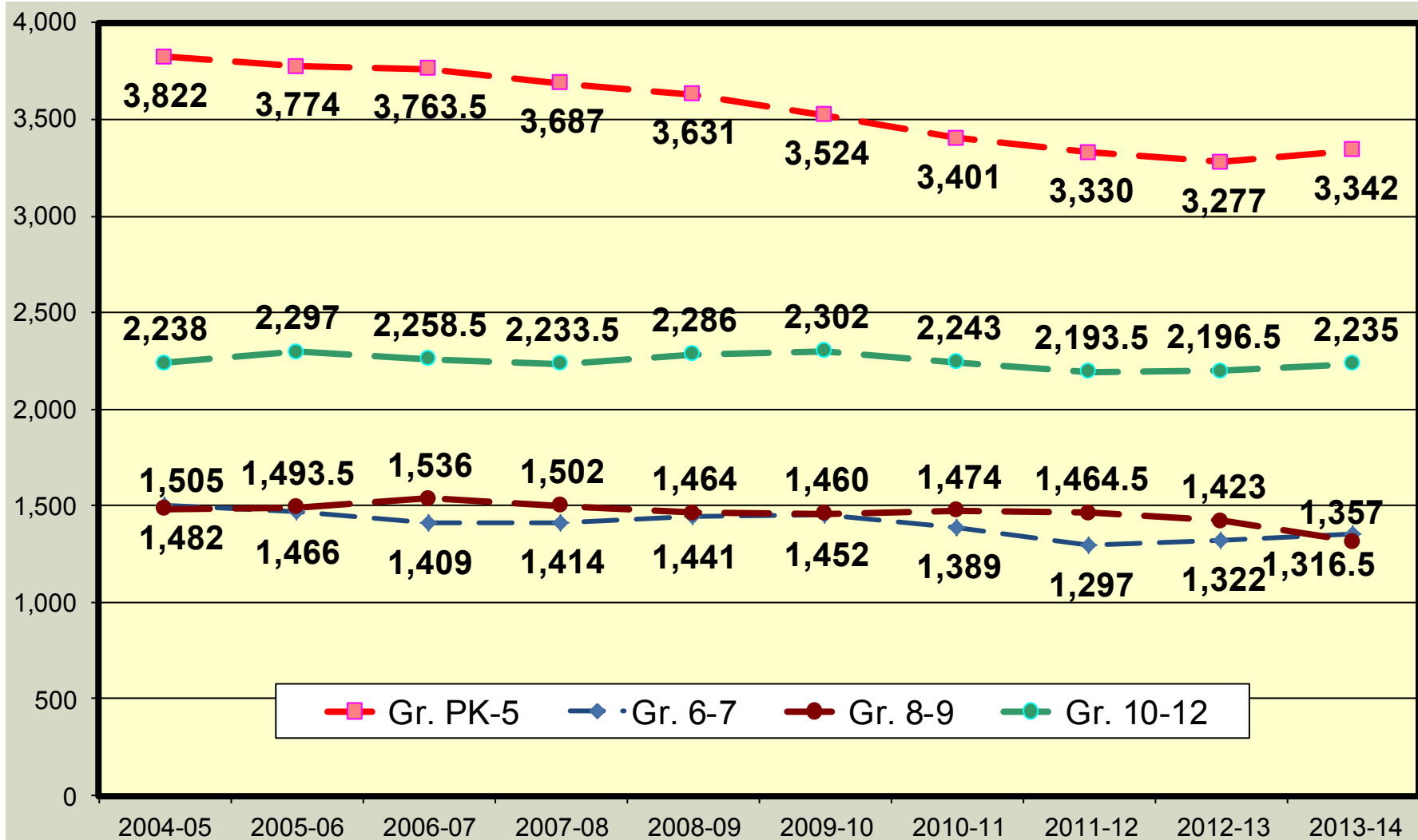
- ❑ District's October 2013 enrollment was 8,250.5.
- ❑ Enrollment has been steadily declining, losing nearly 800 students since 2004-05.
- ❑ Cohort-Survival Ratio Method (CSR) was used to project enrollment ten years into the future.

HISTORICAL ENROLLMENT

2004-05 TO 2013-14



HISTORICAL ENROLLMENT BY LEVEL

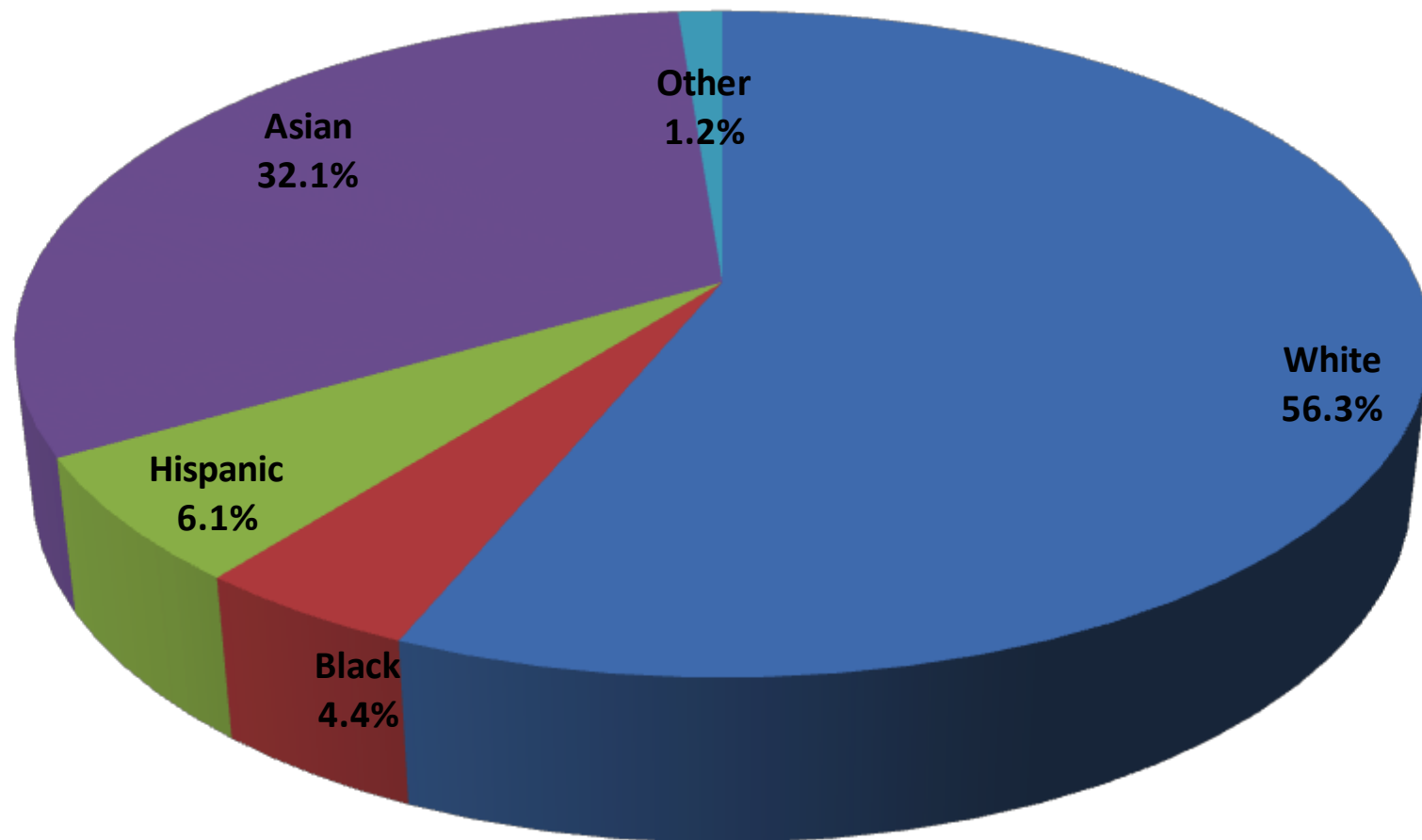


ENROLLMENT PROJECTION METHOD COHORT SURVIVAL RATIO

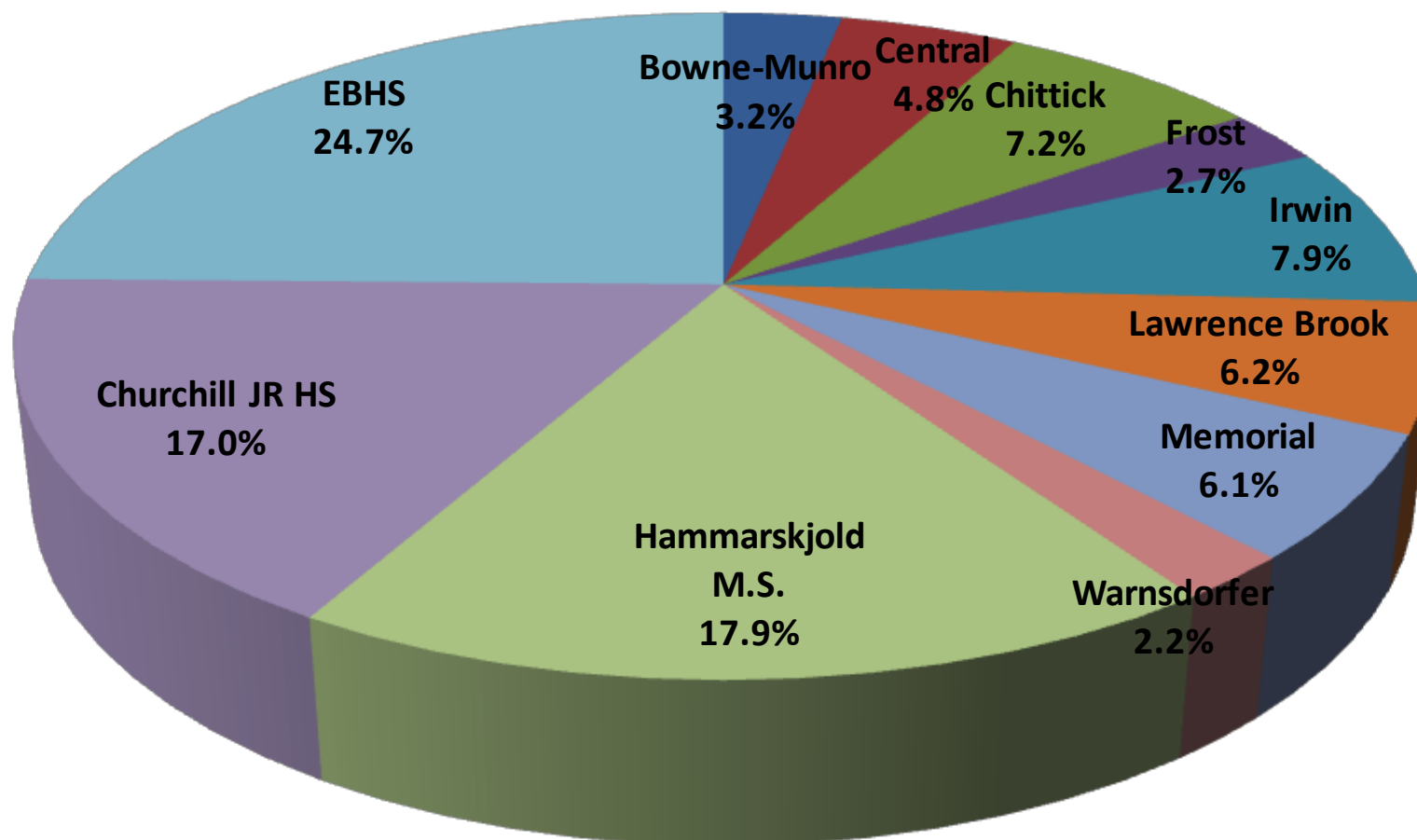
- ❑ Ratios are calculated for each grade progression. (Ex. 100 1st graders in 2012-13 become 95 2nd graders in 2013-14 = 0.95)
- ❑ Survival ratios were computed for ten historical years.
- ❑ Averages were then computed and used to project future enrollments.

