

ANALYSIS OF PROPOSED CONSERVATION AND LIMITED DEVELOPMENT PROJECT IN MARPLE TOWNSHIP

October 19, 2017

FINAL REPORT SUBMITTED TO:

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

The purpose of this report is to evaluate **an open space preservation and limited development proposal in Marple Township** by considering the economic value that will be generated to the Township, Marple Newtown School District, and Delaware County by its completion. The findings from this report are intended to aid the current public discussion about the proposal by articulating important economic considerations by which the proposal should be evaluated.

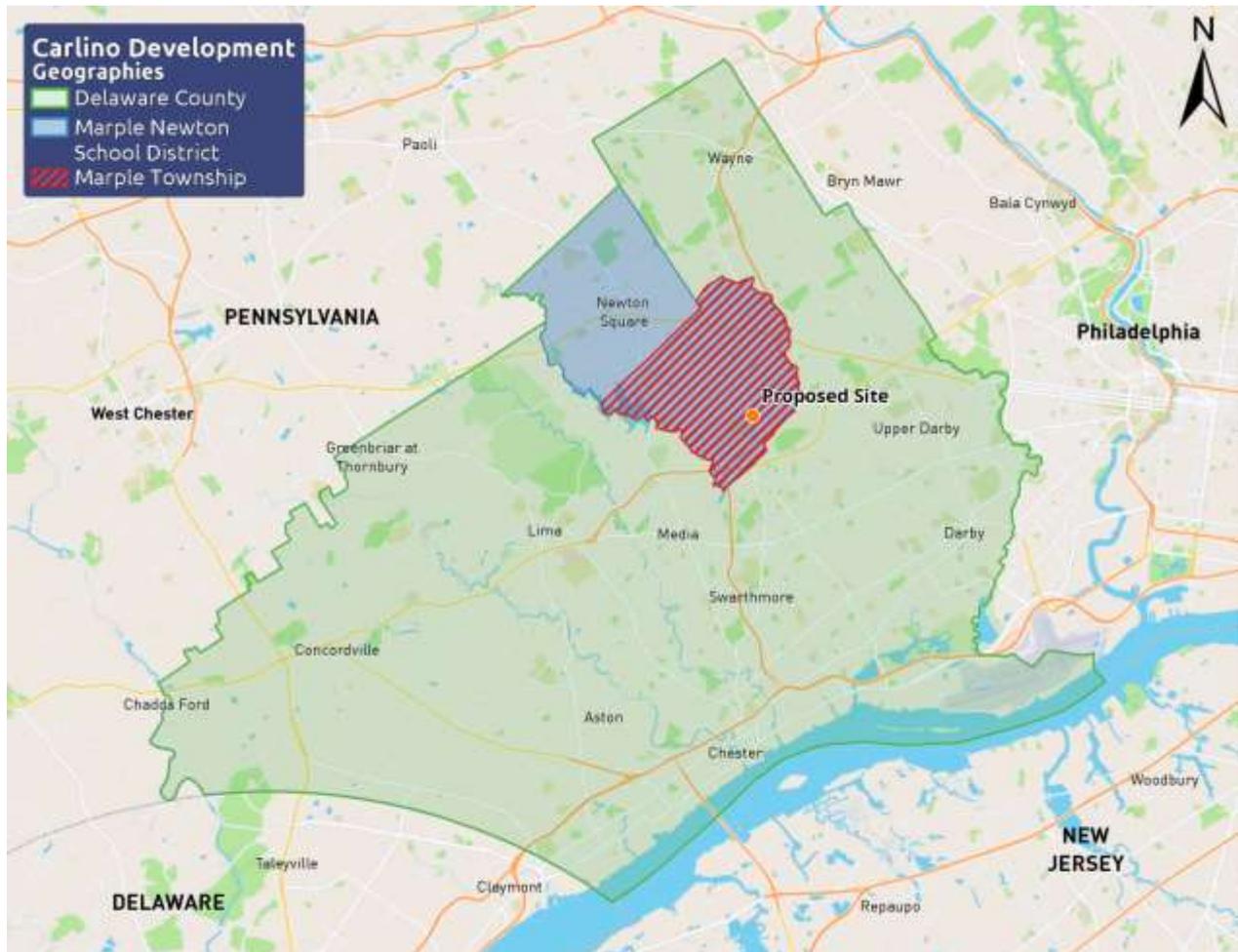
This report was commissioned by **Natural Lands Trust**, a leading regional conservation non-profit organization headquartered in Marple Township, and completed by Econsult Solutions, Inc. (ESI), a Philadelphia-based economic consulting firm. The report relies on information provided by Natural Lands, as well as on research conducted by ESI or extrapolated from past internal or external analyses. The economic analyses contained in this report utilize standard quantitative analysis techniques and employ assumptions based on industry averages.

1.2 ABOUT THE CONSERVATION AND LIMITED DEVELOPMENT PROPOSAL

The proposal, as envisioned by Natural Lands, would permanently protect 170 acres of land within a 210-acre property currently owned by the Archdiocese of Philadelphia, located on Sproul Road, in the north central part of Delaware County in Marple Township (see Figure 1.1). The 210 acres of land include the former Don Guanella Village as well as a heavily forested area, colloquially known as “Penn’s Woods.” The local community is invested in the future of this property and there has been vocal support for the preservation of as much of the open space on this property as possible. Natural Lands believes that it is possible to protect the large majority of the property. However, in order to do so, it will be necessary to permit limited commercial development along Sproul Road. The limited commercial development will generate tax revenues that will make the protection of the open space financially feasible.



FIGURE 1.1 – PROPOSED DEVELOPMENT WITH RELEVANT GEOGRAPHIES



Source: Carlino Commercial Development (2017), ArcMap (2017), PA Department of Community & Economic Development (2017)

To that end, Natural Lands has explored a relationship with Carlino Commercial Development in order to craft a proposal that will preserve approximately **170 acres of passive and active open space**, while developing about **40 acres of various commercial uses** (see Figure 1.2). The open space programming would be determined in partnership with the community. The commercial portion of the site will include key anchor tenants such as a high end supermarket and healthcare offices, along with several eateries and general merchandise sellers.

FIGURE 1.2 – SITE PLAN FOR CARLINO COMMERCIAL DEVELOPMENT



Source: Carlino Commercial Development (2017)

1.3 ESTABLISHING A FRAMEWORK FOR EVALUATING THE OPEN SPACE AND LIMITED DEVELOPMENT PROPOSAL

This report will consider three related ways by which to evaluate the proposal. While these are not the only ways by which the proposal can be analyzed, they are important considerations to introduce into the public discourse.

To begin, the most important aspect of this proposal is the preservation and enhancement of open space on site. It is therefore necessary to account for **the economic value of open space** to a jurisdiction and its residents. Protecting open space, rather than developing over it, may seem to have no economic value, and thus is relegated to being discussed and advocated for in non-economic terms. However, open space actually does produce economic value for a jurisdiction and its residents, which people and local governments are willing to pay for. Therefore it is important to understand and, where possible, quantify that value.

The report will also examine the proposed 40-acre development for its potential for generating new net revenues for the government jurisdictions in which it will be located. Typically the addition

of a new development will grow various tax bases and thus generate tax revenues for those jurisdictions, and at the same time, it may also impose new expenditures on those jurisdictions. The calculation of whether the proposed development will create more in revenues than in expenditures – i.e. its **net fiscal impact** – will be analyzed.

Another economic consideration is how much economic activity a new development will produce. This **economic impact** from upfront construction and from ongoing operations will be measured in terms of overall economic activity as well as the employment and labor income supported by it.

1.4 SUMMARY OF FINDINGS

The conclusion of this report is that **the proposal will generate a compelling economic value to local residents and to local taxing jurisdictions**. Most importantly, the preserved and enhanced open space on site will generate meaningful economic gains and social benefits for local residents and local jurisdictions. The proposal will also generate a net fiscal impact (net new revenues minus net new expenditures) and will produce significant upfront and ongoing economic impacts for the local economy.



2.0 ECONOMIC BENEFITS OF PRESERVATION AND ENHANCEMENT OF OPEN SPACE

2.1 SECTION OVERVIEW AND KEY FINDINGS

The purpose of this section is to consider the proposed conservation and limited development in terms of the economic value it will generate for Marple Township by preserving and enhancing open space. Open space is increasingly valued by residents and jurisdictions. **An economic value can be placed on the benefits of open space as a way to evaluate and advocate for its preservation and enhancement.** This is particularly essential in a climate in which economic and fiscal considerations weigh heavily in discussions about land use and development proposals.

