

THE ECONOMIC IMPACT OF CHESTNUT HILL INSTITUTIONS



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TABLE OF CONTENTS

| | |
|--|-----|
| Table of Contents..... | ii |
| Executive Summary | iii |
| 1.0 Introduction | 5 |
| 1.1 Chestnut Hill Institutions | 5 |
| 1.2 Economic Benefits Delivered by Member institutions..... | 6 |
| 1.3 Report Overview | 7 |
| 1.4 Report Methodology | 9 |
| 2.0 Impact from Operations | 12 |
| 2.1 Section Overview..... | 12 |
| 2.2 Direct Operating Expenditures | 12 |
| 2.3 Economic Impact from Direct Operating Expenditures | 13 |
| 2.4 Fiscal Impact from Direct Operating Expenditures..... | 14 |
| 3.0 Impact from Capital Investments..... | 16 |
| 3.1 Section Overview..... | 16 |
| 3.2 Direct Capital Investments | 16 |
| 3.3 Economic Impact from Annual Capital Investments | 18 |
| 3.4 Fiscal Impact from Annual Capital Investments | 18 |
| 4.0 Impact from Ancillary Spending | 19 |
| 4.1 Section Overview..... | 19 |
| 4.2 Recreational Visitor Spending Attracted to the Area | 20 |
| 4.3 Hospital Patient Spending Attracted to the Area..... | 22 |
| 4.4 Student Spending Attracted to the Area..... | 23 |
| 4.5 Economic Impact from Ancillary Spending..... | 24 |
| 4.6 Fiscal Impacts from Ancillary Visitor Spending | 25 |
| 5.0 Impact from Enhanced Property Values..... | 27 |
| 5.1 Section Overview..... | 27 |
| 5.2 Property Value Impacts of Cultural Amenities | 28 |
| 5.3 Incremental Property Value Attributable to Member institutions | 31 |
| 5.4 Fiscal Impact of Increased Property Values | 33 |
| 6.0 Community And Social Impacts..... | 34 |
| 6.1 Educational Programming | 34 |
| 6.2 Mission-Driven Advocacy | 35 |
| 6.3 Public Service Provision | 35 |
| 6.4 Community Service and Programming..... | 37 |
| 6.5 Institutional Cooperation | 38 |
| Appendix A – Detailed Economic and Fiscal Impact Methodology | A-1 |
| Appendix B - About Econsult Solutions, Inc..... | A-3 |

EXECUTIVE SUMMARY

The Chestnut Hill neighborhood includes a diverse group of institutions, serving the community, regional residents, and out-of-town visitors. These anchor institutions are hubs of economic activity, and also important quality of life drivers through their mission-driven programming, including education, health care, advocacy, environmental protection, economic development and cultural enhancement. This report articulates and quantifies the aggregate economic impact of these organizations on an annual basis within the 5-County Philadelphia region.

Member Institutions

- Chestnut Hill Business District
- Chestnut Hill College
- Chestnut Hill Conservancy
- Chestnut Hill Hospital
- Friends of the Wissahickon
- Morris Arboretum
- Norwood-Fontbonne Academy
- Philadelphia Cricket Club
- Springside Chestnut Hill Academy
- Woodmere Art Museum

Economic impacts attributable to the member institutions are described and quantified across four major benefit categories within this report:

- 1) The member institutions are major centers of employment and procurers of goods and services in support of their ongoing operations. The institutions spend approximately \$210 million per year on their operations, more than half of which goes to salaries and benefits for their 2,100 direct employees.
- 2) The member institutions are major initiators of construction projects to renovate and upgrade their facilities through their capital investments. The institutions undertake approximately \$18 million per year in capital improvements above and beyond routine maintenance.
- 3) The member institutions and their programming attract recreational visitors, patients and their visitors and students to the area, resulting in ancillary spending. Total ancillary spending brought into the area (above and beyond spending captured by the institutions) is estimated at \$27 million annually.
- 4) The member institutions serve as an aesthetic, recreational and cultural amenity for the nearby neighborhood, resulting in enhanced property values. Residential properties within a half mile radius of the institutions alone are estimated to gain \$49 million in aggregate property value as a result of this positive amenity value.

In aggregate, it is estimated that the annual expenditures attributable to operations, construction, and visitor spending associated with the Chestnut Hill Institutional Leaders has an annual aggregate economic impact of \$433 million each year within the 5-County Region, supporting nearly 3,500 jobs with more than \$180 million in earnings. Including property value effects, this total economic impact grows to \$482 million (see Table ES 1).

TABLE ES.1 – ANNUAL ECONOMIC IMPACT OF MEMBER INSTITUTIONS WITHIN THE 5-COUNTY REGION

| Category | Ongoing Operations | Capital Investments | Ancillary Spending | Enhanced Property Value | Total |
|------------------------------------|--------------------|---------------------|--------------------|-------------------------|--------------------|
| Total Employment | 2,880 | 210 | 390 | -- | 3,480 |
| Total Earnings (\$M) | \$153 | \$15 | \$14 | -- | \$182 |
| Total Output (\$M) | \$360 | \$32 | \$41 | -- | \$433 ¹ |
| Incremental Property Value (\$M) | -- | -- | -- | \$49 | \$49 |
| Total Economic Impact (\$M) | \$360 | \$32 | \$41 | \$49 | \$482 |

The economic activity generated by operations, construction, ancillary visitor spending, and increased property value result in additional tax revenues for the City of Philadelphia and the Commonwealth of Pennsylvania. Annual fiscal gains are estimated at \$6.1 million for the City of Philadelphia and \$9.8 million for the Commonwealth of Pennsylvania (see Table ES.2). Importantly, since the City and Commonwealth governments are separate and distinct entities with distinct tax structures and bases, fiscal impacts do not overlap: each represents distinct tax revenues generate to the respective governments.

TABLE ES.2 – ANNUAL FISCAL IMPACT OF ECONOMIC ACTIVITY ATTRIBUTABLE TO MEMBER INSTITUTIONS

| Government | Tax Revenues |
|------------------------------------|--------------|
| City of Philadelphia (\$M) | \$6.1 |
| Commonwealth of Pennsylvania (\$M) | \$9.8 |

Beyond the quantifiable economic impacts outlined this report, the member institutions provide a number of valuable social and community benefits to Chestnut Hill. Members provide educational or advocacy services as central components of their missions. They also provide public-facing services like the maintenance of clean, safe and accessible public spaces. By using their resources for charitable causes and community service initiatives, the member institutions are improving the overall quality of life in Chestnut Hill.

Ultimately, the contributions of these institutions to the unique character of Chestnut Hill are intertwined rather than separable. Member institutions are complementary in their missions and programming, providing for a balance of recreational, educational and aesthetic offerings to visitors and residents. Further, there are many examples of direct partnerships such as joint programming between the institutions, cross-sponsorship of events and programming, and in kind-donations such as hosting neighborhood functions. Each of the member institution contributes to the community in ways that are tailored to its mission and resources, and the collective impact that is generated is greater than the sum of the institutions individually.

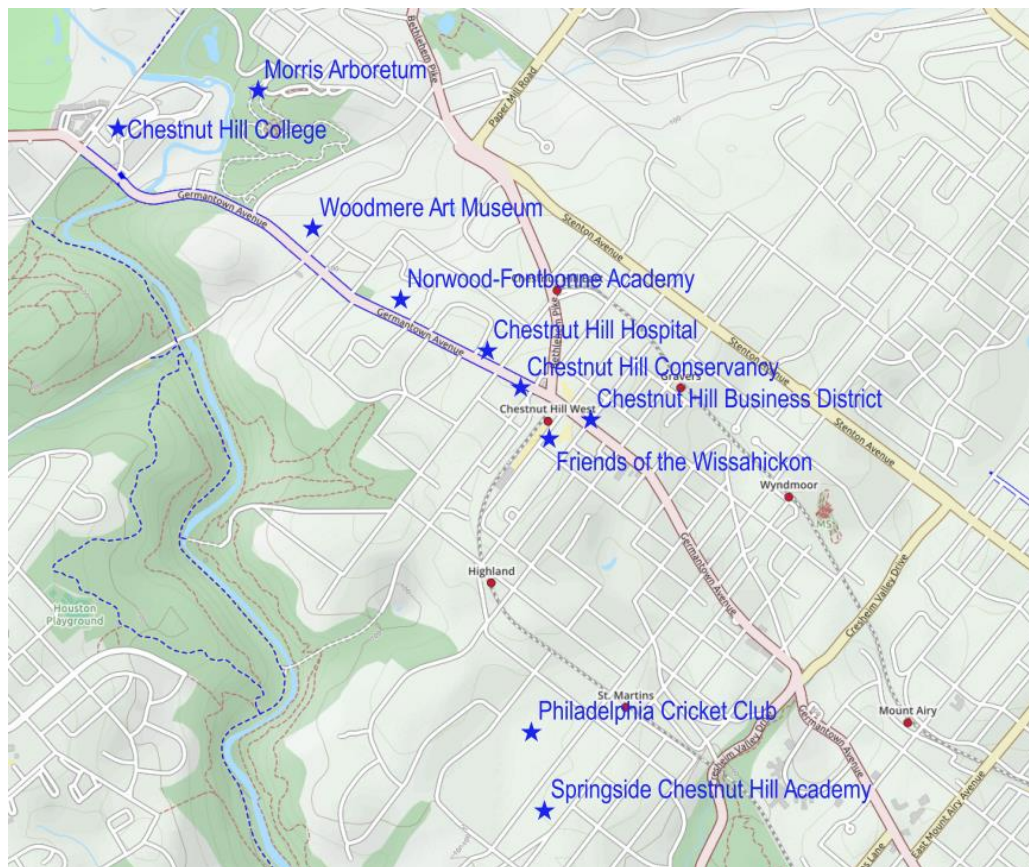
¹ Note that the total operating budgets of the institutions is estimated at \$210 million annually. This ratio implies a collective “multiplier effect” of more than one additional dollar in economic impact for each dollar of operational expenditures.

