

CITY OF PHILADELPHIA PENNSYLVANIA

OFFICE OF THE CONTROLLER

Promoting honest, efficient, and fully accountable government

**SURVEY OF THE CURRENT AND
POTENTIAL IMPACT OF LOCAL
PROCUREMENT BY
PHILADELPHIA ANCHOR
INSTITUTIONS**

January 2014



City Controller
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SURVEY OF THE CURRENT AND POTENTIAL IMPACT OF LOCAL PROCUREMENT BY PHILADELPHIA ANCHOR INSTITUTIONS



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EXECUTIVE SUMMARY

The City of Philadelphia is home to numerous world-class **universities** and **health systems**. They are significant contributors to the local economy. They are often referred to as “**anchor institutions**,” in that their identity is inextricably linked to that of their geographic location. They are known for their commitment to and partnership with their immediate neighborhoods and the City as a whole. **Procurement** represents one facet of their contribution to the local economy, as they procure billions of dollars of goods and services each year, and each procurement decision represents an opportunity to choose a Philadelphia-based vendor and support economic activity and job creation within the City. It is in the City’s interest to know the benefits associated with local spending by anchor institutions.

The purpose of this report, in addition to highlighting some local and national best practices, is to explore the current and potential impact on the Philadelphia economy of local procurement by anchor institutions. It is estimated that anchor institutions in Philadelphia have a total annual operating budget of about \$14 billion, of which about 38 percent, or \$5.3 billion, is non-payroll spending and therefore represents procurement opportunities for which a local vendor may be used. **Of that \$5.3 billion in annual procurement opportunities, currently about 52 percent, or \$2.7 billion, is with local vendors** (see Table ES.1).

Table ES.1 – Estimated Annual Local Spending by Anchor Institutions in Philadelphia

| | Total Non-Payroll Spending | % Locally Procured | Total Locally Procured |
|----------------|----------------------------|--------------------|------------------------|
| Universities | \$1.78 Billion | 52% | \$0.93 Billion |
| Health Systems | \$3.52 Billion | 51% | \$1.81 Billion |
| Total | \$5.30 Billion | 52% | \$2.74 Billion |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

The economic impact of spending by anchor institutions is made up of (1) the direct spending itself, (2) the indirect effect of additional economic activity for some local vendors, who in turn may need to rely on other local vendors, and (3) the induced effect of people earning salaries and wages and in turn spending a portion of their earnings within the City. It is estimated that annual spending by anchor institutions in Philadelphia produces **a total expenditure impact of about \$4 billion per year, supporting about 28,000 jobs and generating about \$90 million in annual local tax revenues** (see Table ES.2). Thus, of the \$5.3 billion in non-payroll spending by anchor institutions, \$2.6 billion in spending is with non-local vendors and has no effect on the Philadelphia economy. The \$2.7 billion in spending with local vendors stimulates an additional \$1.4 billion in expenditures within Philadelphia and supports about 28,000 jobs. Said another way, **every \$1 million spent by anchor institutions with local vendors actually represents \$1.5 million in expenditures within Philadelphia and supports 10 additional local jobs** (see Table ES.3). These impact estimates highlight the large footprint spending by anchor institutions has in Philadelphia, as well as the significant multiplier effect of local spending

Table ES.2 – Economic Impact of Estimated Spending by Anchor Institutions in Philadelphia

| | Universities | Health Systems | Total |
|---------------------------|----------------|----------------|----------------|
| Direct Local Expenditures | \$0.93 Billion | \$1.81 Billion | \$2.74 Billion |
| Total Expenditures | \$1.39 Billion | \$2.76 Billion | \$4.15 Billion |
| Total Employment | 8,200 Jobs | 19,400 Jobs | 27,600 Jobs |
| Total Tax Revenues | \$27 Million | \$62 Million | \$89 Million |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

Table ES.3 – Multiplier Effect of Local Spending by Anchor Institutions in Philadelphia

| | Total | Per \$1M of Local Spending |
|---------------------------|----------------------------------------|----------------------------|
| Direct Local Expenditures | \$2.74 Billion (out of \$5.30 Billion) | \$1.00 Million |
| Total Expenditures | \$4.15 Billion | \$1.52 Million |
| Total Employment | 27,600 Jobs | 10 Jobs |
| Total Tax Revenues | \$89 Million | \$32,000 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

If anchor institutions spend more of their non-payroll spending with local vendors, the economic impact of their spending will be greater. This is because more of the economic activity associated with their spending will take place within Philadelphia, thus benefitting Philadelphia vendors and supporting Philadelphia jobs. If it is assumed that of the amounts currently spent with non-local vendors, 25 percent can be shifted to local vendors, then **anchor institutions will now spend \$3.38 billion with local vendors** (up \$640 million from \$2.74 billion), which is 64 percent of their total spending (up 12 percentage points from 52 percent). With this more localized spending comes a higher level of economic impact in Philadelphia: **a total expenditure impact of about \$5 billion per year, supporting about 32,000 jobs and generating over \$100 million in annual tax revenues** (see Table ES.4). In other words, more local intensity in procurement by anchor institutions would yield meaningful economic gains for Philadelphia.

Table ES.4 – Economic Impact of Estimated Spending by Anchor Institutions in Philadelphia, Given a 25 Percent Shift to Local Vendors

| | Current | Gain | Total |
|---------------------------|----------------|----------------|----------------|
| Direct Local Expenditures | \$2.74 Billion | \$0.64 Billion | \$3.38 Billion |
| Total Expenditures | \$4.15 Billion | \$0.91 Billion | \$5.05 Billion |
| Total Employment | 27,600 Jobs | 4,400 Jobs | 32,000 Jobs |
| Total Tax Revenues | \$89 Million | \$14 Million | \$103 Million |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

1.0 INTRODUCTION

1.1 ANCHOR INSTITUTIONS IN PHILADELPHIA

The City of Philadelphia is home to numerous world-class academic and medical institutions, from Ivy League **universities** to award-winning **health systems**. Their work in educating students, caring for patients, and conducting research advances the common good, brings positive publicity to the City, and draws hundreds of thousands of people (students, faculty, researchers) and billions of dollars of spending (tuition, health care payments, research grants) into Philadelphia. Individually and collectively, they are known as significant contributors to the local economy.

Universities and health systems are often referred to as “**anchor institutions**,” in that their identity is inextricably linked to that of their geographic location; indeed, the universities and health systems in Philadelphia are known nationally and globally for their commitment to and partnership with their immediate neighborhoods in specific and the City as a whole in general.

In contrast, for-profit businesses are perceived as being less geographically anchored, in that they can more easily relocate from their current location or otherwise distance themselves from identifying with their home jurisdiction. While some iconic corporations may be defined as anchor institutions despite having operations all over the world (e.g. Starbucks in Seattle, Ford and GM in Detroit), for the purposes of this report only universities and health systems will be considered as anchor institutions (see Table 1.1, Figure 1.1, and Figure 1.2).¹

¹ Two of Philadelphia's largest corporations split their major hubs and overall identity between Philadelphia and other cities: Comcast has major operations in Los Angeles and New York, while GlaxoSmithKline is headquartered in London.

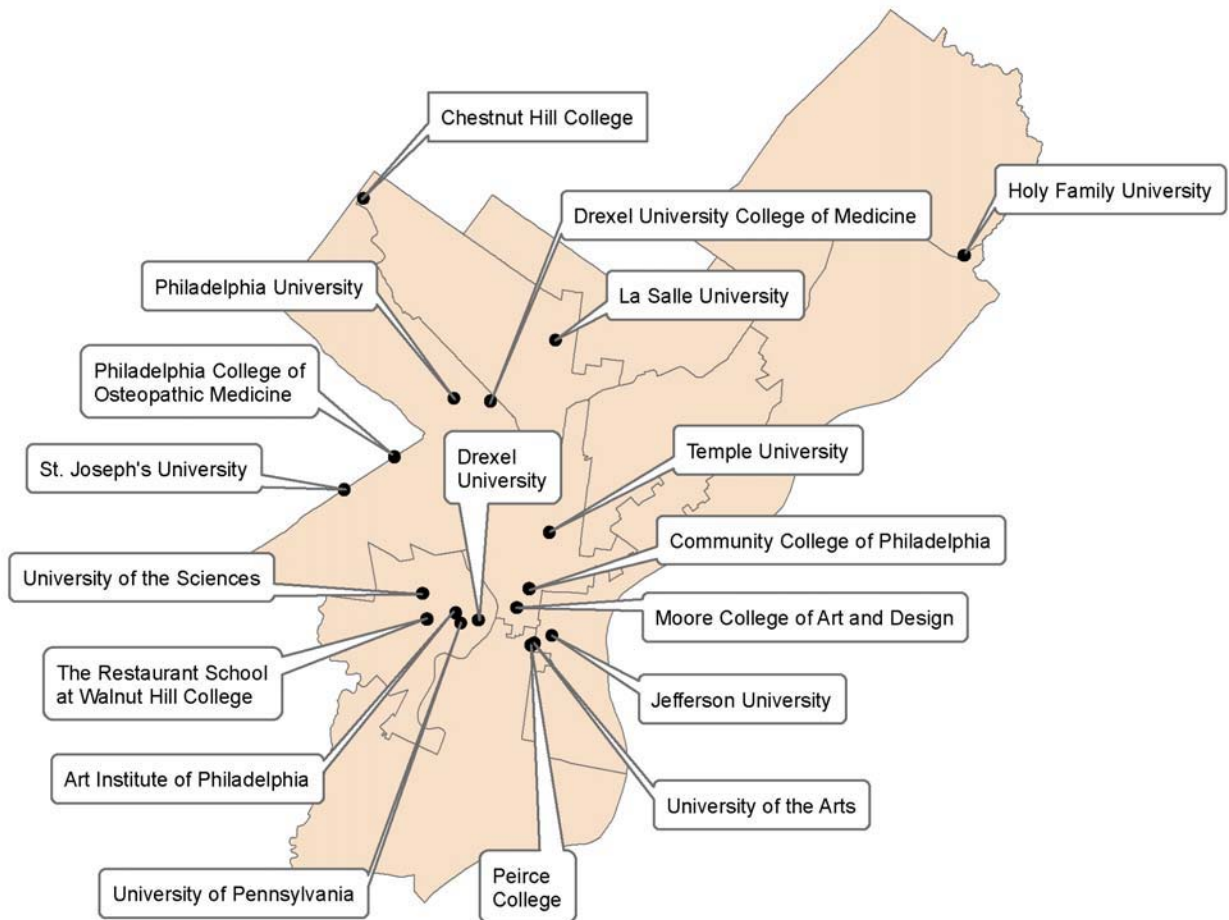
Table 1.1 – Philadelphia Anchor Institutions Studied in This Report²

