STRATEGIC ECONOMICS

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PHILADELPHIA RAIL PARK PROPERTY VALUE IMPACT STUDY

FINAL REPORT

Prepared for: Philadelphia Chinatown Development Corporation

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I. EXECUTIVE SUMMARY

Introduction

Strategic Economics was retained by PolicyLink a to conduct research and analysis of the economic impacts of the Philadelphia Rail Park on the property values in surrounding neighborhoods, and to identify potential strategies that can be used to take advantage of increases in property value to mitigate potential gentrification and displacement effects. Urban Partners, retained by the Philadelphia Chinatown Development Corporation (PCDC), developed a model to estimate the anticipated increase in property values and the annual increase in city tax revenues. The results and recommendations are designed to inform efforts in the Chinatown neighborhood, as well as other Philadelphia neighborhoods experiencing "green gentrification" and displacement pressures.

Summary of Findings

The section below provides additional details of key findings, including the review of literature about the property value and gentrification/displacement impacts of green spaces ("green gentrification"), analysis of demographic trends in the neighborhoods near the Rail Park, the impact of the rail park on property values, and the implications for value capture strategies.

In many U.S. cities, parks and greenways have been shown to have an impact on property values in neighborhoods within a half-mile of the green space. Studies of linear parks like the Atlanta Beltline and the Chicago 606 trail have shown a significant property value premium for homes within ¼ to ½ mile of the parks.

In Philadelphia, there is strong evidence that gentrification is already underway in neighborhoods near downtown Philadelphia and other neighborhoods within close proximity to parks. According to a recent study by the Federal Reserve Bank of Philadelphia, many of the neighborhoods in and around downtown Philadelphia have been undergoing gentrification. According to a recent study of "green gentrification" in Philadelphia by Rigolon and Nemeth, census tracts near parks were more likely to gentrify, especially within a 1/2 mile from the amenity.

Defining Gentrification and Displacement

Gentrification describes a process of change in a neighborhood experiencing rising incomes, higher property values and an increase in highly educated residents. Gentrification is typically the result of new investments and new people moving into a neighborhood. Urban parks and greenways may contribute to gentrification in some neighborhoods. Some refer to this as "green gentrification."

A major concern regarding gentrification is that low-income people of color could be displaced (pushed out or excluded from gentrifying neighborhoods) due to unattainable rents and housing values.

A report published in 2018 by the Philadelphia Chinatown Development Corporation (PCDC) shows that the Chinatown area is experiencing gentrification. From 2009 to 2015, Chinatown lost significant percentages of low-income households, while gaining higher-income households. As of 2015, neighborhood's area median household income (AMI) is higher than the city's. The PCDC

report makes the case that due to the increase in new construction in the City Center area, Chinatown is poised to experience even more development pressure in the future.

Residents in the area surrounding the Rail Park are highly vulnerable to gentrification and displacement. The study area (within a half-mile of the Rail Park Phase One) has a larger share of low-income households and renters than the city of Philadelphia overall. These populations are generally more vulnerable to displacement. Recent demographic changes, such as an increase in non-Hispanic Whites, an increase in college educated residents, a decrease in low-income households, and growth in area median income suggest that the study area may already be in the process of gentrifying.

Approximately 16 percent of the value premium of apartment buildings in the study area could be attributable to the impact of the Rail Park. Since 2013, when the Rail Park organizations merged, sale values per square foot in the study area grew faster than in the city as a whole (7 percent versus 5 percent annually). Using the differences-in-differences approach, the estimated maximum proportion of apartment building value that can be attributed to the rail park is 16 percent. While some of this value is likely attributable to the generally strong market in Center City, at least a proportion of this value is expected to be associated with the Rail Park. The analysis also indicates that the impact of the Rail Park may have occurred well in advance of its completion.

The study area has attracted a significant share of recent development projects in Center City, indicating that the Rail Park has had an impact on investments. In particular, residential and office development is concentrated within the study area. Development activity is occurring along Broad Street, as part of the "Broad Street Renaissance."

Other comparable neighborhoods located near future phases of the Rail Park have also experienced property value increases. The West Poplar neighborhood, which is located just north of Chinatown and will be impacted by the Rail Park during the second phase of construction, has already experienced a spike in residential sales prices. The Fairmount Park neighborhood has also seen an increase in residential sales values within the last five years. This neighborhood is located next to the Schuylkill River and several riverside parks, and is also about a ½ mile from a future phase of the Rail Park.

Rail Park's Likely Impact on Property Values for Adjacent Neighborhoods

The section below summarizes the analysis by Urban Partners estimating the residential property value increases associated with the Rail Park.

An economic impact analysis was performed by Urban Partners utilizing on a model that high-quality open space amenities boost adjacent residential property values by 20%. There is also evidence of a "linear decline" with distance from the edge of an open space with a positive price effect declining to zero at ½ mile or approximately 2,500 feet away.

For the four census tracts located in Chinatown, Callowhill, and West Poplar—the portion of the Rail Park referred to as "the Viaduct" and "Phase 1":

- **Current market value** of residential properties: **$1.16 billion**
- **Anticipated increase** in residential property values: **$169.49 million**
- Resulting annual **increase in city real estate tax:** **$2.37 million**

Implications for Value Capture

The increase in values generated from the Rail Park could be "recaptured" to help minimize the impact on gentrification and displacement. Investments in public amenities such as the Rail Park generate value for nearby property owners. The term "value capture" refers to any strategy that "captures" a portion of the increased property values. Traditionally, value capture has been used by public entities to recoup costs of improvements that benefit nearby property owners, often focusing on improvements such as roads, transit, lighting and sidewalks. However, value capture strategies are increasingly being considered as important tools for providing community benefits. This is particularly important in cases where the public improvement creates negative impacts for the surrounding neighborhood, or where benefits of public investments are not equitably shared.

The results of the analysis of property value and development impacts of the rail park suggest that a value capture strategy may be possible in many Philadelphia neighborhoods that are impacted by "green gentrification". The analysis found that property values are being impacted by the Rail Park. In addition, significant development is occurring in the vicinity of the first phase of the rail park.

The evaluation of potential value capture tools identified a number of strategies that can be explored in the near term. These include community benefits agreements, special assessment districts/business improvement districts, public lands and property control by local community-based organizations, inclusionary housing requirements, development impact fees, transfer of development rights, and tax increment financing.

In addition to value capture tools, there are many policies that could be put into place to minimize the potential for gentrification and displacement citywide. Renter assistance, eviction prevention and other strategies aimed to protect renters could be implemented at the citywide scale to address these issues for many of Philadelphia's neighborhoods, including Chinatown.

Summary of Land Value Capture Mechanisms

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Development impact fee	A one-time fee on new development to defray the cost of new or improved infrastructure required for development (determined via a formula)	Development	Public infrastructure needed to support new development	1% tax on new construction passed in June 2018. Council ultimately withdrew the bill in favor of Mayoral Plan to add up to $100 million to affordable housing funds.
Inclusionary Housing Requirement/ Zoning	A requirement to provide affordable housing or a contribution to a housing trust fund as part of a residential development project	Development	Affordable housing	Mandatory IZ legally permissible. Voluntary IZ adopted September 2018
Commercial or residential linkage fee	Fee charged on development for affordable housing (to mitigate development impact)	Development	Affordable housing	1% tax on new construction passed in June 2018. Council ultimately withdrew the bill in favor of Mayoral Plan to add up to $100 million to affordable housing funds.
Density Bonus/ incentive zoning	A program that allows developers additional height and/or density in exchange for affordable housing or other community benefits	Development	Affordable housing or other community benefits	1% tax on new construction passed in June 2018. Council ultimately withdrew the bill in favor of Mayoral Plan to add up to $100 million to affordable housing funds.

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Exaction	Payment negotiated by local jurisdictions from developers in exchange for development permits	Development	Local infrastructure, community benefits, affordable housing, other	While it is legal to require a developer to mitigate negative impacts of the development on the surrounding community, the Supreme Court ruled in Koontz vs. St. Johns River Water Mgmt. District[i] that the city performs a taking when demanding an exaction not related to, or proportionate with a development and are liable even in the absence of a final governmental decision.
Community Benefits Agreement (CBA)	Agreement between community groups and a developer to provide specific amenities and/or mitigations	Development	Community/neighborhood benefits such as workforce requirements, provision of parks and public facilities, affordable housing, other	CBAs have been used in Philadelphia on several occasions, typically negotiated between a coalition of community groups and a developer prior to city approval of a project.
Transfer of Development Rights	A zoning method that allows property owners to sell development rights for use at another property	Development rights	Protects historic properties, conservation areas, other areas where development is not desirable	Legally permissible in PA. Work most effectively when zoning code and variance process doesn't routinely allow high-density uses.

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Special Assessment District	Assessment on district property owners to fund specific improvements or services that they will uniquely benefit from	Property owners	Typical uses included lighting, landscaping, sewer, other public services	
Business Improvement District (BID)	Assessment on district property owners or businesses to fund specific improvements or services	Property owners or businesses	Typical uses include street beautification, marketing, events, security	There are several BIDs in place in Philadelphia (e.g. University City District and Center City District)
Tax Increment Financing	Public financing method that makes incremental growth in property or other taxes available for specific uses (May be implemented at the project or district level)	Redistributes funds generated by new development that would otherwise go to taxing entities	Typical uses include public infrastructure, affordable housing	TIFs are legal under the 1990 PA Tax Increment Financing Act. Under the Act, eligible TIF projects include commercial, industrial, and residential development in areas that have been identified as "blighted" under the state law definition and that demonstrate they need the TIF funding in order to be viable
Monetization of Green Infrastructure Investment	Can consist of an investment in infrastructure that generates revenue (e.g., solar), or value created through cost savings as part of a development project	Development/ infrastructure investment	Cost savings from development or a revenue stream that may be flexibly used	Currently being implemented. For example, ice skating and Starbucks at Dilworth Park in Center City
Public Real Estate Strategy	Sale, lease or development of public property	Public sector assets	Flexible; if developed, may include affordable housing, other community desired uses	Since 2000, the city has sold 2,314 properties through their Dollar Land Sales program.

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Property Control	Capture of property value increases through ownership by a community-based organization	Specific property owner/asset	Community desired uses	PCDC retains ownership over The Crane building.
Land Value Tax	Property tax levy specifically on the unimproved value of land (as opposed to buildings)	Property owner	City general funds	Pennsylvania allows differential tax on land vs. improvements; not clear how this could be deployed at the neighborhood level.

II. LITERATURE REVIEW

Many academic studies of parks and other types of green spaces in cities have shown that these spaces can provide a variety of advantages to residents including physical and psychological health and social benefits.[1] Economic impacts such as increased property values for homes near parks and greenways is also well documented.[2] However, there is widespread concern that new green spaces in neighborhoods may accelerate the forces of gentrification and displacement. "Green gentrification" or "ecological gentrification" are increasingly popular terms used to describe this process.[3]

This section summarizes:

1. The existing literature on the impacts of proximity to parks in Philadelphia and other locations, which include effects on property values and housing prices, and
2. Studies of the effects of public and private investment in neighborhoods on gentrification and displacement.

Property Value Premiums Near Parks

Within the last twenty years, several studies have explored the relationship between property values and proximity to green amenities. Most of the studies measure the impact of green amenities on single family home values and/or sales prices. Many use GIS spatial analysis and hedonic price modeling, a statistical method to analyze the relationship between home prices and green spaces, while accounting for multiple variables.[4] Factors such as the age of the building, number of rooms, square footage, and lot size also affect the property value, and the hedonic pricing method allows researchers to control for these variables to isolate the impact of green spaces.