1.0 INTRODUCTION

1.1 CHESTNUT HILL INSTITUTIONS

The Chestnut Hill neighborhood includes a diverse group of institutions, each of which serve the local community members, regional residents from Northwest Philadelphia and Montgomery County, and out-of-town visitors. These neighborhood anchors offer a range of amenities such as entertainment, health care services, and educational opportunities. The institutions included in the analysis and collectively referred to as “the member institutions” are all located within three miles of one another within the Chestnut Hill neighborhood in northwest Philadelphia (see Figure 1.1). Due to their close proximity, the impact generated by the member institutions is both dense and powerful, supporting significant employment opportunities and tax dollars in the area.

FIGURE 1.1 – MEMBER INSTITUTIONS WITHIN CHESTNUT HILL



Source: Econsult Solutions (2017), Google Maps (2017)

In addition to attracting visitors from outside of town, these institutions serve as community anchors and leaders for the Chestnut Hill neighborhood. Chestnut Hill, which is known as

Philadelphia Garden District and named “one of the top seven urban enclaves in the country” by Forbes.com, is a historic residential, commercial and cultural center located in northwest Philadelphia. Member institutions represent important amenities within the neighborhood, and attract visitors from outside the neighborhood and region, spurring local economic activity. Further, their mission driving programming delivers broader benefits in a number of ways, including education, advocacy, environmental protection, economic development, and cultural enhancement.

1.2 ECONOMIC BENEFITS DELIVERED BY MEMBER INSTITUTIONS

Member institutions not only serve a wide variety of educational, cultural, and social purposes within Chestnut Hill, but are also significant economic contributors. Collectively, they represent a significant source of direct economic activity within the regional economy. They also serve as components of the region’s tourism product, bringing spending into Chestnut Hill. Finally, they are amenities that enhance the attractiveness and desirability of the neighborhood as a place to live, work and visit, thereby encouraging economic activity and enhancing property values for neighborhood residents.

Importantly, member institutions contribute to the Chestnut Hill neighborhood and to the regional economy in varied ways (see Table 1.1).

- Chestnut Hill’s *education and health* institutions are large employers, purchasers of goods and services and initiators of capital investments (in addition to their education and health care contributions). Accordingly, these institutions make the largest contribution to the operating and capital investment economic impact metrics calculated in this report.
- Chestnut Hill’s *attractions* have a smaller direct operating footprint, but attract visitors into the neighborhood, spurring activity for local retailers, and serve as an amenity for residents. Accordingly, these institutions make significant contributions to the ancillary spending and property value impact metrics calculated in this report.
- Chestnut Hill’s *advocacy organizations* focus on quality of life and business development issues on behalf of the neighborhood. Accordingly, their impact is seen less from their direct operating activity and more from their contributions to the fabric of Chestnut Hill and their role in attracting visitation and investment into the neighborhood.²

² It is important to note that the analysis includes the overall operating budget of the Chestnut Hill Business District and the events it organizes. It does not include the activities and expenditures associated with member businesses within the Chestnut Hill Business District.

TABLE 1.1 – CATEGORIZATION OF INSTITUTIONS BY TYPE

| Member Type | Member Institutions |
|-----------------------------------|--|
| Education and Health Institutions | Chestnut Hill College, Chestnut Hill Hospital, Norwood-Fontbonne Academy, Springside Chestnut Hill Academy |
| Attractions | Morris Arboretum, Philadelphia Cricket Club, Woodmere Art Museum, |
| Advocacy Organizations | Chestnut Hill Business District, Chestnut Hill Conservancy, Friends of the Wissahickon |

Ultimately, the contributions of these institutions to the unique character of Chestnut Hill are intertwined rather than separable. Member institutions are complementary in their missions and programming, providing for a balance of recreational, educational and aesthetic offerings to residents and visitors. Further, there are many examples of direct partnerships such as joint programming between the institutions, cross-sponsorship of events and programming, and in kind-donations such as hosting neighborhood functions.

It is also important to note that this categorization does not imply that institutional benefits are exclusive to any one category. For example, while educational and health institutions are the largest centers of employment and operating activity, they are certainly also significant contributors in of social and community impact, as well as attractors of visitation into the region. Meanwhile, attractions and advocacy organizations do make direct economic contributions through their operating and employment activities, even if at a smaller scale than the larger education and health institutions. Ultimately, it is all of the institutions and their collective contributions that drive economic activity and enhance quality of life in Chestnut Hill.

1.3 REPORT OVERVIEW

This report articulates the depth and breadth of this economic impact, using standard economic impact analysis techniques to translate the direct and indirect economic footprint into the overall effect it has on the 5-County Region's economy, employment, and tax base. Impacts modeled include economic (jobs, earnings and activity, including indirect and induced impacts), and fiscal (tax revenues) impacts. These metrics are calculated and presented collectively.

The economic impact and community impact categories estimated within this report are as follows:

- *Impact from Operations (Section 2):* As major employers and purchasers of goods and services, member institutions have a significant direct, indirect and induced economic footprint within the local economy.
- *Impact from Capital Investments (Section 3):* Construction and renovation activity undertaken by member institutions yield significant one-time impacts during the

construction phase, and once completed enhance the level of operating activity and visitor activity drawn by the member institutions.

- *Impact from Ancillary Spending (Section 4):* Visitors, students and patients attracted by the member institutions bring new spending into the area, which circulates through a variety of sectors (including food and beverage, retail, lodging, etc.).
- *Impact from Enhanced Property Values (Section 5):* The aesthetic and recreation value of member institutions and their campuses serves as an amenity for the community, increasing nearby property values as well as quality of life.
- *Community and Social Impacts (Section 6):* In addition to these economic impacts, the member institutions provide valuable educational and social opportunities for the neighboring communities and deliver a variety of social benefits through their programmatic offerings and advocacy efforts.

Note that the methodologies used to estimate economic impacts in each Sections 2-5 are designed to ensure that these impacts are mutually exclusive and therefore additive. Therefore, they can be summed to describe the total economic and fiscal impact of the member institutions, as is done in the Executive Summary of this report. While the qualitative impacts described in Section 6 cannot be as easily measured as economic categories, they are a crucial component of the collective impact of these institutions to the Chestnut Hill neighborhood, and representative of the variety of ways that the institutions contribute according to their unique missions and resources.



Morris Arboretum

1.4 REPORT METHODOLOGY

Within this report, Econsult Solutions, Inc. (ESI) employs industry-standard economic modeling techniques to translate direct economic activity generated by the member institutions into total economic impact within the Philadelphia 5-County Region ("5-County Region").³

Data Collection

Data was collected directly from each member institution for the most recent operating year to insure accuracy and consistency across member institutions. Responses from member institutions included detailed information regarding:

- Operating Budget
- Capital Investments

³ The 5-County Region includes Bucks County, Chester County, Delaware County, Montgomery County, and Philadelphia County, all in Pennsylvania.

- Visitation Information
- Event Programming

ESI received substantial data from each member institution which allowed for a detailed analysis of the economic impact of the Chestnut Hill Institutional Leaders, as shown in Sections 2 through 4. In cases where information was not provided by member institutions, necessary data was collected and estimated based on publicly available information, notably including IRS 990 non-profit organizational reports, and publicly released attendance figures. In generating the final output, additional data from third party sources were used to supplement the provided operating details.

Economic and Fiscal Impact Modeling

Economic impact estimates are generated by utilizing input-output models to translate an initial amount of direct economic activity into the total amount of economic activity that it supports, which includes multiple waves of spillover impacts generated by spending on goods and services and by spending of labor income by employees. This section summarizes the methodologies and tools used to construct, use, and interpret the input-output models needed to estimate the economic impact of the member institutions.⁴

The economic impact from direct expenditures associated with both institutional operations and visitor spending associated with the member institutions can be modeled using IMPLAN, an industry standard input-output model software program. Such models are designed to estimate two sets of spillover impacts from direct expenditures:

- The indirect effect, which measures the multiplier effect from the purchase of goods and services from local vendors (i.e. supply chain impacts); and
- The induced effect, which measures the multiplier effect from the spending of labor income by employees within a particular geography (i.e. labor income impacts).

The total economic impact of the member institutions is the sum of their own direct economic footprint (in terms of both institutional spending, and ancillary spending by the visitors they attract), plus the indirect and induced effects generated by that direct footprint. Direct institutional expenditures are reported by the member institutions while direct ancillary visitor spending is estimated from attendance and industry sources. Input-output modeling is then used to determine the indirect and induced effects of those direct inputs, which are added to determine overall economic output. For the purposes of this report, economic impacts were measured for the 5-County Region.

⁴ See Appendix A for additional information on the input-output methodology used.

Direct expenditures are modeled in the sector in which they occur, each of which has unique multipliers for indirect/induced and employment impacts within IMPLAN, depending on the degree of leakage from the local economy within that sector. The role of input-output models is to determine the linkages across industries in order to model out the magnitude and composition of spillover impact to all industries of a dollar spent in any one industry. This approach allows for a more realistic estimate than one derived using a generic multiplier applied to all expenditures.

The economic impacts estimated using IMPLAN are translated to fiscal impacts using tax models created by ESI, specific to the Commonwealth of Pennsylvania and City of Philadelphia. Rather than utilizing IMPLAN's fiscal impact estimates, which aggregates all local, state, and federal taxes across various municipalities, ESI uses its own fiscal model based on data collected from government sources. Revenue estimates for the City of Philadelphia are based only on the proportion of economic activity occurring within the City, while revenue estimates within the Commonwealth are based on economic activity occurring within the 5-County region.⁵

Enhanced Property Value Analysis

In addition to direct expenditure estimates and input-output modeling, this analysis includes enhanced property values as an economic component. Estimating such impacts rigorously requires taking into account specific geographic factors and holding constant other components of real estate quality to isolate the incremental impacts of proximity to a nearby amenity. Further, impacts will vary based on the nature of nearby property and the amenity itself. Such a comprehensive analysis for all member institutions is outside of the scope of this study.

Nonetheless, this category represents an important component of economic value from the member institutions, both in terms of their value to residents and the taxable value that they help to generate for the City and School District of Philadelphia. Therefore, a literature review of statistical property value analyses for comparable amenities was undertaken, and a conservative estimate of incremental property value impacts was drawn from this review. This incremental gain was then applied to the known residential property value within a 1/2 mile of the institutions to yield a conservative estimate of property value impacts attributable to the institutions collectively. Since many of the examples identified the incremental property value impacts of a single institutions, this method likely understates the collective value that is brought to the Chestnut Hill neighborhood by the agglomeration of institutions.

