Broadalbin-Perth Central School District

Comprehensive Student Enrollment and Facilities Usage Study

February, 2016

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Broadalbin-Perth Central School District

Comprehensive Student Enrollment and Facilities Usage Study

Introduction

Broadalbin-Perth Central School District (the District), with principal address 20 Pine Street, Broadalbin, NY, is a K-12 public school district with two operational school buildings: The Broadalbin School at 100 Bridge Street, Broadalbin, NY, currently configured Pre-K-Grade 2, and Grade 9 through Grade 12; and the Perth School at 1870 County Hwy 107, Amsterdam, NY, currently configured Grade 3 through Grade 5, and Grade 6 through Grade 8. Geographically, the District is located in the eastern portion of Fulton County and principally within the townships of Broadalbin, Johnstown, Mayfield, and Perth.

Administratively, the District is served by a superintendent of schools, a director of curriculum, a director of special programs, four school principals, one assistant principal, a business administrator, and a director of operations. These educational professionals lead a team of some 135 teachers, 53 paraprofessionals, and 5 "other professionals." These professional staff members serve the educational needs of some 1,733 K-12 students.
[http://data.nysed.gov/reportcard.php?instid=800000051614]

The District is a component of the Hamilton-Fulton-Montgomery (HFM) BOCES located in Johnstown, NY. It is a member in good standing of the Capital Area School Development Association (CASDA), a SUNYA affiliate professional development organization located in Rensselaer, NY.

The goal of this study is to provide the Broadalbin-Perth Central School District with a comprehensive student enrollment and facilities usage study for the next 5-10 years. The District's school buildings comprise the Broadalbin School (grades PK-2 and 9-12) and the Perth School (grades 3-5 and 6-8). Specific goals for this study are as follows:

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GOAL 1: To accurately project the district's grade-by-grade student enrollment over the next 5-10 years based on trended historical enrollment and live birth data and to clearly depict and analyze this information for strategic planning purposes.

GOAL 2: To gather data from municipal sources concerning actual and projected growth of residential, commercial, and industrial assets within the district's boundaries and their possible effect on future enrollments.

GOAL 3: To assess the efficacy of the district's proposed restructuring in terms of available school facilities, infrastructure, and programmatic resources.

GOAL 4: To develop informational tools to effectively communicate these findings to the Broadalbin-Perth community as a means of educating them to the district's most likely 5-10 year future.

GOAL 5: To develop marketing tools to be used to attract new residential, commercial, and industrial development into the Broadalbin-Perth community.

The annual preparation and review of enrollment projections by administration and Board of Education is an important activity in that it facilitates both short and long-term planning for staffing, curriculum, and budget development. It can also provide valuable information relative to the planning of capital projects as well as planning for redistricting, school closure, and merger studies.

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Executive Summary

CASDA has performed a comprehensive study of historical K-12 enrollment patterns and grade-by-grade projections of student enrollment based on cohort-survival methodologies for the Broadalbin-Perth CSD for school years 2001-02 through 2015-16. CASDA has also gathered information concerning local development pressures and other factors that may affect student enrollments in the future. In addition, CASDA has gathered information concerning the District's school buildings in order to assess their capacities in relation to projected enrollments and their abilities to accommodate a change in grade configuration coupled with a pending capital project.

A. *Analysis of Historical and Future Enrollments:* In general, the CASDA reviewers noted a trend of declining K-12 enrollment for the District. This trend began in 2009-10 and has continued through 2015-16. A gradual decrease in live births in the District is most likely the factor at work driving this decline, although student-initiated dropout at the high school level is also a factor. District enrollments are projected to continue to decline through 2025-26 unless other forces (residential growth, increase in live births, reduced dropout rate) intervene. If unchecked, K-12 enrollments are projected to decline from 1,722 in 2015-16 to 1,592 (-7.5%) by 2025-26. More telling than the overall decline in K-12 enrollment is the fact that a similar decline occurs within each grade segment defined by the District (PK-3, 4-6, 7-8, and 9-12). This fact virtually ensures that the District will experience a continued slow erosion of its student population for the foreseeable future.

CASDA recommends that the District engage in a self-examination of its organizational structure and its educational programs to help ensure that it can retain Broadalbin-Perth students within its schools over the next 10 years. Specifically, CASDA recommends further study of possible reorganization initiatives and of specific curricular/support and transition protocol improvements in an effort to address these concerns.

B. *Analysis of Factors Affecting Future Growth:* In its review of factors operating outside the District that may affect future growth in student enrollment, CASDA studied U.S. Census data to establish population, demographic, and economic trends within Fulton County. CASDA reviewers interviewed town and county officials concerning current rates of development and future development opportunities. CASDA also wanted to know what town officials envisioned and planned for the futures of their municipalities, so studied the comprehensive master plans of the townships of Broadalbin, Mayfield, and Perth. Planning and projects contemplated by Fulton County, specifically the

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Tryon Tech Park and the SMART Waters project, were also examined. In addition, the reported future expansion of Global Foundries in neighboring Saratoga County was reviewed for its possible effects on future residential and commercial growth.

Unfortunately, CASDA reviewers found little in its study of outside factors that would mitigate the District's declining student enrollment in the short term (10-year horizon). Although some residential growth may occur over the next ten years, the numbers of school-aged students that will actually enter the District as a result during that timeframe will likely be few. It is more likely that significant development may commence during the next ten years and that it may begin to have a significant positive impact of District enrollments in the long term (20-year horizon).

CASDA recommends that the District focus its resources on developing and maintaining a comprehensive, attractive, rigorous, and forward-looking educational program and promoting this program actively within the region as a means of attracting new families to the District. CASDA further recommends that the District collaborate with local town and county governments in supporting initiatives designed to bring additional residential, commercial, and industrial development into the District.

C. *Analysis of Facilities Usage:* CASDA's analysis of school building usage was performed with the understanding that the District will pursue a reorganization of grade configuration in the Perth and Broadalbin schools. In their study of the District's schools, the CASDA reviewers found that the buildings were generally neat, clean, and conducive to the teaching and learning process. However, due to multiple capital projects over the years, both buildings have become convoluted and have tended to isolate certain programs and functions from each other and/or from the academic program. Building exteriors have lost clarity of entrance/exiting for the general public; interiors have been rerouted, repurposed, or blocked altogether, reducing efficiency and functionality.

Through its proposed capital project and reorganization efforts, the District has an opportunity to rectify some or all of these problems. The CASDA reviewers recommend that program spaces be reorganized in a manner that centralizes and improves accessibility of shared core services. Additionally, it is recommended that educational levels be clustered such that they maintain their own integrity, but still have ready and direct access to shared core services. Finally, that building entrances and offices be reconfigured to provide a more welcoming and efficient aspect.

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Methodology

A. Analysis of Historical and Future Enrollments

Historical Data

The principal methodology employed in this study is the **cohort survival** analysis. The basic data needed for this analysis is at least 10 years of actual grade-by-grade enrollment data as reported by the district to the NYS Education Department (http://data.nysed.gov/profile.php?instid=800000051614). All enrollment data is standardized as data that has been collected and reported on the NYSED Basic Educational Data System (BEDS) date, which occurs annually on or about October 1. Live birth data is derived from school district-specific tables provided by the NYS Department of Health (http://www.health.ny.gov/statistics/vital_statistics/2013/). These projections are statistically prepared and, as such, are subject to statistical error. They are strongly influenced by such factors as residential development, in- and out-migration, school choice, retention and dropout rates, and District reorganization/redistricting.

Cohort Defined

Cohort survival is a statistical methodology that examines the number of students at each grade level in a base year that are counted in the next grade in the following year. In this context, a "**cohort**" is a grade-to-grade group of students (e.g., the K-1 cohort is the group of students that move from grade K to grade 1; the 11-12 cohort is the group of students transitioning from grade 11 to grade 12). In a typical K-12 school district, there are 12 cohorts (i.e., K-1, 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9-10, 10-11, and 11-12). When this data is subjected to statistical analysis, an average "survival" rate is calculated for each cohort as described below.

Kindergarten Enrollment Projections

Annual **live birth** data is used to project the likely entry of new Kindergarten students. This projection is calculated based on a 5 year trend of live births transitioning to grade K in the "target" years, which occur 5 years later. This projection is made solely to predict the number of students who will likely enroll in Kindergarten in the target years. This projection is valid only for a 5-year projection; in a 10-year projection, the grade K prediction is determined through simple averaging of the past 5

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years of enrollment data. Because the capture rates for live birth data vary from year to year, averaging this data over several years helps to "smooth out" anomalies and provides a conservative estimate of future enrollments. [For example, Broadalbin-Perth's 9-year historical live birth average "capture" rate is 1.3033. This fraction indicates that, on average, approximately 130% of live births tend to enter Kindergarten five years later. See Table 3 and Graph 5, and "Findings" below for a more complete discussion of this phenomenon.]

Using the live birth capture average provides a measure of statistical probability of future Kindergarten enrollments, but is subject to statistical error. In addition, because the live birth data beyond 2013 is not yet available, a simple averaging method has been employed to predict Kindergarten enrollments for those "out years." For this reason, the prediction of Kindergarten enrollments more than 5 years into the future creates additional error that ripples through the early grades in those out years that is referred to as the "zone of uncertainty" (cells highlighted in pale yellow in the upper right corner of Table 1). [See Table 3 and Graph 5.]

Cohort Survival

Annual grade-level enrollment information is used to develop a statistical measure of the relative survival of each cohort within the district. The "**survival**" of the cohort is expressed as a decimal fraction, where a survival ratio of 1.0000 indicates no change in the number of students making the transition from one grade level to the next, a survival ratio less than 1.0000 indicates a net loss of student enrollment from one grade level to the next, and a survival ratio greater than 1.0000 indicates a net gain of student enrollment from one grade level to the next. [See Table 2.]