Given the importance local residents in the Township place on having access to open space and on preserving open space at this particular site, it is useful to understand the significant economic value generated to the Township and its residents by the proposed conservation and limited development. All told, it is estimated that benefits of open space for Marple Township include \$24,000 to \$96,000 in increased property taxes each year (\$153,000 to \$612,000 in total property tax revenue impact per year for the Township, the School District, and the County combined), \$164,000 in annual ecological services rendered, \$2.6 million in annual healthcare cost savings, and \$150,000 to \$600,000 of annual direct use value for its residents in total across all taxing jurisdictions.¹ A summary of findings is presented below, and a more detailed write-up of inputs, assumptions, and results can be found in Appendix A.

2.2 METHODOLOGICAL APPROACH

The framework and estimates used in this section are derived from “The Economic Value of Protected Open Space in Southeastern Pennsylvania,” a seminal analysis conducted by Econsult Corporation in 2010 for Delaware Valley Regional Planning Commission and Greenspace Alliance on **the protected value of open space in the Philadelphia five-county region.** This report built on an extensive analysis of the 197,000 acres of protected open space in the region, employing several direct econometric techniques as well as extrapolating findings from other peer-reviewed studies.

This yielded region-wide values for different aspects of economic value generated by protected open space. By dividing those region-wide values by total open space acreage, one can arrive at an estimate of economic value on a per acre basis. It is important, however, to understand that any given acre of open space may behave differently in terms of its economic value, based on its characteristics. The economic value of the open space acreage preserved and enhanced by the

¹ Note the four benefits are not quite additive, as the direct use value may be related to and somewhat overlapped with the healthcare cost savings. For instance, people value outdoor activities and exercise in and of itself; however, they also value them for the increase in wellbeing and attendant decrease in medical costs associated with those activities.

proposed development may be the same, far greater, or far less than that which was calculated in Econsult’s 2010 report. These considerations are accounted for in the analyses that follow.

2.3 POSITIVE IMPACT ON PROPERTY VALUE AND PROPERTY TAX BASE

Proximity to open space is a major selling point for residential real estate, as people increasingly understand the recreational, aesthetic, and ecological gains that accrue to households due to such adjacency. Hence, **residential units near open space can command a premium**, and therefore the addition of permanently dedicated open space to a residential area can translate into property value gains for homeowners and property tax base increases for jurisdictions.

Conservatively extrapolating from a deep body of literature and analysis on the property value impact of proximity to open space, it is estimated that the increase in residential real estate located within a mile of the site will be between one and four percent. This would represent an aggregate property value impact around \$9 to \$36 million. To the extent that this increased value is accounted for in property tax assessments, this will generate approximately \$24,000 to \$96,000 more per year in property tax revenues to the Township, as well as \$98,000 to \$392,000 and \$30,000 to \$120,000 to the School District and County, respectively (see Table 2.1).

TABLE 2.1 – PROPERTY VALUE IMPACT WITHIN A ONE-MILE RADIUS OF THE PROTECTED OPEN SPACE

	Township	School District	County	Total
Property Value Impact (\$M)	\$8.9 - \$35.6	\$8.9 - \$35.6	\$8.9 - \$35.6	\$8.9 - \$35.6
Equalization Ratio	61%	61%	61%	61%
Assessed Value Impact (\$M)	\$5.4 - \$21.6	\$5.4 - \$21.6	\$5.4 - \$21.6	\$5.4 - \$21.6
Property Tax Rate (per \$1,000)	4.480	18.069	5.604	28.153
Property Tax Revenue Impact (\$000)	\$24 - \$96	\$98 - \$392	\$30 - \$120	\$153 - \$612

Source: PA State Tax Equalization Board (2017), Carlino Commercial Development (2017), PA Department of Community & Economic Development (2017), Econsult Solutions, Inc. (2017)

Note that the property value increase is only accounting for the increasing value people living near the development site place on houses now that they are near open space. There are likely to be three additional sources of increased property value and therefore attendant increases to the local property tax base. First, it is likely that the addition of enhanced open space will increase property values throughout the Township, not just for houses within a mile of the development site. Second, proximity to attractive open space will not only increase the value people place on their houses in their current form, but may lead to a higher than usual amount of investment in

those houses, in terms of adding or enhancing the space in their houses. Third, the addition of attractive open space may also induce new development activity by real estate developers who seek to meet the new demand for residential and other locations proximate to such open space.

2.4 DIRECT USE VALUE GAIN TO LOCAL RESIDENTS

Having access to open space allows users the opportunity to enjoy a variety of recreational activities, such as walking, picnicking, and bird watching. While users need not pay for such activities, they do receive value from the presence of the open space and the chance to partake in those activities. Given that the vast majority of users of a particular open space will be nearby residents, most of the value generated by new open space is enjoyed by those residents. It is for this reason that **jurisdictions invest their own resources to acquire and then maintain open space so that their residents can enjoy various recreational activities.**

When a private development includes open space, this is an even better situation for jurisdictions because their residents can derive benefit from its use without the jurisdiction having to pay for or maintain it. This is the case with the open space on the proposed conservation and limited development site, in that the provision of open space on the site produces ongoing direct use value benefits to local residents.

An aggregate amount of direct use value gain to local residents can be estimated by multiplying per-use values by increases in uses. Per-use values were obtained from “willingness to pay” surveys conducted by the US Army Corps of Engineers. Increases in uses were estimated by looking at baseline recreational activity levels as reported in the recent Commonwealth of Pennsylvania’s Statewide Comprehensive Outdoor Recreation Plan (SCORP) survey results and extrapolating a certain percentage increase in uses by residents located near the proposed development. This approach yields an estimated \$175,000 in net new direct use value gain to local residents (see Table 2.2). This is an aggregate annual benefit estimate that will accrue to local residents as a result of the provision of open space.

TABLE 2.2 – DIRECT USE VALUE OF GENERAL PARK USE

Potential Use	Unit Day Value (\$2017)	Total Annual Uses	Total Annual Recreational Value
Walking	\$1.78	47,092	\$84,000
Jogging or running	\$3.93	7,370	\$29,000
Dog walking	\$1.60	19,445	\$31,000
Bicycling	\$3.82	7,113	\$27,000
Picnicking	\$3.05	772	\$2,500
All Activities		81,792	\$173,500

Source: Philadelphia Parks Alliance (2008), Pennsylvania Statewide Comprehensive Outdoor Recreation Plan (2009), Econsult Solutions, Inc. (2017)



This figure is almost certainly conservative, for a variety of reasons. First, it is based on usage patterns reported by the Commonwealth at state parks, which tend to be used more on weekends, whereas for residents living near the proposed site, some uses will be more frequent (e.g. walking your dog once or twice a day vs. taking it to a state park once or twice a month). Second, it is only accounting for residents located within a mile of the open space, whereas many more Township residents and other people will enjoy the open space. Third, it is not accounting for the likelihood of additional, more intensive recreational uses on site, which if finalized will yield more uses as well as higher-valued uses.

2.5 HEALTHCARE COST IMPLICATIONS

Another aspect of the value of direct use of open space is the effect it has on health outcomes and on health care costs. There is an increasing body of literature connecting **access to open space to increased active recreation and in turn to better health outcomes and lower health care costs**. This cost savings is manifold in nature, representing the following categories that have meaningful financial consequences to individual users and the health insurance pools they are part of:

1. Better immediate health outcomes
2. Better long-term health outcomes
3. Fewer worker’s compensation claims
4. Reduced absenteeism and “presenteeism”

Extrapolating from a recent region-wide analysis of these categories, it is estimated that the amount of open space being preserved and enhanced will yield an aggregate \$2.6 million in annual health care cost reduction benefits (see Table 2.3). This category of benefits somewhat overlaps the category of benefits described in the previous section, since part of why people value direct use of open space is for the positive health outcomes and reduced health care costs that it produces.

TABLE 2.3 - HEALTH CARE COST SAVINGS ASSOCIATED WITH PROTECTED OPEN SPACE

Aggregate Health Care Cost Savings in Delaware County	Annual Health Care Cost Savings Per Acre in Delaware County	Estimated Annual Aggregate Health Care Cost Savings from Open Space in Proposed Development
\$193 Million	\$15,000	\$2.6 million

Source: DVRPC (2010), Econsult Corporation (2010), Econsult Solutions, Inc. (2017)



2.6 ECOLOGICAL SERVICES RENDERED

Open space also renders important ecological services that are valuable to the Township and its residents. The proposal for the development site will be of use to human users for various forms of recreation and enjoyment, but it will also perform various nature functions such as sequestering carbon, mitigating floods, and cleaning the air and water. These functions are valued by local residents, who benefit from higher quality air and water and reduced flooding events.

Values have been placed on these functions in some cases through survey efforts that have attempted to determine how much people value various ecological services and in other cases because those services can otherwise be purchased from the marketplace. Extrapolating from a recent region-wide analysis of these categories, it is estimated that the amount of open space being preserved and enhanced will yield an aggregate \$164,000 in annual ecological services benefits (see Table 2.4).