ENROLLMENT BY RACE

2013-14



FREE OR REDUCED LUNCH 2013-14



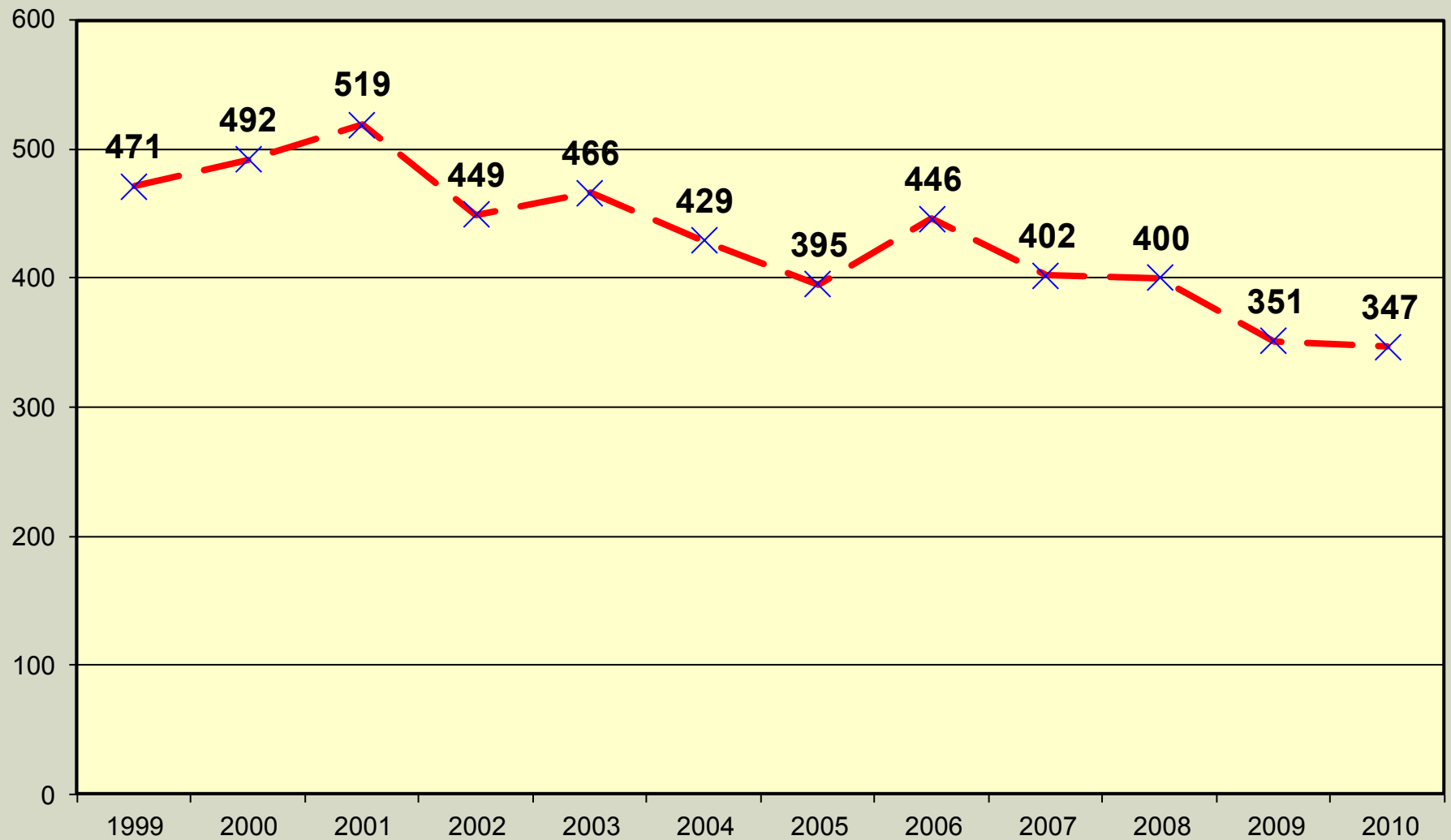
BIRTHS

- ❑ Births in East Brunswick have been declining: Peak- 519 in 2001, 347 in 2010.
- ❑ Births are used to project kindergarten students 5 years later.
- ❑ Fertility rates in East Brunswick are lower than Middlesex County and NJ.
- ❑ Decline is greatest in the eastern part of township (Chittick and Bowne-Munro). Large decline in the northern section (Lawrence Brook) as well.

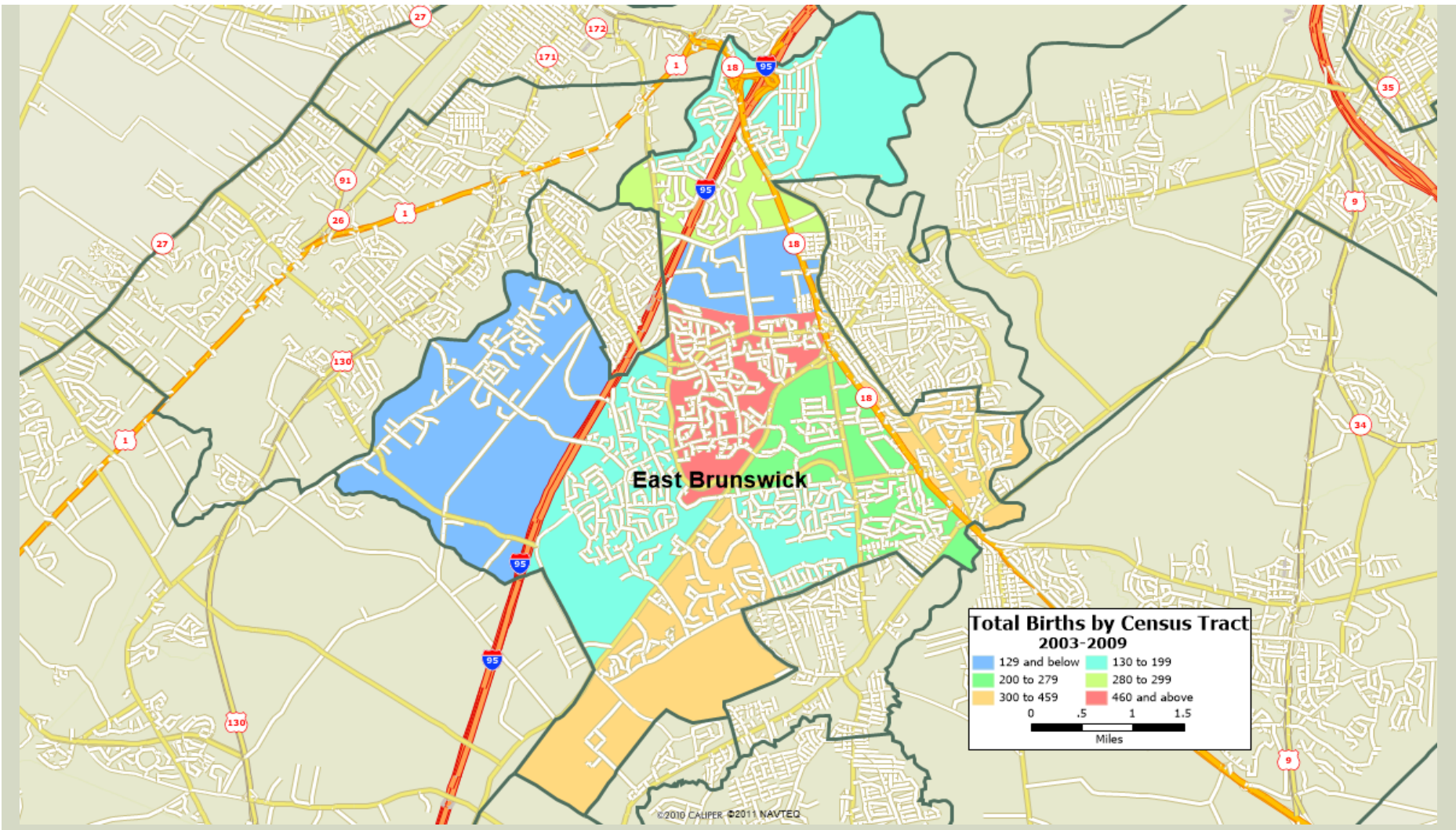
BIRTH RATES AND BIRTH-TO-KINDERGARTEN SURVIVAL RATIOS

Birth Year	Number of Births East Brunswick	Number of Kindergarten Students Five Years Later	Birth-to-Kindergarten Survival Ratio
1999	471	451	0.958
2000	492	466	0.947
2001	519	449	0.865
2002	449	425	0.947
2003	466	416	0.893
2004	429	396	0.923
2005	395	368	0.932
2006	446	370	0.830
2007	402	446	1.109
2008	400	495	1.238
2009	351	N/A	N/A
2010	347	N/A	N/A