Cohort survival ratios are calculated for each cohort over a 5-year or 10-year period and averaged to provide a "typical" survival ratio for each cohort over the period. These typical survival ratios are then used to project probable enrollments in the following 5-10 year period. These statistical projections provide a baseline of information that may be modified by such unpredictable factors as in- and out-migration, new housing or closure of existing housing, home schooling, opening or closure of private/parochial or charter schools, or as a result of in-District actions such as changes in retention policy, redistricting, or school closure. Cohort survival projections are generally more accurate in the "near years" (1-5) and less accurate in the "out years" (6-10). [See Table 1 and Graph 1.]

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Once basic grade-by-grade enrollment projections are completed, it becomes a reasonably simple matter to group the data in various aggregations to answer specific questions. For example, questions relating to the District's proposed reorganization is presented in Table 4 and Graph 3.

Analysis of Cohort Survival Ratios

The cohort survival ratio is, in itself, a statistic that should be analyzed by a district to determine where the district tends to "lose" or "gain" students. It can also be used to identify at which grade level transitions (cohorts) students are typically delayed. Such points are known as "retention points," as indicated by "retention signatures" in the cohort analysis. When a retention signature is identified, it behooves the district to determine why students are impeded from making the transition from one grade level to the next. Impediments may include inadequate preparation and support for transition at the lower grade level or inadequate reception and accommodation for transition at the higher grade level. Such retention signatures are typically identified at grade 9 (cohorts 8-9 and 9-10) in most NYS school districts, and indicate that 9th grade students are typically less successful at making the transition to 10th grade by the BEDS date than are students at other grade levels. They are also common in transitions from elementary to middle school levels in many districts. [See Table 2 and Graph 4.]

B. Analysis of Factors Affecting Future Growth

Interviews with Local Officials

In initial meetings with Superintendent Tomlinson, it was noted that comprehensive plans are being developed at the county level that have the potential to significantly improve the economic condition of Fulton County and its townships in the future. It was therefore determined that interviews would be conducted with key local officials, principally Fulton County Planning Director Jim Mraz. This interview was conducted on November 9, 2015 and included discussions of major initiatives being planned for the county and their potential effects on the District.

In addition, interviews were conducted with Town of Broadalbin Code Enforcement Officer Donald Simmons (11/9), Town of Mayfield Code Enforcement Officer Michael Stewart (11/9), and Town of Perth Code Enforcement Officer Mark Concilla (phone 10/28). These interviews focused on recent and future residential growth in their respective jurisdictions, as well as any commercial or industrial developments that might indirectly impact residential development in the future.

Review of Town and County Planning Documents

The websites of these municipal entities were visited for information that might provide insight into the economic and population futures of the region in general and the District in particular. Documents reviewed included: "Town of Broadalbin Comprehensive Plan" (2004, amended 2011), "Town of Mayfield Comprehensive Plan" (2013), "Town of Perth Comprehensive Plan" (2013), and "SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY" (2014).

Recognizing that these documents were developed to address the town/county municipalities in question, including areas not located within the boundaries of the Broadalbin- Perth Central School District, their data sets were mined for demographic, economic, and planning data specific to the District.

Miscellaneous Data

Data from the **US Census (2010)** on population, housing, demographics, and economics were downloaded and reviewed for their impact on the District. This data was used to create Census maps illustration these factors on a county-by-county level. (http://census.gov/data.html)

NYS Soils Maps were downloaded and reviewed to determine the types and distributions of soils within the District. The aim of this analysis was to identify areas within the District that are conducive to residential development due to favorable soil permeability and suitability for septic field construction. (http://www.bing.com/images/...)

These data and maps were then analyzed to provide some insight into trends that may affect future populations in the county and student enrollments in the District.

C. Analysis of Facilities Usage

Interviews with District Administrators

On November 16 and 19 and December 2 and 9, 2015, the CASDA faculty team conducted site visits to the District for the purpose of familiarizing themselves with the current organizational structures and educational programs of the Broadalbin and Perth schools. A component of these site visits was an interview process with key administrative staff, as well as a brief questionnaire to assess the current and future uses of these facilities. These staff members included primary (Pre-K-grade 2)

administrator Brad Strait, elementary (grade 3-5) administrator Dan Casey, intermediate (grade 6-8) Principal Wayne Bell, and secondary (grade 9-12) Principal Mark Brooks.

Topics of discussion in these meetings included, but were not limited to, the following:

1. Plans for the future educational organization of the schools (whether straight grade configuration, grade clustering, looping, mixed grades, academic "houses," academies, STEM/arts magnets, etc.);

2. Specific discussion of the educational plan and rationale for the location of grade 6 at either Perth or Broadalbin;

3. Educational plans for facilitating the handling of transitional years (grade 6 to grade 7 and grade 8 to grade 9);

4. Educational plan for the grade 9 academy as it relates to grade 9 retention and dropout prevention;

5. Challenges to reorganization posed by the existing facilities designs that will be mitigated by the capital project; and

6. Teacher certifications as they relate to the delivery of educational program under the proposed reorganization (and considering projected enrollments).

Review of District Staffing and Grade Configurations

CASDA faculty analyzed teacher staffing patterns, primarily at the secondary level, to determine whether teacher certifications (especially dual certifications) can provide the potential for more sharing among Grades 7-12. The goal of this analysis is to assist the District to maximize staffing efficiency in programs such as technology, physical education, art/music, special education, and career/technical education, as well as pupil support departments including counseling and psychological/social work, by ensuring that the proper full-time equivalent (FTE) of professional staff is maintained in the District to support its desired programs.

Interviews with District Architects

On October 26, 2015 CASDA faculty members Brewer and Hunter met with District architects Randy Collins and Bryon Manning of CSArch Architecture of Albany, NY. The purpose of that meeting was to clarify the role of CASDA in its service to the District, as well as to share data pertinent to the roles of both parties in advising the District relative to its capital and program planning. Schematics of the District's facilities were reviewed to allow CASDA to gain a global understanding of the nature of

these facilities as they are currently used, and how they could be used in the future, to support educational programs. CASDA faculty in turn shared preliminary findings concerning K-12 student enrollment projections through the 2025-26 school year for use in projecting the relative "aidablity" of various capital planning configurations. This cooperative data sharing will enable both CASDA and CSArch to better provide services to the District in their respective areas of expertise.

Tours of District Facilities

CASDA reviewers conducted walking tours of the Broadalbin and the Perth schools on November 16 and 19 and December 2 and 9, 2015. They were accompanied by superintendent Tomlinson; Director of Curriculum and Instruction Terry LaFountain; principals Bell, Brooks, Casey, and Strait; operations director Mike Carney; architect Bryon Manning (CSArch), and others. During these tours, particular attention was paid to classroom sizes, grade level configurations and program design for current and future use. The walk through of each building focused on useable space, flow of the building for access to classrooms, larger learning centers, library, cafeteria and physical education areas, office locations, and access to buildings by the public. Given the desire of the District to reorganize grade alignments in these schools to better serve its students and its programming, the CASDA team collected information to support the potential repurposing of these spaces to serve the future program.

Review of District Capital Plan

CASDA faculty worked with the District's administrative staff and architect in conceptualizing future facilities uses. To a large degree, the District's proposed facility transition will drive the placements of instructional programs and classroom clusters at the future reconfigured Perth primary/elementary school and Broadalbin middle/high school. In addition, student service facilities such as the guidance suite, psych/social services, nurses' offices, food service/cafeterias, gymnasiums/locker rooms, and after-school programs (sports and extracurricular) should be centrally located and readily accessible to both middle and high school students. Other CASDA/CSArch collaborations were focused on helping to maximizing state aid for the District's proposed capital project through reconfiguring classroom utilization in both the Broadalbin and Perth schools. In addition, the District's Building Condition Survey (BCS) and five-year facilities plan were reviewed to ensure that any proposed building configuration changes are consistent with these planning documents.

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Findings

A. Analysis of Historical and Future Enrollments

Following is a detailed narrative explaining the data developed as part of CASDA's comprehensive student enrollment review. The base data for this section of the report is found in Table 1 in the Appendix, which employs a statistical formulation (described in the Methodology) that uses historical grade-by-grade enrollments to project student enrollments for the District for the next 10 school years.

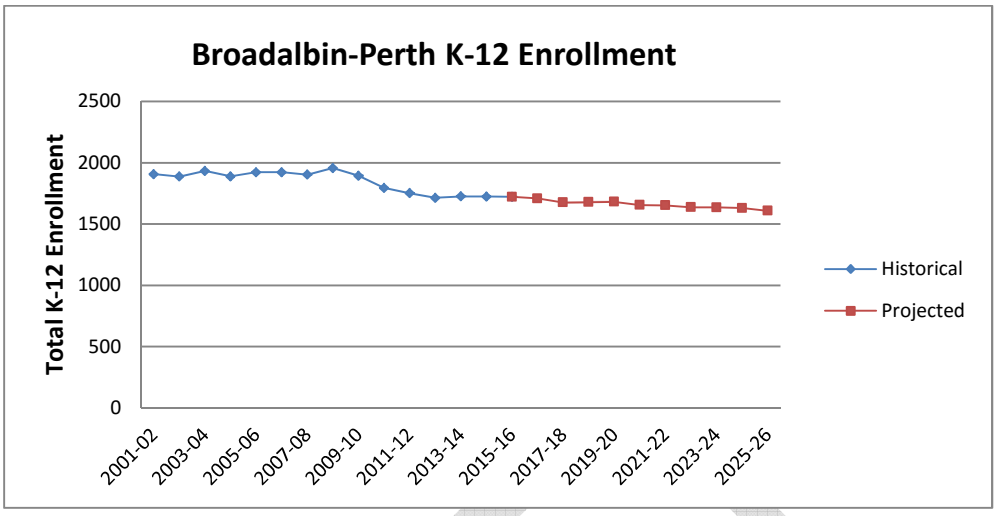
K-12 Enrollment

Data analyses provided below include projections of district-wide (K-12) enrollment, educational-level enrollments by grade, and an analysis of enrollment trends by cohort. In general, the trends noted for Broadalbin-Perth CSD, which indicate gradually dropping enrollments, are typical of many K-12 public school districts across the state.

