DEMOGRAPHIC STUDY

FOR THE

HANOVER

PUBLIC SCHOOLS

STATISTICAL FORECASTING LLC

November 17, 2020

STATISTICAL FORECASTING

- Provide demographic services for school districts in the New York-New Jersey metropolitan area since 1998.

- Performed demographic studies for approximately 150 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 2020-21 through 2024-25, a 5-year period

❑ Analyze community population trends and age structure, birth and fertility rates

❑ Examine district's historical enrollments, both districtwide and by grade configuration (PK-5 and 6-8)

❑ Compute student yields (children per housing unit) by property type (e.g. SF, townhouse/condo, and apartment)

❑ "Pin map" student addresses to show relative concentrations of where students live

❑ Analyze new housing starts and the impact on school district

❑ Project enrollments based on students yields and housing turnover rates (completely independent analysis)

HISTORICAL AND PROJECTED POPULATIONS 1940-2040
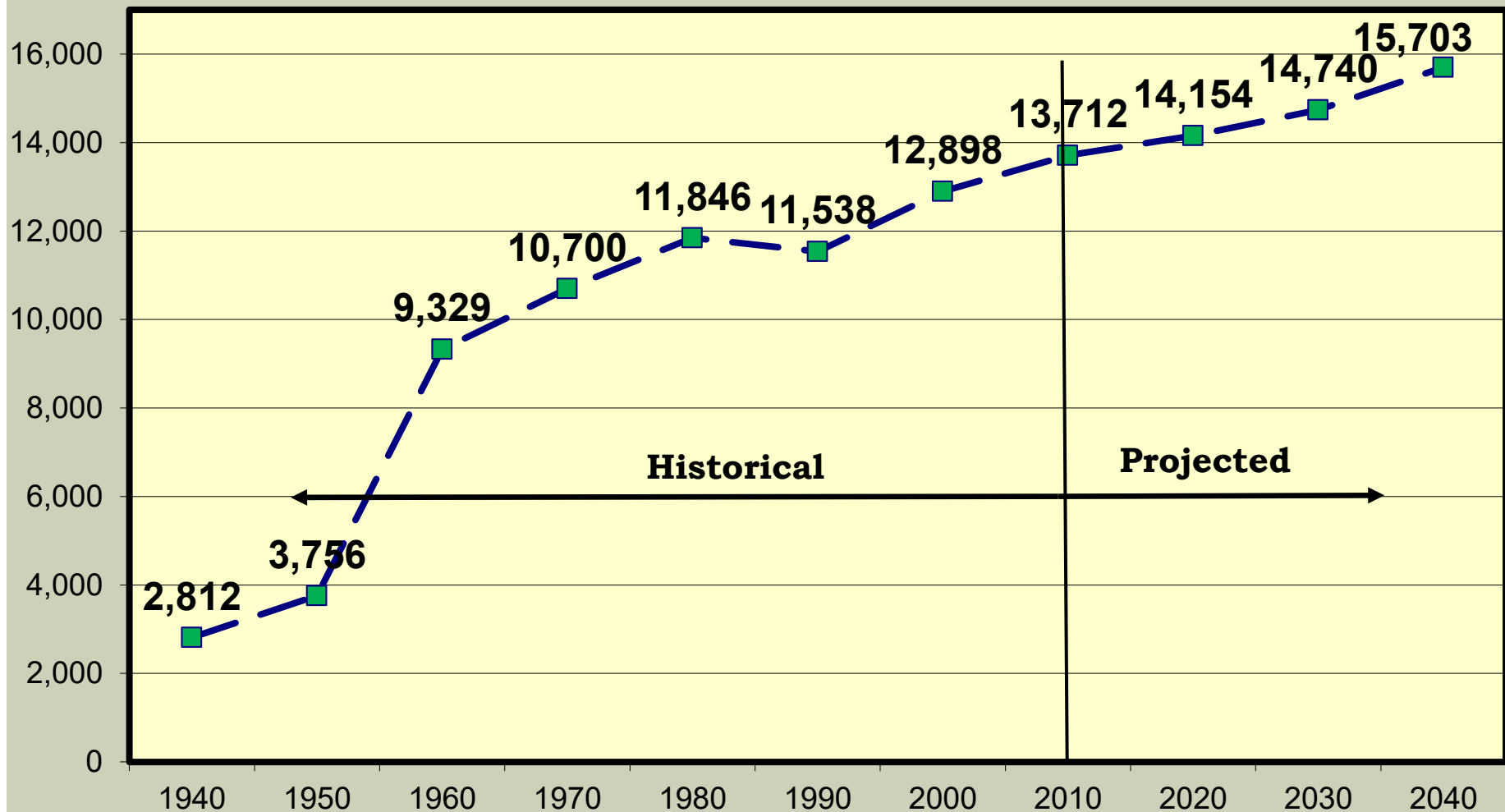
HANOVER TOWNSHIP DEMOGRAPHIC PROFILE

- ❑ 82.2% White in 2014-18 ACS (85.5% in 2010). Asians 2nd-largest race (14.6%)
- ❑ Median age = 44.5 years (NJ = 40.0 years)
- ❑ 17.9% of population is foreign-born (NJ=22.8%). China and India are largest sources.
- ❑ Bachelor's Degree or Higher = 54.4% (NJ = 40.8%)
- ❑ Median family income = $144K (NJ = $101K)
- ❑ 5,9000 housing units, of which 79% are 1-unit homes (attached or detached)
- ❑ 19% of housing units are renter-occupied (NJ = 36%).
- ❑ Median value of owner-occupied unit = $496K
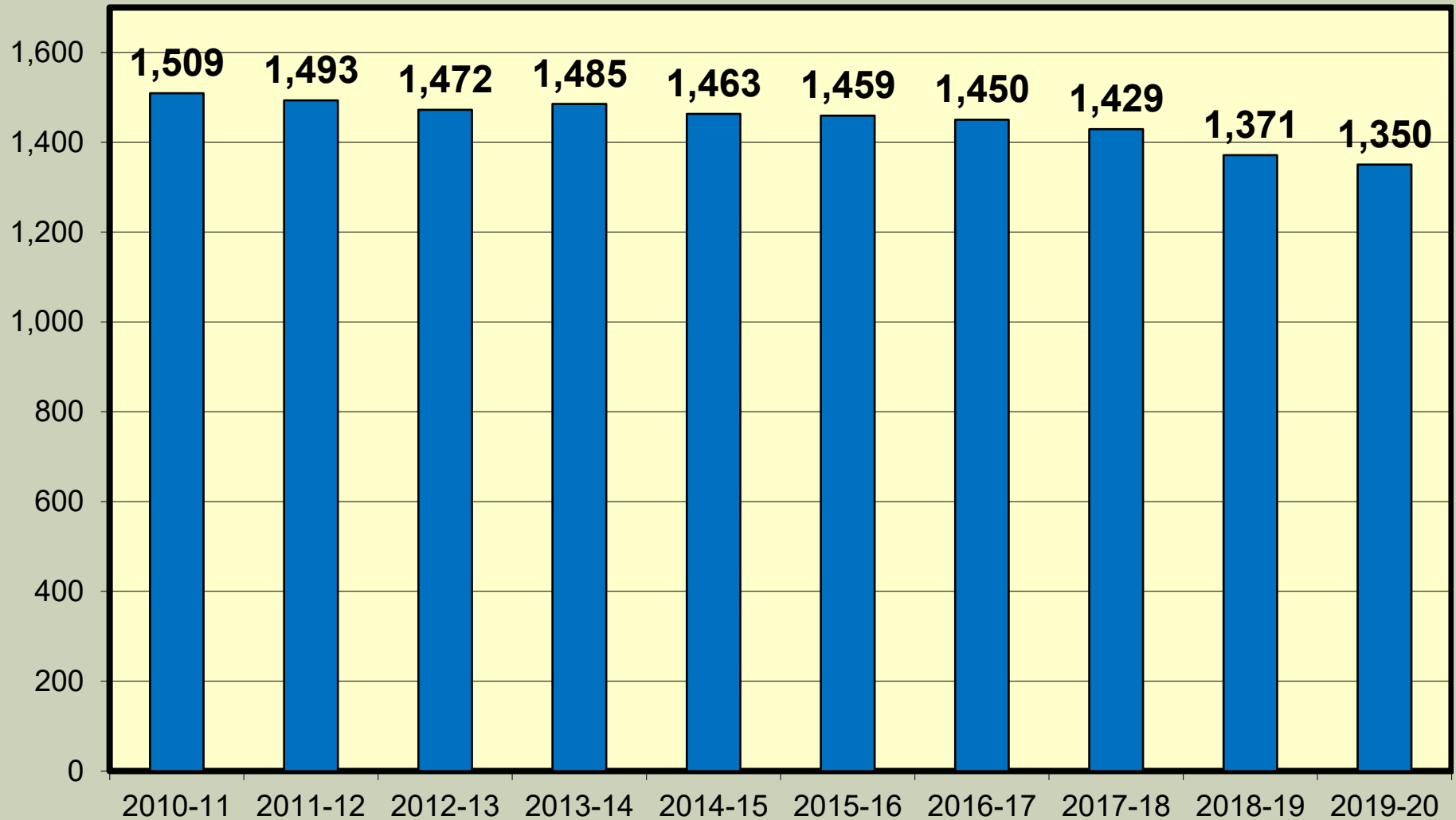
SCHOOL LOCATIONS
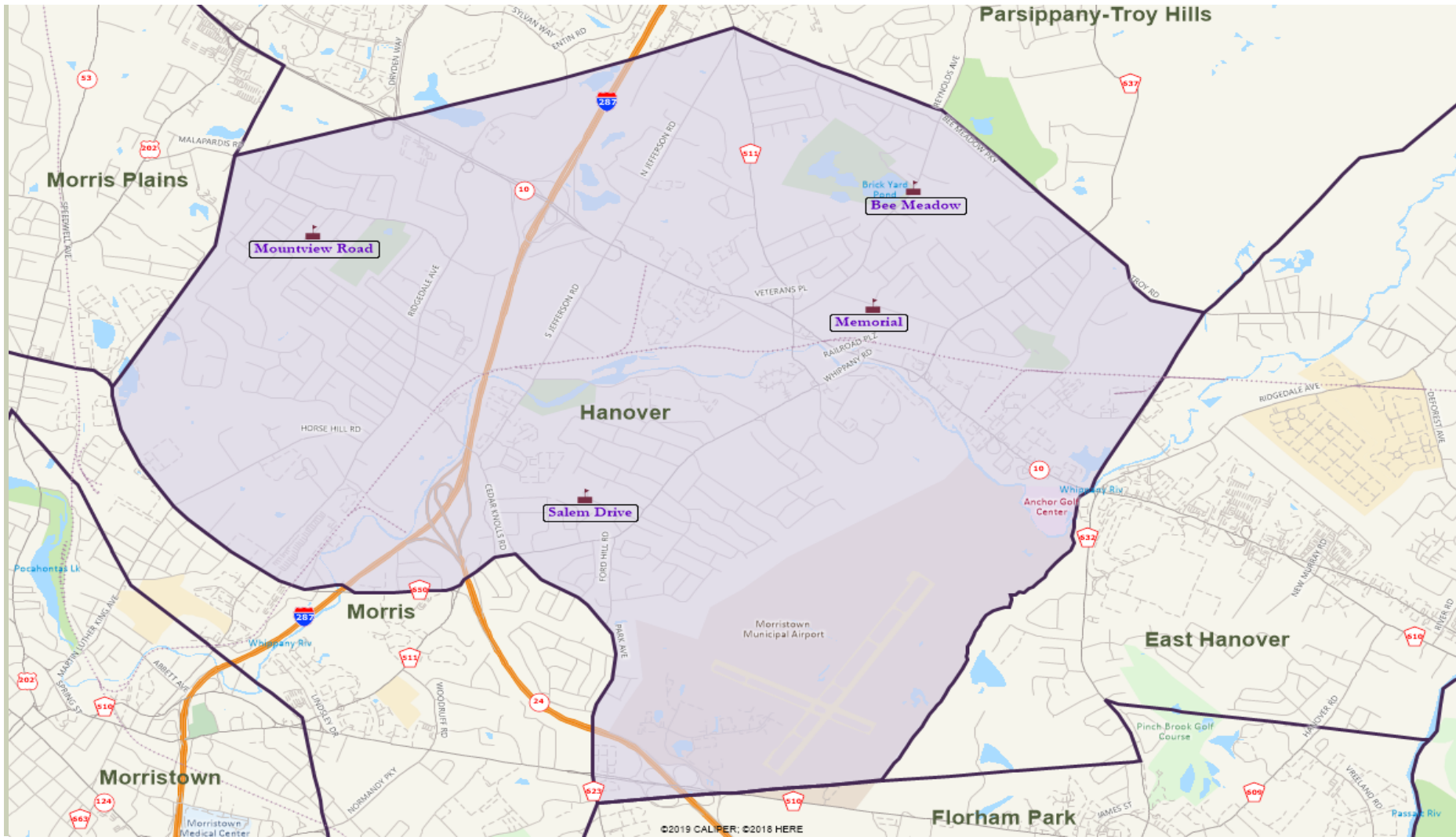
HISTORICAL ENROLLMENT TRENDS

❑ District's 2019-20 enrollment (10/15/19) is 1,350. Lowest in last decade.