Generally, studies that have looked at home values near urban green space have found that prices are higher than comparable properties elsewhere, and this higher value can be attributed to the proximity to a green amenity. While studies have looked at a variety of types of green spaces, a number have reviewed urban parks in the U.S. including in Portland, Oregon; Dallas, Texas; and Minneapolis-St. Paul Metropolitan Area (Twin Cities), Minnesota.[5] In all these studies, the authors found property values to have increased near urban parks while controlling for other factors (see Figure 1).

[1] Bedimo-Rung, Mowen, and Cohen, "The Significance of Parks to Physical Activity and Public Health."
[2] Crompton, "Perceptions of How the Presence of Greenway Trails Affects the Value of Proximate Properties"; Crompton, "The Impact of Parks on Property Values."
[3] Anguelovski et al., "Assessing Green Gentrification in Historically Disenfranchised Neighborhoods"; Immerguck and Balan, "Sustainability for Whom."
4 Crompton, "The Impact of Parks on Property Values."
5 Bolitzer and Netusil, "The Impact of Open Spaces on Property Values in Portland, Oregon"; Lutzenhiser and Netusil, "The Effect of Open Spaces on a Home's Sale Price"; Miller, "Valuing Open Space: Land Economics and Neighborhood Parks"; Anderson, and West, "Open Space, Residential Property Values, and Spatial Context."

FIGURE 1: PARK PROXIMITY IMPACTS ON HOME VALUE STUDIES

Study	Location	Study Focus	Premium
Bolitzer & Netusil, 2000	Portland, OR	193 public parks	1% - 3%
Lutzenhiser & Netusil, 2001	Portland, OR	115 urban parks	0% - 3%
Miller, 2001	Dallas, TX	14 urban parks	0% - 22%
Anderson & West, 2006	Twin Cities, MN	1,825 neighborhood parks	n/a
Lindsey et al, 2003	Indianapolis, IN	14 greenways	2% - 15%
Smith et al., 2016	Chicago, IL	The 606	7.9% - 22%
Immerguck & Balan, 2018	Atlanta, GA	The Beltline	17.9% - 26.6%

Note: Definitions of parks, such as urban vs. neighborhood park, vary according to the study and therefore the table uses the language used by the authors of the study.

In addition to parks, greenways (which include rail parks) are also correlated with positive property value impacts. Lindsay et al. (2003) reviewed 14 greenway corridors in Indianapolis, Indiana. The authors found that most of the greenways were associated with a price premium.[6] More recently, academics have also measured the impacts of new rail line projects such as the New York Highline, the Atlanta Beltline, and the Bloomingdale/606 Trail. The studies relevant to these projects are summarized below:

- **The New York Highline:** The Highline is perhaps the best-known example of this type of linear park space. Many new luxury development projects have been completed adjacent to the highline, and tax revenues have increased in the area.[7] However, Strategic Economics was unable to find a statistical analysis of price premiums near the Highline that measured the property value impacts.
- **Atlanta Beltline**: Immerguck and Balan (2018) have used hedonic modeling to study home values in proximity to the popular Atlanta Beltline, a 22-mile loop in a former railroad right-of-way, which runs around the perimeter of the city. To account for the greenway's length, the authors split the Beltline into four study area segments based on their cardinal location: northwest, northeast, southwest, and southeast. The study found that from 2011 to 2015, home price increases across all segments within a 1/2 mile of the greenway could be attributed to the presence of the Beltline.[8]
- **The 606 (Bloomindale Trail), Chicago**: Another well-known repurposed rail project, the 606 is the focus of a study published in 2016.[9] Although considerably shorter than the Beltline with a distance of 2.7 miles, the 606 also connects several diverse neighborhoods. The authors of the 606 study also segmented their study area, into the 606 East and 606 West, because of significant socioeconomic differences between

6 Lindsey et al., "Property Values, Recreation Values, and Urban Greenways."
7 Loughran, "Parks for Profit."
8 Immerguck and Balan, "Sustainability for Whom."
9 Smith et al., "Measuring the Impacts of the 606: Understanding How a Large Public Investment Impacted the Surrounding Housing Market."

the two areas. 606 East was historically much wealthier with a stronger real estate market compared to homes near the 606 West. However, the study found that with the building of the greenway the 606 West experienced a significant price premium, which shrank the home value gap between the two areas.

Factors Impacting Residential Price Premiums

The range in price premiums and absence of impacts in some cases suggests there may be convening factors that influence the size of an urban green space's influence on property values. Many of the studies that have measured home value premiums have also explored which variables determine how much a green space may affect the value of a home. These variables are explained in further detail below.

- **Park Proximity**: Distance from a home to a green amenity is an important variable that most studies identified. Generally, price premiums for homes decreased as the distance from the park or other green space increases. When looking across studies it appears that the most substantial impact occurs within 500 feet - 600 feet from the amenity, with low or no observable impacts beyond 2,000 feet to 3,000 feet (beyond about 1/2 mile) (Crompton 2001, 2005). For example, homes 1/5 mile from the 606 in Chicago sold for a premium twice as large as those at 1/2 mile, and beyond the 1/2 mile threshold results were statistically insignificant.[10]
- **Location:** Urban parks and greenways can vary greatly from each other as can the area in which they are sited. Much of the literature identifies differing location, neighborhood characteristics, and park qualities as influencing the home value premium size. The location of the park is an important factor. For example, parks closer to the central business district (CBD) or downtown are often associated with higher premiums.[11] The study of the Twin Cities region found that homes near parks in higher density urban neighborhoods experienced a price premium that was three times greater than the average.[12]
- **Neighborhood Characteristics:** The underlying real estate market conditions in a neighborhood may also be a significant influence on the magnitude of the price premium of a park. The Chicago 606 study observed a significant increase in property value for homes that were near the greenway but in lower-income neighborhoods, while they recorded no price premium for homes adjacent the greenway in an already wealthy area.[13] The authors suggest that the higher-income areas near the 606 East segment already had high housing demand and strong home prices, and thus were not as strongly influenced by the new greenway.
- **Park Physical Qualities:** There are mixed results regarding whether park size is an important factor. Bolitzer & Netusil (2000) suggest that homes near parks in their

10 Smith et al.
11 Miller, "Valuing Open Space: Land Economics and Neighborhood Parks"; Anderson, and West, "Open Space, Residential Property Values, and Spatial Context"; Rigolon and Németh, "Green Gentrification or 'Just Green Enough': Do Park Location, Size and Function Affect Whether a Place Gentrifies or Not?"
12 Anderson, and West, "Open Space, Residential Property Values, and Spatial Context."
13 Smith et al., "Measuring the Impacts of the 606: Understanding How a Large Public Investment Impacted the Surrounding Housing Market."

study commanded a higher price when the parks were larger. However, Rigolon an Németh (2019) found that park size was an insignificant factor. Other physical qualities, such as the linear and connective qualities of greenways may have an influence. The authors of the Chicago 606 study suggest that the greenway increased the connectivity between lower-income areas and wealthier areas, which may have helped drive the price premium.[14]

Gentrification and Displacement Effects

A significant body of literature has studied the effects of private investment in neighborhoods on gentrification and displacement. Definitions of gentrification vary among studies and sources, but most describe it as a trend in neighborhood change typically involving higher incomes, property values and educational attainment.

Neighborhood changes are often the result of new people moving into areas while existing residents are forced to leave. Zuk et al. (2018) suggest that in-migrants to gentrifying neighborhoods are typically "wealthier, whiter, and of higher educational attainment than incumbent residents, and out-movers are more likely to be renters, poorer, and people of color than in-movers." However, while some studies look at racial demographic change, others suggest that race is not a strong indicator, and Chapple et al. (2016) suggest that the tie between gentrification and racial demographic change varies according to the local context.

The process of gentrification also involves the inflow of capital, which is often reflected in the built environment and real estate market. Examples may include an increase in home renovations, new construction, and higher property values. New public investments such as parks and road infrastructure may also be a component. [15]

The primary concern with new people and capital moving into a gentrifying area is that lower-income households, often people of color, may be pushed out or be unable to move in. The displacement and exclusion of residents may result from direct and forced reasons such as an eviction, or indirect, responsive causes such as increased rent or taxes.[16] Estimates of displaced households due to gentrification varies across studies, and this is likely due to previous reports having defined displacement in different ways and compared different populations and geographies.[17] In general, displacement analysis is often limited by data confidentiality restrictions, and most studies are not longitudinal. Additionally, quantitative results may not accurately reflect displacement trends as they may not account for situations not captured in the data such as people moving in with friends or family members. Furthermore, most studies do not look at "exclusionary" displacement, whereby households are unable to move into a neighborhood, which may obscure the full picture of displacement.[18]

MEASURES OF GENTRIFICATION AND DISPLACEMENT

14 Smith et al.
15 Zuk et al., "Gentrification, Displacement, and the Role of Public Investment."
16 Zuk et al.
17 Chapple et al., "Developing a New Methodology for Analyzing Potential Displacement."
18 Chapple et al.

Several cities, including Los Angeles, Portland, Seattle, and Boston, and university initiatives like the Urban Displacement Project, have sought to understand current gentrification and displacement trends using public data sources like the Census or American Community Survey and GIS mapping tools. Many of these projects identify areas that are currently experiencing gentrification and displacement or are at-risk using many similar indicators which are also often identified in the literature.[19] [20] [21]

Measures for identifying neighborhoods that may be at-risk for future gentrification and displacement are typically expressed in relation to a larger geography such the city or region. Common indicators of communities at-risk include:

- A high percentage of renters, rent burdened households, and low-income households.
- The presence of older and naturally occurring affordable housing.
- The presence of a transit station or park.
- Adjacency to a wealthy or gentrifying area.

Characteristics that suggest gentrification is ongoing are not only compared to a larger geography, but also to a previous point in time. Common measures include:

- **Demographics**: changes in race and ethnicity and growth in share of college educated.
- **Household income**: loss of low-income households and growth in median household income.
- **Real estate**: increases in home value and rent prices.

Philadelphia Gentrification Studies

A few recent studies have revealed gentrification trends in the Philadelphia region. These include a local report by the Philadelphia Chinatown Development Corporation (PCDC), and two national studies that include Philadelphia among other U.S. cities. The findings are summarized below.

