



an economic impact analysis



Fiscal Impact Analysis of the Hastings Development in South Fayette Township

March 14, 2016



Analysis by:
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RE: Analysis of the Proposed Hastings Development (03.14.2016)

Fourth Economy Consulting was contracted by South Fayette Township to provide independent analysis of the economic and community impact of the proposed Hastings Development. Our understanding is that concerns were raised by the School District regarding a possible under representation of the impacts that the housing development would have on the school district related to enrollment and related costs. Our scope of work set out to review any previous estimates and make an independent estimate of the impacts.

The work conducted includes:

- Fourth Economy Consulting (FEC) reviewed the proposed development plans and the estimates of revenues and fiscal impacts prepared by Econsult and by the South Fayette School District (SFSD).
- Fourth Economy prepared two additional, independent estimates of the number of students generated by the development and the resulting fiscal impact. The different assumptions used in each model are noted in the report.
 - South Fayette Township provided the fiscal impact model that was prepared by the former Township Engineer for the assessment of the Newbury development, a recent development that also included significant housing. Fourth Economy updated the Newbury model with the development inputs and costs for the Hastings project.
 - In addition Fourth Economy developed an independent set of estimates based on the most current available data.
- In addition, Fourth Economy reviewed national and state level research to provide additional benchmarks for the reasonableness of various estimates and to inform our independent estimates.

This report provides guidance on the range of potential impacts that could result from the proposed development. It does not attempt to project or forecast future school district budgets, but estimates the range of fiscal impacts generated by the development.



Fourth Economy Findings

This report represents our analysis of four models of the economic and community impact of the proposed Hastings Development. The estimates included in this analysis are based on the data and information available when the analysis was conducted in the first quarter of 2016. Alternative assumptions were made for each model to provide insight into the influence of different factors and conditions on the estimated impact. Each model employed different assumptions related to the number of students and the cost of educating those students.

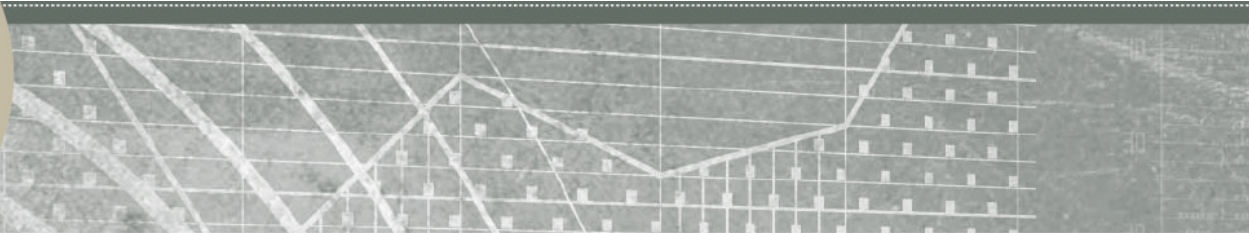
The fiscal impact of this new development is defined by three critical factors:

- The number of new students
- Post-development revenues
- The cost per resident / student

We have summarized the interaction of these factors in Table 1: Revenue / Cost Matrix, which presents the maximum number of students that can be supported by the estimated revenue generated by the proposed development. This matrix illustrates the revenue and cost estimates from the four impact models. The goal is to provide guidance on the range of possibilities for the critical variables and how much tolerance there is between the estimate and the break-even point when proposed development revenues will exceed the school district costs. The minimum number of students that the development can support is 214, assuming the highest school district cost and lowest proposed development revenue estimates. The maximum number of students that the proposed development can support is 415, assuming the lowest school district cost and highest proposed development value estimates.

Table 1: Revenue / Cost Matrix

Source Model	Estimated Revenues	<i>Range of Annual Cost per Student</i>			
		<i>FEC</i>	<i>Econsult</i>	<i>Newbury</i>	<i>SFSD</i>
		\$12,040	\$12,135	\$13,778	\$16,367
		<i>Number of Students Supported by Estimated Revenues</i>			
SFSD	\$3,499,991	291	288	254	214
FEC	\$4,291,496	356	354	311	262
Econsult	\$4,468,400	371	368	324	273
Newbury	\$4,990,612	415	411	362	305



Summary of the Models

The models estimated net impact ranging from -\$4.0 million (SFSD) to \$1.8 million (Newbury). Based on the estimated post-development revenues, the development could sustain a maximum of 214 students based on the SFSD revenue estimate, which is lower than all of the models estimated. The Econsult model estimates a maximum of 368 students, while the Fourth Economy independent models estimated 362 (Newbury) and 356 (FEC).