❑ Enrollment has been slowly declining since 2014-15.

❑ 2010-11 enrollment = 1,509 (-159 students in 10 years)

❑ Cohort-Survival Ratio Method (CSR) was used to project enrollments five years into the future.

HISTORICAL ENROLLMENTS (PK-8) 2010-11 TO 2019-20

HISTORICAL ENROLLMENTS BY GRADE CONFIGURATION 2010-11 TO 2019-20
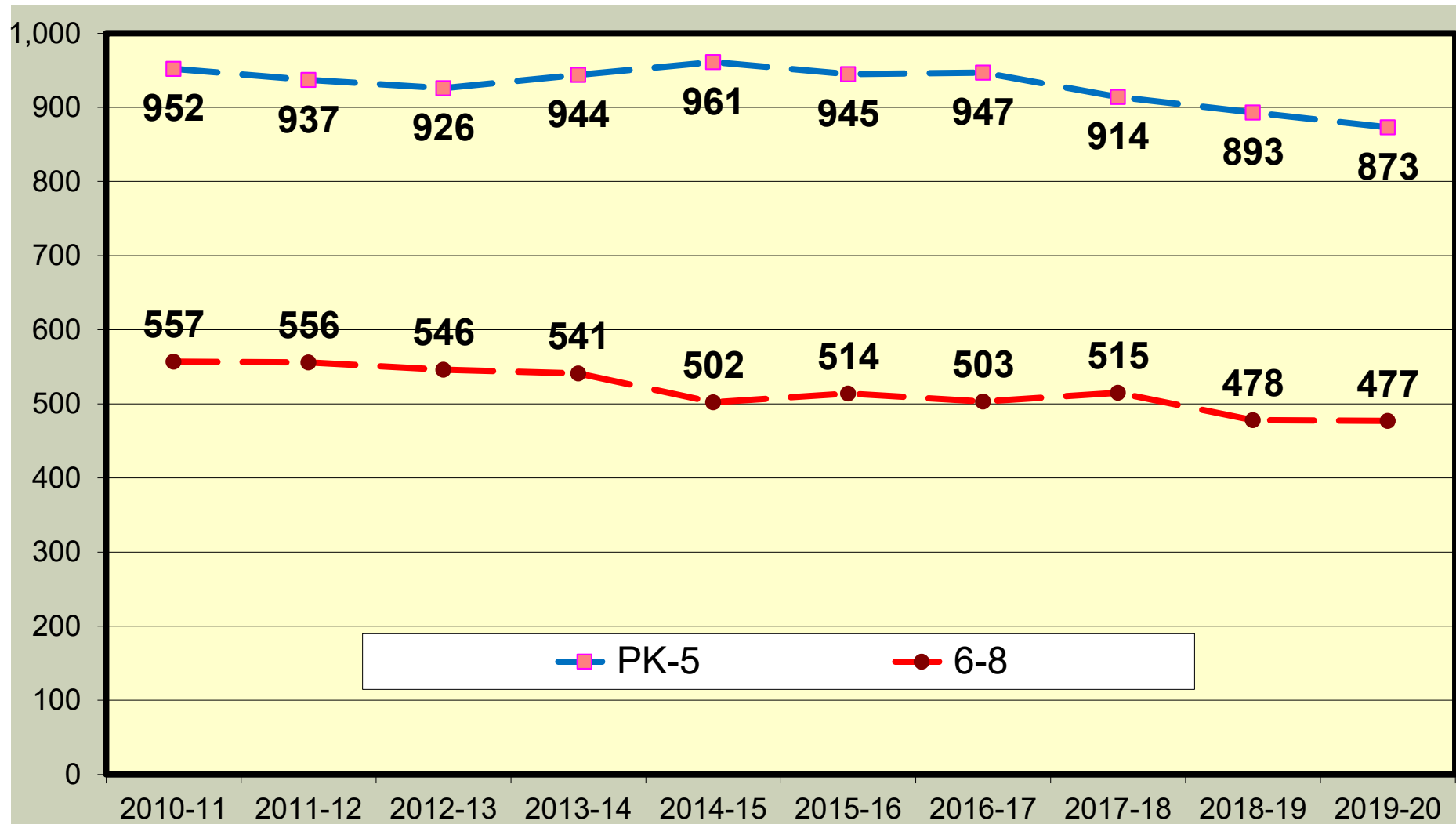
ENROLLMENT PROJECTION METHOD COHORT SURVIVAL RATIO

❑ Ratios are calculated for each grade progression. (Ex. 100 1st graders in 2018-19 become 95 2nd graders in 2019-20 = 0.95)

❑ Survival ratios were computed for ten historical years.

❑ 6 of 9 average ratios were <u>above</u> 1.000 indicating net inward migration.

❑ Averages were then computed and used to project future enrollments.

KINDERGARTEN REPLACEMENT

❑ Negative kindergarten replacement (KR) has occurred in each of last 9 years, ranging from 29-57 students per year.

❑ Negative KR- Number of graduating 8th grade students is greater than the number of kindergarten students replacing them in the next year.

❑ District has lost an average of 40 students due to KR in last 5 years.

❑ Negative KR has been offset (partially or fully) by inward migration of students in 8 of last 9 years
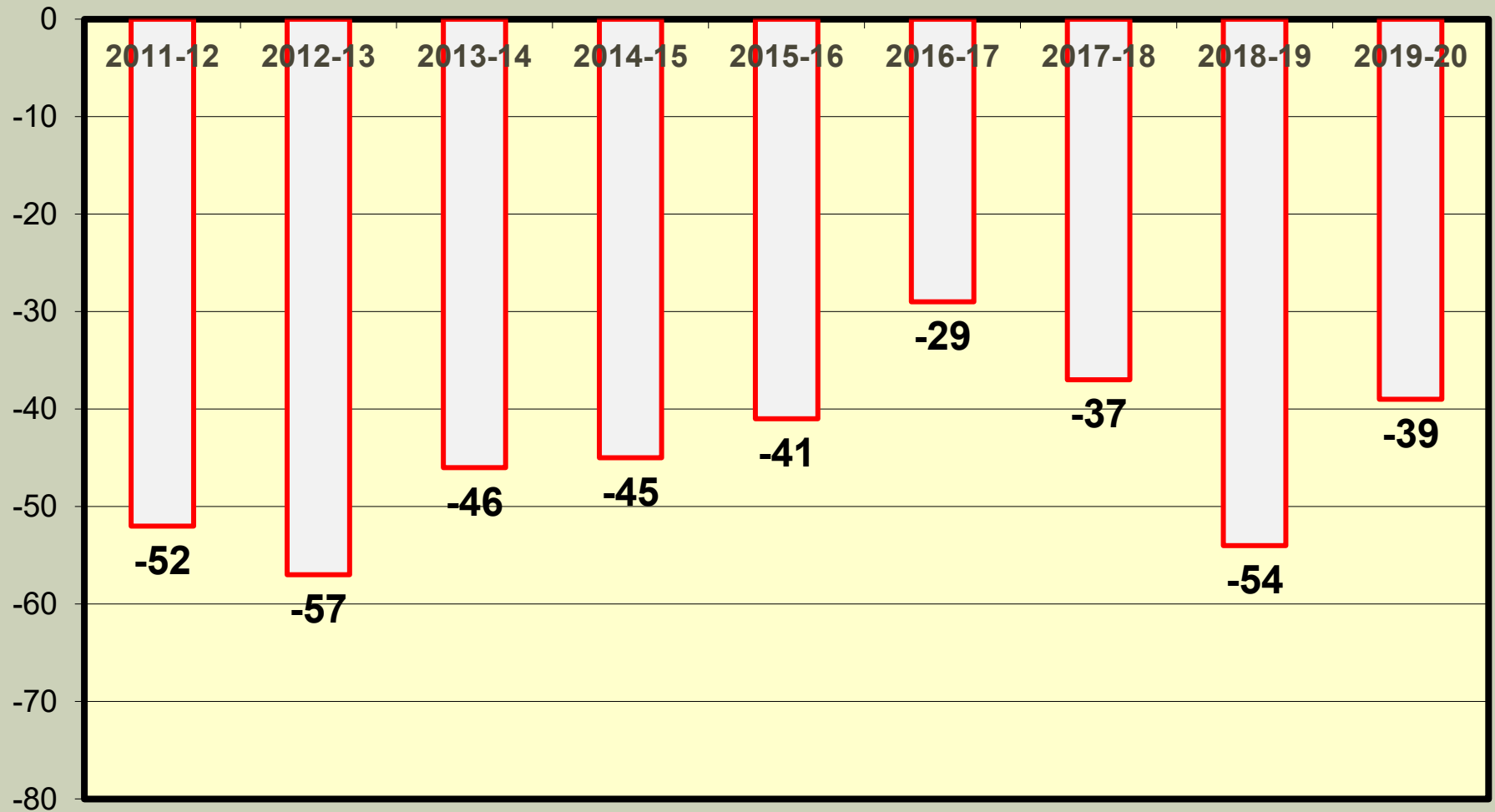
# TOTAL ENROLLMENT CHANGE VS. KINDERGARTEN REPLACEMENT
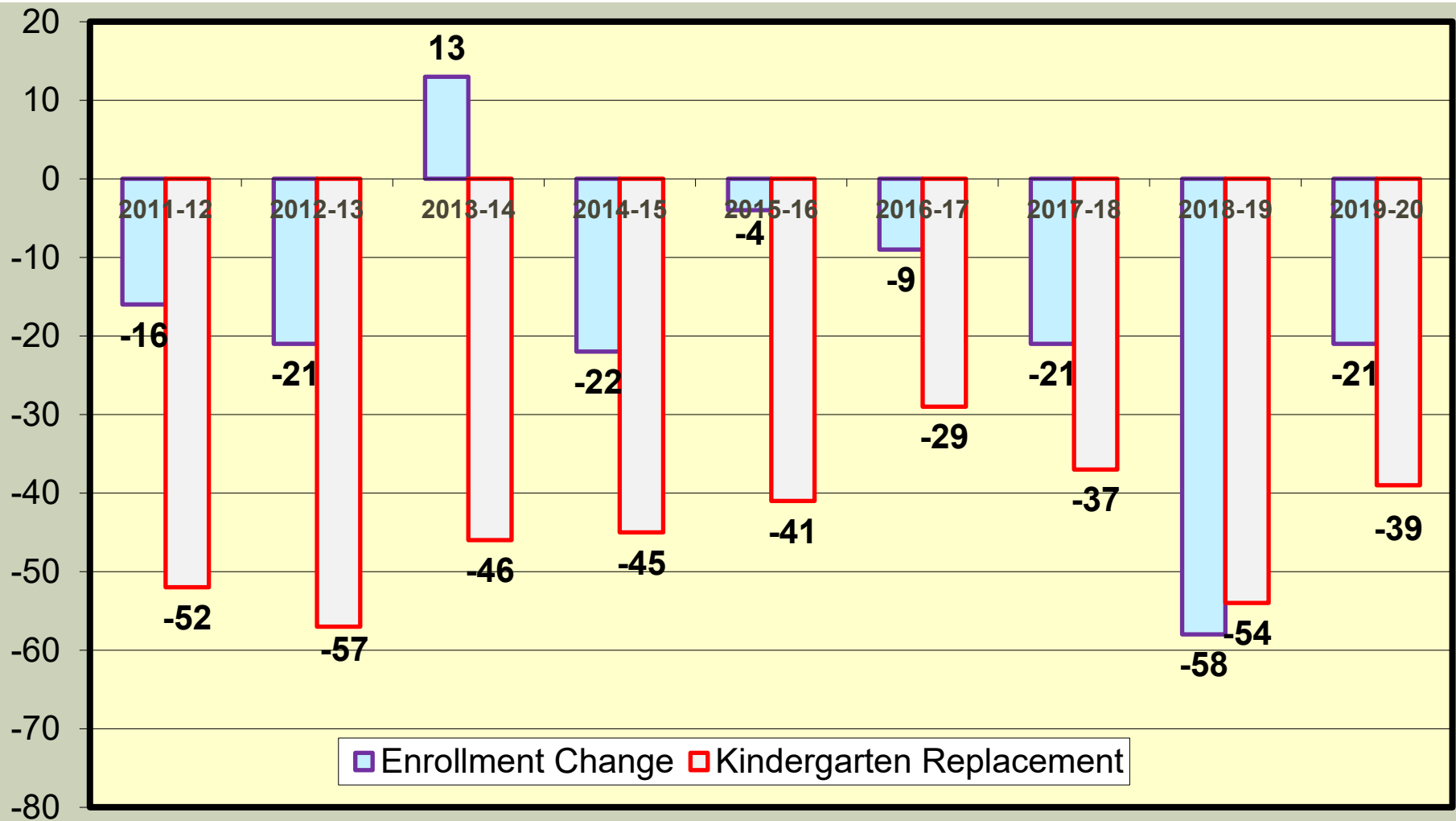
HANOVER TOWNSHIP BIRTH COUNTS