| Universities | Hospitals |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Art Institute of Philadelphia • Chestnut Hill College • Community College of Philadelphia • Drexel University • Drexel University College of Medicine • Holy Family University • La Salle University • Moore College of Art and Design • Peirce College • Philadelphia College of Osteopathic Medicine • Philadelphia University • Restaurant School at Walnut Hill College • Saint Joseph's University • Temple University • Thomas Jefferson University • University of Pennsylvania • University of the Arts • University of the Sciences in Philadelphia | <ul style="list-style-type: none"> • Albert Einstein Medical Center • Aria Health • Cancer Treatment Centers of America at Eastern Regional Medical Center • Chestnut Hill Hospital • Children's Hospital of Philadelphia • Fox Chase Cancer Center • Hahnemann University Hospital • Hospital of the University of Pennsylvania • Jeanes Hospital • Nazareth Hospital • Pennsylvania Hospital • Presbyterian Hospital • St. Joseph's Hospital • Temple University Health System • Thomas Jefferson University Hospital • Veterans Administration Medical Center |

Source: Econsult Solutions, Inc. (2013)

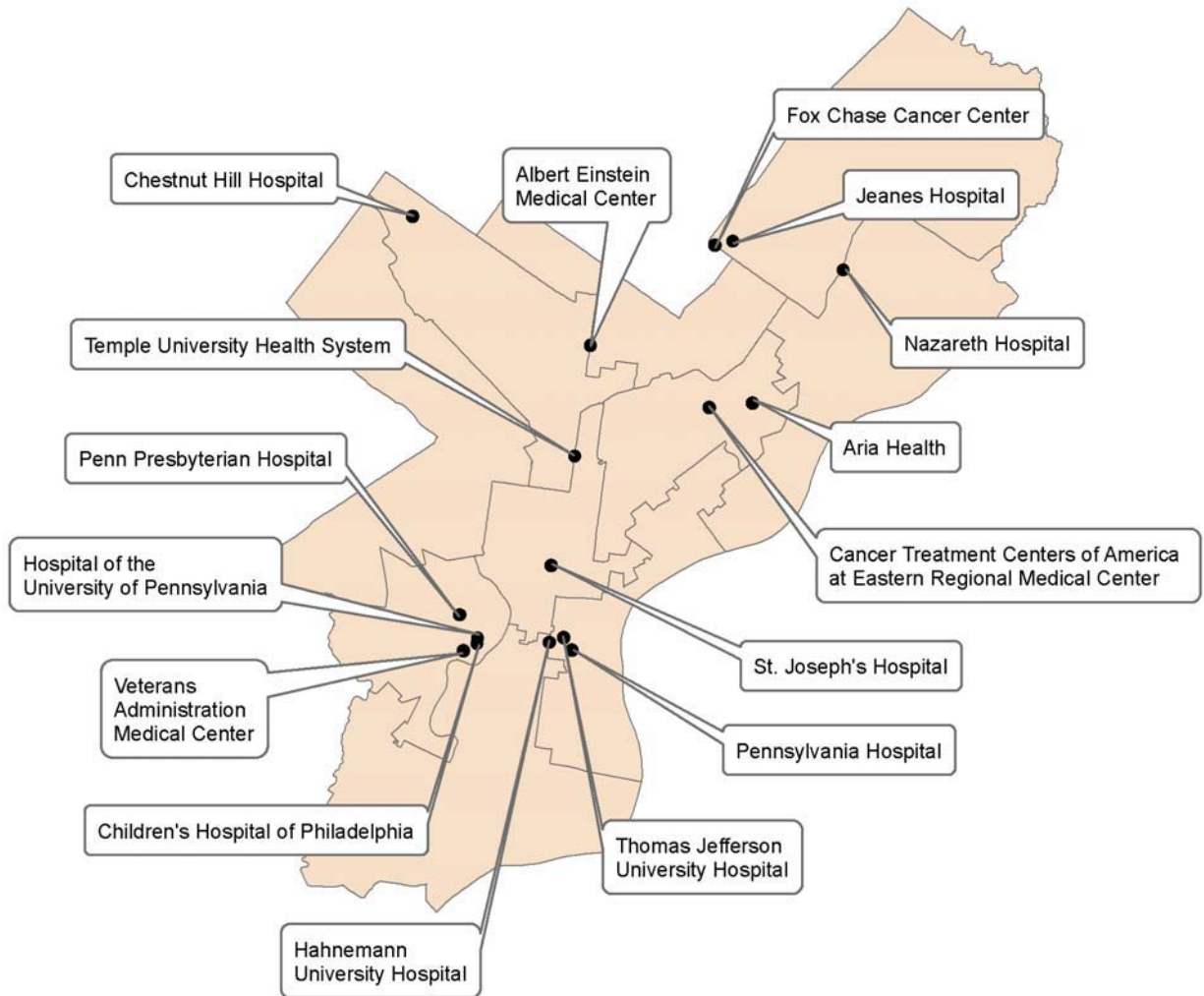
² This is not a comprehensive list of all universities and health systems in Philadelphia. This list represents the universities and health systems that are among the largest employers in Philadelphia, and served as the universe of institutions that were researched and surveyed for this report. Aggregate spending estimates in this report are based on data for all universities and health systems in Philadelphia, not just those institutions on this list.

Figure 1.1 – Philadelphia Universities Studied in This Report



Source: Econsult Solutions, Inc. (2013)

Figure 1.2 – Philadelphia Hospitals Studied in This Report



Source: Econsult Solutions, Inc. (2013)

1.2 PROCUREMENT AS A MEANS OF SUPPORTING PHILADELPHIA'S ECONOMY

Procurement by universities and health systems represents one facet of their contribution to the local economy that may benefit from further exploration. In the course of their operations, these anchor institutions procure billions of dollars of goods and services each year. Each procurement decision represents, among other things, a potential opportunity to choose a Philadelphia-based vendor and therefore a chance to support economic activity and job creation within the City. Therefore, it is in the City's interest to know the benefits associated with local spending by anchor institutions, and to promote programs and efforts by anchor institutions to increase their local spending.

1.3 REPORT OVERVIEW

The purpose of this report, commissioned by the Office of the City Controller and produced by Econsult Solutions, Inc., is to explore the current and potential impact on the Philadelphia economy of local procurement by anchor institutions. Using both primary³ and secondary⁴ research methods, an estimate was made of the composition and scale of total spending represented by anchor institutions, and of the proportion of that total spending that was with local vendors (Section 2). The economic impact of that spending, in its current form, was estimated and in turn compared to the higher economic impact that would result if a greater portion of that spending was with local vendors (Section 3).⁵ The state of local procurement by anchor institutions is further described by looking at initiatives and successes by Philadelphia entities (Section 4) as well as by surveying best practices throughout the US (Section 5).

1.4 NEXT STEPS

One of the aims of this report is to provide data points to inform the current discussion of local procurement by anchor institutions. It is hoped that these data points will support additional actions on the part of the City of Philadelphia and the anchor institutions to increase the amount of institutional spending with local vendors, and that those actions will be motivated by the economic gains established in this report and guided by the best practices shared in this report. In fact, this appears to be the intention of both the City and the anchor institutions, which have all demonstrated a past commitment to local spending and have all expressed an interest in learning how to increase that commitment.

³ All anchor institutions studied in this report were directly or indirectly surveyed on their procurement practices and outcomes, although not all survey recipients opted to respond. See Appendix A for a copy of the survey to anchor institutions.

⁴ Data on the spending patterns of Philadelphia-based universities and health systems was available through IMPLAN, a software tool for modeling economic and fiscal impacts.

⁵ Economic impacts were modeled using IMPLAN, an industry standard input-output software program. See Appendix B for additional detail on Econsult Solutions, Inc.'s economic impact methodology.

2.0 THE MAGNITUDE OF LOCAL SPENDING REPRESENTED BY ANCHOR INSTITUTIONS IN PHILADELPHIA

2.1 SECTION OVERVIEW

The purpose of this section is to express the magnitude of local spending represented by anchor institutions in Philadelphia, and to describe the approach by which these estimates were made. This enables an understanding of the economic impact represented by current spending patterns, and of the greater economic impact that would be achieved by changing spending patterns so that more local vendors were used.

2.2 METHODOLOGICAL APPROACH FOR ESTIMATING LOCAL SPENDING

Local spending by anchor institutions was estimated using data from IMPLAN, a software tool for modeling economic and fiscal impacts. This data source provided an estimate of the magnitude of total non-payroll spending by universities and health systems in Philadelphia. It also provided an estimate of the distribution of that spending by expenditure category, as well as the proportion of that spending that was with local vendors. These estimates were compared to survey response data provided by individual anchor institutions to provide an internal check on their general accuracy.

2.3 LOCAL SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA

Based on this data source and methodological approach, an estimate can be made of the amount, composition, and local intensity of spending by anchor institutions in Philadelphia (see Table 2.1). It is estimated that anchor institutions in Philadelphia have a total annual operating budget of about \$14 billion, of which about 38 percent, or \$5.3 billion, is non-payroll spending and therefore represents procurement opportunities for which a local vendor may be used. **Of that \$5.3 billion in annual procurement opportunities, currently about 52 percent, or \$2.7 billion, is with local vendors.** This is a significant amount of potential and actual economic opportunity for Philadelphia-based businesses.

