School Student Generation Study

Westchester BioScience & Technology Center
Town of Mount Pleasant, New York

PREPARED FOR

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Background

VHB Engineering, Surveying, Landscape Architecture and Geology, P.C. (VHB) has been retained by Fareri Associates to conduct a school impact assessment documenting the potential impacts of residential uses associated with the proposed development known as Westchester BioScience & Technology Center (WBSTC). As proposed, WBSTC comprises a mixed-use community that incorporates approximately 3 million square feet of bio-tech/research and development related uses as well as medical offices, a children's living science center, neighborhood retail, a hotel, and low impact residential uses that may include student housing, senior housing and/or micro-unit housing as part of a comprehensive master plan. The Westchester BioScience and Technology Center will include a new street network that connects the site to the surrounding Grasslands Reservation, regional highway system, and community. Sustainable strategies and best practices are an integral part of the project and are incorporated into the master plan in every area.

The project site encompasses approximately 80 acres in the Town of Mount Pleasant, Westchester County, New York and is generally bounded by Old Saw Mill River Road and West Stevens Avenue to the north, Sprain Brook Parkway to the east, Hospital Road to the south, and Nilsson Drive to the west (the "Project Site"). See Figure 1, Site Location. The Project Site currently contains commercial buildings and vacant land, some of which is being used as construction staging. The County owns approximately 60 acres of the property, known as the "North 60". The developer, Fareri Associates, owns the adjacent 20-acre parcel of land. The 80

acre development site is located in two different school districts: the North 60 is located in the Mount Pleasant Central School District and Fareri's 20 acres is located in the Pocantico Hills School District. See Figure 2, School District Boundaries.

The school impact assessment quantifies the increased population of public school-age children generated by the development. This document provides a detailed description of the study methodology, analysis, and findings. All data sources are referenced at the end of this report.

