PHILADELPHIA

30TH STREET STATION DISTRICT PLAN

DISTRICT PLAN PRIMER

May 29, 2015

Prepared by: AMTRAK

CONTENTS

Cover Image:
Philadelphia Downtown Aerial
Source: Brandywine Trust

1.0 INTRODUCTION

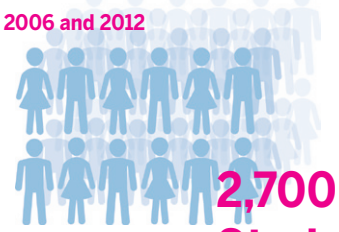
The Philadelphia 30th Street Station District Plan ("District Plan") is a long-range joint master planning effort by Amtrak, Brandywine Realty Trust, Drexel University, the Pennsylvania Department of Transportation (PennDOT), and the Southeastern Pennsylvania Transportation Authority (SEPTA). The District Plan study area encompasses an approximate 640-acre area surrounding the station, including Drexel's 10-acre future 'Innovation Neighborhood' campus located on the west side of 30th Street and approximately 88 acres of rail yards owned by SEPTA and Amtrak.

Population, transportation and development trends strongly suggest the stars are aligned for a dramatic District transformation:

- The year 2010 marked a pivotal reversal of a 50-year decline in population for Philadelphia. This growth includes a burgeoning millennial population, which grew 6.1% between 2006 and 2012 - more than any other US city.
- Two of Philadelphia's major universities, Drexel University and the University of Pennsylvania, boast a steadily growing a student population. Between 2010 and 2014, their undergraduate and graduate population grew by 2,700 students.
- 30th Street Station is the third busiest station in Amtrak's national network and Pennsylvania's busiest station with 11 million annual rail passengers. By 2040, the volume of passengers is expected to more than double.

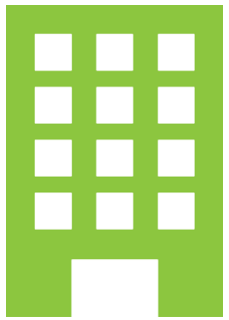
A STAGE FOR URBAN TRANSFORMATION

6.1% Millenial Population Growth
Between 2006 and 2012



2,700 New Students
Between 2010 and 2014

More than 2x the riders by 2040



Direct access to 375,000 workers

- The District's prime location between Center City and University City, two of the metropolitan region's largest employment centers, gives direct access to 375,000 workers. The District is also at the center of tremendous development activity. Thirty-five of the 200 pipeline projects in Philadelphia are in or near the District.

The District Plan kicked-off in June 2014. Over the approximate two-year planning process, the project team will strive to create a unified vision for the year 2040 where the station is at the epicenter of a dynamic, urban neighborhood full of opportunities for community development, economic growth and improved transportation connections.

The District Plan has three phases: Phase 1-existing conditions analysis; Phase 2-development of three vision alternatives; and Phase 3-selection and refinement of a preferred vision alternative into a comprehensive District Plan. The project is currently in Phase 2 and approaching a major milestone in June 2015 – the unveiling of three concept vision alternatives to the District Plan stakeholders and the public.

This document serves as a companion piece to the three concept vision alternatives. It synthesizes what we have learned to date about the District's surrounding context and its distinct features; our shared goals and objectives; and work completed to date to understand the benefits, feasibility, and opportunity costs of potential design solutions. The intended purpose of this document is to provide a solid foundation for assessing how well the concept vision alternatives respond to the District Plan's stated goals and objectives.

2.0 PLAN PROCESS

2.1 Plan Elements

The planning effort involves three main "elements" of analysis:

- The **Transportation Element** will enable improvements to the 30th Street Station complex as a multi-modal transportation hub that meets the District's transportation needs for 2040 and beyond. The Transportation Element will anticipate the next generation of high speed rail and regional and city transit services. The transportation network, as the backbone of the District, is a key to unlocking the District's potential.
- The **Station and Facilities Element** will enhance the grand historic station and maximize the visitor experience to provide an exciting gateway into the District and Philadelphia. This element will formulate a strategic approach to accommodate anticipated transportation growth, enhance intermodal connectivity, improve the customer experience, and respond to the unique needs of rail and transit operations through 2040.
- The **Commercial Opportunities Element** will create a roadmap for transit-oriented development that achieves a balance of residential, commercial, open space, and other land uses that is essential to a healthy urban community. This element will develop an integrated commercial development strategy for the station, the Innovation Neighborhood and other soft sites, and rail yard overbuild.

2.2 The Project Team

A coalition of adjacent property owners, governmental entities and departments and non-profit entities representing private and community interests have come together to provide guidance and direction for the District Plan, a shared vision for the future. Representatives from these organizations serve on a Coordinating Committee to offer general guidance to the District Plan, three Technical Committees to provide technical guidance on the topics of transportation, station and facilities, and commercial opportunities, and an Urban Design Working Group to guide the plan's design approach.

A multi-disciplinary consultant team led by Skidmore, Owings & Merrill LLP (SOM) in association with Parsons Brinckerhoff, OLIN and HR&A Advisors will develop the District Plan.

The Project Team organizations are:

- **Amtrak** is America's Railroad®, the nation's intercity passenger rail service and its high-speed rail operator. Amtrak and its state and commuter partners move people, the economy and the nation forward. Amtrak is the owner of 30th Street Station, the third busiest station in Amtrak's national network with over 4 million annual passengers and a Philadelphia historic landmark.
- **Brandywine Realty Trust** was a pioneer in developing the Cira Centre nearly 10 years ago, bringing new firms and thousands of jobs to Philadelphia. Since that time, the company has developed 3.6 million square feet and invested over $1 billion on the West Bank of the Schuylkill River to create an architecturally inspired, eco-progressive neighborhood with a direct, positive impact on Philadelphia's active socioeconomic status.
- **Drexel University**, founded in 1891 in Philadelphia, is a comprehensive global research university ranked among the top 100 in the nation. With approximately 26,000 students, Drexel is one of America's 15 largest private universities. Drexel is one of Philadelphia's top 10 employers, and a major engine for economic development in the region. Drexel has committed to being the nation's most civically engaged university, with community partnerships integrated into every aspect of service and academics.
- **PennDOT** is a customer-driven service organization responsible for the planning, design, construction, and maintenance of Pennsylvania's multi-modal transportation system. To effectively move people and goods within a highly industrialized region,

the Department has developed an extensive transportation system.

- **SEPTA** provides public transportation services for Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties. Today, SEPTA is the nation's sixth largest transit system, with a vast network of fixed route services including bus, subway, trolley, trackless trolley and Regional Rail, as well as ADA paratransit and shared ride programs.

- The **City of Philadelphia** supports this Master Plan primarily through the Philadelphia City Planning Commission and the Mayor's Office of Transportation & Utilities (MOTU): The mission of the **City Planning Commission** is to guide the orderly growth and development of the City of Philadelphia. **MOTU** is charged with building a shared vision and coordinating decision-making among agencies and departments in order to achieve the greatest efficiency and improve conditions throughout the City's transportation system.

- **CSX Corporation** is one of the nation's leading transportation suppliers. The company's rail and intermodal businesses provide rail-based transportation services including traditional rail service and the transport of intermodal containers and trailers.

- **The Delaware Valley Regional Planning Commission (DVRPC)** has served the Greater Philadelphia region for more than 40 years and works to foster regional cooperation in a nine-county, two-state area. City, county and state representatives work together to address key issues, including transportation, land use, environmental protection and economic development.

- **The Philadelphia Industrial Development Corporation (PIDC)** is Philadelphia's city-wide economic development corporation. Founded in 1958 as a non-profit, joint venture between the City of Philadelphia and the Greater Philadelphia Chamber of Commerce, PIDC plans and implements real estate and financing transactions that attract investment, jobs and tax ratables to the City of Philadelphia.

- **NJ TRANSIT** is New Jersey's public transportation corporation and the nation's largest statewide public transportation system, providing more than 895,000 weekday trips on 261 bus routes, three light rail lines, 12 commuter rail lines and through the agency's Access Link paratransit service linking major points in New Jersey, New York and Philadelphia.

- **The Schuylkill River Development Corporation (SRDC)** works with federal, state, city and private agencies to coordinate, plan and implement economic, recreational, environmental and cultural improvements and tourism initiatives on the lower Schuylkill River between the Fairmount Dam and the Delaware River.

- **University City District (UCD)** is a partnership of world-renowned anchor institutions, small businesses and residents that creates opportunity, improves economic vitality and quality of life in the University City area of West Philadelphia. Their primary mission is community revitalization. They work within a place-based, data-driven framework to invest in world-class public spaces, address crime and public safety, bring life to commercial corridors, connect low-income residents to careers, and promote job growth and innovation.

- **The University of Pennsylvania (UPenn)**, founded in 1740, is an American private Ivy League research university located in Philadelphia, Pennsylvania. With over 24,000 students, Penn is one of the world's most powerful research and teaching institutions, with a research budget last year topping $800 million and more than 4,000 active faculty members.

2.3 Public Input

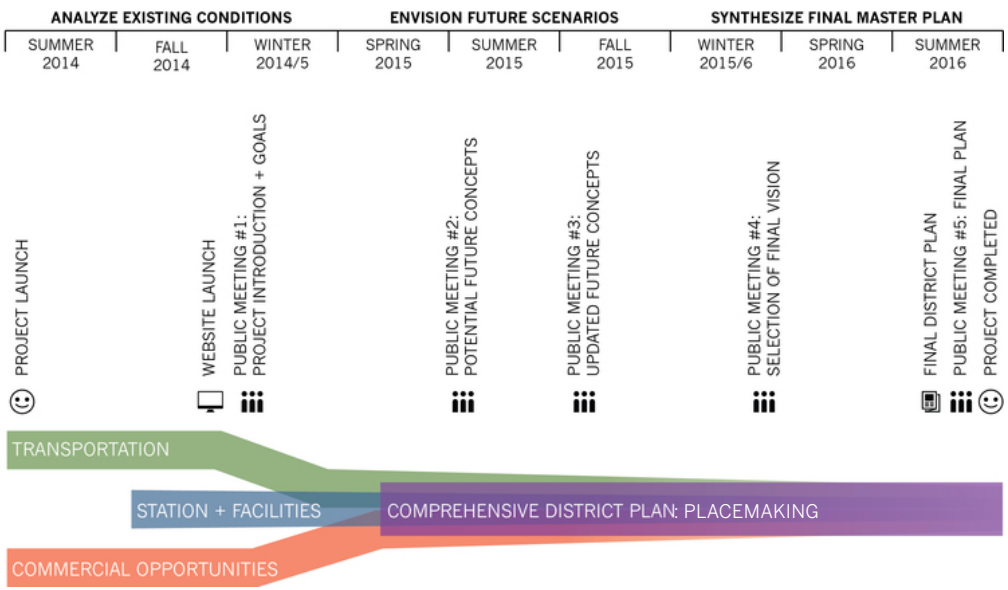
The Project Team strives for an open and continuous dialogue with all stakeholders. A five-part series of public open houses is planned over the duration of the project to engage elected officials, community organizations, business, trade and advocacy organizations, anchor institutions and major employers, transit customers, and the general public in the planning effort. The first open house and accompanying public survey was conducted January-February 2015. Over 600 participants contributed hundreds of ideas for improvements to the station, transportation network, and neighborhood that have been integrated into the ongoing planning effort. Please refer to Appendix A for a summary of the open house.

2.4 Plan Schedule

The three Plan Elements (Transportation, Station and Facilities, and Commercial Opportunities), will be synthesized into a comprehensive District Plan over three phases: Phase 1-existing conditions analysis; Phase 2-development of three vision alternatives; and Phase 3-selection and refinement of a preferred vision. **Placemaking** is the unifying theme for the planning and design process so that the final District Plan is a blueprint for creating an identifiable, vibrant community with a high quality of life.

The Project Team participates in the planning effort through regular meetings and special workshops of the Coordinating Committee, Technical Committees, and Urban Design Working Group to undertake specific planning analyses. This technical work is considered along with public input to create the District Plan.

JANUARY 28, 2015 PUBLIC OPEN HOUSE
Credit: Amtrak



PROJECT PHASING AND TIMELINE
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

3.0 PROJECT GOALS

GOALS TO GUIDE OUR FUTURE VISION

Credit: Schuylkill River Development Corporation

COMMUNITY

Build a vibrant community full of opportunities to live, learn, work and play.

Credit: Amtrak

CONNECTIVITY

Celebrate 30th Street Station as a premier multi-modal transportation hub where people can seamlessly connect to resources and attractions in the local community, the city and the region.

Credit: Brandywine Realty Trust

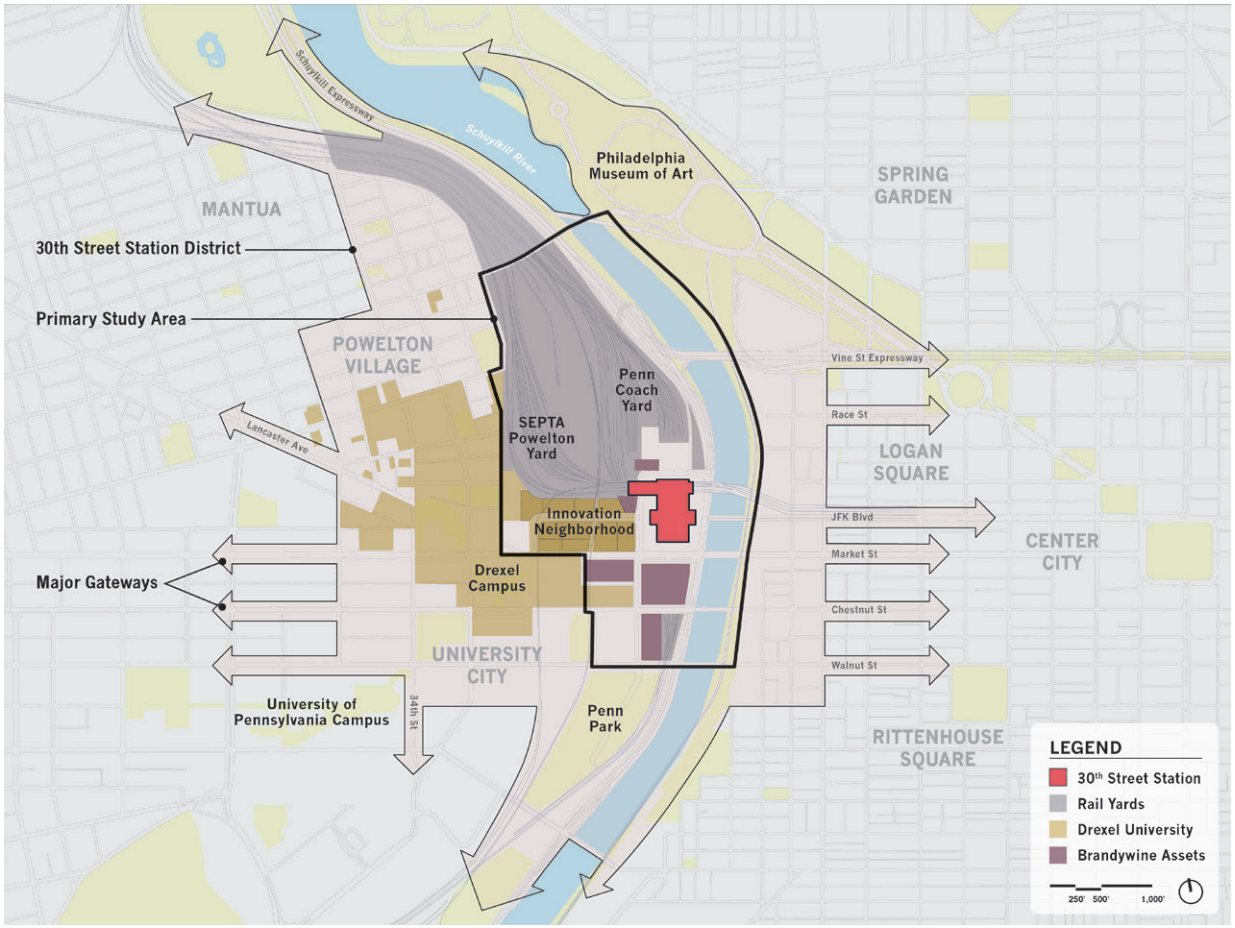
IDENTITY

Create a high-quality network of active, attractive and safe places to welcome residents and visitors into a place of memorable identity and character.

4.0 THE STUDY AREA

The **District Study Area** occupies 640 acres of net land area (excluding the Schuylkill River) bounded roughly by 22nd Street, Walnut Street, 36th Street, Spring Garden Street, and the Benjamin Franklin Parkway. The District is gateway into University City from Center City and 30th Street Station serves as a major gateway into the city at large.

The **Primary Study Area** occupies 175 acres of net land area at the heart of the District and will be main focus of the physical interventions contemplated by the District Plan. It includes 30th Street Station and 88 acres of adjacent rail yards, the 10-acre future Innovation Neighborhood campus, and the Cira Centre office complex.