❑ **Births are used to project kindergarten students 5 years later.**

❑ **Analyzed birth data from 2005-2018. Births declined from high of 135 in 2005 to 106 in 2013 before stabilizing. Fairly stable in last 4 years (128-132 births).**

BIRTH COUNTS AND BIRTH-TO-KINDERGARTEN SURVIVAL RATIOS

| Birth Year	Number of Births Hanover Township	Kindergarten Students 5 Years Later	Birth-to-Kindergarten Survival Ratio
2005	135	123	0.911
2006	122	132	1.082
2007	112	126	1.125
2008	132	143	1.083
2009	131	143	1.092
2010	123	135	1.098
2011	123	148	1.203
2012	114	114	1.000
2013	106	124	1.170
2014	148	129	0.872
2015	129	N/A	N/A
2016	128	N/A	N/A
2017	132	N/A	N/A
2018	128	N/A	N/A

HANOVER TOWNSHIP HISTORICAL BIRTH COUNTS 2005-2018
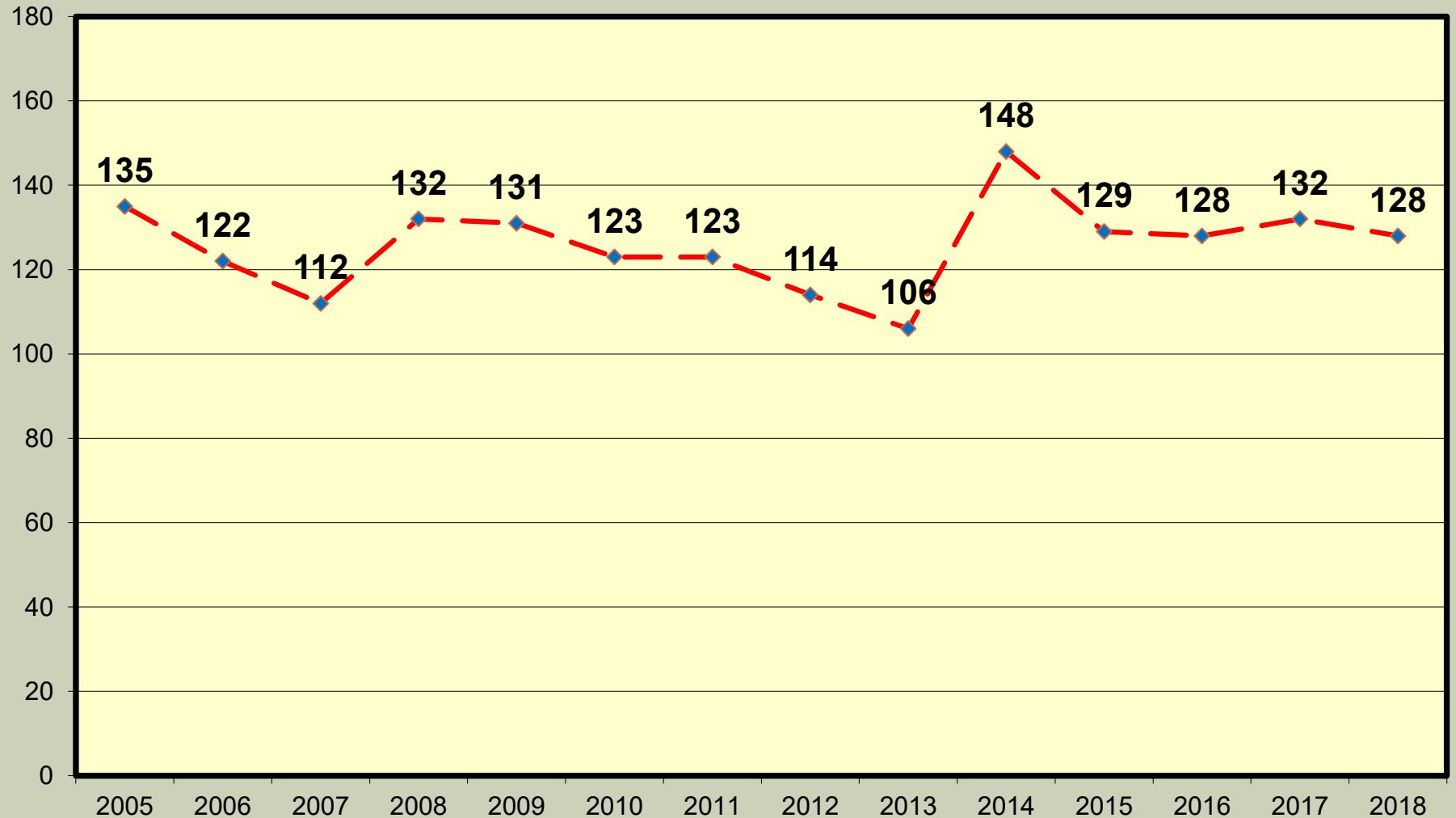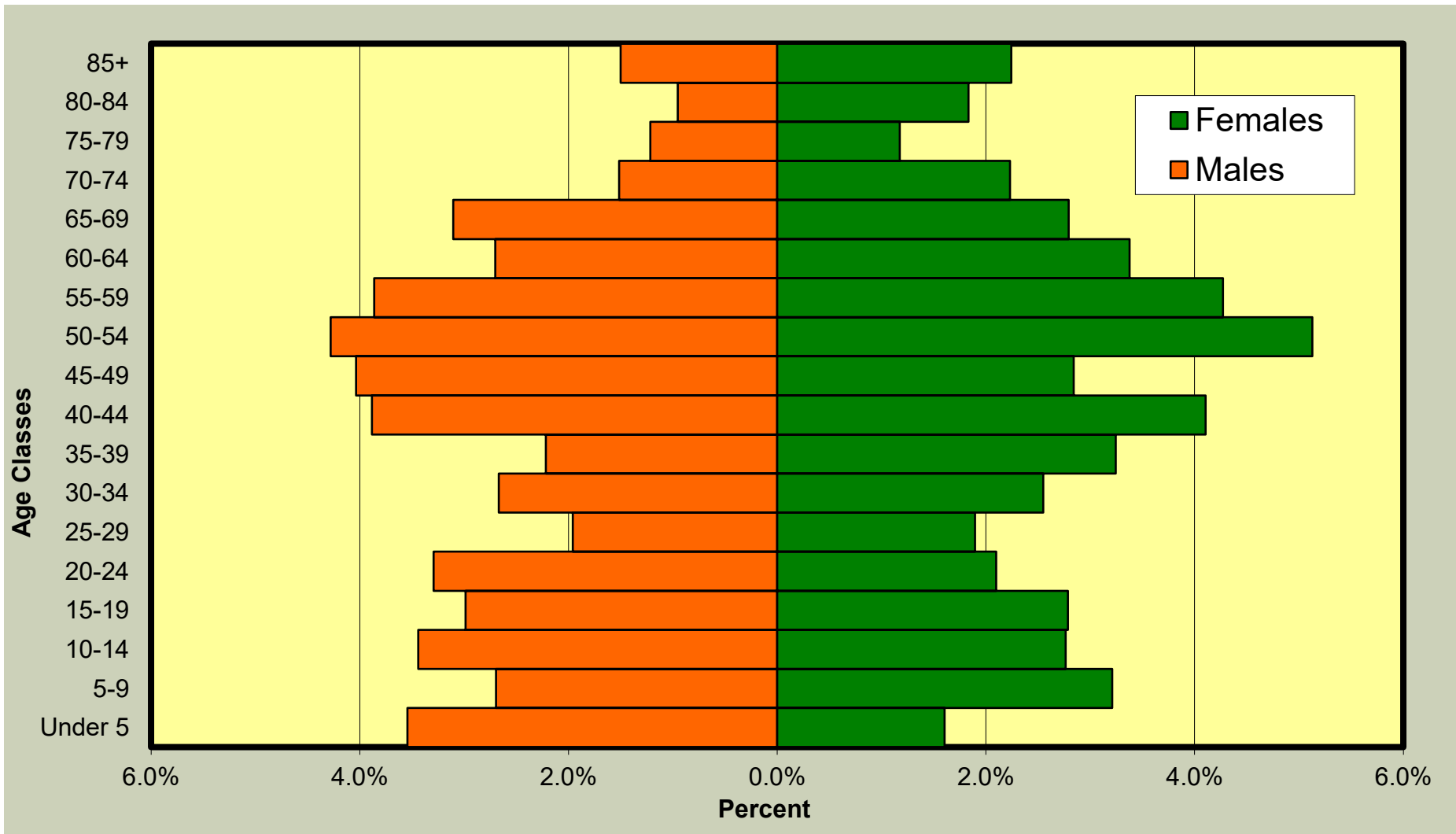
AGE PYRAMID
HANOVER TOWNSHIP
2010 CENSUS
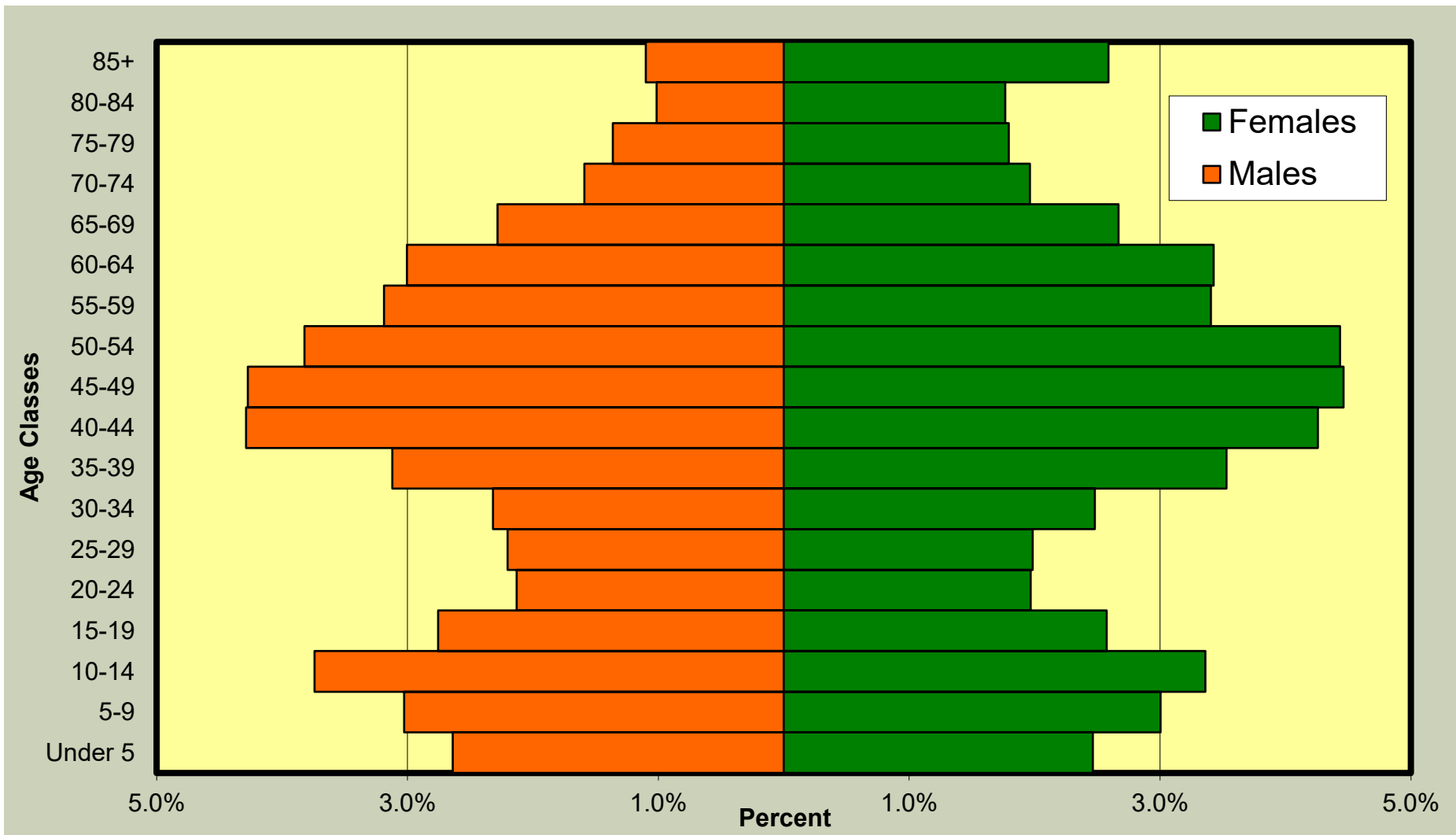
AGE PYRAMID
HANOVER TOWNSHIP
2014-2018 ACS

