



## Cohort Survival Method

- Based on Cohort Survival Methodology - Standard Method for Enrollment Projections & Accepted by CSDE School Construction Projects (CGS 10-283)
- The Cohort Survival Methodology Relies on **Observed Data from the Recent Past in Order to Predict the Near Future**
- Methodology Works Well for Stable Populations, Including Communities That Are Growing or Declining at a Steady Rate
- Recent Instability in Economic Climate - Difficult Time to Predict Enrollment

## Persistency Ratios

- Persistency Ratios Calculated From Historic Enrollment Data to Determine Growth or Loss in a Class as It Progresses Through School System
- Persistency Ratios Account for the Various External Factors Affecting Enrollments: Housing Characteristics, Residential Development, Economic Conditions, Student Transfers In and Out of System, and Student Mobility
- Persistency Ratio of 1.0 Means Class Size Remains the Same; 1.05 Means the Class Size Increases by 5%, or a Class of 100 Grows to 105 the Following Year
- Changes in Population, Housing Stock and Tenure, and Economic Conditions Help Explain Persistency Ratios



**Kindergarten through 12th Grade Persistency Ratios by School Year  
2001-02 to 2013-14**

| Year                     | Birth-K       | K-1           | 1-2           | 2-3           | 3-4           | 4-5           | 5-6           | 6-7           | 7-8           | 8-9           | 9-10          | 10-11         | 11-12         | Est. Migration <sup>1</sup> | Pers. Avg |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------------|-----------|
| 2002-03                  | 1.500         | 1.046         | 1.012         | 1.022         | 1.018         | 1.009         | 1.033         | 0.984         | 1.008         | 0.965         | 0.944         | 0.949         | 0.948         | 1.3%                        | 1.034     |
| 2003-04                  | 1.642         | 1.008         | 1.013         | 1.027         | 1.034         | 1.013         | 1.021         | 0.995         | 1.063         | 1.000         | 0.959         | 1.020         | 0.941         | 2.5%                        | 1.057     |
| 2004-05                  | 1.314         | 1.040         | 1.012         | 1.048         | 1.027         | 1.029         | 1.039         | 1.013         | 1.019         | 0.955         | 0.989         | 1.014         | 0.985         | 2.9%                        | 1.037     |
| 2005-06                  | 1.427         | 1.049         | 1.026         | 1.000         | 1.046         | 0.970         | 1.020         | 0.988         | 1.025         | 0.959         | 1.005         | 0.969         | 0.953         | 0.7%                        | 1.034     |
| 2006-07                  | 1.477         | 1.000         | 0.988         | 1.012         | 1.032         | 0.972         | 1.008         | 0.988         | 0.979         | 0.980         | 0.938         | 1.046         | 0.949         | -0.1%                       | 1.028     |
| 2007-08                  | 1.197         | 1.028         | 1.016         | 1.016         | 1.025         | 1.004         | 1.000         | 1.008         | 0.980         | 0.991         | 0.971         | 1.010         | 0.901         | 0.5%                        | 1.011     |
| 2008-09                  | 1.328         | 0.992         | 1.023         | 0.992         | 0.984         | 1.008         | 0.988         | 1.029         | 1.004         | 0.947         | 0.987         | 1.008         | 1.000         | 0.1%                        | 1.022     |
| 2009-10                  | 1.426         | 1.038         | 1.017         | 1.009         | 1.000         | 0.984         | 1.020         | 1.016         | 1.024         | 0.959         | 0.974         | 1.009         | 0.958         | 0.9%                        | 1.033     |
| 2010-11                  | 1.226         | 1.005         | 1.018         | 1.012         | 0.978         | 0.945         | 0.984         | 0.996         | 0.961         | 0.934         | 0.965         | 1.018         | 0.961         | -2.1%                       | 1.000     |
| 2011-12                  | 1.333         | 1.016         | 0.995         | 0.996         | 1.000         | 1.005         | 1.008         | 0.984         | 0.969         | 0.891         | 0.933         | 1.000         | 0.970         | -0.7%                       | 1.008     |
| 2012-13                  | 1.082         | 1.041         | 1.005         | 1.000         | 0.995         | 1.000         | 0.955         | 0.988         | 0.975         | 0.883         | 0.941         | 1.031         | 0.988         | -1.5%                       | 0.991     |
| 2013-14                  | 1.140         | 1.063         | 1.034         | 0.974         | 1.020         | 1.009         | 0.980         | 1.009         | 0.979         | 0.881         | 1.000         | 1.014         | 0.965         | -0.5%                       | 1.005     |
| <b>Long Term Average</b> | <b>1.3409</b> | <b>1.0271</b> | <b>1.0132</b> | <b>1.0091</b> | <b>1.0132</b> | <b>0.9957</b> | <b>1.0047</b> | <b>0.9998</b> | <b>0.9988</b> | <b>0.9454</b> | <b>0.9672</b> | <b>1.0075</b> | <b>0.9600</b> |                             |           |
| <b>Last 5-Yr Average</b> | <b>1.2414</b> | <b>1.0324</b> | <b>1.0138</b> | <b>0.9983</b> | <b>0.9987</b> | <b>0.9886</b> | <b>0.9893</b> | <b>0.9985</b> | <b>0.9817</b> | <b>0.9095</b> | <b>0.9627</b> | <b>1.0144</b> | <b>0.9684</b> |                             |           |
| <b>Last 3-Yr Average</b> | <b>1.1852</b> | <b>1.0397</b> | <b>1.0113</b> | <b>0.9900</b> | <b>1.0051</b> | <b>1.0045</b> | <b>0.9809</b> | <b>0.9936</b> | <b>0.9744</b> | <b>0.8850</b> | <b>0.9582</b> | <b>1.0152</b> | <b>0.9743</b> |                             |           |
| <b>3-Year Weighted</b>   | <b>1.1529</b> | <b>1.0475</b> | <b>1.0177</b> | <b>0.9865</b> | <b>1.0084</b> | <b>1.0053</b> | <b>0.9761</b> | <b>0.9979</b> | <b>0.9761</b> | <b>0.8833</b> | <b>0.9693</b> | <b>1.0176</b> | <b>0.9736</b> |                             |           |