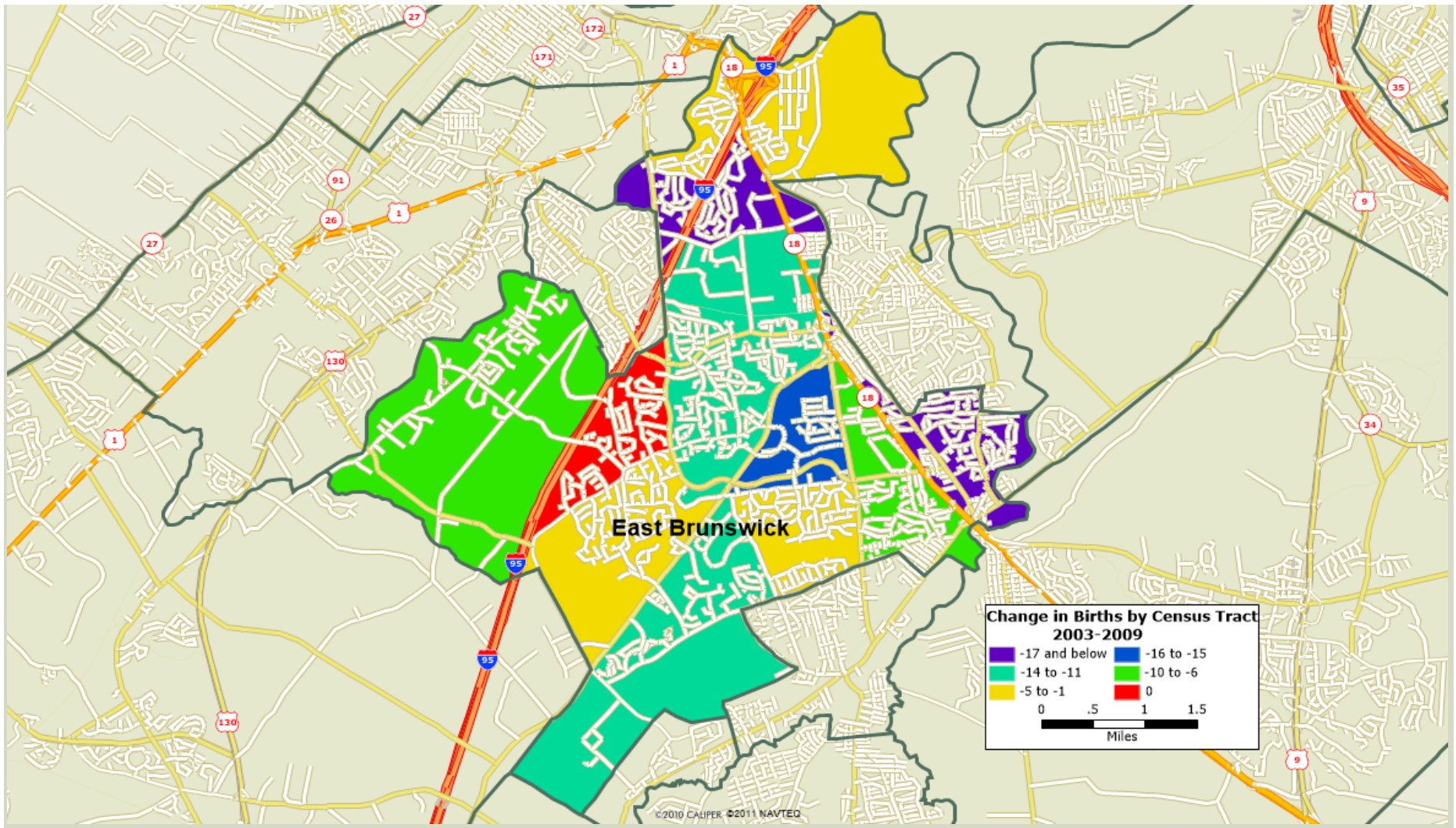
BIRTHS FROM 1999-2010



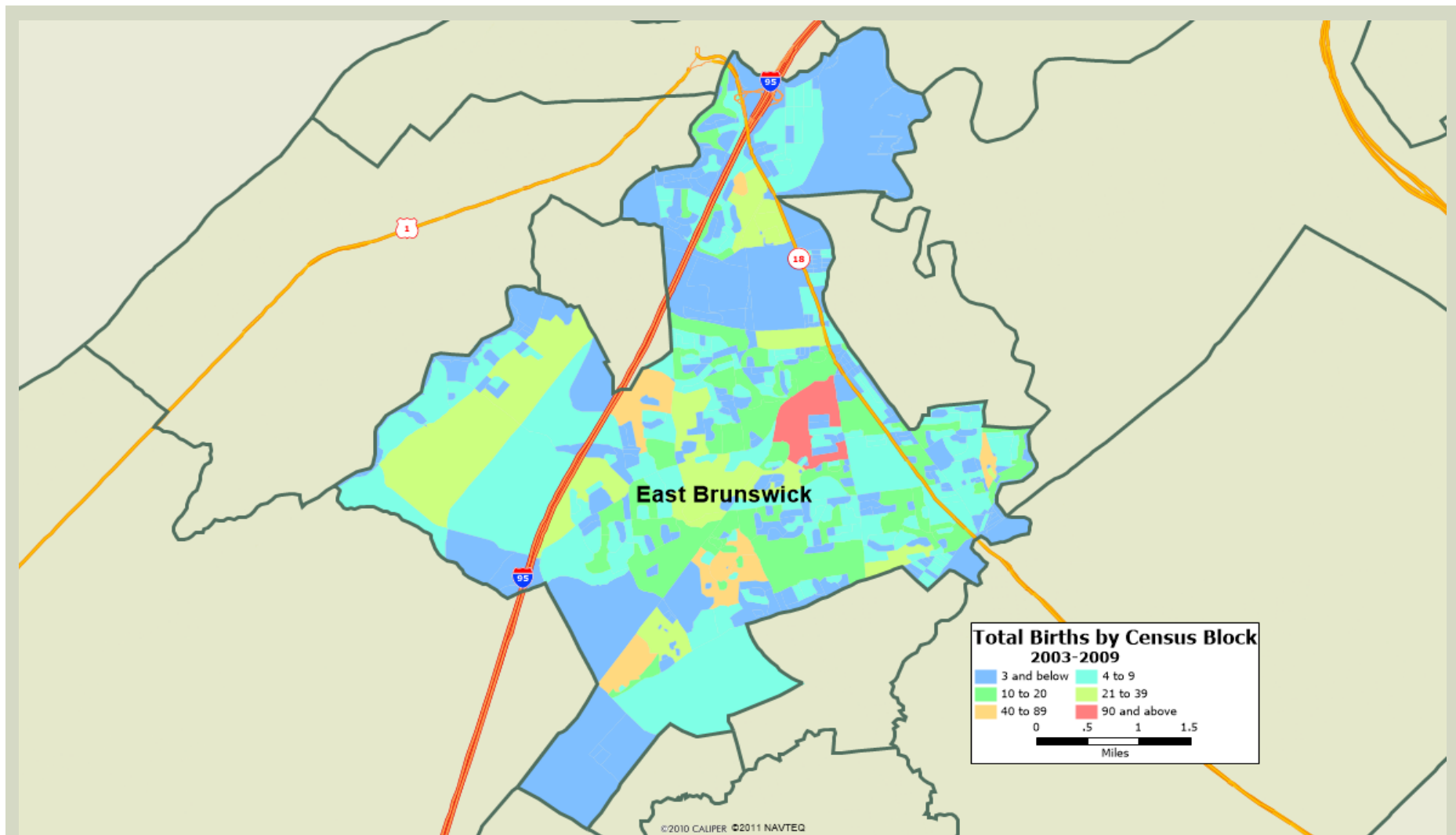
TOTAL BIRTHS BY CENSUS TRACT 2003-2009



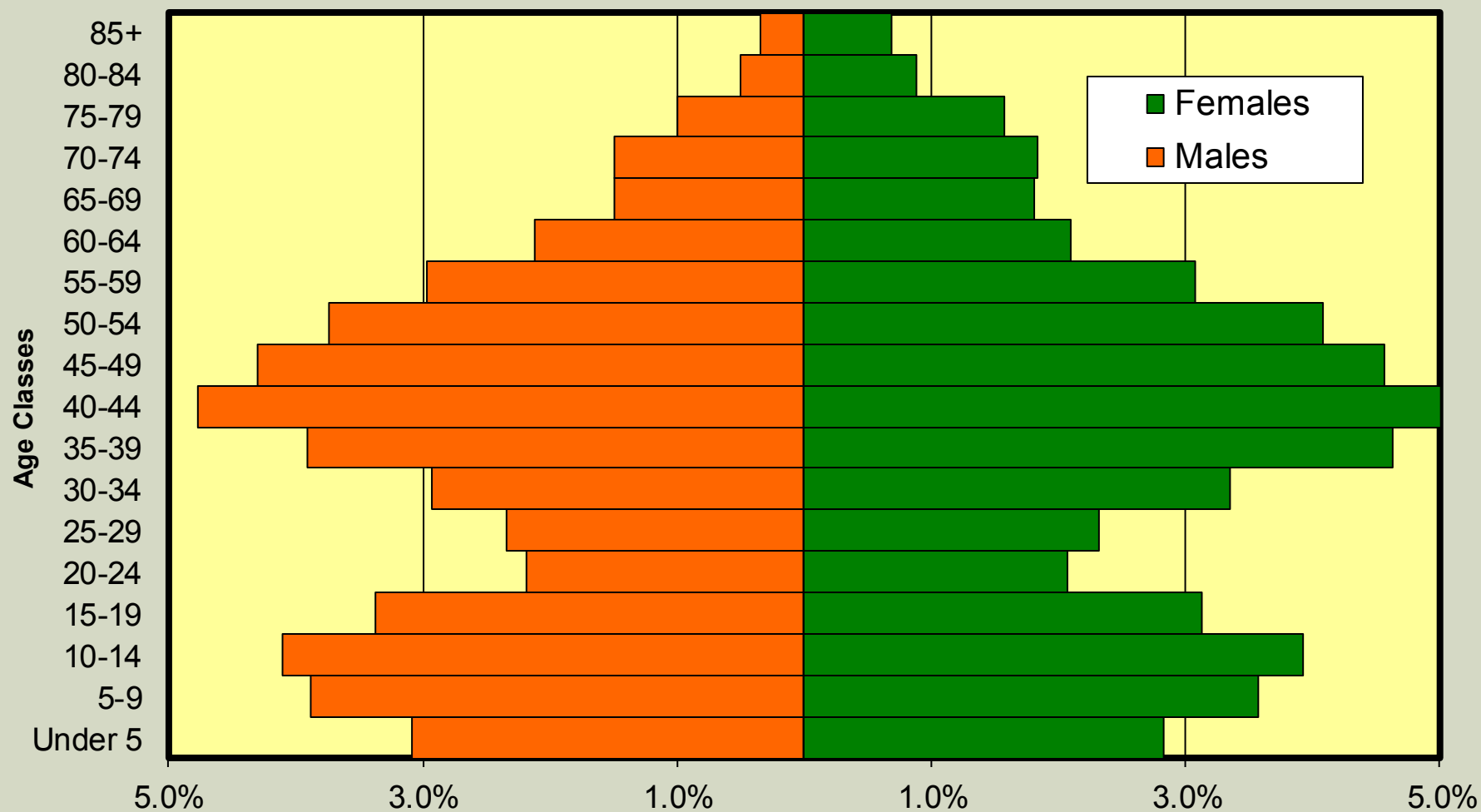
CHANGE IN BIRTHS BY CENSUS TRACT 2003-2009