TABLE 2.4 – VALUE OF ECOLOGICAL SERVICES PROVIDED BY THE PROTECTED OPEN SPACE

Ecological Service Category	Annual Value Generated Per Acre	Annual Value Generated by Proposed Development
Water Supply / Water Quality	\$400	\$77,000
Flood Mitigation	\$300	\$57,000
Air Pollution / Carbon Sequestration	\$100	\$22,000
Miscellaneous	\$100	\$9,000
Total	\$900	\$164,000

Source: DVRPC (2010), Econsult Corporation (2010), Econsult Solutions, Inc. (2017)

3.0 FISCAL IMPLICATIONS FOR MARPLE TOWNSHIP, THE MARPLE NEWTOWN SCHOOL DISTRICT, AND DELAWARE COUNTY

3.1 SECTION OVERVIEW AND KEY FINDINGS

The purpose of this section is to consider the conservation and limited development proposal in terms of the net new revenues it will generate and the net new expenditures it will impose on Marple Township, the Marple Newtown School District, and Delaware County. The analyses performed for this report suggest that, given the characteristics of the proposal, **it is likely that the proposal will generate a significant net positive fiscal impact.** A summary of findings is presented below, and a more detailed write-up of inputs, assumptions, and results can be found in Appendix B.

3.2 COMPARATIVE FRAMEWORK

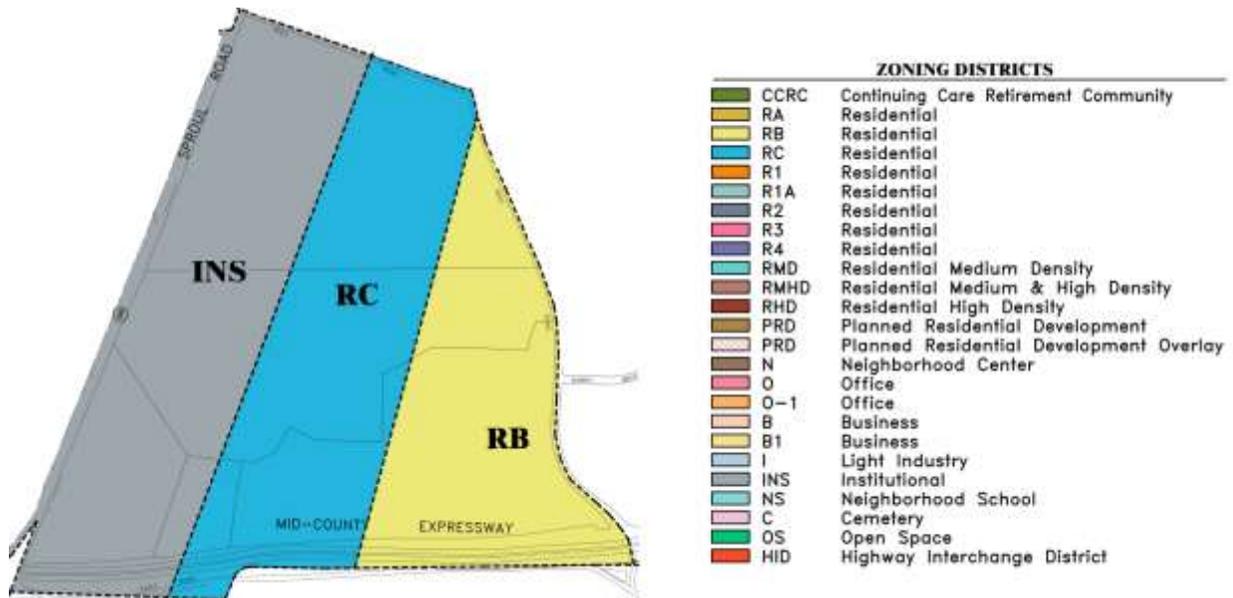
A proposed development can be evaluated in terms of net fiscal impact on a jurisdiction in multiple ways:

One option is to evaluate it in isolation: **will the development generate more in net new revenues than it will impose in net new expenditures?** This question can be answered by estimating net new revenues and net new expenditures, and comparing them to each other, a positive difference being good and a negative difference being bad.

Another option is to compare it to the status quo: **will the development's net fiscal impact be greater than the development site's current net fiscal impact?** This question can be answered by taking the results from the first method, and comparing them to a similar analysis of the development site's current uses.

In this section, the proposed development will be compared against the development site's current use. Currently, the development site is an inactive institutional use in a heavily forested area. The majority of the site is zoned as residential, with a portion along Sproul Road currently zoned for Institutional use (see Figure 3.1).

FIGURE 3.1 – ZONING DISTRICTS ON SITE



Source: Marple Township (2017)

3.3 NET NEW REVENUES

The site currently does not generate much in tax revenues to the Township, School District, or County, since it is currently unoccupied. Presently, the assessed value of the site is \$2.6 million, and its 2017 property tax bill is approximately \$14,700 of which \$2,300 goes to the Township, \$9,400 goes to the School District, and \$2,900 goes to the County.

The conservation and limited development proposal will generate **upfront deed transfer tax revenues** to the Township and the School District as a result of the initial land transaction. The base of this taxable event is estimated by Carlino to be \$30 million, meaning a one-time gain of \$300,000 in deed transfer tax revenues, split evenly between the Township and the School District.² In addition, the site will likely generate ongoing deed transfer tax revenues to the Township and School District. Assuming that the property changes ownership every 10 years, this would yield on average an additional \$45,900 to both the Township and School District each year, assuming a market value of approximately \$92 million upon completion of the development.

The proposed development will then generate **ongoing property tax revenues** to the Township, School District, and County. Carlino presently estimates the new property tax base to be \$92 million for the 40-acre commercial development, as determined based on a net operating

² Note this does not include an additional one percent deed transfer tax to the Commonwealth of Pennsylvania.

income approach, which would mean an annual property tax revenue gain of approximately \$248,400 to the Township, \$1,001,800 to the School District, and \$310,700 to the County.

In addition, the proposed development will generate **ongoing local services tax revenues** to the Township. Based on the estimated number of workers on site and the proportion of those estimated to be new employees in the township, the ongoing local tax revenue is calculated to be \$33,300.

When summing the property, deed transfer, and local services taxes, the revenues per jurisdiction are much higher for the proposed development than the status quo (see Table 3.1). Combined, the three jurisdictions will receive well over 100 times more in tax revenues each year from the proposed development when compared to what they currently receive.

TABLE 3.1 – SUMMARY OF NET NEW REVENUES BY JURISDICTION FOR EACH SCENARIO

Revenue Summary	Current	Carlino
Township	\$2,341	\$327,551
School District	\$9,441	\$1,047,731
County	\$2,928	\$310,711
Total	\$14,711	\$1,685,993

Source: Carlino Commercial Development (2017), Marple Township (2017), Delaware County Board of Assessments (2017), Econsult Solutions, Inc. (2017)

3.4 NET NEW EXPENDITURES

The inactive site currently does not impose much on the Township or County in terms of expenditures, as maintenance and security are minor. The site does not represent any additional public school children so there is no expenditure burden on the School District.

The conservation and limited development proposal may impose **new expenditures** on the Township and County, particularly as it relates to service categories where additional volume means higher costs, such as **public safety, roads, and recreation**. The development should drive an increase in commercial activity as new workers and new traffic come to the area. We assume that each worker will impose new expenditures equal to half of that for a new resident. This is estimated to be \$191,200 in net new Township expenditures and \$25,000 in net new County expenditures.

It is also assumed that of the new workers on site, some will be local residents while some will move to the Township for the job. Of the newly relocated workers, some will have school aged children and others will not. Because no additional housing is being added to the community, newly relocated workers with school children will simply move into existing housing stock replacing families moving out rather than adding additional expenditures for the School District.

In total, the development should add \$216,200 in new expenditures to the Township, School District, and County (See Table 3.2).

TABLE 3.2 – SUMMARY OF NET NEW EXPENDITURES BY JURISDICTION FOR EACH SCENARIO

Overall Summary	Current	Carlino
Township	\$0	\$191,235
School District	\$0	\$0
County	\$0	\$24,987
Total	\$0	\$216,222

Source: Carlino Commercial Development (2017), Marple Township (2017), Delaware County Board of Assessments (2017), Econsult Solutions, Inc. (2017)

3.5 NET NEW FISCAL IMPACT

We have now covered net new revenues and net new expenditures for the Township, School District, and County for the status quo and the proposed development. Based on the analysis, inputs, and assumptions, the proposed limited development is net positive for all three taxing jurisdictions. It has **a significantly greater positive impact than the status quo (almost 100 times greater)**.