Table 2.1 – Estimated Annual Local Spending by Anchor Institutions in Philadelphia

| | Total Budget (\$B) | % Non-Payroll Spending | Total Non-Payroll Spending (\$B) | % Locally Procured | Total Locally Procured (\$B) |
|----------------|--------------------|------------------------|----------------------------------|--------------------|------------------------------|
| Universities | \$5.41 | 33% | \$1.78 | 52% | \$0.93 |
| Health Systems | \$8.69 | 41% | \$3.52 | 51% | \$1.81 |
| Total | \$14.10 | 38% | \$5.30 | 52% | \$2.74 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

The local intensity of spending by anchor institutions in Philadelphia varies widely depending on the expenditure category, ranging from 7 percent for spending on construction and manufacturing to close to 100 percent for spending on education, health care, and social assistance (see Table 2.2 and Figure 2.1).⁶ A closer look at what actual goods and services these spending amounts represent is warranted, in order to better understand where there is reasonable opportunity to shift purchasing from non-local to local vendors. However, based on an initial review of the composition of spending by anchor institutions, it appears that spending in the categories of construction/manufacturing and real estate warrant additional attention, since they represent about \$2.5 billion in annual spending, of which almost \$2 billion is with non-local vendors.

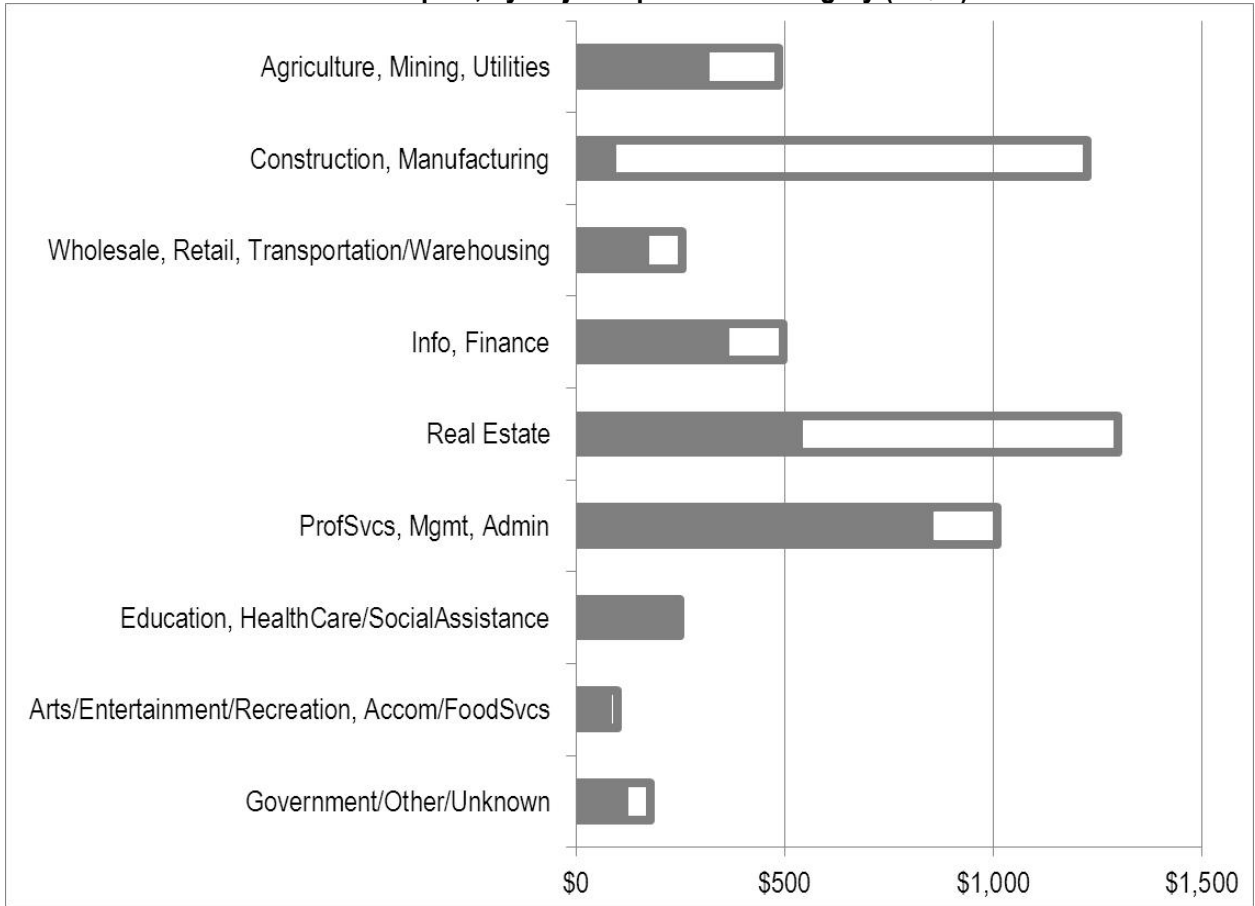
Table 2.2 – Distribution of Estimated Annual Local Spending by Anchor Institutions in Philadelphia, by Major Expenditure Category

| Industries | Total Non-Payroll Spending (\$M) | % Locally Procured | Local Spend (\$M) | Non-Local Spend (\$M) |
|-----------------------------------------------|----------------------------------|--------------------|-------------------|-----------------------|
| Agriculture, Mining, Utilities | \$487 | 64% | \$311 | \$176 |
| Construction, Manufacturing | \$1,225 | 7% | \$86 | \$1,139 |
| Wholesale, Retail, Transportation/Warehousing | \$255 | 65% | \$165 | \$90 |
| Info, Finance | \$498 | 72% | \$356 | \$142 |
| Real Estate | \$1,300 | 41% | \$533 | \$767 |
| ProfSvcs, Mgmt, Admin | \$1,011 | 84% | \$847 | \$164 |
| Education, HealthCare/SocialAssistance | \$248 | 100% | \$248 | \$0 |
| Arts/Entertainment/Recreation, Accom/FoodSvcs | \$100 | 75% | \$75 | \$25 |
| Government/Other/Unknown | \$179 | 64% | \$115 | \$64 |
| Total | \$5,302 | 52% | \$2,735 | \$2,567 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

⁶ These figures represent operating expenditures only, and do not include capital expenditures. See Appendix C for a more detailed version of this table, and for a table of illustrative sub-industries for each major industry category.

Figure 2.1 – Distribution of Estimated Annual Spending (and Local Proportion) by Anchor Institutions in Philadelphia, by Major Expenditure Category (in \$M)



Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

3.0 CURRENT AND POTENTIAL ECONOMIC IMPACT FROM LOCAL SPENDING BY ANCHOR INSTITUTIONS

3.1 SECTION OVERVIEW

The purpose of this section is twofold. First, an estimate is made of the economic and fiscal impact associated with the current composition and scale of spending represented by anchor institutions in Philadelphia. Second, that impact is compared with the higher economic and fiscal impact that would result if anchor institutions shifted more of their spending to local vendors. Specifically, upon the request of the Office of the City Controller, a shift to local vendors of 25 percent of that which is currently procured non-locally was modeled.

3.2 METHODOLOGICAL APPROACH FOR ESTIMATING THE ECONOMIC IMPACT OF SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA

The economic impact of spending by anchor institutions is made up of three parts:

1. First, there is the spending itself, which represents direct economic activity taking place within the City; this is known in economic impact circles as the **“direct effect.”**
2. Second, that spending creates a ripple effect in the form of additional economic activity for some local vendors, who in turn may need to rely on other local vendors to satisfy this demand; this is known in economic impact circles as the **“indirect effect.”**
3. Third, that spending supports employment in various sectors, which leads to people earning salaries and wages and in turn spending a portion of their earnings within the City; this is known in economic impact circles as the **“induced effect.”**

The composition and scale of the direct effect was determined from data provided by IMPLAN, while the composition and scale of the indirect and induced effects was estimated through modeling work done in IMPLAN.

3.3 ECONOMIC IMPACT OF SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA

Based on this data source and methodological approach, an estimate can be made of the economic impact in Philadelphia of spending by anchor institutions in Philadelphia (see Table 3.1). It is estimated that annual spending by anchor institutions in Philadelphia produce **a total expenditure impact of about \$4.1 billion per year, supporting about 28,000 jobs and about \$1.8 billion in annual labor income.**

These represent the impacts from non-payroll spending only. Anchor institutions also employ tens of thousands of people in Philadelphia and pay out billions of dollars per year in employee

earnings, which has an additional economic impact within the City. They are also responsible for providing educational resources, dispensing health care, and conducting research, among other core operational functions; these activities have a significant multiplier effect within the City, in drawing attention, people, and spending into the City. The purpose of this report and the focus of the impact estimates in this section are solely on the effect of local spending by anchor institutions.

Nevertheless, these impact estimates highlight the large footprint that just the spending activity by the anchor institutions has in Philadelphia, as well as the significant multiplier effect of local spending (see Table 3.2). Of the \$5.30 billion in non-payroll spending by anchor institutions, \$2.56 billion in spending is with non-local vendors and has no effect on the Philadelphia economy. The \$2.74 billion in spending with local vendors stimulates an additional \$1.41 billion in expenditures within Philadelphia and supports about 28,000 jobs. Said another way, **every \$1 million spent by anchor institutions with local vendors actually represents \$1.5 million in expenditures within Philadelphia and supports 10 additional local jobs throughout Philadelphia.**

Table 3.1 – Economic Impact of Estimated Spending by Anchor Institutions in Philadelphia

| | Universities | Health Systems | Total |
|---------------------------------------------|---------------|----------------|---------------|
| Direct Local Expenditures (\$B) | \$0.93 | \$1.81 | \$2.74 |
| Indirect Expenditures (\$B) | \$0.22 | \$0.39 | \$0.62 |
| Induced Expenditures (\$B) | \$0.24 | \$0.55 | \$0.80 |
| Total Expenditures (\$B) | \$1.39 | \$2.76 | \$4.15 |
| Total Employment (Jobs) | 8,200 | 19,400 | 27,600 |
| Total Labor Income (\$B)⁷ | \$0.54 | \$1.23 | \$1.76 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

Table 3.2 – Multiplier Effect of Local Spending by Anchor Institutions in Philadelphia

| | Total | Per \$1 Million of Local Spending |
|-----------------------------------|--------------------------|-----------------------------------|
| Direct Local Expenditures | \$2.74B (out of \$5.30B) | \$1.00M |
| Indirect and Induced Expenditures | \$1.41B | \$0.52M |
| Total Expenditures | \$4.15B | \$1.52M |
| Total Employment (Jobs) | 27,600 | 10 |
| Total Labor Income | \$1.76B | \$0.64M |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

⁷ Throughout the report, “labor income” represents the sum of employee earnings and sole proprietor income.