Table 2: Summary of the Model Estimates impact on the School District

	<i>Econsult</i>	<i>Newbury</i>	<i>FEC</i>	<i>SFSD</i>
Total Expected New Students	222	231	269	459
<i>Cost per Student</i>	<i>\$12,135</i>	<i>\$13,778</i>	<i>\$12,040</i>	<i>\$16,367</i>
Total Expected Revenues	\$4,468,400	\$4,990,612	\$4,291,496	\$3,499,991
Total Expected Costs	\$2,698,945	\$3,185,607	\$3,242,613	\$7,512,649
Net Impact	\$1,769,455	\$1,805,005	\$1,048,884	\$(4,012,658)
<i>Number of Students Supported by Estimated Revenue</i>	<i>368.2</i>	<i>362.2</i>	<i>356.4</i>	<i>213.8</i>

In order to assess the reasonableness and accuracy of these estimates we present the differences between the models in order as follows:

- Total Expected New Students
- Cost per Student
- Total Expected Revenues
- Total Expected Costs

Total Expected New Students

The Econsult estimate of 222 public school students is based on the most current demographic data available. For the number of students per household, Econsult provided their data and spreadsheets for review by Fourth Economy. The methodology was rigorous and sound and no errors were discovered in their estimates or calculations. They used detailed household level Census data for the local area to develop these estimates. Their methods and estimates are in line with independently published multipliers for the state of Pennsylvania by the Rutgers University Center for Urban Policy Research for public school children.¹ This estimate assumes that only a portion of the children in the development will attend the South Fayette School District.



Table 3: Comparison of Estimated Students per Household Type

	Students per Household Type			
	Econsult	Newbury	FEC Estimate	SFSD
SF - Age Targeted 3BR	0.15	0.47	0.15	0.15
Single Family 3 BR	0.29	0.47	0.83	1.04
Single Family 4 BR	0.95	0.89	0.83	1.04
Townhouse – Owner 3BR	0.29	0.47	0.83	1.04
Townhouse – Renter 3BR	0.64	0.47	0.83	1.04
Mixed Use Condo 3 BR	0.29	0.47	0.83	1.04
Apartments 1 BR	0.07	0.03	0.05	0
Apartments 2 BR	0.33	0.15	0.05	1.04

The Newbury model uses an estimate of school children based on the number of bedrooms and does not consider whether the units are owner or renter occupied. This is a reasonable method but it likely over-estimates the number of students in the age-targeted units. The source notes for these estimates were not available so we are not able to tell how they were developed. The estimates in the Newbury model are higher but roughly correlate with the Pennsylvania estimates from the Rutgers’ report for school-age children in public schools for higher value 3 BR and 4 BR single-family detached homes (Table 4).

Table 4: Rutgers’ Study Estimates for PA

Structure Type	Public School-Age Children per Unit
Single-Family Detached, 3 BR (more than \$242,500)	0.41
Single-Family Detached, 4 BR (more than \$242,500)	0.75
Single-Family Attached, 3 BR (more than \$205,500)	0.19
5+ Units – Rent, 1BR (more than \$950)	0.04
5+ Units – Rent, 2BR (more than \$1,300)	0.29

Source: Burchell et al. 2006.

The Fourth Economy model estimated the number of school-age children, but did not adjust those numbers for the likely proportion that would attend public school. The estimate was developed from the number of children and total households based on South Fayette Township data from the American Community Survey from 2011 to 2014. The estimate for the



rental units was based on the number of renter households by household size and family type (married with children or single householder with children).²

Table 5: Fourth Economy Model Estimates of Children per Household

	2011	2012	2013	2014	Average
Households	5,461	5,511	5,603	5,770	5,586
All Children	4,414	4,642	4,744	4,646	4,612
All Children Per Household	0.81	0.84	0.85	0.81	0.83
Children over 5 years	3,502	3,716	3,748	3,632	3,650
Children over 5 per Household	0.64	0.67	0.67	0.63	0.65