STUDY AREA MAP
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

5.0 DISTRICT CONTEXT

5.1 Land Use and Ownership

Much of the District land uses are tied to the District's anchor institutions:

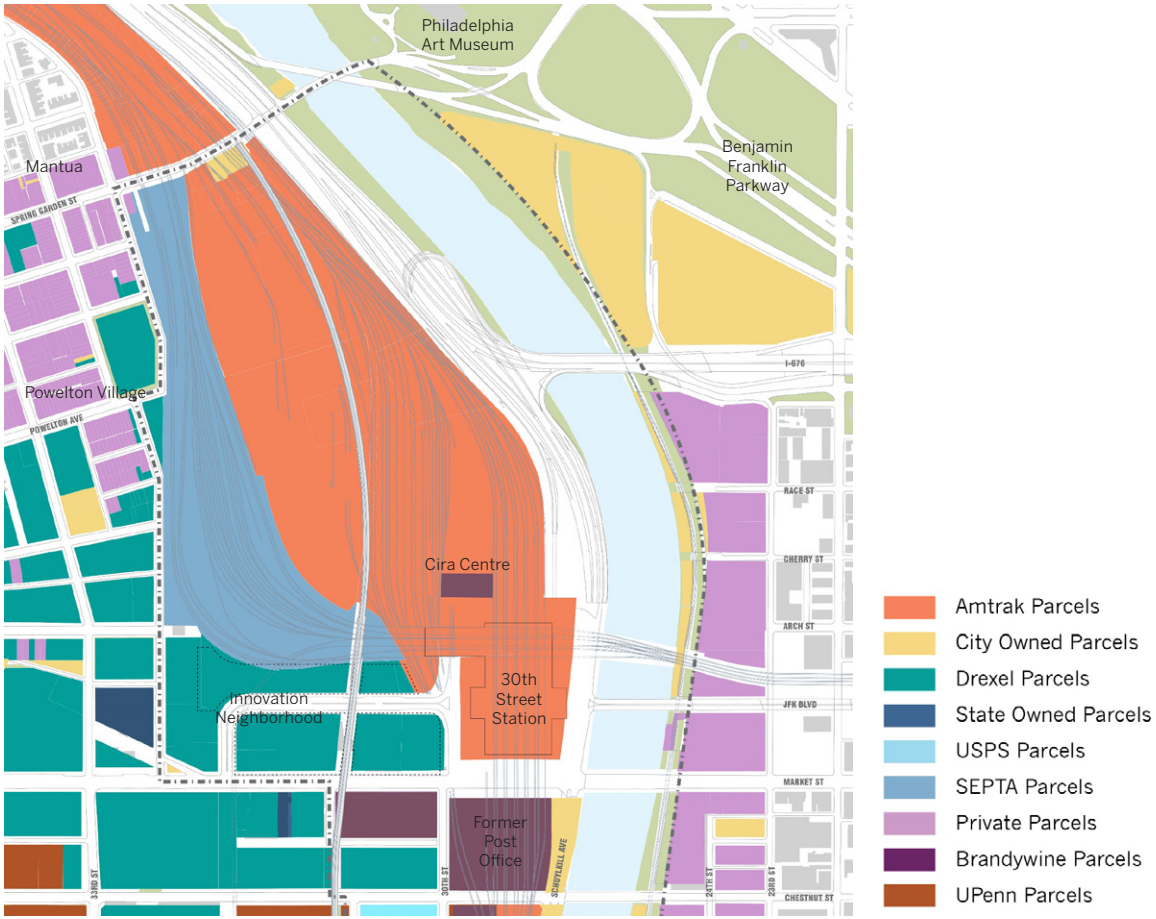
Amtrak owns and operates 30th Street Station and approximately 63 acres of adjacent rail yards collectively known as the Penn Coach Yards.

West of the Penn Coach Yards, **SEPTA** owns the 25-acre Powelton Yard for its Regional Rail operations.

Drexel's 10-acre Innovation Neighborhood abuts the Powelton Yards to the south. The rest of Drexel academic campus extends west of the Primary Study Area.

Brandywine Realty Trust has developed and manages several office and residential buildings, including Cira Centre at Arch Street, evo at Chestnut Street, and FMC Tower at Cira Centre South® at Walnut Street. Additional retail and office development fronts along Market Street, west of the station.

The **University of Pennsylvania's** academic and medical campuses are southwest of the Primary Study Area.



DISTRICT LANDOWNERSHIP
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

At the northeast edge of the District, the Benjamin Franklin Parkway serves as the spine of the Museum District connecting **major cultural attractions** such as the Philadelphia Museum of Art, the Rodin Museum, The Barnes Foundation, and the Franklin Institute Science Museum.

In neighborhoods along the periphery of the District, such as **Mantua, Powelton Village, Fitler Square, Rittenhouse Square, and Logan Square**, the predominant land use is low- to medium-density residential.

5.2 Transportation Network

The 30th Street Station District is the region's most important multi-modal hub. 30th Street Station is the nexus for 95,900 travelers using the following modes of transportation on a daily basis:

Station Transit | Rail

- Amtrak Rail (12,500 weekday trips)
- SEPTA Regional Rail (24,600 weekday trips)
- NJ Transit Rail (1,200 weekday trips)

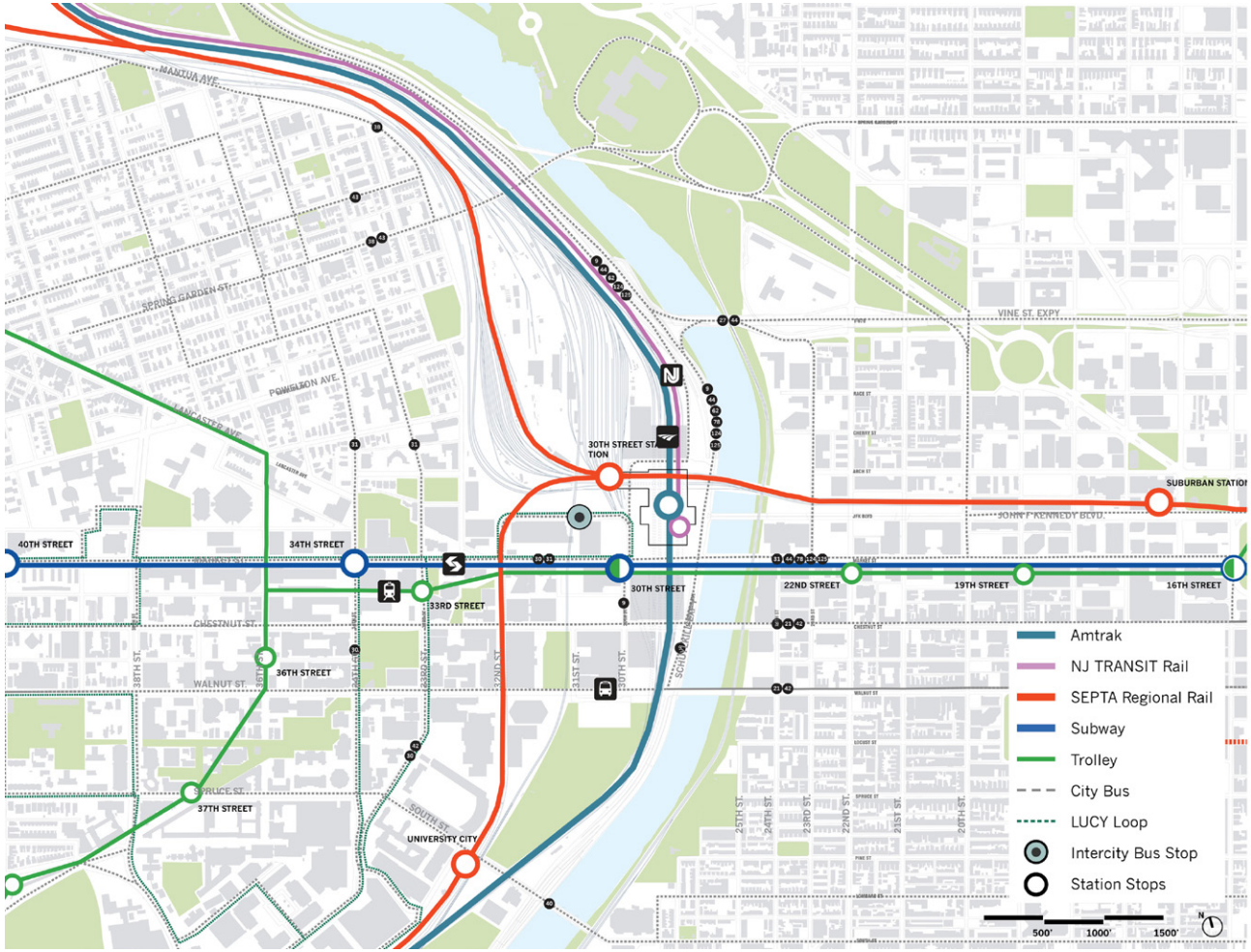
District Transit | Subway, Trolley, and Bus

- SEPTA Subway (10,600 weekday trips)
- SEPTA Bus (4,000 weekday trips)
- SEPTA Trolley (5,100 weekday trips)
- Curbside Intercity Bus (4,900 weekday trips)

District Cars, Bicycles, and Pedestrians

- Automobiles (26,800 weekday trips)
- Pedestrians (6,000 weekday trips)
- Cyclists (200 weekday trips)

Other modes with a smaller presence in the Primary Study Area include private shuttle buses, taxis, and rideshare and car share services.



TRANSIT SYSTEMS
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

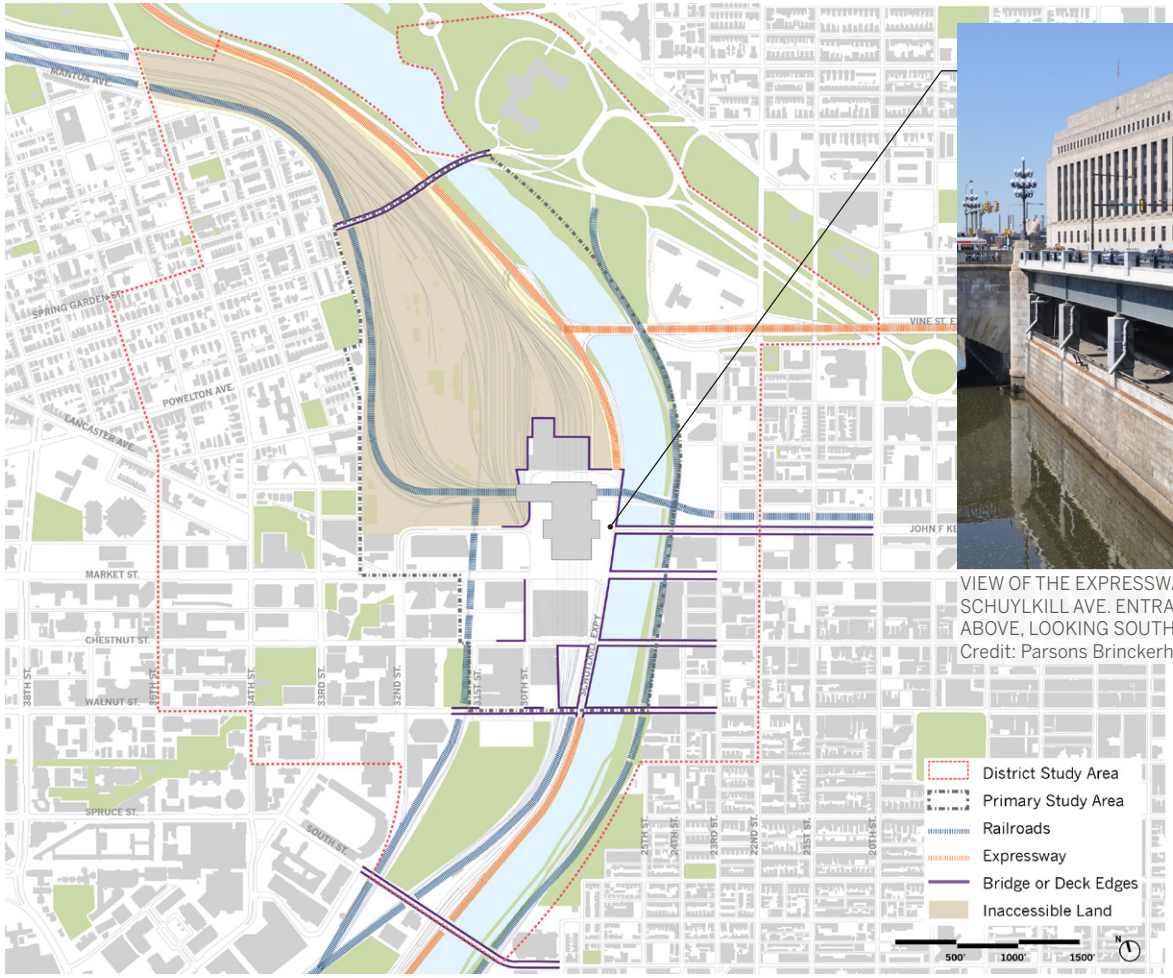
5.3 Rail, Highway, and Roadway Infrastructure

The complex web of rail, highway, and bridge infrastructure at 30th Street Station has played a significant role in shaping the urban fabric of this section of Philadelphia. This infrastructure and resultant grade separation creates a challenging environment for pedestriasn and cyclists traveling through the District.

Highway and Roadway Infrastructure

The 30th Street Station District is connected directly to the interstate system with I-76 (Schuylkill Expressway) and I-676 (Vine Street Expressway) traversing the Primary Study Area along the western bank of the Schuylkill River. The east side of the station is flanked by the bi-level freeway system. The lower level supports the Schuylkill Expressway. The upper level (Schuylkill Avenue between Walnut Street and Arch Street) provides access to the Schuylkill Expressway and Vine Street Expressway.

The local street network includes 11 roadways in the Primary Study Area that serve as connectors to and from various sections of the city. JFK Blvd, Market Street, Chestnut Street and Walnut Street are the east-west connectors over the Schuylkill River to Center City Philadelphia.



INFRASTRUCTURE BARRIERS
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

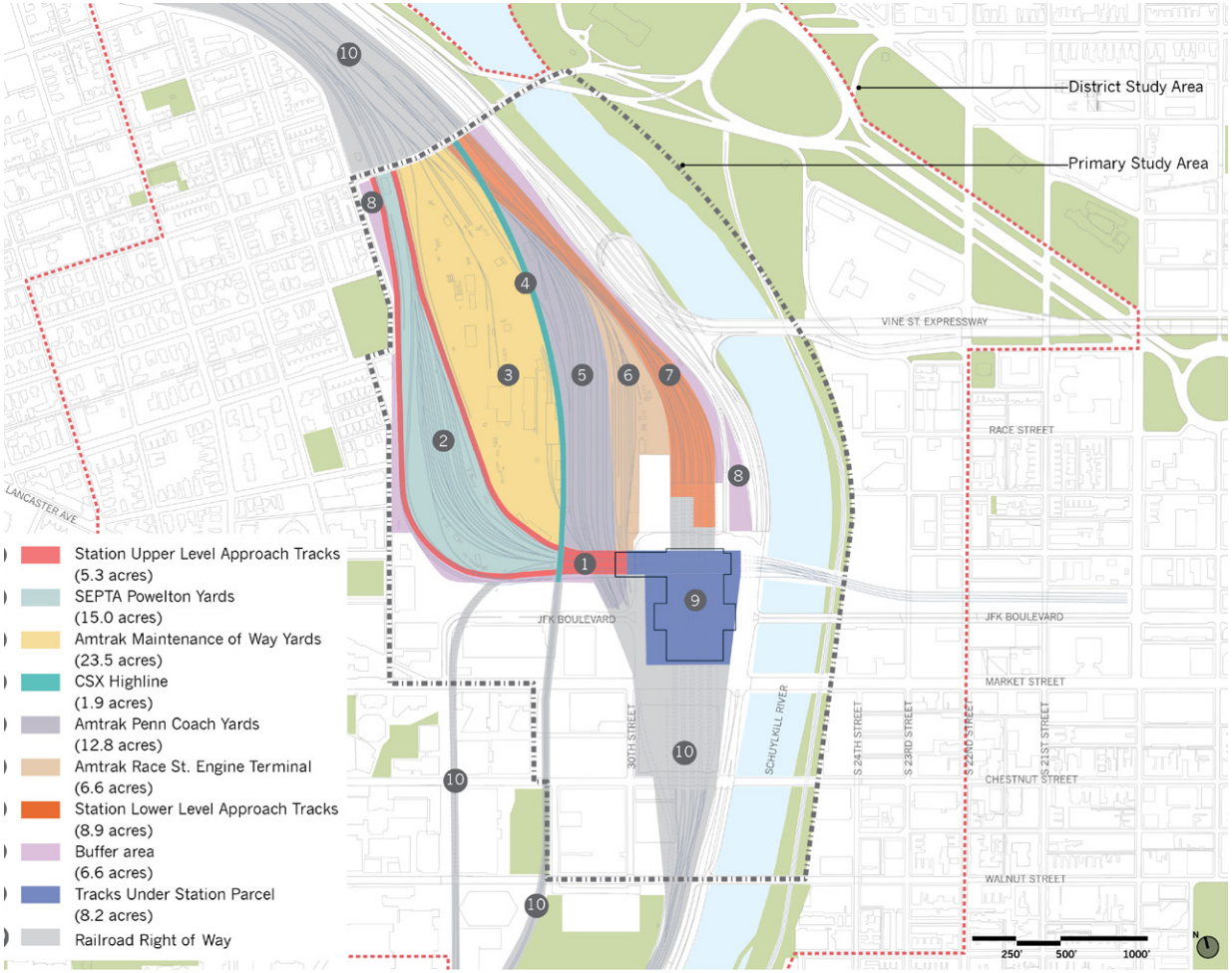
VIEW OF THE EXPRESSWAY BELOW AND SCHUYLKILL AVE. ENTRANCE RAMP ABOVE, LOOKING SOUTH FROM JFK BLVD.
Credit: Parsons Brinckerhoff

Rail Infrastructure:
Eighty-eight acres of rail yard located within the Primary Study Area support the rail operations of this major transportation hub:

Amtrak Rail Yards (63 acres). The station is positioned directly over ten north-south through-tracks providing service to Amtrak and NJ TRANSIT trains. West of the through-tracks, maintenance and rail support functions occur within the Race St. Engine Terminal, Penn Coach Yard, and Maintenance of Way yard (collectively and informally known as the Penn Coach Yards).