TABLE 3.3 – SUMMARY OF NET FISCAL IMPACT BY JURISDICTION FOR EACH SCENARIO

Overall Summary	Current	Carlino
Township	\$2,341	\$136,315
School District	\$9,441	\$1,047,731
County	\$2,928	\$285,724
Total	\$14,711	\$1,469,770

Source: Carlino Commercial Development (2017), Marple Township (2017), Delaware County Board of Assessments (2017), Econsult Solutions, Inc. (2017)

Thus, purely from the standpoint of net fiscal impact, the three taxing jurisdictions stand to gain significantly from the proposed development as compared to the status quo. The next section describes an additional category of benefits from the proposed limited development that strengthen its position as the best way forward for the site, which is the economic impact the project will generate for the local economy.

4.0 ECONOMIC IMPACT TO MARPLE TOWNSHIP, MARPLE-NEWTOWN SCHOOL DISTRICT, AND DELAWARE COUNTY DUE TO THE CONSERVATION AND LIMITED DEVELOPMENT PROPOSAL

4.1 SECTION OVERVIEW AND KEY FINDINGS

The purpose of this section is to consider the proposed development in terms of **the economic impact it will generate for Marple Township and beyond**. Upfront construction will create temporary economic activity during the construction period. Upon completion of construction, ongoing operations will then create permanent economic activity. All told, it is estimated that the conservation and limited development proposal will generate a one-time economic impact of \$74 million in total output for the Township and support over 500 direct, indirect, and induced jobs due to its construction activity. In addition, it will generate an additional annual economic impact of \$89 million and support approximately 1,170 direct, indirect, and induced full-time equivalent jobs within the township as a result of the ongoing operations. A summary of findings is presented below, and a more detailed write-up of inputs, assumptions, and results can be found in Appendix C.

4.2 ECONOMIC IMPACT METHODOLOGY

As noted, the proposed development will produce an economic impact for Marple Township from upfront construction and from ongoing operations. In both cases, this will be doubly beneficial for Marple Township, first because it will represent direct economic activity within the Township and second because it will generate additional spillover activity within the Township.

The upfront construction and ongoing operations of the proposed development are good for the Township because they represent economic activity within the Township and put people to work. As with any economic activity, there are also **two spillover effects** with additional positive implications for the Township. First, goods and services procured as part of the upfront construction and ongoing operations of the proposed development represent business opportunities for local vendors. This is known in economic impact terms as **“the indirect effect.”** Second, some of the salaries and wages paid as part of the upfront construction and ongoing operations of the proposed development get spent within the Township, producing additional economic activity. This is known in economic impact terms as **“the induced effect.”**

The multiplier effect of any economic activity, including the upfront construction and ongoing operations of the proposed development, is that direct expenditures yield an indirect effect and an induced effect, as described above. The scale and composition of this multiplier effect was estimated using IMPLAN, a standard input-output modeling program.

4.3 DIRECT ACTIVITY LEVELS OF CONSTRUCTION AND OPERATIONS

By itself, the proposed development will represent a significant amount of economic activity within the Township. Construction itself will represent \$91.2 million in direct expenditures, including **\$69.8 million in hard and soft costs** that will put construction workers and professional service providers to work. In addition, the sheer size of the construction project will provide procurement opportunities for vendors of a variety of goods and services.

Upon completion of construction, the proposed development will support business activity and new employment. Based on proposed square footage allocations by different types of commercial use, it is estimated that **the site will directly employ about 1,280 people** and represent \$83.3 million in annual sales, upon full occupancy.³

4.4 ESTIMATED ECONOMIC IMPACT OF THE PROPOSED DEVELOPMENT

These direct outlays, from construction of and then operation of the site, have a multiplier effect in the local, county, and state economy. Salaries and wages paid on site will get spent locally, supporting additional economic activity, while goods and services procured from local vendors will support those businesses and their employees.

Standard input-output modeling techniques were employed to account for these multiplier effects, and they suggest that the upfront and ongoing economic impact from the proposed development will be significant for the local, county, and state economy:⁴

The construction phase will represent approximately (see Table 4.1):

- \$74 million of one-time economic impact within the Township economy, supporting over 500 direct, indirect, and induced jobs and \$30 million in earnings.
- \$116 million of one-time economic impact within the County economy, supporting over 770 direct, indirect, and induced jobs and \$44 million in earnings.
- \$130 million of one-time economic impact within the Commonwealth economy, supporting over 840 direct, indirect, and induced jobs and \$48 million in earnings, and generating \$2.8 million in state tax revenues.

Ongoing, the proposed development at full occupancy will produce approximately (see Table 4.2):

³ This represents 1279 full- and part-time jobs. However, for purposes of this economic impact analysis, the direct job figure was converted to full-time equivalent (FTE) employees, specific to industry. In total, there are an estimated 1134 direct FTE employees.

⁴ Economic impacts for larger geographies are inclusive of the economic impacts of the smaller geographies, since the Township is wholly contained within the County, and the County is wholly contained within the Commonwealth.

- \$89 million of annual economic impact within the Township economy, supporting about 1,170 direct, indirect, and induced jobs and \$43 million in earnings.
- \$152 million of annual economic impact within the County economy, supporting about 1,540 direct, indirect, and induced jobs and \$61 million in earnings.
- \$162 million of annual economic impact within the Commonwealth economy, supporting over 1,580 direct, indirect, and induced jobs and \$64 million in earnings, and generating \$3.7 million in state tax revenues each year.

TABLE 4.1 – ONE-TIME UPFRONT ECONOMIC IMPACT OF CONSTRUCTION WITHIN MARPLE TOWNSHIP, DELAWARE COUNTY, AND THE COMMONWEALTH OF PENNSYLVANIA (IN \$M)

Economic Impact from Upfront Construction	Economic Impact to Marple Township Economy	Economic Impact to Delaware County Economy	Economic Impact to State of Pennsylvania Economy
Direct Output (\$M)	\$70	\$70	\$70
Indirect and Induced Output (\$M)	\$4	\$46	\$60
Total Output (\$M)	\$74	\$116	\$130
Total Employment (FTE)	505	776	843
Total Earnings (\$M)	\$30	\$44	\$48

Source: US Green Building Council, IMPLAN (2015), Econsult Solutions, Inc. (2017)

TABLE 4.2 – ONGOING ANNUAL ECONOMIC IMPACT OF PROPOSED DEVELOPMENT’S OPERATIONS WITHIN MARPLE TOWNSHIP, DELAWARE COUNTY, AND THE COMMONWEALTH OF PENNSYLVANIA (IN \$M)

Economic Impact from Ongoing Operations	Economic Impact to Marple Township Economy	Economic Impact to Delaware County Economy	Economic Impact to State of Pennsylvania Economy
Direct Output (\$M)	\$83	\$83	\$83
Indirect and Induced Output (\$M)	\$6	\$69	\$79
Total Output (\$M)	\$89	\$152	\$162
Total Employment (FTE)	1,168	1,542	1,584
Total Earnings (\$M)	\$43	\$61	\$64

Source: US Green Building Council, IMPLAN (2015), Econsult Solutions, Inc. (2017)



4.5 IMPROVING COMMUNITY QUALITY OF LIFE, CATALYZING ADDITIONAL INVESTMENT

Above and beyond the economic impacts from the proposed development, there are additional social benefits that will positively impact the community. Notably, the site will have a high-end grocery store as a key anchor tenant as well as a wide range of retail offerings. These will represent a desirable set of amenities for Township residents, and non-Township shoppers alike. Unlike Media and Newtown Square, Marple Township lacks a central location rich with these amenities. The proposed development will therefore bring invaluable resources and enhance the limited retail choices currently in the Township.

Having a high quantity and quality of retail choices is increasingly valued by local residents as a quality of life benefit, and at the proposed concentrations of activity are sure to draw in consumer spending from a wide range. Such investments have been shown to have significant spillover impacts beyond the economic activity, jobs, and multiplier effects calculated for this section. Specifically, they can improve the fundamentals of an area in terms of **attracting additional real estate investment**, which will further produce upfront construction activity and ongoing job creation. They also help to **bolster the commercial vitality of the area** and attract additional businesses to locate nearby. This is particularly true of high-end supermarket concepts, which draw in an attractive quantity and quality of consumer activity that can catalyze additional commercial investment nearby.

5.0 CONCLUSION

This report has endeavored to explore the economic value that will be produced by the proposed conservation and limited development proposal in order to inform the current public discussion about the development. The clear conclusion of the analyses conducted for this report is that **the proposed conservation and limited development will generate a compelling economic value to local residents and to local taxing jurisdictions.**

First, **the preserved and enhanced open space on site will generate meaningful economic gains and social benefits for local residents and local jurisdictions.** These gains and benefits are in the form of higher property values and a higher property tax base, significant ongoing direct use value gains, health care cost reductions, and ecological services rendered. Preserved and enhanced open space has value that residents and jurisdictions are willing to pay for, and its proposed conservation will generate significant ongoing value for the Township and its residents.