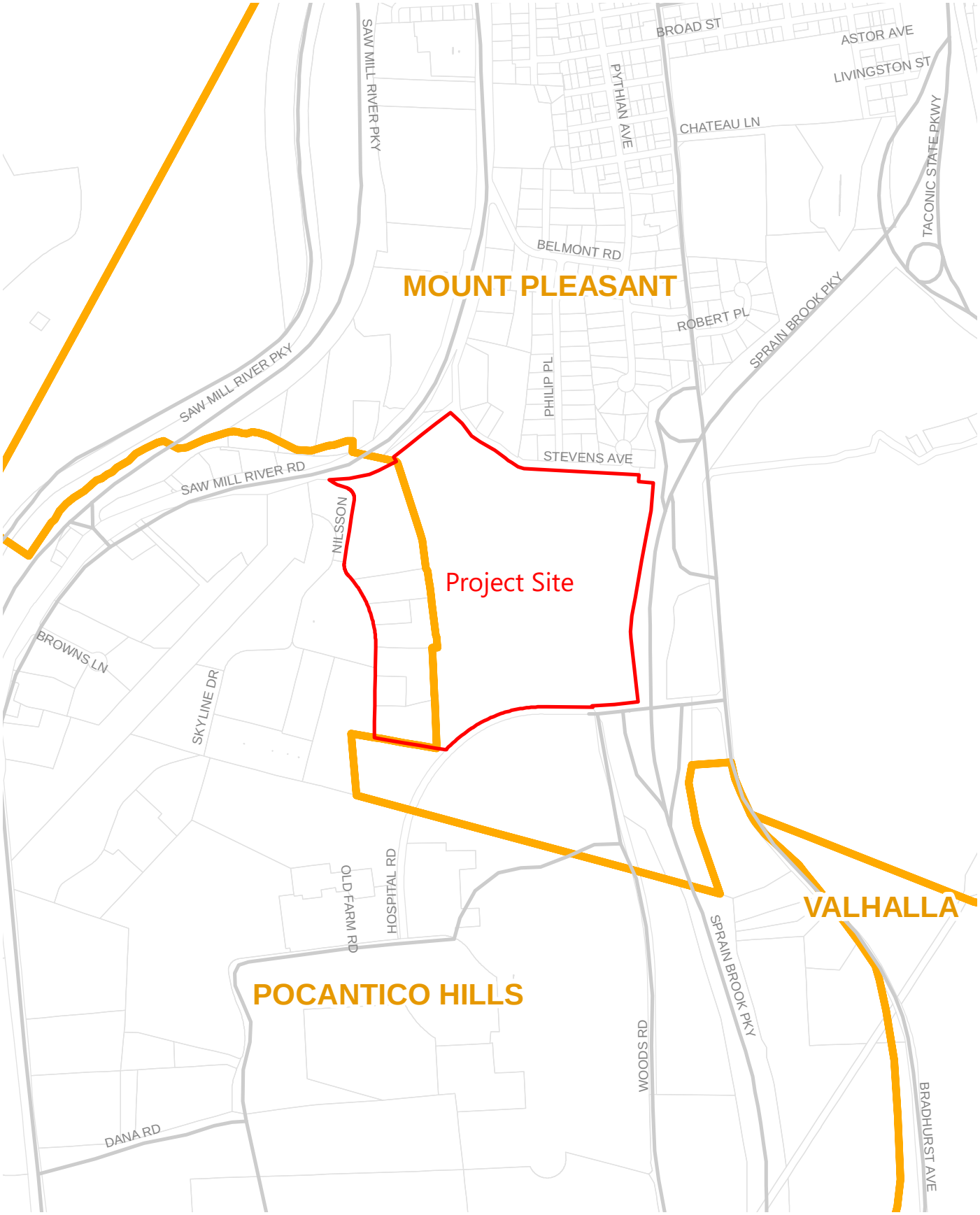
0 310 620 1240 Feet

Westchester BioScience & Technology Center | Mount Pleasant, NY

Site Location

Source: Westchester County GIS, 2016; Bing Maps

Figure 2



Westchester BioScience & Technology Center | Mount Pleasant, NY

School District Boundaries

School District

Source: Westchester County GIS

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Proposed Development

The proposed development includes low impact residential uses such as student housing, senior housing and/or micro-unit housing as part of a comprehensive master plan. The project will be developed in multiple phases over roughly a ten year period with an anticipated build year of 2024 for the first phase. Since the purpose of this study is to examine potential impacts of residential uses associated with the proposed development, details of non-residential uses are not discussed.

The following table provides information relative to the number and type of housing units proposed for the Master Development Plan (inclusive of Phase 1), as well as anticipated population.

Table 1 Westchester BioScience & Technology Center- Residential Uses

Housing Type/Size	Master Development Plan No. of Units	Population No. of Persons
Micro-Units	132	132
Studio units	132	132
1 BR units	132	219
Co-Living Unit (2 person lily pad)	132	265
Co-Living Unit (3 person lily pad)	66	198
Co-Living Unit (3 person lily pad)	66	264
TOTAL	660	1,209

Source: Fareri Associates

Source: 1.66 persons per unit multiplier based on Rutgers University Center for Urban policy Research, Residential Demographic Multipliers – Estimates of the Occupants of New Housing, June 2006 (for 5+ units, rent, 1 BR, all values).

2.2 What is Low Impact Housing

For purposes of this study, low impact housing is an approach to housing development that uses various planning and design practices to conserve community resources and reduce infrastructure and municipal costs, thereby mitigating potential environmental and fiscal impacts associated with development. This type of housing is appropriate for the proposed project, mixed into a bio-tech complex. It is anticipated that many of these units would be occupied by employees or students of uses on the project site or adjacent medical and school uses.

The following is a description of the type of low impact housing proposed for development as part of the WBSTC.

2.2.1 Micro-Units

According to the Urban Land Institute, there is no standard definition of a "micro unit". A micro unit is an ambiguous term that may cover many small studio or one-bedroom apartments. Micro units proposed for development as part of the WBSTC will be studio apartments. Units will include fully functioning kitchens and bathrooms. Micro unit housing at WBSTC will likely offer some common living space such as a communal living room, co-working space, and/or communal gym.

Urban Land Institute's report *The Macro View on Micro Units*, states

> *The target market profile for micro units is predominantly young professional singles, typically under 30 years of age, with most under 27 years of age, trending slightly more male than female. Secondary segments include some couples and roommates, and some older move-down singles.*

2.2.2 Graduate Student/Faculty Housing

A studio apartment that does not have its own laundry and kitchen facilities. Examples may include assisted living facilities and college dormitories.