SEPTA Powelton Yard (25 acres). Six upper-level east-west through-tracks service SEPTA Regional Rail. Heading east from 30th Street Station towards Center City, the six upper level tracks neck down to four tracks and cross the Schuylkill River on a viaduct located on the north side of JFK Blvd transitioning to the Center City tunnel and Suburban Station. Moving west out of the station, the two northerly tracks and the two southerly tracks carry trains to and from points west and north of the station. The two center tracks bear south. The remaining tracks located within Powelton Yard serve as mid-day train storage.

CSX High Line. CSX's West Philadelphia Elevated Branch, known commonly as the High Line, was originally constructed by the Pennsylvania Railroad in 1904. It is an active freight line carrying two-tracks on an elevated trestle traversing north-south through the rail yards. The High Line rises north from Arsenal Interlocking onto its elevated structure through the Primary Study Area, crosses to the west side of the Northeast Corridor and heads north above 31st Street, and finally touches down at Zoo Interlocking. This dedicated line is a critical link the national freight distribution network.



RAIL YARD FUNCTIONS
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

EXISTING FREIGHT RAIL ALIGNMENTS THROUGH AND ADJACENT TO THE PRIMARY STUDY AREA
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

ELEVATED HIGH LINE THROUGH THE RAIL YARDS (Image Credit: OLIN)
Credit: OLIN

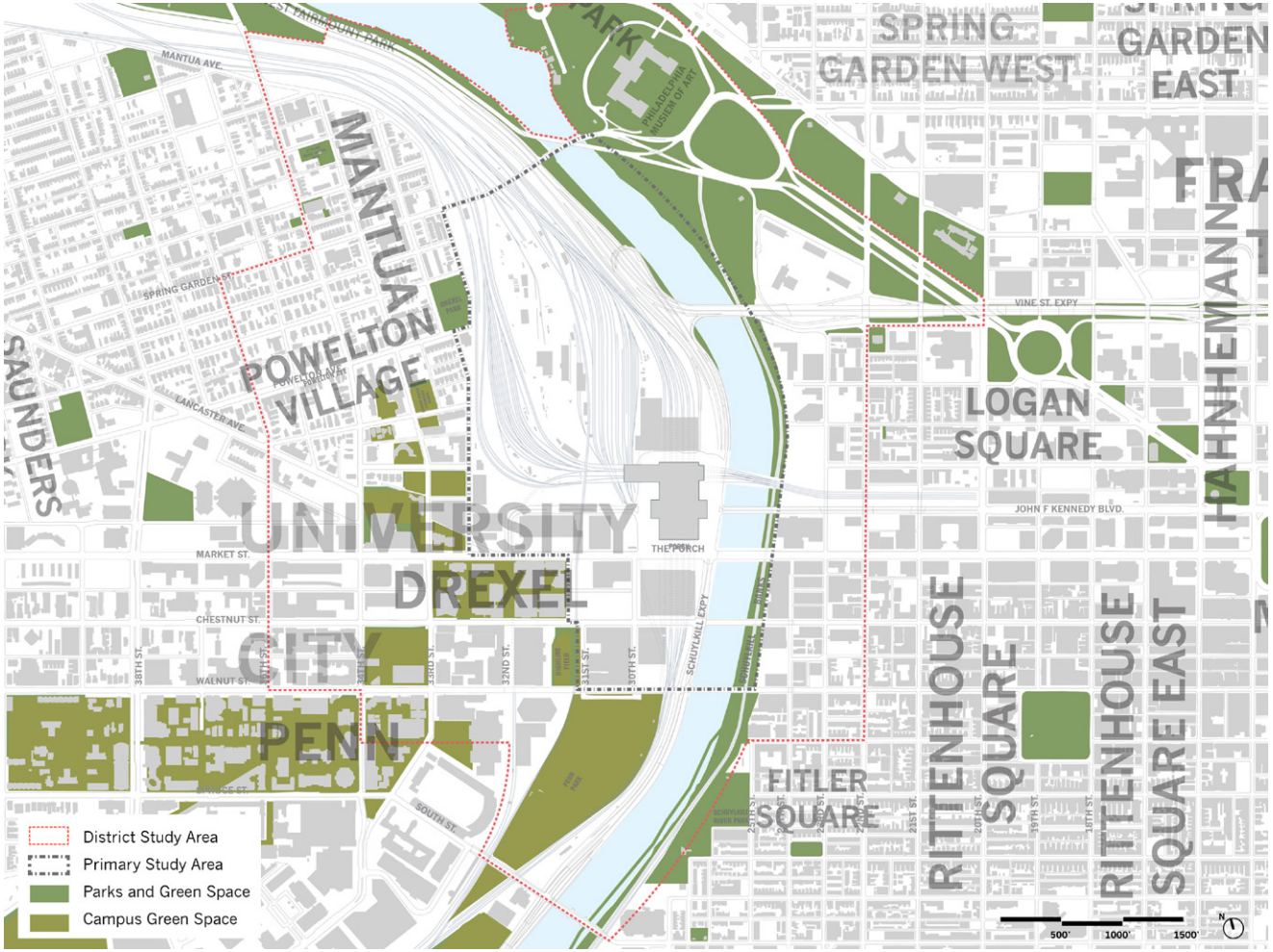
5.4 Neighborhoods and Parks

The 30th Street Station District is surrounded by campuses and parks but contains only one civic space, the Porch at 30th Street, within its boundaries. The Porch has brought a much-needed civic amenity to the immediate station area, and its success suggests the potential for more extensive, longer-term investments.

The Drexel and Penn campuses themselves offer substantial, publicly accessible open spaces that support their campus communities,

The relatively recent Drexel Park, located at the western edge of the District, offers a good example of a new neighborhood-scale park that serves the communities of Drexel, Powelton Village, and Mantua. Similarly, at the eastern edge of the district, Schuylkill River Park and Taney Field serve the Fitler Square and Rittenhouse Square communities with passive and active recreational activities.

The District also benefits from its proximity to a network of regional parks. The immensely popular Schuylkill River Trail connects the District to the Benjamin Franklin Parkway, East and West Fairmount Park, the Wissahickon, and destinations outside the city like Valley Forge. These great parks are essential to Philadelphia's image and identity, and suggest the role that civic open spaces can play in shaping the future of the District.



DISTRICT NEIGHBORHOODS AND PARKS
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

MELON STREET, MANTUA
Credit: City of Philadelphia, Mural Arts Program

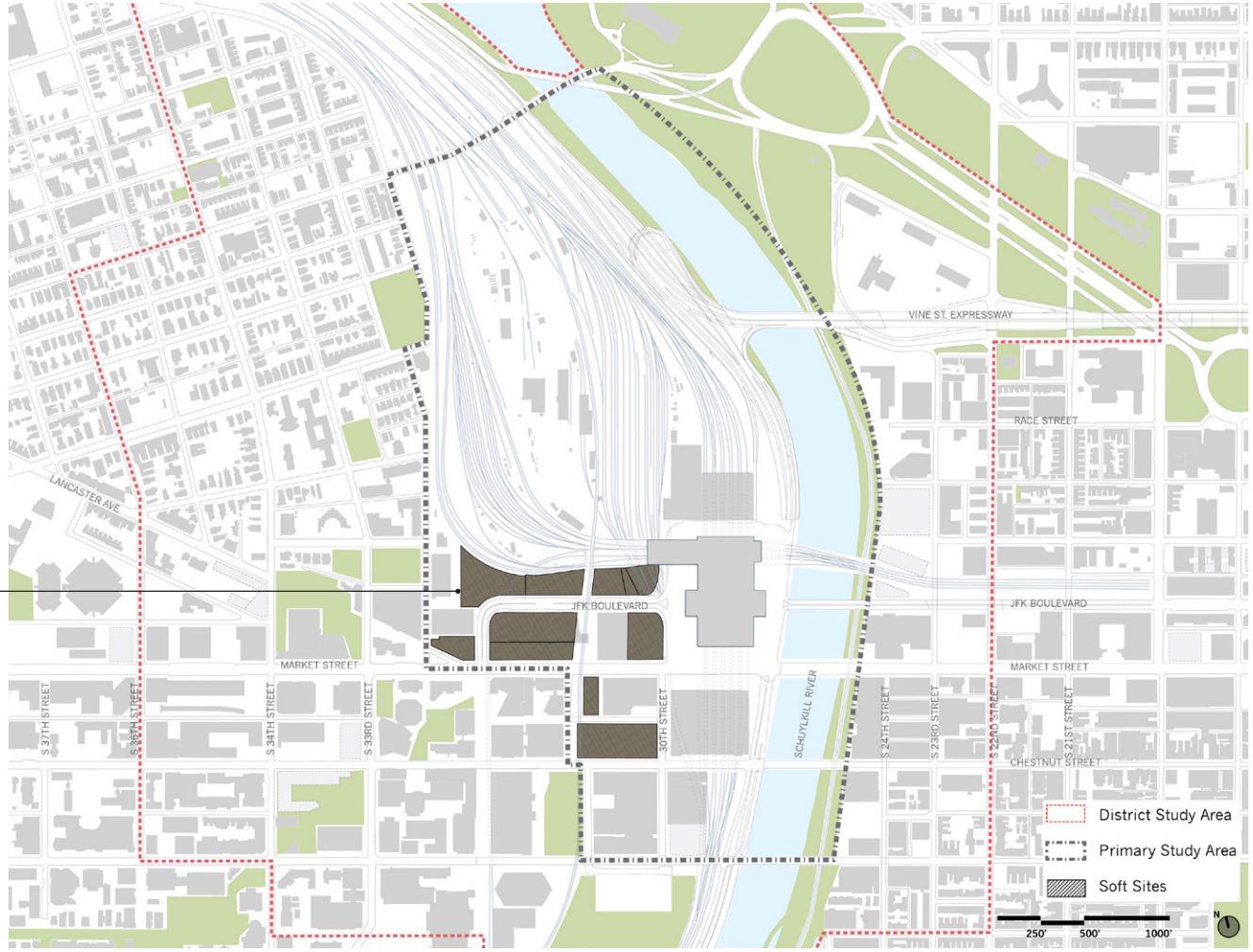
POWELTON VILLAGE
Credit: J. Fusco for Visit Philadelphia™

THE PORCH AT 30TH STREET STATION
Credit: University City District

5.5 Soft Sites

There are roughly 11.7 acres of "soft sites," or underbuilt lots are of a scale and situation, that could easily accommodate new development. Most of these sites are surface parking lots or single-story retail buildings today, and about 10 acres are owned by Drexel as part of its Innovation Neighborhood.

INNOVATION NEIGHBORHOOD PARCELS
Credit: Drexel University

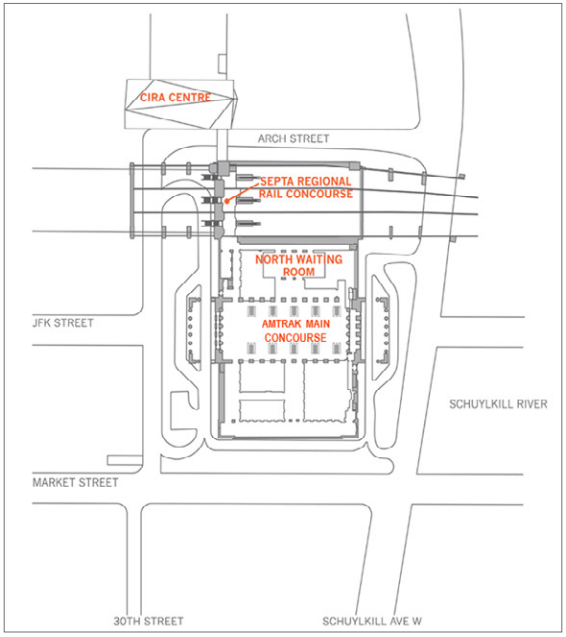


DISTRICT SOFT SITES
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

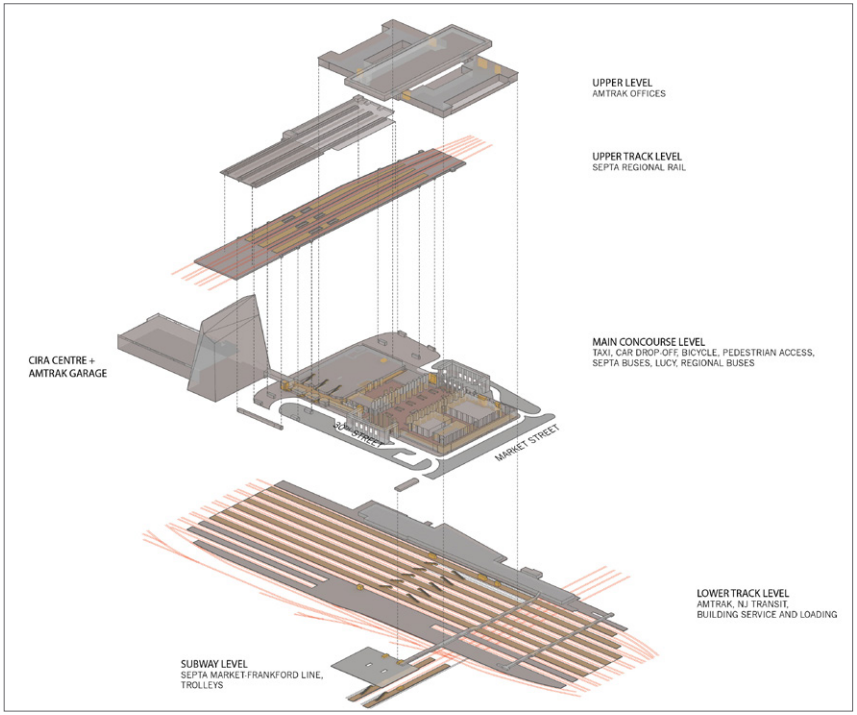
5.6 The Station

Built between 1929 and 1934, 30th Street Station is one of the great stations constructed by the Pennsylvania Railroad Company. The building's purposeful design of a lower track and upper track level tied together by a single building enabled the facility to accommodate multi-modal functions. Today, the vertical separation allows for integration of Amtrak, SEPTA, NJ TRANSIT, and a variety of surface transportation modes. The station building also includes Amtrak offices on upper floors and interconnects with the adjacent Cira Centre building via a pedestrian bridge over Arch Street. 30th Street Station is now Amtrak's third busiest station and Pennsylvania's busiest station with 11 million annual rail passengers.

Numerous passageways and stairwells throughout the station enabled a circulation pattern that efficiently integrated commuter rail with intercity rail concourse areas. Although several of these passageways are not presently accessible to the public, they are still intact.