The proposed development will also generate a net fiscal impact (net new revenues minus net new expenditures) well in excess of what is currently being generated at the site, resulting in significant financial gains to Marple Township, the Marple Newtown School District, and Delaware County. **The net fiscal impact across all three jurisdictions is estimated to be about \$1.4 million, which is many multiples greater than the current net fiscal impact of \$15,000. It will also produce significant upfront and ongoing economic impacts for the local economy.**



APPENDIX A - SUPPORTING DOCUMENTATION FOR OPEN SPACE IMPACT ANALYSIS

Aggregate House Value Premium Produced by Proposed Development

Distance to Proposed Development	# Houses within Close Proximity to Proposed Development	Average House Value of These Houses	Aggregate House Value of These Houses
1 Mile	2,423	\$367,509	\$890 million

Aggregate House Value of Houses within Close Proximity to Proposed Development	Property Value Impact Produced by Proximity to Open Space	Aggregate Property Value Impact from Open Space
\$890 million	1% - 4%	\$8.9 million - \$35.6 million

1. Proximity to open space affords a premium on house values. Therefore, the aggregate house value close to the proposed development site was calculated.
2. The number of households within 1 mile of the site was determined using ESRI Business Analyst, which uses data from the 2014 American Community Survey. ESRI Business Analyst uses granular geography level data to aggregate to custom geographies. Within a one mile radius of the development, it is estimated that there are an estimated 2,423 households.
3. Average house value was also determined using ESRI Business Analyst. The value of a home within a one mile radius of the site is estimated to be \$367,509.
4. In aggregate, the total value of homes within a mile of the site is approximately \$890 million.
5. A proxy for the premium produced by proximity to open space can be taken from an analysis by Econsult Corporation in 2010 Green Space Alliance and Delaware Valley Regional Planning Commission report (<http://www.dvrpc.org/OpenSpace/Value/>). This study directly analyzed the property value premium associated with proximity to open space, and found it to range from 0.7 percent to 14 percent for houses within a ¼ mile, depending on neighborhood type and open space type. To be conservative, 1 percent to 4 percent was used for houses within a mile.
6. Having a 1 to 4 percent premium yields approximately \$8.9 million to \$35.6 million in total increased property value from adding the open space.
7. Note that the property value increase is only accounting for the increasing value people place on houses now that they are near open space. There are likely to be three additional sources of increased property value and therefore attendant increases to the local property tax base. First, it is likely that the addition of enhanced open space will increase property values throughout the Township, not just for houses within a mile of the development site. Second,



proximity to attractive open space will not only increase the value people place on their houses in their current form, but may lead to a higher than usual amount of investment in those houses, in terms of adding or enhancing the space in their houses. Third, the addition of attractive open space may also induce new development activity by real estate developers who seek to meet the new demand for residential and other locations proximate to such open space.



Aggregate Annual Property Tax Revenue Gain Produced by Proposed Development

	Township	School District	County	Total
Property Value Impact (\$M)	\$8.9 - \$35.6	\$8.9 - \$35.6	\$8.9 - \$35.6	\$8.9 - \$35.6
Equalization Ratio	61%	61%	61%	61%
Assessed Value Impact (\$M)	\$5.4 - \$21.6	\$5.4 - \$21.6	\$5.4 - \$21.6	\$5.4 - \$21.6
Property Tax Rate (per \$1,000)	4.480	18.069	5.604	28.153
Property Tax Revenue Impact (\$000)	\$24 - \$96	\$98 - \$392	\$30 - \$120	\$153 - \$612

1. The increased property value was multiplied by Delaware County's equalization ratio for 2017. All properties in Delaware County are taxed on 61 percent of the market value. Therefore, \$8.9 million to \$35.6 million in market value will yield \$5.4 million to \$21.6 million in assessed value. (<http://dced.pa.gov/local-government/boards-committees/tax-equalization-division/>).
2. The tax rates for each jurisdiction are then applied to the assessed value. In Marple Township, property tax is paid to Marple Township, the Marple Newtown School District, and Delaware County. The 2017 millage rates for Marple Township are 4.48 to the Township, 18.069 to the School District, and 5.604 to the County (http://munstats.pa.gov/Reports/ReportInformation2.aspx?report=taxes_Dyn_Excel).
3. This yields \$24,000 to \$96,000 to the Township, \$98,000 to \$392,000 to the School District, and \$30,000 to \$120,000 to the County in new property tax revenues, or about \$150,000 to \$600,000 more per year to all three taxing jurisdictions combined.
4. It is important to understand that these calculations do not take into account the extent to which additional housing in the Township beyond the 1-mile distance will also benefit from the open space in the proposed development and will therefore likely see some premium produced by the addition of this open space.
5. It is also important to understand that these calculations are assuming that increases in house value produced by the open space will actually get accounted for in property assessments. If property assessments lag or do not adjust, that will affect the property tax revenue impact on the taxing jurisdictions.

Direct Use Value Produced by Availability of Open Space in Proposed Development

Potential Use	Unit Day Value (\$2017)	Total Uses	Total Recreational Value
Walking	\$1.78	47,092	\$84,000
Jogging or running	\$3.93	7,370	\$29,000
Dog walking	\$1.60	19,445	\$31,000
Bicycling	\$3.82	7,113	\$27,000
Picnicking	\$3.05	772	\$2,500
All Activities		81,792	\$173,500

1. These Unit Day values come from the Philadelphia Parks Alliance report (http://conservationtools.org/library_items/1061-How-Much-Value-Does-the-City-of-Philadelphia-Receive-from-its-Park-and-Recreation-System-) and are relevant to the Philadelphia 5-county region. The direct use value represents the amount of money residents save by not having to pay market rates to enjoy general park activities (if not publicly available).
2. The estimated net new visitor volume was estimated by analyzing the habits of Philadelphia residents who do not live within a ½ mile of a river or park. This data is available from the Statewide Comprehensive Outdoor Recreation Plan (SCORP) survey results which are collected by the National Parks Service from each state every five years. By comparing the total number of residents to the total uses for each activity category, we were able to estimate the current activity levels of those living nearby the proposed open space on the Archdiocese site.
3. This is based on usage patterns reported by the Commonwealth at state parks, which tend to be used more on weekends, whereas for residents living near the proposed site, some uses will be more frequently (e.g. walking your dog once or twice a day vs. taking it to a state park once or twice a month). The use per resident ratios for each activity were applied to the 6,409 residents in Marple Township that live within a mile of the site. It is important to note that there will be additional users that come from further away to use the open space and as a result, additional recreational value generated by the site. Indeed, the open space is intended to provide a benefit to all residents in the Township.
4. The above are baseline assumed uses that will definitely be available on site. There will potentially be additional, more intensive recreational uses on site, although programming has not yet been finalized. If so, this would yield additional users and/or higher-valued uses, and therefore a greater economic value. Because these additional uses are not yet confirmed, they are not included in this analysis.



Health Care Cost Reduction Associated with Active Recreation Occurring on Open Space in Proposed Development

Aggregate Health Care Cost Savings in Delaware County	Health Care Cost Savings Per Acre in Delaware County	Estimated Aggregate Health Care Cost Savings from Open Space in Proposed Development
\$193 Million	\$15,000	\$2.6 million

- Aggregate health benefits from open space were calculated for each of the counties in the Philadelphia five-county region by Econsult Corporation in the Green Space Alliance and Delaware Valley Regional Planning Commission report (<http://www.dvrpc.org/OpenSpace/Value/>).
- These health care cost reductions are from the following categories:
 - Better immediate health outcomes – Access to open space increases active recreation and in turn makes people healthier and thus less likely to need to go to the doctor.
 - Better long-term health outcomes – By providing more access to open space and thus increasing active recreation, the proposed development will also stave off chronic health problems that are years and decades in the making, thus lowering health care costs for individual participants when they get older.
 - Fewer worker’s compensation claims – There is a growing understanding of the connection between access to open space, increased active recreation, and reduced worker’s compensation claims. Keeping workers from being out of work for extended periods, and avoiding the administrative burdens associated with such filings, is an important aspect of the cost savings produced by making open space more accessible.
 - Reduced absenteeism and “presenteeism” – Healthier people, in addition to requiring less and less costly health care services, also miss work less often (absenteeism) and, by being sick less often, or less likely to have episodes in which they are at work but not at 100 percent (“presenteeism”). These avoided negatives are another component of how open space improves productivity and minimizes costs.
- The existing literature connects open space to these health care cost reductions, and enabled an estimate of the aggregate health care cost reduction from open space in the Philadelphia five-county region and by county. A Delaware County per-acre estimate of \$15,000 was determined by dividing Delaware County aggregate cost reductions by total open space acreage.
- Applying that per-acre estimate to the open space in the proposed development, it is estimated that the proposed development will yield \$2.6 million in health care savings.
- It is important to understand that this approach does not make any assumptions or promises about usage of the new open space being any different than average. If the new open space



generates additional activity, either from more users than average, more uses than average, or more intensive uses than average, then health care cost reductions may be even higher.