2.2.3 Single Room Occupancy (SRO)

A studio apartment that does not have its own laundry and kitchen facilities. Examples may include assisted living facilities and college dormitories. Also included are co-living units in which each occupant has a bedroom and bathroom but kitchen and living spaces are communal.

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Projection of School-Age Children

The number of school-age children from a residential development is dependent on a number of variables including housing type, number of bedrooms, and rent or sales price. Projections of the number of school age children from a proposed development are typically determined using standard demographic multipliers and student generation factors developed by Rutgers University, Center for Urban Policy Research (CUPR). Researchers from Rutgers published student generation multipliers for each state and the U.S. as a whole in 2006. They used Census Bureau PUMS data and calculated multipliers for various types of housing; however, they did not distinguish studio or efficiency units from one-bedroom units. Furthermore, they did not calculate multipliers for any of the specialized housing types proposed for WBSTC. Since 2006, no one has published updated multipliers using the same methodology.

CUPR generation rates are not provided for non-traditional housing models such as micro-units, co-living apartments, graduate student/faculty housing, transit oriented development (TOD) (small units), mid-rise mixed-use small units, and urban unit 9+ story buildings (small unit). To obtain reliable, fact-based generation rates for these non-traditional housing types, research has been conducted and numerous sources are referenced herein. All sources consulted and all references identified in this study are listed in the rear of this report under Data Sources and References. The manner in which the data has been used herein and the direct links to the sources are also provided.

There is no definitive source (or sources) for student generation multipliers. Some researchers have generated multipliers for different housing types based on historical actuals in a specific school district, region, or state, but their methodologies seldom factor in community context, and it is even more rare for them to include multipliers for micro-units, purpose-built co-living apartments, or purpose-built student housing. Research for this report found the following multipliers for the types of non-traditional housing proposed for WBSTC:

Table 2 Student Generation Multipliers – Non-Traditional Housing Types

Unit Type	Multiplier	References
Micro-unit	0.008 (elementary); 0.005 (middle school)	Jack Schreder & Associates 2017
SRO (co-living apartment) unit	0.00	Portland Public Schools 2013
Graduate student/faculty housing	0.032–0.122	Grip 2014; UCSD 2015
Studio/efficiency unit	0.00–0.03	Mix and Jiang 2009; RPM Consulting 2003; Lapkoff & Goblett 2018
TOD	0.02	Listokin 2006
Mid-rise mixed use small unit	0.02	Portland Public Schools 2013
Urban unit, 9+ story building	0.004	Vandewalle & Associates 2016

Using these multipliers, it is estimated that the proposed project would generate approximately 8 school-age children.

Table 3 School-Age Children Generated on the Project Site

Unit Type	No. of Units	Multiplier	School-Age Children
Micro-Unit	132	0.008 (elementary); 0.005 (middle school)	1
SRO (co-living apartment) unit	264	0.00	0
Studio/efficiency unit	132	0.00–0.03	4
One Bedroom Unit	132	0.02	3
TOTAL	660		8

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Existing School District

The project site is located in two different school districts: approximately 60 acres (¾ of the site) is located in the Mount Pleasant Central School District and approximately 20 acres (1/4 of the site) is located in the Pocantico Hills School District. See Figure 2, School District Boundaries. It is assumed that all residential uses constructed on the site would be located along the proposed Main Street so that residents can take advantage of the proposed plazas and open spaces and commercial uses while being in close proximity to the bio-tech and office uses located elsewhere on the site and the surrounding medical and school uses. The proposed site plan shows Main Street and adjacent buildings located within the Mount Pleasant Central School District. Therefore, it is assumed that any school-age children would attend schools in the Mount Pleasant Central School District. It is also assumed, to be conservative, that all school-age children on the site would attend public schools.

Mount Pleasant Central School District

The Mount Pleasant Central School District encompasses the hamlets of Hawthorne and Thornwood as well as portions of the hamlet of Valhalla and the Village of Pleasantville.

The Mount Pleasant Central School District comprises four schools: Hawthorne Elementary (K-2), Columbus Elementary (3-5), Westlake Middle School (6-8) and Westlake High School (9-12). The middle and high school share the same campus along with the District Office.