A report published in 2018 by the PCDC does not focus specifically on gentrification, but its analysis suggests that the area may be experiencing gentrification. Using American Community Survey data from 2009 to 2015, the report shows that Chinatown lost significant percentages of low-income households while gaining higher-income households. As of 2015, Chinatown contains a higher proportion of wealthier populations compared to the city overall. Greater shares of higher-income households live in Chinatown and the neighborhood's area median household income (AMI) is higher compared to the city's ($51,387 vs. $45,833). The PCDC also argues that the City Center area, in which Chinatown is contained, has experienced an increase in new construction and is poised to experience even more development pressure.[22]

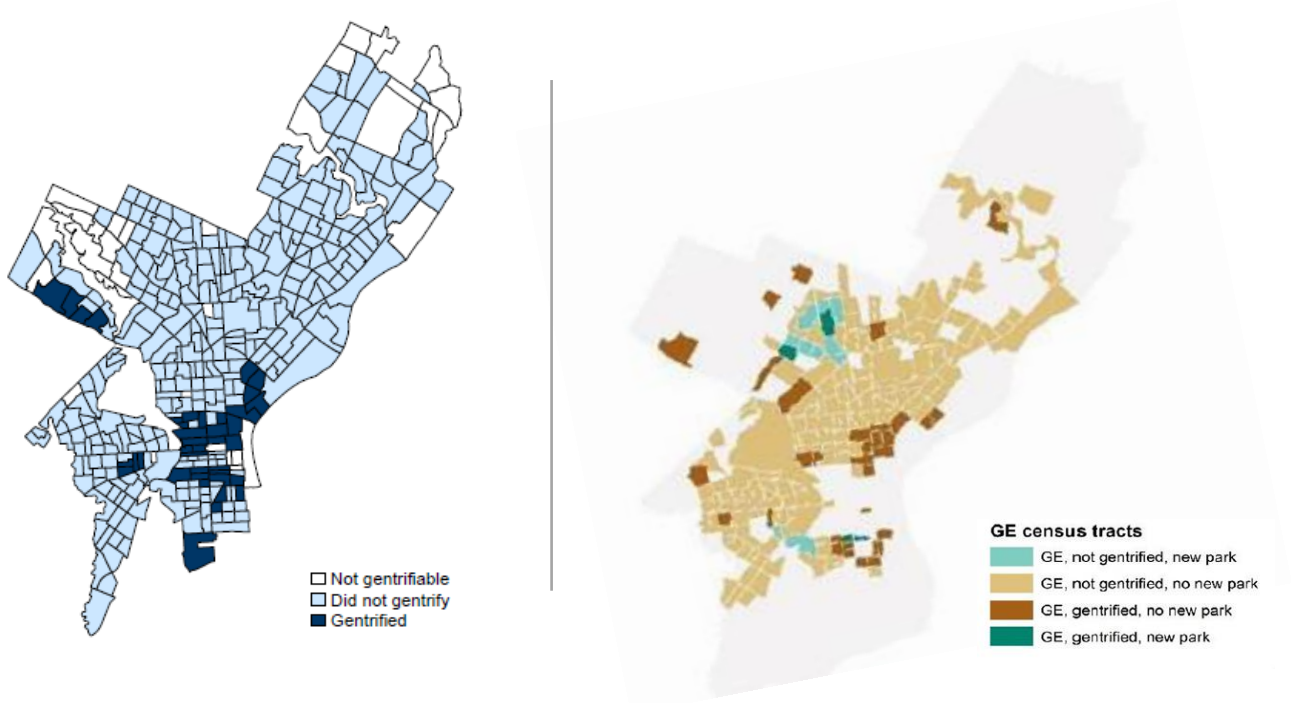
Another recent study by the Federal Reserve Bank of Philadelphia argues that many of the neighborhoods in and around downtown Philadelphia are undergoing gentrification (Figure 2).[23] To measure the process, the authors used a single variable, the percentage increase of those with a

19 Chapple and Zuk, "Systems for Gentrification."
20 "Where Is Gentrification Happening in Your City?"
21 Zuk et al., "Gentrification, Displacement, and the Role of Public Investment."
22 "Supply and Demand Factors for Affordable Housing in Philadelphia's Chinatown."
23 Brummet and Reed, "The Effects of Gentrification on the Well-Being and Opportunity of Original Resident Adults and Children."

bachelor's degree. By this measure, the census tracts that correspond to the Chinatown neighborhood experienced gentrification between 2000 and 2014 (See Figure 2: Two Gentrification Studies in Philadelphia.[24]

Rigolon and Nemeth (2019) also found evidence of gentrification in Philadelphia.[25] This study looked specifically at the influence of new urban parks and greenways on gentrification. And while the authors also used percentage of bachelor's degree as a measure of gentrification, they supplemented this with additional variables, the median household income and median rent or median housing value. The authors found that between 2008 and 2016 census tracts near parks were more likely to gentrify, especially within a 1/2 mile from the amenity (Figure 2). Additionally, parks near a city's downtown were more likely to be linked to gentrification. While the study found a strong like between gentrification and parks from 2008-2016, this was not so for the years 2000-2008. The authors suggest this is likely due to the advanced state of gentrification in many areas spurred by the housing bubble during that period. Like the Chicago 606 study argued, the authors in this study suggest that influence of parks may have been limited by the strong real estate market at the time.

FIGURE 2: TWO GENTRIFICATION STUDIES IN PHILADELPHIA, 2000-2014 (LEFT) AND 2008-2016 (RIGHT)



Source: (left) Brummet and Reed, "The Effects of Gentrification on the Well-Being and Opportunity of Original Resident Adults and Children."; (right) Rigolon and Németh, "Green Gentrification or 'Just Green Enough': Do Park Location, Size and Function Affect Whether a Place Gentrifies or Not?"

24 Census Tract 2 and Census Tract 376, 2014
25 Rigolon and Németh, "Green Gentrification or 'Just Green Enough': Do Park Location, Size and Function Affect Whether a Place Gentrifies or Not?"

Summary of Findings

Parks and greenways often contribute to higher property values and gentrification. However, the magnitude of the impact of urban green spaces on neighborhoods depends on several convening factors, including, distance from a home to a green amenity, distance from the green amenity to the CBD or downtown, and underlying market forces.

In general, the price impacts can be experienced within a ½ mile of the park or green space, and the impacts are often strongest within a ¼ mile. These impacts are most pronounced in areas near a downtown. However, in areas with already strong real estate markets and those that have already significantly gentrified, new green spaces may do little to affect home prices or advance gentrification.

In Philadelphia, there is strong evidence that gentrification is already underway. According to a recent study by the Federal Reserve Bank of Philadelphia, many of the neighborhoods in and around downtown Philadelphia have been undergoing gentrification, with an increase in the number of residents with a bachelor's degree.

Many other neighborhoods in Philadelphia within close proximity to parks experienced "green gentrification." According to a recent study by Rigolon and Nemeth, census tracts near parks were more likely to gentrify, especially within a 1/2 mile from the amenity. Additionally, parks near a city's downtown were more likely to be linked to gentrification.

III. STUDY AREA DEMOGRAPHIC TRENDS

This section describes population and household trends within the study area, as compared to the City of Philadelphia. The study area is defined as the area within a half-mile of the Rail Park. Based on a review of literature (see Section III of the report), the impacts of a park or green space are often experienced within a half-mile distance. Figure 1 on the following page shows a map of the study area. The demographic analysis is based on data from the U.S. Census for the year 2000 and American Community Survey five-year estimates for 2013 to 2017. This section provides context about conditions in the study area, including trends related to gentrification and displacement.

Race/Ethnicity and Education

Changes in race and ethnicity and educational attainment are commonly highlighted in discussions of gentrification and displacement. Two recent studies on gentrification that focused on the City of Philadelphia found that an increase in the share of residents with a bachelor's degree was a major indicator of gentrification and/or displacement impacts. Findings about trends in ethnicity and educational attainment are summarized below and in Figure 4.

- **The study area has experienced a significant loss in the share of Non-Hispanic Black or African Americans.** In 2000, Non-Hispanic Black or African Americans accounted for nearly half of the study area's population, and in 2017 that percentage has decreased to less than a third.
- **The proportion of Non-Hispanic Whites has increased in the study area**. Although the share of Non-Hispanic Whites has decreased overall in the city, it jumped a notable amount in the study area.
- **Educational attainment increased significantly in the study area.** While the study area had been more educated than the city generally, from 2000 to 2017 the share of those with a bachelor's degree or higher increased nearly by nearly a quarter reaching almost 50 percent.

FIGURE 3: RACE AND EDUCATION, 2000 TO 2017

	Philadelphia			Study Area		
	2000	2017	change	2000	2017	change
Race/Ethnicity						
Non-Hispanic White	42.5%	34.9%	-7.6%	28.8%	38.5%	9.7%
Non-Hispanic Black or African American	42.6%	41.3%	-1.3%	46.1%	29.2%	-16.9%
Non-Hispanic Asian	4.4%	7.0%	2.6%	16.4%	20.5%	4.1%
Hispanic/Latino	8.5%	14.1%	5.6%	6.4%	8.2%	1.8%
Bachelor's Degree or higher	17.9%	27.1%	9.2%	25.9%	48.4%	22.5%

Sources: Census, 2000; American Community Survey, 2017; Strategic Economics, 2019.

FIGURE 4: STUDY AREA GEOGRAPHY

Rail Park Phase One Half Mile Buffer

- Rail Park Phase One
- Study Area
- 2017 Chinatown Neighborhood Plan Boundary
- Highways and Major Roads

Sources: Philadelphia Business Journal, 2019; City of Philadelphia, 2019; Strategic Economics, 2019.

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Household Income

Measures related to household income often used to identify areas at risk of gentrification and areas that are likely experiencing gentrification and displacement. Neighborhoods with a higher percentage of low-income households compared to the city may be at risk of gentrifying, and those that have lost low-income households or have seen a larger growth in the household area median income (AMI) may be experiencing gentrification. Trends in household AMI and the share of low-income households are show in Figure 5, and summarized below.

- **The study area had a higher percentage of low-income households than the city.** In 2000, the study area's proportion of low-income households was nearly 16 percentage points higher than Philadelphia's overall share.
- **The study area has lost a large share of low-income households.** The proportion of low-income households has increased slightly in Philadelphia. However, the study area departs dramatically from this trend, as the share of low-income households decreased by about 14 percentage points, bringing the share of low-income households just below the city's proportion.
- **The median household income increased significantly in the study area, surpassing the median income in the city.** In 2000, the study area's AMI was well below the city's level. However, since then the city's AMI has decreased, while the study area's AMI increased by more than 60 percent.

FIGURE 5: HOUSEHOLD INCOME, 2000 TO 2017

	Philadelphia			Study Area		
	2000	2017	change	2000	2017	change
Household Area Median Income (AMI)	$45,504	$40,649	-$4,855	$28,731	$46,999	$18,268
Low-income Households	41.9%	44.6%	2.7%	57.6%	43.4%	-14.2%

Sources: Census, 2000; American Community Survey, 2017; Strategic Economics, 2019.
Note: low-income households are defined here as 80% and below of the City's area median income.

Tenure and Household Types

Studies have suggested that a high percentage of renters is an important potential gentrification risk factor, and changes in household size and the percentages of non-family households may indicate ongoing gentrification. These measures are discussed below and in Figure 6.

- **The share of renters in the study area remains larger than in the city overall**. As of 2017, 82 percent of households in the study area were renters, nearly double the city's share.
- **The study area has kept pace with the city in other household trends.** While the study area continues to have a larger proportion of nonfamily households and single households than the city, changes since 2000 have been in line with overall city trends.

FIGURE 6: TENURE AND HOUSEHOLDS BY TYPE, 2000 TO 2017

	Philadelphia			Study Area		
	2000	2017	change	2000	2017	change
Tenure						
Owner Occupied	59.3%	52.2%	-7.1%	16.1%	17.8%	1.7%
Renter Occupied	40.8%	47.8%	7.0%	83.9%	82.2%	-1.7%
Households by Type						
Families w/ children	32.8%	26.3%	-6.5%	21.4%	13.6%	-7.8%
Families w/o children	26.9%	26.4%	-0.5%	17.0%	17.8%	0.8%
Householder living alone	33.8%	39.4%	5.6%	55.1%	52.1%	-3.0%
Other non-family household	40.0%	47.1%	7.1%	61.4%	68.5%	7.1%

Sources: Census, 2000; American Community Survey, 2017; Strategic Economics, 2019.

Summary of Findings

The demographic analysis shows that study area displays many of the characteristics that academic literature has linked to gentrification and displacement, as summarized below:

- The study area has a larger share of low-income households and renters than the city of Philadelphia overall. These populations are generally more vulnerable to displacement.
- Recent demographic changes, such as an increase in non-Hispanic Whites, an increase in college educated residents, a decrease in low-income households, and growth in area median income suggest that the study area may already be in the process of gentrifying.