Ecological Services Rendered by Proposed Development

Ecological Service Category	Value Generated Per Acre	Value Generated by Proposed Development
Water Supply / Water Quality	\$400	\$77,000
Flood Mitigation	\$300	\$57,000
Air Pollution / Carbon Sequestration	\$100	\$22,000
Miscellaneous	\$100	\$9,000
Total	\$900	\$164,000

1. Various ecological services were valued by taking estimates published in Econsult Corporation's report for the Green Space Alliance / Delaware Valley Regional Planning Commission report (<http://www.dvrpc.org/OpenSpace/Value/>). Those estimates in turn were based on over 100 academic studies, and applied to open space in the Philadelphia five-county region.
2. For the purposes of valuing the ecological services rendered by the open space in the proposed development, Delaware County estimates were used, and divided by the total open space acreage in Delaware County to arrive at a value generated per acre.
3. The total acreage of open space in the proposed development was provided by Carlino and Natural Lands Trust, and is estimated to be 174 acres. This will represent a 1.35 percent increase in the amount of open space in the County.
4. Multiplying through by the estimated per acre amounts yields about \$160,000 in ecological services rendered by the open space in the proposed development.
5. It is important to understand that this approach assumes an average level of ecological services rendered, and does not take into account the specific characteristics of the open space or of its surrounding environment. If the open space is more effective in rendering ecological services than these per-acre averages, then it will create more value than what is reported here.

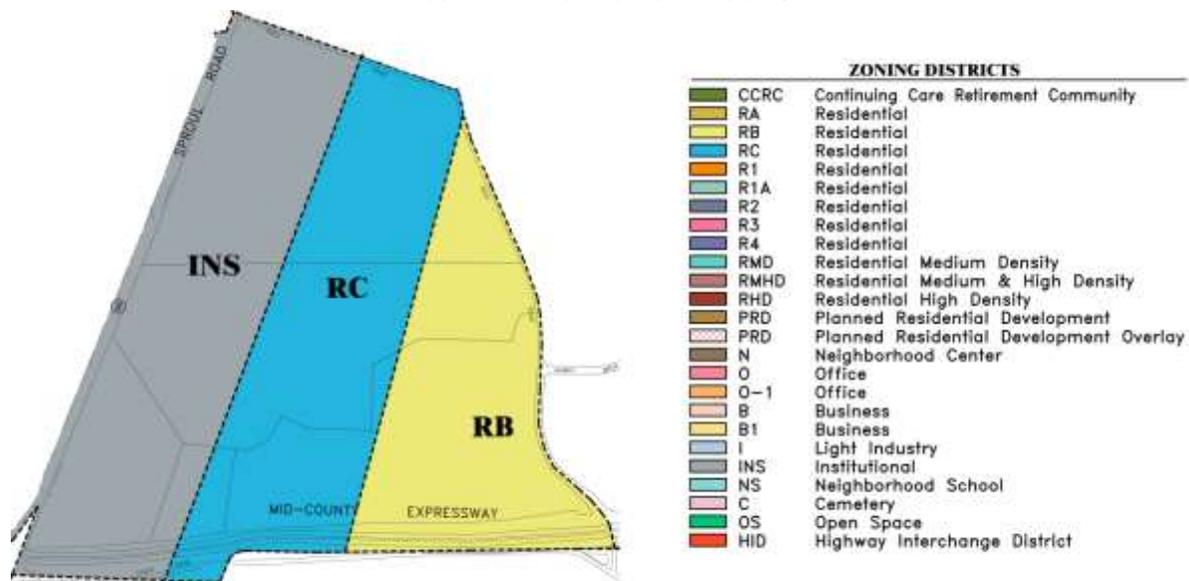


APPENDIX B - SUPPORTING DOCUMENTATION FOR FISCAL IMPACT ANALYSIS

Current Zoning

Institutional zoning allows the area to be developed as a school, medical facility, library, museum, cemetery, or municipal facility. However, for the institutionally zoned portion of the site, no new development is assumed due to the uncertainty of what could be built on site.

FIGURE B.1 – ZONING DISTRICTS ON SITE



Source: Marple Township (2017)

Property Tax Revenues

Property Tax Revenues	Current	Carlino
Commercial Portion	\$0	\$91,810,673
Market Value		\$91,810,673
STEB Ratio		61%
Assessed Value		\$56,004,511
Township Rate		0.004480
School District Rate		0.018069
County Rate		0.005604
Collection Rate		99%
Township PTR	\$2,341	\$248,391
School District PTR	\$9,441	\$1,001,826
County PTR	\$2,928	\$310,711

1. The site owes \$14,711 in property taxes for 2017 according to the Delaware County Board of Assessments (folio number 25-00-04498-02, see <http://w01.co.delaware.pa.us/pa/publicaccess.asp?real.x=50&real.y=40>). ESI divided this amount between the Township, School District, and County based on the relative millage rates.
2. Property taxes for the development were estimated based on the market value for the property and the Delaware County STEB Ratio of 61%. This says that the property will be taxed on its assessed value, which will be 61% of a property's market value. This value comes from the PA State Tax Equalization Board (see <http://dced.pa.gov/local-government/boards-committees/tax-equalization-division/>).
3. Carlino provided the estimated market value for the commercial site based on predicted NOI and a 7.5 percent capitalization rate. [Note: as this market value has not yet been determined by the taxing jurisdictions, and may very well be lower, Carlino will want to be mindful of what of this analysis it presents to the taxing jurisdictions and makes publicly available.]
4. The tax rates for each jurisdiction are then applied to the assessed value. In Marple Township, property tax is paid to Delaware County, Marple Township, and the Marple Newtown School District. The 2017 millage rates for Marple Township are 5.604 to the County, 4.480 to the Township, and 18.069 to the School District. (http://munstats.pa.gov/Reports/ReportInformation2.aspx?report=taxes_Dyn_Excel)
5. Assuming a collection rate of 99 percent, the development yields \$248,391 in property tax revenue to the Township, \$1,001,826 to the School District, and \$310,711 to the County.

Deed Transfer Tax Revenues

Deed Transfer Tax Revenues	Current	Carlino
Unit Price	\$0	\$0
Land Value	\$0	\$30,000,000
Total Sales Value	\$0	\$91,810,673
Turnover (years)	-	10
Township Rate	\$0	0.5%
School District Rate	\$0	0.5%
County Rate	\$0	0%
Township DTTR (upfront)	\$0	\$150,000
School District DTTR (upfront)	\$0	\$150,000
County DTTR (upfront)	\$0	\$0
Township DTTR (ongoing)	\$0	\$45,905
School District DTTR (ongoing)	\$0	\$45,905
County DTTR (ongoing)	\$0	\$0

1. Deed transfer tax revenues for the proposed development will be generated upon initial land transfer. Carlino provided ESI with the cost of the land, which is \$30 million.
2. With a 0.5 percent rate for the Township and for the School District each, this works out to \$150,000 upfront for the Township and the School District each. The Township and the School District will see deed transfer tax revenues again if Carlino sells the site in the future.
3. Assuming that this property then turns over in ownership every 10 years, that yields an average of \$45,900 in annual deed transfer tax revenues to the Township and to the School District each year assuming \$92 million in total market value upon completion of the development.⁵
4. No amounts are assumed for the site in its current use, as it is vacant.

⁵ The Commonwealth of Pennsylvania also has a 1 percent deed transfer tax rate which would apply to both the initial land transfer to Carlino, as well as to each subsequent sale of the property. This equates to \$300,000 upfront from Carlino in deed transfer tax to the Commonwealth. Assuming turnover every 10 years, the property at market value (\$92 million) would also generate on average about \$91,800 annually in deed transfer tax to the Commonwealth.

Local Services Tax Revenues

Local Services Tax	Current	Carlino
# Workers on Site	--	1,279
Total # of New Workers	--	640
Local Services Tax	--	\$52
Tax Revenue	\$0	\$33,254

1. There will be 1,279 full- and part-time workers at the development based on information from the economic impact calculation. It is further assumed that half of these workers did not previously work in the Township.
2. The local services tax (LST) in Marple Township is \$52 per worker (http://munstats.pa.gov/Reports/ReportInformation2.aspx?report=taxes_Dyn_Excel). Assuming 640 newly relocated workers on site, this equates to \$33,254 in local services tax revenue to the Township from the proposed development.