Source: American Community Survey, U.S. Census Bureau

There are several important assumptions in the Fourth Economy model. 1) It includes children too young to be enrolled to account for the potential that these children may at some time attend a district school. Using American Community Survey estimates for 2009-2014 and enrollment in the SFSD for the 2014-2015 school year,³ only 79 percent of the school-age children would attend public school in the district. 2) This model made no adjustment for 4 BR units versus 3 BR units as that approach was incorporated in the Econsult model and Newbury model and we could not produce any valid estimates that were significantly different than those models. 3) The Fourth Economy model uses Econsult's estimate of 0.15 children in the age-targeted housing because there could be situations where those households may have a student attending the school for at least some period of time. 4) The estimate also assumes that all residents of the development are entirely new to the district. Analysis of new mover data indicates that this is not accurate, as a portion of the new movers have stayed within the district, so this also represents a higher impact estimate.⁴

The original SFSD model estimated a flat rate of 1.04 students per household for all units with 2 bedrooms or more.⁵ The original school district analysis contained different numbers and types of units than those provided to Fourth Economy by Charter Homes. We assumed that the current plan would follow the number and types of units submitted by the developer. We applied the school district's estimate of 1.04 students per unit to all of the unit types except for the single bedroom apartments in which we followed the SFSD method of assuming zero students in those units. These assumptions result in a higher potential number of students, but it assumes that all of the children are school aged and that 100 percent will attend district schools. Excluding the number of children under 5 would reduce the estimate to 398 children, while further applying the public school enrollment rate results in an



estimate of 315 students. The original SFSD model significantly over-estimated the number of students in the age-targeted housing and significantly over-estimated the number for the larger rental units. Fourth Economy did adjust the SFSD model to use Econsult’s estimate of 0.15 children in the age-targeted housing rather than the 1.04 students in the school district’s original analysis. For the reasons stated above, we believe that even the 0.15 over-estimates the impact from these units.

Cost per Student

The variance in the cost per student estimates arise based on what is included and whether the estimate accounts for state and federal revenues. The summary matrix below explains the differences.

Table 6: Inclusions and Exclusions in the Cost Estimates

	Econsult	Newbury	FEC Estimate	SFSD
Instructional Costs	Included	Included	Included	Included
Transportation Costs	Included	Included	Included	Included
Debt Costs	Included	Excluded	Included	Included
Federal Revenue	Included	Excluded	Included	Excluded
State Revenue	Included	Excluded	Included	Excluded

The SFSD estimate of \$16,367 includes the total district expenditures for instruction, maintenance, transportation and debt service on a per student basis and assumes that 100 percent of that cost is covered by local revenues.⁶ Econsult’s estimate of the cost per student is based on SFSD’s reported cost of \$16,367 per student. Econsult did adjust the SFSD estimate for federal and state revenues so that the estimate of \$12,135 per student reflects how much the district has to cover from its own sources for all costs including instruction, maintenance, transportation and debt.

Table 7: Newbury Model of Cost Estimates

2015-2016 Expenses not including Debt ⁷	2015-2015 Students ⁸	Expenditures per Student
\$41,569,057	3,017	\$13,778

Debt service does not increase with the number of students and should be excluded from the cost estimate. The Newbury model excludes the debt service but included instruction, maintenance and transportation costs for the estimate. The Newbury model does not account



for federal and state revenue, so the estimate of \$13,778 per student may still over-estimate the actual own-source costs that the development should have to cover.

The Fourth Economy model included debt service, instruction, maintenance and transportation costs for the estimate. The Fourth Economy model did account for federal and state revenue so the estimate of \$12,040 represents the actual own-source costs that the development should have to cover. By including the debt service in this estimate, these households are paying in advance for future debt that may be the result of expanding the school in the future. These estimates are presented in Table 8: FEC Model of Cost Estimates.

Table 8: FEC Model of Cost Estimates

2015-2016 Expenses Instruction, Transportation & Debt	2015-2015 Students	Local Revenue	Expenditures per Student
\$48,921,154	3,017	74%	\$12,040

Total Expected Revenues

Table 9: Taxes Included and Excluded in each Model

	Econsult	Newbury	FEC Estimate	SFSD
Property Taxes	Included	Included	Included	Included
Annual Transfer Tax	Included	(1)	Excluded	Excluded
EIT Taxes	Included	Included	Included	Excluded
Act 511 Taxes	Included	(1)	Included	Excluded
Non-Tax Revenue	Excluded	Included	Excluded	Excluded

Note: (1) These taxes may be included in the Newbury model's category of Non-Tax Revenue but it is not explicit

Econsult included all tax types except for the non-tax revenues.⁹ The property taxes are based on their projected market value and a lower assessed value estimate. Fourth Economy compared their estimate of property values to similar new developments in the area and found the estimates to be reasonable expectations of the market value. The additional taxes are then estimated based on assumptions about the household income for properties of those values.