3.4 INDUSTRY DISTRIBUTION OF ECONOMIC IMPACT OF SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA

These impacts are distributed across a wide range of industries (see Table 3.3 and Figure 3.1). This is because of the varied nature of spending by anchor institutions in Philadelphia, and because the inter-related connected nature of the Philadelphia economy is such that direct impacts in one industry result in indirect impacts in many other industries.

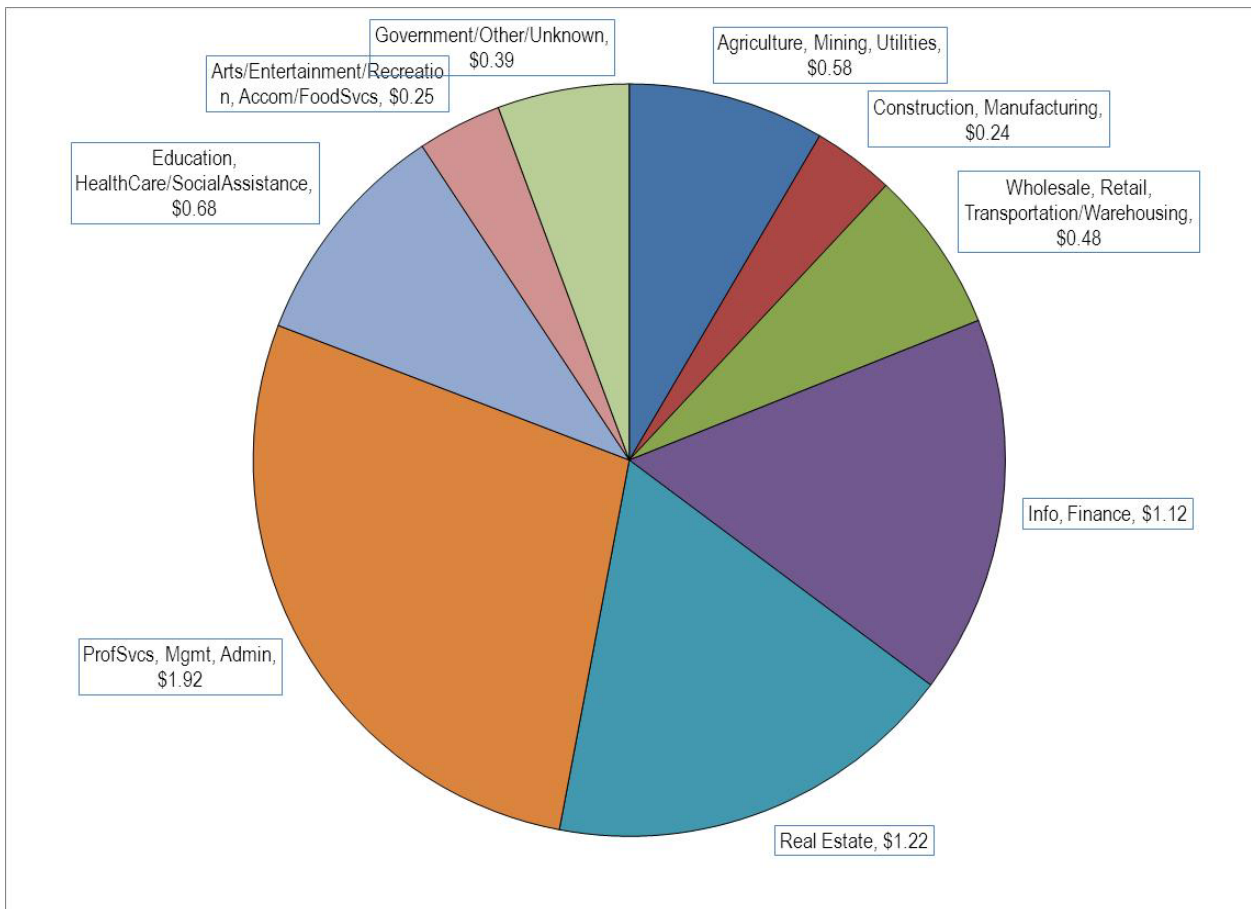
Table 3.3 – Industry Distribution of Expenditure Impact of Estimated Spending by Anchor Institutions in Philadelphia⁸

| Industries | \$B | % |
|-----------------------------------------------|---------------|-------------|
| Agriculture, Mining, Utilities | \$0.58 | 8% |
| Construction, Manufacturing | \$0.24 | 4% |
| Wholesale, Retail, Transportation/Warehousing | \$0.48 | 7% |
| Info, Finance | \$1.12 | 16% |
| Real Estate | \$1.22 | 18% |
| ProfSvcs, Mgmt, Admin | \$1.92 | 28% |
| Education, HealthCare/SocialAssistance | \$0.68 | 10% |
| Arts/Entertainment/Recreation, Accom/FoodSvcs | \$0.25 | 4% |
| Government/Other/Unknown | \$0.39 | 6% |
| Total | \$6.88 | 100% |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

⁸ See Appendix D for a more detailed version of this table.

Figure 3.1 – Industry Distribution of Expenditure Impact of Estimated Spending by Anchor Institutions in Philadelphia



Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

3.5 FISCAL IMPACT OF SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA

This amount of economic activity represented by local spending by anchor institutions in Philadelphia also has the effect of increasing various local tax bases, thus generating tax revenues to the City each year.⁹ Specifically, local spending by anchor institutions supports economic activity that yields wage tax revenues, business tax revenues, and sales tax revenues.

⁹ Econsult Solutions, Inc. constructed a model that converts the output from IMPLAN to generate detailed estimates of the increases in state and local tax collections that arise from local spending by anchor institutions. Specifically, the estimated earnings supported by the direct, indirect, and induced expenditures generated by the model were used to apportion the net increase in the relevant tax bases and therefore in those tax revenue categories. The resulting estimates represent the projected tax revenue gains to the City as a result of local spending by anchor institutions and its attendant indirect and induced effects.

Note that because anchor institutions are non-profit institutions, they are exempt from paying some local taxes. This fact is reflected in these estimates.

It is estimated that about \$89 million per year is generated to the City from local spending by anchor institutions (see Table 3.4).

Table 3.4 – Fiscal Impact of Estimated Spending by Anchor Institutions in Philadelphia (in \$M)

| Wage Tax Revenues | Business Tax Revenues | Sales Tax Revenues | Total Tax Revenues |
|-------------------|-----------------------|--------------------|--------------------|
| \$66.7 | \$18.3 | \$4.2 | \$89.2 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

3.6 METHODOLOGICAL APPROACH FOR ESTIMATING THE ECONOMIC IMPACT OF MORE LOCALIZED SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA

If anchor institutions spend more of their non-payroll spending with local vendors, the economic impact of their spending will be greater. This is because more of the economic activity associated with their spending will take place within Philadelphia, thus benefitting Philadelphia vendors and supporting Philadelphia jobs.

To provide some sense of the magnitude of additional impact associated with more localized spending by anchor institutions in Philadelphia, it is assumed that of the amounts currently spent with non-local vendors, 25 percent can be shifted to local vendors. In other words, if anchor institutions spend 40 percent with local vendors for a particular expenditure category (i.e. 60 percent with non-local vendors), then it is assumed that that can be increased to 55 percent (i.e. one-quarter of the 60 percent spent with non-local vendors, or 15 percent, is shifted from non-local vendors to local vendors).

This shift level was provided by the Office of the City Controller as a useful starting point for understanding what impact would result from a concerted effort to shift from non-local vendors to local vendors. This is purely a theoretical exercise, and does not account for the actual capacity levels for local vendors or the strategic priorities for anchor institutions. Nor does this exercise represent an endorsement of a specific goal level; a 25 percent shift may be easily achievable for some institutions and in some spending categories, or alternatively it may prohibitively difficult. Nevertheless, it is a helpful exercise for gaining a sense of the magnitude of additional economic impact produced by more localized spending by anchor institutions in Philadelphia.

3.7 LOCAL SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA, GIVEN A 25 PERCENT SHIFT TO LOCAL VENDORS

Based on this methodological approach and level of shift to local vendors, an estimate can be made of the new amount of local spending by anchor institutions in Philadelphia (see Table 3.5 and Figure 3.2). **Anchor institutions would now spend \$3.38 billion with local vendors** (up

\$640 million from \$2.74 billion), which is 64 percent of their total spending (up 12 percentage points from 52 percent).¹⁰