The initial data examined in this study is 15 years of actual enrollment (BEDS) data from reporting years 2001-02 through 2015-16. This data indicate that the district reached a high-water mark of 1,956 K-12 students in the 2008-09 school year. Since that time, the District has steadily lost enrollment, reaching a low point of 1,714 K-12 students in 2012-13, with a slight rebound, then back down to 1,722 in 2015-16. Overall, this represents a nearly **9.7% decline** in student enrollment during the past 15 years. The exact reason for this decline is not known, but may reasonably be attributed to a combination of out-migration (parents choosing to move their families out of district), school choice (parents choosing to send their children to private, parochial, and/or charter schools), and reduced birth rate.

When the immediate past 10 years of historical grade level enrollment is analyzed using the cohort survival methodology and projected forward 10 years, it is predicted that the district's K-12 enrollment will continue to decline to approximately 1,608 students in 2025-26. This represents a nearly **6.8% additional decline** in student enrollment over the next 10 years. [*See Table 1 and Graph 1 attached*.]

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This projection assumes that the cohort survival trends of the past 10 years remain reasonably consistent and that there are no significant factors (e.g., increased/decreased in- or out-migration, retention policy changes, school choice changes, or live birth rate increases or decreases) afoot that would influence either grade-by-grade or overall enrollment in that period.

The cohort survival analysis provides data on grade-by grade historical enrollments, enrollment trends, and enrollment projections that can be aggregated in different ways to provide the District with information on potential shifts in student enrollment that can assist with staffing and budget administration. Perhaps the most direct aggregation is the aggregation by educational level. In the Broadalbin-Perth CSD, these levels comprise the early elementary school level (K-3), elementary school level (4-6), middle school level (7-8), and the high school level (9-12). These projections are completed on the 10-year basis of analysis. [*See Table 2 and Graph 2 attached*.]

Beginning with the **early elementary level** (Grades K-3), we can see that student enrollment at this level has varied between 468 (2004) and 528 (2008) students over the past 15 years (Table 1). Graph 2 shows a cyclical change in the numbers of students during this period, with high points in enrollment occurring on 6-7 year cycles (2001-02, 2008-09, and 2014-15); if this cyclical trend continues, we should expect to see the next high point of K-3 enrollment about 2020 or 2021. However, the overall trend for this age group is that it has **declined by 5.8%** since 2001. In addition, it was noted that incoming Kindergarten enrollments have declined by 8.0% during the same period. Together, these facts help to explain the historical and projected declines in K-12 enrollment being

experienced by the district. Projections indicate that the primary level will continue to **decline at a rate of 8.1%** over the next 10 years. [Note that the relative accuracy of primary level enrolments declines after 3 years due to lack of data on live birth rates that affect Kindergarten enrollments.]

Enrollment Trends for Broadalbin-Perth CSD		
Educational Level	**Historical Change since 2001-02**	**Projected Change thru 2025-26**
Grades K-3	-5.8%	-8.1%
Grades 4-6	-17.8%	-2.9%
Grades 7-8	-6.1%	-17.7%
Grades 9-12	-8.6%	-2.1%
Grades K-12	-9.7%	-6.7%

This analysis shows that **upper elementary level** (Grades 4-6) enrollments reached their lowest point in the 2015-16 school year, when enrollments were reported as just 387 students, a figure that was down from 471 in 2001-02. Overall, this represents a nearly **17.8% decline** in elementary enrollments in the past 15 years. It is projected that 4-6 enrollments will continue to decline at a slow but steady pace over the next 10 years, reaching a level of 376 student in the 2025-26 school year, or a **2.1% decrease** from 2015-16. [Note that these projections are subject to statistical error after 7 years as described in the Methodology for this analysis in this report.]

At the **middle school level**, the grade 7-8 enrollment reached a historical high point in the 2004-05 school year, with a total of 378 students in those grades. The middle school level saw its lowest enrollment in the 2012-13 year, when only 270 students were enrolled in these grades. The most recent (2015) BEDS data indicate an enrollment of 295 grade 7-8 students. Overall this represents a **6.1% decline** in middle school enrollments in the past 15 years. As students from the shrinking elementary level enter the middle school, grade 7-8 enrollment is projected to **decline by 17.7%** to just 243 students over the next 10 years.

The historical enrollment at the **high school level** (Grades 9-12) reached a high point in 2006-07, when the enrollment was reported to be 690 students. Since that time, the high school's enrollment has declined steadily to 552 grade 9-12 students in 2015-16. Since 2001 (15 years), the grade 9-12 enrollment has **declined by 8.6%**. Over the next 10 years, the high school is projected to **lose 2.1%** of

its enrollment, varying year-to-year between 533 and 564 students. Grade 12 (graduating) classes are projected to vary from a low of 119 in 2017-18 to a high of 150 just 2 years later in 2019-20. In Table 1, we can trace the year-to-year enrollments of this (projected) 150-member "Class of 2020," now in an 8th grade class of 160 students, which started as a Kindergarten class of 128 students in the 2007-08 school year.

Live Birth Data and Kindergarten Enrollments

Table 3 and Graph 5 present information concerning the reported birth rates within the Broadalbin-Perth catchment area. These data are drawn from NYS Department of Health (NYSDOH) charts reporting live births for every school district within the state. These data show a general decline in live births from 98 births in 2002 to 81 births in 2013; this represents a **17.3% decline in live births** during these 12 reporting years.

Interestingly, the District tends to enroll between 15% and 60% **more** students in its Kindergarten classes than the number of babies reported born in the District five years earlier, averaging 30% over the nine years of data that can be compared. For example, in 2002, 98 births were reported, but five years later in 2007-08, 128 students were enrolled in the District's Kindergarten classes. This represents 30.6% **more** Kindergarten students than reported births five years earlier.

Although this discrepancy would on its face appear impossible, pointing to a probable flaw in the reported data at NYSDOH, we can still make use of the data at to project future Kindergarten enrollments. In particular, reported births for 2011 (87), 2012 (70), and 2013 (81) can be multiplied by 130% to project probable Kindergarten enrollments for 2016-17 (113), 2017-18 (91), and 2018-19 (106) (See Table 3).

Because NYSDOH live birth data for 2014 and 2015 are not yet available, a simple averaging methodology has been used to project Kindergarten enrollments for 2019-20 through 2024-25. This method introduces statistical error that ripples through the enrollment projections, creating a "zone of uncertainty" in the calculations that must be taken into consideration when determining the accuracy of the projected data. It is important for the District to update enrollment projections annually so as to provide the most accurate data possible to principals responsible for planning and scheduling faculty, staff, classrooms, and other programmatic resources.

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Reorganization Analysis

At the request of Superintendent Tomlinson, a special analysis was prepared to project total enrollments for Pre-K through Grade 6 vs. Grade 7 through Grade 12. The District's request was based on considerable Strategic Planning Committee analysis and discussion of educationally-appropriate programming for Grade 6. As an extension of that discussion, the Committee recommended that the District reorganize its grade configuration to house Pre-K, Kindergarten, and Grades 1-6 at the Perth school. CASDA's analysis of Pre-K through Grade 6 projection data was requested to ensure that the Perth school could comfortably accommodate this grade configuration.

Although projection of Pre-K is not technically part of the cohort survival projection methodology, the past five (5) years of Pre-K enrollment was averaged to project 2016-17 Pre-K enrollment, that past four (4) years and the 2106-17 projected year were averaged to project 2017-18 Pre-K enrollment, and so on until all years from 2016-17 through 2025-26 were projected. Not surprisingly, this analysis indicates that Pre-K enrollment will hold fairly steady for the next ten years, varying between 68 and 78 Pre-K students per year during the period. At the same time, aggregated K-6 enrollments are projected to decline from 837 students in 2016-17 to 809 students in 2025-26. (See Table 4 and Graph 3)

When added to the Pre-K enrollment projections, total projected enrollments for the Perth appear to fall within the published building capacity for the Perth school and are shown in the chart below:

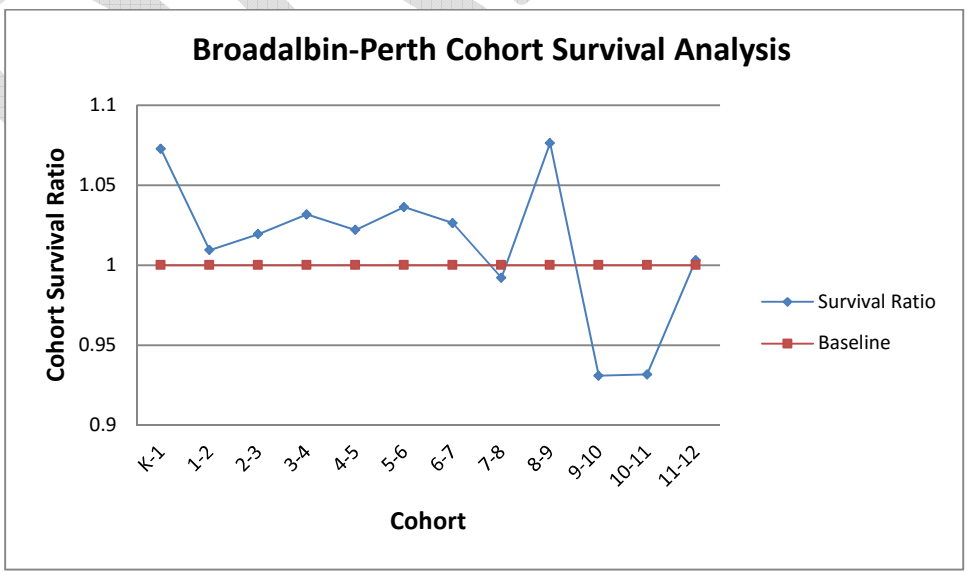
Broadalbin-Perth Reorganization Analysis