⁵ In this respect, revenue impacts for the Commonwealth are conservative, since economic activity attributable to member institutions has spillover impacts in other counties in Pennsylvania beyond the 5-county region captured in this analysis. These effects, which are likely to be relatively limited due to geographic distance, are excluded from this calculation.

2.0 IMPACT FROM OPERATIONS

2.1 SECTION OVERVIEW

Data directly provided by each member institution supplied ESI with the necessary information relevant to quantifying impacts from their annual operations. In addition to providing expenditure levels, most member institutions also provided employment details such as total annual salaries and total full-time and part-time employees. These details helped to improve the precision of modeled impacts.

Each year, the member institutions spend a significant amount on their ongoing operations. By hiring local residents, procuring from local businesses, organizing events, and developing educational programs, the day to day economic footprint of member institutions has a large economic impact on the 5-County Region in various ways.

2.2 DIRECT OPERATING EXPENDITURES

The member institutions serve a variety of functions and purposes and therefore do not all fall within the same industry. From an economic modeling standpoint, it is necessary to categorize the each member institution into the most appropriate sector to accurately understand the indirect and induced effects of its economic activity.⁶ The indirect and induced impacts will therefore vary in both magnitude and industry distribution.

Where available, data from the most recent operating year was aggregated to arrive at an estimate of total annual operating expenditures. A large portion of total spending goes to employee salaries, reflecting the nature of the largely knowledge and cultural activity undertaken by the member institutions. Collectively, the member institutions spend an estimated \$210 million each year, of which slightly more than 50% (\$106 million) goes to the salaries and benefits paid to the 2,100 direct employees (see Table 2.1).

⁶ Said another way, the way in which Morris Arboretum operates and exhausts its annual budget differs greatly from the way in which Chestnut Hill College operates, etc.

TABLE 2.1 – ANNUAL OPERATING EXPENDITURES BY TYPE

| Operations | Annual Operations |
|---|--------------------------|
| Total Employees | 2,100 |
| Total Annual Operating Costs (\$M) | \$210.2 |
| Employee Salaries & Benefits (\$M) | \$106.2 |
| All Other Operating Costs (\$M) | \$104.0 |

Source: Member institutions (2017)

2.3 ECONOMIC IMPACT FROM DIRECT OPERATING EXPENDITURES

The member institutions provide the 5-County Region with an array of entertainment, health care, and educational services. In addition to the notable social and community benefits associated with the member institutions, the \$210 million in annual operating costs benefit the local economy in various ways. These member institutions serve as significant procurer of goods and services from local businesses and provide employment opportunities to local residents, both directly and indirectly. These ongoing activities are a foundational aspect of the economic vitality of the 5-County Region, as well as a major tax revenue generator. The annual operational spending of the member institutions leads to a total economic impact of \$360 million, supporting 2,880 direct, indirect, and induced jobs with \$153 million in annual earnings in the 5-County Region (see Table 2.2).

TABLE 2.2 – ANNUAL ECONOMIC IMPACT FROM OPERATIONS WITHIN THE 5-COUNTY REGION

| Category | Annual Impact |
|---------------------------------|----------------------|
| Direct Output (\$M) | \$210 |
| Indirect & Induced Output (\$M) | \$150 |
| Total Output (\$M) | \$360 |
| Total Employment | 2,880 |
| Total Earnings (\$M) | \$153 |

Source: Member institutions (2017), Econsult Solutions (2017), IMPLAN (2013)

*Woodmere Art Museum*

2.4 FISCAL IMPACT FROM DIRECT OPERATING EXPENDITURES

Although many of the member institutions are non-profit entities, the fiscal impacts generated by their activity are nonetheless substantial. The aggregate economic activity described above grows various tax bases for the Commonwealth of Pennsylvania and City of Philadelphia directly and indirectly via spending by local vendors and spending by local employees. Note that even in the case of tax-exempt institutions, much of this indirect and induced activity is taxable, and direct taxes were included only where applicable. Those direct taxes and the taxes generated as a result of the indirect and induced activity are aggregated by tax type to yield a total annual revenue generation estimate for the City of Philadelphia and Commonwealth of Pennsylvania.⁷

In total, Philadelphia is estimated to gain an additional \$4.5 million in tax revenues each year and Pennsylvania gains an additional \$7.8 million in taxes revenues each year as a result of the operations of the member institutions, the majority of which (\$4.7 million) is in the form of income taxes paid by the direct and indirect employees (see Table 2.3).

⁷ Note that while the City of Philadelphia is wholly contained within the Commonwealth of Pennsylvania from a geographic and economic standpoint, the City and Commonwealth represent separate and distinct government entities with separate and distinct tax bases. Therefore, tax revenues generated to the City and Commonwealth are additive rather than duplicative.

TABLE 2.3 – ANNUAL FISCAL IMPACT FROM OPERATIONS WITHIN THE CITY OF PHILADELPHIA AND COMMONWEALTH OF PENNSYLVANIA (IN 000s)

| Category | City of Philadelphia | Commonwealth of Pennsylvania |
|-----------------------|---------------------------------|---|
| Income Tax | \$2,909 | \$4,684 |
| Sales Tax | \$608 | \$2,417 |
| Business Tax | \$989 | \$718 |
| Total (\$000s) | \$4,505 | \$7,819 |

Source: Member institutions (2017), Econsult Solutions (2017),
Commonwealth of Pennsylvania Tax Compendium (2015), IMPLAN (2013), BEA (2015), Philadelphia Department of Revenue (2015)

3.0 IMPACT FROM CAPITAL INVESTMENTS

3.1 SECTION OVERVIEW

There are significant economic stimuli that result from the major renovation and maintenance projects undertaken by the member institutions. Capital investments are those specific projects that go above and beyond routine maintenance and result in new or significantly upgraded facilities. Unlike operational spending, activity of this type tends to be highly variable on an annual basis, depending on need and availability of funding. Accordingly, data was collected over multiple years where possible and annualized to show an average annual impact. Importantly, this activity not only results in an upfront economic stimulus during the construction period, but also typically expands or maintains operating capacity of the sponsoring institution on an ongoing basis.

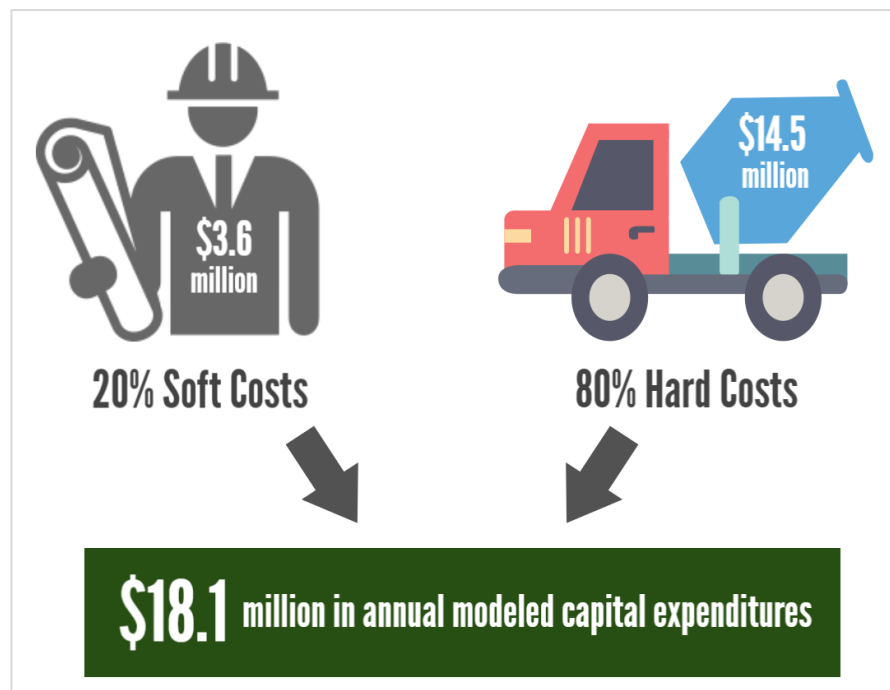
3.2 DIRECT CAPITAL INVESTMENTS

The collective capital investment towards new construction, renovation and maintenance undertaken by the member institutions in recent years is significant. Since construction expenditures tend to vary significantly from year to year, the member institutions reported their total capital investments over a multi-year period.⁸ By generating an annual average over many years rather than relying on each institution's most recent operating year, the analysis more accurately reflects the scale of expected impacts for any typical year. In aggregate, the institutions reported an average capital investment of \$21.3 million per year, most of which was spent by Chestnut Hill College, Chestnut Hill Hospital, and Springside Chestnut Hill Academy.

It is assumed, as is typical for construction projects, that 15 percent (or \$3.2 million) of the total capital expenditures are non-modeled expenditures (such as fees, interest, etc.), leaving \$18.1 million for modeled costs. Of this remaining sum, hard costs, such as labor and equipment, are assumed to total \$14.5 million (80%), based on industry standards, with the other \$3.6 million (20%) assumed to be soft costs, such as engineering, architectural, and other professional services (see Figure 3.1).

It is important to note that both hard costs and soft costs are included in the input/output modeling, but have different multiplier effects based on the type of spending and the attendant indirect and induced effects within the 5-County region.

⁸ Member institutions were asked to report their aggregate capital investments over multiple years. It is important to note that all routine annual maintenance expenditures are excluded in this portion of the analysis. Because these expenditures are accounted for in the member institutions' operating budgets, included them as capital investments would lead to double counting, and in turn, an inflated impact. Instead, large-scale projects and new construction make up the direct inputs in calculating the average annual economic impact.

FIGURE 3.1 – CATEGORICAL BREAKDOWN OF ANNUAL CAPITAL EXPENDITURES BY THE MEMBER INSTITUTIONS

Chestnut Hill Institutional Leaders members (2016), Econsult Solutions (2017), Piktochart (2017)



Chestnut Hill Hospital's Emergency Department and ICU Addition

3.3 ECONOMIC IMPACT FROM ANNUAL CAPITAL INVESTMENTS

The capital investments reported by the institutions have significant economic implications with the 5-County region on an annual basis. The \$18.1 million in direct modeled capital expenditures annually each year is estimated to generate a total economic impact of \$32.4 million within the 5-County Region. These expenditures are estimated to support 210 jobs, with earnings of \$15 million each year (see Table 3.1).