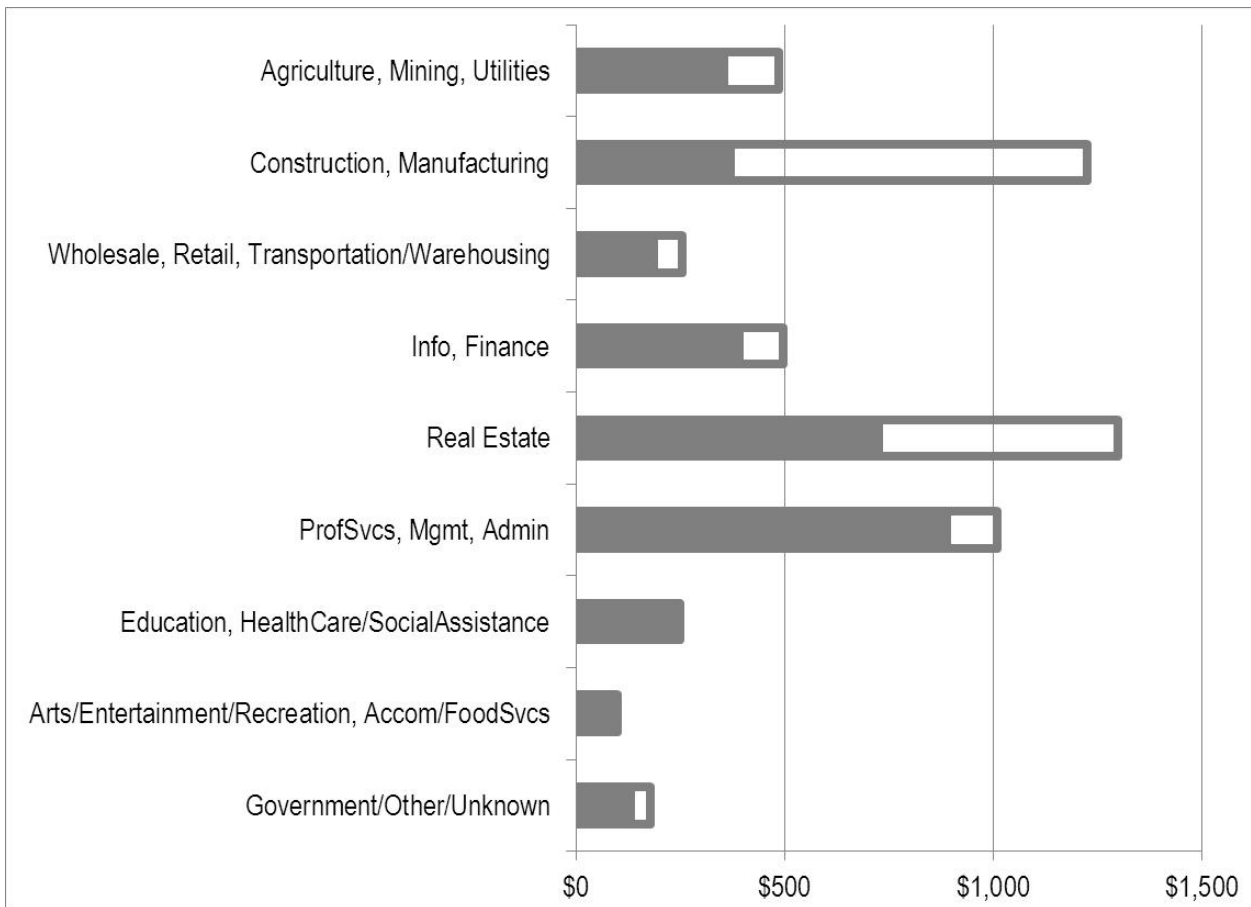
Table 3.5 – Distribution of Estimated Annual Local Spending by Anchor Institutions in Philadelphia, by Major Expenditure Category, Given a 25 Percent Shift to Local Vendors

| Industries | Current | | 25% Shift | | |
|-----------------------------------------------|---------------|-------------------|---------------|-------------------|----------------|
| | Local Spend % | Local Spend (\$M) | Local Spend % | Local Spend (\$M) | Increase (\$M) |
| Agriculture, Mining, Utilities | 64% | \$311 | 73% | \$355 | \$44 |
| Construction, Manufacturing | 7% | \$86 | 30% | \$371 | \$285 |
| Wholesale, Retail, Transportation/Warehousing | 65% | \$165 | 74% | \$187 | \$22 |
| Info, Finance | 72% | \$356 | 79% | \$392 | \$35 |
| Real Estate | 41% | \$533 | 56% | \$725 | \$192 |
| ProfSvcs, Mgmt, Admin | 84% | \$847 | 88% | \$888 | \$41 |
| Education, HealthCare/SocialAssistance | 100% | \$248 | 100% | \$248 | \$0 |
| Arts/Entertainment/Recreation, Accom/FoodSvcs | 75% | \$75 | 81% | \$81 | \$6 |
| Government/Other/Unknown | 64% | \$115 | 73% | \$131 | \$16 |
| Total | 52% | \$2,735 | 64% | \$3,377 | \$642 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

¹⁰ These figures represent operating expenditures only, and do not include capital expenditures. See Appendix E for a more detailed version of this table.

Figure 3.2 – Distribution of Estimated Annual Spending (and Local Proportion) by Anchor Institutions in Philadelphia, by Major Expenditure Category (in \$M), Given a 25 Percent Shift to Local Vendors



Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

3.8 ECONOMIC IMPACT OF SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA, GIVEN A 25 PERCENT SHIFT TO LOCAL VENDORS

With this more localized spending would come a higher level of economic impact in Philadelphia (see Table 3.6). It is estimated that annual spending by anchor institutions in Philadelphia would produce **a total expenditure impact of about \$5.1 billion per year, supporting about 32,000 jobs and about \$2 billion in annual labor income**. This represents a gain of about \$1 billion in expenditures each year, supporting about 4,400 more jobs and about \$280 million more in annual labor income, should 25 percent of that which is procured non-locally be shifted to local vendors. In other words, more local intensity in procurement by anchor institutions would yield meaningful economic gains for Philadelphia.

Table 3.6 – Economic Impact of Estimated Spending by Anchor Institutions in Philadelphia, Given a 25 Percent Shift to Local Vendors

| | Current | Gain | Total |
|---------------------------------|---------------|---------------|---------------|
| Direct Local Expenditures (\$B) | \$2.74 | \$0.64 | \$3.38 |
| Indirect Expenditures (\$B) | \$0.62 | \$0.14 | \$0.76 |
| Induced Expenditures (\$B) | \$0.80 | \$0.13 | \$0.92 |
| Total Expenditures (\$B) | \$4.15 | \$0.91 | \$5.05 |
| Total Employment (Jobs) | 27,600 | 4,400 | 32,000 |
| Total Labor Income (\$B) | \$1.76 | \$0.28 | \$2.04 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

3.9 FISCAL IMPACT OF SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA, GIVEN A 25 PERCENT SHIFT TO LOCAL VENDORS

This additional economic activity from more intensive local spending by anchor institutions in Philadelphia also has the effect of generating more tax revenues to the City each year. It is estimated that about \$103 million per year would be generated to the City from local spending by anchor institutions, should 25 percent of that which is procured non-locally be shifted to local vendors. (see Table 3.7). This represents a gain of about \$14 million per year in tax revenues to the City as a result of increased local spending.

Table 3.7 – Fiscal Impact of Estimated Spending by Anchor Institutions in Philadelphia, Given a 25 Percent Shift to Local Vendors (in \$M)

| | Current | Gain | Total |
|---------------------------|---------------|---------------|----------------|
| Wage Tax Revenues | \$66.7 | \$10.6 | \$77.3 |
| Business Tax Revenues | \$18.4 | \$2.9 | \$21.3 |
| Sales Tax Revenues | \$4.2 | \$0.5 | \$4.7 |
| Total Tax Revenues | \$89.2 | \$14.0 | \$103.2 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

4.0 LOCAL EXAMPLES

4.1 SECTION OVERVIEW

The purpose of this section and the ensuing section is to provide some best practices by anchor institutions in Philadelphia and throughout the US, in order to showcase some of the specific policies, programs, and initiatives being used by anchor institutions to ensure that as much of the large spending amounts they represent are being used to benefit their local economies. These practices help explain how anchor institutions are able to achieve their current local spending levels, and assist in guiding future efforts to increase those local spending levels.

4.2 INSTITUTIONAL COMMITMENT, INSTITUTIONAL BARRIERS

As anchor institutions, universities and health systems are physically and psychologically connected to their home jurisdictions, and as such have a vested interest in doing what they can to make their local economies functional and vibrant. One of the tangible ways they can do this is through their spending power. By and large, anchor institutions do seek to prioritize local vendors in their procurement decisions, and have historically had high local spending levels.

However, as more and more anchor institutions have joined group-purchasing organizations (GPOs) as a way to access purchasing power and drive down costs, this has constrained the amount of spending with local vendors. For many anchor institutions, this has meant that as they attempt to increase local spending, they are finding they need to unwind various policies, procedures, and mindsets that have formed over time. Many of the best practices in this section and the ensuing section are an attempt by anchor institutions to break through past barriers and reestablish long-standing commitments to local spending.

4.3 UNIVERSITY OF PENNSYLVANIA

In sheer size and in level of effort, **the University of Pennsylvania** has been a commendable anchor institution in terms of local spending. “Engaging Locally” is one of the main components of the Penn Compact, President Amy Gutmann’s vision for Penn, and one of the ways this aim is fulfilled is through a commitment to economic inclusion through the engagement of local vendors in Penn’s procurement process. Penn’s Local Community Business Program, which was established in 1986, identifies and develops meaningful relationships with West and Southwest Philadelphia suppliers that have the capacity to provide required goods and services at competitive prices. This initiative has resulted in about \$100 million per year in contracts for West and Southwest Philadelphia vendors.¹¹

¹¹ From the University of Pennsylvania Purchasing Services website.

4.4 OTHER LOCAL EXAMPLES

Other anchor institutions have also distinguished themselves in the use of their procurement power to positively influence the Philadelphia economy. **Drexel University's** University Procurement Supplier Diversity Development Initiative increases the local intensity of Drexel's spending by forging mutually beneficial relationships with key stakeholders, expanding the number of local contractors on its construction bidder's list, and working with larger construction companies to sponsor apprenticeship programs. Drexel works with the Pennsylvania Minority Business Development Center at The Enterprise Center to ensure that local vendors have the technical assistance to fulfill its procurement needs.¹²

University of Pennsylvania and Drexel University have both supported the growth of **Telrose Corp.**, a Philadelphia-based minority-owned office supply company that now employs 22 people, 70 percent of whom live in West Philadelphia. University of Pennsylvania worked with Office Depot, under which Telrose was a subcontractor, to shift to a supplier role and prepare Telrose to take on the prime contractor role. Drexel University subsequently shifted \$1.8 million of its office supply purchasing to Telrose.¹³

The first sentence of **Community College of Philadelphia's** policy entitled "Inclusion of Diverse Suppliers and Philadelphia-based Businesses in College Purchasing Activities" reads as follows: "Support of diversity and use of Philadelphia-based businesses is a business objective of the College in undertaking its procurement of goods and services." To fulfill that business objective, the Purchasing Department of Community College of Philadelphia has partnerships with and is members of organizations throughout the Philadelphia region that represent, certify, and advocate for locally-owned and minority-owned businesses.¹⁴

Guidance provided by the Controller's Office of **Temple University** explicitly instructs that while procurement is to be done in a "timely, cost-effective, and efficient manner," vendors geographically proximate to campus should receive preference.¹⁵

¹² From Drexel University's University Procurement website.