Source: Calculated by MMI from State Department of Education, Public School Information System (2001-02 to 2010-11), Tolland Public Schools 12-13 and 13-14, and CT Department of Public Health (CT DPH) Birth Data.

<sup>1</sup> Derived from the comparison of 3-8 enrollment aggregate one year with the 2-7 aggregate from the prior year

- Persistency Above 1 = in-migration; student moved in or transferred in from non-public, or was retained
- Persistency Below 1 = out-migration; student moved out or transferred out to non-public

# Enrollment Projection Primer



## Projections Building Blocks

- Starting Data Used in Projections Are Critical to Overall Accuracy, as Each Year Builds Upon the Last
  - Students in the System – Progressed Forward
  - CT Department of Public Health Birth Records
  - Historic Enrollment Trends
- Develop Several Projection Models Applying Different Persistency Ratios to Building Blocks
- Census, Housing, Economic Data & Planning Initiatives Informs Model Selection



**DISTRICTWIDE ENROLLMENT PROJECTIONS BY GRADE (2014-15 to 2021-22)**

| School Year | Birth Year | Births | K   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | PK | PK-12 Total |
|-------------|------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-------------|
| 2014-15     | 2008       | 143    | 178 | 168 | 172 | 184 | 191 | 203 | 221 | 239 | 210 | 215 | 199 | 222 | 204 | 48 | 2,653       |
| 2015-16     | 2009       | 138    | 171 | 183 | 171 | 172 | 183 | 189 | 200 | 220 | 234 | 191 | 207 | 202 | 215 | 48 | 2,587       |
| 2016-17     | 2010       | 99     | 123 | 177 | 186 | 170 | 172 | 181 | 187 | 200 | 216 | 213 | 184 | 210 | 196 | 48 | 2,462       |
| 2017-18     | 2011       | 91     | 113 | 127 | 179 | 185 | 170 | 170 | 179 | 186 | 197 | 197 | 205 | 187 | 203 | 48 | 2,346       |
| 2018-19     | 2012       | 116    | 144 | 117 | 129 | 179 | 185 | 168 | 168 | 179 | 183 | 179 | 189 | 208 | 181 | 48 | 2,256       |
| 2019-20     | 2013       | 117    | 146 | 149 | 118 | 128 | 179 | 183 | 166 | 168 | 176 | 166 | 172 | 192 | 201 | 48 | 2,193       |
| 2020-21     | 2014       | 112    | 139 | 150 | 151 | 118 | 128 | 177 | 181 | 166 | 165 | 160 | 160 | 175 | 186 | 48 | 2,104       |
| 2021-22     | 2015       | 107    | 133 | 144 | 153 | 150 | 118 | 127 | 175 | 181 | 163 | 150 | 154 | 162 | 169 | 48 | 2,027       |