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Pre-K	68	70	73	78	76	73	74	75	75	74
K	113	91	106	109	107	105	104	106	106	106
1	123	122	98	113	117	115	113	111	114	114
2	102	125	123	99	114	118	116	114	112	115
3	136	104	127	125	101	117	120	118	116	114
4	143	140	107	131	129	104	120	124	122	120
5	129	147	143	110	134	132	106	123	126	125
6	125	133	152	148	114	139	137	110	127	131
TOTAL	940	931	928	913	892	903	890	881	898	899

This information was transmitted to the District architect for comparison to published building capacity. Suffice it to say here that in terms of gross capacity, the Perth school appears to be large enough to accommodate the numbers of students, Pre-K through Grade 6, that are projected to be in attendance there from 2017-18 through 2025-26. This assessment is predicated on the assumption that class sizes will fall within the range of not fewer than 20 and not more than 27 students per section. This assessment is also dependent on the nature of capital alterations to this school that may be planned in the upcoming capital project. See also Part C of this report (Analysis of Facilities Usage), which deals with the numbers of classrooms needed to support not only the gross number of students and the educational program, but also the District's policies regarding class size and specials (e.g., physical education, art, music).

Cohort Survival Analysis

The calculation of cohort survival ratios used to project probable grade-by-grade, educational level, and district-wide enrollments also may be analyzed to inform the District's administration of enrollment trends that are in need of attention from a policy perspective. An analysis of the Broadalbin-Perth CSD cohort survival ratios provides some interesting areas for study and improvement. The 10-Year average of cohort survival that forms the basis of this study highlights three areas of concern. (See Graph 4)



First, the data indicate that **the District is consistently gaining enrollment at cohorts K-1, 1-2, 2-3, 3-4, 4-5, 5-6, and 6-7**. These gains may be due to a multiplicity of factors including student transfer from private, parochial, charter, and/or home schools, as well as simple in-migration into the District from one or more neighboring public school districts. They may also be the result of retention policies and practices within the District that hold students back from progressing to the next grade level. These individual cohort gains are puzzling in light of the general declines in student enrollments noted at all levels of the District (See above). One would expect that such gains in cohort enrollments would drive a general increase in student enrollment throughout the District. However, during the course of this study, a 15-year decline (8.0%) in incoming Kindergarten enrollment was noted (See Tables 1 and 3 and Graph 5), which may account for this general enrollment decrease. Although beyond the scope of this study, deeper investigation of this phenomenon is warranted to determine the causative agent(s) at work.

Second, the data indicate **a significant "retention signature" at cohorts 8-9 and 9-10**. A retention signature at this level is normally caused by a "pile-up" of students who have not acquired enough credits at the end of grade 9 to make the transition to grade 10 by the beginning of the year following their grade 9 experience. It may indicate that the District has inadequately prepared its grade 8 students for the rigors of the grade 9 experience, has paid inadequate attention to the academic or social needs of 9th grade students, and/or has inadequately prepared its grade 8 and grade 9 faculties for the need to facilitate this transition on behalf of its students. The District's interest in implementing a 9th grade academy may help to ameliorate this situation in the future.

Third, the data indicate that **the District is losing enrollment at cohort 10-11**. This decrease is almost certainly caused by student-initiated drop-out some time between the sophomore and junior years, which points to possible inadequacies in high school programing needed to entice students to remain in school through graduation. This indicator is directly associated with measures of dropout rate and cohort graduation rate of the District and may indicate that the high school program is not adequately meeting the academic, career/technical, and/or social needs of its high school population. The District's interest in implementing an enhanced career/technical program for grades 7-12 may help to ameliorate this situation in the future.

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Section Summary

Taken as a whole, the enrollment projection data provided indicate that District K-12 enrollments will continue to decline by about 7.5% over the next 10 years. A principal factor contributing to this decline appears to be a decrease in birth rates within the District, which have led to reductions in Kindergarten enrollments. A second contributing factor may be a persistent dropout rate in the high school in grades 10 and 11. Probable in-migration of students indicated by high cohort survival ratios in the elementary grades has not proven to be sufficient to counter this trend.

B. Analysis of Factors Affecting Future Growth

At the outset of this study, superintendent Tomlinson shared with the CASDA reviewers that planners at the county and town levels of government had provided him with certain information that indicated a hopeful future for population and economic growth in the District. In particular, the Tryon Tech Park in Perth and the Global Foundries plant in Malta were mentioned as being key to this growth. Based on this information, CASDA was commissioned to investigate the specifics of how these entities might help to spur growth the District over the next ten years. During this phase of the study CASDA reviewers met with planning and code enforcement officials from Fulton County and the towns of Broadalbin, Mayfield, and Perth. In addition, data from the 2010 U.S. Census and NYS geological maps were reviewed and analyzed in light of the primary inquiry of this study.

U.S. Census Data

Analysis of U.S. Census data for Fulton County indicates that the County has experienced a -2.6% change (decline) in the general population from 2010 to 2014. Generally, the population of the County is "graying," with 5 and 18 year-olds decreasing (from 5.5% to 5.0% and from 22.2% to 20.8%, respectively) and 65+ year-olds increasing (from 16.0% to 18.1%) as a percentage of total population. On an educational level, 85.8% of Fulton County residents hold a high school diploma or above, while 15.7% hold a bachelor's degree or higher, as compared to 86.3% and 29.3%, respectively, for the nation.

Other Census data for the County shows that its economic situation generally mirrors the slow recovery of the U.S. economy, with 59.9% of its adult population working in the civilian labor force (as compared to 63.5% for the nation). The total employment rate for the County dropped 4.4% (but rose

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2.0% nationally) between 2012 and 2013. Slightly more of the County's population (15.7%) qualifies at poverty level, as compared to the national rate (14.8%).

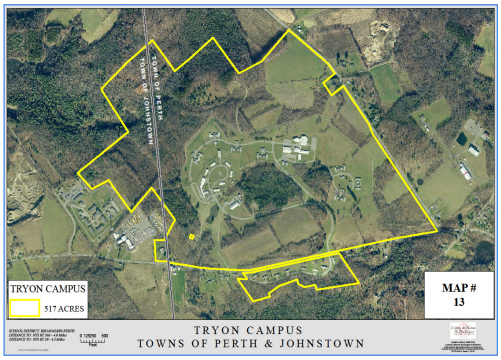
According to U.S. Census data, residential building permits issued in 2014 numbered just 72 permits County-wide. This datum correlates well with anecdotal information received from the building departments of the towns of Broadalbin, Mayfield, and Perth (see town data below). Census data indicate that an average of 2.38 persons live in each of the County's 22,440 households. It also shows that the County's population is relatively stable, with some 87.0% not having changed their permanent residence between 2010 and 2014. A majority (69.3%) of County residents own their own homes, as compared to 64.4% nationally.

When taken as a whole, these data paint a lackluster economic and population picture for Fulton County, and thereby for the District. The Mohawk Valley/Southern Adirondack region continues its long struggle to regain some of the industrial/commercial strength it had in the late 19th and early 20th centuries. It has become clear to County leaders that positive steps need to be taken to stem the flow of residents out of the County by stimulating the economy to provide opportunity from within. County leaders propose doing so by attracting a new industrial/commercial base and by repurposing existing lands and facilities for the purpose. They hope that by doing so, job opportunities will increase and people will stay, thus improving the economic outlook for all concerned.

Tryon Tech Park

Tryon Tech Park is located in the extreme western portion of the Town of Perth and well within the boundaries of the District. It has been redeveloped from the recently-decommissioned Tryon Youth Detention Center located along County Route 107 near the Perth-Johnstown municipal boundary. This facility currently comprises 515 acres of mixed undeveloped and developed land encompassing a high quality loop road and several abandoned dormitory, educational, and commercial buildings.

Tryon Technology Park, Johnstown, NY



According to Jim Mraz of the Fulton County Planning Department, the Tryon property has been divided into as many as 11 "shovel-ready" industrial sites that are being repurposed to attract national or international industries such as biomedical, food/beverage, business services, and health care. In addition to the shovel-ready industrial sites, the park is surrounded by undeveloped land that may be built up as residential properties to support the employees of the attracted industries. (See Fulton County map "Tryon Technology Campus and Incubator Center – Exhibit 8: Site Plan" and "Town of Perth Comprehensive Plan," page 41)

As this report is being written, only one industrial site at Tryon has been leased – to a biomedical research and pharmaceutical company that will manufacture and distribute medical marijuana in New York. Other green technology companies are being actively recruited by the Fulton County government. It is hoped that Tryon, it its full development, will provide a much-needed boost to the economy of Fulton County and the entire lower Mohawk Valley region. When fully developed, Tryon could attract a significant number of new families to the county, town, and District. However, as hopeful as these predictions may sound, it is more likely that any improvements will occur within a 20-year, rather than a 10-year, horizon.

SMART Waters

Fulton County government, with the assistance of chief planner Jim Mraz, has been proactive in the development of the SMART Waters project. These County leaders have come to understand that certain critical factors need to be addressed if their plans for stimulating economic growth are to be realized. Chief among these factors is the development of reliable fresh water delivery and wastewater removal and treatment systems. [See "SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY"]

In developing this concept, it was discovered that while more than adequate supplies of fresh water are available within the County's borders, its distribution is uneven. These distribution systems were designed to serve primarily the cities of Johnstown, Gloversville, and Amsterdam. In addition, smaller municipal water supply/distribution systems exist in the villages of Broadalbin, Mayfield, Northhampton, and Northfield. Measurements taken by the County's consultant engineering firm indicate that most of these systems have excess capacity to serve future growth within the municipalities.