The revised Newbury model used the same property values and household incomes to estimate the real estate and income taxes. Fourth Economy adjusted for inflation the original value for the non-tax revenue in the Newbury model.

The Fourth Economy model did not include the transfer taxes or the non-tax revenue. These amounts should be included, but since they are included in the other models we excluded them here to test the sensitivity to different revenue scenarios. The Fourth Economy model began with the property values in the Econsult model but adjusted those amounts for an expected collection rate of 90% to reflect potential market or administrative variances, abatements or credits that would impact tax revenue.

The SFSD model included only property taxes and assumed an average home value of \$216,500 for every type of unit.¹⁰ This approach inflates the value of the rental apartments and rental townhouses, but it under-estimates the value for every other unit type and as a result, it severely deflates the value estimates and the revenue generated by the development.

Total Expected Costs

The total expected costs are simply a function of the number of students and the cost estimates described above. None of the scenarios and models presented so far considers other real-world factors that will drive the actual fiscal impact. These factors include:

- The Distribution of students by grade/school
- The number of students transported by grade/school
- Current and future bus capacity
- Current and future classroom capacity

Table 10: Estimated Distribution of Students

School	Distribution	Econsult	Newbury	FEC	SD
K-5	48%	109	113	132	225
Grade 6-8	25%	53	56	65	110
Grade 9-12	27%	60	62	73	124
Total New Students		222	231	269	459

Notes: some totals may not sum due to rounding in the calculations.¹¹

Based on the current enrollment patterns, we applied the distribution of students to the various model estimates. These were then used to estimate the number of buses needed and



the impact on classroom sizes. Because the start times are staggered for these school groups, the same bus and driver can handle different groups in the course of the school day. Based on a 72-passenger bus, and assuming that it can seat of maximum of 48 students above Grade 5¹² estimates that the development will require 1.1 to 3.1 buses. This also assumes that all students from the development will need to be transported and will be attending public school. If some are attending private schools they may be transported on a smaller bus. At most, the district would need four new buses that would add a capital expense of \$380,000¹³, but a combination of 72 passenger buses and smaller buses could also work at a lower capital cost. The salaries for additional drivers should not be included as those estimates are already included in the cost per student estimates.

Table 11: Buses Needed

<i>School</i>	<i>Students Per Bus</i>	<i>Econsult</i>	<i>Newbury</i>	<i>FEC</i>	<i>SD</i>
K-5	72	1.5	1.6	1.8	3.1
Grade 6-8	48	1.1	1.2	1.3	2.3
Grade 9-12	48	1.3	1.3	1.5	2.6

Another consideration is whether the new students generated by the development create a tipping point in the capacity of the facilities. There are numerous factors that impact facility capacity such as scheduling, specialized facilities, support spaces and curricular constraints. These needs will be driven by the number of students that enroll as well as their specific needs and interests.

Table 12: Estimated Post-Development Students

<i>School</i>	<i>Distribution</i>	<i>Econsult</i>	<i>Newbury</i>	<i>FEC</i>	<i>SD</i>
K-5	56%	1,570	1,574	1,593	1,686
Grade 6-8	28%	798	800	810	855
Grade 9-12	31%	871	873	884	935
Total Students		3,239	3,248	3,286	3,476

Using the distribution of current students by grade level as reported by SFSD, Fourth Economy distributed the new students and aggregated the numbers to estimate the total post-development students by grade level (Table 12: Estimated Post-Development Students). We then applied the number of regular-size classrooms for each grade level reported by SFSD to those new totals to estimate the number of students per classroom (Table 13: Estimated Post-Development Students Per Classroom).¹⁴



Table 13: Estimated Post-Development Students Per Classroom

School	Classrooms	Econsult	Newbury	FEC	SD
K-5	61	26	26	26	28
Grade 6-8	39	20	21	21	22
Grade 9-12	33	26	26	27	28

The estimates in Table 13: Estimated Post-Development Students Per Classroom are included to provide a general sense of the potential impact on facility space. There is insufficient information to accurately predict the distribution of students by age. While this estimate is highly qualified it provides some guidance into other potential impacts that additional development may have on school district facilities.



Explanation of Sources

Historical Enrollment Data

Pennsylvania Information Management System (PIMS)
Data Collection Team
PA Department of Education
Division of Data Quality
333 Market Street
Harrisburg, PA 17126-0333
Email: Ra-DDQDataCollection@pa.gov
Phone: (717) 787-2644
Fax: (717) 787-3148

This workbook contains 2014-15 enrollments for all publicly funded schools in Pennsylvania as reported by school districts, area vocational-technical schools, charter schools, intermediate units, and state-operated educational facilities. Local education agencies were asked to report those students who were enrolled and attending as of October 1, 2014.