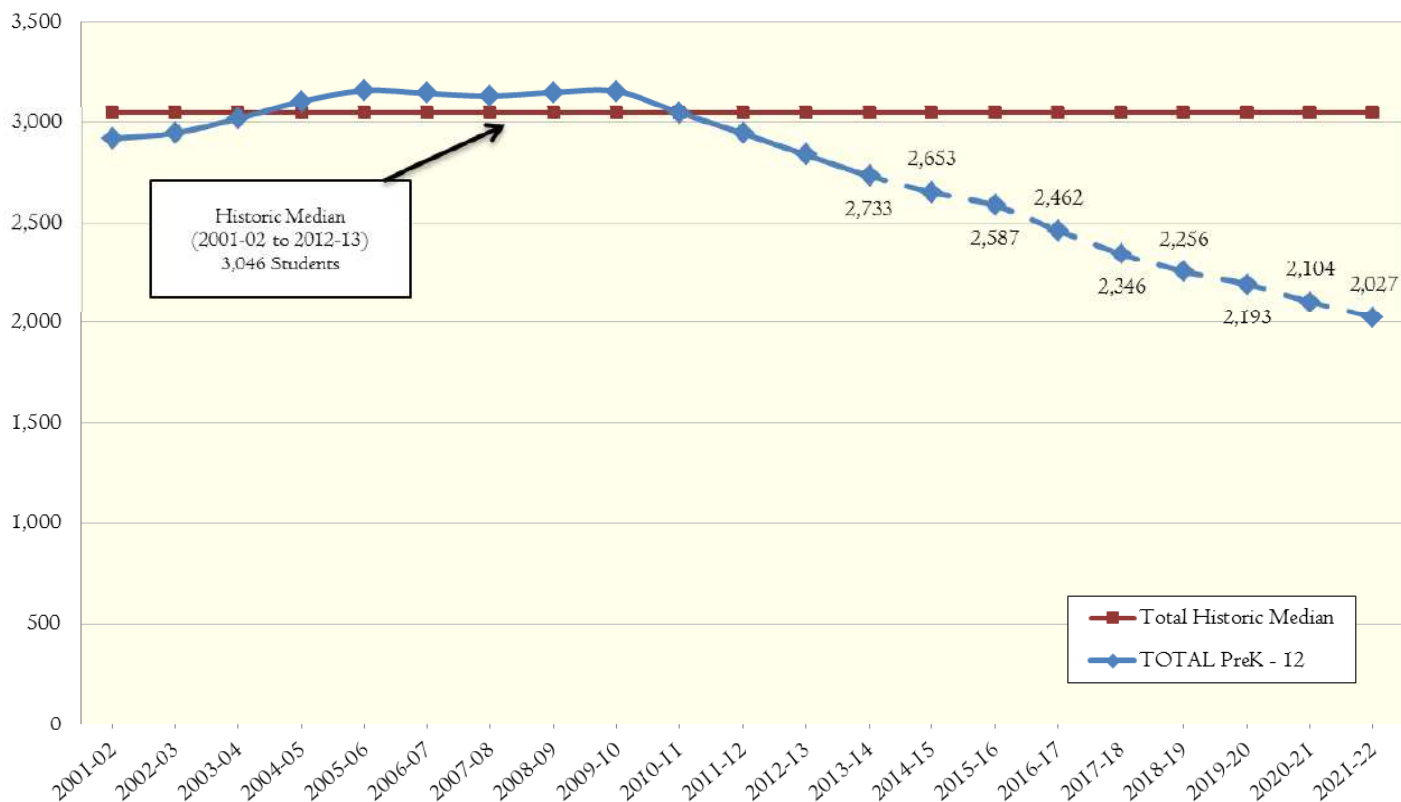
Five Average Persistency Ratios

# Tolland Demographic Profile





### Enrollment Projections Tolland Public Schools, PreK - 12th Grade 2001-02 to 2021-22



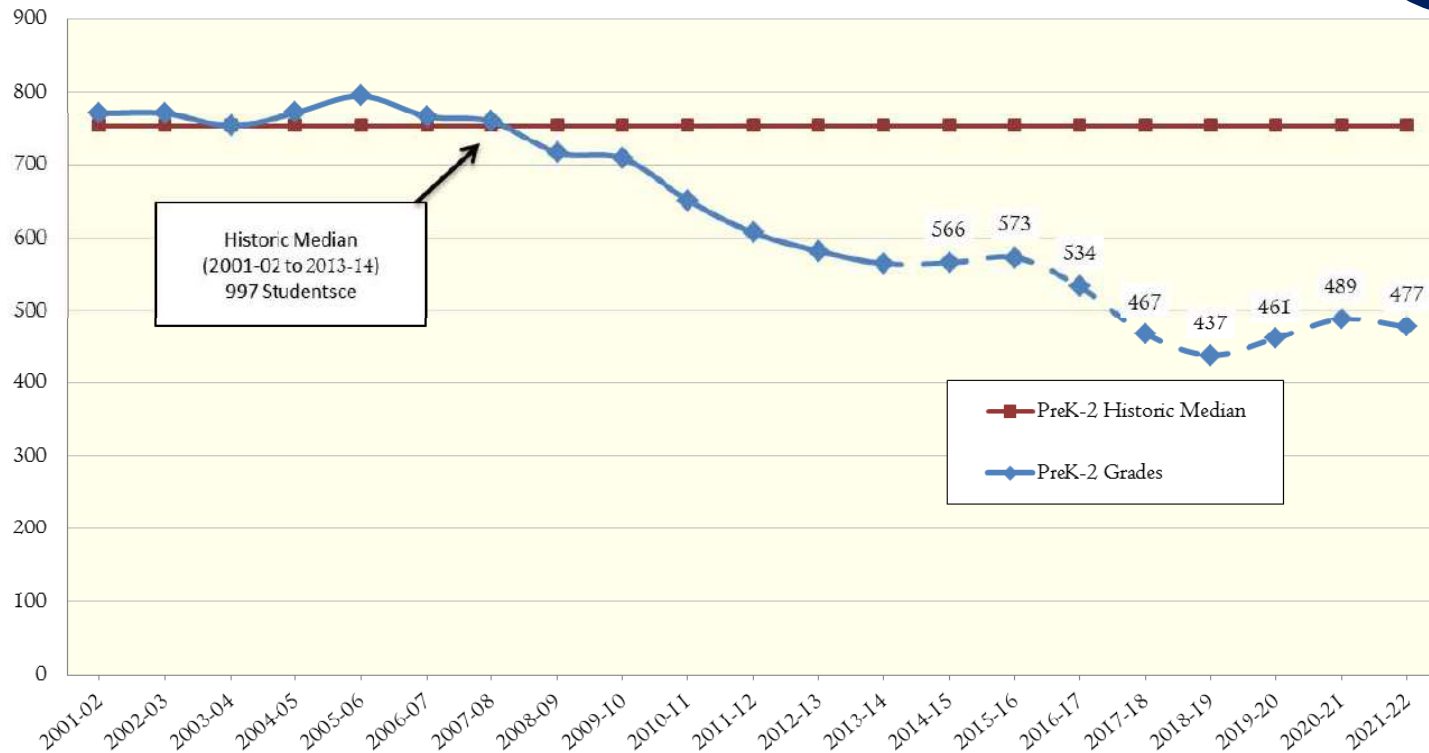
Sources: CT Dept. of Ed. CeDar and Tolland Public Schools (2012-13 & 2013-14); projections prepared by MMI.



# Tolland Demographic Profile



### Enrollment Projections Tolland Public Schools, PreK - 2nd Grade 2001-02 to 2021-22



Sources: CT Dept. of Ed. CeDar and Tolland Public Schools (2012-13 & 2013-14); projections prepared by MMI.