CHANGE IN MALES AND FEMALES 2010 TO 2014-2018 HANOVER TOWNSHIP

Age Group	Males		Females	
	Numerical Change	Percentage Point Change	Numerical Change	Percentage Point Change
Under 5	+148	+0.9	-107	-0.9
5-9	-27	-0.3	+50	+0.2
10-14	-18	-0.3	-63	-0.6
15-19	+52	+0.2	+48	+0.2
20-24	+182	+1.2	+32	+0.1
25-29	-20	-0.2	+1	-0.1
30-34	+66	+0.3	+27	+0.1
35-39	-109	-0.9	-17	-0.3
40-44	-29	-0.4	+7	-0.2
45-49	-5	-0.2	-203	-1.6
50-54	+92	+0.5	+130	+0.7
55-59	+119	+0.7	+148	+0.9
60-64	-23	-0.3	+16	-0.1
65-69	+134	+0.8	+36	+0.1
70-74	0	-0.1	+52	+0.3
75-79	-12	-0.1	-77	-0.6
80-84	-2	-0.1	+22	+0.1
85+	+65	+0.4	-32	-0.3

NEW HOUSING HANOVER TOWNSHIP

Subdivision/ Developer	Number of Units	Housing Type	Notes/Approval Status
Airport Road (Airport Road)	324	Apartments (market-rate and affordable)	49 units would be set aside for Low-Moderate Income households. Has not been rezoned, site plan application has not been filed.
Corporate Mailings (26 Parsippany Road)	129	Townhouses (market-rate) Apartments (market-rate and affordable)	Site plan approved with conditions; efforts to comply with conditions ongoing. Demolition permits pending.
Pine Plaza (831 Route 10)	60	Townhouses (market-rate)	Redevelopment plan/amended zoning not yet adopted, site plan application has not been filed.
River Park (off of Eden Lane)	1,499	Apartments (market-rate and affordable) 32 special needs bedrooms/units (housing type unknown)	Amended redevelopment plan not yet adopted, site plan application has not been filed.
Whippany Village (476 Route 10)	46	Apartments (market-rate and affordable)	Received preliminary and final site plan in July 2019. Mix of retail and residential. Nine units would be set aside for Low-Moderate Income households. Has not begun construction. Building permits pending.
Total	**2,058**		

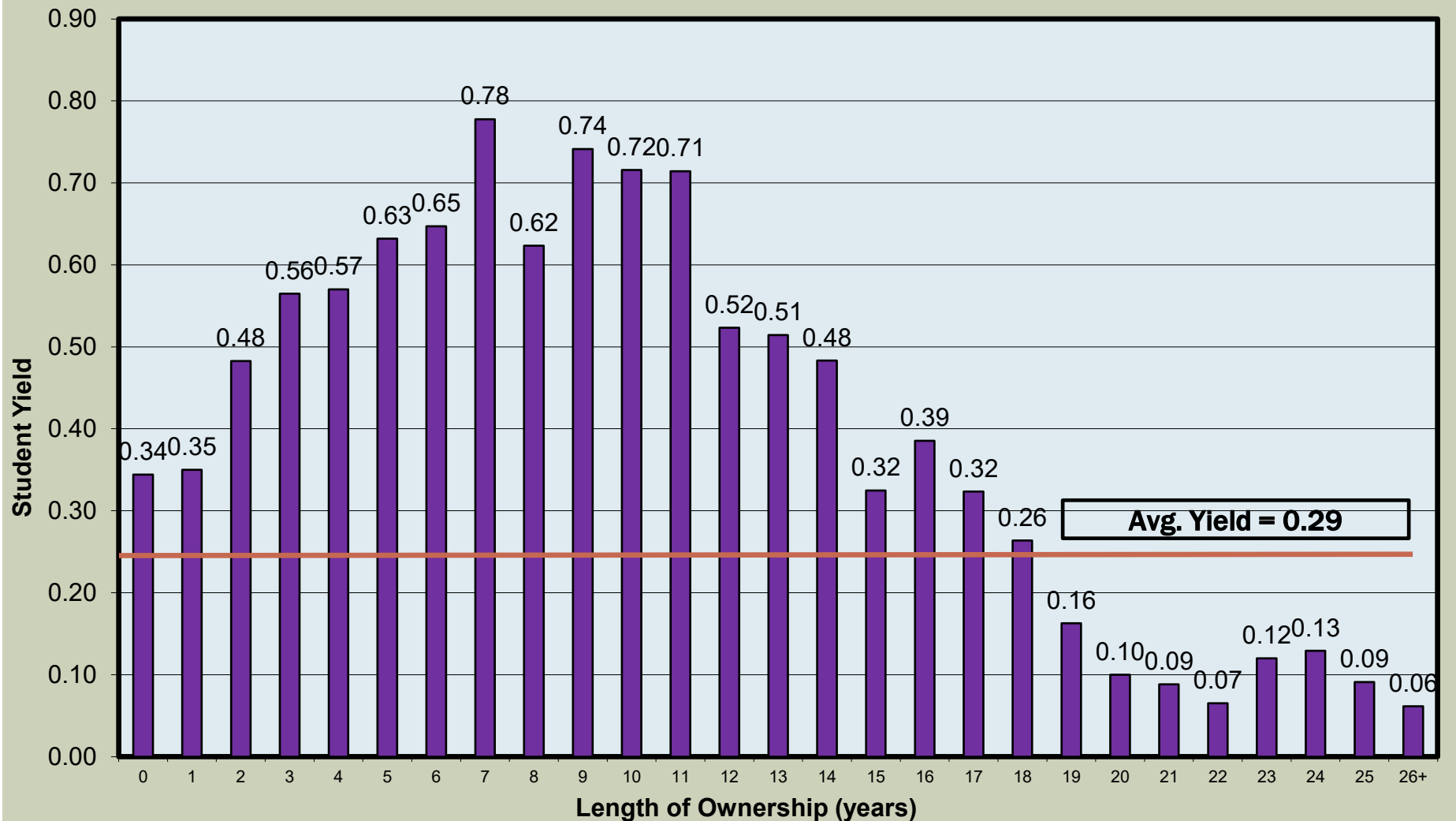# POTENTIAL NEW HOUSING HANOVER TOWNSHIP
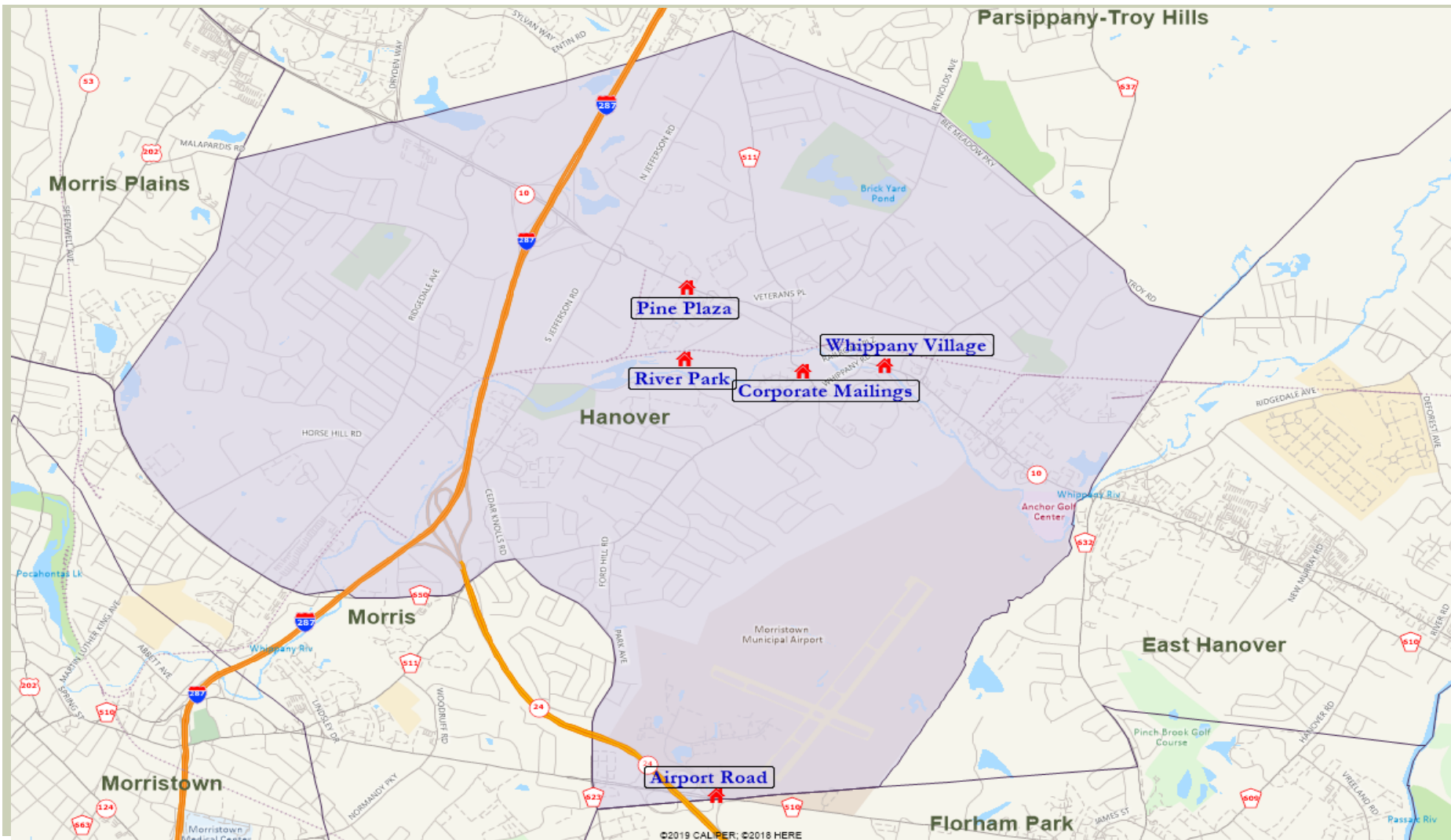
STUDENT YIELDS