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Likewise, municipal wastewater treatment systems in the County currently serve the cities of Gloversville and Johnstown and the villages of Broadalbin, Mayfield, and Northhampton. At least the Gloversville-Johnstown Joint Wastewater Treatment Facility (GJJWTF) has excess capacity to serve future growth within the cities.

The unincorporated majority of the County depends on individual water wells for its domestic water and on individual septic systems to treat its wastewater. This situation includes the majority of the lands encompassed within the District's boundaries. Although commercial and residential development is possible on these lands, the lack of water and wastewater systems limits growth significantly.

According to Fulton County Planner Jim Mraz, a major challenge affecting implementation of the SMART Waters plan is negotiation between the County and its municipal partners on appropriate mechanism and compensation for sharing excess capacity. A second major challenge is developing support for a County-level authority to coordinate and administer the expansion of existing, and development of new, water/wastewater infrastructure throughout the County. The implementation of such a unified, County-wide water/wastewater system would have a positive impact on industrial, commercial, and residential development throughout the County. It could also help to spur significant residential growth within the District, given other factors discussed in this section. Such growth would likely be realized on a 20-year, rather than 10-year, horizon.

Towns of Broadalbin, Mayfield, and Perth

The District is located within four different townships in Fulton County – Broadalbin, Mayfield, Perth, and Johnstown, but principally within the first three. The scope of the CASDA project included study of up to three (3) townships, so has focused on the towns of Broadalbin, Mayfield, and Perth.

CASDA reviewers interviewed the Code Enforcement officers of these three townships in order to gather information concerning recent, current, and future development in the town. The results of these interviews were somewhat disappointing in that they did not point to any significant current or future development in those municipalities. A small number of planned subdivisions approved prior to 2009 have not filled out appreciably due to lack of funding and/or prospective buyers. All three officials also stated that no new residential developments were on the immediate horizon.

All three officials indicated that, since 2009, requests for both planned subdivisions and individual residential building permits had fallen off considerably, with only 8-10 new building permits issued annually per town, usually for single-family homes. The single exception to this trend in the "Belan Road" development, a 100+ unit planned subdivision (residential) near the intersection of Routes 29 and 30 in the Town of Mayfield and adjacent to the Village of Broadalbin. According to Michael Stewart (Mayfield code official), this planned development has stalled with the stagnant economy, so "nothing has come of it." Mr. Stewart went on to say that if the Belan Road development does become a reality it will likely be annexed by the Village and be served by the Village's wastewater treatment system.

Data provided by researchers at Rutgers University indicate that a typical New York State single-family detached housing unit with two bedrooms will statistically house 2.31 persons, including 0.16 pre-school (0-4 YOA) and 0.29 school-aged (5-17 YOA) children [Burchell, Listokin, Dolphin, *Residential Demographic Multipliers: Estimates of Occupants of New Housing*, Center for Urban Policy Research, Rutgers University, New Brunswick, NJ, June 2006]. Using this statistical data, and assuming that 27 new single-family homes are built in the District in a given year (9 homes per town × 3 towns = 27 potential new homes), this level of development should bring an average of 7.83 new students to the District (0.29 potential children per new home × 27 potential new homes = 7.83 potential new students) when the new homes are actually occupied. These new students would be distributed through 13 school grades at about 0.60 students per grade level. Over a 10-year period, this level of development would bring a little more than 78 new students into the District (about 6 students per grade level), though some would inevitably graduate from the District or never enter at all, choosing other means to pursue a high school diploma, so at no time would 78 new students be present in the District at any one time. NOTE: The research provides demographic multipliers for different types of housing units (see Appendix); single-family two-bedroom homes were used here for purposes of illustration.

Perth official Mark Concilla was optimistic about the potential build-out of the Tryon Tech Park (see above) in the western portion of the Town (and the District), but less optimistic about any possible development in the eastern section. He saw the potential in the park to be a draw for clean industry and residential growth to the region.

Michael Stewart of Mayfield was positive about the planned development of what he termed "resource hubs" in two locations in the town that the town hopes will support tourism and trigger

new residential and commercial development in proximity. One of these resource hubs is located at the rotary/intersection of Routes 29 and 30 in Vail Mills (proximate to the District's Broadalbin campus). Mr. Stewart also spoke enthusiastically about the County's SMART Waters plan (see above) as being a positive step to encourage and support future development in the region.

In addition to these interviews, CASDA reviewers studied the current comprehensive plans for future development in these townships (see appendices) that envision organized and regulated growth consistent with town goals, state laws, and Adirondack Park Agency (APA) rules governing development in this region. Each of these documents describes the respective town's historical development as a municipality, its geography, its current demographic and economic status, its public infrastructure and resources, and its future land use plan. In analyzing these documents for purposes of this report, the CASDA reviewers focused primarily on those factors directly or indirectly impinging on future growth within the District.

The accompanying chart presents some selected comparative data points of interest:

Selected Comparative Data Points Drawn From Town Comprehensive Plans

	Broadalbin	Mayfield	Perth
Population - 2000	5,066	6,432	3,638
Population - 2010	5,260	6,495	3,646
Change in total population – 2000-2010	+194	+63	+8
Owner-occupied housing units - 2010	1,748	2,162	1,270
Renter-occupied housing units - 2010	362	502	191
Change in total housing units – 2000-2010	+161	+319	+208

It can be seen from these data that despite the overall decline in population in Fulton County as a whole described above (U.S. Census Data) for the years 2010-2014, the populations of these three towns was still increasing up to the time of the 2010 census. Housing units also increased significantly in the same time period, in fact at a much faster rate than did total population. Census data are not

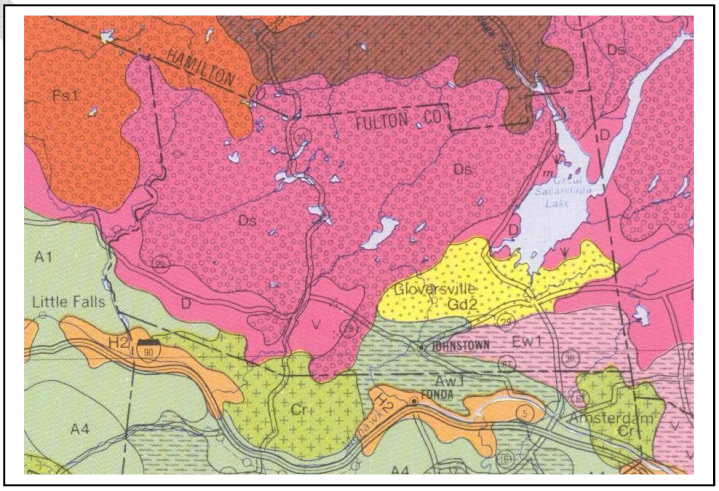
available for these towns for the 2010-2014 timeframe, so it was not possible at this time to determine the effect of the 2009 world-wide economic slowdown on these factors.

Perhaps more interesting than individual statistics presented in these reports are the land use plans that are the main feature of town strategic plans. Each of these plans envisions a future characterized by positive and planned growth of all elements necessary for the maintenance of a robust community. These elements include organized town centers or "resource hubs" with mixed commercial and residential development, identified tracts for the development of single and multiple-family units, and ample open space to allow residents and visitors to take maximum advantage of the region's rich natural resources. All of these plans recognize the limitations on growth imposed by soil types, water, wastewater, transportation, and other issues and welcome infrastructure solutions designed to mitigate these limitations. It is interesting to note that, while each town welcomes resources from outside, they are not necessarily as interested in sharing their resources with neighboring municipalities. In general, however, these plans take a positive approach to growth that bodes well for future District enrollments on the 20-year horizon.

NYS Soils Maps

Portions of the towns' comprehensive plans deal with the geography and geology of the area. These factors are examined in order to assess suitability for construction of single family homes served by wells and septic fields. A review of NYS surficial soils maps was performed in order to clarify the data presented in the towns' plans.

These maps show that the majority of the soils in the District are of glacial origin, either glacial till (jumbled rock, clay, and sand) or glacial outwash (stratified sand/clay mixture) deposited during the latest glacial recession approximately 14,000 years ago. The accompanying map shows a large expanse of glacial outwash, essentially a delta formed by meltwater flowing



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from the base of a receding glacier, labeled "Gd2" (Colonie deltaic) forming the southern shore of the Great Sacandaga Lake and encompassing the Broadalbin campus and the intersection of Routes 29 and 30, extending eastward to the county line and westward to Gloversville. South of this outwash area is a large expanse of glacial till labeled "Ew1" (Mosherville till) that encompasses the area around the Perth campus and Route 30 north of Amsterdam, extending eastward to the county line and westward toward Johnstown (including the Tryon campus). Between and east of these formations along Route 29 and forming the eastern shore of the Great Sacandaga Lake is an incursion of a different till labeled "D" (Charlton till). ["General Soils Map of New York State," Cornell University by Cline and Marshall, 1976.]

Glacial soils are generally considered marginal for large-scale development due to their slow rates of percolation for septic fields. Of these three types, glacial outwash (Gd2) provides the best percolation rate and could potentially support the highest density of housing and/or commercial development. In terms of groundwater flow rates for driven wells, all three soils and their underlying limestone bedrock are good, often providing flow rates in excess of the minima required by building codes or by banks for home mortgages.

Whether or not the County succeeds in providing water/wastewater systems to the area encompassing the District, these are the primary soils upon which new homes and businesses would be built in the District in the future. If county-wide systems become a reality, then these soils could support medium-high density housing developments. If these systems are not built, then the soils will support only low density developments. While it is unlikely that a total "build out" of unserved vacant land in the District will occur in the short term, it is certainly possible that one or more developers will assume the extra costs of such development and new that new homes and additional students to the District will result.