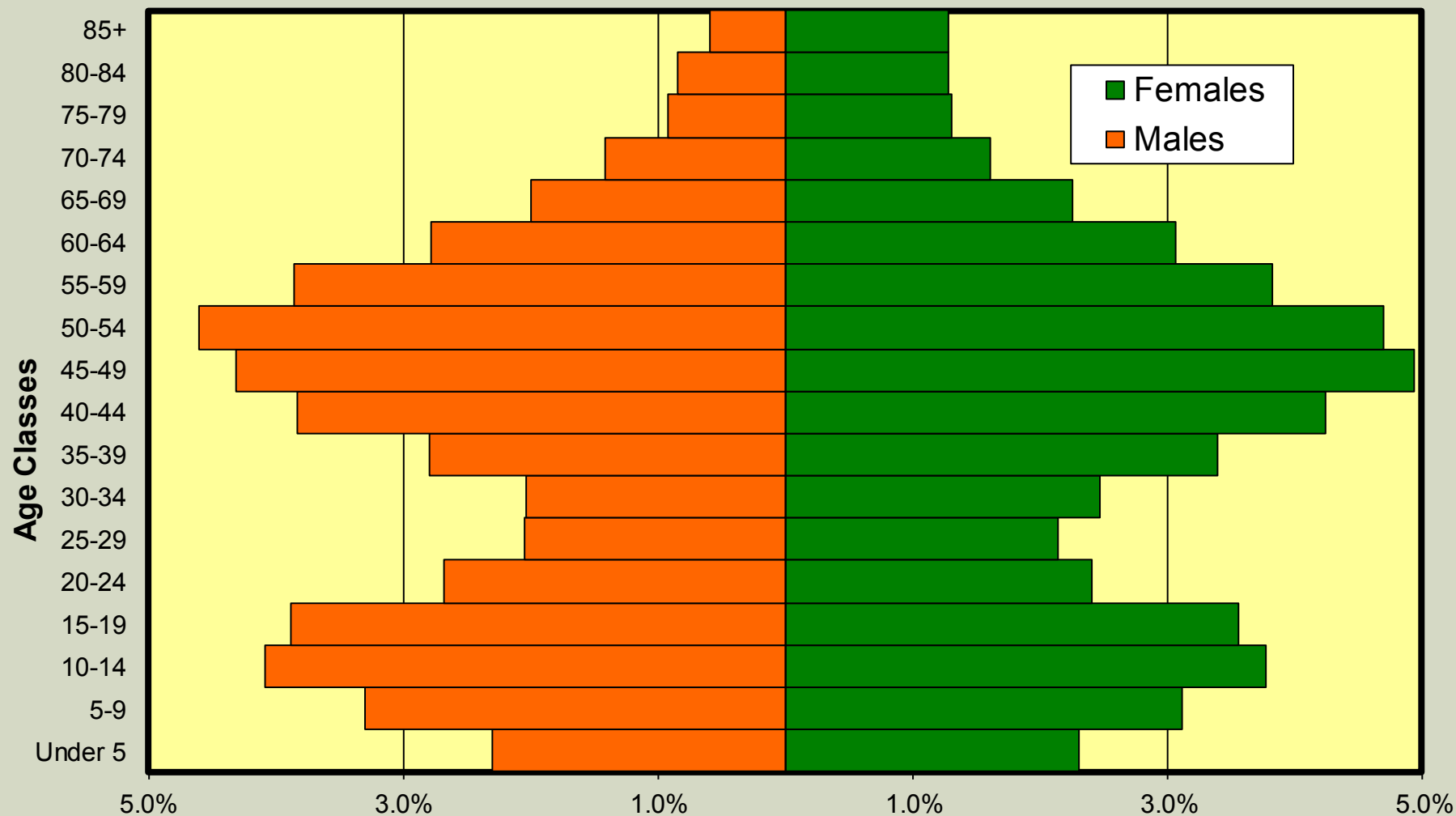
TOTAL BIRTHS BY CENSUS BLOCK 2003-2009



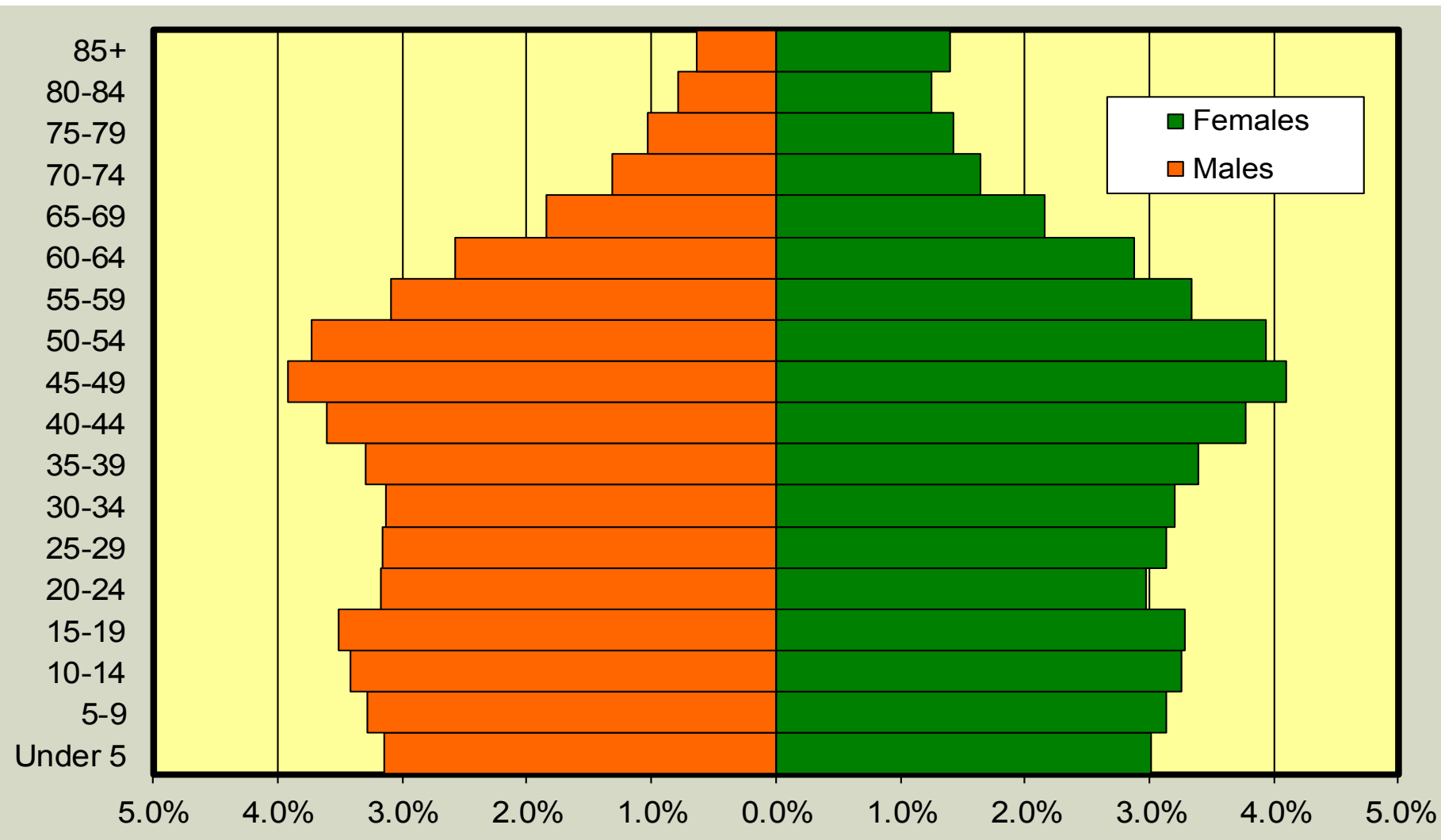
AGE PYRAMID - EAST BRUNSWICK 2000



AGE PYRAMID - EAST BRUNSWICK 2010



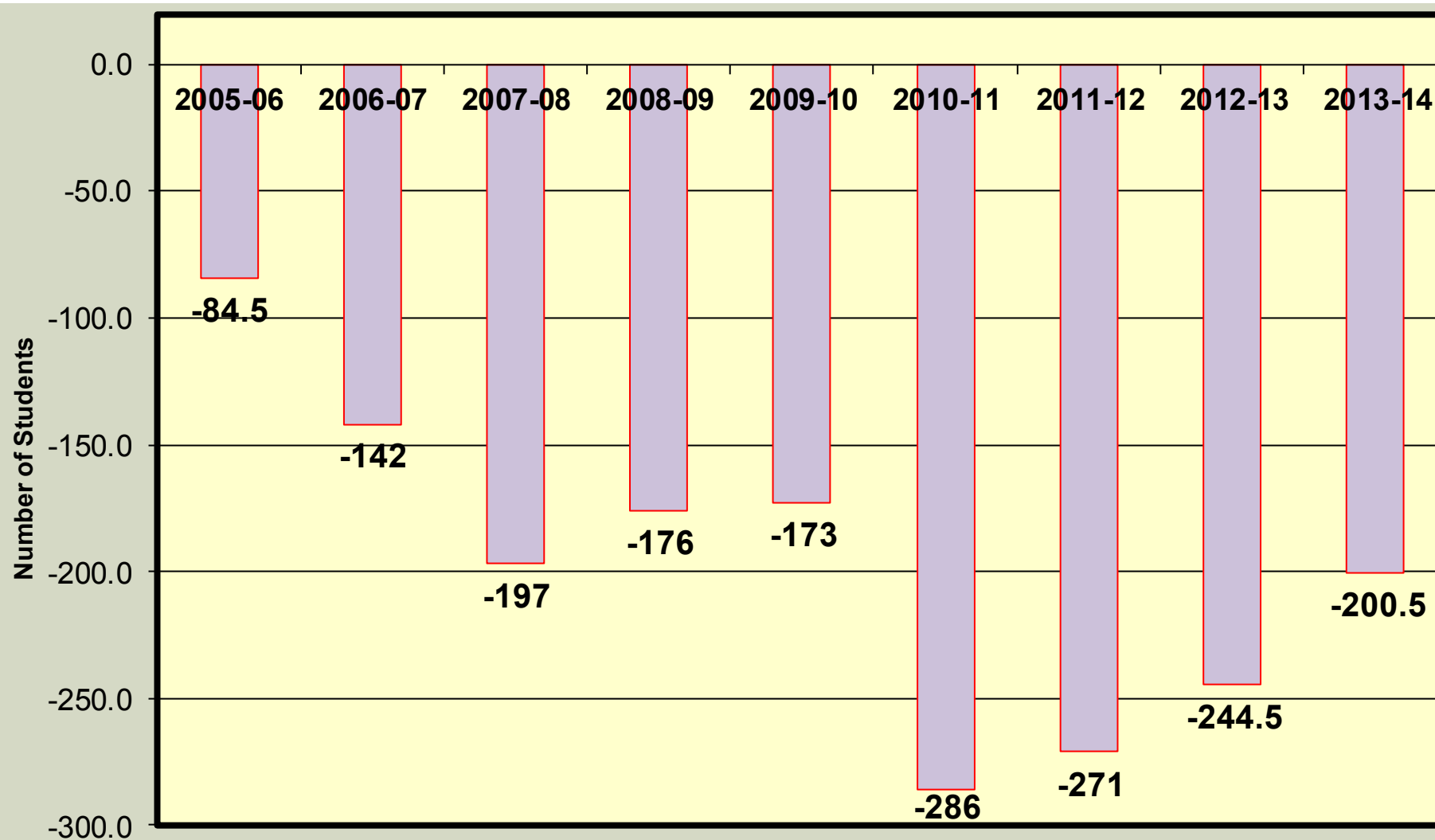
AGE PYRAMID - NEW JERSEY 2010



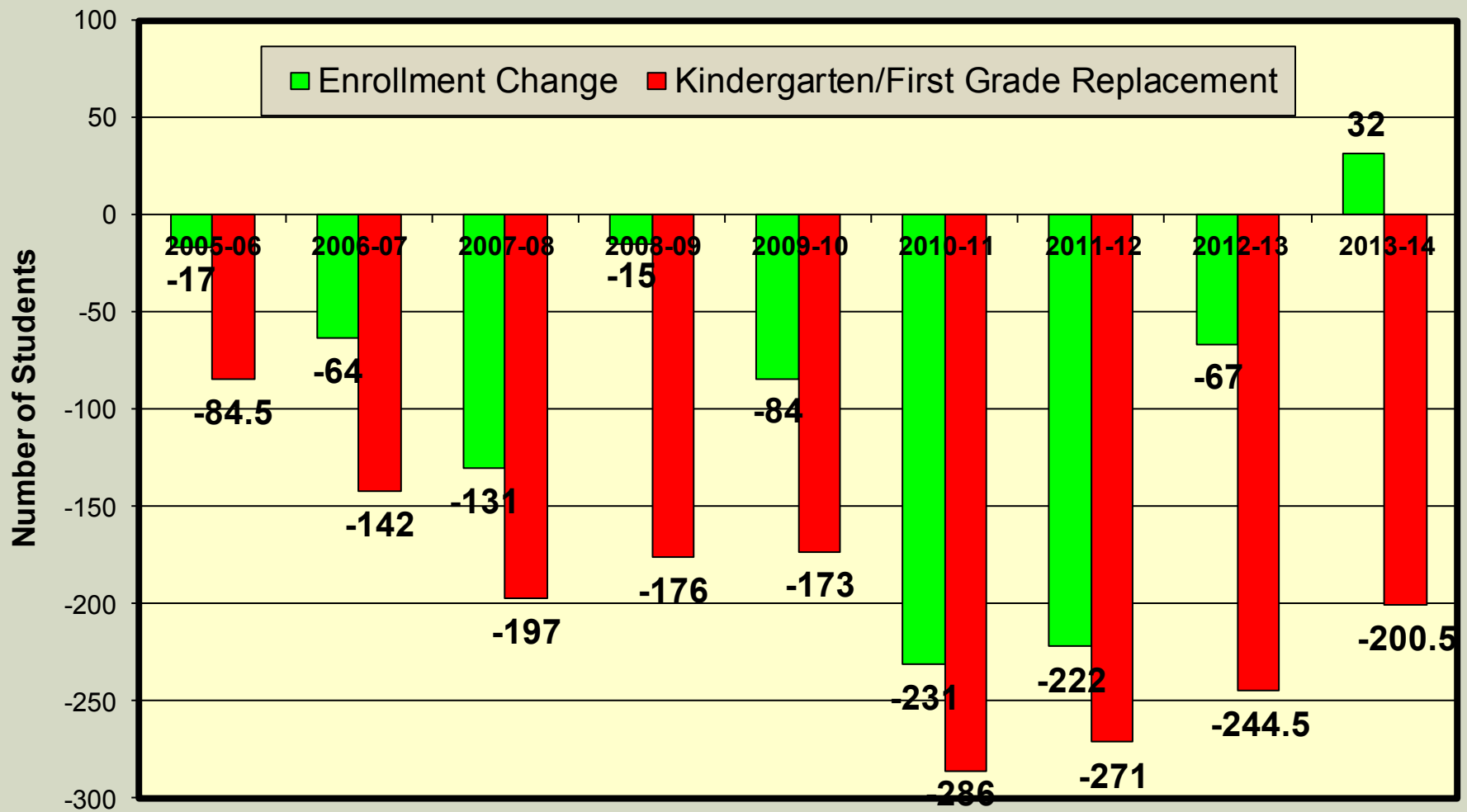
KINDERGARTEN/FIRST GRADE REPLACEMENT

- ❑ Negative kindergarten/first grade replacement has occurred for past 9 years.
- ❑ Negative KR- Number of graduating 12th grade students is greater than the number of kindergarten students replacing them in the next year.
- ❑ Negative KR was 200.5 students in 2013-14 as 695.5 12th graders graduated in 2012-13 and were replaced by 495 kindergarten students in 2013-14.

HISTORICAL KINDERGARTEN/FIRST GRADE REPLACEMENT



TOTAL ENROLLMENT CHANGE VS. KINDERGARTEN/FIRST GRADE REPLACEMENT



NEW HOUSING

- Golden Triangle: 400 market-rate apartments with a mix of 1-3 BR.
- 85 Main Street (near Spotswood border)- 133 apartment and townhouse 2-BR units. 20 units to be set aside for affordable housing.
- Student yields were computed for detached single-family homes, townhouses, and apartments by joining township property database and school district's 2013-14 student database.

STUDENT YIELDS

- Average student yield for detached SF homes = 0.56
- Average student yield for townhouses/condos = 0.41
- Average student yield for (1-2 BR) apartments = 0.32
- Total of 169 children are projected from the two new developments.

STUDENT YIELDS

TOWNHOUSES/CONDOMINIUMS

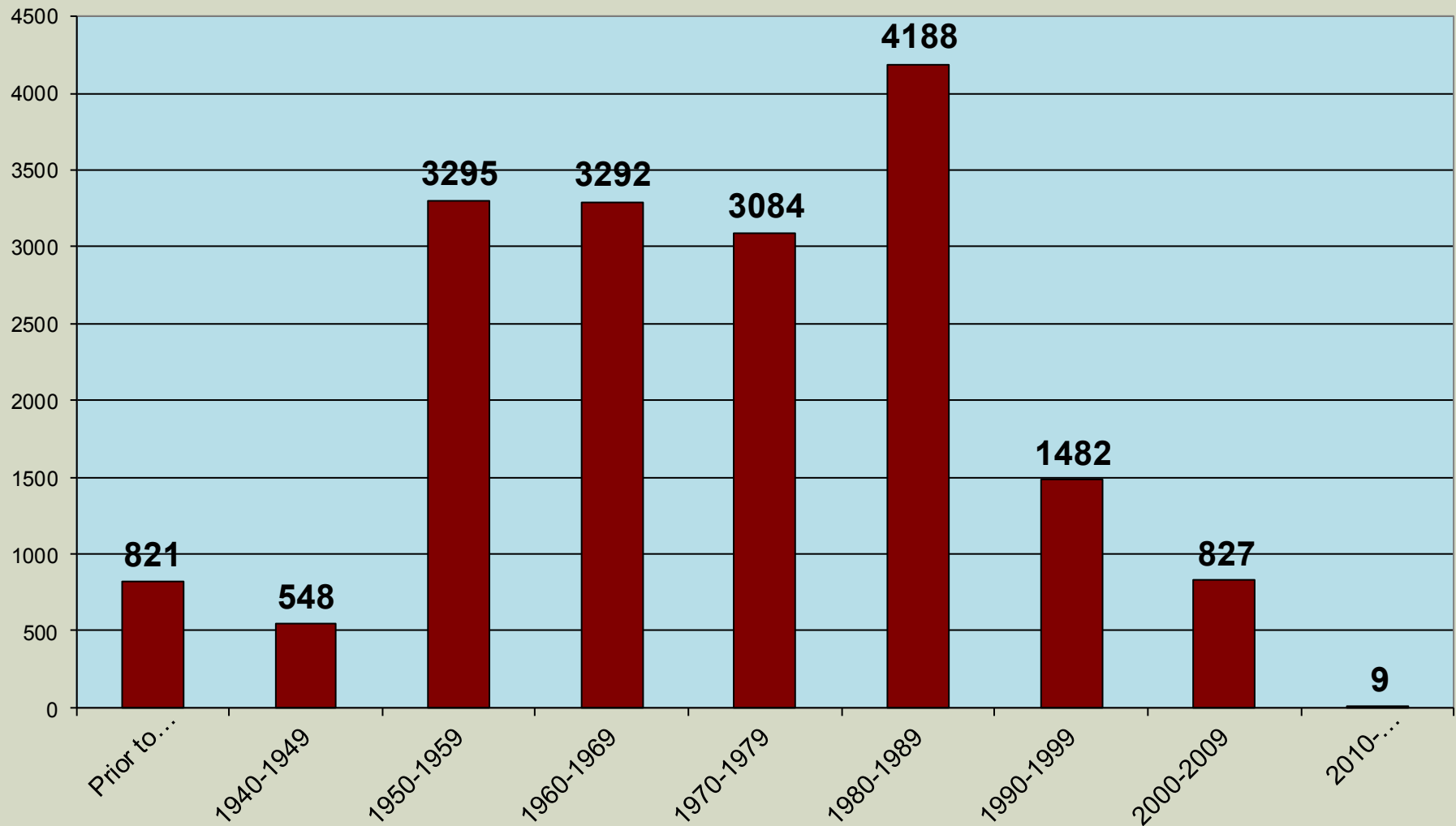
Development	Number of Units	PK-5	6-7	8-9	10-12	Total Students	Total Student Yield
Briar Ridge	61	5	3	1	4	13	0.21
Carriage Square	80	10	4	5	10	29	0.36
Colonial Oaks	48	12	10	6	11	39	0.81