The 2019-2020 projected district enrollment is 1,928, which is up from the 2018-2019 district enrollment of 1,901. The Mount Pleasant CSD also projects total enrollment to increase to 1,957 in the 2020-2021 school year. An additional 87 students residing in the district attend private or parochial schools.

Costs to the School District

The most recent adopted budget for the Mount Pleasant CSD is the 2019-2020 budget. The total Mount Pleasant CSD budget for 2019-2020 is $64,201,310 – an increase of $2,260,439 (3.65%) from the prior school year. Based on a total school district enrollment of 1,928 students, the average cost per pupil for 2019-2020 would be approximately $32,299.

Table 4 Average Cost Per Pupil (2019-2020)

A 2019-2020 Budget	B 2019-2020 Enrollment	C Cost Per Pupil (A÷B)
$64,201,310	1,928	$32,299

According to information provided by the Mount Pleasant Central School District[1], approximately 87.4% of the per pupil cost is paid by local tax levy; the remainder of the budget comes from the State or other sources.

Table 5 Tax Levy Per Pupil (2019-2020)

A Cost per Pupil	B % of Per Pupil Cost Paid by Local Tax Levy	C Tax Levy Per Pupil (A x B)
$32,229	87%	$28,039

While analysis of the per pupil tax levy assists in determining the allocation of tax levies based on projected enrollment, it is the marginal expense for new students that must be analyzed when calculating the true impact of the development. Simply using the per pupil tax levy as a basis for estimating the total cost of additional students generated overestimates the marginal cost of educating an additional student. The marginal cost is defined as all of the actual costs of educating these students. There are many items in the school budget that are fixed and would not be affected by a modest increase of additional students. These fixed items include administrative services such as district clerk; district meetings; central administration, business administration, auditing and treasurer, public information, data processing, curriculum development and supervision.

The budget includes costs for administrative, program and capital costs. Approximately 55% of the total budget, or $35.2 million is allocated for instructional costs. Based on a student population of 1,928, the instruction costs per pupil are approximately $18,242, of which 87% or approximately $15,870 is paid by local tax levy.

Table 6 Program Costs and Tax Levy per Pupil

A Instructional Costs (57% of total budget)	B 2019-2020 Enrollment	C Instructional Costs Per Pupil (A÷B)	D % Paid by Local Tax Levy	E Per Pupil Instructional Costs Paid by Local Tax Levy (C x D)
$35,170,370	1,928	$18,242	87%	$15,870

With a $15,870 average cost per child, 8 new students would cost approximately $126,960.

Based on preliminary estimates, the project is expected to generate approximately $9.3 million in new real estate taxes annually to the School Districts, Town of Mount Pleasant and Westchester County. As stated earlier, approximately 60 acres (¾ of the site) is located in the

[1] Mount Pleasant Central School District 2019-2020 Adopted Budget.

Mount Pleasant Central School District. If roughly ¾ of the anticipated property taxes are generated by the 60-acre portion of the site, then $6.975 million in new real estate taxes would be generated by the County-owned North 60 site, including approximately $4.9 million which would be allocated to the Mount Pleasant Central School District, based on the current tax rate of 1367.157315.

At this time, the County-owned North 60 property is exempt from property taxes. Once the site is redeveloped, it would become taxable generating property taxes to numerous taxing jurisdictions. The taxes generated on the County-owned portion of the site would be entirely new revenue to the taxing jurisdictions.

As previously discussed, residential uses on the site would result in an additional 8 new school age children enrolled in the Mount Pleasant CSD. With a $15,870 average cost per child, the cost to the school district to educate these children would be $126,960. If the North 60 generates an estimated $4,918,842 in annual taxes to the Mount Pleasant Central School District, this would result in a net annual benefit of $4,791,882 to the Mount Pleasant Central School District.

Pocantico Hills Central School District

The Pocantico Hills Central School District (Pocantico Hills CSD) serves an area of about 5.5 square miles. Communities served by the Pocantico Hills CSD include parts of Briarcliff, Elmsford, Hawthorne, Pleasantville, Sleepy Hollow, and Valhalla.