- Student yields (K-8) were computed by housing type to determine impact of new developments.
- Student addresses were joined to the Hanover Township property database.
- Detached Single-Family homes: 0.53
- Townhouse/Condo: 0.078
- Apartments: 0.164
- 335 public school children (K-8) projected
- 228 (K-5) and 107 (6-8)

STUDENT YIELDS
DETACHED SINGLE-FAMILY

Student Yield (y-axis)
Length of Ownership (years) (x-axis)

Avg. Yield = 0.29

Length of Ownership (years)	Student Yield
0	0.34
1	0.35
2	0.48
3	0.56
4	0.57
5	0.63
6	0.65
7	0.78
8	0.62
9	0.74
10	0.72
11	0.71
12	0.52
13	0.51
14	0.48
15	0.32
16	0.39
17	0.32
18	0.26
19	0.16
20	0.10
21	0.09
22	0.07
23	0.12
24	0.13
25	0.09
26+	0.06

STUDENT YIELDS TOWNHOUSES/CONDOS

| Development	Approx. Price ($)	Year Built	Bedrooms	Number of Units	K-5 Students	6-8 Students	K-8 Students	2019-20 Student Yield
Eden Lane	400,000	1993	1-3 BR	297	12	12	24	0.081
Grande at Hanover (The)	350,000	2007-2011	1-2 BR	160	2	1	3	0.019
Hanover Hills	300,000	1994	2-BR	165	7	6	13	0.079
Hanover Ridge	785,000	2016	4-BR	16	4	2	6	0.375
Oak Ridge	425,000	1996	2-3 BR	210	11	7	18	0.086
Sunrise at Hanover	335,000	1993	1-3 BR	155	13	2	15	0.097
Waterview	425,000	2013	2-3 BR	60	4	1	5	0.083
Whippany Crossings	750,000	2018	3-BR	24	1	0	1	0.042
Total				1,087	54	31	85	0.078

STUDENT YIELDS APARTMENTS

Development (Property Address)	Rent ($)	Year Built	Bedrooms	Number of Units	K-5 Students	6-8 Students	K-8 Students	2019-20 Student Yield
Sterling Parc (2101 Glen Drive)	2,077-2,839	2004	1-3 BR	260	23	9	32	0.123
The Willows at Cedar Knolls (700 Justin Court)	N/A	2013	1-3 BR	78	21	8	29	0.372
Woodmont Knolls (200 Woodmont Drive)	2,730-4,160	2014	1-2 BR	126	11	4	15	0.119
Total				464	55	21	76	0.164

HOME SALES
HANOVER TOWNSHIP
1995-2019
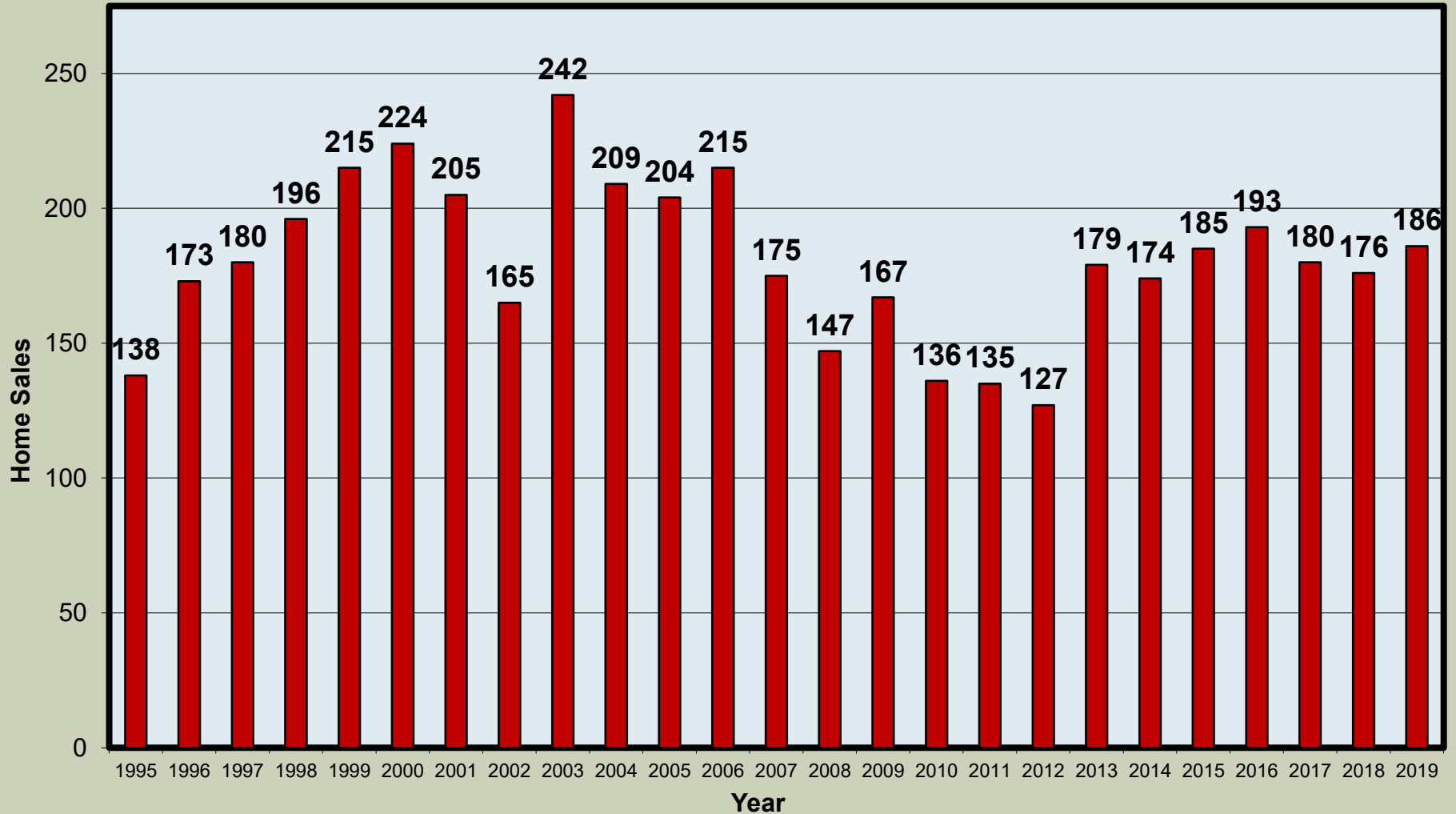
ENROLLMENT PROJECTIONS
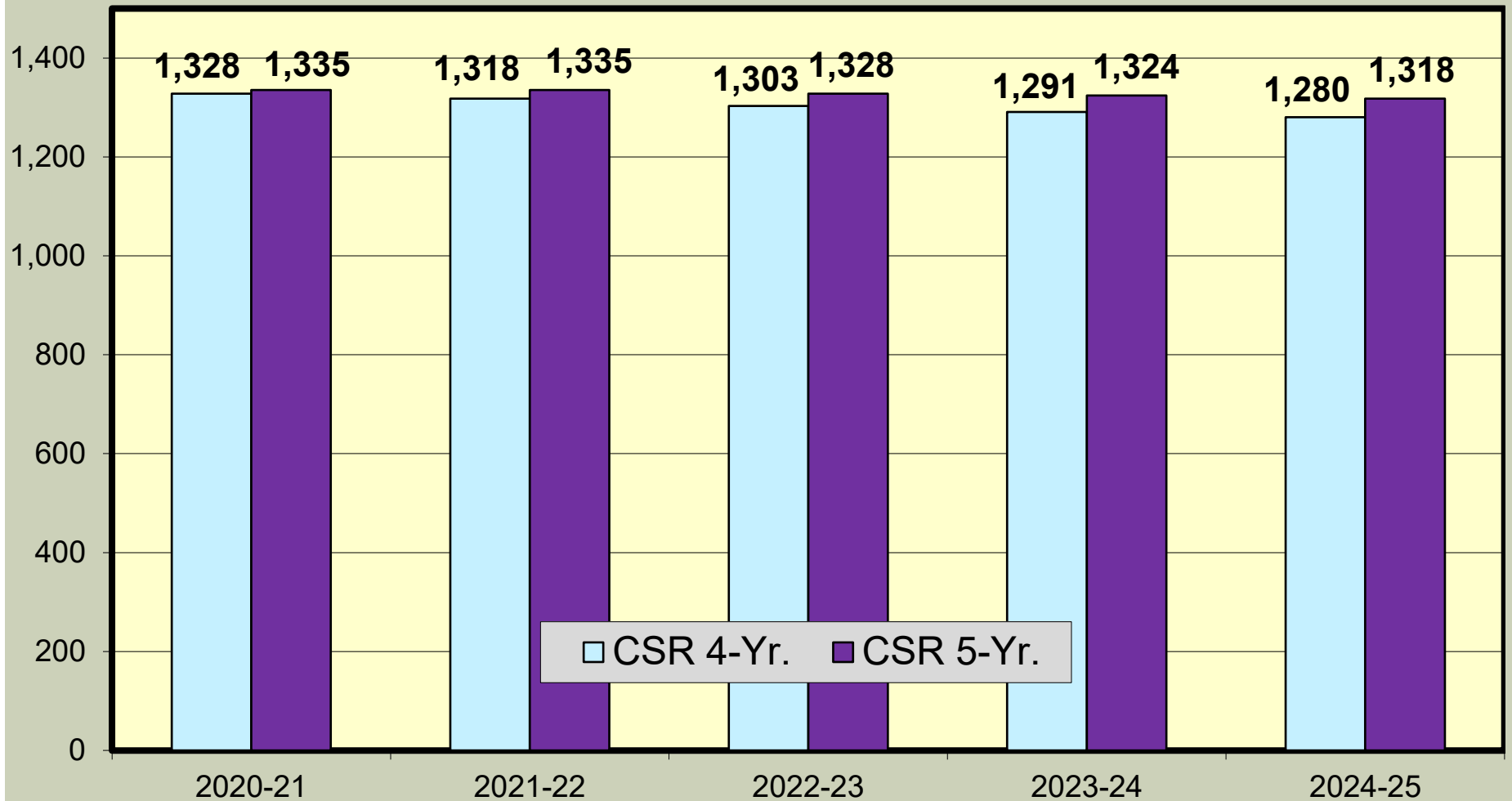
ENROLLMENT PROJECTIONS BY GRADE CONFIGURATION

Historical	PK-5		6-8	
2019-20	873		477	
Projected	PK-5 CSR 4-YR	PK-5 CSR 5-YR	6-8 CSR 4-YR	6-8 CSR 5-YR
2020-21	863	868	465	467
2021-22	850	862	468	473
2022-23	835	852	468	476
2023-24	856	880	435	444
2024-25	865	896	415	422
5-year Change	-8	+23	-62	-55

CAPACITY ANALYSIS

School	Capacity	Current Enrollment 2019-20	Difference	Projected Enrollment 2024-25	Difference
Elementary (K-5)	1,224	873	+351	896	+328
Memorial Junior School (6-8)	695	477	+218	422	+273