TABLE 3.1 – ANNUAL ECONOMIC IMPACT FROM CAPITAL INVESTMENTS WITHIN THE 5-COUNTY REGION

| Category | Annual Impact |
|---------------------------------|----------------------|
| Direct Output (\$M) | \$18.1 |
| Indirect & Induced Output (\$M) | \$14.3 |
| Total Output (\$M) | \$32.4 |
| Total Employment | 210 |
| Total Earnings (\$M) | \$15.0 |

Source: Member institutions (2017), Econsult Solutions (2017), IMPLAN (2013)

3.4 FISCAL IMPACT FROM ANNUAL CAPITAL INVESTMENTS

The economic activity generated by the capital expenditures of the member institutions (including direct, indirect, and induced economic impacts) also creates one-time tax revenue gains for the City of Philadelphia and Commonwealth of Pennsylvania. It is estimated that each year, Philadelphia will gain an additional \$441,000 in tax revenues and Pennsylvania will gain an additional \$811,000 in tax revenues as a result of the capital expenditures of the member institutions (see Table 3.2).

TABLE 3.2– ANNUAL FISCAL IMPACT FROM CAPITAL INVESTMENTS (IN 000s)

| Category | City of Philadelphia | Commonwealth of Pennsylvania |
|-----------------------|-----------------------------|-------------------------------------|
| Income Tax | \$287 | \$460 |
| Sales Tax | \$59 | \$272 |
| Business Tax | \$95 | \$79 |
| Total (\$000s) | \$441 | \$811 |

Source: Member institutions (2017), Econsult Solutions (2017), Commonwealth of Pennsylvania Tax Compendium (2015), IMPLAN (2013), BEA (2015), Philadelphia Department of Revenue (2015)

4.0 IMPACT FROM ANCILLARY SPENDING

4.1 SECTION OVERVIEW

The member institutions help to draw local, regional, and global students and visitors to Chestnut Hill. These visitors generate economic impact and support employment within the 5-County Region through their spending on categories like food, retail, and accommodations. This infusion of external dollars from ancillary spending is crucial to the viability of local businesses in these low margin sectors, which in turn helps to maintain and expand these amenities for local residents as well.⁹

Visitor spending estimates developed within this analysis take into account the aggregate yearly attendance of each organization and the spending profiles of locals, and out-of-towners who take advantage of the amenities available at the member institutions. The heterogeneity of the member institutions results in a diverse pool of tourists, patients, students, and nearby community members that contribute to the ancillary spending within the 5-County Region. Because each visitor type has a unique spending profile, purpose, and duration for their trip, it is necessary to create a detailed model which takes individually calculates ancillary spending for each type.

The three broad categories included in the calculation are as follows:

1. **Recreational Visitors:** The majority of the member institutions serve this type of visitor. This includes visitors who are primarily attracted to the cultural, social, and aesthetic amenities available at the member institutions. Visitors to the Woodmere Art Museum, the Philadelphia Cricket Club, the Wissahickon Valley Park, and the Morris Arboretum are included. Additionally, all attendees at events hosted by the Chestnut Hill Business District (Home & Garden Festival, Fall for the Arts Festival, and the Harry Potter Festival),¹⁰ Chestnut Hill College, Norwood-Fontbonne Academy, and Springside Chestnut Hill Academy were included as recreational visitors.
2. **Hospital Patients/Visitors:** The Chestnut Hill Hospital estimates that they get over 160,000 outpatient visits and admit 6,000 inpatients each year. The ancillary spending in this category includes local spending by outpatients and spending from the visitors of inpatients.¹¹

⁹ Note that the term “ancillary spending” refers to that spending that is not captured by the member institutions, but instead accrues to other local entities (stores, landlords, etc.). This distinction is important because payments captured by the institutions (for example, tuition at one of the education institutions or ticket sales at one of the attractions) will be reflected in the operating budgets of the institutions as described in Section 2 of this report. Isolating ancillary spending only ensures that economic impact categories are mutually exclusive and can therefore be aggregated.

¹⁰ As noted in Section 1 of this report, calculations of the Chestnut Hill Business District include only the operations of the non-profit entity and the spending associated with the events it produces, and do not include the full range of expenditures associated with member businesses within the District.

¹¹ While the spending of visitors of inpatients is included, spending by the inpatients themselves is not included. For the most part, inpatients spend their time within the hospital and all of their meal and accommodation costs are captured by the hospital.

Additionally, the model includes the spending of attendees and participants at the events hosted by the hospital.

3. **Students:** The students at Chestnut Hill College not only pay tuition, they also spend money on transportation, room and board, supplies and books, and entertainment. A large proportion of this ancillary spending takes place within the 5-County Region. This spending is either net new to the area, in the case of students from outside those geographies, or is retained spending, in that local students may well have attended a college outside those geographies (taking their spending power with them) in the absence of Chestnut Hill College.¹²

Another key factor in determining ancillary spend is the home location of each visitor. While many institutions attract primarily locals (whose spending likely would have been retained within an economic area with or without the existence of those institutions) out of town visitors infuse new dollars into an area, which circulate to various businesses and create and sustain employment. In addition, out of town visitors are likely to extend their stay within a destination, adding on additional activities to their trip as well as necessities like food and lodging. Thus the “ancillary” spending impacts detailed in this section are a significant economic driver for the region.

To sum, the estimation of student and visitor spending requires a series of inputs which collectively seek to define:

- The number of spenders (recreational visitors, hospital patients/visitors, and students)
- Total spending and ancillary spending by those spenders
- The proportion of that spending that is captured within the 5-County economy

Data from a variety of sources, including the member institutions, are used to develop estimates, and where proxy data is unavailable, conservative proportions are assumed.

4.2 RECREATIONAL VISITOR SPENDING ATTRACTED TO THE AREA

Member institutions reported an aggregate total of nearly 1.7 million attendees on an annual basis. This aggregate count includes all attendees and participants at events hosted by member institutions, as well as routine day trippers and all visitors to Wissahickon Park. In order to

¹² Note that member educational institutions Springside Chestnut Hill Academy and Norwood-Fontbonne Academy host students at the pre-K to 12 and pre-K to 8 level respectively, who may also contribute some ancillary spending within the region. Springside Chestnut Hill Academy's current enrollment is approximately 1,050 while Norwood-Fontbonne Academy currently has 418 students. Since students in these grades are anticipated to spend most of their time within the neighborhood on campus and anticipated to have a limited ancillary spending footprint, this spending has been conservatively excluded from the calculation. Further, most of these students would likely have attended other institutions within the 5-County region absent the presence of these institutions, and therefore only a small proportion of this spending (such as that by international students) is likely to be “net new” to the local economy.

translate this aggregate visitor count to the volume of ancillary spending attracted to the region, it is necessary to make a number of conservative adjustments to estimate the number of unique visitors with a spending footprint in the region, and then to apply an appropriate spending profile for those visitors.

The first step in this process is the estimate the ratio of local to non-local visitors for each institution based on the best available data and estimates. While the majority of visitors are believed to be locals (i.e. those who live within the 5-County Region), several institutions reported a portion of visitors who travelled from out of town for specific events. Next, an accounting is made of visitors who attended more than one member institution within the same trip,¹³ and of visitors who may not have had any ancillary spending (outside of the institutions they visited) during their trip.¹⁴ With these adjustments, it is estimated that there are over 250,000 unique local visitors and about 60,000 unique out of town visitors attributable to the member institutions who deliver ancillary spending within the neighborhood each year.

Finally, it is important to make a distinction between these local residents and the visitors who travel from further distances as their spending profiles will differ significantly. Typically, the farther that an individual or family travel to visit a member institution, the longer they are likely to stay. By extending their time in the region, they increase the amount of money they spend at local hotels, restaurants and stores. Spending profiles based on survey data provided by Visit Philadelphia and Americans for the Arts were relied upon to estimate per visitor daily spending (see Table 4.1).

¹³ Note that the sum of visitors to each institution is different than the unique visitor count, because a person or travel party may visit multiple institutions on their trip. From the perspective of ancillary spending, such a trip should only be counted once, rather than once per institution. Within this analysis, it is conservatively assumed that 25 percent of attendees also visit another member institution during their trip and the unique visitation estimate is reduced accordingly.

¹⁴ Note that the visitation estimates associated with the Friends of the Wissahickon (FOW) required a unique calculation approach, since the organization itself is not a visitor attraction in the same sense as a museum or campus. While FOW is not the sole operator of the 1,800 acre Wissahickon Valley Park, its preservation and advocacy efforts clearly enhance the volume of visitation. In the interest of being conservative, this analysis only counts 10% of the annual visitation of 1.15 million for the purpose of the ancillary spending calculation. Further, from an economic standpoint, the nature of visitors to the Park differs from those visiting the institutions along the main commercial corridor, as many may be engaging in recreational activities that do not entail any ancillary spending. It is conservatively estimated within this analysis that 15% of these visitors spend ancillary dollars within the region.

TABLE 4.1 – ESTIMATED VISITOR SPENDING PER VISITOR PER DAY WITHIN THE 5-COUNTY REGION

| Spending Category | Local | Out of Town |
|-------------------------------------|--------------|--------------------|
| Food | \$14 | \$51 |
| Hotel | \$1 | \$75 |
| Transportation | \$3 | \$18 |
| Other | \$4 | \$43 |
| Total (per Visitor, per Day) | \$22 | \$187 |

Source: Longwoods International provided by Visit Philly (2015), Arts and Economic Prosperity IV, American for the Arts (2012)

4.3 HOSPITAL PATIENT SPENDING ATTRACTED TO THE AREA

Chestnut Hill Hospital received about 160,000 outpatient visits and 7,150 admissions within its facilities in 2016. It is estimated that those 7,150 inpatients collectively brought 300 visitors each day to the hospital. In addition, the events hosted by the hospital drew over 2,700 visitors to the hospital facilities.