¹³ "How Local Purchasing Spurred Growth in West Philly," Institute for a Competitive Inner City (February 4, 2012); "2010 Community Impact Report," Drexel University.

¹⁴ Certifying bodies include: Minority Supplier Development Council (MSDC), Office of Economic Opportunity, City of Philadelphia, and Women Business Enterprise Council (WBEC). Chambers of Commerce include: Greater Philadelphia Chamber of Commerce, African American Chamber of Commerce of Pennsylvania, New Jersey & Delaware, Asian American Chamber of Commerce of Greater Philadelphia, and Greater Philadelphia Hispanic Chamber of Commerce. Technical assistance providers include: Pennsylvania Minority Business Enterprise Center (PA-MBEC) and Greater Philadelphia Urban Affairs Coalition. "College Policies and Procedures Memorandum No. 216: Inclusion of Diverse Suppliers and Philadelphia-based Businesses in College Purchasing Activities," Community College of Philadelphia (November 1, 2012).

¹⁵ "Vendor Solicitation and Selection," Temple University Office of the Controller (March 11, 2013).

5.0 NATIONAL EXAMPLES

5.1 SECTION OVERVIEW

The purpose of this section is to provide some best practices by anchor institutions throughout the US. This section was produced in large part by the Democracy Collaborative, a national research and policy center based at the University of Maryland that focuses on spreading community wealth-building strategies and promoting the role of anchor institutions, such as universities, in strengthening local economies.

5.2 INNOVATIVE PROCUREMENT STRATEGIES

A growing number of hospitals, universities, and local governments are implementing innovative procurement strategies. For instance, **Henry Ford Health System in Detroit** has implemented a policy of paying local vendors a month in advance to provide working capital. In 2010, Henry Ford entered into a partnership with Detroit Medical Center and Wayne State University to increase their local impact through the "Live Local, Buy Local, Hire Local" initiative. The first year impact in 2010 was modest, with just \$400,000 in purchasing redirected to local businesses. But the effort has since picked up steam, with \$16.5 million in contracts shifted to date. Henry Ford has also set a \$100M purchasing goal from MBEs and WBEs. By 2010, it had reached \$86M, with established purchasing relationships with 660 minority-owned suppliers.

In 1999, **the University of Minnesota** established the Office for Business and Community Economic Development to oversee practices of local economic inclusion. This office provides incentives to University departments that do business with targeted local businesses and works to increase expenditures with these businesses. Additionally, this office also provides training and technical assistance to vendors and local businesses. Currently, the University requires that at least 10 percent of all base contracts are made with local, minority and women-owned businesses. In 2008 alone, \$75 million of the university's \$700-million spent on goods and services went to women- and minority-owned businesses (Hodges and Dubb 2012). Key steps behind this success have included: 1) requiring general contractors to establish levels of participation for targeted businesses; 2) gradual increases in targets over time; 3) setting inclusion requirements for union construction workers; and 4) providing apprenticeship opportunities, with help of local partners.

In 1994, **Miami Dade College**, the largest community college in the country, established its Office of Minority and Small Business Enterprise. The office is responsible for overseeing policies and procedures for economic inclusion. One of the most effective techniques used by the Office has been the use of "reserve trade shows" in which procurement officers set up displays and targeted vendors are invited to attend, rather than making vendors set up booths. The results have been that minority business enterprises now routinely obtain between 20 and 27 percent of total Miami Dade College procurement (Dubb and Hodges 2012).

Gundersen-Lutheran, a Wisconsin-based health care system, is a founding member of a multi-stakeholder food cooperative to prevent wealth from leaving regional farmers and has set a procurement goal of having 20 percent of the food purchases sourced locally; it also purchased

an ownership stake in LHI, a health management company, to enable the company to take back local control and save local jobs and more broadly pursues local purchasing through negotiating local subcontracting with first-tier suppliers. It also has developed 14 million kilowatt hours of local wind generation capacity, part of an overall 2014 goal to source 100 percent of its energy through renewable sources (Zuckerman 2013).

University Hospitals (UH) in Cleveland is another national leader: In 2005, set a target that it would award 80 percent of contracts in a \$1.2 billion, 5-year construction “Vision 2010” initiative locally. When the project was completed, UH found that it had exceeded its target, awarding 92 percent of all contracts locally. The hospital also exceeded its goals in the areas of women- and minority-owned business contracting. A key factor behind achieving these goals was hiring a third-party that took responsibility for implementation with a laser focus. The success of this initiative led UH to revisit their entire supply chain. Steve Standley, Chief Administrative Officer at University Hospital, noted in a 2011 interview that University Hospital had “essentially doubled the spending in Cleveland in the last three years” (Zuckerman 2013).

Bon Secours Health System, headquartered in Baltimore, has less of a track record, but conducted a thorough review of its purchasing in 2011. Its Purchasing Office analysis found that use of “group purchasing organizations” (GPOs) was interfering with hospital’s ability to employ local MBEs and WBEs and identified \$40M of \$60-70M spending at Baltimore hospital that could be potentially re-localized. In the first year, Bon Secour shifted \$2M in business to MBEs – increased use of local MBEs from 4 to 6% of total procurement; it has set a goal of reaching 9% local MBE procurement (Zuckerman 2013).

Business incubation and community investment activities linked to low-income communities can complement procurement work. Many anchor institution-led business incubation efforts focus on technology transfers that often do not employ a significant number of low-income residents. However, it is possible to implement business incubation activities in a way that supports low-income residents. For example, the South Side Innovation Center supported by **Syracuse University** has targeted programs for traditionally underserved entrepreneurial groups including low-income individuals, people with disabilities, women, and minorities. Founded in 2006, the Center has helped create over 130 new businesses (Hodges and Dubb 2012).

Similarly, in Oregon, the Business Outreach Program (BOP) at **Portland State University** provides technical assistance to women and minority-owned businesses in low-income communities. Since 1994, it has supported over 420 small businesses. In 2010, they reported that they helped create 146 jobs through supporting local business development over the previous four years (Hodges and Dubb 2012).

Sinai Health System in Chicago, through its Sinai Community Institute (SCI), has helped develop the North Lawndale Employment Network (NLEN) (Chicago), a partnership of community-based organizations, economic development agencies and businesses working together to meet the workforce development needs of North Lawndale residents and employers. SCI also served as the NLEN fiscal agent, provided office space to the network, and the SCI executive director served as NLEN's board chair until NLEN received its own 501(c)(3) status. NLEN has since sponsored the creation of Sweet Beginnings, LLC, a social enterprise, “green” urban honey business selling mainly at local farmers markets. The business, which incorporated in 2006, to date has employed more than 300 ex-offenders, with a recidivism rate of less than 4 percent, compared to an Illinois state average of 55 percent (Zuckerman 2013).

A leading example of anchor institution supporting local business through community investment is **Dignity Health**, a large San Francisco-based hospital. Dignity Health's Community Investment Program provides below-market interest rate loans to non-profit organizations that develop affordable housing for low-income families and seniors, provide job training for unemployed or underemployed persons and create wealth in low-income and minority neighborhoods. Between 1992 and 2011, Dignity Health lent more than \$132 million to 221 different nonprofit organizations (Zuckerman 2013).

The University of Cincinnati has also played a leading role in leveraging its endowment for community investment. From 2003 through 2009, the University committed a total of \$148.6 million out of its \$833 million endowment to finance real estate development in Uptown. Money invested is lent out to support community economic development at a below-market 4 percent interest rate (Hodges and Dubb 2012)

5.3 KEY TAKEAWAYS FOR INCREASING LOCAL SPENDING BY ANCHOR INSTITUTIONS

These and other best practices in anchor procurement suggest a number of important lessons for increasing local spending by anchor institutions, which should be considered as the City and its anchor institutions work collaboratively to support local vendors and stimulate local economic impact:

- Establish benchmarks (starting point). Gradually increase targets and goals over time.
- Reward success — provide incentives to procurement officers who meet inclusion targets.
- Link procurement effort to larger anchor institution vision and mission.
- Use multiple tools: not just procurement, but also community investment and direct incubation.
- Work outside your comfort zone: use reverse vendor fairs help foster anchor procurement.
- Make concerted effort to recruit local businesses and to build their capacity. Mentoring is key.
- Press contractors to re-shape operations so they can provide more opportunities for local firms.
- Divide bids into smaller components that could be handled by local firms.
- Address key issues like bonding and retainage, by means such as “joint venture” structures.
- Engage a third-party firm to monitor progress toward goals and troubleshoot obstacles.

APPENDIX A – SURVEY TO ANCHOR INSTITUTIONS

We've been asked by the Philadelphia City Controller's office to put together a report on the successful local procurement practices of major employers. We'd like to include you in this report. Please complete the survey below – it will take five to ten minutes.

1. Please fill out as many spaces below as you are easily able to.

| Annual Spending | \$ Total Spending | % or \$ to Local Enterprises |
|-----------------------|-------------------|------------------------------|
| Construction | | |
| Transportation | | |
| Financial Services | | |
| Professional Services | | |
| Building Services | | |
| Food Services | | |
| Other | | |
| Total | | |

2. Is increasing local procurement a strategic goal for your organization? Have you set goals for the coming year?
3. Can you share any information on your local procurement results, such as annual reports, best practices, and profiles on success stories?
4. Can you share any information on your local procurement practices, such as policies, procedures, and programs?
5. What are the biggest barriers you face in increasing local procurement?
6. Do we have permission to include your numbers in a publicly available report? Or do you prefer we not show your numbers by themselves and only have them included in citywide aggregate figures?