MAPPING

- Maps were created to compare different variables from 2014-15 to 2019-20.
- Student counts by census block
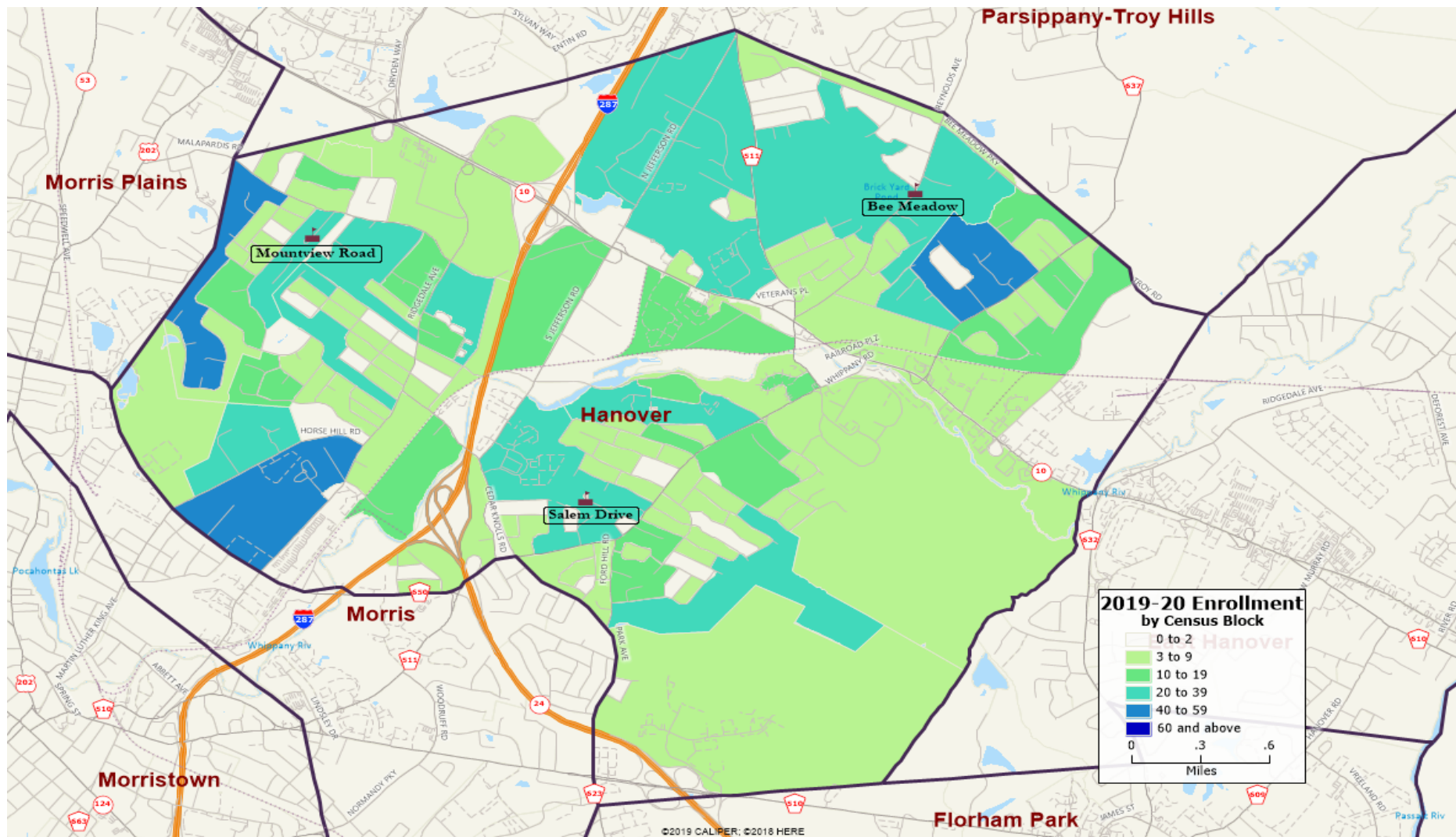- Student density by census block
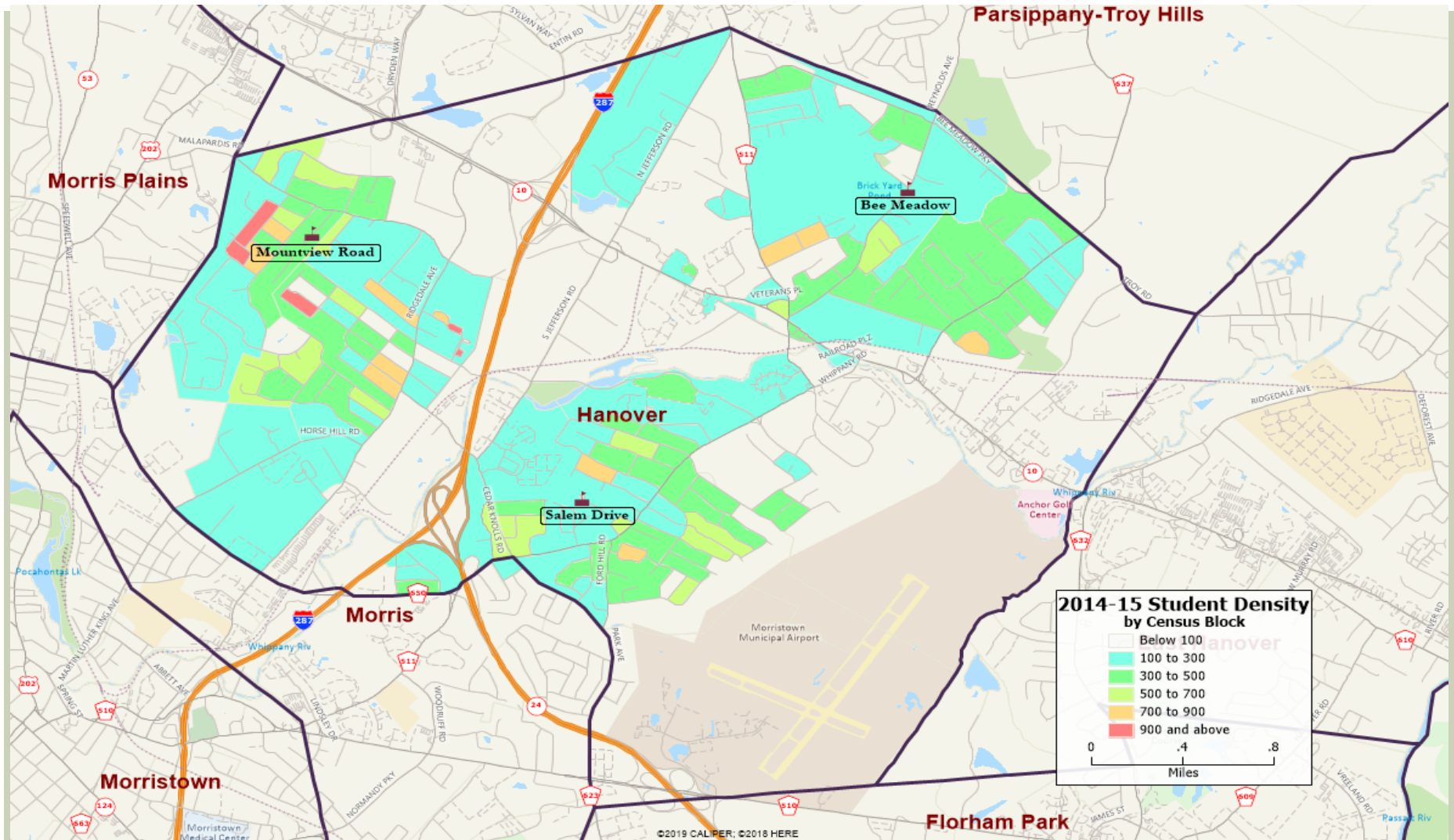- Student yield by census block