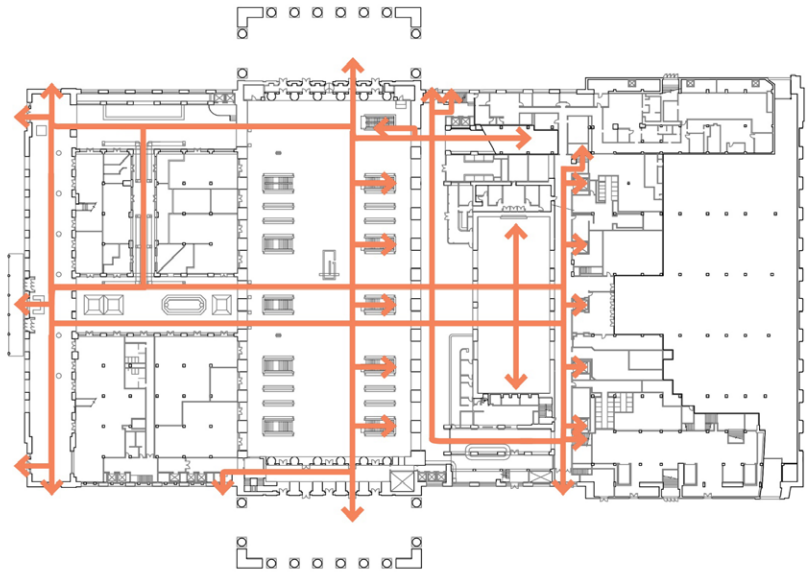


AMTRAK AND SEPTA CONCOURSE AREAS
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

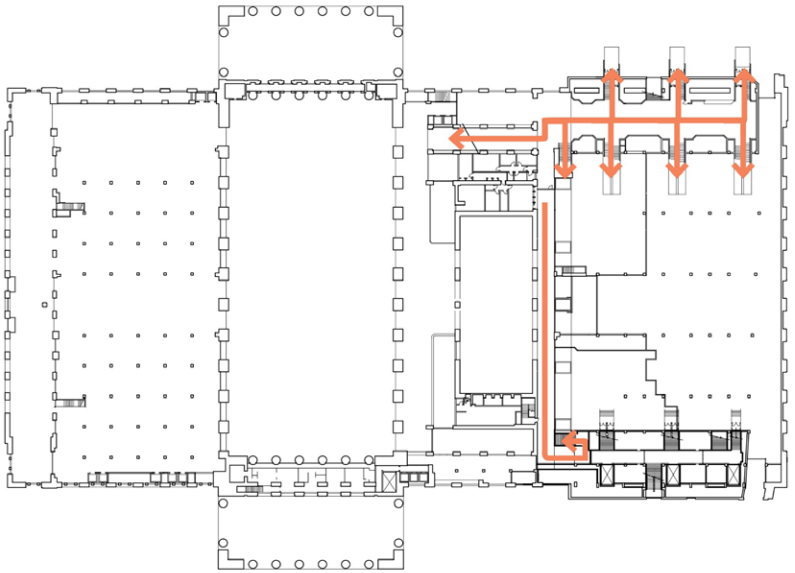


VERTICAL ELEMENTS AT 30TH STREET STATION
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

CURRENT CIRCULATION PATTERNS AT 30TH STREET STATION
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

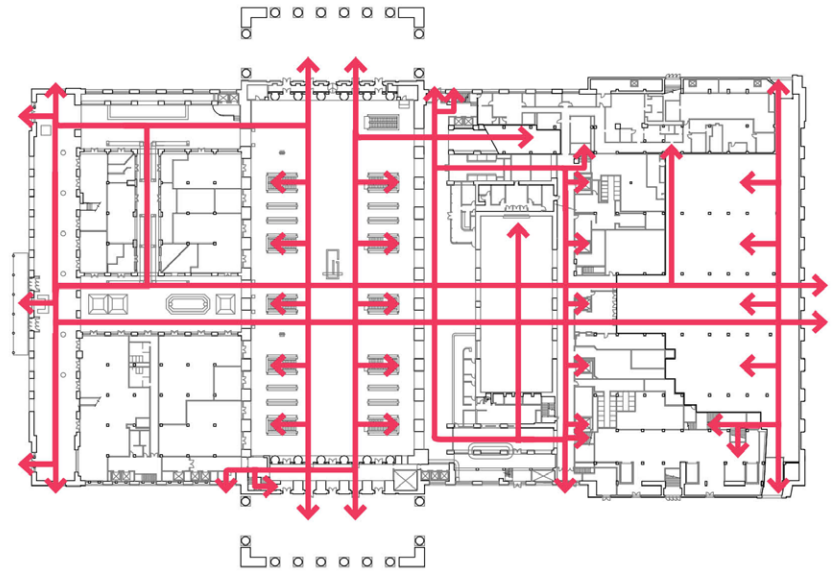


First Floor Plan

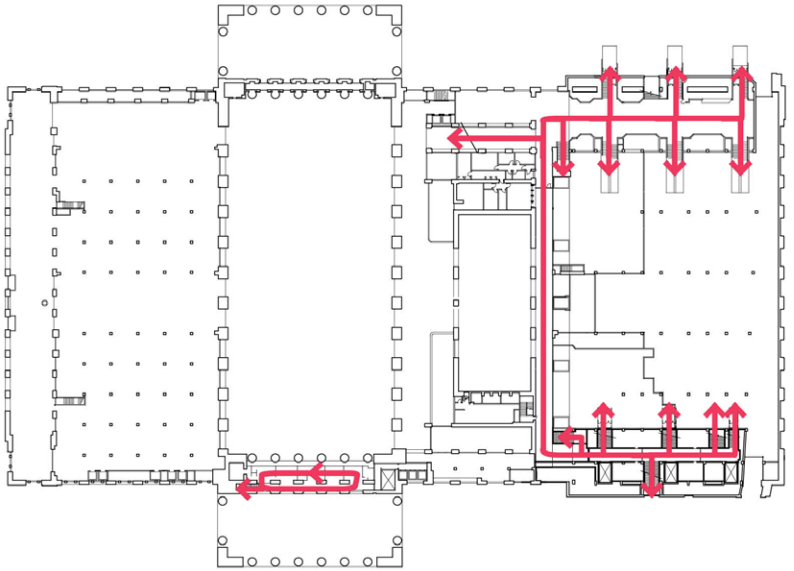


Mezzanine Floor Plan

HISTORIC CIRCULATION PATTERNS AT 30TH STREET STATION
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A



First Floor Plan



Mezzanine Floor Plan

6.0 2040 OUTLOOK

Upward population, transportation, and real estate trends converging around 30th Street Station set a compelling stage and opportunity for a grand transformation of the District.

6.1 Population

The year 2010 marked a pivotal reversal of a 50-year decline in population for Philadelphia. Population growth has continued year after year and in 2014, Philadelphia boasts a thriving population of 1.55 million people. Much of this growth is attributable to a burgeoning millennial population, which grew 6.1% between 2006 and 2012 - more than any other US city.[1] Center City Philadelphia also boasts the third most populus downtown in the US after New York City and Chicago.

In Philadelphia's downtown, there has been a longer and steady history of population growth. Between 2000 and 2010 , the population in Philadelphia's core (defined here as two miles from City Hall) grew by 7.6% and added 21,000 residents , more than the growth of 19,500 residents in San Francisco's core and Washington, DC's core.[2]

6.2 Transportation

Population growth in the city and the northeast region has spurred new demand for transportation services. Amtrak is planning a series of infrastructure and station improvements along the Northeast Corridor, including the procurement of "Next Generation" high speed train sets to provide increased high speed rail (Acela) service and increased rolling stock capacity for other northeast regional services to respond to this growth. Similarly, SEPTA is preparing for a new fleet of coaches and increases in peak and off-peak service for Regional Rail routes to increase its capacity. By 2040, the number of rail passengers at 30th Street Station is expected to rise by a factor of two and a half times the current rail weekday ridership of 38,300.

The use of District transit services outside the walls of 30th Street Station - subway, trolley, city bus, and intercity curbside bus - is also expected to rise by a factor of two times the current number of 24,700 travelers.

One District transit service of note is the Loop through University City (LUCY), an employer shuttle route that services major employment centers at Drexel University, Drexel University, Penn Presbyterian Medical Center, the University of Pennsylvania, the University of Pennsylvania Health System, and the Children's Hospital of Philadelphia. LUCY ridership has sky-rocketed in recent years. Between 2008 and 2013, LUCY annual ridership increased by 67% as compared to 6% for all other SEPTA bus services suggesting great demand for "last mile" connection transportation services from 30th Street Station to the District's major employers.

In contrast to the upward rail and transit trends, automobile trends in the region show declining overall daily traffic volumes and flat peak-hour congestion. A major factor for this flat growth trend is that the roadway network in the Primary Study Area continues to operate at or near capacity during peak periods.

Cycling is an increasingly popular alternative mode of transportation in Center City and University City. Between 2005 and 2013, cyclists crossing the Schuylkill River during the peak between Spring Garden Street and South Street grew 260 percent. Of all large cities in the United States, Philadelphia has the highest percentage of commuters using a bicycle to get to work with 2.3 percent of all commuters; in greater Center City, 5.3 percent of commuters travel by bike.[3]

1 The Pew Charitable Trusts, Millennials in Philadelphia, January 2014.

2 US Census Bureau, Patterns of Metropolitan and Micropolitan Population Change: 2000 to 2010, 2010 Census Special Reports, September, 2012.

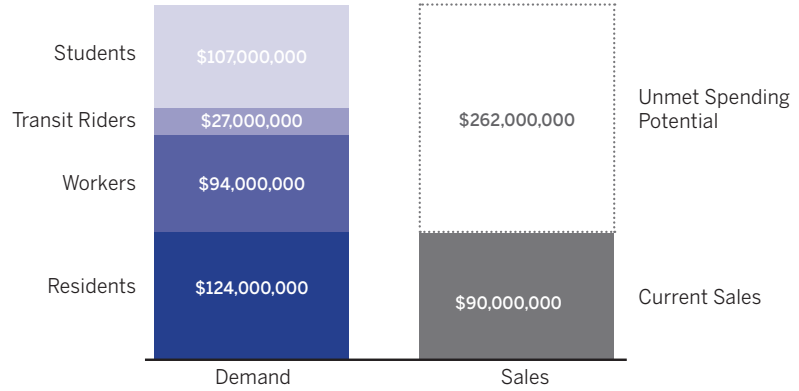
3 Bicycle Coalition of Greater Philadelphia, Bike PHL Facts, 2014.

6.3 Real Estate Market

The City of Philadelphia reports approximately 200 development projects recently completed, under construction and planned representing more than $8.5 billion of investment.[1] The concentration of planned and recently completed projects in the district – 35 in total – suggests the area is primed for a dramatic transformation. Half of the pipeline developments are residential while the remaining projects represent new office or institutional (academic, research, or hospital-related) development. New residents, employees and transit users to the District translate into several distinct opportunities and considerations for future retail, residential, office, and hotel development.

Retail: Based on an analysis of the combined current and pipeline development spending potential of residents, workers, transit riders, and students in the Primary Study Area through 2020, there is an estimated $262 million of unmet retail spending potential creating an opportunity to deliver 110,000-175,000 square feet of new retail near 30th Street Station. Currently, most of the retail offerings in the Primary Study Area are located at the station, which has approximately 35,000 square feet of retail space. For a detailed discussion of this analysis, please refer to Appendix B.

Residential: A demand analysis of rental and owner-occupied units indicate a demand of approximately 3,500 new residential units within Center City and University City annually. Pipeline development in the District captures some of the near-term potential by bringing 1,400 new units to the District. The District's high degree of transportation access and proximity to major employment hubs in Center City and University City makes it well-positioned to capture additional demand. However the urban environment in the immediate environs of the station is uninviting to households and must be improved for the District to adequately compete with neighboring markets. For a detailed discussion of this analysis, please refer to Appendix B.



RETAIL DEMAND VS. RETAIL SALES
Credit: HR&A

Office: Between 2010 and 2014, the annual pace of office absorption and development in Philadelphia averaged 244,000 square feet of net absorption, 2.6 million square feet of gross absorption, and 82,000 square feet of new office development. Center City and University City pipeline office development through 2020 totals 3.4 million square feet, an average of 566,000 square feet annually - seven times the historical annual pace. This extraordinary pace of office development is driven by specific institutions or companies expanding in Philadelphia. The Comcast Innovation and Technology Center (1.3 million square feet) and FMC Tower at Cira Centre South (830,000 square feet) are prime examples. New office development in the District, therefore, will rely both on competing for tenants looking in Central Philadelphia, but also creating a District attractive enough to support net new growth for Center City and University City. For a detailed discussion of this analysis, please refer to Appendix B.

Hotel: As the District is not within comfortable walking distance of major tourist attractions like Independence Hall, planned growth of University City's institutions is more likely to fuel demand for hotel rooms in the District than tourism. Developments such as The Study at University City, Penn Tower, and Homewood Suites (an extended stay hotel), represent hotels that allow institutions to attract patients and other visitors that may need overnight accommodation.

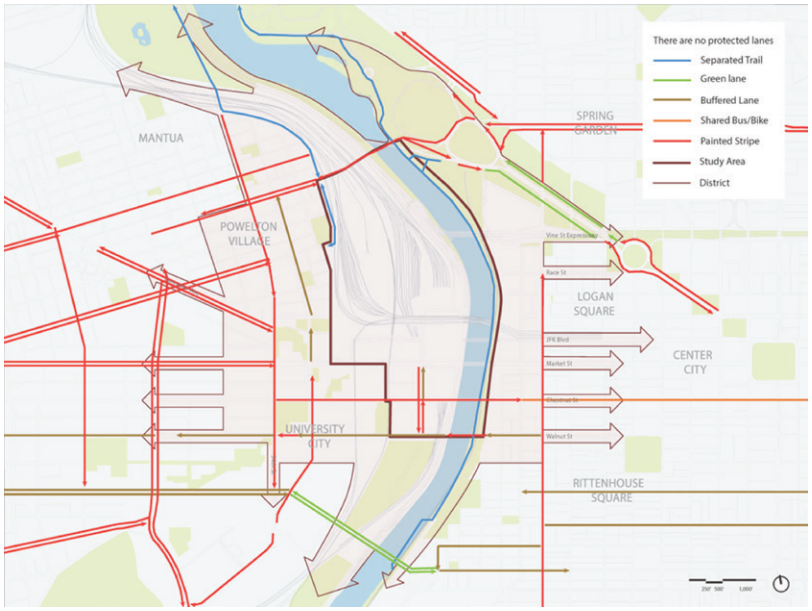
1 City of Philadelphia, PhillyStat Report: Commerce / Economic Development, August, 2014.

7.0 CHALLENGES AND OPPORTUNITIES

The District offers several key challenges and opportunities, as identified through an evaluation of existing conditions and trends, stakeholder interviews, and input from the public.

7.1 Transportation Element

Improved Transit Services to Accommodate Growth: As stated above in the 2040 Outlook, Amtrak and SEPTA as the primary transportation service providers in the District, are preparing to improve transportation services to accommodate anticipated growth in the city and the region. Continued efficient, safe, and convenient transportation options at 30th Street Station will be a key ingredient to unlocking the development potential of the District.



DISTRICT BICYCLE LANE NETWORK
Credit: Parsons Brinckerhoff

Indego BIKE SHARE STATION
Credit: Amtrak

First / Last Mile Connections: While the District is rich in transit options for the main segment of a trip, stakeholders frequently cite the need for improved "first and last mile" connections between 30th Street Station and their homes or places of work. Many Philadelphia neighborhoods, even those in close proximity, lack straightforward connections to the station. Bus routes that stop near the station are largely commuter-oriented, focusing on service in outlying communities such as suburban King of Prussia. With the exception of LUCY, local bus routes stop further away from the station, preventing a convenient connection to 30th Street Station. The extraordinary demand for LUCY service, as stated above in the 2040 Outlook, is evidence of the need for better first / last mile connections.

Walking and biking can be convenient and efficient modes to make the first last mile connection, however the area around 30th Street Station is lacking in adequate pedestrian and cycling infrastructure that provides a safe and welcoming environment. Pedestrians must navigate large blocks, wide streets, low-quality building facades, minimal street trees and high-speed traffic.

The City of Philadelphia has made great strides in supporting bicycle use throughout the city. The bicycle infrastructure network throughout the District is fairly extensive and the City launched a bicycle share program called Indego in April 2015. Yet, critical gaps in the District's bicycle network remain. In particular, there are no bicycle lanes on Market Street that allow cyclists safe access to the station.

Multi-Modal Connectivity: The 30th Street Station District is endowed with an exceptional number of robust travel modes. It has the multi-modal elements that connect the station to the city and the region – and they are proximate. However, the modes do not clearly integrate creating a confusing experience for visitors of the station and diminishes the potential of the station to achieve its full multi-modal potential.

The top cited issue is the poor connection between the SEPTA subway and trolley station headhouse and 30th Street Station. The SEPTA headhouse is located across 30th Street and in the past connected to 30th Street Station via an underground pedestrian tunnel. The entrances to the tunnel were closed in the 1980s due to substantial safety and security concerns. Today, travelers must exit 30th Street Station and cross a busy 30th Street to access the SEPTA subway and trolley services.

A similar condition exists for the connection between 30th Street Station and the SEPTA city buses, curbside intercity buses (BoltBus and MegaBus), and tour buses. The various bus services board and alight passengers from Schuylkill Avenue on the east side of the station, from 30th Street and JFK. Blvd on the west side of the station, or from the Market Street bridge. Travelers must cross very busy intersections, including the entrance to the Schuylkill Expressway, to make the connection.

SEPTA SUBWAY AND TROLLEY STATION HEAD HOUSE
Credit: Parsons Brinckerhoff

CURBSIDE INTERCITY BUSES AT 30TH ST AND JFK. BLVD.
Credit: Parsons Brinckerhoff

FOUR-LANE MERGE INTO A SINGLE-LANE ENTRANCE TO I-76/676
Credit: Parsons Brinckerhoff

The lack of a clear, comprehensive wayfinding system inside and around the station contributes to the poor multi-modal connectivity. Amtrak, PennDOT and SEPTA have partnered together to upgrade the wayfinding signs at the station, vastly improving the passenger experience. There is an opportunity to complement the station wayfinding system with a District-wide wayfinding strategy to help achieve the District Plan goals.