IV. PROPERTY VALUE AND DEVELOPMENT IMPACTS OF THE RAIL PARK

This section describes the analysis of property value impacts associated with the Philadelphia Rail Park, focusing on the study area (within one-half mile of the first phase of the Rail Park). The section includes:

- An overview of the methodology and limitations to the analysis;
- An analysis of trends in apartment building sales, apartment rents, and recent development; and
- A summary of key findings.

Methodology and Limitations

The potential impact of the Rail Park on residential property values was analyzed using a difference in differences approach. Difference in differences is a statistical method that mimics an experimental design with a "treatment" and a "control" group. The goal is to measure the value increment of properties within the study area (the "treatment" group, properties whose value we would expect to be affected the Rail Park) compared with citywide trends (the "control" group, properties on which the Rail Park would have little or no effect).

The study measures the rate of growth in apartment building sales prices and apartment rents in the study area and compares them to the relative rate of growth in the city. It is important to note that this methodology does not definitively isolate the growth associated with the Rail Park, given that other factors may also be influencing the relative growth rates. Rather, this difference in growth is assumed to reflect the maximum portion of property value attributable to the Rail Park.

The effect attributable to the Rail Park is measured from a specific point in time, in this case Q1 2013, when organizations merged to form the Friends of the Rail Park. This point was chosen as the point from which it is expected that planning of the Rail Park might have begun to impact residential values.

Residential sales were analyzed using sales of apartment buildings, provided by the Costar Group. Non-arms length and distressed sales transactions were removed from the data. Apartment rents were analyzed using quarterly historical average effective rent data, also from CoStar.[26] Only market rate apartments were included in the analysis.

A growth curve was fit to the study area and city data for apartment sales transactions and historical average rents between 2013 and 2019. The slope of this curve represents the growth of sales and rent prices over a certain time period. Following the difference-in-differences method, the maximum potential value uplift due to the Rail Park is calculated as the percentage difference between the value of property in 2019 and what it would be if values appreciated at the same rate as the city as a whole.

[26] Average effective rent is a metric provided by the Costar Group. Average effective rent is the average monthly rent paid by a tenant adjusted downward for concessions paid by a landlord, and upward for extra costs a tenant might incur.

In addition, recent and ongoing development in Center City Philadelphia was analyzed by land use, size, cost, and proximity to phase one of the Rail Park. Data was collected from the Philadelphia Business Journal and plotted geospatially using ArcGIS.

DATA LIMITATIONS

A hedonic price model (the statistical method used in several studies included in the literature review) was not attempted for this study due to data constraints. Most hedonic price models focus on single family home sales, however given the high proportion of rental apartment units in the study area (82 percent), this analysis focuses on apartments. The relatively small size of the study area – and thus relatively limited number of data points for analysis – also presents challenges for a more in-depth statistical method. Assessed property value data was also explored but determined to not be reliable given ongoing challenges to assessed valuations following the Actual Value Initiative.

Apartment Building Sales

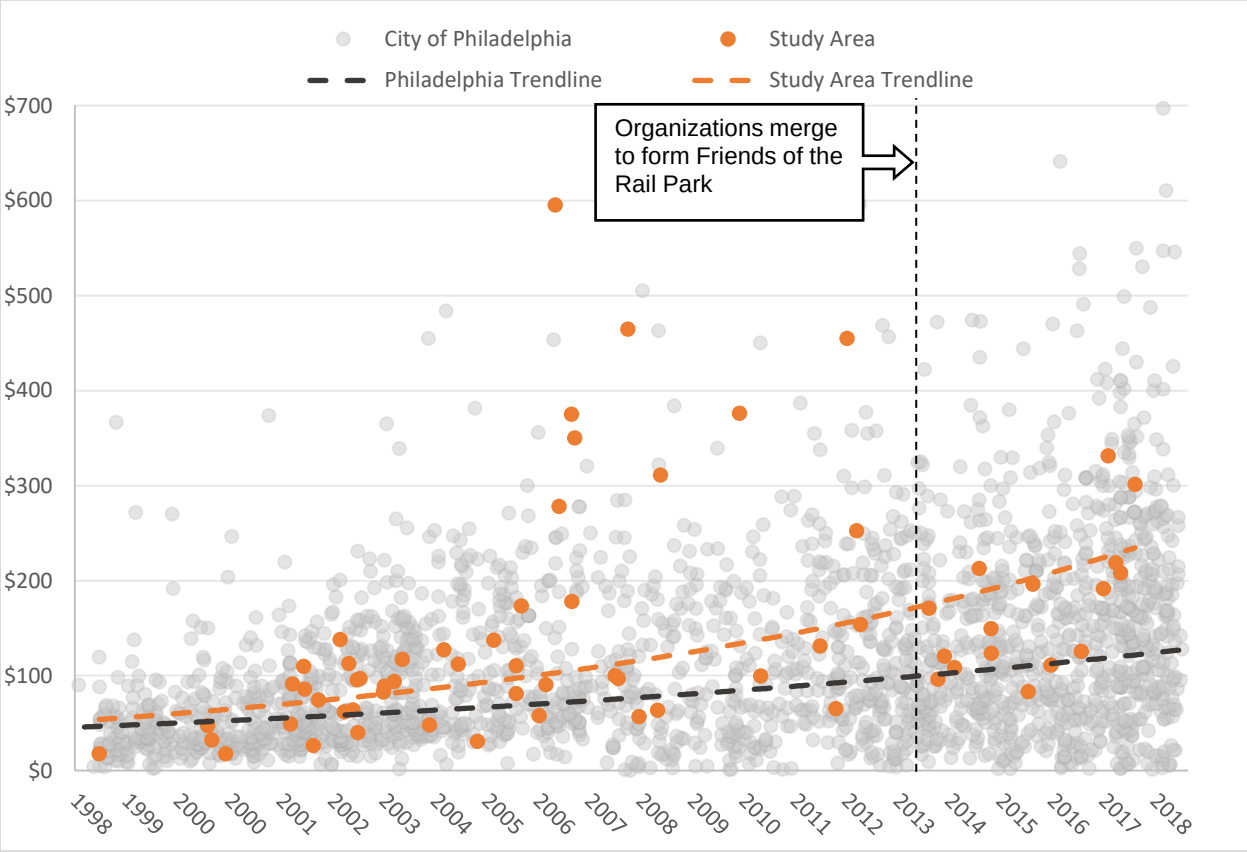
Strategic Economics evaluated trends in apartment building sales transactions between 1998 and 2018. Key findings are summarized below.

Apartment building prices increased faster in the study area than in the city as a whole. Figure 7 compares trends in building sales price per square foot in the study area and the city. The trendlines show average sales prices over time. Both trendlines begin at similar values and with similar slopes. However, as time progresses, the study area trendline diverges upward from the city, indicating a more significant increase in annual growth rate.

Since the formation of the Friends of the Rail Park in 2013, average sales prices grew faster in the study area than in the city (7.4 percent per year, compared to 4.9 percent. (See Figure 8).

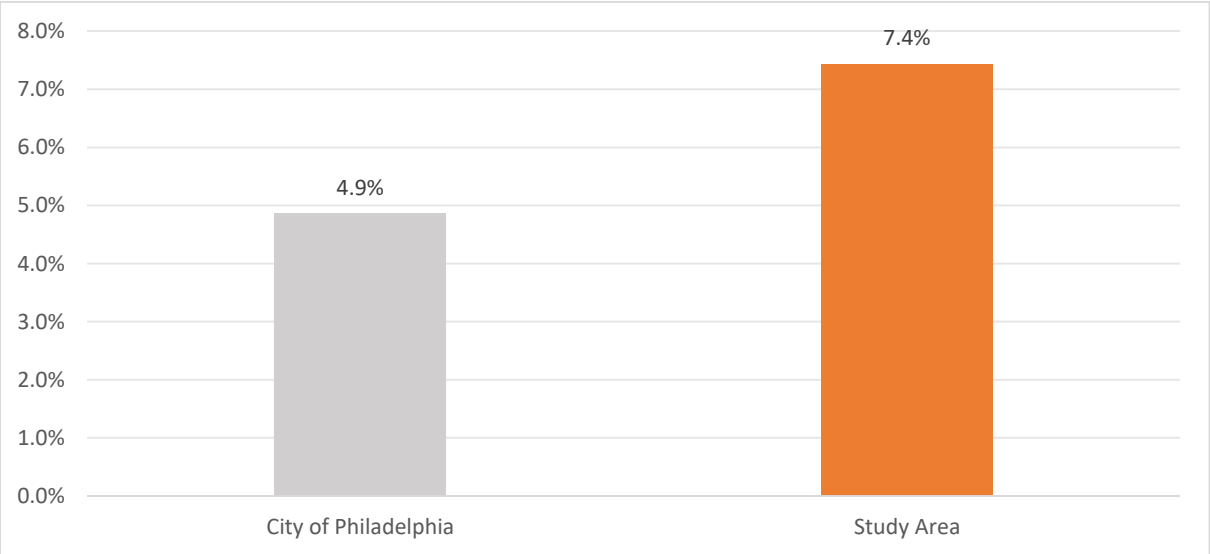
The differences-in-differences approach suggests that up to 16 percent of the value increment may be related to the announcement and construction of the Rail Park. Figure 9 visualizes the difference-in-differences value increment. The chart compares the sales prices in 2019 at the study area growth rate and what it would be if values appreciated at the same rate as the city. As shown in the chart, the value increment is 16 percent.

FIGURE 7: APARTMENT BUILDING SALES BY PRICE PER BUILDING SQ FT IN PHILADELPHIA AND STUDY AREA, 1998 TO 2018



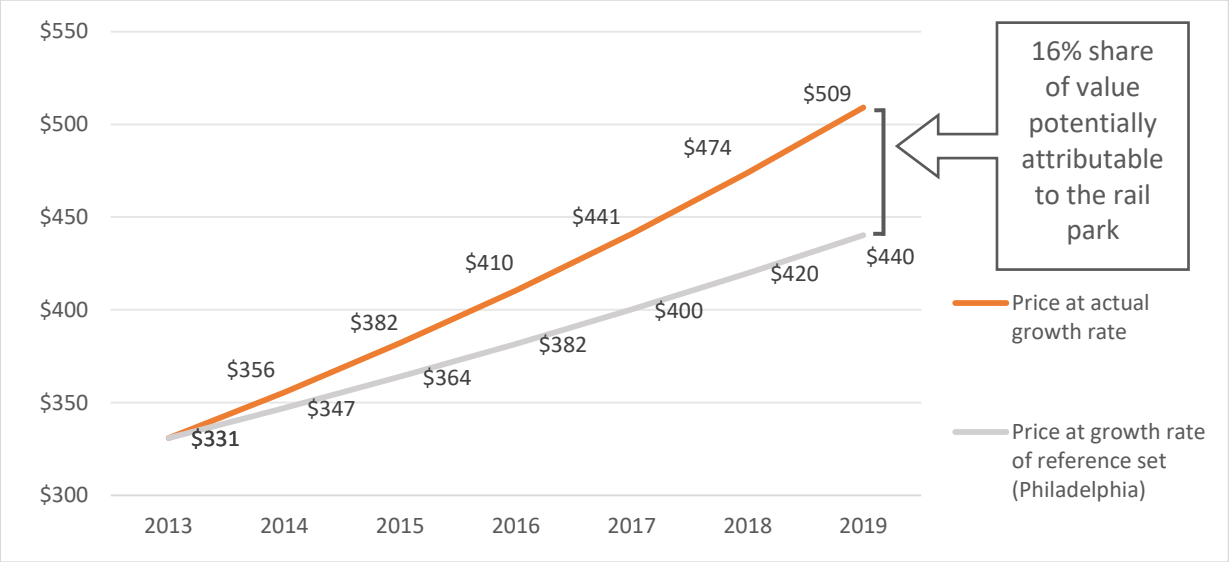
Sources: Costar, 2019; Strategic Economics, 2019.