2010-2014 - National Center for Education Statistics
Common Core of Data

The Common Core of Data (CCD) is a program of the U.S. Department of Education's National Center for Education Statistics that annually collects fiscal and non-fiscal data about all public schools, public school districts and state education agencies in the United States. The data are supplied by state education agency officials and include information that describes schools and school districts, including name, address, and phone number; descriptive information about students and staff, including demographics; and fiscal data, including revenues and current expenditures.

Current Enrollment for the 2015-2016 School Year

Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston. March 7, 2016. Letter regarding South Fayette Township's Request for Information for Independent Study for Proposed Charter Homes Development.

School District Staffing

2010-2014 - National Center for Education Statistics, Common Core of Data



Current Staffing for the 2015-2016 School Year was provided by Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston. March 7, 2016. Letter regarding South Fayette Township's Request for Information for Independent Study for Proposed Charter Homes Development.

School District Budget

South Fayette School District
PDE-2028 Final General Fund Budget
Fiscal Year 07/01/2015 - 06/30/2016
Downloaded from
<http://www.southfayette.org/cms/lib03/PA01001917/Centricity/Domain/322/2015-2016%20Final%20Budget.pdf>

Population, Housing and Demographic Data for South Fayette Township were sourced from the U.S. Census Bureau, 2006-2010 American Community Survey and the U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates.

Proposed Housing Types and Values were provided by the Developer, Charter Homes.

The Analysis of New Movers was conducted by Fourth Economy based on a sample of 200 households that moved into South Fayette Township within the past twelve months. The data was provided by DatabaseUSA.com and includes the previous residence and move distance.



References

¹ Burchell, Robert W. et al. 2006. Residential Demographic Multipliers: Estimates of the Occupants of New Housing. Center for Urban Policy Research, Rutgers University. New Brunswick, NJ.

² Population, Housing and Demographic Data for South Fayette Township were sourced from the U.S. Census Bureau, 2006-2010 American Community Survey and the U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates.

³ Enrollment data for 2014-2015 is from the Pennsylvania Information Management System (PIMS). In addition, enrollment data was sourced from the National Center for Education Statistics Common Core of Data.

⁴ The Analysis of New Movers was conducted by Fourth Economy based on a sample of 200 households that moved into South Fayette Township within the past twelve months. The data was provided by DatabaseUSA.com and includes the previous residence and move distance.

⁵ Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston et al. September 2, 2015. Letter regarding the Charter Homes Proposal – Mayview Property Residential Development.

⁶ Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston et al. September 2, 2015. Letter regarding the Charter Homes Proposal – Mayview Property Residential Development.

⁷ South Fayette School District. PDE-2028 Final General Fund Budget, Fiscal Year 07/01/2015 - 06/30/2016. Downloaded from <http://www.southfayette.org/cms/lib03/PA01001917/Centricity/Domain/322/2015-2016%20Final%20Budget.pdf>.

⁸ Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston. March 7, 2016. Letter regarding South Fayette Township's Request for Information for Independent Study for Proposed Charter Homes Development.

⁹ Peter Angelides and Daniel Miles to Anthony Faranda-Diedrich. Letter regarding estimates of Public School Children and Tax Revenues. September 8, 2015.

¹⁰ Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston et al. September 2, 2015. Letter regarding the Charter Homes Proposal – Mayview Property Residential Development.

¹¹ Estimated from the distribution by grade with historical enrollment data from the National Center for Education Statistics and current enrollment provided by Dr. Billie Rondinelli and



Mr. Brian Tony to Ryan Eggleston. March 7, 2016. Letter regarding South Fayette Township's Request for Information for Independent Study for Proposed Charter Homes Development.

¹² Bus capacity provided by Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston. March 7, 2016. Letter regarding South Fayette Township's Request for Information for Independent Study for Proposed Charter Homes Development.

¹³ Cost of a bus included in Exhibit 1, Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston et al. September 2, 2015. Letter regarding the Charter Homes Proposal – Mayview Property Residential Development.

¹⁴ The number of regular sized classroom was reported by Dr. Billie Rondinelli and Mr. Brian Tony to Ryan Eggleston. March 7, 2016. Letter regarding South Fayette Township's Request for Information for Independent Study for Proposed Charter Homes Development.