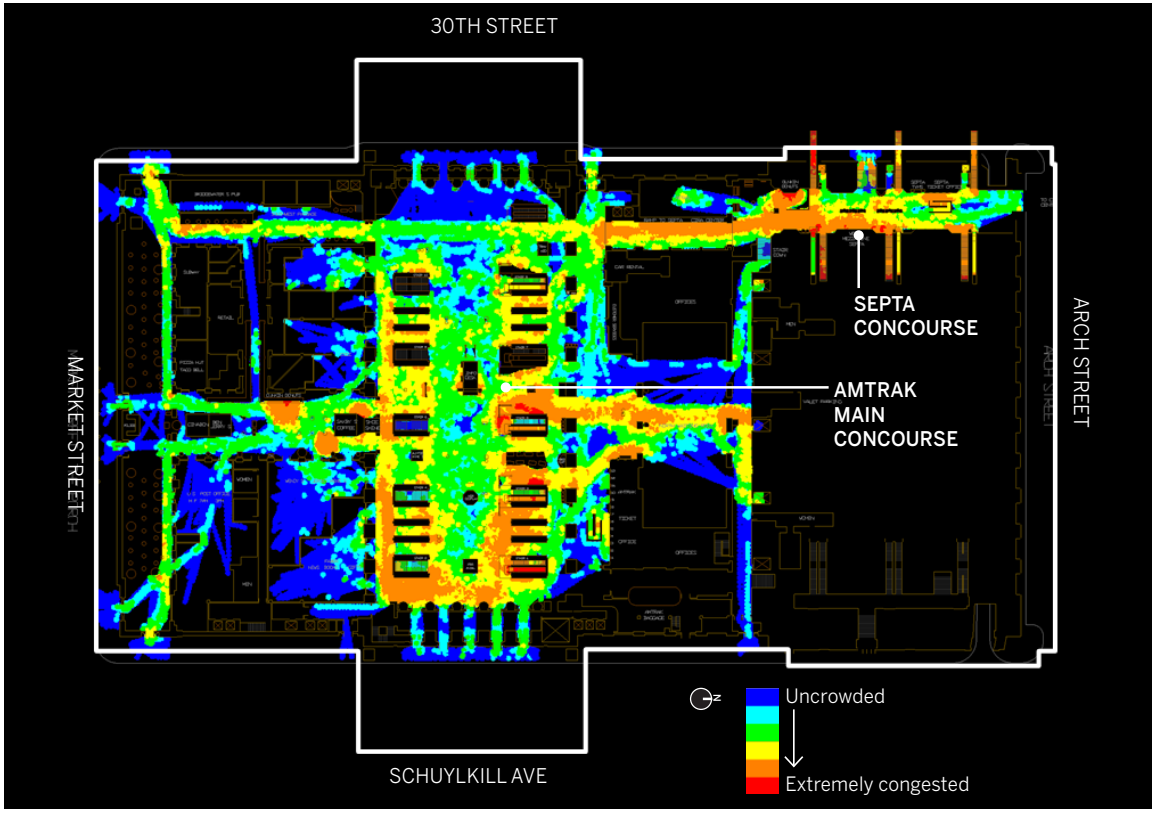
Traffic Congestion: A traffic study of morning and afternoon weekday peak periods clearly indicates that Schuylkill Avenue and the entrance to I-76/I-676, where four lanes of traffic merge to one, causes the observed congestion around the station. Along this section of Schuylkill Avenue there are more than 20 buses stopping in a 60-minute time period with passengers alighting and exiting. Taxis also exit from 30th Street Station onto this stretch of Schuylkill Avenue. The competition for a short merge space and ultimate queuing affects the entire connected street network of JFK Blvd, Market Street, Chestnut Street, Walnut Street and numbered streets from 30th through 34th. The congestion creates a frustrating experience for drivers, bus riders, bicyclists and pedestrians alike.

7.2 Station and Facilities Element

Making the Station Future Ready: Based on the transportation projections described above in the 2040 Outlook, the station will need to handle two and half times more passenger trips in 2040 than today. This is tantamount to taking the current volume of trips in the entire District – nearly 100,000 – and consolidating them within the walls of 30th Street Station. There is a pressing need to enhance the station's capacity to accommodate this growth.

Passenger circulation in the station is currently uneven. The station is extremely porous with approximately 60 sets of double entrance doors around the perimeter. The busiest doorways are at Schuylkill Avenue (formerly 29th Street) and JFK Blvd on the east and 30th Street and Market Street at the southwest corner of the building. The eastern doorway provides the key pedestrian connection to the Center City business district. The southwestern doorway provides the key connection to the 30th Street SEPTA Subway and Trolley station and to the main walking route to University City destinations. It also provides the key connection to the SEPTA Regional Rail concourse in the northwest section of the building. SEPTA Regional Rail passengers represent two-thirds of all station passengers yet they are circulating within approximately one-fifth of the station's footprint.

Making the station future ready is not simply a matter of capacity and circulation. It is also about creating an environment that contributes to a passenger's seamless journey that begins when planning the trip, continues at the departure and arrival stations, and ends once the passenger has made it to the final destination. The station experience is a key contributor to that seamless journey. Integrating modern conveniences, such as e-ticketing, real-time signage, charging stations, and WiFi service, into the historic station is necessary to provide the best experience. Observations of best practices from stations around the country and world also suggest that decentralized, less formal waiting areas complemented by retail, charging stations and transit information cultivates a positive passenger experience.



STATION CONGESTION AREAS, AM PEAK HOUR MAXIMUM PEDESTRIAN DENSITY
Credit: Parsons Brinckerhoff

GARE SAINT LAZARE, PARIS SEATING AREA
Credit: Parsons Brinckerhoff

Making the Rail Yards Future Ready: For the rail yards, the major challenge is balancing the needs of a fully operational yard with future opportunities for overbuild development. Overbuild development must be calibrated against a series of considerations including, but not limited to: topography, geotechnical conditions, railroad clearances, ventilation requirements, smoke exhaust and National Fire Protection Association (NFPA) 130 compliance, local air pollution concerns, stormwater management, National Environmental Policy Act (NEPA) compliance, and floodplain concerns.

Most importantly, overbuild development must enable the robust functions in the rail yards to continue their role in providing continued high-quality transportation service. Furthermore, with planned upgrades in train equipment and service by both Amtrak and SEPTA, the ability to reasonably expand and improve the yard support functions must be preserved.

7.3 Commercial Opportunities Element

Station Retail as a Catalyst: Retail can play a pivotal role in placemaking. Retail serves as an amenity to those that live, work, study and travel in the District, can attract visitors to an area, and create an environment that makes adjacent properties more marketable to attract development.

Presently, retail is scattered throughout the District resulting in a discontinuous ground-floor environment that is neither alluring to shoppers nor clearly recognizable as a place to shop or dine. 30th Street Station offers the most robust and concentrated retail program in the District (approximately 35,000 square feet), however it does not cater to the full range of consumers that are present in the area. Most of the station's retail offerings are quick-service restaurants for passengers and area office workers.

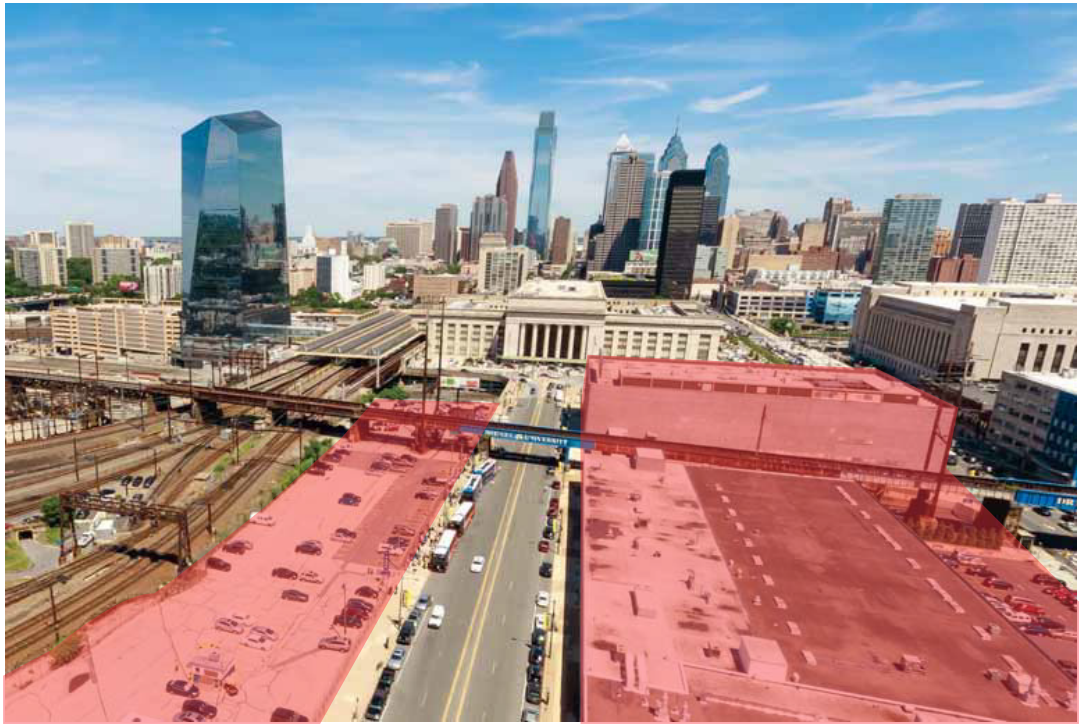
One of the top comments received from the public at a January 2015 open house and survey was a desire for more retail options in the District, particularly neighborhood retail services such as a dry cleaner or grocery market. Diversifying and improving retail options within the station could attract new workers, local residents and students. A modern, well-diversified station retail program would be an attractive amenity for those who work, live and study in the District and be a catalytic first step towards achieving the District Plan's goals.

IMAGINE 30TH STREET STATION RETAIL (TOP PHOTO) TRANSFORMED INTO A GRAND CENTRAL MARKET (BOTTOM PHOTO)
Credits: Amtrak, New York Daily Photo

A MODERN CONVENIENCE RETAIL CONCEPT AT NEW YORK LAGUARDIA AIRPORT
Credit: Skift.com

Integrating Drexel's Vision for the Innovation Neighborhood: Drexel University has experienced dynamic growth during the past decade and has made a commitment to maintaining that growth. Drexel has assembled 10 acres of strategically-located land between 30th Street Station and Drexel's main campus to accommodate its physical expansion. In conjunction with the District Plan, Drexel is planning the development of these 10 acres known as the Innovation Neighborhood as a mixed-use development project that combines economic, physical and institutional assets to create a place that facilitates idea generation. At full build out, the Innovation Neighborhood has the capacity to exceed more than 5.0 million square feet of development. The Innovation Neighborhood plays an exciting role as a catalyst for future development of the rail yards and will enliven the streets right outside of 30th Street Station.

DREXEL'S NEW LEBOW COLLEGE OF BUSINESS BUILDING (RIGHT) ELEGANTLY ALONGSIDE THE HISTORIC PAUL PECK CENTER BUILDING DESIGNED BY FRANK FURNESS (LEFT), Credit: Drexel University



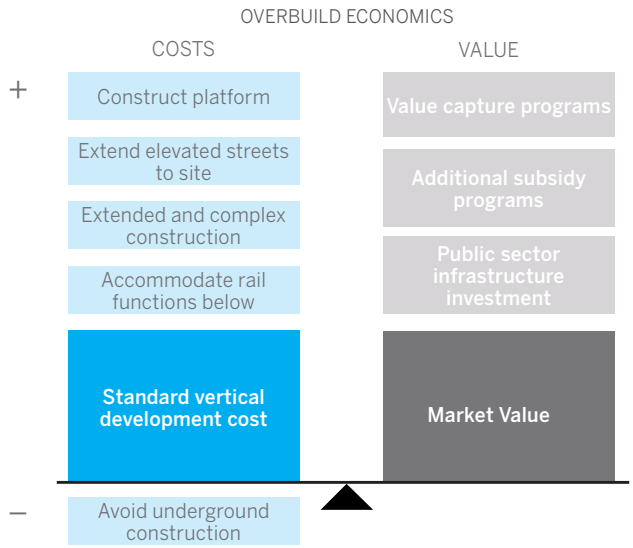
VIEW OF INNOVATION NEIGHBORHOOD PARCELS LOOKING EAST
Credit: Drexel University

Overbuild Development: The air rights above the more than 80 acres rail yards behind 30th Street Station present an exciting development proposition because of its world-class transit access and prime location between University City and Center City, Philadelphia's two primary employment centers. Combined, these two regions represent over 50 percent of Philadelphia's total employment.[1]

Development of the air rights is as complex as it is enticing due to three major constraints:

1. *Physical.* There are technical challenges for accommodating development. The topography of the rail yards are highly variable rising from its lowest elevation of approximately 15 feet to its peak of nearly 80 feet. Overbuild development must also overcome two major barriers: the CSX high line which bisects the rail yards and the Schuylkill Expressway that cuts off access to the river's edge.
2. *Operational.* As identified above as a challenge for the Station and Facilities Element, overbuild development must respect the rail yards as fully-operational facility.
3. *Economic.* The cost of vertical development in the rail yards will vary based on technical requirements to accommodate rail functions (such as column spacing, clearance envelopes), the amount of public infrastructure (such as streets and utilities) to support the development, and the structural method of development (a deck being the most costly), among other considerations. Subsidy programs and value capture strategies could help address the financial gap between the fair market value and cost of air rights development.

Benchmark examples of overbuild development projects demonstrate that a strategic approach that blends program, function, and financing strategies that are right for the circumstances of that project can yield success. For example, Chicago's 24-acre Millennium Park that sits atop commuter rail tracks was born out of significant public and philanthropic commitment to build a grand civic space to revitalize downtown Chicago.



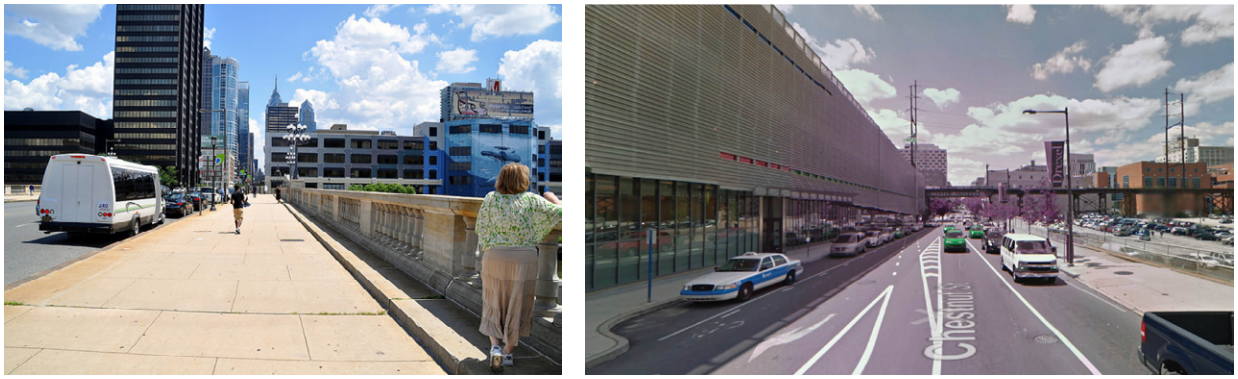
MILLENNIUM PARK, CHICAGO, AN URBAN PARK OVER AN ACTIVE RAIL YARD
Credit: Adrian Smith + Gordon Gill Architecture

1 US Census Bureau Longitudinal Employer-Household Dynamics, 2011.

7.4 The District as a Place

Currently, the District lacks a distinct character. Its primary association is with 30th Street Station, viewed as an important crossroad but not as a final destination. The lack of civic spaces (with the notable exception of The Porch), uninviting streetscapes and grade separation challenges to street-level continuity diminish the quality of this urban environment.

However, the District has unique features that should be enhanced and celebrated. The historic 30th Street Station serves as a grand gateway for visitors to Philadelphia. The District offers special views of the Philadelphia Art Museum and City Hall. Finally, the Schuylkill River and the Schuylkill River Trail are regionally-celebrated assets sitting right at the front door to the District. Closing the physical gap between the station and these nearby resources must be a major consideration of the District Plan.



THE STARK STREETSCAPE MAKES FOR AN UNINVITING WALK INTO CENTER CITY (LEFT) AND UNIVERSITY CITY (RIGHT)
Credits: Parsons Brinckerhoff, OLIN

YET, THE SCHUYLKILL RIVER TRAIL, A CELEBRATED REGIONAL ASSET IS RIGHT OUTSIDE 30TH STREET STATION'S FRONT DOOR
Credit: Schuylkill River Development Corporation

8.0 PLANNING FOR OUR FUTURE

8.1 Design Objectives

Through stakeholder interviews, goal-setting workshops, and public meetings, six design objectives have emerged as shared priorities for the District Plan. These design objectives serve as the foundation for overcoming our challenges, taking advantage of our opportunities and developing the future vision for the District as a unique place.

GOALS

COMMUNITY: Build a vibrant community full of opportunities to live, learn, work and play.

CONNECTIVITY: Celebrate 30th Street Station as a premier multi-modal transportation hub where people can seamlessly connect to resources and attractions in the local community, the city and the region.

IDENTITY: Create a high-quality network of active, attractive and safe places to welcome residents and visitors into a place of memorable identity and character.

DESIGN OBJECTIVES

PLACEMAKING: Lead with the public realm. Attractive, iconic and authentic infrastructure and public space can shape district identity, enhance real estate value and attract development.

THE STATION AS A 21ST CENTURY HUB: Improve the station to be future-ready for a growing number of passengers and create a neighborhood destination while preserving the special characteristics of this grand historic station.

MULTI-MODALISM: Enhance the multi-modal connections that serve as the transportation backbone of the District.