FIGURE 8: COMPOUND ANNUAL GROWTH IN APARTMENT BUILDING SALES PRICE PER SQUARE FOOT, 2013 - 2019



Sources: Costar, 2019; Strategic Economics, 2019.

FIGURE 9: DIFFERENCE IN DIFFERENCES VALUE INCREMENT, APARTMENT BUILDING SALES PRICE PER BUILDING SQ FT



Sources: Costar, 2019; Strategic Economics, 2019.

Apartment Rents

The results of the apartment rent analysis are shown in Figures 10–13. Key findings are summarized below.

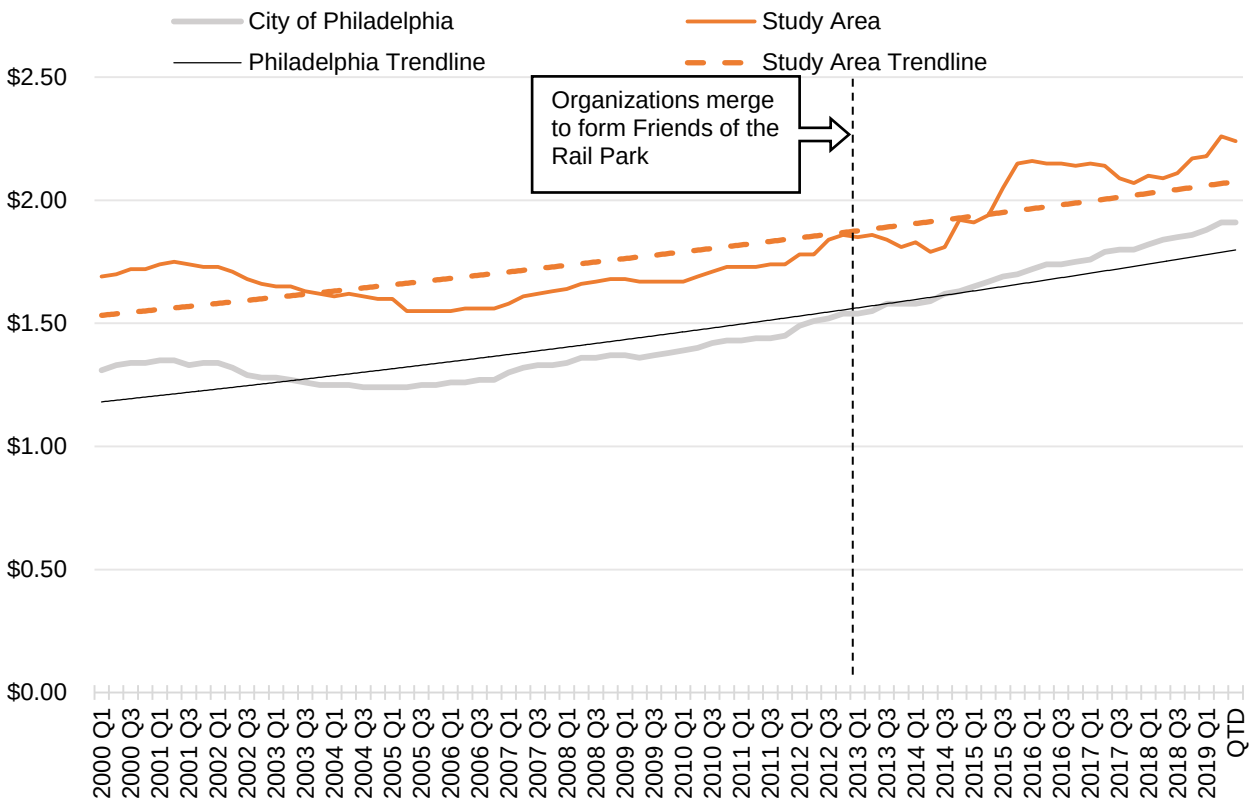
Apartment rents in the study area have consistently been higher than in the city as a whole. Figure 10 shows rents in the study area and city between 2000 and 2019. As shown, rents in the study area are higher than the city. Unlike the in the apartment building sales analysis, a significant difference in the slope of the trendlines is not discernable.

Since the Rail Park organization was formed in 2013, rents have grown more slowly in the study area than in the city. As shown in Figure 11, rents grew an average of 3.2 percent per year in the study area, compared to 3.7 percent per year in the city. This suggests only a limited impact of the Rail Park on rents to date.

However, comparison of the growth rates before and after 2013 suggests a slightly higher increase in the growth rate in the study area. Figure 12 shows that growth rate in the study area has increased by 2.5 percent, slightly higher than the increase in growth rate in the city.

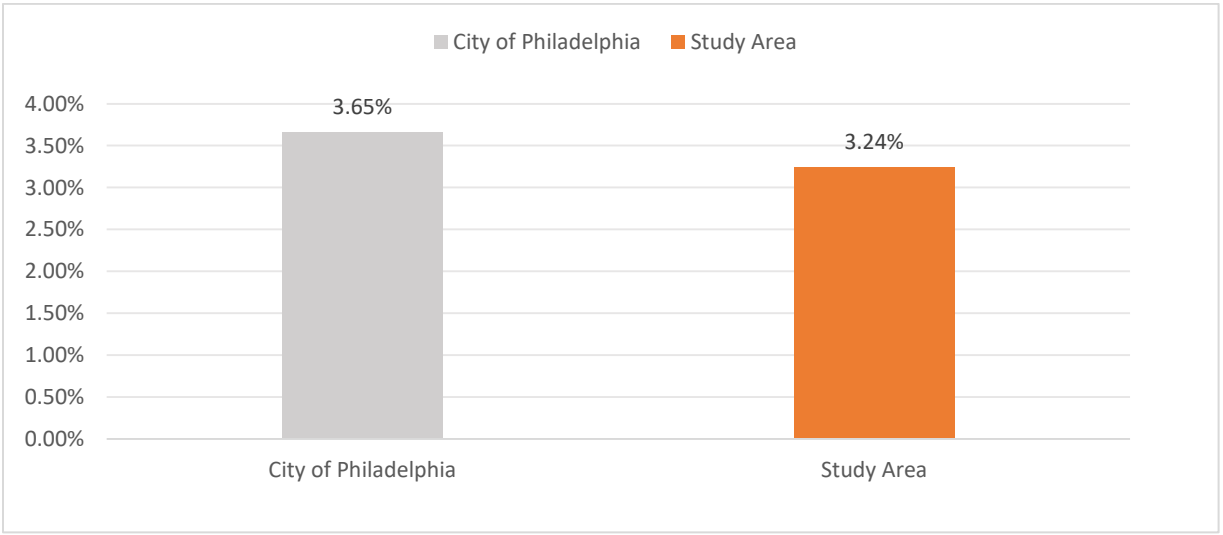
Overall, the differences-in-differences approach does not find an impact of the Rail Park on apartment rents. Figure 13 shows the result of the differences analysis, which implies a negligible (and potentially negative) impact of the Rail Park on apartment rents (-2 percent).

FIGURE 10: AVERAGE EFFECTIVE APARTMENT RENT PER SQUARE FOOT IN THE STUDY AREA AND PHILADELPHIA, 2000 - 2019



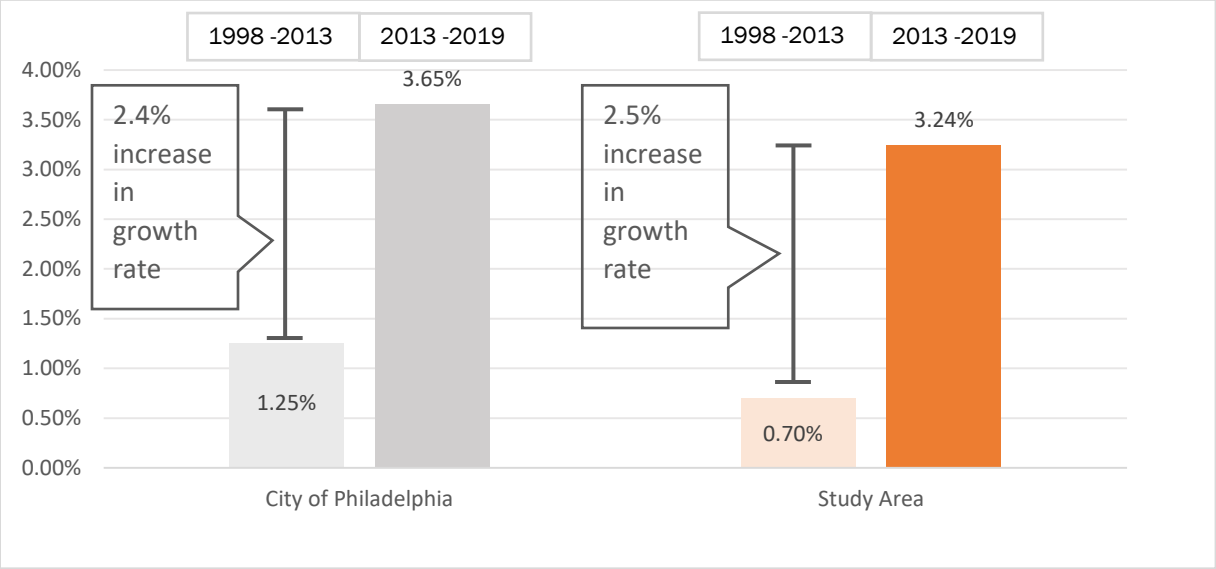
Sources: Costar, 2019; Strategic Economics, 2019.

FIGURE 11: COMPOUND ANNUAL GROWTH IN APARTMENT RENTS SINCE 2013, PHILADELPHIA AND STUDY AREA



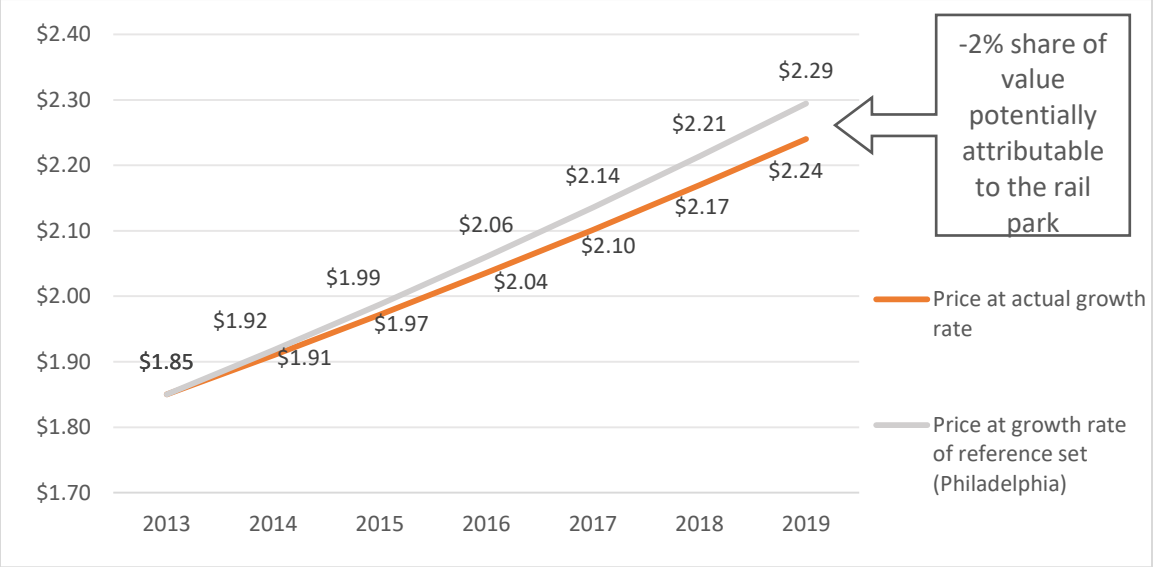
Sources: Costar, 2019; Strategic Economics, 2019.