Township Expenditures

Township Expenditures	Annual	% of Budget	% Variable	\$ Variable
Public Safety	\$8,230,034	34.0%	50%	\$4,115,017
Highway, Streets, and Parks	\$3,532,818	14.6%	25%	\$883,205
General Government	\$2,018,947	8.3%	10%	\$201,895
Other	\$2,524,314	10.4%	10%	\$252,431
Refuse Fund (e.g. trash collection)	\$1,994,134	8.2%	25%	\$498,534
Paxon Hollow Fund	\$1,772,420	7.3%	10%	\$177,242
Sewer Fund	\$3,471,487	14.3%	25%	\$867,872
Highway Aid Fund	\$650,000	2.7%	10%	\$65,000
Total	\$24,194,154			\$7,061,195
Township Population	23,613			23,613
Variable Cost per Capita				\$299

Township Expenditures	Current	Carlino
New Residents	0	640 ⁶
Variable Cost per Capita	\$299	\$299
New Township Expenditures	\$0	\$191,235

1. New Township expenditures are estimated first by calculating a marginal cost per new resident, and then multiplying by the number of new residents being added.
2. New residents may add expenditures for the Township because they consume services and add wear and tear to local roads. However, they do not add an expenditure amount equal to the current average Township expenditure per resident (i.e. total Township expenditures divided by current population), because a considerable portion of Township expenditures is fixed, in terms of whether it increases or decreases based on changes to resident population.
3. For example, the cost of keeping the Township building open does not materially go up or down if the Township increases or decreases its resident population. Even in categories where expenditures do go up or down based on resident population, there are still fixed

⁶ This represents “estimated resident equivalents”, which we conservatively estimate to represent the new traffic and activity that will occur in the Township and that will require new Township expenditures as a result of the commercial development.



elements. For example, public safety outlays will depend on resident population, but there is still only one police chief, one police building, and so on.

4. ESI therefore estimated the proportion of each major expenditure category that is variable in nature, i.e. that moves up and down based on resident population. These estimates were used to calculate a variable cost per capita, which is to say on the margins how much in new expenditures will the Township bear upon adding one new resident. This was estimated to be \$299.
5. Now we determine how many new residents will be added to the Township from a proposed development.
6. The proposed development is not adding residents but it is adding commercial activity, workers, and traffic. We assume that the proposed development is adding the equivalent of 640 residents, corresponding to half the number of workers who will be new to the site (1,279). These workers will impose some expenditure burden on the Township but not nearly as much as residents, since most will live elsewhere and draw services from other jurisdictions. However, this is balanced by the fact that, besides workers, customers of the various commercial uses will be in the Township and will also impose some expenditure burden on the Township. We calculate this expenditure burden to be \$191,235. Some of these workers and shoppers are not actually net new to the Township, and therefore they will not impose much if any net new expenditures on the Township.
7. As it is not known whether 640 resident equivalents is correct or not, this number can be tested with sensitivity analyses to see if major deviations from it result in different results in the fiscal impact analysis. Given the significant difference between the net fiscal impact for the proposed development and the status quo, it does not appear that any assumption of resident equivalents would yield a different outcome.

County Expenditures

County Expenditures	Annual	% Variable	\$ Variable
Social Welfare	\$87,220,000	10%	\$8,722,000
Administration of Justice	\$141,682,000	5%	\$7,084,100
General Government	\$19,100,000	5%	\$955,000
Other	\$105,055,000	5%	\$5,252,750
Total	\$353,057,000		\$22,013,850
County Population	563,402		563,402
Variable Cost per Person			\$39

County Expenditures	Current	Carlino
New Residents	0	640 ⁷
Variable Cost per Capita	\$39	\$39
New County Expenditures	\$0	\$24,987

1. A similar approach was taken to estimate net new County expenditures. Here the variable proportions are considered to be much smaller, since any new development would represent a very small increase in the County population and therefore could fairly easily be absorbed with minimal increase in County expenditures. Again, while the development represents workers and shoppers and therefore net new expenditures to the County, some of these workers and shoppers are not actually net new to the County and therefore those will not impose much if anything in net new expenditures to the County.
2. Based on the assumptions above, it is estimated that the marginal cost per new County resident is \$39, which means \$24,987 in new County expenditures from the proposed development.

⁷ This is an "estimated resident equivalents".



Total Fiscal Impact

Total revenues and expenditures from the two scenarios are summarized below, as is the difference between the revenues and expenditures, which represents the estimated net fiscal impact from each scenario.

Revenue Summary	Current	Carlino
Township - Property Tax	\$2,341	\$248,391
Township - Deed Transfer Tax	\$0	\$45,905
Township - Local Services Tax	\$0	\$33,254
Township - Total	\$2,341	\$327,551
School District - Property Tax	\$9,441	\$1,001,826
School District - Deed Transfer Tax	\$0	\$45,905
School District - Total	\$9,441	\$1,047,731
County - Property Tax and Total	\$2,928	\$310,711

Revenue Summary	Current	Carlino
Township	\$2,341	\$327,551
School District	\$9,441	\$1,047,731
County	\$2,928	\$310,711
Total	\$14,711	\$1,685,993

The total amount of revenue currently provided to all three jurisdictions by the site is \$14,711. For the development, this revenue would increase to nearly \$1.7 million.

Expenditure Summary	Current	Carlino
Township	\$0	\$191,235
School District	\$0	\$0
County	\$0	\$24,987
Total	\$0	\$216,222

Looking at the total number of new expenditures, the status quo adds no new expenditures at any level. The development would add \$216,222 in new expenditures.

Overall Summary	Current	Carlino
Township	\$2,341	\$136,315
School District	\$9,441	\$1,047,731
County	\$2,928	\$285,724
Total	\$14,711	\$1,469,770

Based on this approach and these inputs and assumptions, the proposed development is net positive for the Township, School District, and the County. The development benefits all three taxing jurisdictions significantly more than the site does currently.



APPENDIX C - SUPPORTING DOCUMENTATION FOR ECONOMIC IMPACT ANALYSIS

Conversion of Developer Construction Budget into Modeled Construction Costs

Use Type	Total Construction Expenditures (\$M)	Modeled Portion	Modeled Construction Expenditures (\$M)
Hard and Soft Costs	\$69.8	100%	\$69.8
Land	\$15.5	0%	\$0.0
Fees	\$5.9	0%	\$0.0
Total	\$91.2	-	\$69.8

1. Carlino provided two pro forma documents that divided project development costs into hard and soft costs, totaling \$91.2 million. This figure also represents the cost associated with purchasing the land where the development will be built, the cost of legal services to purchase the land, and associated fees.
2. Land and fee expenditures are not typically included in economic impact analyses as they do not circulate through the local economy and therefore do not create economic impact. In order to make this data ready for modeling, land costs and fees (\$15.5 and \$5.9 million respectively) were excluded from the total, and only hard and soft construction costs were used.
3. After accounting for these factors, the construction expenditures associated with the proposed development that will be modeled totaled \$69.8 million.

Economic and Tax Revenue Impact of the Proposed Construction within Marple Township, Delaware County, and the State of Pennsylvania

Economic Impact from Upfront Construction	Economic Impact to Marple Township Economy	Economic Impact to Delaware County Economy	Economic Impact to State of Pennsylvania Economy
Direct Output (\$M)	\$70	\$70	\$70
Indirect and Induced Output (\$M)	\$4	\$46	\$60
Total Output (\$M)	\$74	\$116	\$130
Total Employment (FTE)	505	776	843
Total Earnings (\$M)	\$30	\$44	\$48

Tax Revenue Impact from Upfront Construction	Tax Revenue Impact to Commonwealth of Pennsylvania Government
Personal Income Taxes	\$1.5
Sales and Use Taxes	\$1.0
Business Taxes	\$0.3
Total	\$2.8

1. These numbers reflect the economic impact of the proposed construction expenditures within Marple Township, Delaware County and the State of Pennsylvania. All output figures and earnings are IMPLAN estimates from direct expenditures. However, the total employment figure reflects the conversion of IMPLAN’s employment estimates into full-time equivalents (FTE). Because IMPLAN jobs include full-time, part time and temporary positions, one cannot tell the proportion that is full time. Thus IMPLAN employment estimates are converted to FTE for reporting purposes.
2. To calculate the FTE conversion, a spreadsheet containing IMPLAN sector codes and ratios (which equal FTE divided by employment estimate) was used.⁸ To calculate FTE from IMPLAN employment data, the IMPLAN employment estimate is multiplied by the sector ratio. For example, if the results of an IMPLAN analysis indicate that 20 jobs will be created in Sector 19, and the ratio for that sector happens to 0.8630, the FTE would be 20 * 0.8630 or 17.3. The resulting multiplication is added across all IMPLAN sectors to get the FTE employment total. The FTE figure found in the above table reflects direct, induced and indirect employment.
3. Township-level output, employment, and earnings estimates are not directly generated by IMPLAN but are shared down from a single-county result. In order to create an estimate for

⁸ <https://goo.gl/6KTfd6>, “536 FTE and Employment Compensation Conversion Table,” IMPLAN

Marple Township, Delaware County level estimates were apportioned down to Township levels.