Again, the home location of each patient and visitor is an important factor in determining the amount of ancillary spending that occurs within the 5-County Region. The hospital primarily serves residents of Philadelphia and Montgomery Counties. To be conservative, it was estimated that all outpatients live within the 5-County Region and therefore do not stay in a hotel for their visit. On the other hand, inpatients who stay for an extended period of time at the hospital might travel from outside of the region to obtain health care. Chestnut Hill Hospital estimates that 5 percent of visitors to these inpatients come from outside the region and therefore spending more money during their visit. In aggregate, it is estimated that there are 267,800 local visits¹⁵ and 5,600 out of town visits to the hospital each year (see Table 4.2).¹⁶ In aggregate, these patients, patient visitors, and event attendees are estimated to bring an additional \$835,000 in ancillary spending to the 5-County Region.

¹⁵ The ancillary spending associated with these local visitors is negligible and therefore excluded due to the fact that their spending in the region would occur with or without the presence of the hospital.

¹⁶ As previously mentioned, this does not include the 7,150 inpatient admissions.

TABLE 4.2 – HOSPITAL VISITORS BY HOME LOCATION

| Hospital Visitors | Local | Out of town |
|--------------------------|----------------|--------------------|
| Outpatients | 161,200 | - |
| Visitors of Inpatients | 104,000 | 5,500 |
| Event Attendees | 2,600 | 100 |
| Total | 267,800 | 5,600 |

Source: Chestnut Hill Hospital (2016), Econsult Solutions (2017)

4.4 STUDENT SPENDING ATTRACTED TO THE AREA

Chestnut Hill College attracts and retains talented students from around and beyond into the 5-County Region.¹⁷ These students may have chosen another college or university outside of the region but for the presence of the college. The spending that takes place in the region by these students would therefore not occur without the presence of Chestnut Hill College.

There are just over 1,800 students enrolled at Chestnut Hill College, approximately 50 percent of whom are commuters. Using data provided by the Integrated Postsecondary Education Data System (IPEDS) on projected total costs for students, ancillary spending profiles were developed by student type (on-campus, off-campus, and commuter). Conservative estimates were then made for the proportion of ancillary spending not directly captured by Chestnut Hill College.¹⁸ The proportion of spending that takes place in the 5-County Region was estimated for each spending category. This adjustment recognizes that not all spending takes place within the local geography, especially as consumer behavior has shifted, with millennials in particular increasingly shifting towards online shopping. Through this method, it is estimated that the Chestnut Hill students generate approximately \$17.2 million in ancillary spending each year, approximately \$10.4 million of which is captured within the 5-County economy (see Table 4.3).

¹⁷ As previously noted, ancillary spending by pre-K – 12 students at Springside Chestnut Hill Academy and the pre-K – 8 students at Norwood-Fontbonne Academy is anticipated to be limited and is excluded from this analysis.

¹⁸ Spending that takes place off-campus and does not accrue directly to Chestnut Hill College is considered “ancillary” for the purpose of this analysis. Money spent on rent or meal plans that is paid directly to Chestnut Hill College is accounted for in Chestnut Hill College’s operating budget.

TABLE 4.3 – ESTIMATED ANCILLARY STUDENT SPENDING AT CHESTNUT HILL COLLEGE

| Student Type | # of Students | Per Student Ancillary Spending | Aggregate Ancillary Spending (\$M) | Aggregate Ancillary Spending in Philadelphia (\$M) |
|--------------|---------------|--------------------------------|------------------------------------|--|
| On-campus | 480 | \$5,420 | \$2.6 | \$1.7 |
| Off-campus | 428 | \$13,920 | \$6.0 | \$4.6 |
| Commuters | 910 | \$16,650 | \$8.6 | \$4.2 |
| Total | 1,818 | \$9,440 | \$17.2 | \$10.4 |

Source: NCES IPEDS (2017), Chestnut Hill College (2017), Econsult Solutions (2017)

4.5 ECONOMIC IMPACT FROM ANCILLARY SPENDING

Using the unique spending profiles for each type of visitor and each geographic location, total spending by industry was calculated. The industry most affected by these visitors was the food and beverage industry. By eating at restaurants during their visit to Chestnut Hill, the visitors help support local businesses and their employees. Additional spending on hotels, transportation, retail and rent was captured within the 5-County Region and can be attributed to the member institutions (see Table 4.4).

TABLE 4.4 – ANNUAL ANCILLARY SPENDING ATTRIBUTABLE TO MEMBER INSTITUTIONS BY VISITOR TYPE

| Visitor Type | Est. # of Ancillary Spenders | Est. Aggregate Annual Spending (\$M) |
|--------------------------------|------------------------------|--------------------------------------|
| Local and Out of Town Visitors | 310,000 | \$15.7 |
| Out of Town Hospital Visitors | 5,600 | \$0.8 |
| Students | 1,800 | \$10.4 |
| Total | 317,000 | \$27.1 |

Source: NCES IPEDS (2017), Member institutions (2017), Econsult Solutions (2017), Visit Philly (2015)

However, there is a significant difference between total economic value of retail and the amount available to circulate through the local economy. Therefore, the model assumes that the markup on retail is what creates the impact on the local economy. Because local stores buy goods from wholesalers and manufacturers outside of the area, the expenditures cannot be fully attributed to Philadelphia County and these “retail margins” are thus dropped from the regional model. While \$3.9 million is spent on miscellaneous retail within the region, \$1.1 million is accounted for in the model. Therefore, of the \$27 million in aggregate ancillary spending by visitors, patients and their visitors, and students, \$24.3 million is modeled for the analysis (see Table 4.5).

TABLE 4.5 – ANNUAL ANCILLARY SPENDING ATTRIBUTABLE TO MEMBER INSTITUTIONS BY SPENDING CATEGORY

| Spending Category | Total Spending (\$M) | Modeled Spending (\$M) |
|------------------------------|-----------------------------|-------------------------------|
| Food and beverage | \$12.2 | \$12.2 |
| Hotels and motels | \$4.8 | \$4.8 |
| Transportation | \$3.5 | \$3.5 |
| Miscellaneous retail | \$3.9 | \$1.1 |
| Rent | \$2.8 | \$2.8 |
| Total Annual Spending | \$27.1 | \$24.3 |

Source: NCES IPEDS (2017), Member institutions (2017), Econsult Solutions (2017), Visit Philly (2015)

The \$24.3 million in modeled ancillary spending within the 5-County Region is estimated to lead to indirect and induced expenditures of \$16.3 million within the region, equating to a total economic impact of \$40.5 million annually (see Table 4.6). This ancillary spending, and its indirect and induced impact, supports 390 total jobs with annual earnings of \$14.1 million within the 5-County Region.

TABLE 4.6 – ANNUAL ECONOMIC IMPACT FROM ANCILLARY SPENDING

| Category | 5-County Region |
|---------------------------------|------------------------|
| Direct Output (\$M) | \$24.3 |
| Indirect & Induced Output (\$M) | \$16.3 |
| Total Output (\$M) | \$40.5 |
| Total Employment | 390 |
| Total Earnings (\$M) | \$14.1 |

Source: Member institutions (2017), Econsult Solutions (2017), IMPLAN (2013), Visit Philly (2015)

4.6 FISCAL IMPACTS FROM ANCILLARY VISITOR SPENDING

The total economic (direct, indirect and induced) impact generated through ancillary spending by visitors, patients and students generates a significant volume of taxable activity for the Commonwealth of Pennsylvania and City of Philadelphia. These expenditures are estimated to lead to \$864,000 in tax revenues to Philadelphia and \$1.15 million in tax revenues to Pennsylvania on an annual basis, including a significant volume of hotel tax revenue (see Table 4.7).

TABLE 4.7 – ANNUAL FISCAL IMPACT FROM ANCILLARY SPENDING (\$000)

| Category | City of Philadelphia | Commonwealth of Pennsylvania |
|-----------------------|-----------------------------|-------------------------------------|
| Income Tax | \$268 | \$433 |
| Sales Tax | \$73 | \$337 |
| Business Tax | \$118 | \$98 |
| Hotel Tax | \$405 | \$286 |
| Total (\$000s) | \$864 | \$1,153 |

Source: Member institutions (2017), Econsult Solutions (2017), Commonwealth of Pennsylvania Tax Compendium (2015), IMPLAN (2013), BEA (2015), Philadelphia Department of Revenue (2015)

*Home & Garden Festival*

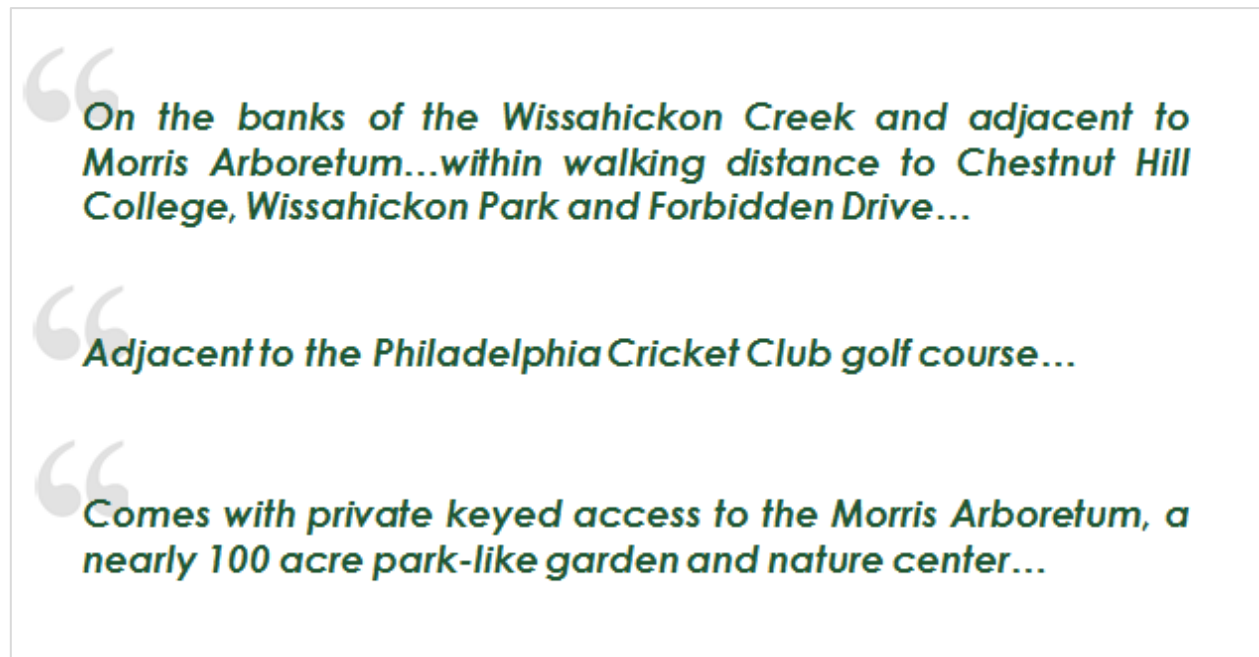
5.0 IMPACT FROM ENHANCED PROPERTY VALUES

5.1 SECTION OVERVIEW

The member institutions provide significant cultural, aesthetic and recreational benefits to the Chestnut Hill neighborhood and its residents. Chestnut Hill is a desirable residential neighborhood, driven primarily by its unique businesses, neighborhood vibrancy, and access to useful amenities. Chestnut Hill has seen an increase in home value over the last five years, moderate growth in population, and growth in household incomes, reflecting vitality and steady residential demand.