From pre-kindergarten to eighth grade, students attend central school campus and then make the choice to attend Briarcliff High School, Pleasantville High School, or Sleepy Hollow High School. Pocantico Hills pays tuition for its students in grades 9 through 12 to attend their choice of one of these three high schools. The Pocantico CSD pays tuition to the high schools based on their non-resident tuition rates as set by New York State. The 2019-2020 Pocantico Hills CSD budget includes $5.2 million for high school tuition costs, or approximately 16.4% of the total budget.

The 2019-2020 district enrollment is 482, which is the same as the 2018-2019 district enrollment.

High School Tuition

Tuition rates that Pocantico Hills pays to partner high school districts are based on the Non Resident Tuition rates (NRT) calculated by the New York State Education Department, based on financial information derived from the financial statements of the respective high school districts. The following table shows the distribution of high school tuition payments across high schools.

Table 7 Pocantico Hills CSD Tuition Distribution Across High Schools

High School	Tuition Payments
Pleasantville HS	$1,023,619
Briarcliff HS	$3,684,407
Sleepy Hollow HS	$479,817

Source: Pocantico Hills CSD Draft Budget Report Fiscal Year 2019-2020 (4/11/2019).

Costs to the School District

The total Pocantico Hills CSD budget for 2019/2020 is $30,813,330 – a decrease of $217,760 from the prior year. Based on a total school district enrollment of 482 students, the average cost per pupil for 2019-2020 would be approximately $63,928.

Table 8 Average Cost Per Pupil (2019-2020)

A 2019-2020 Budget	B 2019-2020 Enrollment	C Cost Per Pupil (A÷B)
$30,813,330	482	$63,928

According to information provided by the Pocantico Hills CSD, approximately 83% of the per pupil cost is paid by local tax levy; the remainder of the budget comes from the State or other sources.

Table 9 Tax Levy Per Pupil (2019-2020)

A Cost per Pupil	B % of Per Pupil Cost Paid by Local Tax Levy	C Tax Levy Per Pupil (A x B)
$63,928	83%	$52,837

While analysis of the per pupil tax levy assists in determining the allocation of tax levies based on projected enrollment, it is the marginal expense for new students that must be analyzed when calculating the true impact of the development. Simply using the per pupil tax levy as a basis for estimating the total cost of additional students generated overestimates the marginal cost of educating an additional student. The marginal cost is defined as all of the actual costs of educating these students. There are many items in the school budget that are fixed and would not be affected by a modest increase of additional students. These fixed items include administrative services such as district clerk; district meetings; central administration, business administration, auditing and treasurer, public information, data processing, curriculum development and supervision.

The budget includes costs for administrative, program and capital costs. Approximately 76% of the total budget, or $21.5 million is allocated for instructional costs. Based on a student population of 482, the program costs per pupil are approximately $44,554, of which 83% or $36,980 is paid by local tax levy.

Table 10 Program Costs and Tax Levy Per Pupil

A Instructional Costs (76% of total budget)	B 2019-2020 Enrollment	C Instructional Costs Per Pupil (A÷B)	D % Paid by Local Tax Levy	E Per Pupil Instructional Costs Paid by Local Tax Levy (C x D)
$21,475,099	482	$44,554	83%	$36,980

No new school-age children from the proposed development would attend schools in the Pocantico Hills CSD, therefore, there would be no additional cost to the Pocantico Hills CSD.

Based on preliminary estimates, the project is expected to generate approximately $9.3 million in new real estate taxes annually to the School Districts, Town of Mount Pleasant and Westchester County. As stated earlier, approximately 20 acres (¼ of the site) is located in the Pocantico Hills Central School District. If roughly ¼ of the anticipated property taxes are generated by the 20-acre portion of the site, then $2.3 million in new real estate taxes would be generated by the proposed project.

At this time, this portion of the site generates $109,363 in property taxes. Once the site is redeveloped, it would generate an additional $2.2 million in annual taxes, including an additional $1.2 million to the Pocantico Hills CSD over the $59,936 the school district currently receives (based on the current tax rate of 649.099247).

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Conclusion

The proposed development includes low impact residential uses such as student housing, co-living units, studio and one-bedroom apartments and/or micro-unit housing as part of a comprehensive master plan. The project will be developed in multiple phases over roughly a ten year period with an anticipated build year of 2024 for the first phase. Since the purpose of this study is to examine potential impacts of residential uses associated with the proposed development, details of non-residential uses are not discussed.