The Commons at Kingswood Station	242	33	11	8	17	69	0.29
Country Woods	294	62	20	21	39	142	0.48
Crosspointe	463	38	17	17	16	88	0.19
Dunham's Court	71	18	0	2	10	30	0.42
Fox Meadow	264	60	20	22	33	135	0.51
Lake Avenue	291	51	18	17	14	100	0.34
Lexington Village	226	41	24	16	29	110	0.49
Society Hill	739	159	59	35	74	327	0.44
Summerhill Meadows	172	32	26	17	22	97	0.56
Summerhill Village	64	13	5	2	3	23	0.36
Timber Hollow	203	36	8	11	20	75	0.37
Windsong	180	65	16	18	13	112	0.62
Williams Court	29	3	1	2	6	12	0.41
Total	3,427	638	242	200	321	1,401	0.41

STUDENT YIELDS

APARTMENTS

Development	Number of Units	PK-5	6-7	8-9	10-12	Total Students	Student Yield
Cranbury Crossing	160	31	9	9	14	63	0.39
Royal Gardens	96	11	5	3	8	27	0.28
Taylor Gardens	363	61	27	24	41	153	0.42
Wyndmoor Apartments	410	39	11	13	22	85	0.21
Total	1,029	142	52	49	85	328	0.32

HOMES BUILT BY DECADE



ENROLLMENT PROJECTIONS

- Enrollments were projected by school for a ten-year period.
- Years 1-5 are much more reliable than Years 6-10, where the latter relies on projecting future birth counts.
- Baseline enrollment projections were adjusted to account for new residential construction at Golden Triangle and 85 Main Street. These will impact Lawrence Brook and Bowne-Munro attendance areas.

ENROLLMENT PROJECTIONS

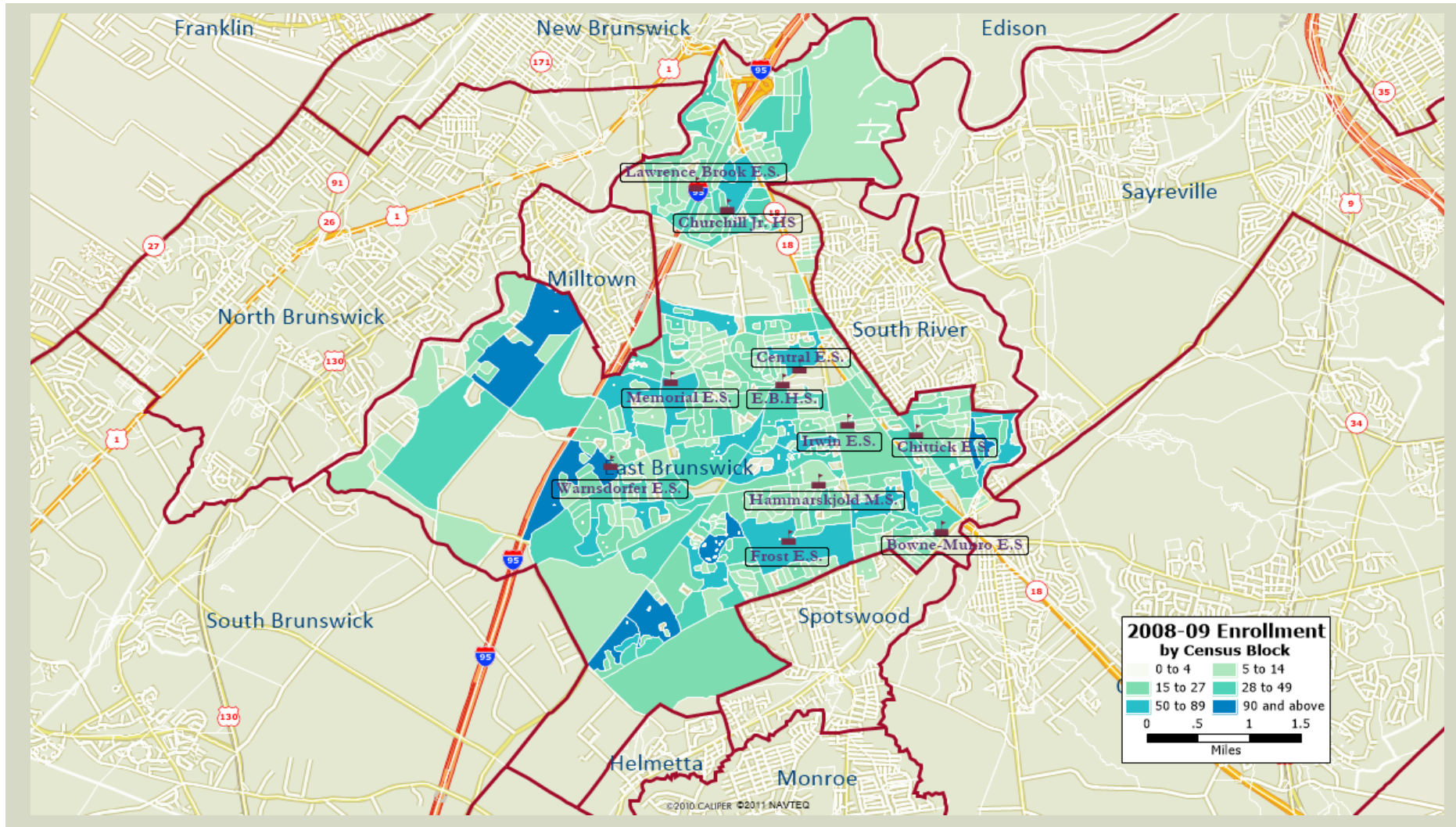
Year	PK-5 Total	6-7 Total	8-9 Total	10-12 Total	PK-12 Total
2014-15	3,300	1,275	1,360	2,150	8,085
2015-16	3,310	1,253	1,388	2,101	8,052
2016-17	3,315	1,206	1,312	2,065	7,898
2017-18	3,312	1,180	1,271	2,057	7,820
2018-19	3,304	1,196	1,224	2,037	7,761
2019-20	3,233	1,263	1,197	1,945	7,638
2020-21	3,268	1,218	1,213	1,871	7,570
2021-22	3,309	1,108	1,282	1,830	7,529
2022-23	3,310	1,140	1,237	1,815	7,502
2023-24	3,310	1,182	1,126	1,891	7,509