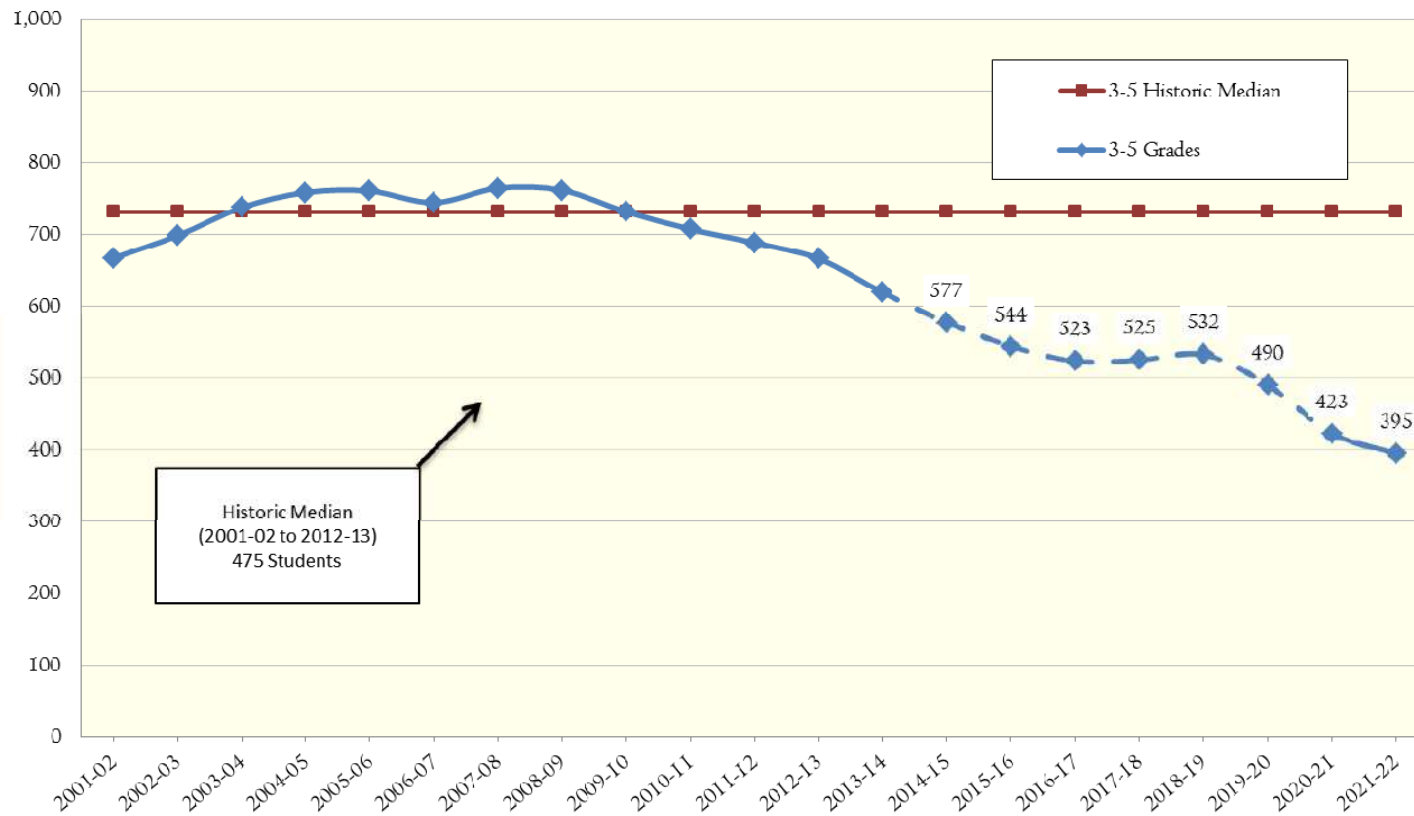


# Tolland Demographic Profile





### Enrollment Projections Tolland Public Schools, 3th - 5th Grade 2001-02 to 2021-22



Sources: CT Dept. of Ed. CeDar and Tolland Public Schools (2012-13 & 2013-14); projections prepared by MMI.