The anchor institutions of the neighborhood are amenities that are likely to have positive effects on residential real estate values, meaning that proximity to one of the member institutions is seen as a positive attribute when people are making residential real estate decisions. In fact, many realtors in Chestnut Hill area often list nearby institutions as neighborhood amenities. Because local realtors understand the benefit associated with being close to the facilities and open space provided by these Institutions, they point out proximity to campus to emphasize the attractiveness of a house (see Figure 5.1 below). This benefit is promoted along with the area's retail and entertainment opportunities, all of which are seen by these real estate experts as pluses for potential residents.

FIGURE 5.1 –RECENT CHESTNUT HILL REAL ESTATE LISTINGS ADVERTISING PROXIMITY TO MEMBER INSTITUTIONS



The increase in real estate values for houses located near one of the member institutions not only benefits individual property owners (who see an important asset on their personal balance sheets

go up in value) but also the City and the School District (which see their property tax base go up, resulting in more property tax revenues per year). This effect has a financial component, but is also reflective of broader quality of life benefits for the neighborhood.

Data on housing, population and income outcomes for the neighborhood in recent years confirm the vitality and desirability of Chestnut Hill. Each month, ESI's Philadelphia Housing Index measures changes in the sales price of Philadelphia's housing units over time in order to compare similar homes in each neighborhood in the City. Between 2012 and 2017, the estimated price paid for an average house within Chestnut Hill increased approximately 33 percent when controlling for various housing characteristics that otherwise affect the price of a residential home. Data from the Philadelphia Housing Index also found that homes within Chestnut Hill sell for 136 percent more than the average home across the City of Philadelphia as a whole.¹⁹

Housing values are also reflected in the population characteristics of the neighborhood. According to Census data, households living in Chestnut Hill have a median income of \$77,000, more than double that of the city as a whole.²⁰ Population within the neighborhood has also grown by at a stable rate of six percent over the past five years, reflecting healthy residential demand.²¹ Section 5.2 below explores the evidence that cultural amenities and institutions help contribute to economic vitality and quality of life in ways that support and enhance property values for nearby residents and communities.

5.2 PROPERTY VALUE IMPACTS OF CULTURAL AMENITIES

While the member institutions serve a wide variety of functions within Chestnut Hill, each in their own way serve as a positive amenity for neighborhood residents. Many operate campuses which are aesthetically attractive, and preserve and provide for open space. Many have direct recreational and cultural value through the activities they offer. And others are involved in advocacy activity that helps to preserve the unique character of Chestnut Hill while building the local amenities such as retail and food offerings available to residents.

The value of a home can be viewed as a bundle of different attributes or characteristics, with each characteristic contributing to the value of an individual home. Statistically, it is possible to isolate the estimated incremental impact of any one of those characteristics. Rigorous studies have utilized this approach to isolate the volume of proximity to either positive amenities (like a campus or garden) as well as negative amenities (like a landfill or prison). The section below reviews briefly property value effects of various amenities similar to the member institutions within Chestnut Hill. The section that follows utilizes these findings and real estate data from Chestnut Hill to provide an order of magnitude impact of these effects.

¹⁹ Econsult Solutions Philadelphia Housing Index, 2017

²⁰ U.S. Census American Community Survey 5-year estimates 2011-2015

²¹ U.S. Census American Community Survey 5-year estimates 2011-2015

Educational Institutions

Families and individuals who live close to educational institutions enjoy a number of benefits. Campuses are well-maintained, aesthetically pleasing, and institutions tend to provide beneficial services like public safety and maintenance that sometimes extend beyond campus borders. Further, local residents can sometimes access the campus for recreational purposes, including green space, amenities like a library or fitness center, and arts and cultural programming associated with the institution. In sum, educational institutions are “good neighbors” on a number of dimensions.

Statistical studies have confirmed this proposition through a controlled analysis of real estate markets:

- Amanda Lockshiss studied the effect of institutions on local housing prices and on locality tax bases.²² She found that for the majority of institutions, the cultural and recreational amenities offered by each university, along with the considerable open space protected and maintained by schools, generally generate property value appreciation in nearby residential areas.
- Researchers from Rutgers University found that towns that New Jersey towns that had four-year Institution campuses within their borders had property values that were over 13 percent higher than towns that did not have an Institution campus, all else being equal.²³ In other words, the presence of an institution of higher education conferred a property value premium all through the town and not just on geographically proximate locations. This suggests that there is an overall town-wide value-enhancing effect from having an Institution within one’s borders.
- A more targeted statistical analysis by ESI in Radnor Township focused on the immediate area surrounding a campus.²⁴ That analysis found that homes within a half mile of Villanova University, Cabrini College, and Eastern University enjoyed a price premium of 2.7 percent compared to other similar properties within the Township.

Gardens and Green Spaces

Cultural and aesthetic amenities also have well-documented positive impacts on nearby property values. Similarly to educational institutions, many operate campuses or protect open space that is

²² Lockshiss, Amanda, “The Effect of a College on Housing Prices and the Tax Base, The College of New Jersey, April, 2009.

²³ Vandegrift, Donald, Amanda Lockshiss, and Michael L. Lahr, “Town Versus Gown: The Effect of a College on Housing Prices and the Tax Base,” MPRA Paper No. 18998, July 7, 2009

²⁴ *The Community and Economic Impact of Institutions of Higher Education to Radnor Township*, Econsult Solutions (2014).

both aesthetically pleasing and available for recreational use. Further, close cultural amenities like museums and gardens are popular attractions for locals to visit, for both regular and special programming.

- The connection between green spaces and property value in the Philadelphia region was documented at length in a 2010 ESI study which calculated a variety of economic impacts associated with open space. The study concluded that that \$16.3 billion is added to the value of southeastern Pennsylvania's housing stock as a result of protected open space.²⁵
- Numerous studies have found evidence positive property value impacts from horticultural amenities. For example, a study in the neighborhood of Cox Arboretum in Dayton, Ohio found an estimated 5 percent of average residential selling price is attributable to proximity of the park and arboretum.²⁶



Wissahickon Valley Park

²⁵ *The Economic Value of Protected Open Space in Southeastern Pennsylvania*, Economy League of Greater Philadelphia, Econsult Corporation, Keystone Conservation Trust for GreenSpace Alliance and Delaware Valley Regional Planning Commission (2010).

²⁶ Kimmel, Margaret M. 1985. "Parks and Property Values: an Empirical Study in Dayton and Columbus, Ohio." Thesis. Oxford, OH: Miami University, Institute of Environmental Sciences.

5.3 INCREMENTAL PROPERTY VALUE ATTRIBUTABLE TO MEMBER INSTITUTIONS

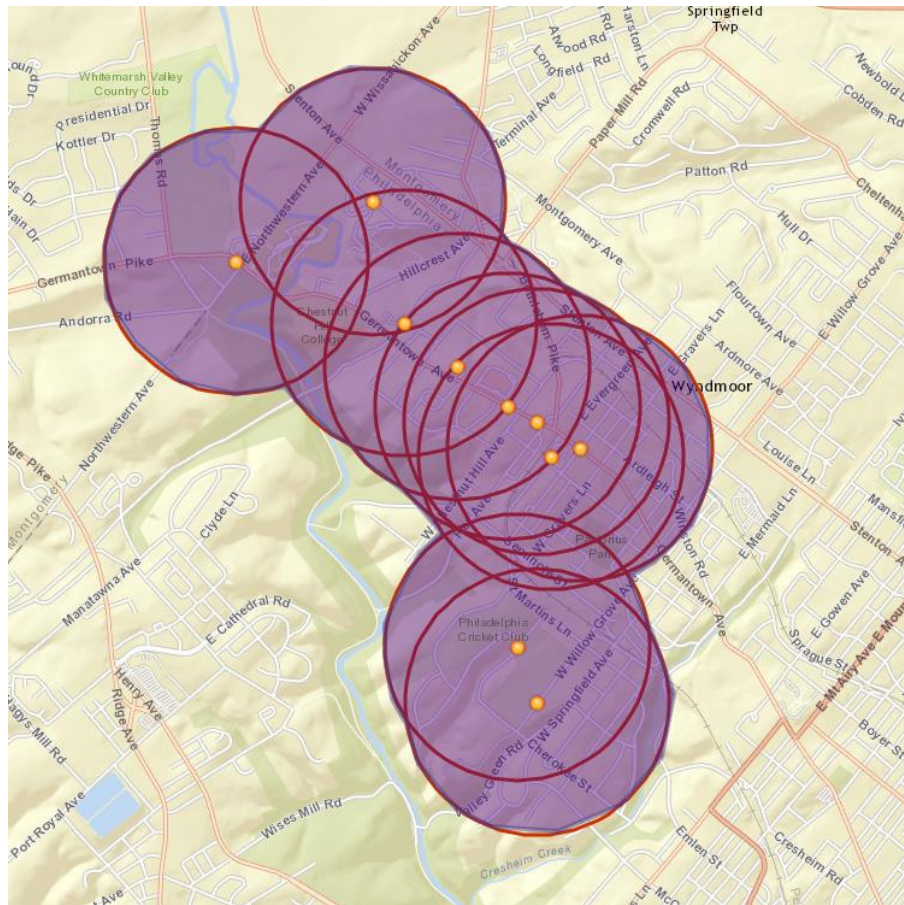
Increases in property values are economically significant both to local households and to local government entities. Homes are the largest asset on the balance sheet of many families, and therefore increases in home values translate into increased household wealth and ultimately to spending. Further, property taxes are the primary revenue source for most municipalities and school districts. Increases in property values therefore translate into increased revenue to support these services, without raising tax rates.