APPENDIX B – ECONOMIC IMPACT MODEL THEORY

B.1 HISTORY

The theory behind input-output modeling stretches as far back as the mid 17th century, when Sir William Petty described the interconnectedness of “production, distribution, and wealth disposal.” While Perry can be credited with noticing links between economies, input-output modeling did not begin to take true form until the mid 18th century, when French physician François Quesnay created the *Tableau Économique*. His work detailed how a landowner spends his earnings on goods from farms and merchants, who in turn spend their money on a host of goods and services. Over the course of the century, an algebraic framework was added by Achille-Nicholas Isnard. Robert Torrens and Léon Walras refined the model by establishing the connections between profits and production.

The modern input-output system can be attributed to Wassily Leontief. In his thesis, “The Economy as a Circular Flow” (1928), he outlined the economy as an integrated system of linear equations relating inputs and outputs. This framework soon gained popularity, and became a widely accepted analytical tool. In 1936, Leontief produced the first input-output analysis of the US. Leontief’s work became the US Department of Commerce’s Bureau of Economic Analysis’s (BEA) standard benchmark for US production in the 1950’s. Leontief received a Nobel Prize for his work in 1973.

In 1976 the USDA Forest Service became required to submit five year management plans to the federal government concerning the socio-economic effects of resource use. Through extensive surveying, the impacts of each industry could be determined at local levels. This directly resulted in the creation of IMPLAN software for measuring economic impacts. By the late 1980’s the University of Minnesota began to offer the software to a wider audience. Seeing the need to update economic databases and improve the existing software, the Minnesota IMPLAN Group (MIG) was formed in 1993. Using a similar methodology to the USDA Forest Service, MIG was able to provide a quality input-output modeling software to a wider range of users with frequent database updates.

B.2 APPLICATION

The use and application of multipliers are fairly basic and intuitive. Multipliers, in their most basic form, are the result of an algebraic analysis expressing how two inputs are interconnected in the production of an output. The result of the equation generates a multiplier that is broken down into direct, indirect, and induced effects. In a generalized example: if the multiplier for good “X” on good “Y” is 3, then the direct of good “X” on “Y” is 1, with indirect and induced effects of 2. Essentially, every unit of good “X” supports 2 units of good “Y”.

When implemented on a large complex scale, such as that of the US economy or any subsection of it, multiplier effects across industries can be complicated. However, the same general concept comes into play. Each industry has largely different and varied inputs into other industries. The quantity of the output is largely decided by the scale and efficiency of the industries involved. As a result, the sum of those inputs equates to an output product plus a value added/component. By

arranging these inputs and outputs by industry in a matrix, and performing some algebra to find the Leontief inverse matrix, each industry's effect on final demand can be estimated. Additionally, the direct, indirect, and induced effects can also be determined. Direct effects include direct purchases for production, indirect effects include expenses during production, and induced effects concern the expenditures of employees directly involved with production. Using building construction as an example, the direct effects would include materials, brick, steel, and mortar, the indirect effects would involve the steel fabrication, concrete mixing, and the induced effects would consider the construction workers purchases from their wages. While impacts vary in size, each industry has rippling effects throughout the economy. By using an input-output model, these effects can be more accurately quantified and explained.

IMPLAN is one of several popular choices for regional input-output modeling. Each system has its own nuances in establishing proper location coefficients. IMPLAN uses a location quotient to determine its regional purchase coefficient (RPC). This represents the proportion of demand for a good that is filled locally; this assessment helps determine the multiplier for the localized region. Additionally, IMPLAN also accounts for inter-institutional transfers (eg. firms to households, households to the government, etc...) through its social account matrix (SAM) multipliers. IMPLAN takes the multipliers and divides them into 440 industry categories in accordance to the North American Industrial Classification System (NAICS) codes. A comprehensive breakdown of a region's multipliers by industry can be shown.

Despite the usefulness of input-output modeling, there are some shortcomings to the system. Notably, input-output models ignore economies of scale. Input-output models assume that costs and inputs remain proportionate through different levels of production. Further, multipliers are not generally updated on a timely basis; most multipliers are prone to be outdated with the current economy. If the multipliers are sourced from a year of a recession economy, the multipliers may not accurately represent the flows from an economic boom period. Additionally, the multipliers may not capture sudden legal or technological changes which may improve or decrease efficiency in the production process. Regardless, I-O models still serve as the standard in the estimation of local and regional impacts.

B.3 ECONOMIC IMPACT MODEL

The methodology and input-output model used in this economic impact analysis are considered standard for estimating such expenditure impacts, and the results are typically recognized as reasonable and plausible effects, based on the assumptions (including data) used to generate the impacts. In general, one can say that any economic activity can be described in terms of the total output generated from every dollar of direct output. If an industry in a given region sells \$1 million of its goods, there is a direct infusion of \$1 million into the region. These are referred to as *direct output*.

However, the economic impact on the region does not stop with that initial direct expenditure. Regional suppliers to that industry have also been called upon to increase their production to meet the needs of the industry to produce the \$1 million in goods sold. Further, suppliers of these same suppliers must also increase production to meet their increased needs as well. These are referred to as *indirect output*. In addition, these direct and indirect output require workers, and

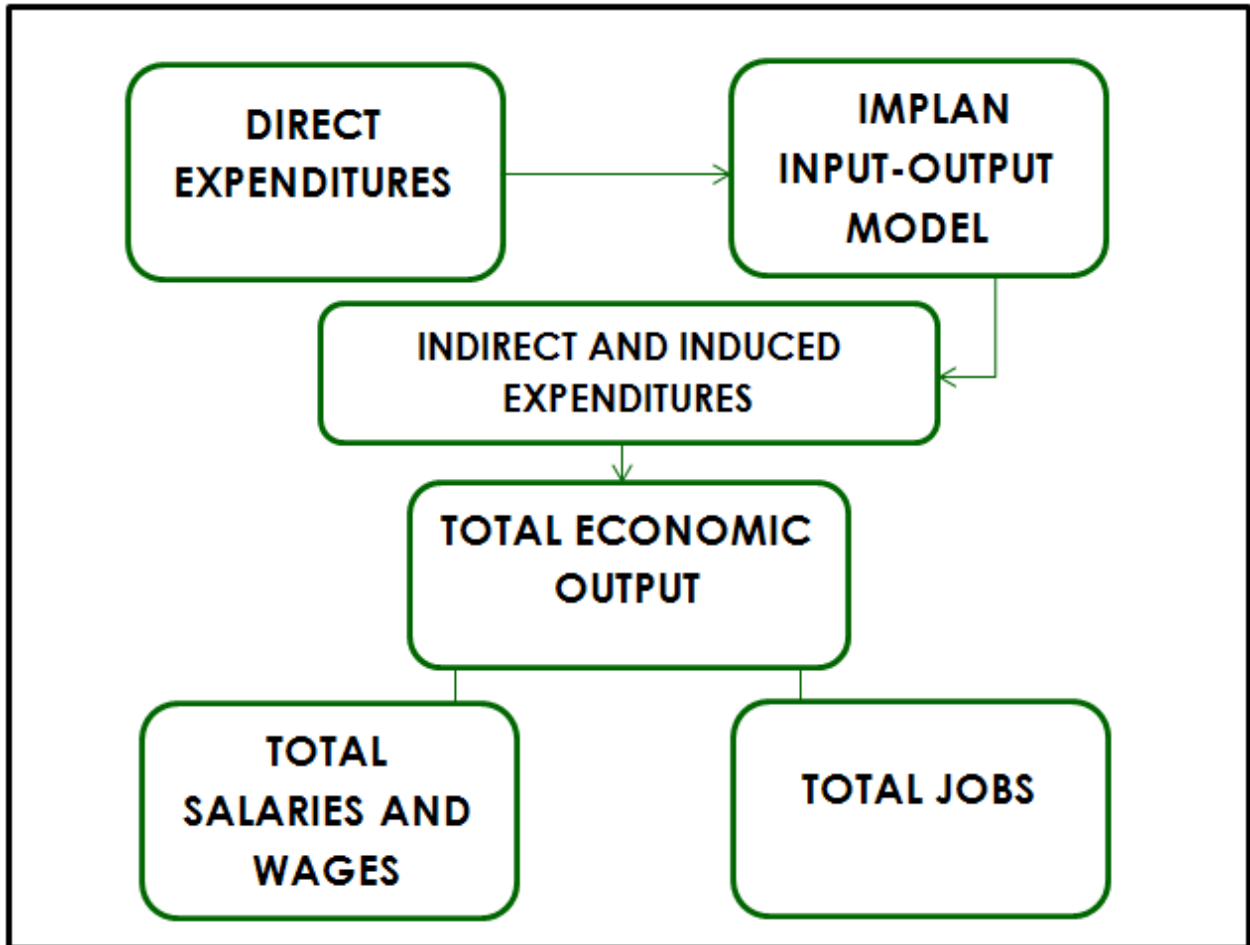
these workers must be paid for their labor. These wages and salaries will, in turn, be spent in part on goods and services produced locally, engendering another round of impacts. These are referred to as *induced expenditures*.

Direct output are fed into a model constructed by Econsult Solutions and based on IMPLAN data. The model then produces a calculation of the total expenditure effect on the regional economy. This total effect includes the initial direct expenditure effect, as well as the ripple effects described, the indirect and induced expenditure effects.

Part of the total expenditure effect is actually the increase in total wages and salaries (usually referred to as labor income), which the model can separate from the expenditure estimates. Direct payroll estimates are fed into the “household” industry of the input-output model. Impacts of this industry are estimated using the personal consumption expenditure breakdown of the national input-output table and are adjusted to account for regional consumption spending and leakages from personal taxes and savings. The direct, indirect, and induced labor income represent a component of the total economic impact attributable to wages and salaries. Finally, the model calculates the total expenditures affecting the various industries and translates this estimate into an estimate of the total labor (or jobs) required to produce this output.

In short, the input-output model estimates the total economic activity in a region that can be attributed to the direct demand for the goods or services of various industries. This type of approach is used to estimate the total economic activity attributable to the expenditures associated with various types of spending in the region (see Figure B.1 and Table B.1).