FIGURE 12: COMPOUND ANNUAL RENT GROWTH IN APARTMENTS BEFORE AND AFTER 2013, PHILADELPHIA AND STUDY AREA



Sources: Costar, 2019; Strategic Economics, 2019.

FIGURE 13: DIFFERENCE IN DIFFERENCES VALUE INCREMENT, APARTMENT RENTS



Sources: Costar, 2019; Strategic Economics, 2019.

Development Trends

Strategic Economics compared development trends in the study area to the rest of Center City. The results are shown in Figures 14-16 and summarized below.

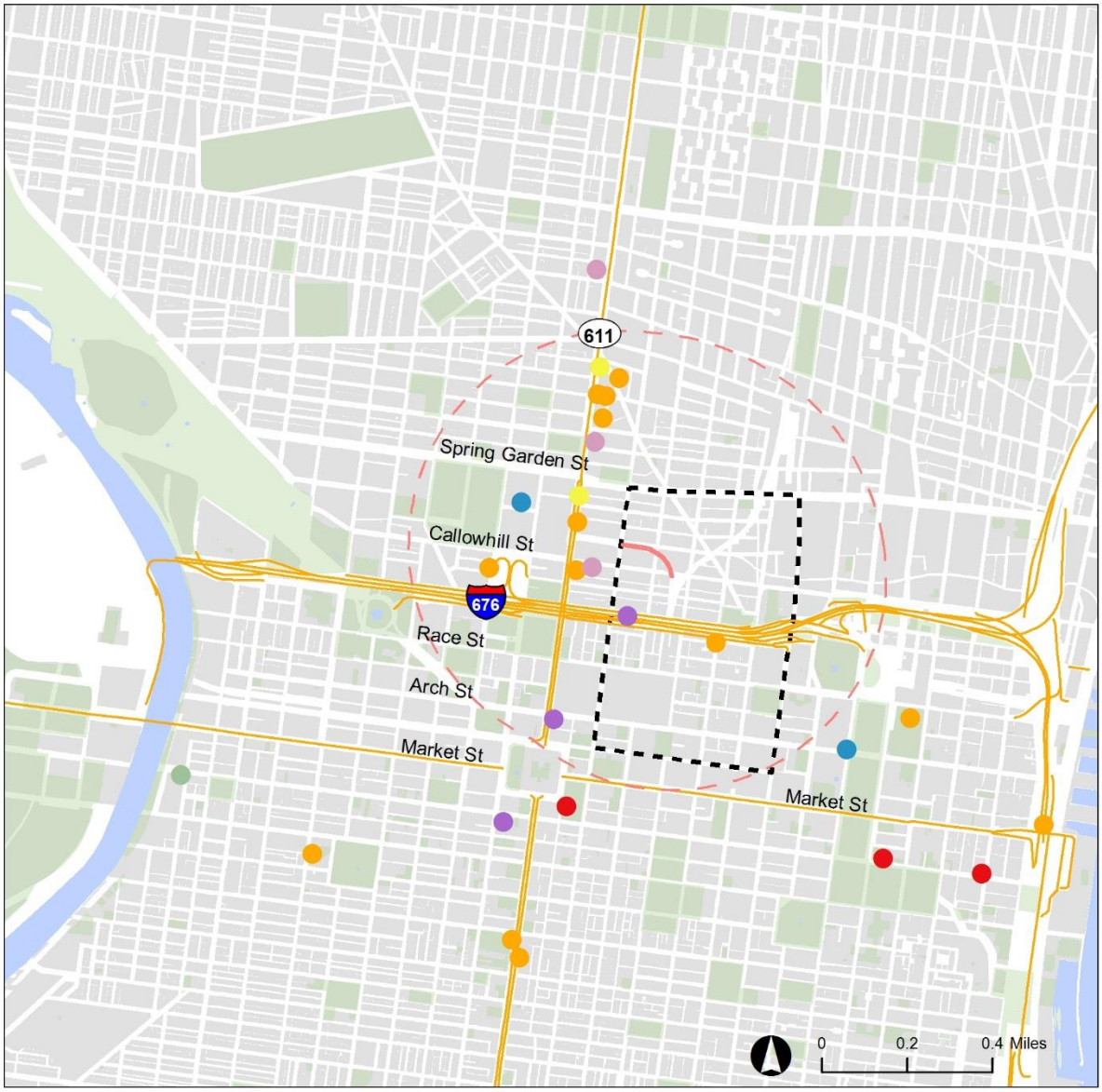
Recent development in Center City includes a concentration of projects near the Rail Park on North Broad Street. Figure 14 shows the locations of new and under construction development projects by land use type in Philadelphia's Center City. While it is expected that these projects were attracted to this location as part of the Broad Street Renaissance, it is likely that the Rail Park is also a factor influencing investment. Overall, 15 out of 31 new or under construction projects are in the study area, accounting for 36 percent of total investment in Center City.

The study area accounts for 75 percent of recent apartment development in Center City. Figures 15 and 16 show the portion of Center City development occurring within the study area by land use. 1,986 apartment units are under construction or recently completed within the study area.

Seventy seven percent of Center City office development is within the study area. A total of 2,499,338 square feet of office are recently built or under construction.

Hotel, condominium and retail projects, however, are less likely to be located within the study area. The study area accounts for only 25 percent of hotel units and 10 percent or less of retail and condo development.

FIGURE 14: RECENTLY COMPLETED AND UNDER CONSTRUCTION DEVELOPMENT: PHILADELPHIA CENTER CITY



Recently Completed and Under Construction Development: Philadelphia Center City

Land Use

- Education
- Hotel
- Retail
- Mixed Use Residential
- Residential
- Mixed Use
- Office
- Other
- Renovation
- Rail Park Phase One
- Study Area
- 2017 Chinatown Neighborhood Plan Boundary
- Highways and Major Roads

Sources: Philadelphia Business Journal, 2019; City of Philadelphia, 2019; Strategic Economics, 2019.

STRATEGICECONOMICS

FIGURE 15: RECENTLY COMPLETED AND UNDER CONSTRUCTION DEVELOPMENT, CENTER CITY PHILADELPHIA

	Inside Study Area		Outside Study Area		
	Amount	Share of Total	Amount	Share of Total	Total Center City
Number of Projects	15	48%	16	52%	**31**
Investment Total	$877,800,000	36%	$1,581,750,000	64%	**$2,459,550,000**
Office Square Feet	2,499,338	77%	750,000	23%	**3,249,338**
Apartment Units	1,986	75%	656	25%	**2,642**
Retail Square Feet	110,600	10%	956,500	90%	**1,067,100**
Hotel Units	286	25%	850	75%	**1,136**
Condo Units	13	7%	165	93%	**178**

Source: Business Journal, 2019; Strategic Economics, 2019.

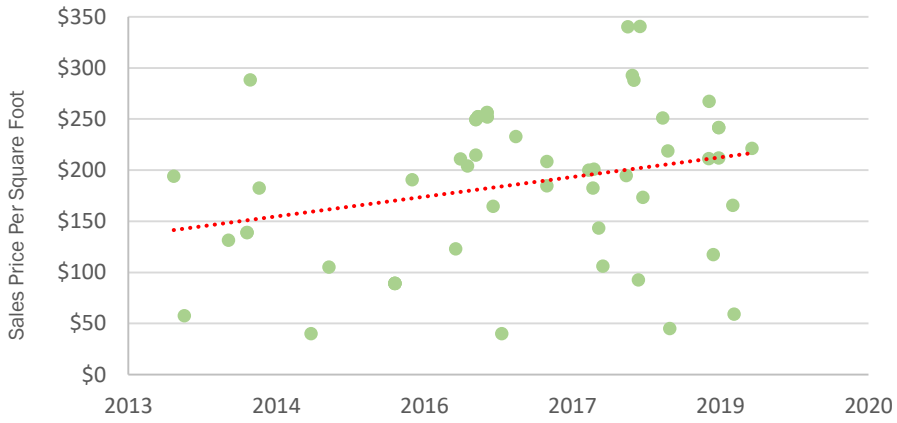
FIGURE 16: SHARE OF DEVELOPMENT WITHIN STUDY AREA, CENTER CITY PHILADELPHIA

Sources: Costar, 2019; Strategic Economics, 2019.

Impacts in Other Philadelphia Neighborhoods

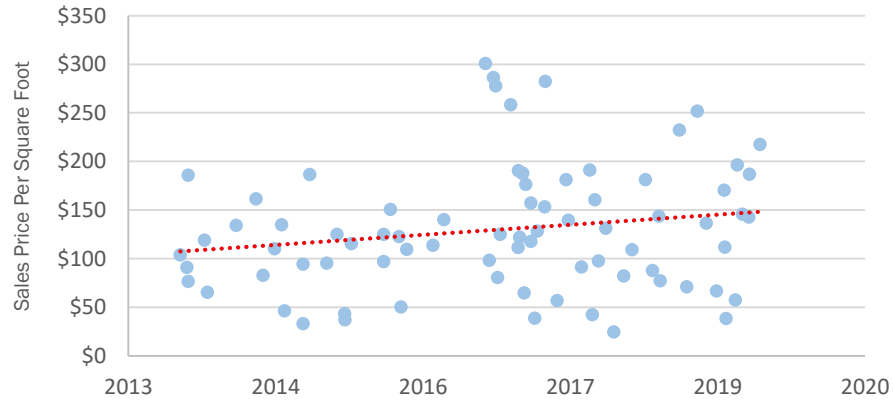
Additional neighborhoods located in or near Philadelphia's downtown have also experienced property value increases and may experience larger increases in the future due to their proximity to green spaces. The West Poplar neighborhood is located just north of Chinatown and includes a section of where the Rail Park will be extended during the second phase of construction. This neighborhood has already experienced an increase in residential sales prices from 2014 to 2019 (Figure 17) and is positioned to be potentially impacted by additional increases resulting from future development of the Rail Park. The Fairmount Park neighborhood has also seen an increase in residential sales from in the last five years (Figure 18). This neighborhood is located next to the Schuylkill River and several riverside parks, and is also about a ½ mile from where a future section of the Rail Park will be located.

FIGURE 17: WEST POPLAR, RESIDENTIAL SALES PRICES 2014-2019



West Poplar neighborhood is approximated as Census Tract 132. Red dotted line represents the trendline.
Source: Urban Partners, 2019, Strategic Economics, 2019.

FIGURE 18: FAIRMOUNT PARK, RESIDENTIAL SALES PRICES 2014-2019



Fairmount Park neighborhood is approximated as Census Tract 109. Red dotted line represents the trendline.
Source: Urban Partners, 2019, Strategic Economics, 2019.

FIGURE 19: AVERAGE RESIDENTIAL SALE PRICES, 2014-2019

Neighborhood/Year	Average Sq Ft	Average Price Per Sq Ft	5-year Growth Percent
Fairmount Park (a)			
2014	1,345	$113	
2019	1,238	$133	18%
West Poplar (b)			
2014	2,580	$162	
2019	2,396	$180	11%

Note: Fairmount Park and West Poplar sale prices are for townhomes/rowhouses.
(a) Fairmount Park neighborhood is approximated as Census Tract 109.
(b) West Poplar neighborhood is approximated as Census Tract 132."
Source: Urban Partners, 2019; Strategic Economics, 2019.