In order to estimate the incremental property value impacts attributable to member institutions, it is necessary to both estimate the percentage increase in value attributable to the member institutions and the base of property value to which this increase applies. Based on the studies discussed in Section 5.2 above, it is conservatively estimated for the purpose of this calculation that member institutions yield a 2.5% increase in value for residential properties within a half-mile buffer of a member institution.²⁷

The property value base against which this increment applies can be estimate through spatial analysis of residential property value data, utilizing a half-mile buffer from each institution. As shown in Figure 5.1, every half mile buffer around a member institution overlaps with another half mile buffer because the member institutions are all within close proximity to one another. In order to ensure that the calculation does not include properties multiple times for each institution, one large combine buffer was created around the member institutions. The aggregated buffer includes all homes that are within a half mile of any of the sites, once and only once (see Figure 5.2).²⁸

²⁷ Note that this estimate is conservative in three respects. First, it is on the low-end of the observed property value effects of similar amenities identified in Section 5.2 Second, it relies on research of benefits specific to individual institutions. The member institutions represent a cluster of amenities along a single corridor, and many residential properties are in close proximity to multiple institutions. This aggregation of amenities may well have a greater effect on property values than any single institution Third, property value impacts may well extend beyond this half-mile radius, significantly increasing the impacted residential property base.

²⁸ Note that Wissahickon Valley Park is separated spatially from the other institutions which cluster along or near Germantown Avenue in the Center of the Chestnut Hill neighborhood. The park clearly represents an amenity that may well have a larger property value effect than the much smaller campuses of the individual institutions. However, it would be improper to credit the entire property value enhancement effects of the Park to the work of the Friends of the Wissahickon group. Therefore, this effect is conservatively excluded from this analysis.

FIGURE 5.2 – HALF MILE BUFFER AREA AROUND MEMBER INSTITUTIONS

Source: Esri Business Analyst (2017), Econsult Solutions (2017)

Within a half-mile of the member institutions, there are approximately 3,600 occupied homes, which have an average value of \$556,000 for an aggregate market value of approximately \$2.01 billion. The estimated 2.5% incremental property value impact attributed to the member institutions implies that absent the member institutions, these properties would only be worth \$1.96 billion, or \$49 million less (see Table 5.1).

TABLE 5.1 – ESTIMATED AGGREGATE PROPERTY VALUE IMPACT WITHIN 1/2 MILE OF MEMBER INSTITUTIONS

| Category | Value |
|---|-----------------------|
| Owner-occupied Housing Units within ½ mile of the member institutions | 3,621 |
| Average Property Value | \$556,100 |
| Aggregate Residential Property Value within ½ mile of member institutions | \$2.01 billion |
| Estimated Property Value Impact | 2.5% |
| Aggregate Property Value without the member institutions (\$M) | \$1,964 |
| Est. Increase in Property Value for homes within ½ mile of a member institutions | \$49.1 million |

Source: Esri Business Analyst (2017), Econsult Solutions (2017)

5.4 FISCAL IMPACT OF INCREASED PROPERTY VALUES

Not only does the increased value generate wealth for homeowners located within a half mile of one of the institutions, but it also generates increased property tax revenues each year for the City and School District of Philadelphia. The additional \$49 million in residential property values generated by proximity to one of the member institutions translates into increased property tax revenues of approximately \$310,000 for the City of Philadelphia and \$377,000 for the School District of Philadelphia on an annual basis (see Table 5.2).

TABLE 5.2 – ESTIMATED INCREMENTAL ANNUAL PROPERTY TAX REVENUE TO THE CITY AND SCHOOL DISTRICT OF PHILADELPHIA DUE TO ENHANCED PROPERTY VALUES

| Category | Value |
|---|----------------|
| Estimated Increase in Property Values | \$49.1 million |
| City of Philadelphia Property Tax Rate ²⁹ | 0.6317% |
| Annual Incremental Property Tax Revenue to City of Philadelphia (000s) | \$310 |
| School District of Philadelphia Property Tax Rate | 0.7681% |
| Annual Property Tax Revenue to School District of Philadelphia (000s) | \$377 |

Source: Esri Business Analyst (2017), Econsult Solutions (2017)

²⁹ Note that direct rather than effective tax rates are utilized in this calculation, since the property tax base in question is residential property, which by and large does not benefit from tax exemptions applicable to certain classes of property (such as non-profits) or to new construction abatements. Such exemptions or abatements may apply in limited circumstances, but their effect is expected to be negligible on the properties in question.

6.0 COMMUNITY AND SOCIAL IMPACTS

Beyond the quantifiable economic impacts outlined in Sections 2-5, the member institutions provide a number of valuable community and social impacts through their work. Many of the member institutions have an educational mission and offer extensive educational programming. Others are devoted to advocacy for neighborhood issues such as environmental and historic preservation and economic development. Many provide public benefit through services like educational aid, uncompensated medical care, and maintenance of clean, safe and accessible public spaces. And, many use their resources for charitable causes and community service initiatives. Collectively, the institutions are thus major cultural contributors and support quality of life within the neighborhood and beyond.

As previously addressed, categorizing the member institutions by primary function (Education/Health Institutions, Attractions, and Neighborhood Advocates) serves as a way to differentiate the primary economic impacts that they provide. However, this categorization does not imply that benefits are exclusive to any one institutional type. As detailed below, each of the member institutions contributes to the community in ways that are tailored to its mission and resources. Notably, the institutions are not only complementary in their missions, but directly cooperate on joint programming efforts. Ultimately, the intertwining of these institutions means that their collective contribution to the unique character of the Chestnut Hill community is greater than the sum of their individual parts.

6.1 EDUCATIONAL PROGRAMMING

Many of the member institutions are at their core devoted largely or in part to education. This includes not only direct educational providers Chestnut Hill College, Norwood-Fontbonne Academy and Springside Chestnut Hill Academy, but also to the other attractions and advocacy organizations which have cultural education and outreach at the foundation of their mission.

Many members focus their educational outreach programs on schools and community groups. Each year, a substantial number of local and regional school and community groups take advantage of the variety of events and programs at these institutions. Examples include:

- Woodmere Art Museum educates as many as 10,000 children each year during class visits and outreach programs. It also hosts a variety of conferences and symposiums, with public art and culture performances and lectures occurring on a weekly basis.
- Morris Arboretum provides over 170 classes on a range of plant-related topics including sustainability, climate change, horticulture, and landscape restoration. The Arboretum also offers guided tours covering topics as diverse as local history, basic botany, ecological interdependence, and the impact of wetlands. Additionally, the Arboretum offers career symposiums and internships to provide hands-on information about plant science.

- Chestnut Hill Hospital is a teaching hospital. It hosts 44 medical residents annually and provides a year-round rotational program for 120 nursing students.

6.2 MISSION-DRIVEN ADVOCACY

The neighborhood advocacy organizations are devoted to community improvement as their fundamental mission and purpose. The Chestnut Hill Conservancy, Chestnut Hill Business District and Friends of the Wissahickon are all non-profit advocacy organizations reliant on member and donor contributions with annual operating budgets that are small relative to institutions like hospitals, colleges and museums. Thus, their economic impact and social impact is less a function of their direct employment, operating and capital activities and more a function of their contributions to the unique character and quality of life in Chestnut Hill.

- According to its mission statement, the Chestnut Hill Conservancy is “dedicated to preserving the historical, architectural and cultural resources that define the character of Chestnut Hill and its environs.” This entails not only direct action to ensure the preservation of certain properties or buildings, but also broader advocacy efforts that raise public awareness about these issues.
- According to its mission statement, the Chestnut Hill Business District is dedicated to supporting the area’s business community, retail attraction and economic development efforts through promotion of the region as a dynamic, friendly and attractive destination to live, work and visit.” In addition to direct services like cleaning and public safety, the promotional aspect of this mission helps to define the neighborhood for visitors, and the attraction and economic development efforts increase the amenities and economic opportunities available to residents.
- The mission of the Friends of the Wissahickon is to “preserve the natural beauty and wildness of the Wissahickon Valley and stimulate the public interest therein.” This involves both direct efforts to preserve and enhance the park, and public advocacy to generate interest in the park and these efforts.

6.3 PUBLIC SERVICE PROVISION

Many of the institutions also directly provide public-facing services. This includes the financial aid offered by the educational institutions to reduce the cost of attendance and increase the accessibility of their institutions, uncompensated medical care, the physical improvements and cleanliness and safety efforts of institutions on and around their campuses, and the significant volume of protected open space accessible to the public and maintained by the institutions.

Student Financial Aid

Each of the educational institutions offers institutional aid and grants to assist students in paying for their educational experience. For the most recent available year, Chestnut Hill College provided \$15.5 million in institutional aid and Springside Chestnut Hill Academy provided \$8.2 million. Additionally, Norwood-Fontbonne Academy provides \$200,000 in financial aid annually to their students.

These contributions help to make high-quality educational experiences accessible for a broader group of students, and to lessen loan debt that they face upon graduation, positioning them for greater financial success. From an economic standpoint, it is also important that much of this aid is funded by the donations of alumni and other supporters of the institution, many of whom may no longer live in the region. Accordingly, they represent a transfer of funds from outside the region into Chestnut Hill, where they not only support education, but also the employment and operating activities of the institutions within the local economy.