CAPACITY ANALYSIS

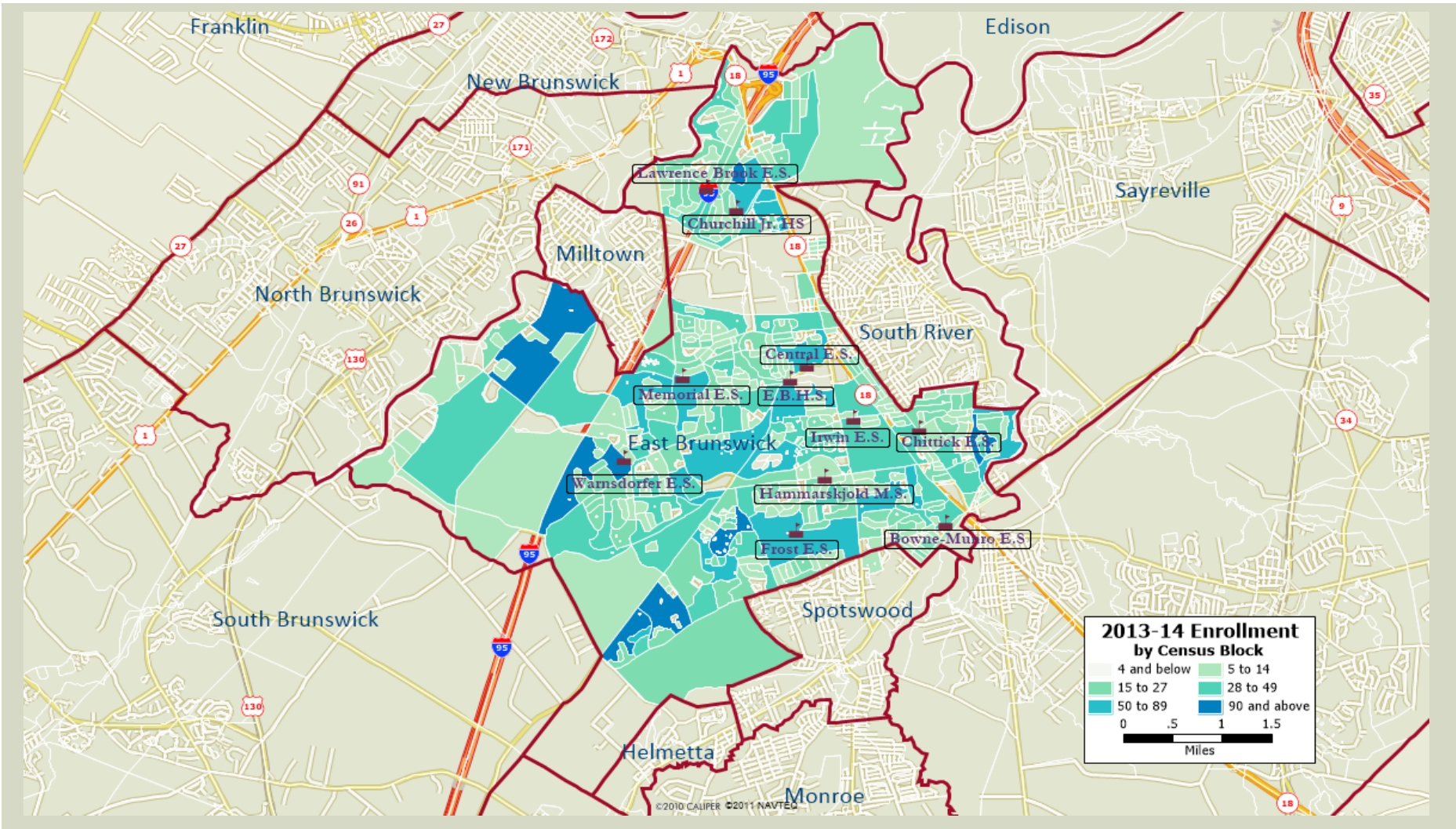
School	FES Capacity	Enrollment 2013-14	Difference	Enrollment 2018-19	Difference	Enrollment 2023-24	Difference
Bowne-Munro	270	213	+57	213	+57	217	+53
Central	532	426	+106	423	+109	413	+119
Chittick	550	453	+97	413	+137	408	+142
Frost	455	423	+32	413	+42	416	+39
Irwin	478	459	+19	470	+8	468	+10
Lawrence Brook	520	426	+94	457	+63	471	+49
Memorial	565	499	+66	512	+53	499	+66
Warnsdorfer	488	443	+45	403	+85	418	+70
Hammarskjold	1,518	1,357	+161	1,196	+322	1,182	+336
Churchill	1,432	1,316.5	+115.5	1,224	+208	1,126	+306
East Brunswick High School	2,724	2,235	+489	2,037	+687	1,891	+833