Figure B.1 – Flowchart of Input-Output Methodology for Estimating Economic Impact



Source: Econsult Solutions, Inc. (2013)

Table B.1 – Glossary of Terms for Input-Output Models

Multiplier Effect – the notion that initial outlays have a ripple effect on a local economy, to the extent that direct output lead to indirect and induced output.

Economic Impacts – total expenditures, employment, and labor income generated.

Fiscal Impacts – local and/or state tax revenues generated.

Direct Output – initial outlays usually associated with the project or activity being modeled; examples: one-time upfront construction and related expenditures associated with a new or renovated facility, annual expenditures associated with ongoing facility maintenance and/or operating activity.

Direct Employment – the full time equivalent jobs associated with the direct output.

Direct Labor income – the salaries and wages earned by employees, contractors, and proprietors as part of the direct output.

Indirect Output – indirect and induced outlays resulting from the direct output; examples: vendors increasing production to meet new demand associated with the direct output, workers spending direct labor income on various purchases within the local economy.

Indirect Employment – the full time equivalent jobs associated with the indirect output.

Indirect Labor income – the salaries and wages earned by employees, contractors, and proprietors as part of the indirect output.

Total Output – the sum total of direct output and indirect output.

Total Employment – the sum total of direct employment and indirect employment.

Total Labor income – the sum total of direct labor income and indirect labor income.

Source: Econsult Corporation (2009)

B.4 SOURCES

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APPENDIX C – ADDITIONAL DETAIL ON DISTRIBUTION OF ESTIMATED LOCAL SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA BY EXPENDITURE CATEGORY¹⁶

Table C.1 – Distribution of Estimated Local Spending by Anchor Institutions in Philadelphia, by Expenditure Category

| Industries | Total Non-Payroll Spending | % Locally Procured |
|--------------------------------------------------------|----------------------------|--------------------|
| Agriculture, Forestry, Fishing, and Hunting | \$5,977,638 | 0.1% |
| Mining | \$604,022 | 0.0% |
| Utilities | \$480,039,993 | 64.7% |
| Construction | \$23,765,757 | 68.8% |
| Manufacturing | \$1,201,257,721 | 5.8% |
| Wholesale Trade | \$121,179,254 | 66.7% |
| Retail Trade | \$31,134,607 | 57.2% |
| Transportation and Warehousing | \$102,527,217 | 64.7% |
| Information | \$206,427,705 | 84.0% |
| Finance and Insurance | \$291,746,897 | 62.7% |
| Real Estate and Rental and Leasing | \$1,300,144,901 | 41.0% |
| Professional, Scientific, and Technical Services | \$462,646,274 | 77.3% |
| Management of Companies and Enterprises | \$191,417,343 | 99.8% |
| Administrative, Support, and Waste Management Services | \$356,758,709 | 83.6% |
| Educational Services | \$29,621,960 | 99.9% |
| Health Care and Social Assistance | \$218,100,177 | 100.0% |
| Arts, Entertainment, and Recreation | \$8,905,674 | 58.2% |
| Accommodation and Food Services | \$91,027,784 | 76.4% |
| Other Services (Except Public Administration) | \$125,464,437 | 49.8% |
| Public Administration | \$51,727,153 | 99.7% |
| Unknown | \$1,498,716 | 31.5% |
| Total | \$5,301,973,937 | 51.6% |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

¹⁶ Spending data is sorted by industry at the two-digit North American Industry Classification System (NAICS) Code level. Within each two-digit NAICS Code are three-, four-, five-, and six-digit codes representing underlying sub-industries.

Table C.2 – Illustrative Procurement Example for Each Industry

| Two-Digit NAICS Code Industry | Illustrative Six-Digit NAICS Code Industry |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------|
| 11 Agriculture, Forestry, Fishing, and Hunting | 111421 Nursery and Tree Production |
| 21 Mining | 213112 Support Activities for Oil and Gas Operations |
| 22 Utilities | 221310 Water Supply and Irrigation Systems |
| 23 Construction | 238140 Masonry Contractors |
| 31-33 Manufacturing | 323120 Support Activities for Printing |
| 42 Wholesale Trade | 423430 Computer and Computer Peripheral Equipment and Software Merchant Wholesalers |
| 44-45 Retail Trade | 453210 Office Supplies and Stationery Stores |
| 48-49 Transportation and Warehousing | 491110 Postal Service |
| 51 Information | 517110 Wired Telecommunications Carriers |
| 52 Finance and Insurance | 524210 Insurance Agencies and Brokerages |
| 53 Real Estate and Rental and Leasing | 531210 Offices of Real Estate Agents and Brokers |
| 54 Professional, Scientific, and Technical Services | 541330 Engineering Services |
| 55 Management of Companies and Enterprises | 551112 Offices of Other Holding Companies |
| 56 Administrative, Support, and Waste Management Services | 561612 Security Guards and Patrol Services |
| 61 Educational Services | 611710 Educational Support Services |
| 62 Health Care and Social Assistance | 624410 Child Day Care Services |
| 71 Arts, Entertainment, and Recreation | 713940 Fitness and Recreational Sports Centers |
| 72 Accommodation and Food Services | 722310 Food Service Contractors |
| 81 Other Services (Except Public Administration) | 811212 Computer and Office Machine Repair and Maintenance |
| 92 Public Administration | 921190 Other General Government Support |

Source: US Bureau of Labor Statistics (2012), Econsult Solutions, Inc. (2013)

APPENDIX D – ADDITIONAL DETAIL ON DISTRIBUTION OF ECONOMIC IMPACT OF ESTIMATED LOCAL SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA BY EXPENDITURE CATEGORY

Table D.1 – Distribution of Economic Impact of Estimated Local Spending by Anchor Institutions in Philadelphia, by Expenditure Category

| Industries | Expenditure Impact |
|----------------------------------|------------------------|
| Agriculture | \$15,555 |
| Mining | \$16,424 |
| Utilities | \$581,670,255 |
| Construction | \$61,306,025 |
| Manufacturing | \$180,569,491 |
| Wholesale Trade | \$202,358,379 |
| Retail Trade | \$96,444,505 |
| Transportation/Warehousing | \$181,550,157 |
| Information | \$532,132,654 |
| Finance and Insurance | \$586,480,188 |
| Real estate rental and leasing | \$1,223,784,942 |
| Pro, Sci, and Technical Services | \$828,097,006 |
| Management | \$410,935,953 |
| Admin and Waste Management | \$677,590,753 |
| Educational service | \$86,040,628 |
| Health Care/Social Assistance | \$594,144,061 |
| Arts/Entertainment/Recreation | \$32,663,144 |
| Accommodation/Food Services | \$216,741,469 |
| Other Services | \$168,347,369 |
| Government Occupations | \$221,101,834 |
| Unknown | \$471,920 |
| Total | \$6,882,462,713 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)

APPENDIX E – ADDITIONAL DETAIL ON DISTRIBUTION OF ESTIMATED LOCAL SPENDING BY ANCHOR INSTITUTIONS IN PHILADELPHIA BY EXPENDITURE CATEGORY, GIVEN A 25 PERCENT SHIFT TO LOCAL VENDORS

Table E.1 – Distribution of Estimated Local Spending by Anchor Institutions in Philadelphia, by Expenditure Category

| Description | Current | | 25% Shift | | |
|----------------------------------|---------------|------------------------|---------------|------------------------|----------------------|
| | Local Spend % | Local Spend (\$M) | Local Spend % | Local Spend (\$M) | Increase (\$M) |
| Agriculture | 0.1% | \$3,542 | 25.0% | \$1,497,066 | \$1,493,524 |
| Mining | 0.0% | \$50 | 25.0% | \$151,043 | \$150,993 |
| Utilities | 64.7% | \$310,539,995 | 73.5% | \$352,914,994 | \$42,374,999 |
| Construction | 68.8% | \$16,345,066 | 76.6% | \$18,200,239 | \$1,855,173 |
| Manufacturing | 5.8% | \$69,931,544 | 29.4% | \$352,763,089 | \$282,831,544 |
| Wholesale Trade | 66.7% | \$80,858,051 | 75.0% | \$90,938,352 | \$10,080,301 |
| Retail Trade | 57.2% | \$17,822,419 | 67.9% | \$21,150,466 | \$3,328,047 |
| Transportation/Warehousing | 64.7% | \$66,324,122 | 73.5% | \$75,374,896 | \$9,050,774 |
| Information | 84.0% | \$173,445,244 | 88.0% | \$181,690,859 | \$8,245,615 |
| Finance and Insurance | 62.7% | \$182,876,509 | 72.0% | \$210,094,106 | \$27,217,597 |
| Real estate rental and leasing | 41.0% | \$533,394,592 | 55.8% | \$725,082,170 | \$191,687,577 |
| Pro, Sci, and Technical Services | 77.3% | \$357,518,776 | 83.0% | \$383,800,650 | \$26,281,874 |
| Management | 99.8% | \$191,033,269 | 99.8% | \$191,129,288 | \$96,018 |
| Admin and Waste Management | 83.6% | \$298,323,913 | 87.7% | \$312,932,612 | \$14,608,699 |
| Educational service | 99.9% | \$29,606,172 | 100.0% | \$29,610,119 | \$3,947 |
| Health Care/Social Assistance | 100.0% | \$218,070,003 | 100.0% | \$218,077,546 | \$7,544 |
| Arts/Entertainment/Recreation | 58.2% | \$5,180,385 | 68.6% | \$6,111,708 | \$931,322 |
| Accommodation/Food Services | 76.4% | \$69,529,117 | 82.3% | \$74,903,783 | \$5,374,667 |
| Other Services | 49.8% | \$62,503,139 | 62.4% | \$78,243,463 | \$15,740,324 |
| Government Occupations | 99.7% | \$51,567,500 | 99.8% | \$51,607,413 | \$39,913 |
| Unknown | 31.5% | \$471,920 | 48.6% | \$728,619 | \$256,699 |
| Total | 51.6% | \$2,735,345,329 | 63.7% | \$3,377,002,481 | \$641,657,152 |

Source: IMPLAN (2012), Econsult Solutions, Inc. (2013)