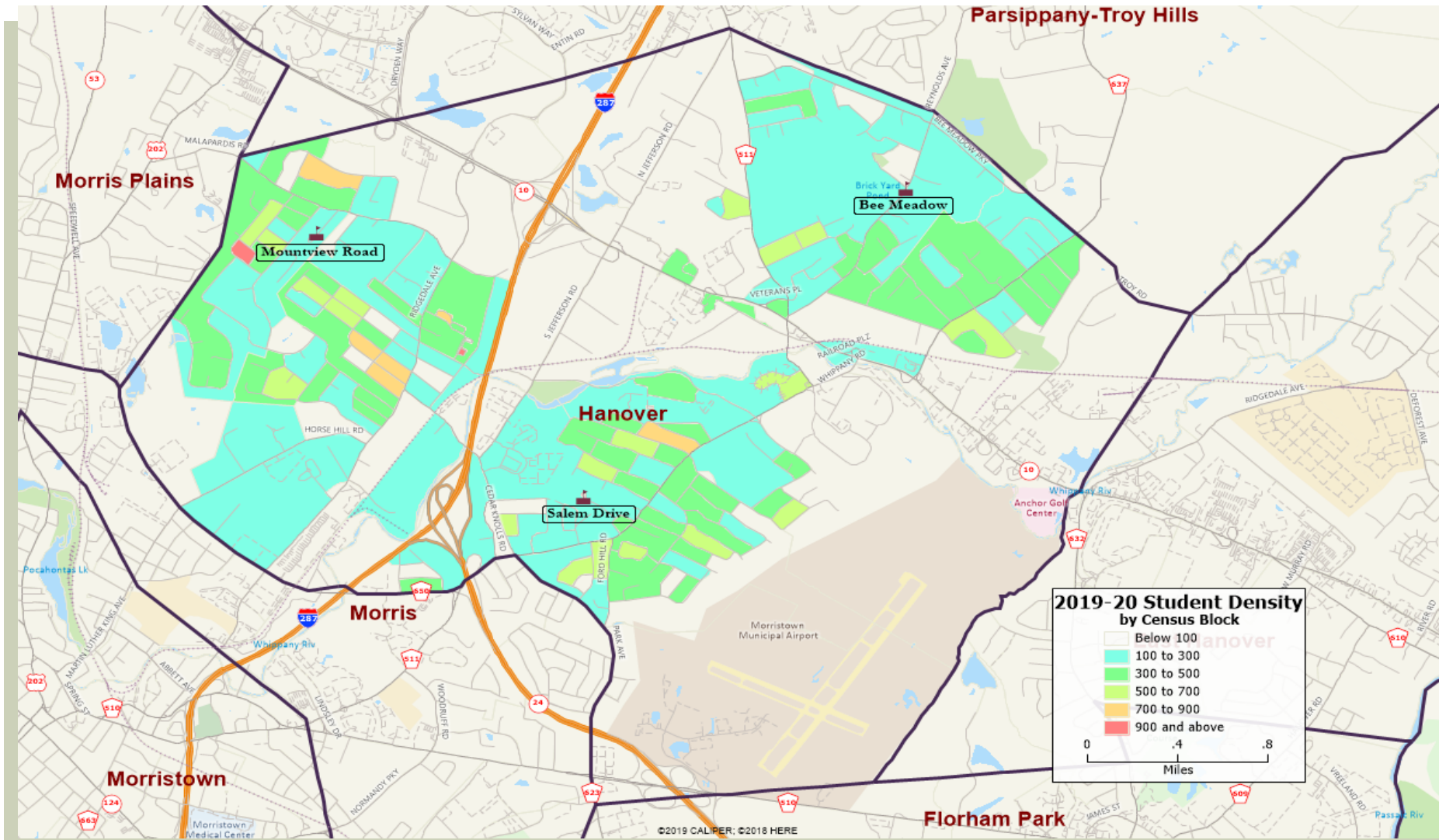# ENROLLMENT BY CENSUS BLOCK 2014-15
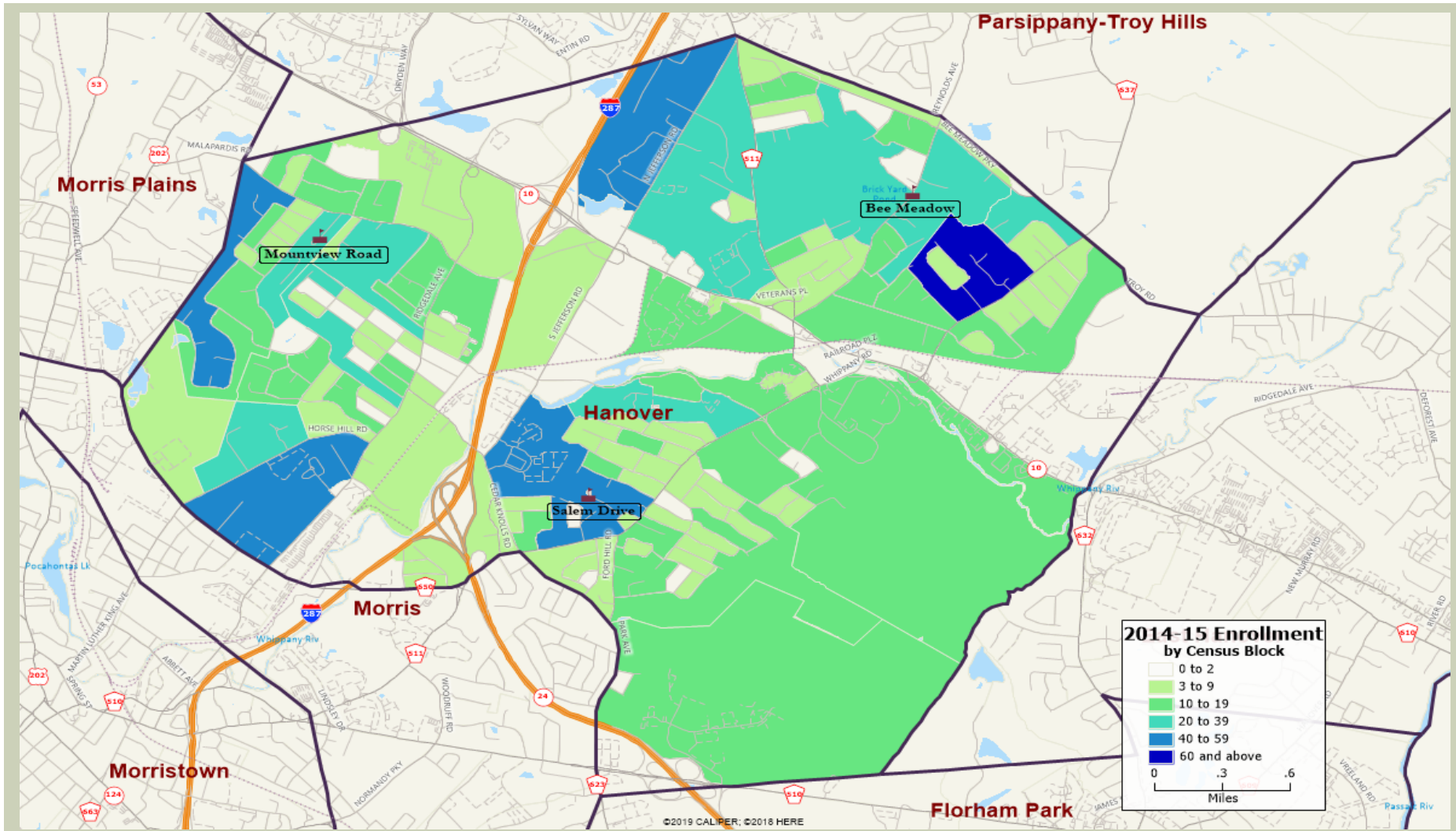
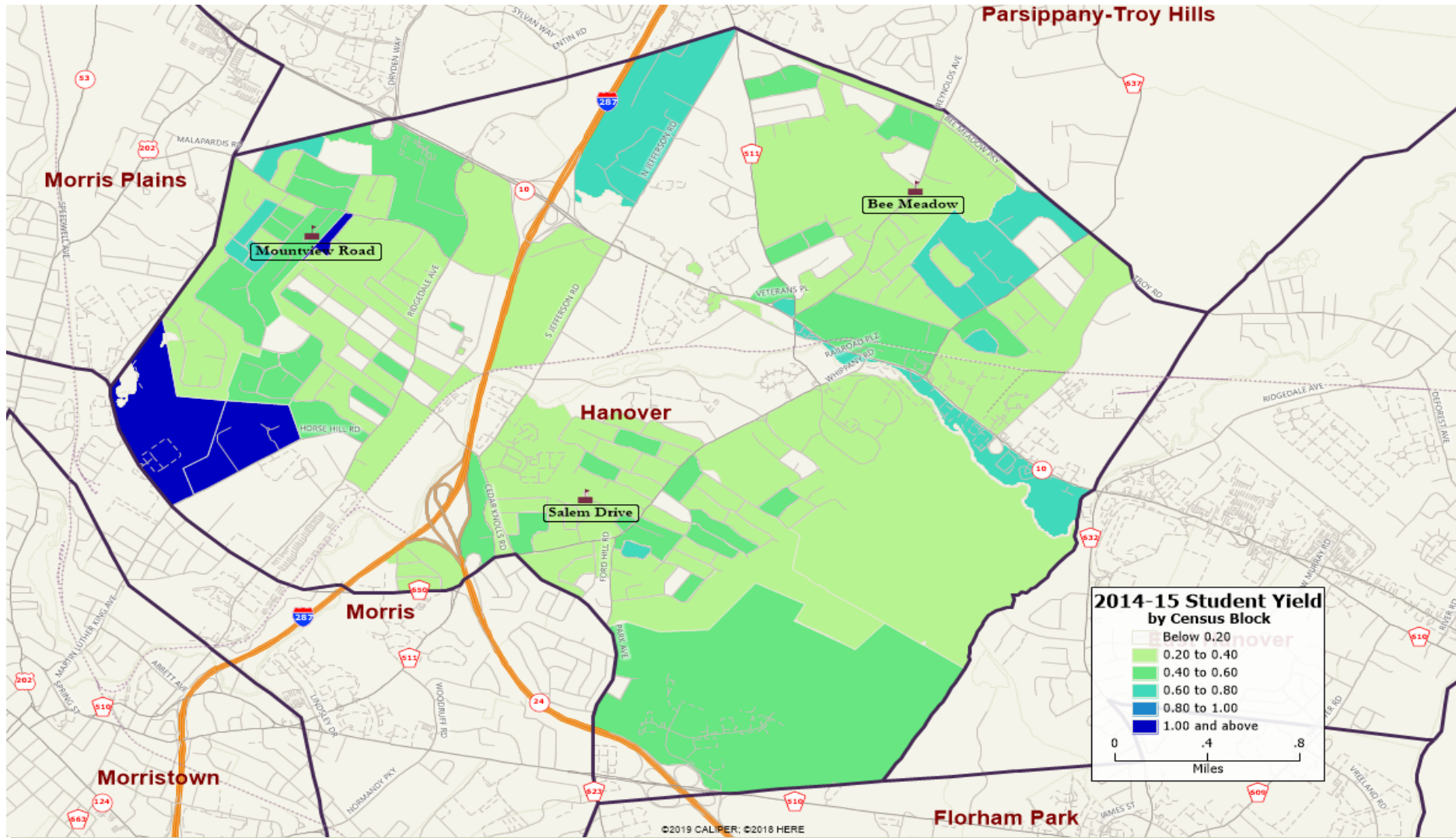# ENROLLMENT BY CENSUS BLOCK 2019-20

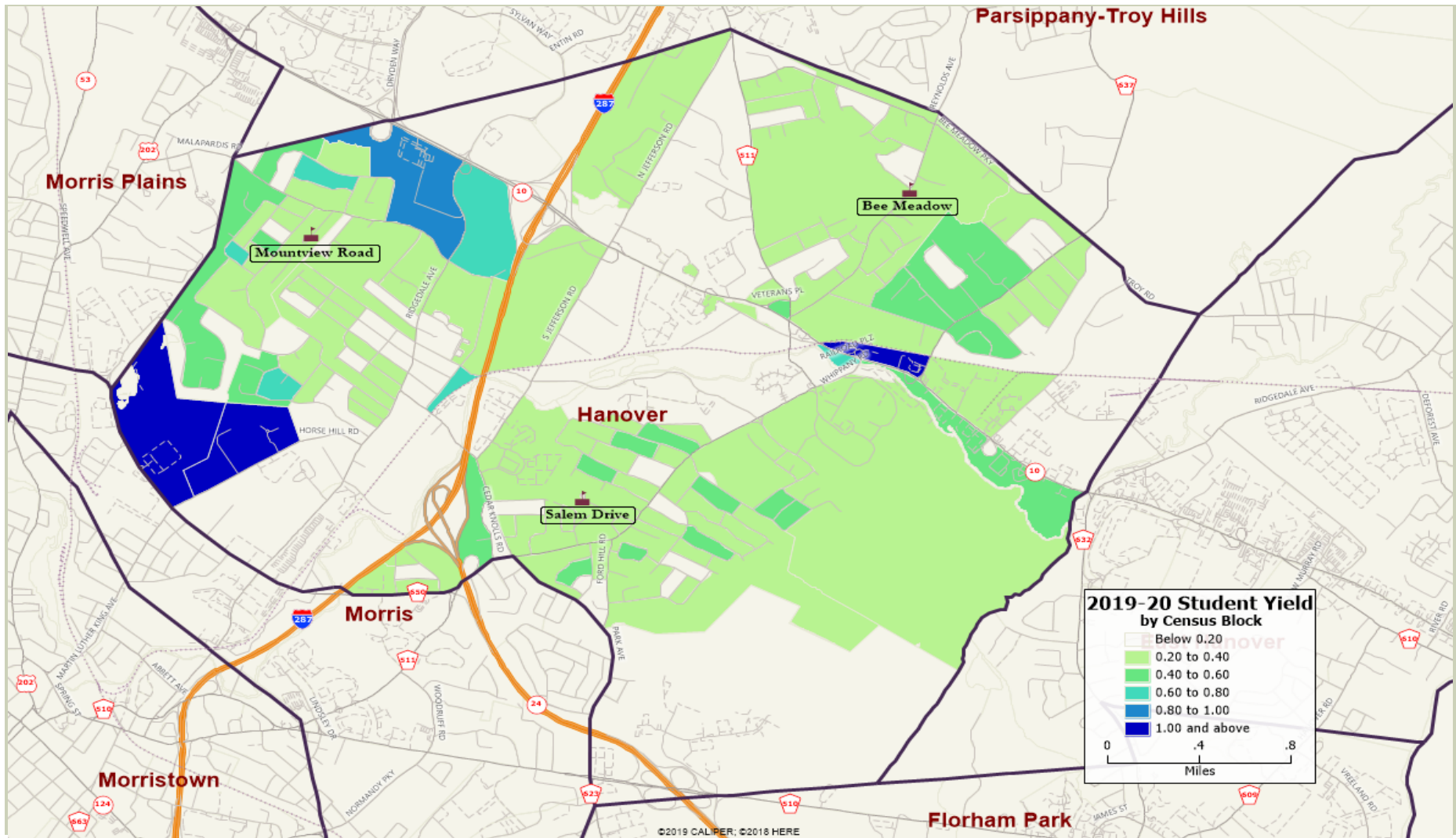# STUDENT DENSITY BY CENSUS BLOCK 2014-15

STUDENT DENSITY BY CENSUS BLOCK 2019-20

STUDENT YIELD BY CENSUS BLOCK 2014-15

STUDENT YIELD BY CENSUS BLOCK 2019-20

HOUSING TURNOVER ANALYSIS

Completely independent analysis using houses, not students, to project enrollment. Only done for SF homes, TH/condos removed.