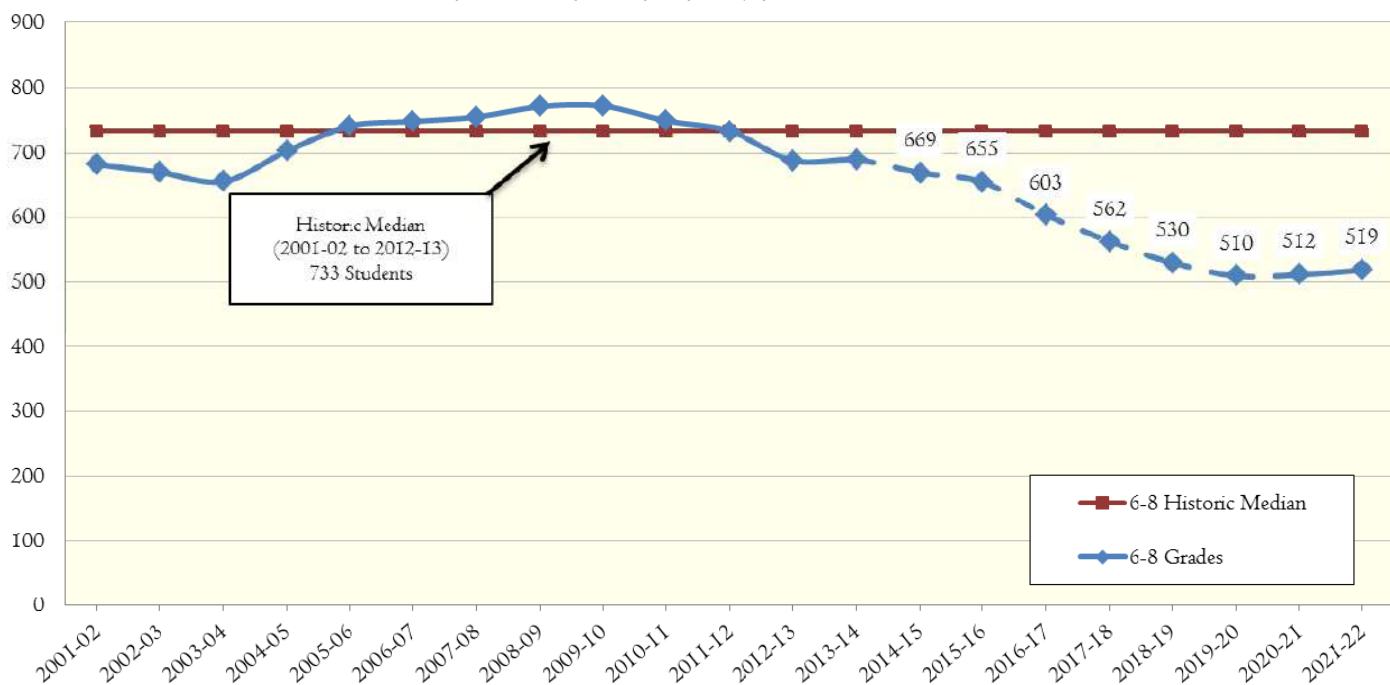


# Tolland Demographic Profile





### Enrollment Projections Tolland Public Schools, 6th - 8th Grade 2001-02 to 2021-22



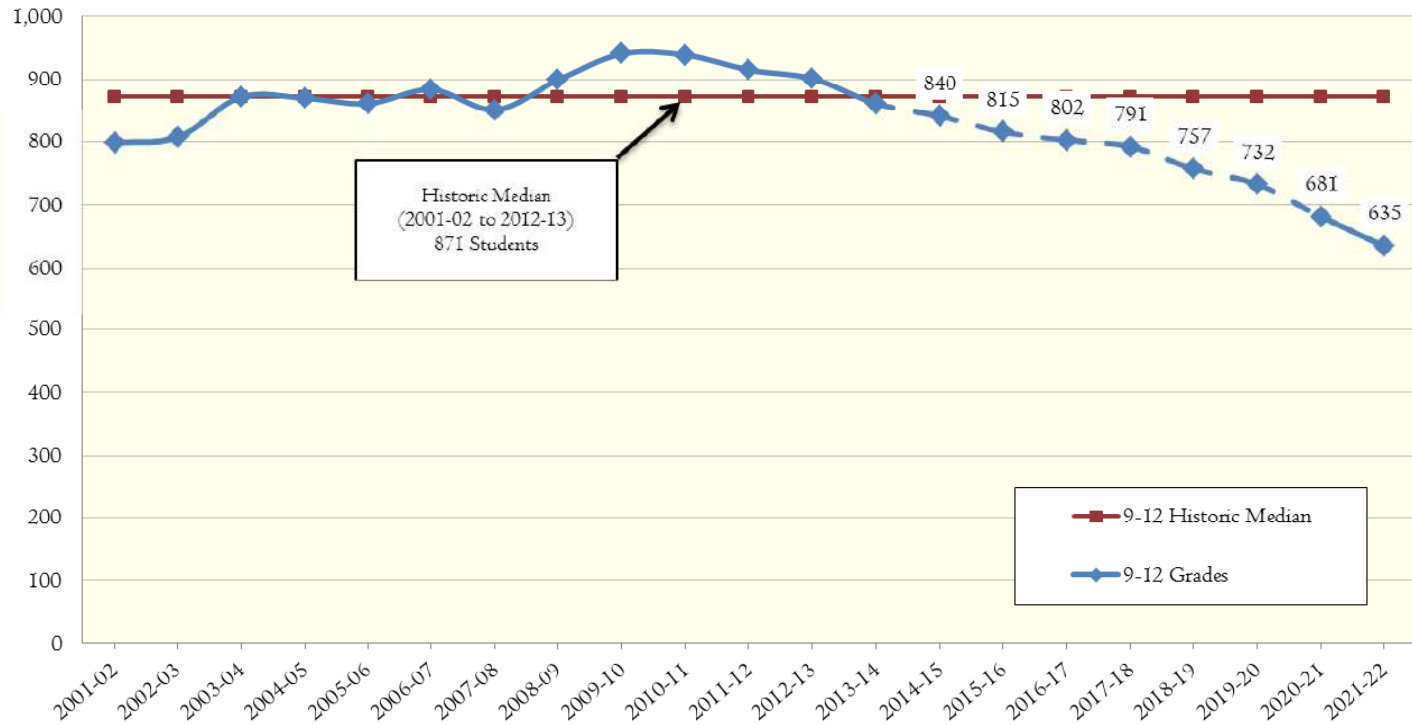
Sources: CT Dept. of Ed. CeDar and Tolland Public Schools (2012-13 & 2013-14); projections prepared by MMI.