NEW, CONNECTED NEIGHBORHOODS: Support development that builds on District strengths, shapes and reinforces neighborhood character through the scale and design of the buildings, carefully considers neighborhood transitions within the District and at its edges, and connects existing neighborhoods.

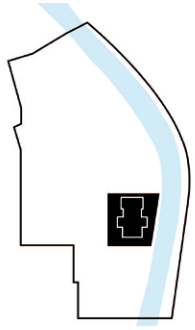
CONNECTIONS TO THE SCHUYLKILL RIVER: Bring district residents, workers, and visitors to the riverside trails and vibrant public spaces.

A BRIDGE BETWEEN CENTER CITY AND UNIVERSITY CITY: Knit together the neighborhoods of Center City and University City through enhanced and new connections.

8.2 Approach for Developing Concept Vision Alternatives

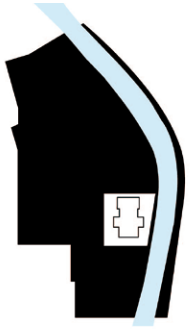
Three concept vision alternatives will enable the Project Team, stakeholders, and the public to evaluate different approaches to achieve our shared goals and objectives. The alternatives represent a balancing act of the District's needs, such as transportation connections, parks, the mix of land uses, and the pedestrian experience, to name a few. Each alternative paves a different path towards the future, emphasizing certain needs over others to shine a spotlight on the benefits, trade-offs, and ultimately our priorities.

The concept alternatives are conceived as a kit of parts, a combination of physical planning interventions designed at two scales - the Station Square and the District. At the Station Square scale, the planning interventions address the topics of station expansion, open space, and circulation. At the District scale, the planning interventions addresss the topics of development (within and beyond the rail yards), circulation and connections, and open space networks.



STATION SQUARE

- Station Expansion
- Open Space
- Circulation



THE DISTRICT

- Development (within and beyond the rail yards)
- Open Space Networks
- Circulation and Connections

8.3 Special Studies

An early task of the Project Team was to assess at a conceptual level the feasibility of relocating or modifying two major barriers – the CSX High Line and the Schuylkill Expressway. Appendices C and D present the details of the analysis. Based on the findings, the Project Team recommends rehabilitating and improving each in its current configuration.

9.0 NEXT STEPS

Three major stakeholder groups will evaluate the three concept vision alternatives over the next several weeks:

- **The Public:** Elected officials, community organizations, business, trade and advocacy organizations, major employers, transit customers, and the general public will be invited to share their feedback on the alternatives at a public open house in Summer 2015.
- **Project Team:** The stakeholder agencies making up the District Plan's Coordinating Committee, Technical Committees, and Urban Design Working Group will conduct a technical evaluation of the alternatives.
- **Peer Review Panel:** A panel of outside experts will convene in Summer 2015 to assess the alternatives from five perspectives: urban design, transportation and mobility, economic development and urban policy, sustainability and landscape architecture, and infrastructure and civil engineering.

Over the following months, this feedback will be considered and harmonized into a draft preferred vision to conclude Phase 2 of the District Plan. The public will be invited to review the Project Team's progress (anticipated Fall 2015) one more time before Phase 2 concludes.

Schuylkill River Trail
Source: Schuylkill River Development Corporation

APPENDICES

Inside 30th Street Station
Source: Amtrak

APPENDIX A PUBLIC OPEN HOUSE RESULTS JANUARY 28, 2015

OPEN HOUSE SUMMARY

PHILADELPHIA 30TH STREET STATION DISTRICT PLAN

We Asked. You Answered.

Hundreds Provide Input through First Public Open House and Survey

Nearly 300 people gathered at 30th Street Station on January 28th to learn about the Philadelphia 30th Street Station District Plan. The event, which was the first of five public open house meetings, provided an opportunity for interested parties to learn about the project, meet the team, ask questions and contribute to the planning process.

Another 339 people completed a survey available at the January Open House and online from January 28 to February 27th, through the District Plan's website, www.PhillyDistrict30.com. Participants answered a range of questions about current experiences in the District and expectations for the future of the District. Click here to see the results.

Overall, hundreds of ideas for improvements to the station, transportation network and neighborhood were captured during the open house and through the survey. These ideas will be integrated into the ongoing analysis being conducted by the project team.

Sampling of Ideas Generated

Transportation:

- Reconnect the underground passage from 30th Street Station to SEPTA's Market Frankford Station
- Create shelter for Bolt Bus and Megabus riders
- Widen Spring Garden Street Bridge for pedestrians and bicycles
- Create a bike station at 30th Street Station
- Relocate the exit ramp off I-76E
- Connect Mantua Greenway to Center City

30th Street Station:

- More retail space
- Create family oriented area, especially for children
- Develop more activity inside the station- great food events, late night activity
- Fix bathrooms and concession programs
- Add a dry cleaner and shoe repair
- Keep it classic, we need to preserve our history not replace it
- Include the addition of Philly-centric foods/restaurants- ie. Capogiro, Franklin Fountain, 13th Street

Neighborhood:

- More walkable (safe-looking) path from the station to residential areas
- Beautify area around tracks and make neighborhood friendly
- Work with Mantua Greenway to beautify bike path
- 32nd Street in Powelton has the best view of Center City- enhance that
- 29th and Market streets intersection pedestrian crossing is difficult
- Connect to east side of river and Schuylkill River Trail

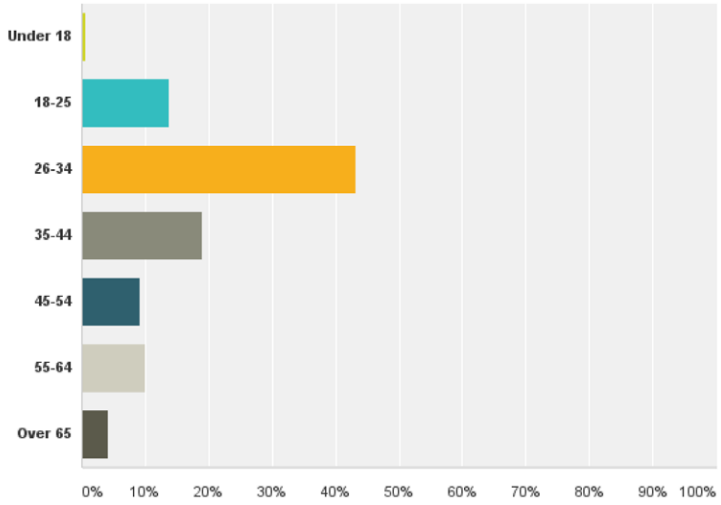
SURVEY RESPONSES (January 28, 2015 - February 27, 2015)

Total Responses: 339

Gender of Survey Participants:
Male: 78.5%
Female: 21.5%

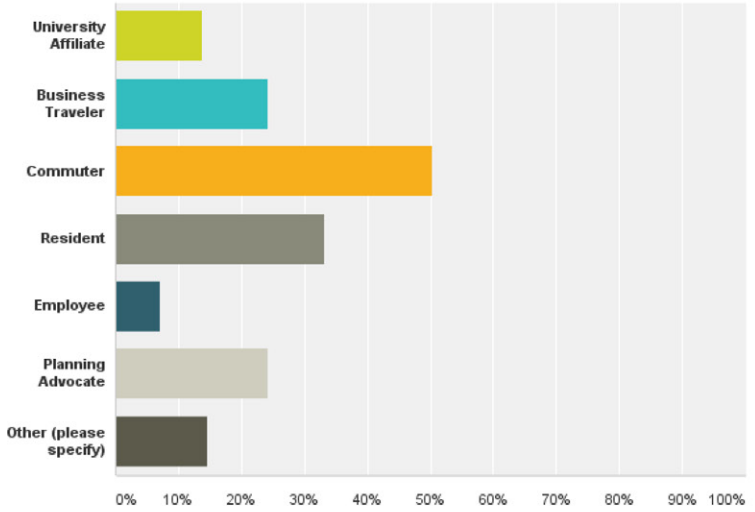
Q3 Age Group

Answered: 336 Skipped: 3



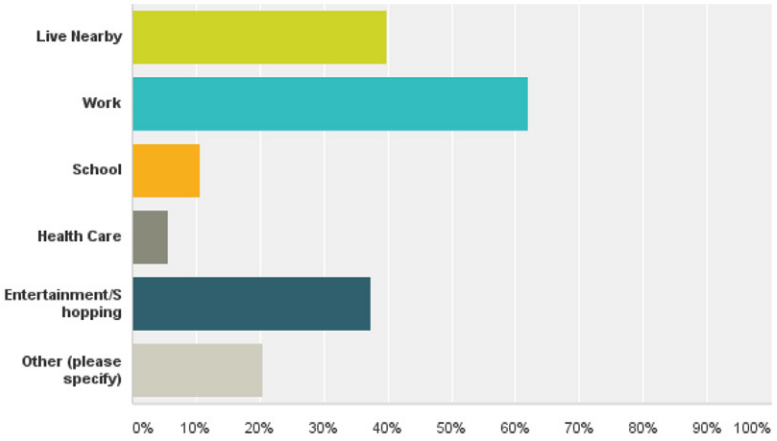
Q4 Which of the following best describes you in relation to the 30th Street Station District?

Answered: 334 Skipped: 5



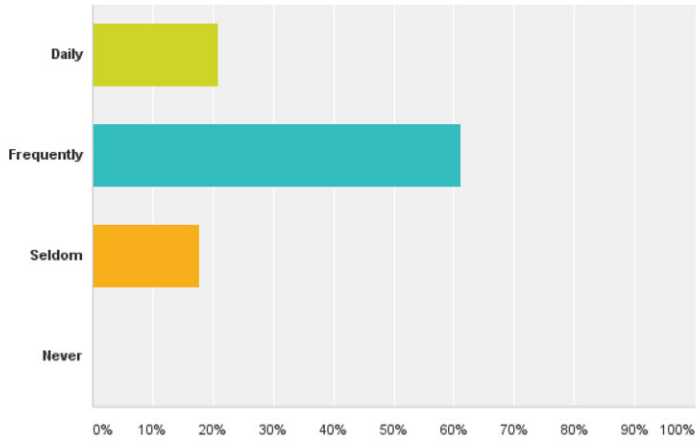
Q5 What are your primary reasons for traveling in and around 30th Street Station?

Answered: 331 Skipped: 8



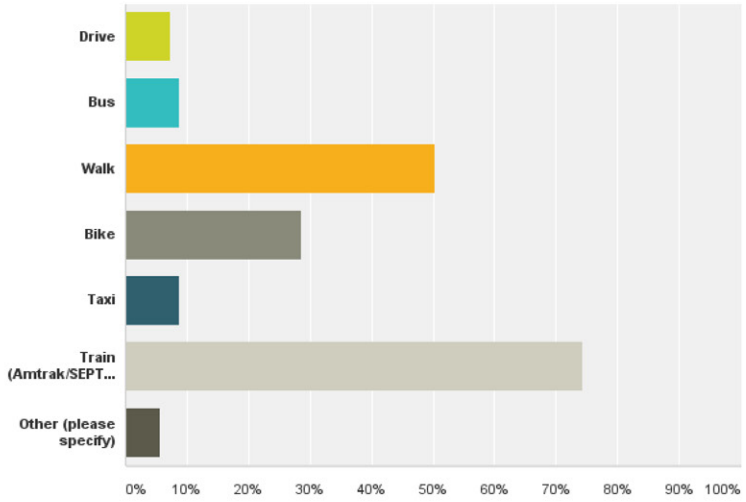
Q6 How often do you travel around the 30th Street Station Area?

Answered: 334 Skipped: 5



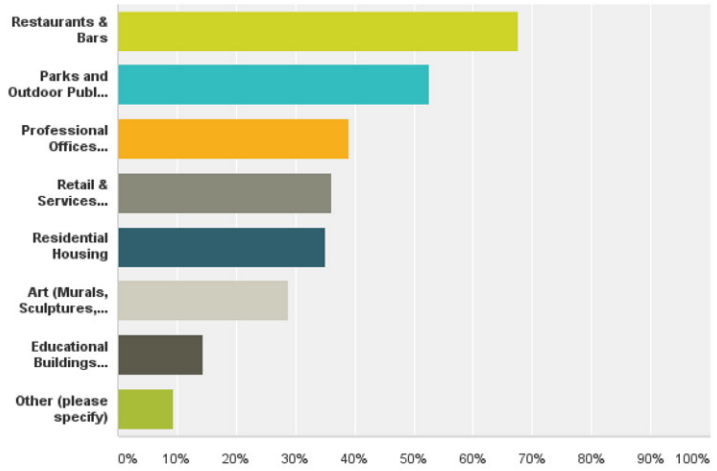
Q7 If you had a choice, what would be your preferred method of travel in and around 30th Street Station?

Answered: 332 Skipped: 7



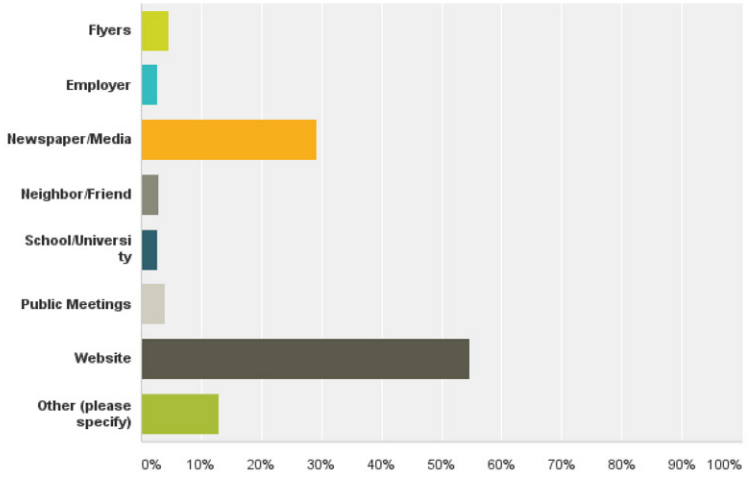
Q8 What would you like to see more of in and around 30th Street Station during the next 5-10 years? (Choose a max of 2)

Answered: 333 Skipped: 6



Q9 How did you hear about this public open house?

Answered: 333 Skipped: 6



Q10. I am interested in the project because…
Recurrent topics:

- I live nearby.
- I use the station as a commuter.
- The station is a critical transportation hub.
- Interested in the growth of University City
- Interested in development of the rail yards
- Interested in inclusion of bicycle friendly infrastructure

Q11. What would you consider to be a hidden gem (often overlooked in and around the 30th Street Station area?
Recurrent topics:

- Lobby
- Drexel Park
- The station building and its architecture
- Underground passageway between 30th Street Station and SEPTA Market-Frankford Line
- Powelton Village
- Open land above tracks
- Neighborhoods
- Restaurants
- Proximity to the Zoo and Art Museum

Q12. What is something the 30th Street Station area is lacking?
Recurrent topics:

- Restaurants
- Pharmacy/Drug Store
- Gardens
- Grocery Stores
- Green Space/Trees
- Pedestrian friendly intersections
- Underground connection between 30th Street Station and SEPTA Market-Frankford Line
- Affordable parking

Q13. Tell us what you like most about the 30th Street Station area
Recurrent topics:

- Access to the Northeast Corridor
- Access to Drexel University and University of Pennsylvania
- The station building
- Convenience
- The Porch
- Schuylkill River
- Transportation options

Q14. List neighborhoods, cities, or towns in which you have lived or visited that embody the characteristics you would like to see in a neighborhood in the study area:

Q15. Other comments
Recurrent topics:

- Restore underground passageway to Market-Frankford Line
- Engage the neighbors, collaborate
- Increase density, go big
- Improve pedestrian and bike access
- Bus terminal
- Neighborhood centerpiece/welcome to travelers

APPENDIX B REAL ESTATE MARKET ASSESSMENT METHODOLOGY

RETAIL DEVELOPMENT POTENTIAL

Editor's Note: The following is a summary of the retail assessment conducted by HR&A in December 2014. Assumptions regarding passenger spending were based on a preliminary forecasting analysis of Amtrak residential, student, workers, and riders conducted by the consultant team in August 2014. HR&A has since updated the assumptions to match more recent forecasts. As a result, the total unmet spending potential estimate has increased from $250 million to $262 million and the estimated net new retail space supportable by the District has increased from 100,000-170,000 to 110,000-175,000. The methology used for these estimates is the same as described herein.

Current Unmet Spending Potential

The District has a significant opportunity to capture spending potential located in the District. HR&A estimates that there is $270 million in annual spending potential from consumers within the District today. To estimate this, HR&A identified spending potential from District residents, workers, students, and transit riders.