The proposed development would generate approximately 8 school-age children, all of whom are assumed would attend the Mount Pleasant Central School District. It would cost approximately $127,680 to educate these students. However, the proposed development would generate approximately $4.9 million in property tax revenue to the Mount Pleasant Central School District, providing a net benefit to the Mount Pleasant Central School District of almost $4.8 million. The Pocantico Hills Central School District would receive no new students from the proposed development and would receive a net benefit of approximately $1.2 million.

Data Sources and References

Methodology for Calculating Student Generation Multipliers

Wong, Sidney. 2017. "Residential Demographic Multipliers: Using Public Use Microdata Sample Records to Estimate Housing Development Impacts." *Cityscape*, 19(3): 415–427.

- This article describes an updated methodology based on Rutgers 2006 methodology.

Examples of Student Generation Multipliers for Special Circumstances

Grip, Richard S. 2014. Demographic Study Princeton Public Schools. Princeton, New Jersey: Princeton Public Schools.

Lapkoff & Goblett Demographic Research, Inc. 2018. "Table II-7. K–12 Enrollment Forecast Simulation for Parcmerced at Buildout." In Demographic Analysis and Enrollment Forecasts. San Francisco: San Francisco Unified School District.

- This study calculates a student generation multiplier of 0.01 for market-rate studio apartment units in a specific subarea of San Francisco targeted for redevelopment as a new neighborhood.

Listokin, David et al. 2006. "G. Specialized Housing Residential Multipliers: Transit-Oriented Development." In Who Lives in New Jersey Housing? New Jersey Demographic Multipliers. New Brunswick, New Jersey: Rutgers Center for Urban Policy Research.

- This study includes a special set of student generation multipliers for transit-oriented development projects: 0.02 public school children per unit.

Mix, Troy and Xuan Jiang. 2009. "Table B2. Residential Multipliers in Delaware 2006." In Demographic Multipliers in Delaware. University of Delaware Institute for Public Administration.

- This study calculates a student generation multiplier of 0.00 for studio/efficiency units in large multifamily buildings.

Jack Schreder & Associates. 2017. "Appendix C: Student Generation Rate Information." In North Bayshore Precise Plan: Final Subsequent Environmental Impact Report. Mountain View, California: City of Mountain View.

- The city hired Jack Schreder & Associates to prepare a student generation analysis for a subarea plan that recommends accommodating a sizable amount of micro-units.
- This analysis uses a multiplier of 0.008 elementary-school students per micro-unit and 0.005 middle-school students per micro-unit.
- The consultant states that micro-unit multipliers are not based on projects within the school district's boundaries, but does not otherwise address methodology.

Portland (Oregon) Public Schools. 2013. "Table 10. Housing Types." In Enrollment Forecasts 2014-15 to 2028-29.

- This school district enrollment projection report includes multiplier of 0.00 for SRO units (which includes both market-rate and affordable co-living apartments) and 0.02 for Mid-Rise Mixed Use Small Units (which includes buildings with small studio and one-bedroom apartments).
- Projections based on existing development within the school district.

RPM Consulting. 2003. "Summary of IMH Model and Enhance Employment Model Estimates." In Village at Playa Vista Development: Student Generation Study. Los Angeles: City of Los Angeles.

- This student generation report for a specific development project calculated student generation multipliers of 0.032 for K–5 students and 0.021 for grades 6–12.

University of California–San Diego. 2015. "San Diego Unified School District Comment Letter." In Graduate and Professional Student Housing—East Campus: Final Initial Study and Mitigated Negative Declaration.

- The San Diego Unified School District looked at actual students living in family housing units at the University of California–San Diego to calculate a multiplier of 0.122 elementary school students per family housing unit (i.e., purpose-built student apartments with 2+ bedrooms).

Vandewalle & Associates. 2016. "G. Student Generation Rates Used in This Study." In Student Enrollment Projections 2017–2037. Madison, Wisconsin: Madison Metropolitan School District.

- A consultant looked at actual student generation rates from various types of residential development within the Madison Metropolitan School District to calculate various multipliers based on context (suburban or urban), project size (by units and stories), and project type (mixed use).