# Tolland Demographic Profile



### Enrollment Projections Tolland Public Schools, 9th - 12th Grade 2001-02 to 2021-22



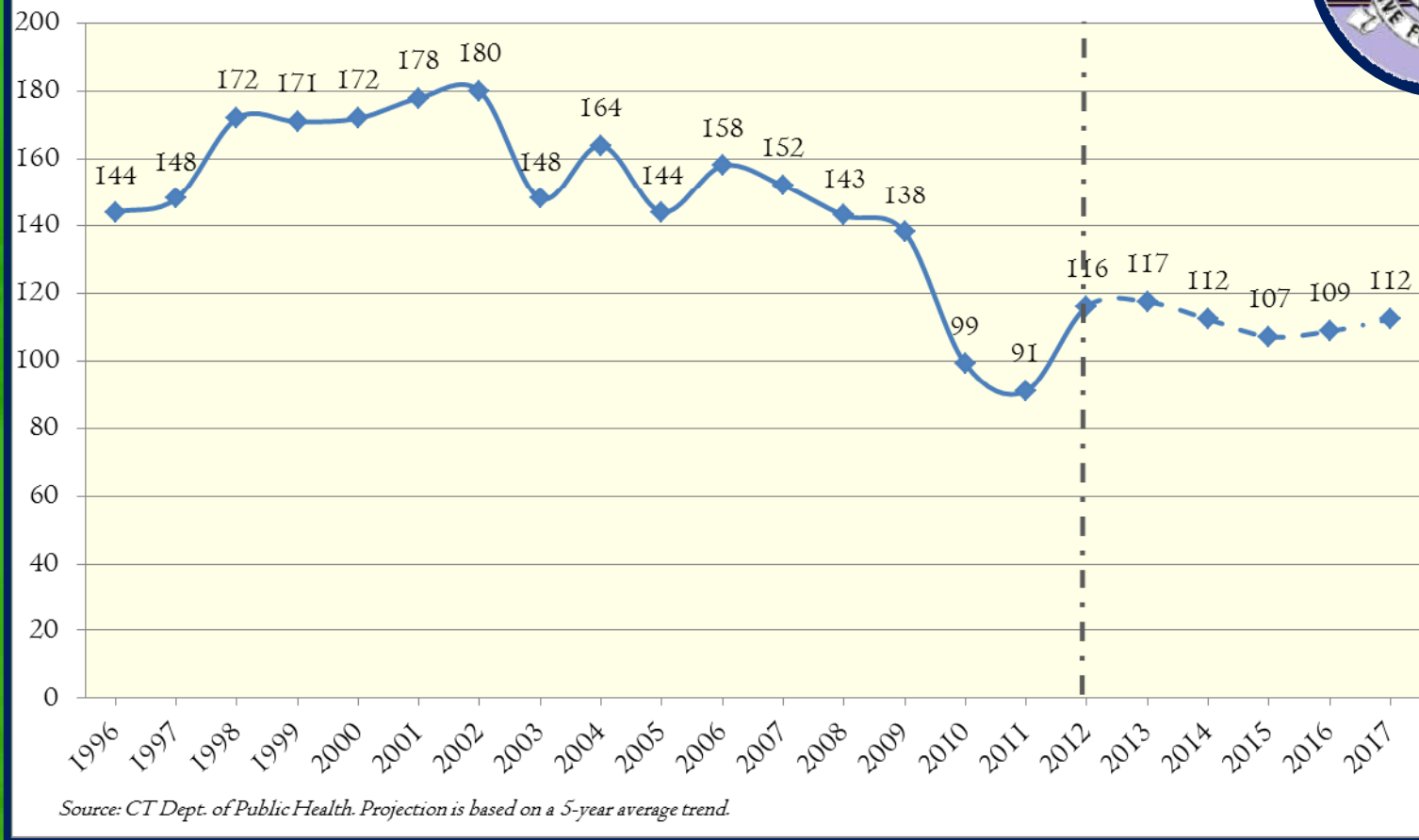
Sources: CT Dept. of Ed. CeDar and Tolland Public Schools (2012-13 & 2013-14); projections prepared by MMI.