- *Residential Spending Potential.* The 16,000 residents living within the District spend an estimated total of $99 million, annually, or $6,130 per resident according to ESRI Business Analyst, a national demographic and economic data provider.
- *Worker Spending Potential.* HR&A estimates 13,000 employees work in the District from the US Census Bureau's Longitudinal Employer-Household Dynamics survey of workers. To avoid double-counting, the analysis excludes workers that also live in the area. More specifically, there are 12,872 employees in the area, only 96 of whom live and work in the area. As such, HR&A estimates the spending potential for only those workers (12,776) who work in the District, but live outside the District. To understand the spending potential of these workers, HR&A relies on a 2011 survey of office worker spending patterns from the International Council of Shopping Centers. Results from this survey describe spending patterns of office workers by income levels and spending categories. HR&A inflates findings from this survey to 2014 dollars, indicating a worker in the area would spend, on average, $6,175 annually. This equates to $79 million in annual spending by workers in the District.
- *Student Spending Potential.* HR&A estimates only undergraduate student spending given that they are unlikely to be counted as residents by the US Census Bureau and third-party data providers such as ESRI Business Analyst. Although both Drexel University and the University of Pennsylvania enroll graduate students, HR&A assumes that graduate student spending potential is accounted for in the estimate of resident spending potential if they live in the area. As Drexel's campus is entirely within the District, HR&A accounted for the spending potential from all Drexel undergraduates (14,000 students). Only a portion of the University of Pennsylvania's 10,300 undergraduate student population lives or studies within the District, and as such, HR&A counts spending potential from only 30% of University of Pennsylvania undergraduates. Based on HR&A 2011 survey data of US undergraduate spending inflated to 2014 dollars, HR&A estimates that an average undergraduate in the area spends $4,600 on retail annually, or $78 million in total annual undergraduate spending potential.
- *Passenger Spending Potential.* While we know there are approximately 63,000 weekday travelers who pass through 30th Street Station, some of these riders live, work, or study in the District. The spending potential from those riders is accounted through the estimates of resident, worker, and student spending potential. To estimate spending potential from transit riders, HR&A isolates the total spending at 30th Street Station, estimated to be $25 million annually (equal to the 35,500 square feet of retail space in the Station multiplied by an average sales per square foot of $700), less the share that could be attributable to the 1,500 Amtrak employees that work at 30th Street Station to avoid double-counting. More specifically, HR&A subtracts Amtrak employee

spending (2,000 employees multiplied by the average annual worker spending of $6,175) from total sales leaving a remainder of $12 million in spending that is likely to be entirely attributable to riders.

In total, HR&A estimates that there is $270 million of annual spending potential in the District. The majority of this spending, $99 million comes from residents in the area, followed by workers with $79 million in spending potential, $78 million from students, and $12 million from riders.

To identify **unmet** spending potential, HR&A compares the $270 million of spending potential against the $90 million in existing retail sales, as estimated by ESRI Business Analyst, that take place in the District today. This indicates that there is $180 million of unmet spending potential that occurs outside the District.

Future Spending Potential

There is a significant amount of development under construction and planned in the District. These projects will increase the number of residents, workers, students, and riders in the area and thereby increase spending potential that could be captured by new retail offerings. As shown in Table B.1, the majority of development under construction is residential; however, the FMC Tower will bring many office workers to the District as well. As a result of this additional development within the District, spending potential within the District is estimated to grow from $270 million today to $340 million within the next few years:

Residential				
Location	**Address**	**Units**	**Status**	**Expected Year of Completion**
3601 Market Street	3601 Market St	364	Under Construction	2015
Cira Centre South – Evo	2930 Chestnut St	850	Completed	2014
FMC Tower at Cira Centre	30th & Walnut	268	Under Construction	2016
One Riverside Place	210 S. 25th St	88	Planned	N/A
RiverWalk	100 N. 23rd St	665	Planned	N/A
Dormitory				
Location	**Address**	**Units**	**Status**	
New College House at Hill Field	3300 Chestnut St	95	Under Construction	2016
The Summit at Drexel University	3400 Lancaster Ave	351	Under Construction	2015
Commercial				
Location	**Address**	**SF**	**Status**	
FMC Tower at Cira Centre	30th & Walnut	622,000	Under Construction	2016
Hotel				
Location	**Address**	**Units**	**Status**	
The Study at University City	33rd and Chestnut	212	Planned	2016

TABLE B.1 DISTRICT DEVELOPMENT UNDER CONSTRUCTION AND PLANNED

- Future Resident Spending Potential. HR&A estimates future resident spending potential by taking the average household size in the District today (1.8, according to ESRI Business Analyst) and multiplying this by the anticipated number of new residential units (2,200). HR&A then multiplies this new incremental population by the average annual residential spending potential resulting in an estimate of $25 million of additional annual spending potential that can be attributed to future residents of the District.
- Future Worker Spending Potential. The FMC Tower will contain 622,000 square feet of office space. At 250 square feet per employee, this equates to approximately 2,500 new workers in the area. Applying the average worker spending estimated above, HR&A estimates annual spending potential from future workers to be $15 million.
- Future Student Spending Potential. Drexel University will add 6,000 undergraduate students, and based on the same annual average student spending estimated above, HR&A estimates an additional $29 million in annual spending potential from undergraduate students.
- Future Passenger Spending Potential. Amtrak ridership is projected to increase from 12,500 weekday riders in 2013 to approximately 15,300 riders in 2020. Based upon the average Amtrak rider spending above, HR&A estimates the projected growth in Amtrak passengers will equate to $3 million in additional annual spending potential.

As a result of this future development and increasing ridership, HR&A estimates there will be approximately $250 million of unmet spending potential within the District.

Retail Development Potential

If new development captures 25% to 40% of the $250 million of unmet spending potential, this

could support between 100,000 and 170,000 square feet of new retail space within the District. This estimate is based on an estimated sales productivity of $600 in annual sales per square foot, a benchmark for urban retail districts in the Northeast that is in line with Urban Land Institute's estimate of sales productivity for high-performing convenience retail stores. Other factors not considered in the analysis could influence the amount of retail development that could be warranted in the District. Some factors could reduce the potential to build 100,000 to 170,000 square feet whereas other factors could increase potential beyond this range. First, some of the new developments that are planned or under construction include ground-floor retail within their plans. This supply could capture some of the unmet spending potential estimated above. Second, because Drexel's Innovation Neighborhood is in the preliminary planning stage, HR&A did not include spending potential that would result from this large-scale development. The Innovation Neighborhood will be significant for the District and will bring both significant spending potential and space for new retail. Third, if development occurs above the rail yards, this could also increase spending potential. Finally, careful coordination and selection of new retail in the District could make it a true urban retail destination, allowing it to capture consumers not counted in the analysis, such as residents from outside the District like those living elsewhere in the City and region, and tourists to Philadelphia.

RESIDENTIAL DEVELOPMENT POTENTIAL

The population of Central Philadelphia, defined as University City and Greater Center City, has been growing significantly.[1] This growth has driven residential development activity, which slowed during the Great Recession, but has since accelerated. As shown above, between 2000 and 2010, Philadelphia's population within two miles of City Hall grew by over 20,000 residents, more than the growth experienced in San Francisco or Washington, DC. While the Great Recession resulted in a construction slowdown with only 500 housing units being constructed in Greater Center City in 2012, residential development pace has accelerated with over 2,000 units built in 2013 alone.[2] The District is well positioned to capture household demand through new residential development. The analysis below identifies District development potential for both rental and for-sale units.

Rental Housing Development Potential

Today, Class A residential buildings in Central Philadelphia, command average rents between approximately $1,700 for a studio and $2,700 for a two-bedroom apartment.[3] In order to afford these rents, a household would need to earn between $60,000 and $125,000 annually, assuming a household pays no more than 30% of their income towards rent. There are approximately 25,000 households within Central Philadelphia that fall within this income band.[4] Of these 25,000 households, the proportion that rent differs by age of householder, as shown in Table B.2. Furthermore, approximately 21% of renters in Philadelphia have moved within the past year, representing an annual turnover rate for renter households. Applying these rates to those income-qualified households shows approximately 3,000 households are "in the market" for a rental unit in Central Philadelphia, annually.

1 University City is defined as the area bounded by the Schuylkill River, Spring Garden Street, 40th Street, Powelton Avenue, Market Street, 50th Street, and Woodland Avenue; Greater Center City is defined as the area bounded by Girard Avenue, Tasker Avenue, the Delaware River, and the Schuylkill River.

2 "Center City Reports: Housing Resurgence," Center City District and Central Philadelphia Development Corporation, March 2014.

3 REIS, HR&A

4 ESRI Business Analyst

Age of Householder	Households with Annual Income between $60K and 125K	Renter Portion1	Turnover Rate2	Households "in the market" for a rental unit
< 25	1,230	92%	21%	241
25-44	14,144	65%	21%	1,975
45-64	6,695	38%	21%	540
65+	2,723	30%	21%	176
Total	24,792			2,933

TABLE B.2 ANNUAL RENTAL HOUSING DEMAND IN CENTRAL PHILADELPHIA
Data Sources: ESRI Business Analyst,; US Census Bureau, American Community Survey, 1 Year Estimate, 2013.

Age of Householder	Households with Annual Income between$75K and $150K	Owner Portion1	Turnover Rate2	Households "in the market" for a rental unit
< 25	834	8%	6%	4
25-44	12,151	35%	6%	246
45-64	6,010	62%	6%	219
65+	2,075	70%	6%	85
	21,070			554

TABLE B.3 ANNUAL RENTAL HOUSING DEMAND IN CENTRAL PHILADELPHIA
Data Sources: ESRI Business Analyst,; US Census Bureau, American Community Survey, 1 Year Estimate, 2013.

For-Sale Development Potential

Average for-sale unit prices in Central Philadelphia range from $300,000, the average sales price in Southwest Center City, to $660,000, the average sales price for condominiums in Center City West.[1] In order for a household to afford to purchase a for-sale unit within this price range, it would need to earn between $75,000 and $150,000, annually.[2] There are approximately 21,000 households within the Central Philadelphia that fall within this income band. [3] Of these 21,000 households, the proportion that owns differs by age of householder, as shown in Table B.3. Furthermore, approximately 6% of owners in Philadelphia have moved within the past year, representing an annual turnover rate for households that own. Applying these rates to those income-qualified households shows approximately 550 households are "in the market" for a for-sale unit in Central Philadelphia, annually.

Overall Development Potential

Based upon the above-described estimated demand for rental and owner occupied units, HR&A estimates that there is demand for approximately 3,500 new residential units within Central Philadelphia, annually. Analysis indicates the majority of this demand will stem from households that rent, although the exact proportion between for-sale and rental units will depend upon market conditions.

Pipeline development in Central Philadelphia will capture some of the near-term household demand. The FMC Tower, Riverwalk, and other pipeline developments within the District will bring 1,400 new residential units to the District, which may capture near-term potential. Further District housing development and competing for the deep pool of Central Philadelphia households looking for a unit to buy or rent will require creating a neighborhood attractive to those households as described below.

Residential development presents the strongest market opportunity for development in the District, but the long-term attractiveness of the District to households will require mixed-uses similar to other districts in Philadelphia and along the Northeast Corridor.

1 "Center City Reports: Housing Resurgence," Center City District and Central Philadelphia Development Corporation, March 2014.

2 Assumes mortgage payment does not exceed 30% of annual income and costs of mortgage financing, such as a minimum down payment as well as property taxes and insurance.

3 ESRI Business Analyst

OFFICE DEVELOPMENT POTENTIAL

The analysis below evaluates trends in both office absorption and development pace in Central Philadelphia, defined as University City and Greater Center City. Over the past five years (2010 through 2014), Central Philadelphia experienced:

- Net absorption of 1,220,000 square feet, or 244,000 square feet annually on average.[1] Net absorption represents total square feet occupied less the total space vacated. Positive net absorption indicates more "move-in" activity than "move-out" activity.
- Gross absorption of 10.2 million square feet, or an average of 2.6 million square feet annually. Gross absorption represents total square feet occupied and does not consider vacated space.[2] Developers target gross absorption activity as a representation of total leasing activity, rather than net absorption.
- Development of 408,000 square feet, or 82,000 square feet annually on average. Much of this space, 340,000 square feet, includes the 3737 Market Street development in University City, a KOZ-designated site.[3] Figure B.1 above depicts development activity from 1997 through 2014 in Central Philadelphia. Over this longer timeframe, there has been 198,000 square feet built annually on average in Central Philadelphia or 128,000 square feet built annually on average when excluding the Comcast Center.[4]

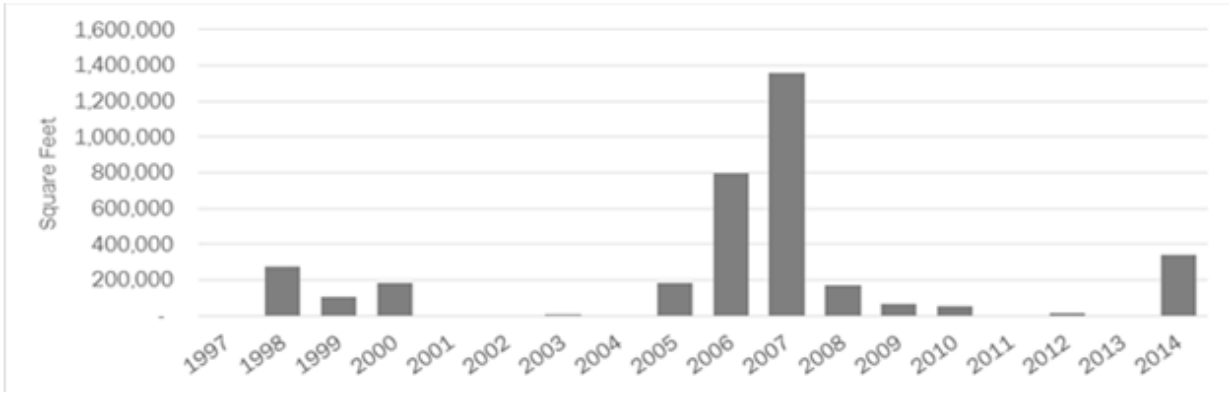


FIGURE B.1 CENTRAL PHILADELPHIA OFFICE DELIVERY, 1997-2014
Data Source: CoStar

There is a significant amount of office space in the pipeline in Central Philadelphia. Specifically, there are four office buildings, or 2.1 million square feet, expected to be built in University City by 2019. These include:

- Two proposed University City Science Center buildings, one located at 3400 Market Street, the other at 3800 Market Street, totaling 1.25 million square feet.
- FMC Tower with 830,000 square feet, and falls within the District

In Center City West and Center City East, there is just one building, the Comcast Innovation and Technology Center building with 1.3 million square feet, scheduled for completion by 2018. In total, there are five pipeline office buildings in Central Philadelphia, totaling 3.4 million square feet. These projects represent the equivalent of 42 years of development based on the historical annual pace of 82,000 square feet per year or 17 years of development based on the historical annual pace of 198,000 square feet per year. While this level of development appears extraordinary for Central Philadelphia, it is primarily driven by specific institutions or companies expanding in Philadelphia. New office development in the District, therefore, will rely both on competing for tenants looking in Central Philadelphia, but also creating a District attractive enough to support net new growth for Central Philadelphia. A combination of strategies described below can help position the District to attract those new markets.

1 CoStar
2 CoStar
3 CoStar
4 CoStar

HOTEL DEVELOPMENT POTENTIAL

Since 2010, four hotels have been built in Central Philadelphia, defined as University City and Greater Center City.[1] Three of these hotels were built in Center City, near the Convention Center while one, Homewood Suites, was built in University City. This development activity equates to 850 hotel rooms in four years, or an annual average development pace of 213 rooms. Over a longer-term, from 2005 through 2014, 1,250 hotel rooms went online in Central Philadelphia, representing a slower annual average development pace of 125 rooms.[2]

Growth in Philadelphia's hotel market can be attributed, in part, to the expansion of the Convention Center that was completed in 2011. In 2006, the Convention and Visitors' Bureau estimated that between 2,000 and 2,500 new hotel rooms could be supported through expansion.[3] This, in addition to growing levels of tourism, institutional growth, and new office development indicate strong demand drivers are in place for new hotel development. However, as shown above, occupancy and ADR have not increased in Center City or University City but have remained stable and some new hotel development has required City subsidy.

Pipeline Hotel	Status	Rooms	Estimated Completion Year
Four Seasons Philadelphia, at Comcast Center	In Construction	222	2017
Sleep Inn Philadelphia	In Construction	42	2017
SLS International Hotel & Residences	Final Planning	150	2016
Hotel Indigo Philadelphia Center City	Final Planning	150	2016
AC Hotel by Marriott Historic Warner Brothers Building	Final Planning	140	2017
Hudson Philadelphia	Planning	310	2016
W / Element Hotels Philadelphia	Planning	295	2018
The Study @ University City	Planning	212	2016
Comfort Inn & Suites Philadelphia	Planning	200	2017
Kimpton Hotel, at the former Family Court	Planning	199	N/A
Hilton Garden Inn Philadelphia Franklin Square	Planning	143	2017
	Total	**2,063**	

TABLE B.4 PIPELINE HOTEL DEVELOPMENT, CENTRAL PHILADELPHIA
Data Source: Smith Travel Research, Inc.

There are 13 hotels with 2,300 rooms projected to be built in Central Philadelphia between now and 2018. Only one of these hotels, The Study,[4] will be located within University City. While these rooms are planned to be completed within the next four years, these 2,300 rooms equate to more than 10 years of development given the pace of new development experienced in the past four years (213 rooms per year). Given that occupancy rates have remained above 70% while supply has increased, it is possible that the pipeline development will be absorbed faster than previous years.

While pipeline development could address much of the demand for hotel rooms in Central Philadelphia over the next ten years, the District has the potential to capture some new development. The District offers some distinct strengths with adjacency to growing University City institutions and a convenient location. Further District real estate development, any enhanced transportation connectivity, and increasing appeal as a place to be, as described below, can improve the competitive positioning of the District to attract hotels.