ENROLLMENT BY CENSUS BLOCK

2008-09

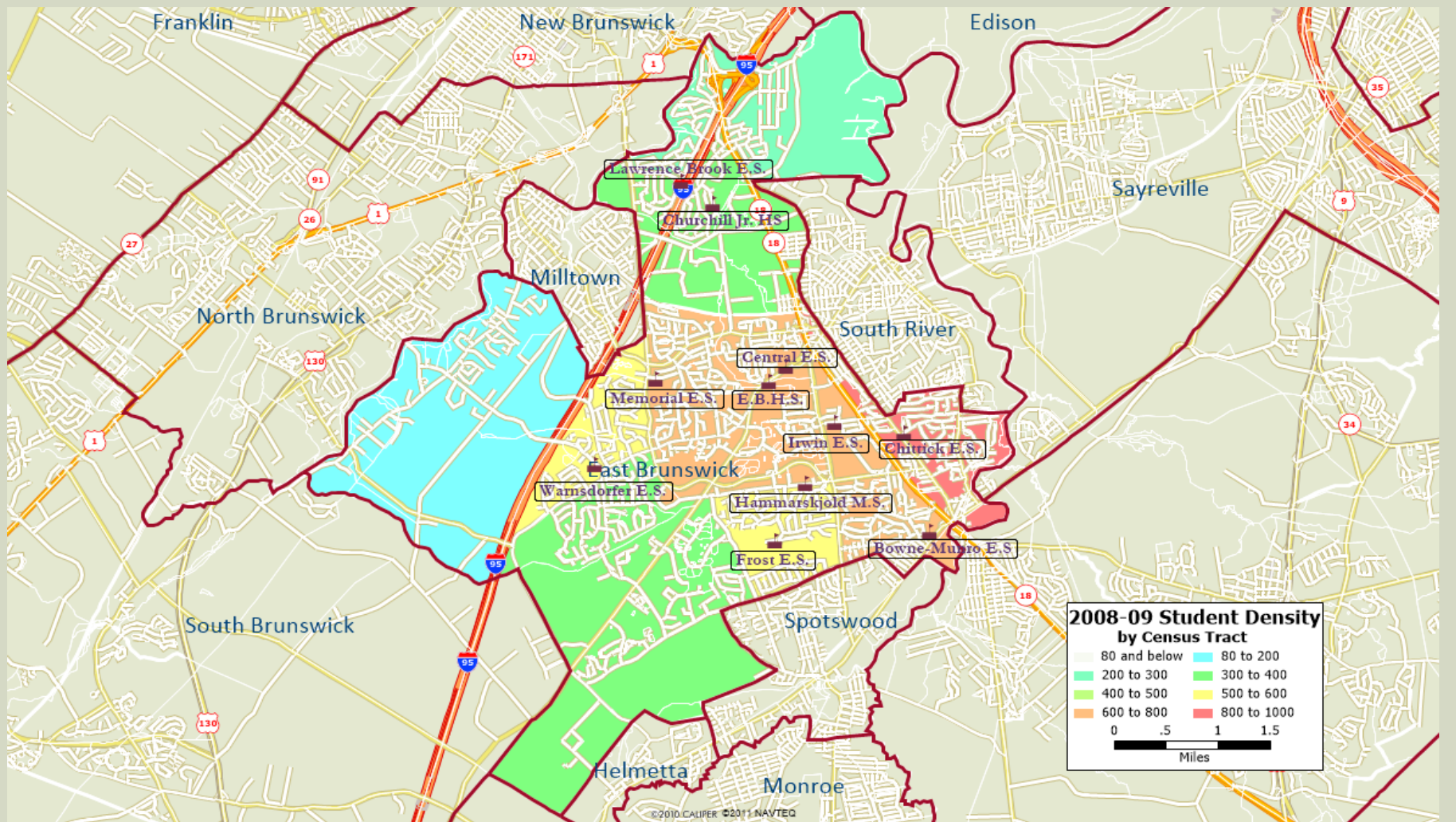


ENROLLMENT BY CENSUS BLOCK 2013-14



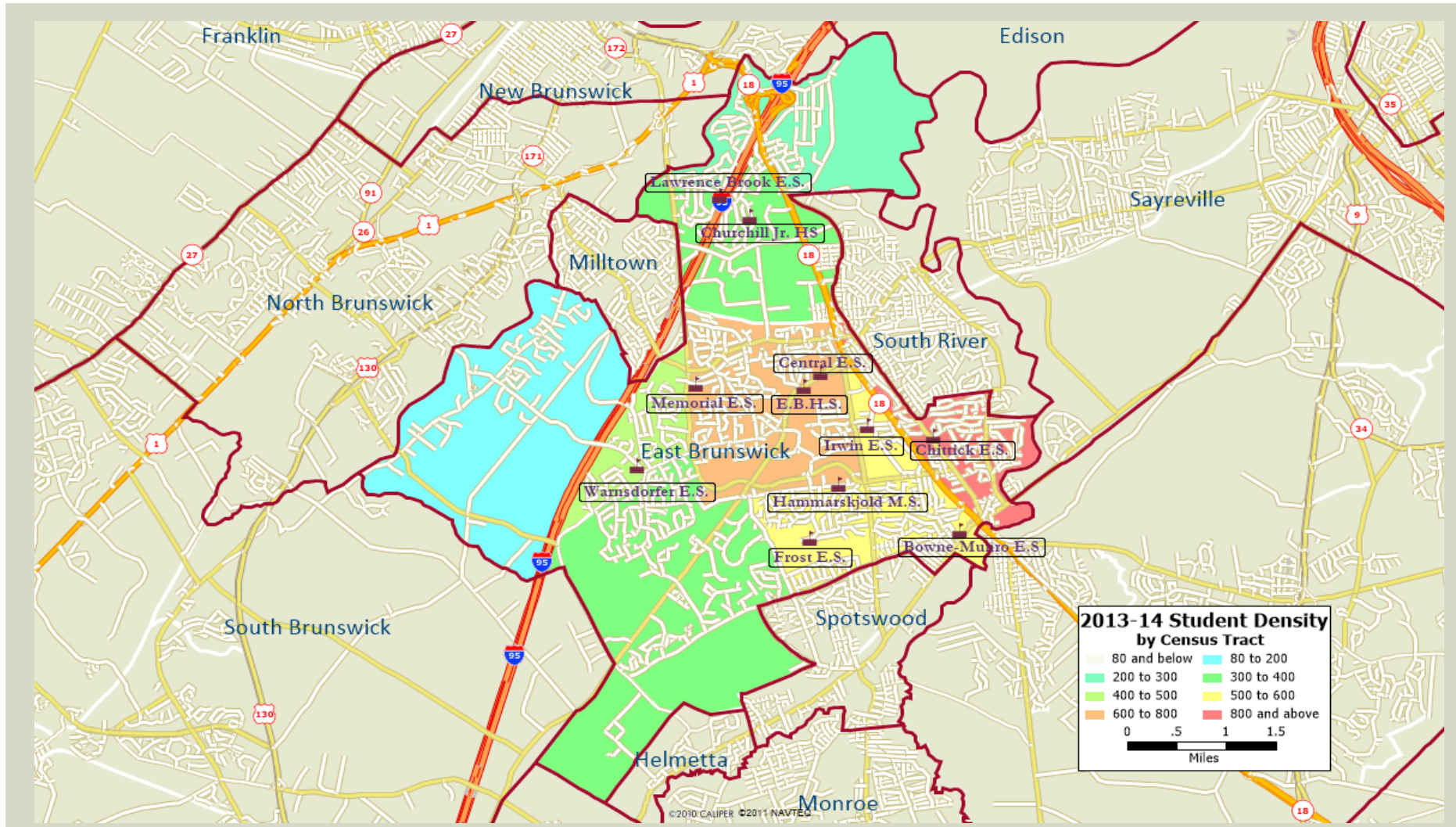
STUDENT DENSITY BY CENSUS TRACT

2008-09



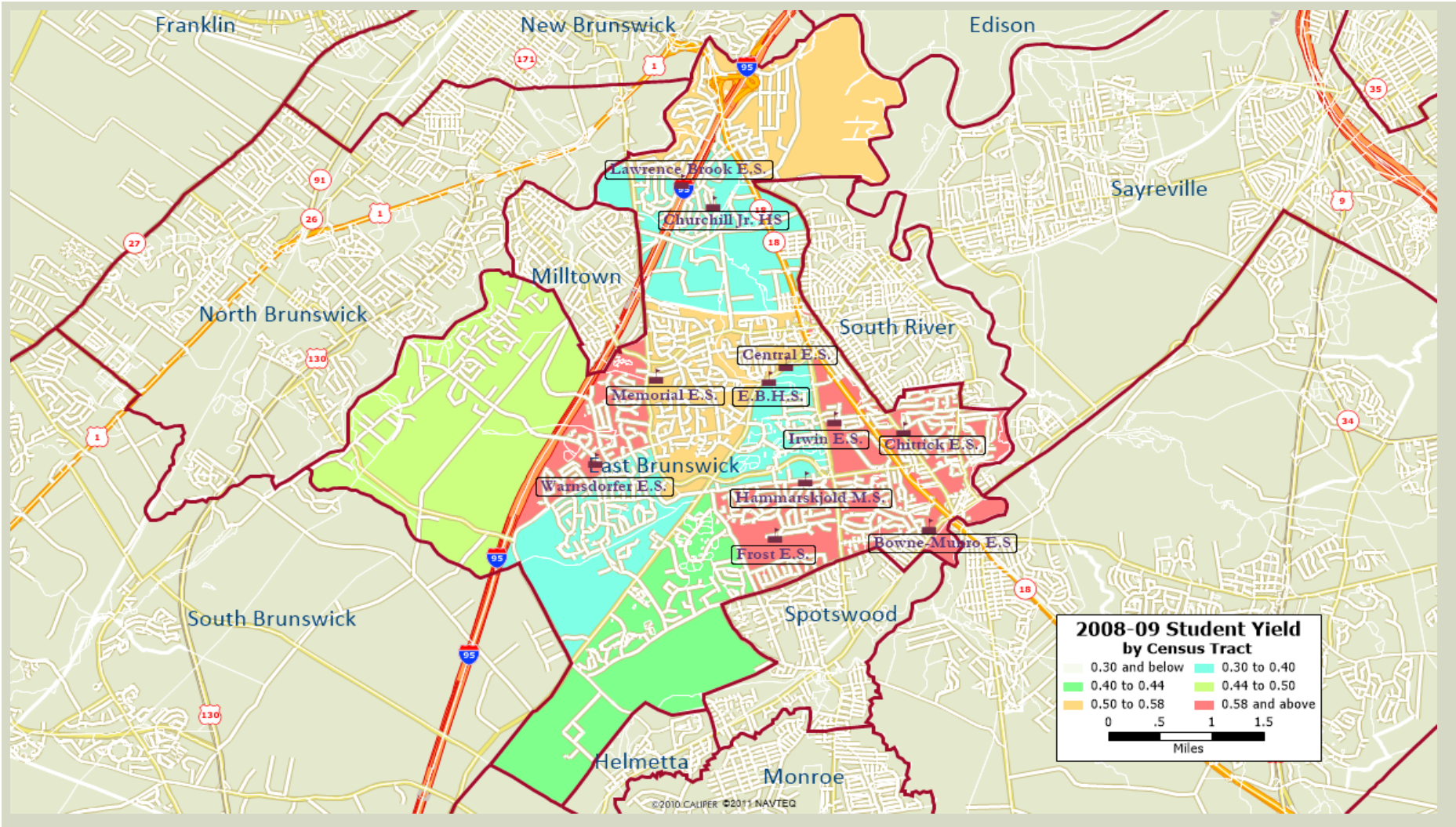
STUDENT DENSITY BY CENSUS TRACT

2013-14



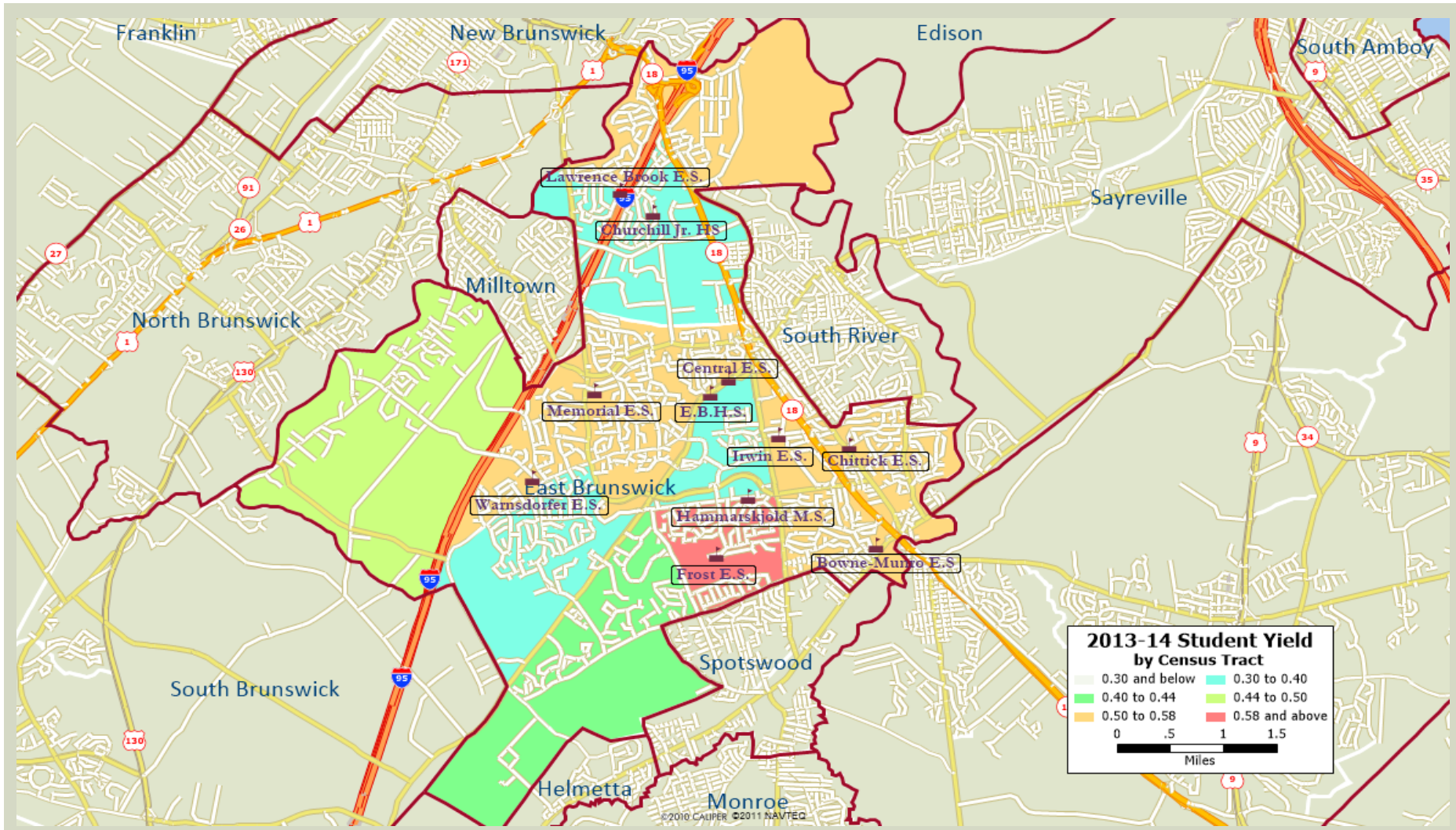
STUDENT YIELD BY CENSUS TRACT

2008-09



STUDENT YIELD BY CENSUS TRACT

2013-14



HOUSING TURNOVER ANALYSIS

Completely independent analysis using houses, not students, to project enrollment.

Should not be used for yearly enrollment projections. Use those from CSR.