Summary of Findings

Up to 16 percent of value in apartment buildings within the study area may be attributable to the impact of the Rail Park. As shown in Figure 7, in apartment buildings sold in the study area, sale values per square foot since 2013 grew faster than in the city (7.4 percent versus 4.9 percent annually). Using the differences-in-differences approach, the estimated maximum proportion of apartment building value that can be attributed to the rail park is 16 percent.

While apartment building values have been increasing, these values are not yet reflected in increased rents. Since 2013, apartment rents within the study area actually grew slightly more slowly than in the city as a whole (3.7 percent versus 3.2 percent annually). Using the difference-in-differences approach implies a maximum impact of the rail park of -2 percent (essentially, no impact). Nevertheless, there are some slight indications that rents might be beginning to increase. The fact that the value of buildings based on property sales transactions are increasing faster than rents suggests that buyers are anticipating that rents will increase (to warrant their higher price) in the near future.

A significant share of recent development projects in Center City Philadelphia are located within the study area. In particular, residential and office development is concentrated within the study area. Development is occurring along Broad Street, associated with the "Broad Street Renaissance."

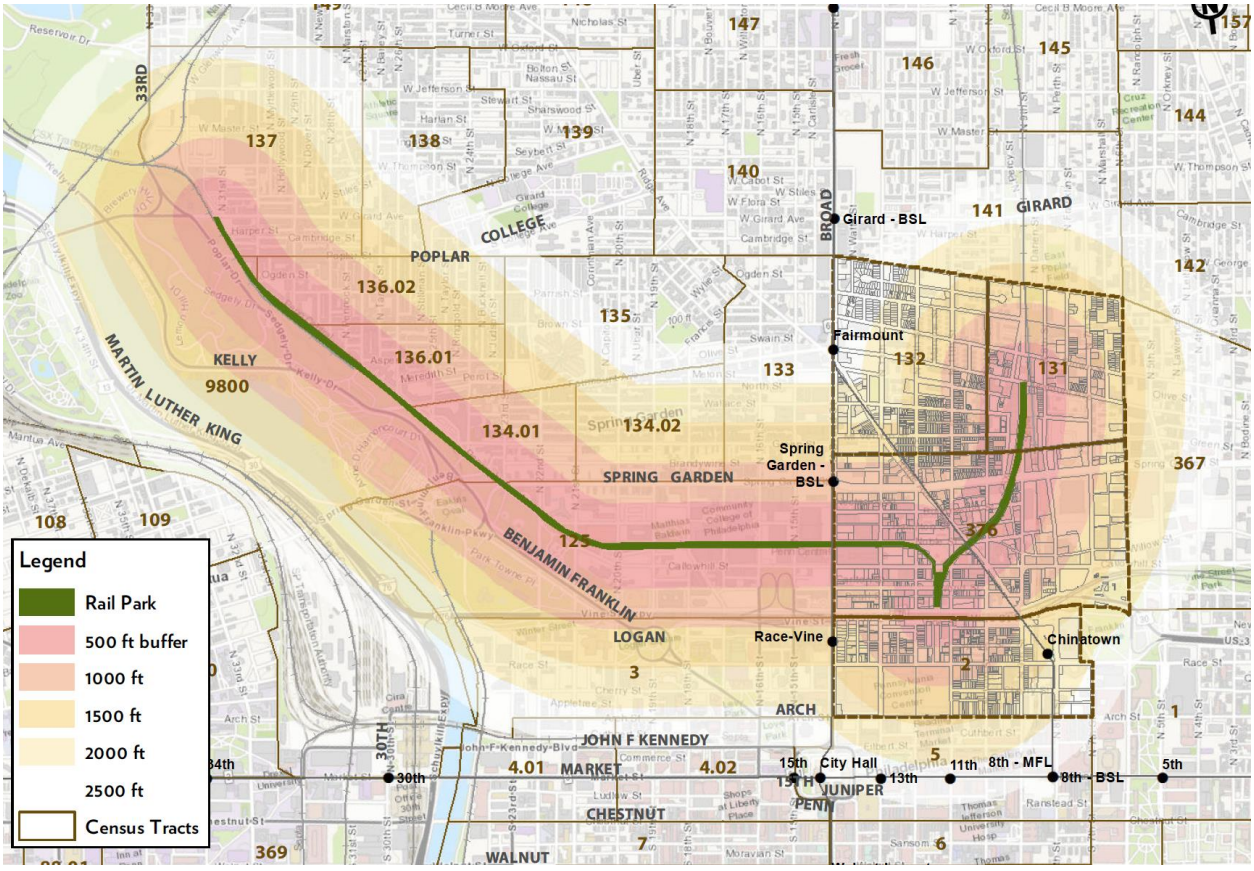
V. RAIL PARK'S IMPACT ON VALUE INCREASE

As detailed above, high quality parks and other types of urban green spaces have significant impact on property values for homes located in close proximity to the green amenity. Many academic research reports and case studies show that the magnitude of the economic impact of urban green spaces on neighborhoods depends on several convening factors: i) distance to the green amenity; ii) distance from the green amenity to the central business district or downtown; and iii) underlying market forces.

Most studies found 20% higher values for properties that are immediately adjacent to an open space amenity, but also evidenced a "linear decline" with distance from the edge of an open space with a positive price effect declining to zero at ½ mile or approximately 2,500 feet away. For the purpose of estimating the increased property values triggered by the Rail Park, following formula is used to calculate the amount of property value increase for homes located within ½ mile from the Rail Park:

- Zone 1, Properties within 500 feet: 20% benefit
- Zone 2, Properties within 501 to 1,000 feet: 15% benefit
- Zone 3, Properties within 1,001 to 1,500 feet: 11% benefit
- Zone 4, Properties within 1,501 to 2,000 feet: 7% benefit
- Zone 5, Properties within 2,001 to 2,500 feet: 3% benefit (see Figure 20)

FIGURE 20: PARCELS LOCATED WITHIN ½ MILE OF THE RAIL PARK



Current Value of Homes within ½ Mile

For the purpose of this analysis, property value impacts are calculated for the four census tracts located in Chinatown, Callowhill, and West Poplar (Tracts 2, 376, 131, and 132). The portion of the Rail Park located in these neighborhoods is referred to as "the Viaduct" and "Phase 1" (see Figure 21).

FIGURE 21: FULL VISION OF THE RAIL PARK

Current assessed values of residential and mixed-use (residential over lower-level commercial) properties located within ½ mile from the Rail Park are summarized below. In 2019, the aggregate assessed value of all residential and mixed-use properties within this area is $1.16 billion (Figure 22).

FIGURE 22: CURRENT ASSESSED VALUE OF RESIDENTIAL PROPERTIES WITHIN ½ MILE (IN MILLIONS)

	0 to 500 Feet	501 to 1,000 Feet	1,001 to 1,500 Feet	1,501 to 2,000 Feet	2,001 to 2,500 Feet	Total
Condos	$168.22	$49.37	$49.34	$46.61	$24.66	**$338.20**
Apartments	$148.68	$132.16	$118.70	$20.29	$25.44	**$445.27**
Single-Family Homes	$34.53	$76.44	$69.52	$15.84	$15.80	**$212.13**
Mixed-Use (Office Residential)	$30.51	$62.17	$72.77	$0.86	-	**$166.31**
Total	**$381.94**	**$320.14**	**$310.33**	**$83.60**	**$65.90**	**$1,161.91**

Source: City of Philadelphia, Urban Partners

Increased Value of Existing Homes within ½ Mile

Based on the formula outlined on Page 32, property value increases that are attributed to the development of the Rail Park are summarized for the five zones, as well as the four different residential property types. Apartments and condominiums will have the greatest amount of value increase ($64.8 million and $50.5 million, respectively), followed by single-family residential ($27.6 million) and mixed-use buildings ($26.6 million). Properties located within 0 to 500 feet of the Rail Park will see $76.4 million increase in property values, representing 45.1% of all value increases (Figure 23).

FIGURE 23: INCREASED VALUES FOR RESIDENTIAL PROPERTIES WITHIN ½ MILE (IN MILLIONS)

	0 to 500 Feet	501 to 1,000 Feet	1,001 to 1,500 Feet	1,501 to 2,000 Feet	2,001 to 2,500 Feet	Total
Condos	$33.64	$7.41	$5.43	$3.26	$0.74	**$50.48**
Apartments	$29.74	$19.82	$13.06	$1.42	$0.76	**$64.80**
Single-Family Homes	$6.91	$11.47	$7.65	$1.11	$0.47	**$27.61**
Mixed-Use (Office Residential)	$6.10	$12.43	$8.01	$0.06	-	**$26.60**
Total	**$76.39**	**$51.13**	**$34.15**	**$5.85**	**$1.97**	**$169.49**

Source: City of Philadelphia, Urban Partners

Increased Property Tax Revenue for City of Philadelphia

Based on the City of Philadelphia's 2019 tax rate, $2.37 million in increased property tax revenue for the City is shown below for existing homes within ½ mile of the Rail Park (Figure 24)

FIGURE 24: INCREASED REAL ESTATE TAX REVENUE FROM RAIL PARK TRIGGERED VALUE INCREASE

	0 to 500 Feet	501 to 1,000 Feet	1,001 to 1,500 Feet	1,501 to 2,000 Feet	2,001 to 2,500 Feet	Total
Condos	$471,000	$104,000	$76,000	$46,000	$10,000	**$707,000**
Apartments	$416,000	$277,000	$183,000	$20,000	$11,000	**$907,000**
Single-Family Homes	$97,000	$161,000	$107,000	$16,000	$7,000	**$388,000**
Mixed-Use (Office Residential)	$85,000	$174,000	$112,000	$1,000	-	**$372,000**
Total	**$1,069,000**	**$716,000**	**$478,000**	**$83,000**	**$28,000**	**$2,374,000**

Source: City of Philadelphia, Urban Partners

Summary of Findings

Nationally, research shows property values increase based on proximity to open space amenity. Most studies found 20% higher values for properties that are immediately adjacent to an open space amenity, but also evidenced a "linear decline" with distance from the edge of an open space with a positive price effect declining to zero at ½ mile or approximately 2,500 feet away.

For the four census tracts located in Chinatown, Callowhill, and West Poplar—the portion of the Rail Park referred to as "the Viaduct" and "Phase 1":

- **Current market value** of residential properties: **$1.16 billion**
- **Anticipated increase** in residential property values: **$169.49 million**
- Resulting annual **increase in city real estate tax:** **$2.37 million**

VI. IMPLICATIONS FOR VALUE CAPTURE

This section provides an overview of value capture tools and considers how they might be used to help address concerns about gentrification and displacement in the vicinity of current or future phases of the Rail Park, or in other neighborhoods experiencing similar investments and gentrification pressures. It begins with an overview of value capture, followed by an overview of value capture tools, and summary findings about the implications for value capture strategies.

Value Capture Overview

Investments in public amenities such as the Rail Park generate value for nearby property owners. The term "value capture" refers to any strategy that "captures" a portion of the increased property values. Traditionally, value capture has been used by public entities to recoup costs of improvements that benefit nearby property owners, often focusing on improvements such as roads, transit, lighting and sidewalks. However, value capture strategies are increasingly being considered as important tools for providing community benefits. This is particularly important in cases where the public improvement creates negative impacts for the surrounding neighborhood, or where benefits of public investments are not equitably shared.