# Tolland Demographic Profile



### Tolland Actual and Projected Births, 1996-2017

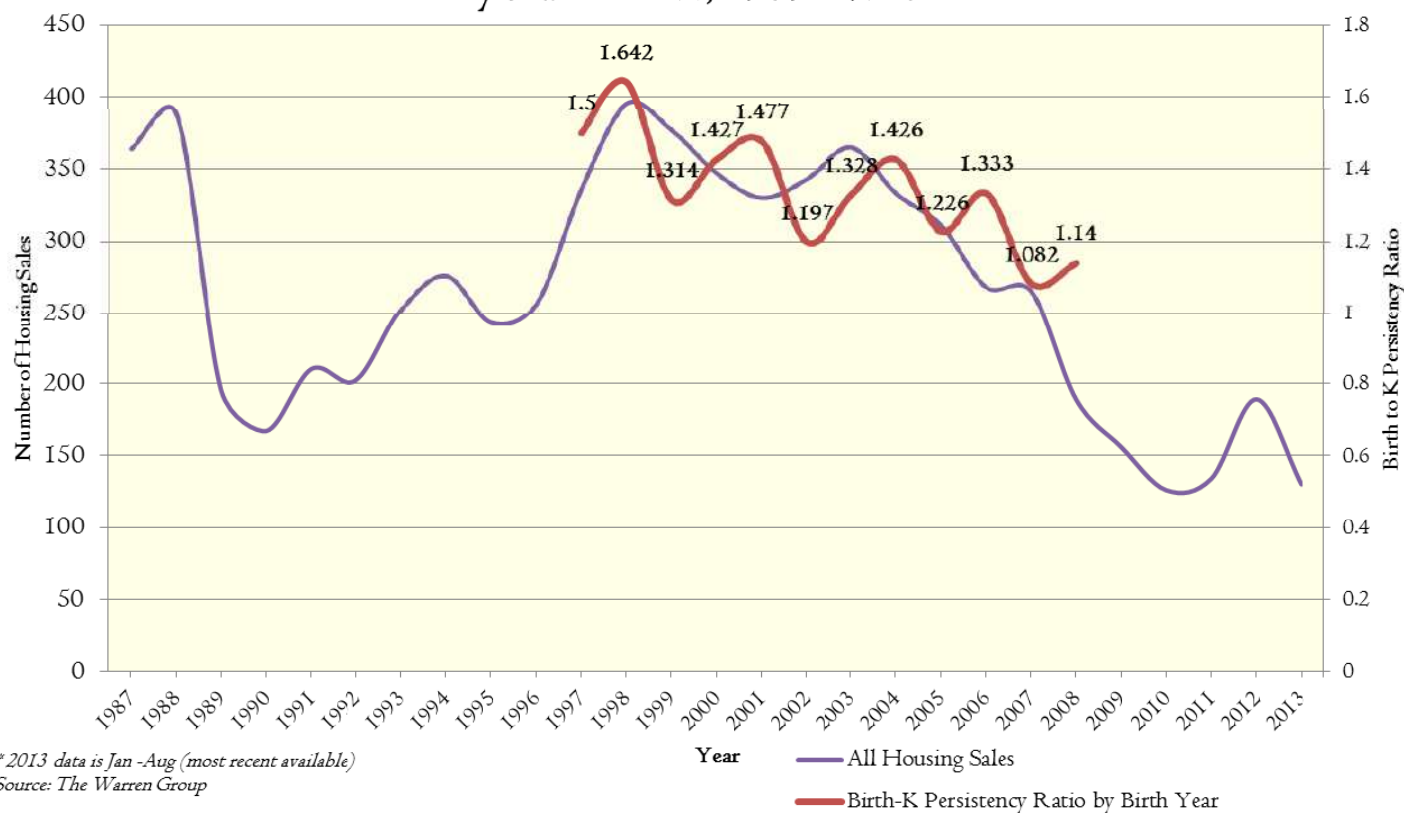


# Tolland Demographic Profile





Tolland Housing Sales and Birth to K Persistency Ratios,  
by Year of Birth, 1987 - 2013\*



# Tolland Demographic Profile