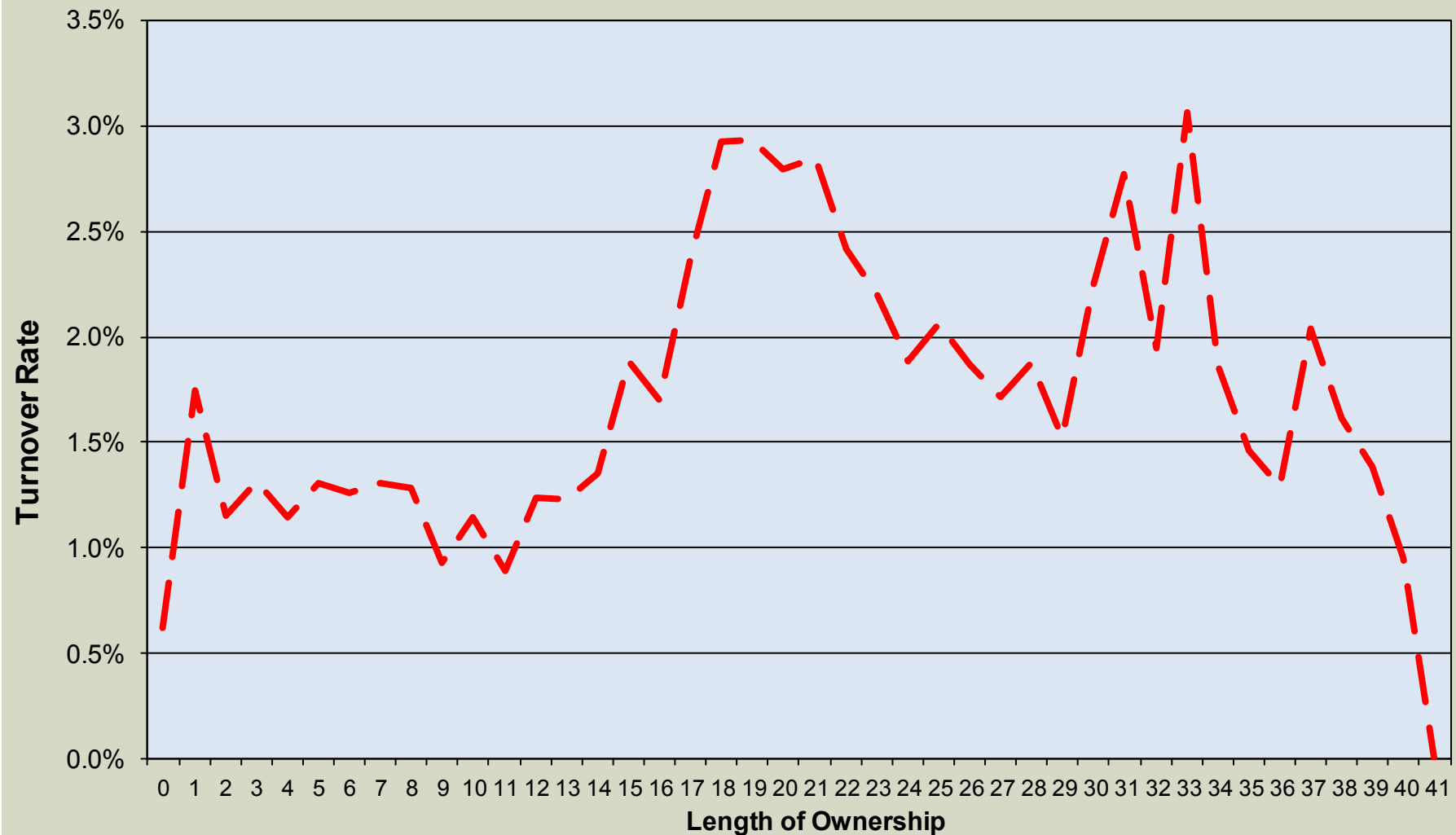
Three inputs:

1. Housing turnover rates by length of ownership
2. Current distribution of homes by length of ownership
3. Student yields by length of ownership

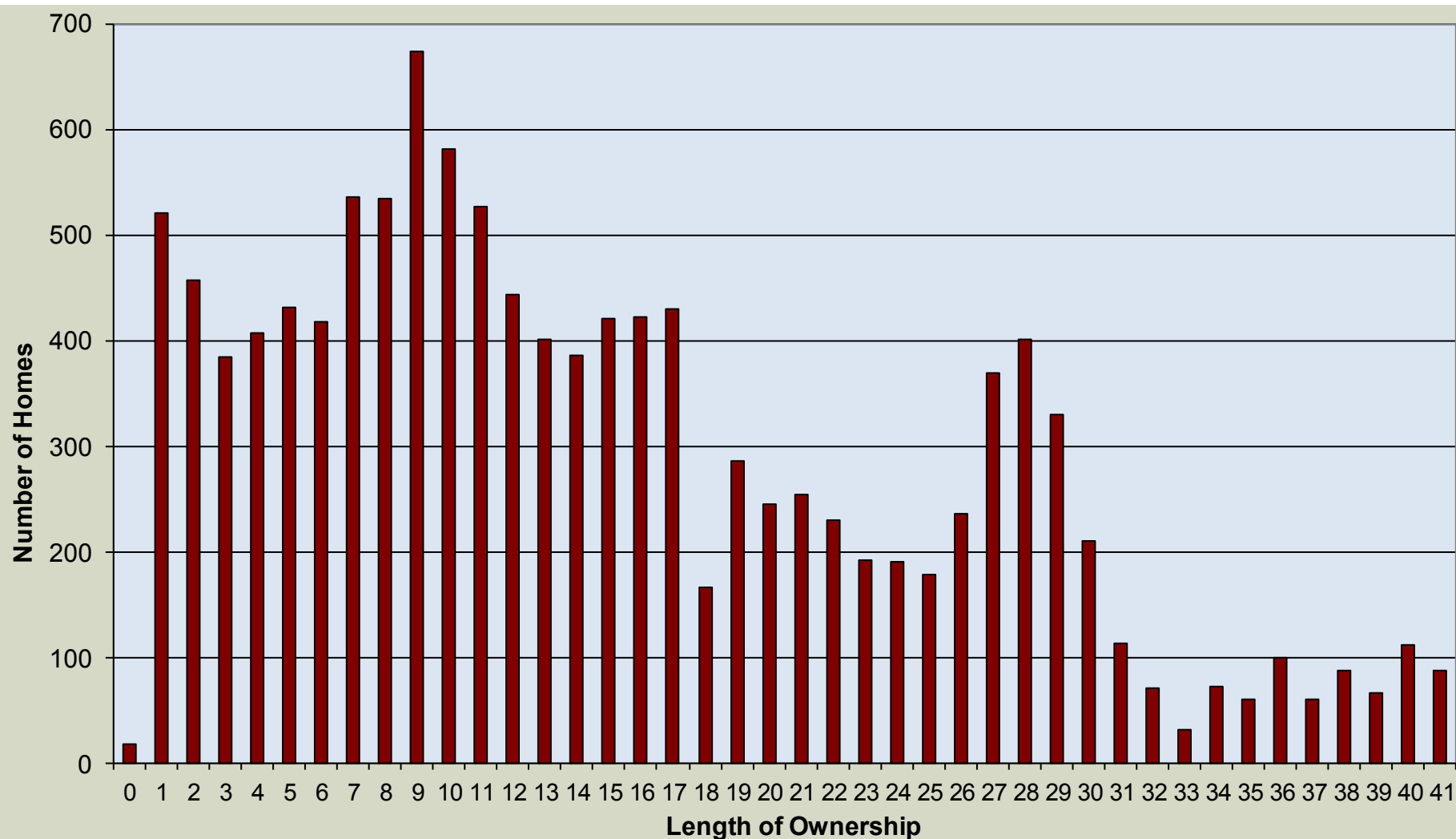
TURNOVER RATES

- Used parcel-level data to track each home (nearly 16,000 units) through its “lifecycle”. Data contained sale dates, sale prices, and year home was built.
- Sales data were collected from 1973-2014.
- Follow each year’s cohort of homes beginning in 1973 to see when they sell.
- Ex. Home built in 1940 sold in 1987, 1989, and 1995 (part of three cohorts). Length of ownership is 2 years after 1st sale, 6 years after 2nd sale. Current length of ownership is 19 years.

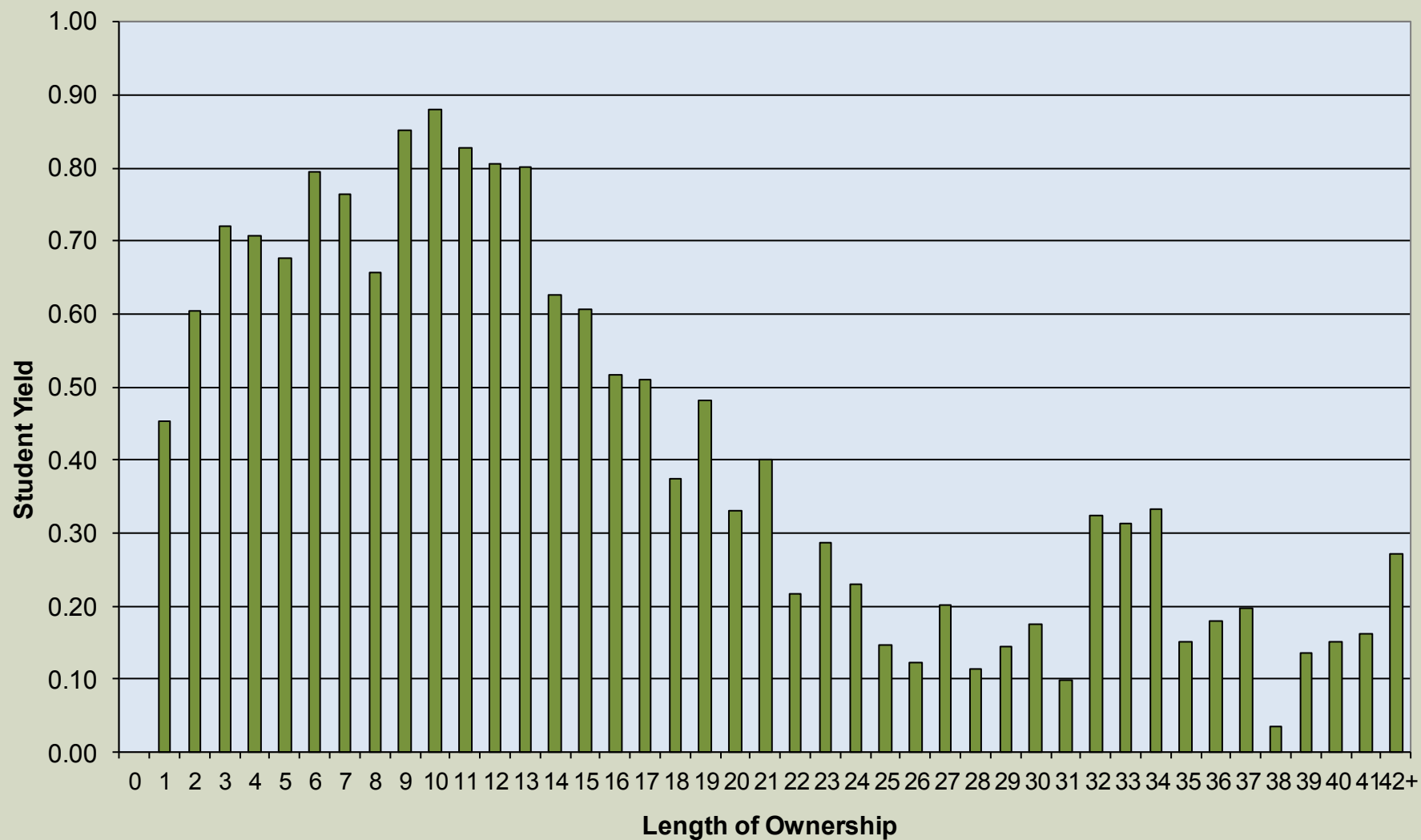
WEIGHTED-AVERAGE TURNOVER RATES BY LENGTH OF OWNERSHIP



CURRENT NUMBER OF HOMES BY LENGTH OF OWNERSHIP



YIELDS BY LENGTH OF OWNERSHIP



HOUSING TURNOVER PROJECTION METHODOLOGY

- Use current length of home ownership distribution and historical turnover rates to either a) advance homes to next year of ownership or b) sell home and have it return to zero years of ownership.
- Number of homes at each length of ownership is multiplied by student yield at each length of ownership.

ENROLLMENT PROJECTIONS FROM HOUSING TURNOVER ANALYSIS

- **Scenario 1** – Used average historical turnover rates. Enrollment is projected to decline to 7,042 by 2023-24.
- **Scenario 2** – Increased turnover rate of long-held homes; in essence, increasing the selling process of homes that have few children. Enrollment is projected to decline to 7,801 by 2023-24.