As discussed in previous sections of this report, research shows that investments in parks and greenways have the potential to increase property values and result in gentrification and/or displacement of lower income residents. Our analysis of the neighborhood surrounding the Rail Park suggests that gentrification is already underway, and that property values are increasing as a result of the Rail Park (although on average rents do not yet reflect this increase in value). In addition, significant development is occurring in the vicinity of the first phase of the Rail Park. This creates a strong rationale for the use of value capture tools to help mitigate some of the negative impacts.

Comparable Philadelphia neighborhoods located near future phases of the Rail Park have also experienced property value increases. The West Poplar neighborhood has already experienced an increase in residential sales prices from 2014 to 2019, and could be impacted by additional increases with the extension of the Rail Park. The Fairmount Park neighborhood has also seen an increase in residential sales values within the last five years. This neighborhood is located next to the Schuylkill River and several riverside parks, and is also about a ½ mile from where a future section of the Rail Park will be located.

Evaluation of Value Capture Tools

Around the country, commonly used value capture tools include special assessments and taxes, tax increment financing, various forms of developer contributions, and joint development or other public sector real estate transactions. When pursuing implementation of these tools, it is important to ensure transparency and community input, and consider the equity implications of potential outcomes. A matrix of value capture tools is provided on the following pages.

The chart is organized to show the source of value for each tool; i.e., where the revenue comes from, as well as how revenues can be used. In general, value capture tools can capture value from development, existing private property owners, public or community-owned properties, and in some

cases businesses. Most tools that have the potential to provide funds for or direct provision of affordable housing are based on new development. These include tools such as an inclusionary housing requirement/ incentive zoning and tax increment financing (TIF). Each of the categories of tools is discussed in more detail below. Note that information specific to Philadelphia was researched by May 8 Consulting and incorporated into this report.

FIGURE 25: VALUE CAPTURE TOOLS AND POTENTIAL APPLICABILITY TO COMMUNITY BENEFITS IN THE VICINITY OF THE RAIL PARK

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Development impact fee	A one-time fee on new development to defray the cost of new or improved infrastructure required for development (determined via a formula)	Development	Public infrastructure needed to support new development	1% tax on new construction passed in June 2018. Council ultimately withdrew the bill in favor of Mayoral Plan to add up to $100 million to affordable housing funds.
Inclusionary Housing Requirement/ Zoning	A requirement to provide affordable housing or a contribution to a housing trust fund as part of a residential development project	Development	Affordable housing	Mandatory IZ legally permissible. Voluntary IZ adopted September 2018.
Commercial or residential linkage fee	Fee charged on development for affordable housing (to mitigate development impact)	Development	Affordable housing	1% tax on new construction passed in June 2018. Council ultimately withdrew the bill in favor of Mayoral Plan to add up to $100 million to affordable housing funds.
Density Bonus/ incentive zoning	A program that allows developers additional height and/or density in exchange for affordable housing or other community benefits	Development	Affordable housing or other community benefits	1% tax on new construction passed in June 2018. Council ultimately withdrew the bill in favor of Mayoral Plan to add up to $100 million to affordable housing funds.

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Exaction	Payment negotiated by local jurisdictions from developers in exchange for development permits	Development	Local infrastructure, community benefits, affordable housing, other	While it is legal to require a developer to mitigate negative impacts of the development on the surrounding community, the Supreme Court ruled in Koontz vs. St. Johns River Water Mgmt. District[ii] that the city performs a taking when demanding an exaction not related to, or proportionate with a development and are liable even in the absence of a final governmental decision.
Community Benefits Agreement (CBA)	Agreement between community groups and a developer to provide specific amenities and/or mitigations	Development	Community/neighborhood benefits such as workforce requirements, provision of parks and public facilities, affordable housing, other	CBAs have been used in Philadelphia on several occasions, typically negotiated between a coalition of community groups and a developer prior to city approval of a project.
Transfer of Development Rights	A zoning method that allows property owners to sell development rights for use at another property	Development rights	Protects historic properties, conservation areas, other areas where development is not desirable	Legally permissible in PA. Work most effectively when zoning code and variance process doesn't routinely allow high-density uses.

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Special Assessment District	Assessment on district property owners to fund specific improvements or services that they will uniquely benefit from	Property owners	Typical uses included lighting, landscaping, sewer, other public services	
Business Improvement District (BID)	Assessment on district property owners or businesses to fund specific improvements or services	Property owners or businesses	Typical uses include street beautification, marketing, events, security	There are several BIDs in place in Philadelphia (e.g. University City District and Center City District)
Tax Increment Financing	Public financing method that makes incremental growth in property or other taxes available for specific uses (May be implemented at the project or district level)	Redistributes funds generated by new development that would otherwise go to taxing entities	Typical uses include public infrastructure, affordable housing	TIFs are legal under the 1990 PA Tax Increment Financing Act. Under the Act, eligible TIF projects include commercial, industrial, and residential development in areas that have been identified as "blighted" under the state law definition and that demonstrate they need the TIF funding in order to be viable
Monetization of Green Infrastructure Investment	Can consist of an investment in infrastructure that generates revenue (e.g., solar), or value created through cost savings as part of a development project	Development/ infrastructure investment	Cost savings from development or a revenue stream that may be flexibly used	Currently being implemented. For example, ice skating and Starbucks at Dilworth Park in Center City
Public Real Estate Strategy	Sale, lease or development of public property	Public sector assets	Flexible; if developed, may include affordable housing, other community desired uses	Since 2000, the city has sold 2,314 properties through their Dollar Land Sales program.

Mechanism	Definition	Captures Value from	Provides Value for	Philadelphia Context
Property Control	Capture of property value increases through ownership by a community-based organization	Specific property owner/asset	Community desired uses	PCDC retains ownership over The Crane building.
Land Value Tax	Property tax levy specifically on the unimproved value of land (as opposed to buildings)	Property owner	City general funds	Pennsylvania allows differential tax on land vs. improvements; not clear how this could be deployed at the neighborhood level.

Sources: *Value Capture in the Commons Toolkit*, http://civiccommons.us/app/uploads/2018/11/Final_RCC_Value-Capture_Updated-Oct-2018_Pages.pdf, Strategic Economics, May 8 Consulting.

Development Impact Fee – a one-time fee on new development to defray the cost of new infrastructure or assist in delivering affordable housing

Development impact fees are most effective in locations with strong real estate markets, where development is occurring and can support the additional cost of the fee. One challenge of impact fees is that the revenue stream generated is not predictable, and can vary significantly over time depending on the amount of development activity.

Development impact fees have not been employed in Philadelphia to date. They were considered along with a range of other potential new revenue sources for affordable housing in 2018, but ultimately the housing package passed by the City in October 2018 focused on other sources of revenue. These funds will span 5 years; it makes sense to revisit whether it makes sense to institute impact fees in the future.

Inclusionary Housing Requirement/Incentive Zoning - a requirement to provide affordable housing as part of residential projects

Inclusionary housing requirements and incentive zoning programs (also known as density bonus programs) are increasingly being used across the US for affordable housing.

Similar to development impact fees, a mandatory inclusionary housing requirement was considered in 2018 but not adopted. However, a voluntary inclusionary zoning policy, called the Mixed-Income Housing Program, was adopted in September 2018. Under this program, developers can take advantage of voluntary height and density bonuses if they construct new affordable units or make a payment to the Housing Trust Fund. A mandatory policy could be revisited in the future.

Exaction - payment negotiated by local jurisdiction from developer in exchange for development permits

This value capture tool requires a direct negotiation between the City and each developer, which can be time consuming and difficult to implement uniformly across development projects. Philadelphia has shifted away from direct negotiations with developers. However, if the City returns to a negotiated approach for new development projects, this tool could be appropriate for the provision of community benefits.

Community Benefits Agreement (CBA) - agreement between community groups and a developer to provide specific amenities and/or mitigations

CBAs can be a very effective tool to achieve specific benefits desired by local community groups. Typically, they are used for major development projects where the size of the investment makes it worthwhile to negotiate for significant benefits. Examples of community benefits include provision of community space; local hiring, training and living wages; local procurement; and affordable housing.

There are a growing number of precedents for CBAs in Philadelphia, and a mandatory CBA law is under consideration. CBAs can be particularly effective when community stakeholders are engaged by local leaders to discuss their priorities, well in advance of making final decisions about major projects. CBAs should continue to be an important tool for minimizing gentrification and displacement in the near term, especially as key sites are entering the redevelopment planning process.

Transfer of Development Rights (TDR)/Air Rights - zoning method that allows property owners to sell development rights for use at another property

A transfer of development rights (TDR) program creates a market for development rights and facilitates their transfer between "sending areas" to "receiving areas." The development rights from the "sending" site are sold, preserving that area from future development. The development rights can be purchased and used at designated receiving sites to build additional density or height. TDR programs are often used to direct development to certain areas, in exchange for the protection of others. TDR programs define "sending" sites – often areas designated for lower densities due to the presence of historic resources, ecological sensitivity, or other factors -- and "receiving" sites that are more appropriate for higher density development. For this reason, it is often the case that "sending" sites are historic districts or open spaces. A TDR program could be further considered as a tool for preserving housing affordability as well as historic resources in the Chinatown district.

Special Assessment District/Business Improvement District - assessment on property owners or businesses to fund specific improvements or services

Special assessment districts are commonly used commonly across the U.S. as a way to fund neighborhood-level investments and services such as lighting, landscaping, marketing, security, and events. They are not typically used to fund affordable housing. Assessment amounts are closely tied to the benefits received by individual properties or businesses.

This tool may offer potential to capture value from either existing property owners or businesses, and is currently being explored by PCDC as part of a separate study.

Tax Increment Financing (TIF) - public financing method that makes incremental growth in property or other taxes available for specific uses

TIF is a common financing mechanism in the U.S., often used to help pay for needed public infrastructure associated with a development project. Some states, such as California, allow TIF districts to set aside a proportion of TIF revenues for affordable housing.

TIF has been used extensively in Philadelphia, but typically in conjunction with individual projects (as opposed to broader districts). They have not been used to fund community benefits to date, but this could be explored as an option in the future.

Monetization of Green Infrastructure Investment - revenue or cost savings generated by investment in infrastructure

Philadelphia has sought alternative revenue strategies to help fund parks, including use of concession fees for amenities such as bike rental, ziplines, event rentals, educational programs, sponsorship or naming rights, and events. The revenues generated have been used directly to fund park maintenance.

In addition to rail park maintenance, this source could be explored as a way to help fund other needed community benefits. However, it may raise concerns about privatization of public space.

Public Real Estate Strategy - sale, lease or development of public land

Where publicly-owned properties exist, there can be opportunities to leverage their value to help generate revenue for community priorities or to deliver desired land uses. The city's current disposition activities are geared toward prioritizing land uses that support the community, including provision of discounted land for projects that deliver community benefits. There are a number of publicly owned

properties within the Chinatown District; the potential use of these properties as part of a community benefits strategy could be considered.

The potential for community control of publicly-owned property should also be explored as part of the public real estate strategy. It gives community-based organizations direct control of property assets, which can be used to provide or protect affordable housing, assist small businesses, provide community space, or achieve other goals to stabilize and protect vulnerable households and businesses facing gentrification and displacement.

Land Value Tax - property tax levy specifically on the unimproved value of land (as opposed to buildings)

A land value tax is designed to capture the value of public investments that increase the location value of properties. Because the tax is applied only to the land, it also offers the benefit of increasing the holding cost for vacant or underdeveloped land, encouraging investment. Increasing the tax on land value has been considered many times in Philadelphia, but not implemented thus far. This tool should continue to be explored as a potential strategy to fund community needs.

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[i] https://www.supremecourt.gov/opinions/12pdf/11-1447_4e46.pdf

[ii] https://www.supremecourt.gov/opinions/12pdf/11-1447_4e46.pdf