4. This calculation assumes that most of the direct activity occurs on-site, and thus the direct figure remains unchanged (this is why the direct output is the same across all geographies). However, the indirect and induced number is reduced to reflect the economic impacts generated by people who work and live in the Township.
5. The estimate for the proportion of people who work and live in the Township was pulled from Census local employment dynamics data, which illustrates where labor supply is located.⁹ The proportion of people who work in the Township who also live in the Township is 8.2 percent, and this was multiplied by the indirect and induced total figures for Delaware County and added to the total direct to get a figure for Marple Township. For instance, \$46 million (indirect and induced output) multiplied by 8.2 percent is \$4 million. This \$4 million plus the \$70 million direct output from construction reflects the total impact in the Township.
6. Economic impacts continue to ripple out to the rest of the state, mostly in adjoining counties. Thus, \$70 million of direct construction activity produces another \$60 million in indirect and induced output, for a total statewide economic impact of \$130 million, supporting 840 jobs and \$48 million in earnings.
7. Tax revenue impacts to the Township and School District were covered in the previous section. However, construction also produces one-time increases to various Commonwealth of Pennsylvania tax bases, and thus generates tax revenues to the Commonwealth.
8. The state-level tax revenue estimates above are based on an internal tax revenue impact model created to translate total economic impacts into their commensurate tax revenue gains.¹⁰ It uses IMPLAN estimates of total income generated and total value added (i.e., gross output, or the difference between the total output and the cost of its intermediate outputs), and apportions tax revenue gains based on commensurate one-time expansions in the state economy.

⁹ <https://goo.gl/GXLY8j>, "Longitudinal Employer-Household Dynamics", Census Bureau

¹⁰ Total earnings, total value added and effective income tax were sourced from the Federal Reserve Bank of St. Louis (2015), and the Commonwealth of Pennsylvania Tax Compendium (2015).



Conversion of Square Footage by Commercial Type to Employment by Commercial Type with Direct Output Estimates

Project	Area (sq. feet)	Building Area per Employee (sq. feet)	Employee Estimate	Estimated Direct Labor Income	Estimated Annual Sales
High-end grocer ¹¹	115,000	-	400	\$11.2	\$25.9
Sporting goods retailer	50,000	549	91	\$1.9	\$5.1
Junior Box retail	62,000	549	113	\$2.8	\$6.9
Small shop retail	37,600	588	64	\$0.9	\$2.5
Bank	3,500	317	11	\$0.8	\$2.2
Convenience store	5,500	92	60	\$1.6	\$3.6
Fast-food chain	5,000	92	54	\$1.4	\$2.3
Medical office or similar provider ¹²	100,000	207	483	\$20.1	\$34.3
Maintenance and Utility Expenses ¹³	-	-	3	\$0.1	\$0.4
Total	378,600	-	1,279	\$40.9	\$83.3

1. The above table lists the planned or proposed uses for the development by square footage (the first two columns).
2. Data from the US Green Building Council on average building area per employee were used to translate use by square feet into a commensurate number of employees per use on site (the next two columns).¹⁴ For example, the building area per employee for specialty retail is estimated to be 549 square feet per employee. The proposed Sporting Goods development envisions 50,000 square feet of retail store space. Thus the estimated number of employees is 50,000 divided by 549, or 91 employees.
3. The only exceptions to this calculation were the employment estimates for the high-end grocer and maintenance and utility expenses. These two are based on direct information from Carlino on potential tenants and operating expenses. Note that the operating expenses modeled (\$0.4 million in the last row) are included in this table, and they exclude operating expenses for property management, insurance and property tax (\$1.9 million).

¹¹ Employment estimates were not used for this category, as an estimate for a high-end grocer was provided by Carlino, from which a lower estimate was used to be conservative.

¹² The employment estimate for this category changed since it was last reported because it was initially assumed that the Main Line Health Center or comparable provider was a hospital. It has since been categorized as a medical office, changing the building area per employee estimate and thus the overall employee estimate.

¹³ This is based on a sheet provided by Carlino outlining the potential operating expenses. The modeled operating expenses exclude property management fees, insurance, and property tax.

¹⁴ <https://goo.gl/s8uRrs>, "Building Area per Employee by Business Type", US Green Building Council (2008)

4. If given an employee count, IMPLAN can generate an estimate of the total annual sales associated with the store or service. Hence, for the sporting goods category, 91 employees were put into IMPLAN to generate the total employee compensation and total annual sales figures, which are \$1.9 million and \$5.1 million respectively (the last two columns).



Economic and Tax Revenue Impact of the Proposed Development’s Operations within Marple Township, Delaware County, and the State of Pennsylvania

Economic Impact from Ongoing Operations	Economic Impact to Marple Township Economy	Economic Impact to Delaware County Economy	Economic Impact to State of Pennsylvania Economy
Direct Output (\$M)	\$83	\$83	\$83
Indirect and Induced Output (\$M)	\$6	\$69	\$79
Total Output (\$M)	\$89	\$152	\$162
Total Employment (FTE)	1,168	1,542	1,584
Total Earnings (\$M)	\$43	\$61	\$64

Tax Revenue Impact from Ongoing Operations	Tax Revenue Impact to Commonwealth of Pennsylvania Government
Personal Income Taxes	\$2.0
Sales and Use Taxes	\$1.4
Business Taxes	\$0.4
Total	\$3.7

1. These numbers reflect the economic impact of the ongoing operations of the proposed development within Marple Township, Delaware County and the State of Pennsylvania. All output figures and earnings are IMPLAN estimates from direct expenditures. However, the total employment figure reflects the conversion of IMPLAN’s employment estimates into full-time equivalents (FTE). Because IMPLAN jobs include full-time, part time and temporary positions, one cannot tell the proportion that is full time. Thus IMPLAN employment estimates are converted to FTE for reporting purposes.
2. To calculate the FTE conversion, a spreadsheet containing IMPLAN sector codes and ratios (which equal FTE divided by employment estimate) was used.¹⁵ To calculate FTE from IMPLAN employment data, the IMPLAN employment estimate is multiplied by the sector ratio. For example, if the results of an IMPLAN analysis indicate that 20 jobs will be created in Sector 19, and the ratio for that sector happens to 0.8630, the FTE would be 20 * 0.8630 or 17.3. The resulting multiplication is added across all IMPLAN sectors to get the FTE employment total. The FTE figure found in the above table reflects direct, induced and indirect employment.
3. Township-level output, employment, and earnings estimates are not directly generated by IMPLAN but are shared down from a single-county result. In order to create an estimate for

¹⁵ <https://goo.gl/6KTfd6>, “536 FTE and Employment Compensation Conversion Table,” IMPLAN

Marple Township, Delaware County level estimates were apportioned down to Township levels.

4. This calculation assumes that most of the direct activity occurs on-site, and thus the direct figure remains unchanged (this is why the direct output is the same across all geographies). However, the indirect and induced number is reduced to reflect the economic impacts generated by people who work and live in the Township.
5. The estimate for the proportion of people who work and live in the township was pulled from Census local employment dynamics data, which illustrates where labor supply is located.¹⁶ The proportion of people who work in the Township who also live in the Township is 8.2 percent, and this was multiplied by the indirect and induced total figures for Delaware County and added to the total direct to get a figure for Marple Township. For instance, \$69 million (indirect and induced output) multiplied by 8.2 percent is \$6 million. This \$6 million plus the \$83 million direct output from operations reflects the total impact in the Township.
6. Economic impacts continue to ripple out to the rest of the state, mostly in adjoining counties. Thus, \$83 million of direct operating activity produces another \$79 million in indirect and induced output, for a total statewide economic impact of \$162 million, supporting 1,584 jobs and \$64 million in earnings.
7. Tax revenue impacts to the Township and School District were covered in the previous section. However, operations also produce ongoing increases to various Commonwealth of Pennsylvania tax bases, and thus generate tax revenues to the Commonwealth.
8. The state-level tax revenue estimates above are based on an internal tax revenue impact model created to translate total economic impacts into their commensurate tax revenue gains.¹⁷ It uses IMPLAN estimates of total income generated and total value added (i.e., gross output, or the difference between the total output and the cost of its intermediate outputs), and apportions tax revenue gains based on commensurate ongoing expansions in the state economy.

¹⁶ <https://goo.gl/GXLY8j>; “Longitudinal Employer-Household Dynamics”, Census Bureau

¹⁷ Total earnings, total value added and effective income tax were sourced from the Federal Reserve Bank of St. Louis (2015), and the Commonwealth of Pennsylvania Tax Compendium (2015).