Global Foundries

Global Foundries' Semi-Conductor ChipFab plant is located on a large campus in central Saratoga County near the village of Malta, just 15-20 minutes' commute from Broadalbin via Route 29. Because this facility is located outside both the District and the County, it is beyond the scope of this report and was not studied in detail. However, CASDA reviewers posed questions to County and town officials concerning its likely future impact on those municipalities and on the District.

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Recent local news features have reported the intention of Global Foundries owners to expand their operation in Malta and to add as many as 4,500 new jobs within the region, possibly within the next five to ten years (http://wnyt.com/article/stories/s3960168.shtml). It is generally assumed that at least some of these jobs will go to individuals who do not now reside within the region, and that this fact will drive a demand for additional residential and commercial development. According to County Planner Jim Mraz, the real estate market in Saratoga County is largely "saturated," meaning that a significant proportion of buildable lots in that county have been built. Mr. Mraz also opined that the housing costs in Saratoga County were significantly higher than Fulton County.

Global Foundries, Malta, NY campus



It is hoped by local officials and by the District that these factors will combine to encourage residential building in eastern Fulton County, adding to the District's student enrollment. Although not a foregone conclusion at this time, it appears likely that at least some new development will occur within the District and that some new students will enroll due to this situation. It is still too soon to speculate on how many new students might be expected and when they may appear on the District's rolls. However, it is likely that the effects of this expansion are on a 20-year, not a 10-year, horizon.

It should be kept in mind, however, that Saratoga County is also flanked by Albany, Hamilton, Montgomery, Rensselaer, Schenectady, Warren, and Washington counties and that these counties will also vie as housing choices for Global Foundries employees. For this reason it behooves the District to develop and maintain an attractive, comprehensive, and rigorous educational program that will serve the needs of both long-time families and families of the demographic expected from a highly technical workforce such as that of Global Foundries. By remaining competitive with other local school districts, the District can help to ensure that new families make the decision to relocate within its boundaries in lieu of the other school district choices available to them.

Other Nearby Projects

During the development of this report, local news sources reported that a new regional Dollar General distribution center is in the planning stages for the Wilton area of Saratoga

County to be operational by 2018 (http://wnyt.com/article/stories/s4013925.shtml). Up to 500 new jobs are to be available. This new facility would join those recently built by Ace Hardware (1997) and Target (1999) in the same area. Another recent story concerned the planned expansion of General Electric's Global Research Center in Nyskayuna (Schenectady County), where up to 100 new high tech jobs will be available within the next few years (http://wnyt.com/article/stories/S4017347.shtml).

As hopeful as these positive economic developments are in terms of bringing new families into the area (and the District), countervailing events may expand the availability of buildable home sites within Saratoga County. A recent case in point is the recent announcement that the Eagle Crest Golf Course (Clifton Park) may be converted into a residential development in the county (http://www.dailygazette.com/news/2016/jan/12/0112_EagleCrest/).

These news stories represent only a sampling of economic news that can affect the future of the region and the District. Suffice it to say that it behooves the District to remain alert to the ups and downs of the local economy that have the potential to impact development within the District. The District may wish to develop a marketing plan designed to make itself an attractive alternative for new families that may come into the area looking for the sort of lifestyle and educational opportunity available in Broadalbin-Perth Central School District.

Section Summary

A number of factors affecting future development within the District interact to either encourage or discourage growth. County planners are trying to be proactive and are making plans to revitalize the region's economy. Town planners are also thinking ahead for the future of their respective townships, but are constrained by the realities of the present economic condition. The District is attempting to plan for an uncertain future that it can impact only though the development of educational programs likely to attract the notice of potential new residents.

The CASDA reviewers' overall assessment of growth potential for the District is that they see significant promise for growth on the 20-year horizon, but much less promise for the 10-year horizon. For this reason, they feel it is unlikely that student enrollments will increase appreciably between 2016-17 and 2015-26.

C. Analysis of Facilities Usage

During the course of this project, CASDA reviewers studied the current and future uses of the Broadalbin and Perth schools. A considerable amount of anecdotal data was compiled through tabletop discussions, architectural floorplans, questionnaires, and physical walk-throughs of these facilities. Following is an analysis of that data as it relates to the District's plans for grade realignment and capital improvements to those schools.

Building Reconfiguration and Staffing

The manner in which schools and other District buildings will be reconfigured and/or repurposed will have an impact on how staff will be used for instruction at each building/grade level/ school. Teaching staff that hold K-12 certification (physical education, music, art special education, OT/PT, speech therapy, counseling, social work, and psychological services) can be assigned to any building/school without regard to grade level configuration. The services associated with these areas of certification can easily follow student enrollment changes and may be allocated to support educational programs as needed.

The area where the staffing impact is most likely to occur is the placement of grade 6 and use of staff based on appropriate certifications for either elementary or middle school level teaching based on teacher certification. Elementary teachers may teach in a middle school configuration if they hold a Middle School Teaching Certificate. The teaching certifications for staff need to be reviewed annually to determine whether they can teach grade 7 and 8 courses as such as English, math, science, social studies , technology, home and careers, and health.

Building Layout and Grade Reconfiguration

The buildings of the district have undergone a number of renovations over the past several years. The renovations have resulted in the creation of isolated halls, underutilized spaces, and silos of instructional areas in the schools. Some of these changes have resulted in flow issues that will impact the District's attempts to institute new grade level configurations. The current structure for both schools has a tendency to isolate grade levels and programs.

In the Broadalbin school, grade 9-12 wings and the corridors that lead from the Pre-K through grade K-2 wing restrict student movement within the building. In the present configuration, this is a

desirable condition in that it provides separation between older and younger students/programs. In the proposed grade 7-12 reconfiguration, it could serve a negative function by impeding flow of students/programs between separate academic and common student services areas. Due to the existence of the elementary, gymnasium, and auditorium entrances, the main entrance to the building is not easy to find for visitors unfamiliar with the campus.

The separation at the Perth school, currently configured grade 3-8, is made even more complicated by its three-story construction, small cafeteria, isolated music and technology areas, room availability for grade level access, and location of common spaces for larger group use. The middle school entrance is isolated from the middle school office and does not provide a welcoming access to the school. A clear and welcoming entrance needs to be incorporated in the new design for a grade Pre-K through Grade 6 elementary school. However, the school can be effectively reconfigured to house its proposed grade reconfiguration.

The reorganization of schools to accommodate new grade level structures needs a focus on program and academic use of the building. The administrators were encouraged to discuss and develop the flow of the building for academic use of the buildings by wings, common core centers for multiple instructional uses and create a flow within each building for access by staff, students and the public.

Facilities Plans, Building Tours, Administrator Discussions and Questionnaires

Technology classroom at the Perth school



A review of the District's five year facilities plan indicates that the buildings have undergone several renovations over the past years. The most recent changes have occurred in 2003 and 2008. The upkeep and maintenance of the buildings has kept them in good repair. The Perth (IS/MS) school has 144,630 square feet in a three-story structure. The Broadalbin building housing the high school and primary school has 244,320 square feet in a two-story structure. [Broadalbin-Perth CSD, Five year Capital facilities Plan, 2010]. A number of the spaces in the buildings have been recently renovated and should not be disrupted in reconfiguring grade levels in

the schools. These spaces should be used to organize common core centers for use as instructional areas for multiple grade levels. An example of this type of space is the technology wing in the Middle School (second floor). This learning center should be maintained as a technology innovation center for grades 3-6.

The transition of the middle school (grades 7-8) to the Broadalbin building will require the integration of technology and home career skills classrooms into the building. The core location of these classes needs to be designed into an innovative technology enter that can support students grades 7-12. The location of this center may require additional space in the Broadalbin building designated as an academic center with appropriate access from both the high school and the middle school areas of the building.

Proposed location of tech center at the Broadalbin school



Both the Broadalbin and Perth schools will need to repurpose current classrooms rooms, large instructional centers, music rooms, art, technology labs, and common use areas (cafeteria, locker rooms, and gymnasiums) to accommodate the instructional program flow within each of the buildings. The repurposing of rooms and larger instructional areas should be coordinated with the District's architectural firm to ensure that the aidability of work in the schools is maximized.

CASDA reviewers discussed grade level placement, program design and access to common core teaching centers with building principals and central office administrators on the four visits to the schools. In addition, a questionnaire was distributed to and completed by these administrators to gather a uniform data set for analysis. The areas that were identified as priorities for the relocation of grade levels, academic needs of students and staff and efficiency for district operations provided the parameters for building use in the future. Areas identified are as follows:

- Cafeteria spaces at both schools need upgrades to serve and support students.
- Gymnasium and locker room spaces need to be repurposed to meet teaching and extracurricular needs at each school.
- Library and media center areas need to be relocated for better access by students and staff. The library/media centers have different instructional use by grade level.

- Common Core teaching centers need to be created within each building to provide access and flow for students and staff as the schools are designed by grade level/corridor location.
- Office locations and spaces need to be positioned for better access by students, staff and the public. Offices within the buildings are undersized and not located to main entrances for monitoring access to the schools.
- Current grade level placements at the elementary grades, Pre-K, K-grade 6 are based on class size of 20-25 students. The current core classroom needs for Pre-K to grade 6 are; Pre-K , (4) full day, (1)-1/2 day, and (5-6) classroom spaces for each grade in grades K-6. The total for core academic classrooms is based on using 6 class rooms per grade level is 47 classrooms. If the calculation is based on 5 classrooms per grade level K-6, the classroom need is 40 classrooms. The enrollment projections provided in the study should indicate the number of classrooms needed for educational programs per State Education Department guidelines for school spaces.
- Middle school grades 7 and 8 will currently use 25 classrooms for core academic areas in English, math, social studies, science and foreign language. The areas of art (2), music (suite), health (1), special education (4), technology (suite), home and career skills (1) , library/media area Suite) and physical education (2 station teaching area) need to incorporated into the building to comply with middle school education requirements.
- Create academic wing for transitional services and alternate pathways learning center.
- Provide Grade 9 transition "Academy" wing at the high schools for academic and intervention services.
- Create innovative technology center to incorporate 21st Century Learning Skills with technology support for students and staff.
- Create better academic access and flow of each building by developing common core centers for areas such as music, art, physical education and cafeteria/food services.
- Relocation of Central Offices from the bus garage to the high school will require office spaces (6-8), a conference area and larger training room for professional development with staff.