Uncompensated Medical Care

Chestnut Hill Hospital provides a significant volume of uncompensated medical care to members of the surrounding community. The hospital's commitments to community health are both reactive and proactive. Within the hospital, \$19 million in charity and uncompensated care is provided on an annual basis to patients who are unable to pay for their care. Proactively, the hospital also promotes community health through free wellness programs and screening events, hosting as many as 65 of these events annually. It also circulates a number of wellness articles, newsletters, and magazines to inform locals of pertinent health issues.

Physical Improvements, Cleanliness and Safety

As noted throughout this report, the large-scale member institutions maintain campuses that serve as amenities within the Chestnut Hill community in numerous ways. An important aspect benefitting the community is cleanliness and safety efforts taking place on and around these campuses. Institutional funds are utilized for physical infrastructure, lighting, and public safety personnel on and around campuses that enhance not on the aesthetic quality but the safety of the neighborhood. Further, the Chestnut Hill Business District provides these services within the central commercial corridor, as part of its purpose is to "maintain the safety and ambiance of the corridor." In each case, institutional funds provide a service that neighborhood residents draw broad benefits from.

Protected Open Space

Another way in which the member institutions support their surrounding community is by providing access to quality of life resources like open space. Many of the member institutions control, preserve, and maintain a sizeable amount of green space:

- Friends of the Wissahickon, in Partnership with the City of Philadelphia, help to maintain the approximately 1,800 acres that make up Wissahickon Valley Park.
- The Morris Arboretum extends across approximately 167 acres of space in total, 92 acres of which comprise the public garden. The remaining 75 acres is open, uncultivated space and includes educational facilities and staff offices.
- Chestnut Hill College covers 75 acres between its Main Campus and Sugarloaf campus, where 10 acres are preserved as green space in perpetuity. Master planning for the campus is controlled by the Philadelphia City Council and accordingly goes through a public approval process.
- The Philadelphia Cricket Club has 40 acres of open space protected by a restricted easement that is monitored by the National Lands Trust.
- The Woodmere Art Museum protects over six acres of protected open space, all of which is fully accessible to the public.
- Chestnut Hill Hospital has a campus of 12.5 acres, all of which is open to the public.
- Norwood-Fontbonne has 14 acres of protected green space which are used by other schools and organizations.

As discussed in Section 5.2, this open space serves as a valuable neighborhood amenity, as it is available to residents at no charge as both an aesthetic and active resource. Residents can directly use the open space for recreational purposes, and the presence of this open space provides an aesthetic benefit to Chestnut Hill as a whole. Beyond these immediately recognizable benefits, open space also provides a number of ecological, health, and economic benefits.

6.4 COMMUNITY SERVICE AND PROGRAMMING

Many of the member institutions are engaged in a variety of community service and outreach initiatives. These programs generate a significant volume of service hours, and render services including youth mentoring, environmental improvements and healthcare. Examples include:

- The Campus Ministry of the Chestnut Hill College provides a number of service opportunities, inviting students to give back to the local community by providing service

hours at venues including soup kitchens and after-school programs. Throughout the past year, as many as 490 students gave a total of 2,050 service hours to these programs.

- At Norwood-Fontbonne Academy, students are immersed in grade-level themes of community service at various mentor sites. On campus, the NFA hosts events like E-Waste recycling drives and an annual dinner raising funds in support of Teenagers, Inc.
- Students at the Springside Chestnut Hill Academy make an environmentally conscious effort to tend to the neighboring Wissahickon woods by removing invasive species, planting natives, performing trail maintenance, and removing trash, often in partnership with Friends of the Wissahickon.
- The Morris Arboretum has partnered the ACLAMO Family Center of Norristown to host a summer camp serving underprivileged youth.

6.5 INSTITUTIONAL COOPERATION

As described throughout the course of this section, the collective contributions of member institutions to Chestnut Hill is greater than can be expressed through a purely economic analysis. Similarly, as described throughout the course of this report, the collective contributions of the institutions to the unique fabric of Chestnut Hill is greater than the sum of the contributions of each institution individually.

The member institutions collectively are “greater than the sum of their parts” in part because of their complementary nature, and the balance of their missions in economic, recreational, education and aesthetic offerings to residents and visitors. Importantly, however, this collective impact is enhanced by the direct cooperation and intertwining between the institutions themselves. There are many examples of direct partnerships such as joint programming between the institutions, cross-sponsorship of events and programming, and in kind-donations such as hosting neighborhood functions.

One noteworthy example of this programmatic collaboration is the annual Harry Potter Festival which takes place along Germantown Avenue for a full weekend each October. The festival, originated by Chestnut Hill College and organized primarily by the College and the Chestnut Hill Business District, is a collective effort by many of the member institutions. The Woodmere Art Museum organizes the TriWizard Straw Maze while Chestnut Hill College hosts the Quidditch tournament and the Harry Potter Conference. Additional restaurants, bars, and shops along Germantown Avenue serve themed food and sell “magical” merchandise. The collaboration among member institutions expands the breadth of resources available for the event and allows the festival to completely transform Chestnut Hill for a weekend.



The Harry Potter Festival

Signature events like these demonstrate the variety of roles that the member institutions serve for the surrounding community. As previously noted, the educational and health care institutions are the largest centers of employment and operating expenditures in the neighborhood, and thus account for the largest portion of the economic impacts described in this report. However, other institutions play important roles in attracting visitors into the neighborhood and in defining and improving the image of Chestnut Hill as a place to live, work and play. Further, as detailed throughout this chapter, each organization delivers social and community benefits in ways that are uniquely tailored to their mission and area of focus. Ultimately, each institution contributes to the Chestnut Hill community in its own unique way, and it is the collection of these economic and social impacts that make the member institutions vital contributors to the neighborhood.

APPENDIX A – DETAILED ECONOMIC AND FISCAL IMPACT METHODOLOGY

A.1 OVERVIEW

Economic impact estimates are generated by utilizing **input-output models** to translate an initial amount of direct economic activity into the total amount of economic activity that it supports, which includes multiple waves of spillover impacts generated by spending on goods and services and by spending of labor income by employees. This section summarizes the methodologies and tools used to construct, use, and interpret the input-output models needed to estimate this project's economic impact.

A.2 INPUT-OUTPUT MODEL THEORY

In an inter-connected economy, every dollar spent generates two spillover impacts:

- First, some amount of the proportion of that expenditure that goes to the purchase of goods and services gets circulated back into an economy when those goods and services are purchased from local vendors. This represents what is called the “**indirect effect**,” and reflects the fact that local purchases of goods and services support local vendors, who in turn require additional purchasing with their own set of vendors.
- Second, some amount of the proportion of that expenditure that goes to labor income gets circulated back into an economy when those employees spend some of their earnings on various goods and services. This represents what is called the “**induced effect**,” and reflects the fact that some of those goods and services will be purchased from local vendors, further stimulating a local economy.

The role of input-output models is to determine the linkages across industries in order to model out the magnitude and composition of spillover impact to all industries of a dollar spent in any one industry. Thus, the total economic impact is the sum of its own direct economic footprint plus the indirect and induced effects generated by that direct footprint.

A.3 INPUT-OUTPUT MODEL MECHANICS

To model the impacts resulting from the direct expenditures Econsult Solutions, Inc. developed a customized economic impact model using the **IMPLAN** input/output modeling system. IMPLAN represents an industry standard approach to assess the economic and job creation impacts of economic development projects, the creation of new businesses, and public policy changes within a county its surrounding area

IMPLAN has developed a social accounting matrix (SAM) that accounts for the flow of commodities through economics. From this matrix, IMPLAN also determines the regional purchase coefficient (RPC), the proportion of local supply that satisfies local demand. These values not only establish the types of goods and services supported by an industry or institution, but also the level in which they are acquired locally. This assessment determines the multiplier basis for the local and regional models created in the IMPLAN modeling system. IMPLAN takes the multipliers and divides them into 440 industry categories in accordance to the North American Industrial Classification System (NAICS) codes.

The IMPLAN modeling system also allows for customization of its inputs which alters multiplier outputs. Where necessary, certain institutions may have different levels of demand for commodities. When this occurs, an “analysis-by-parts” (ABP) approach is taken. This allows the user to model the impacts of direct economic activity related to an institution or industry with greater accuracy. Where inputs are unknown, IMPLAN is able to estimate other inputs based on the level of employment, earnings, or output by an industry or institution.

A.4 EMPLOYMENT AND WAGES SUPPORTED

IMPLAN generates job estimates based on the term “job-years”, or how many jobs will be supported each year. For instance, if a construction project takes two years, and IMPLAN estimates there are 100 employees, or more correctly “job-years” supported, over two years, that represents 50 annual jobs. Additionally, these can be a mix of a full and part-time employment. Consequently, job creation could feature more part-time jobs than fulltime jobs. To account for this, IMPLAN has a multiplier to covert annual jobs to full-time equivalent jobs.

Income to direct, indirect, and induced jobs is calculated as employee compensation. This includes wage and salary, all benefits (e.g., health, retirement) and payroll taxes (both sides of social security, unemployment taxes, etc.). Therefore, IMPLAN’s measure of income estimates gross pay opposed to just strictly wages.

A.5 TAX REVENUE IMPACT

The economic impacts in turn produce one-time or ongoing increases in various tax bases, which yield temporary or permanent increases in various tax revenues. To estimate these increases, Econsult Solutions, Inc. created a **tax revenue impact model** to translate total economic impacts into their commensurate tax revenue gains. These tax revenue gains only account for a subset of the total tax revenue generation that an institution or industry may have on the economy. Furthermore, where institutions are tax exempt, only the tax revenue generation from supported indirect and induced industries is accounted for.

APPENDIX B - ABOUT ECONSULT SOLUTIONS, INC.

This report was produced by Econsult Solutions, Inc. (“ESI”). ESI is a Philadelphia-based economic consulting firm that provides businesses and public policy makers with economic consulting services in urban economics, real estate economics, transportation, public infrastructure, development, public policy and finance, community and neighborhood development, planning, as well as expert witness services for litigation support. Its principals are nationally recognized experts in urban development, real estate, government and public policy, planning, transportation, non-profit management, business strategy and administration, as well as litigation and commercial damages. Staff members have outstanding professional and academic credentials, including active positions at the university level, wide experience at the highest levels of the public policy process and extensive consulting experience.