Should not be used for yearly enrollment projections. Use those from CSR.
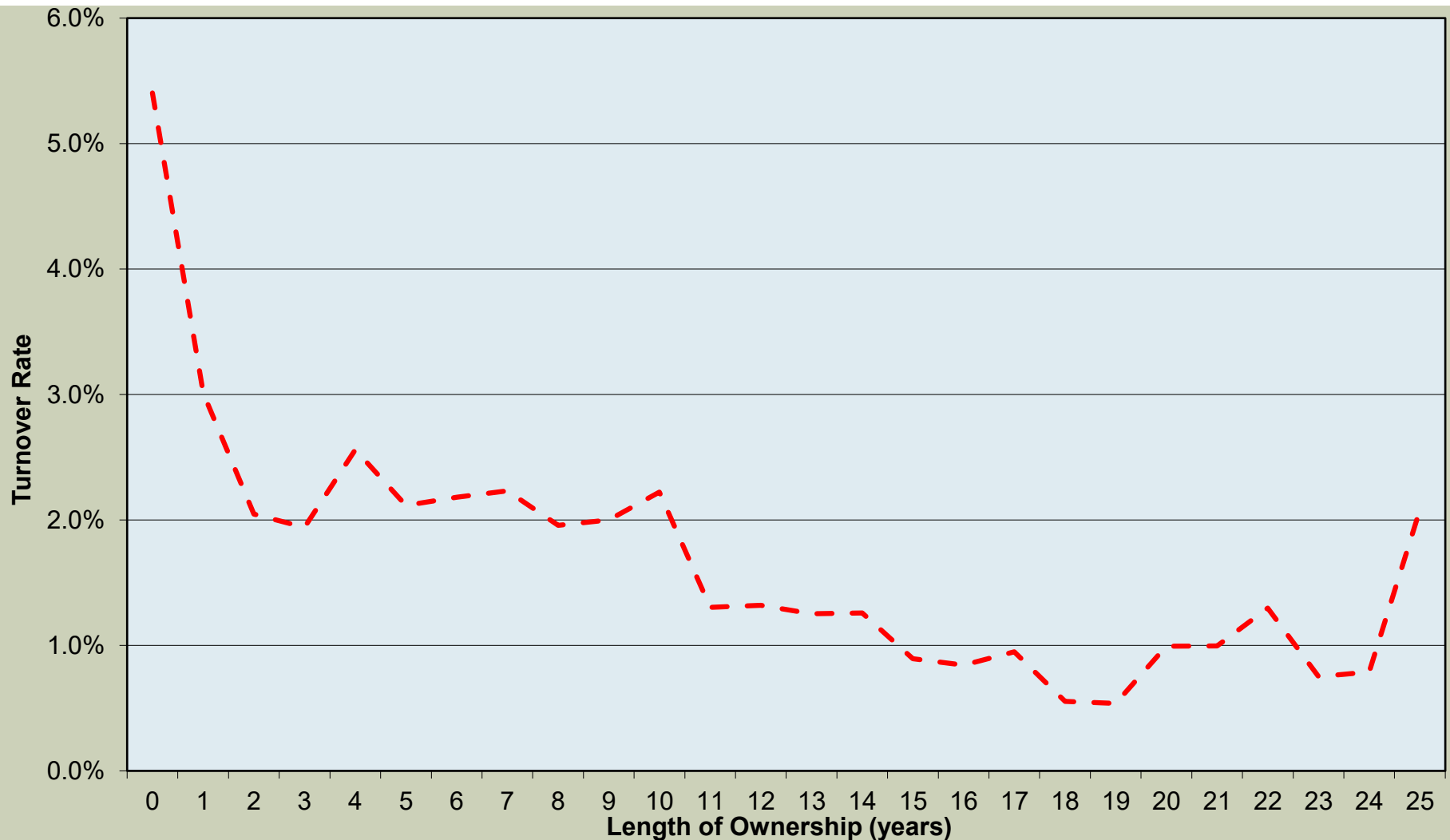
Three inputs:
1. Housing turnover rates by length of ownership
2. Current distribution of homes by length of ownership
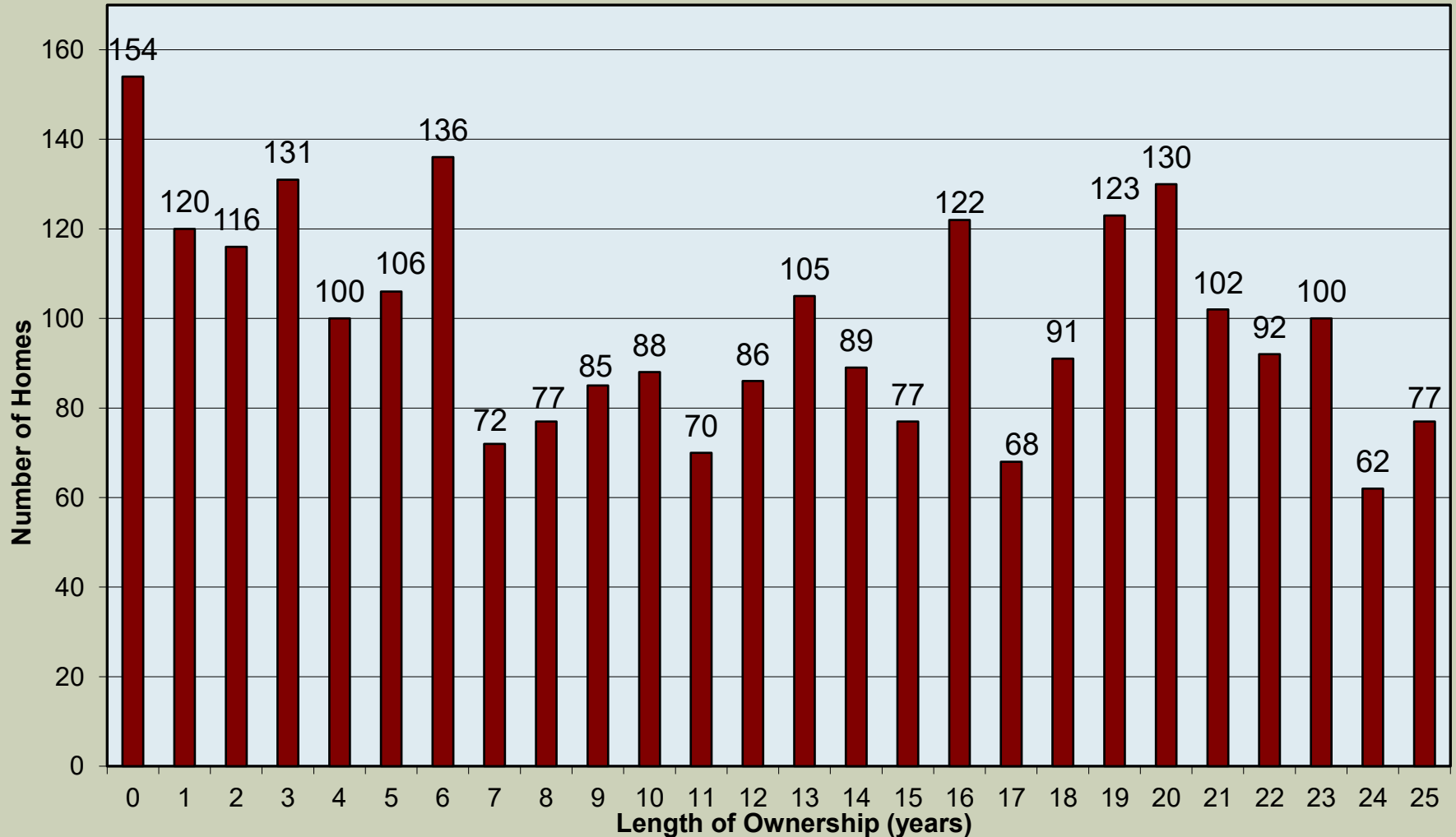3. Student yields by length of ownership

TURNOVER RATES

- Used parcel-level data to track each home through its "lifecycle". Data contained sale dates, sale prices, and year home was built.

- Sales data were collected from 1994-2019.

- Follow each year's cohort of homes beginning in 1998 to see when they sell.

- Ex. Home built in 1980 sold in 2002, 2008, and 2012 (part of three cohorts). First length of ownership is 6 years, second length of ownership is 4 years, current length of ownership is 7 years.
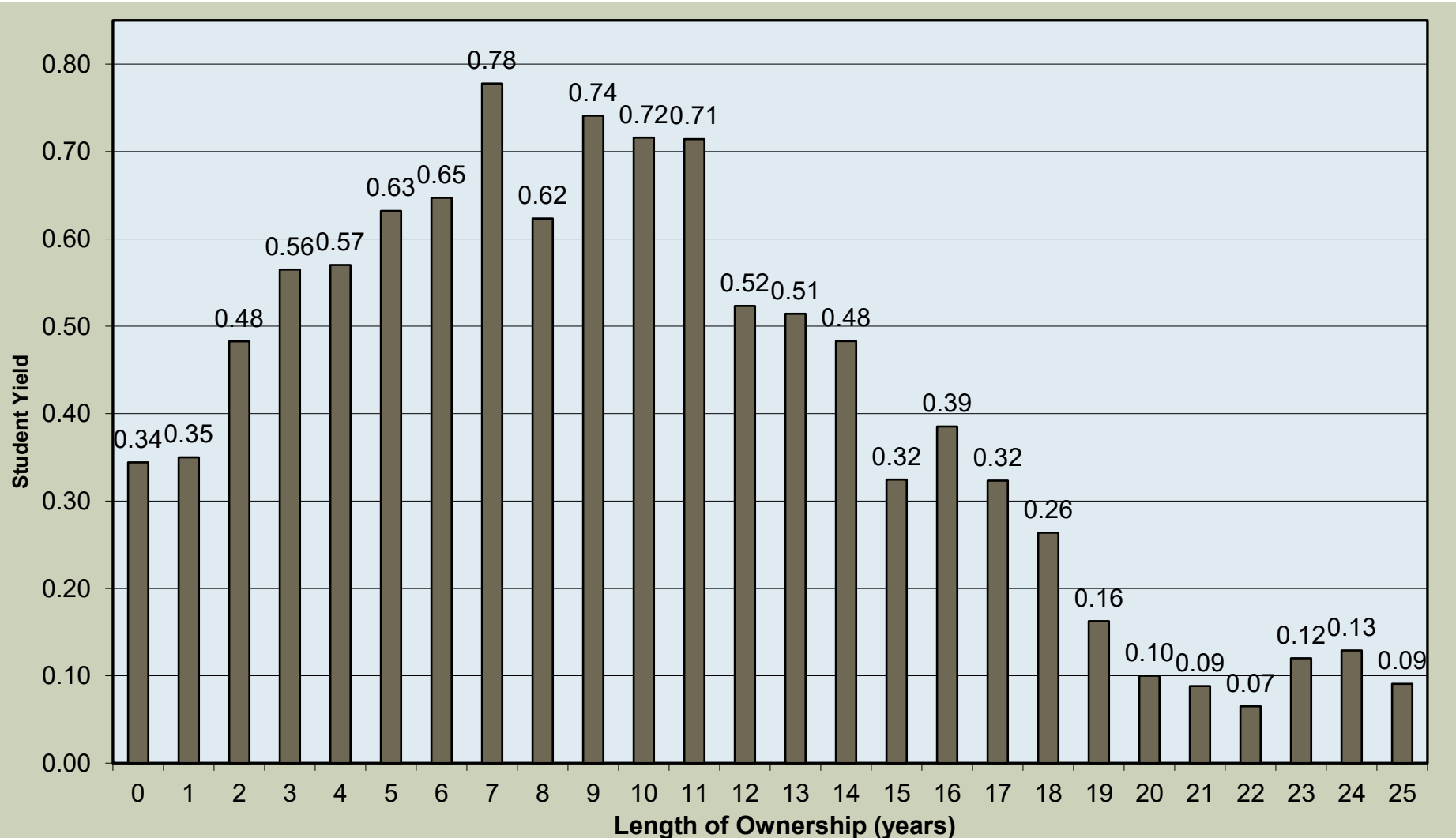
WEIGHTED-AVERAGE TURNOVER RATES BY LENGTH OF OWNERSHIP

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.

SCENARIO 1

	2019	2020	2021	2022	2023
Detached Single-Family Homes	1,150	1,155	1,175	1,199	1,208
Townhouses/ Condominiums (constant)	88	88	88	88	88
Apartments (constant)	82	82	82	82	82
Mixed-use units, out of town, no address, or unmatched (constant)	71	71	71	71	71
Total	**1,391**	**1,396**	**1,416**	**1,440**	**1,449**

SCENARIO 2

	2019	2020	2021	2022	2023
Detached Single-Family Homes	1,141	1,131	1,142	1,151	1,152
Townhouses/ Condominiums (constant)	88	88	88	88	88
Apartments (constant)	82	82	82	82	82
Mixed-use units, out of town, no address, or unmatched (constant)	71	71	71	71	71
Total	1,382	1,372	1,383	1,392	1,393

COVID-19

- Effects of COVID-19 on enrollment are varied across the country.
- Vermont has 2-5% increase this year after years of enrollment decline (15% increase in some towns).
- Big declines in large school districts- Los Angeles (-11,000), Broward County (-8,500), Orange County (-8,000), Charlotte-Mecklenburg (-5,000).
- People are leaving large metro areas to live in rural COVID-free areas, either in 2nd homes or a purchased home. Will they return?
- Student withdrawals – highly concentrated in lower elementary grades (NJ district: 40 of 124 withdrawals were kindergarten). Kindergarten redshirting?
- Most student withdrawals are students going to private school or being homeschooled. Rate of withdrawal seems to be linked to whether district is 100% virtual learning, hybrid, or full in-person instruction.
- 2 working parents likely to place child in a private school. Will they return back to public school?

SUMMARY

- Enrollments are projected to decline in the next five years, mostly in the middle school, if housing units do not come online.

- Baseline projections were not adjusted for housing growth due to uncertainty of timeline. Also, River Park is likely to be completed outside of 5-year enrollment projection timeframe.

- 2,000+ new housing units but housing type and bedroom distribution are likely to minimize student generation. Existing townhouses and apartments in Hanover Township have very low student yields.