Facilities Planning in the Context of Program Change

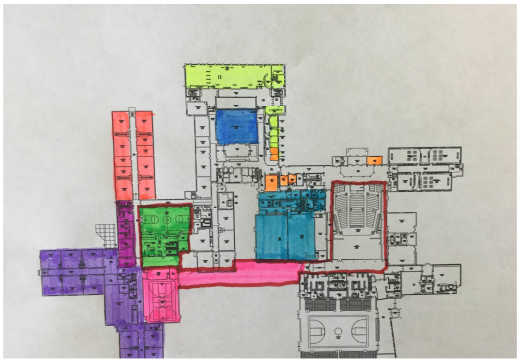
The reorganization of the Broadalbin and Perth building will require repurposing of current classrooms and larger instructional spaces to accommodate student, staff, and community utilization

of each school. The reorganization of schools should maximize existing classrooms and larger group spaces, create core centers of teaching for efficient use of building, and generate an easy access to the schools by the community. In reorganizing the schools, it is noted that academic flow of each building is needed based on conversations with building administrators and school architect. The focus of repurposing design (to maximize current spaces for building aid) and potentially developing new spaces (to accommodate administrative office relocations) is reflected in the plans for each building. In reviewing academic needs for each school, the current building floor plans were used to illustrate classroom placement for grade levels and common teaching centers as a means of maximizing current building space.

Broadalbin School –At the Broadalbin school, the current building design lacks appropriate spaces for access to, and flow through, the building to accommodate co-sharing of academic spaces by multiple grade levels. The use of current building floor plans will highlight areas that could be repurposed, restructured, and potentially built to provide better efficiency of the buildings, create common core teaching centers, and meet the future educational needs of the District.



Broadalbin School – First Floor

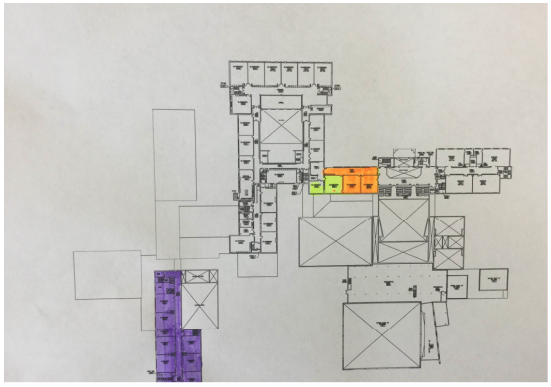


The current Pre-K- K grades 2 building at Broadalbin will need to be restructured to support grades 7-8. The classroom spaces for this area will require 25 classrooms for core classes, as well as larger teaching centers for special education, art, music, physical education, technology, home and career skills/business education, and counseling- support teaching. The development of these areas require housing by grade level wings to support academic classes and strategically placed core teaching centers, as well a support functions such as food services

The high school and middle school need to share common teaching centers to reduce

duplication of space, increase the efficient use of current classrooms and large group areas, and improve the follow of the building for access by students, staff, and community. The potential of developing an innovative technology wing that connects the middle school and high school through a new outdoor corridor could strengthen the academic program for 21st Century Learning Skills at both educational levels.

Broadalbin School – Second Floor



Broadalbin School
Legend

[ ] Relocation of central office to Broadalbin
[ ] Relocation of high school main office
[ ] Repurpose cafeteria/kitchen space with potential addition serving 7-12 students
[ ] Middle School grade 7-8 PE stations, locker rooms, weight room, training room
[ ] Intermediate offices and classrooms, OT/PT, speech, special education, psychologist
[ ] Middle School offices, music, tech (old gym)
[ ] CTE, technology, STEM, common classes grade 7-12
[ ] Grade 7-8 classrooms, media center
[ ] Common areas to be shared 7-12
[ ] Relocated high school media center

Large group areas will need to be repurposed to meet the needs of middle school and high school teachers and students. The library/media center will need to be relocated centrally between these educational levels and the cafeteria/kitchen area redesigned to serve students and staff from both educational levels. In addition, physical education teaching stations, gymnasiums, locker rooms, and weight training center areas will need to be restructured to better serve curricular classes, extracurricular activities, and community uses.

The offices and main entrances to each of the school need to be clearly identified to increase better access to each school. If the Central Office moves into the high school, 6-8 classrooms for offices and a large meeting space will need to be relocated. The move of Central Office to the high school create a more efficient operation of academic flow and management of the District.

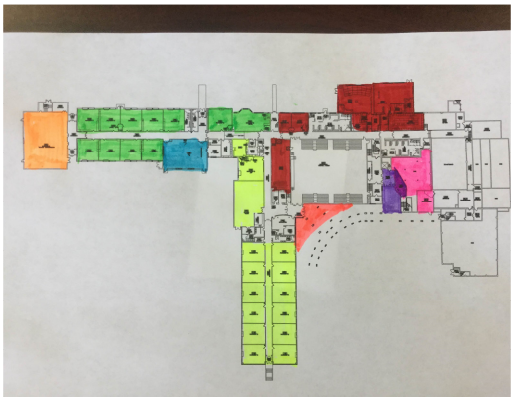
Perth School – The Perth building currently houses grades 3-8 as an intermediate and middle school program. The movement of grade 7-8 to the Broadalbin building will require the Perth building to be reorganized as a Pre-K, K- 6 school. The changes to accommodate grade level placements, common teaching areas, and a centralized point of access to the



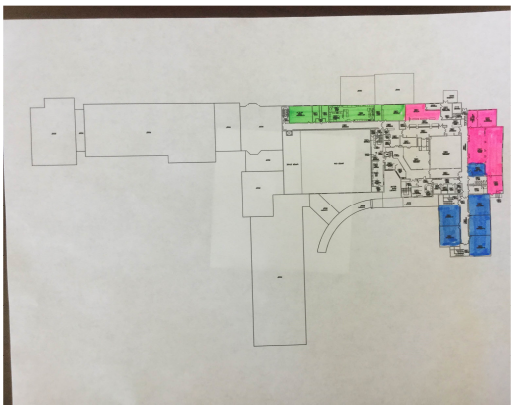
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building will require repurposing of current spaces to accommodate grade level placements, common teaching spaces for art, music, physical education, library/media services, special education, counseling and support services, office areas for meetings, and administrators and centralized entrance to the building.

A current floor plan of the Perth school can be used to demonstrate placement of classrooms for grade level placements, central core teaching spaces for efficiency and movement of students, and large group instruction spaces to recognize the learning levels and needs of students for areas such as physical education, larger group programs and library media center work. The primary and intermediate programs offered at the school will be different and should be reflected in the grade level placements within the building. Intermediate grades can be housed by floor or cluster in groups of rooms where primary grades are usually cluster in halls of similar grades (i.e., Pre-K, K, and grades 1-2) to support reading programs, art, music and physical education. Placement of classes also allows teachers to work in teams, cluster grouping or by subject area at grades 4-6.



Perth School – Ground Floor



Perth School – First Floor

Current grade level placements at the elementary grades (Pre-K and grades K-6) are based on class sizes of 20-25 students per section. The current core classroom needs for Pre-K to grade 6 are: Pre-K: 4 sections (full day) and 1 section (half day) and 5-6 sections classroom spaces for each grade in grades K-6. The total for core academic classrooms is based on using 6 class rooms per grade level is 47 class rooms. If the calculation is based on 5 classrooms per grade level K-6, the classroom need is 40 classrooms. The enrollment projections provided in the study (see Appendix A, Table 1) can be used to project the number of sections needed per grade level for each year from 2016-17 through 2025-26.

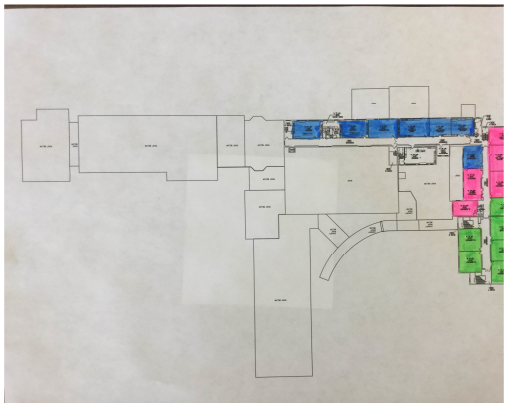
This information should be balanced against State Education Department guidelines for classroom spaces.

A few of the primary concerns in reorganizing for a Pre-K, K-6 school is the placement of grades in areas of the school that provide academic flow, common core areas that provide efficiency and support of programs in common teaching spaces. The arrangement of grade levels and access to larger spaces for use by all students and staff is essential to the design of the Perth building.

Locate grades Pre-K, K and grades 1 and 2 in the single level wing of the Perth building. Pre-K and grade K rooms will need bathrooms and water support for teaching activities. Grades 1 and 2 will also be in the same single level space as Pre-K and K but without bathrooms.

Perth School
Legend

[ ] Pre-K, K classrooms
[ ] PE and large group space for pre-K-grade 2
[ ] Classroom grades 1-2
[ ] Library/media center, reading area for pre-K-grade 2
[ ] New entrance with transition space
[ ] New large group/performance area
[ ] Core center classes (art, music, technology, library and media center
[ ] Grade 3 classrooms (first floor) and Grade 6 classrooms (second floor)
[ ] Grade 4 classrooms (first floor) and SPED (second floor) and Central café/kitchen for grades pre-K-grade 6 (ground floor)
[ ] Grade 5 classrooms and STEM classrooms and innovative tech center



Perth School – Second Floor

A media center/reading area should be centrally located to these classrooms for the purpose of providing opportunities for student interaction during grade level programs and reading activities. The smaller gymnasium in the school should be maintained for physical education classes, large group activities and recess activities.

Section Summary

In their study of the District's schools, the CASDA reviewers found that the buildings were neat, clean, and generally conducive to the teaching and learning process. However, due to multiple capital projects over the years, both buildings have become convoluted and have tended to isolate certain programs and functions from each other and/or from the academic program. Building exteriors have lost clarity of entrance/exiting for the general public; interiors have been rerouted, repurposed, or blocked altogether, reducing efficiency and functionality.

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Through its proposed capital project and reorganization efforts, the District has an opportunity to rectify some or all of these problems. The CASDA reviewers recommend that program spaces be reorganized in a manner that centralizes and improves accessibility of shared core services. Additionally, it is recommended that educational levels be clustered such that they maintain their own integrity, but still have ready and direct access to shared core services. Finally, that building entrances and offices be reconfigured to provide a more welcoming and efficient aspect.

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Recommendations

The following recommendations are offered after a thorough review of the data and trends presented herein. In all cases, CASDA can provide guidance on the implementation of these recommendations, as follows:

1. **The District should annually prepare, or have prepared, a K-12 enrollment projection.** The annual preparation and review of K-12 enrollment projections by administration and Board of Education is an important activity that facilitates both short and long-term planning for staffing, curriculum, and budget development. It can also provide valuable information relative to the planning of capital projects as well as planning for redistricting, school closure, and merger studies.
2. **CASDA reviewers recommend that the District use its annual enrollment projections to plan for staff, budget, and facilities needs and make adjustments accordingly to achieve efficiencies in its programming.** This activity becomes important when projections indicate small entering Kindergarten classes (~100 students) that will move through the District as relatively small elementary classes that may require as few as four (4) sections per grade in lieu of the historical six (6) sections per grade. We recommend that the District resist the temptation to let section enrollments drift below the 20 student minimum simply to avoid staff reassignments or reductions in force.
3. **The District may wish to examine the reasons for gain of enrollment at cohorts K-1, 1-2, 2-3, 3-4, 4-5, 5-6, and 6-7.** The gains in enrollment from year to year at each of these levels is unusual and puzzling. Possible reasons for the phenomenon include families/students moving into the District after BEDS days, academic/social retention of students at these grade levels, and cyclical student mobility due to factors beyond the District's control. Until a closer study of this trend can be done, the District should be mindful of these and other factors at work in the District.
4. **The District may wish to examine the reasons for the loss of enrollment at cohorts 7-8, and 10-11 and to implement programs to address them.** Student out-migration, school choice, and student-initiated dropout are the most common reasons for loss of student enrollment at these levels. Occasionally, this phenomenon can point to reversible situations in K-12 curriculum, teaching methodology, and/or availability of career-based education. The District

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may want to consider conducting a longitudinal study to determine the cause of departure and destination of these "lost" students.

5. **The District may wish to examine the reasons for the "retention signature" at cohorts 8-9 and 9-10 and implement programs to address them.** This situation almost always can be traced to inattention to the transition plan for students at the grade 8 and grade 9 levels. Often, reversing it requires a more rigorous approach at grade 8 combined with a more accommodating approach at grade 9. In any case, it is an eminently reversible situation that can be helped by the development and consistent application of a grade-to-grade transition plans at these critical levels. The District's preliminary plans to implement a "Freshman Academy" is a good start to fixing the problem as long as the concept of grade 9 completion by the start of the grade 10 year is a prime goal of the Academy. The District may wish to consider development of a "Grade 8 Academy" as well.
6. **The District may wish to involve itself in supporting and promoting Fulton County proposals for SMART Waters, Tryon Tech Park, and other regional development initiatives.** A series of collaborations between the District and its municipal partners may benefit the District by providing opportunities to influence the direction of various county/town initiatives in a way that will benefit the District. Such benefits could include residential and commercial developments that would increase the District's tax base, its student enrollment, and the diversity of its population. Care should be taken, of course, to ensure that such collaborations do not become politically motivated to the point that they distract the District from its primary mission.
7. **The District may wish to mount a self-promotional campaign to market itself to potential new residents and businesses.** The District should consult with a professional service, either independently or through HFM BOCES, to advise it on the best way to proceed to develop and execute such a campaign. Other Capital area school districts have conducted marketing campaigns with some success, using television spots, brochures, and targeted advertising as a means to deliver their messages. These districts should be contacted for details of the process used and the cost/benefit of the resulting projects. As the use of public funds for such a project may be questionable, the District may wish to seek a private sector source of funding such as architectural and/or construction firms.
8. **The District may wish to examine its full educational program to ensure that it is attractive to potential new families as compared to those of surrounding school districts.** If the District

hopes to attract new families from high-tech firms such as Global Foundries and Tryon Tech Park, the quality of education that the District maintains should be of the highest quality and be able to demonstrate successful outcomes (e.g., superior assessment scores, high graduation rates, and college entrance and success). Such a program should emphasize ELA (English language arts), social studies, and STEM (science, technology, engineering, mathematics) at its core, but should promote strong foreign language, visual and performing arts, and health/PE programs as well. While CTE (career and technical education) programs will continue to be important for a significant segment of students, CASDA recommends that the District take advantage of its association with HFM BOCES to provide these programs in a cooperative setting that will maximize efficiencies.

9. **CASDA reviewers support the District's strategic planning efforts generally, and specifically in regard to the proposed grade level reconfiguration of the Broadalbin and Perth schools.** As does the District, the CASDA reviewers believe that the proposed grade reconfiguration is both educationally and economically viable. The District should take advantage of staffing and other efficiencies that will result from this reconfiguration.
10. **CASDA reviewers recommend that, as capital planning continues, the District work with its architectural consultants to:**
    a. **Centralize shared core services in the schools** – Centralizing services that are accessed by different student clusters will improve efficiency of the teaching/learning experience in the schools. The District should work with its architectural consultants to identify and create centralized areas within the school buildings to locate shared core services.
    b. **Improve the design and locations of entrances and offices –** School main entrances should be obvious to parents and other visitors unfamiliar with the layout of the building. School offices should be located immediately proximate to building entrances and properly designed to improve administrative operations, accessibility, safety, and security.
    c. **Cluster grade levels appropriately in line with the grade level reorganization plan** – Clustering grade levels will increase opportunities for sharing program resources and curricular offerings in age-appropriate environments. Grade level classrooms should be located on the same corridor, floor, or cluster space to maximize these opportunites.

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d. **Improve student flow within and between grade level clusters and core services** – Current building layout creates bottlenecks for student movement from classroom wings to core services scattered throughout the schools, potentially reducing efficiency and effectiveness of program delivery. This situation should be improved through architectural redesign and programmatic reorganization.

e. **Work to eliminate isolation of program spaces** – Certain program spaces (e.g., locker rooms, weight rooms, gymnasiums) at the Broadalbin school have been systematically cut off from the rest of the building due to partitioning, abandonment, or repurposing. Currently, some program spaces can be accessed by teachers and students only by moving through adjoining program spaces rather than through dedicated hallways. This situation should be addressed within the context of the District's proposed capital project.

f. **Examine the possibility of creating needed classroom spaces from underutilized facilities** – Certain large facilities (e.g., gymnasiums, cafeterias, stages, library/media centers) at the Perth school appear to be programmatically underutilized. Some of these spaces may better serve the program if they are repurposed as classroom spaces serving one of more grade level clusters.

g. **Improve signage for directing visitors to parking areas and building entrances** – Although the District does provide some signage directing visitors to building entrances and parking lots, these are inadequate to direct visitors unfamiliar with layout of the campuses and the schools.

h. **Reconstruct facilities within existing floorplans to minimize the enlargement of building "footprints" that would reduce aidability** – Student enrollment projections provided in this report do not support the concept of increasing the "footprint" of the District's school buildings at this time. While the District may choose to do so, it is unlikely that it will be able to justify its decision to NYSED in terms of generating building aid for additions. As a result, the costs of any new structures that add to this footprint will likely be unaided, increasing the cost of the project for taxpayers. The District should work with its architectural consultants to focus improvements within the existing building footprint to the extent possible.

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Appendices:

Appendix A: Analysis of Historical and Future Enrollments

- Table 1: Broadalbin-Perth CSD COHORT SURVIVAL CALCULATOR
- Graph 1: Broadalbin-Perth CSD K-12 Enrollment Projections
- Table 2: B-P Educational Level Enrollment Projections
- Graph 2: B-P Educational Level Enrollment Projections
- Table 3: B-P Reorganization to PK-6 and 7-12
- Graph 3: B-P Reorganization
- Table 4: B-P Cohort Survival Ratios
- Graph 4: B-P Cohort Survival Analysis
- Table 5: Live Birth vs Kindergarten Data
- Graph 5: Live Birth vs Kindergarten Data

Appendix B: Analysis of Factors Affecting District Growth

- US Census Tables and Graphs
- B-P District Map
- Tryon Technology Park Map
- NYS Soils Map
- NYS Residential Demographic Multipliers
- Town of Broadalbin – Comprehensive Plan
- Town of Mayfield – Comprehensive Plan
- Town of Perth – Comprehensive Plan
- Fulton County – SMART Waters Plan

Appendix C: Analysis of Facilities Usage

- Floor plans of B-P schools
- Administrator Questionnaires

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