1 Smith Travel Research, Inc.

2 Smith Travel Research, Inc.

3 "Philadelphia: Smart City. Smart Choice for Hotel Investment, 2013," Philadelphia Convention and Visitors Bureau.

4 Smith Travel Research, Inc.

APPENDIX C CSX HIGH LINE ASSESSMENT

The Project Team condcuted a concept-level feasibility assessment of relocating the existing freight services or modifyiing the alignment of the CSX High Line to facilitate development in the rail yards. The existing High Line is 2.15-mile two-track freight line (only one track currently in service) that is open to the air allowing for accommodation of double-stack trains. Formally known as the West Philadelphia Elevated, the High Line's construction was completed by the Pennsylvania Railroad in 1904.

The Project Team identified the feasibility constraints and a rough order-of-magntitude cost for five alternatives, as summarized in Table C.1. Based on these findings, the Project Team recommends the baseline alternative, rehabilitation of the High Line in its existing alignment and configuration.

The five alternatives are described as follows:

1. **PREFERRED - Baseline Alternative - Rehabilitate in Place (see p. C-3):** This alternative assumes the High Line remains in its current alignment and will be rehabilitated nd will be rehabilitated to operate at its maximum capcity.
2. **Relocate Operations to the East Philadelphia Subdivision (see p. C-4):** This alternative proposes to relocate the High Line freight operations to the east side of the Schuylkill River onto the Philadelphia Subdivision.
3. **Shift Alignment East via Penn Coach Yard (see p. C-5):** This alternative proposes to shift the High Line alignment eastward into the Amtrak Penn Coach Yard either at grade or via an underground tunnel.
4. **Shift Alignment West via Powelton Yard or Maintenance of Way Yard (see p. C-6):** This alternative proposes to shift the High Line alignment westward to the west side of the SEPTA Powelton Yard or through the Amtrak Maintenance of Way Yard by utilizing an existing tunnel under 32nd Street.
5. **Bury the High Line (see p. C-7):** The most dramatic of all alternatives, this option proposes to bury the entire elevated line from south of Arsenal Interlocking to Zoo Interlocking.

Alternative	Summary of Major Feasibility Constraints	Rough Order-of-Magnitude Cost Estimate (as a multiplier of the baseline alternative cost)	Recommended Alternative
1. **Baseline Alternative - Rehabilitate in Place (see p. C-3):** This alternative assumes the High Line remains in its current alignment and will be rehabilitated to operate at its maximum capcity.	Least relative staging and operational impacts during rehabilitation.	Hundreds of millions	Yes
2. **Relocate Operations to the East via Philadelphia Subdivision (see p. C-4):** This alternative proposes to relocate the High Line freight operations to the east side of the Schuylkill River onto the existing Philadelphia Subdivision.	Reduces total freight rail capacity from four active tracks to the two active tracks of the Philadelphia Subdivision. This reduction in capacity is in direct conflict with the growing regional and national demand for freight services. Accommodation of double-stack freight trains requires retrofit of an existing tunnel beneat the Philadelphia Art Museum, a substantial concern for this significant cultural resource. Substantial staging and operational impacts during construction.	4x baseline	No
3. **Shift Alignment East via Penn Coach Yard (see p. C-5):** This alternative proposes to shift the High Line alignment eastward into the Amtrak Penn Coach Yard either at grade or via an underground tunnel.	Introduces freight occupancy of the passenger rail Northeast Corridor line, which is counter to high-speed rail goals and regional rail growth plans. Requires additional side clearances beneath 30th Street Station and the former Post Office building. Requires substantial property acquisition and demolition of Penn Coach Yard facilties if the shifted alignment operates at grade through the yard. Substantial staging and operational impacts during construction.	At grade: 3x baseline Tunnel: 6x baseline	No
4. **Shift Alignment West via Powelton Yard or Amtrak Maintenance of Way Yard (see p. C-6):** This alternative proposes to shift the High Line alignment westward to the west side of the SEPTA Powelton Yard or through the Amtrak Maintenance of Way Yard by utilizing an existing tunnel under 32nd Street.	Reduces total freight capacity due to horizontal and vertical constraints through SEPTA Powelton Yard and the 32nd Street tunnel. This reduction in capacity is in direct conflict with the growing regional and national demand for freight services. Introduces passenger capacity impacts and horizontal and vertical conflicts with SEPTA, Northeast Corridor, and Keystone tracks. Overhead bridges and street network between South Street and Arsenal Junction introduce vertical constraints for double-stack cars. Substantial staging and operational impacts during construction.	Via Amtrak: 5x baseline Via SEPTA: 6x baseline	No
5. **Bury the High Line (see p. C-7):** The most dramatic of all alternatives, this option proposes to bury the entire elevated line from south of Arsenal Interlocking to Zoo Interlocking.	Requires a change of elevation that exceeds the typical maximum freight grade of 1.0 to 1.5%. Of all the alternatives, creates the most substantial staging and operational impacts during construction.	18x baseline	No

TABLE C.1 SUMMARY OF HIGH LINE ALTERNATIVES

ALTERNATIVE 1 (PREFERRED)

Baseline Alternative - Rehabilitate In Place

Major Components:

- Renew existing structure to a state of good repair.
- Renew and reactivate the abandoned second track.
- Update signal system.
- Remove catenary poles and relocate transmission wires underground.

Major Feasibility Constraints:

Least relative staging and operational impacts during construction.

Rough Order-of-Magnitude Cost Estimate:

Hundreds of millions

FIGURE C.1 ALTERNATIVE 1 - BASELINE, REHABILITATE IN PLACE
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

ALTERNATIVE 2 (NOT PREFERRED)
Relocate Operations to the East via the Philadelphia Subdivision

Major Components:

- A total 6-mile long intervention.
- Vacate and decommission existing High Line structure.
- Relocate all current operations from Arsenal Interlocking to Zoo Interlocking onto the eastern Philadelphia Subdivision, a double-track freight line.
- Construct a new spur to connect the 25th Street Elevated to the Philadelphia Subdivision.
- Construct a new tunnel or retrofit the existing tunnel beneath the Philadelphia Art Museum to accommodate double-stack containers.
- Continue tunnel through Fairmount Park to reconnect at Zoo Interlocking.

Major Feasibility Constraints:

- Reduces total freight rail capacity from four active tracks to the two active tracks of the Philadelphia Subdivision. This reduction in capacity is in direct conflict with the growing regional and national demand for freight services.
- Significant cultural impact to the Philadelphia Art Museum and Fairmount Park.
- Substantial staging and operational impacts during construction.

Rough Order-of-Magnitude Cost Estimate:

Four times (4x) the baseline alternative

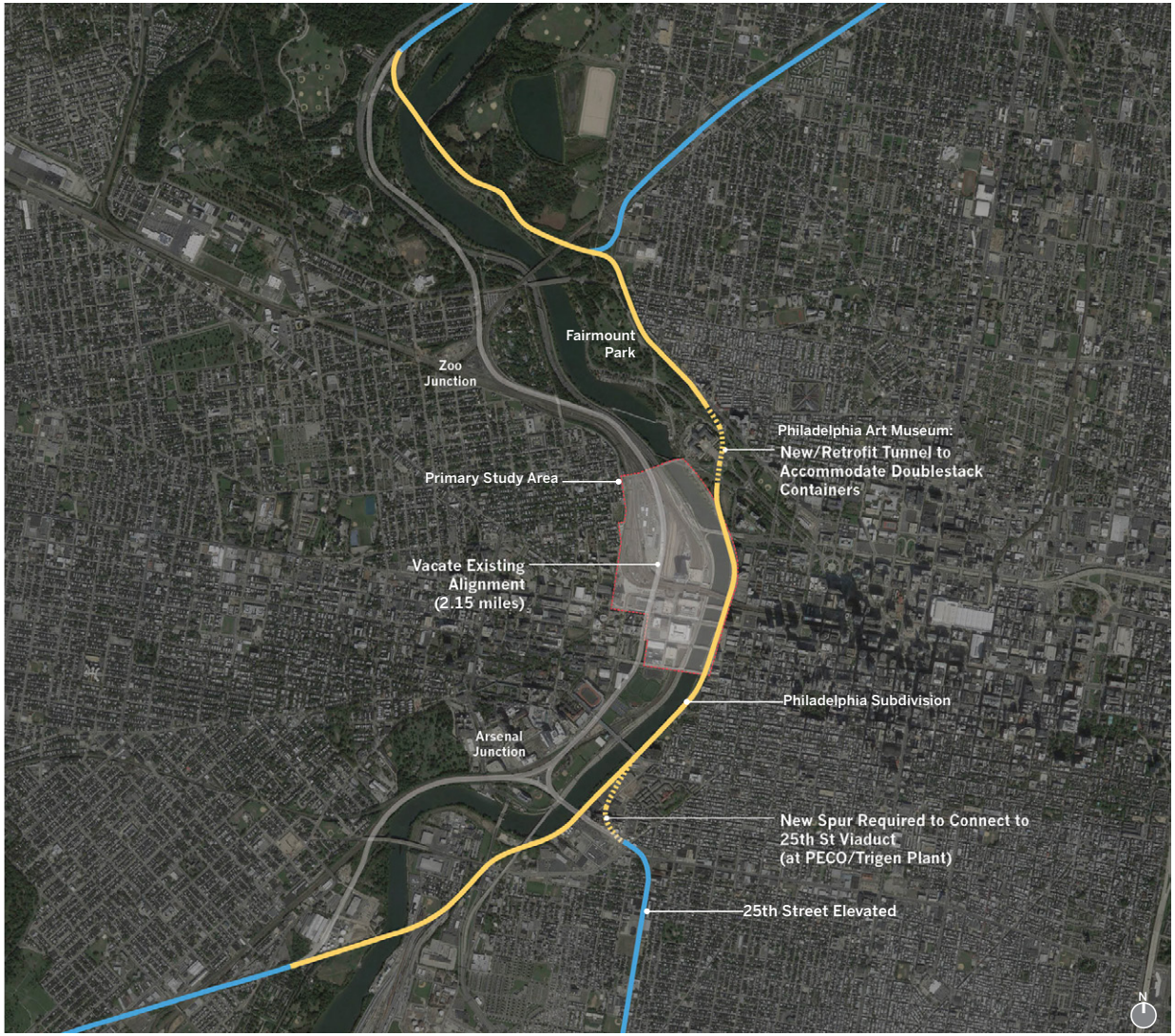


FIGURE C.2 ALTERNATIVE 2 - RELOCATE OPERATIONS TO THE EAST VIA THE PHILADELPHIA SUBDIVISION
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

ALTERNATIVE 3 (NOT PREFERRED)

Shift Alignment East via Penn Coach Yard

Major Components:

- A total 3-mile long intervention.
- Vacate and decommission existing High Line structure.
- New connection from Arsenal Interlocking to Northeast Corridor line.
- Operate on lower level tracks beneath the former Post Office and 30th Street Station, requiring additional side clearances.
- Either (1) operate at grade through Penn Coach Yard or (2) tunnel below Penn Coach Yard and north and rise to grade at a new connection at Zoo Interlocking.

Major Feasibility Constraints:

- Introduces freight occupancy of the passenger rail Northeast Corridor line, which is counter to high-speed rail goals and regional rail growth plans.
- Requires additional side clearances beneath 30th Street Station and the former Post Office building.
- Requires substantial property acquisition and demolition of Penn Coach Yard facilties if the shifted alignment operates at grade through the yard.
- Substantial staging and operational impacts during construction.

Rough Order-of-Magnitude Cost Estimate:

At grade - three times (3x) the baseline alternative

Tunnel - six times (6x) the baseline alternative

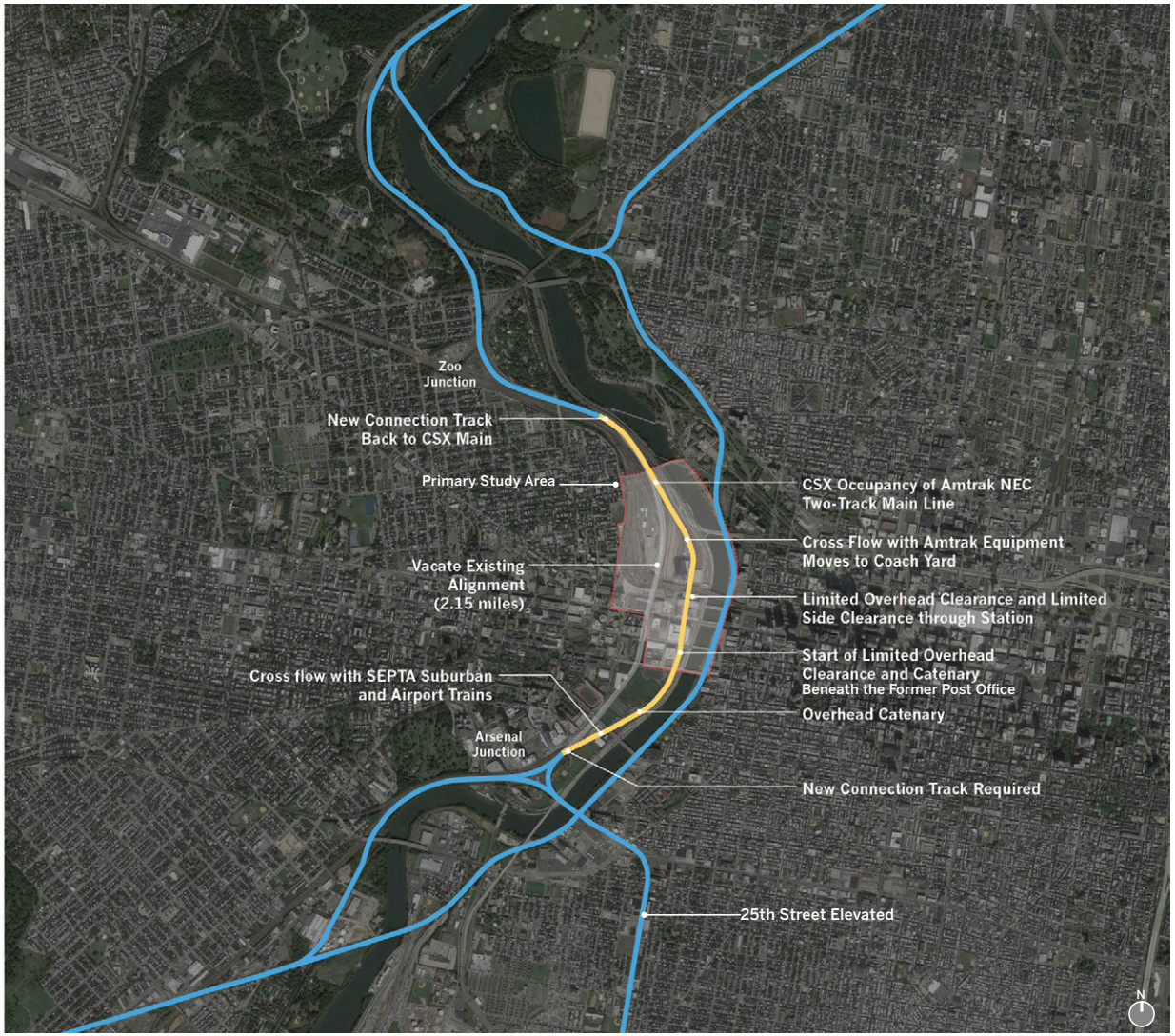


FIGURE C.3 ALTERNATIVE 3 - SHIFT ALIGNMENT EAST VIA PENN COACH YARD
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

ALTERNATIVE 4 (NOT PREFERRED)
Shift Alignment West Via Powelton Yard or Maintenance of Way Yard

Major Components:

- A total 2-mile long intervention.
- Vacate and decommission existing High Line structure.
- New connection to SEPTA Regional Rail tracks from Arsenal Interlocking.
- Utilize existing tunnel under 32nd Street to access Powelton Yard.
- New branch to Zoo Interlocking undercrossing the Northeast Corridor.

Major Feasibility Constraints:

- Reduces total freight capacity due to horizontal and vertical constraints through SEPTA Powelton Yard and the 32nd Street tunnel. This reduction in capacity is in direct conflict with the growing regional and national demand for freight services.
- Introduces passenger capacity impacts and horizontal and vertical conflicts with SEPTA, Northeast Corridor, and Keystone tracks.
- Overhead bridges and street network between South Street and Arsenal Junction introduce vertical constraints for double-stack cars.
- Substantial staging and operational impacts during construction.

Rough Order-of-Magnitude Cost Estimate:

Six times (6x) the baseline alternative

FIGURE C.4 ALTERNATIVE 4 - SHIFT ALIGNMENT WEST VIA POWELTON YARD OR MAINTENANCE OF WAY YARD
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

ALTERNATIVE 5 (NOT PREFERRED)
Bury the High Line

Major Components:

- A total 2.15-mile long intervention.
- Vacate and decommission existing High Line structure.
- Relocate the line from Arsenal to Zoo Interlocking below grade in generally the same alignment as the current right-of-way.
- New underground trench connection at Zoo Interlocking.

Major Feasibility Constraints:

- Requires a change of elevation that exceeds the typical maximum freight grade of 1.0 to 1.5%.
- Of all the alternatives, creates the most substantial staging and operational impacts during construction.

Rough Order-of-Magnitude Cost Estimate:
Eighteen times (18x) the baseline alternative

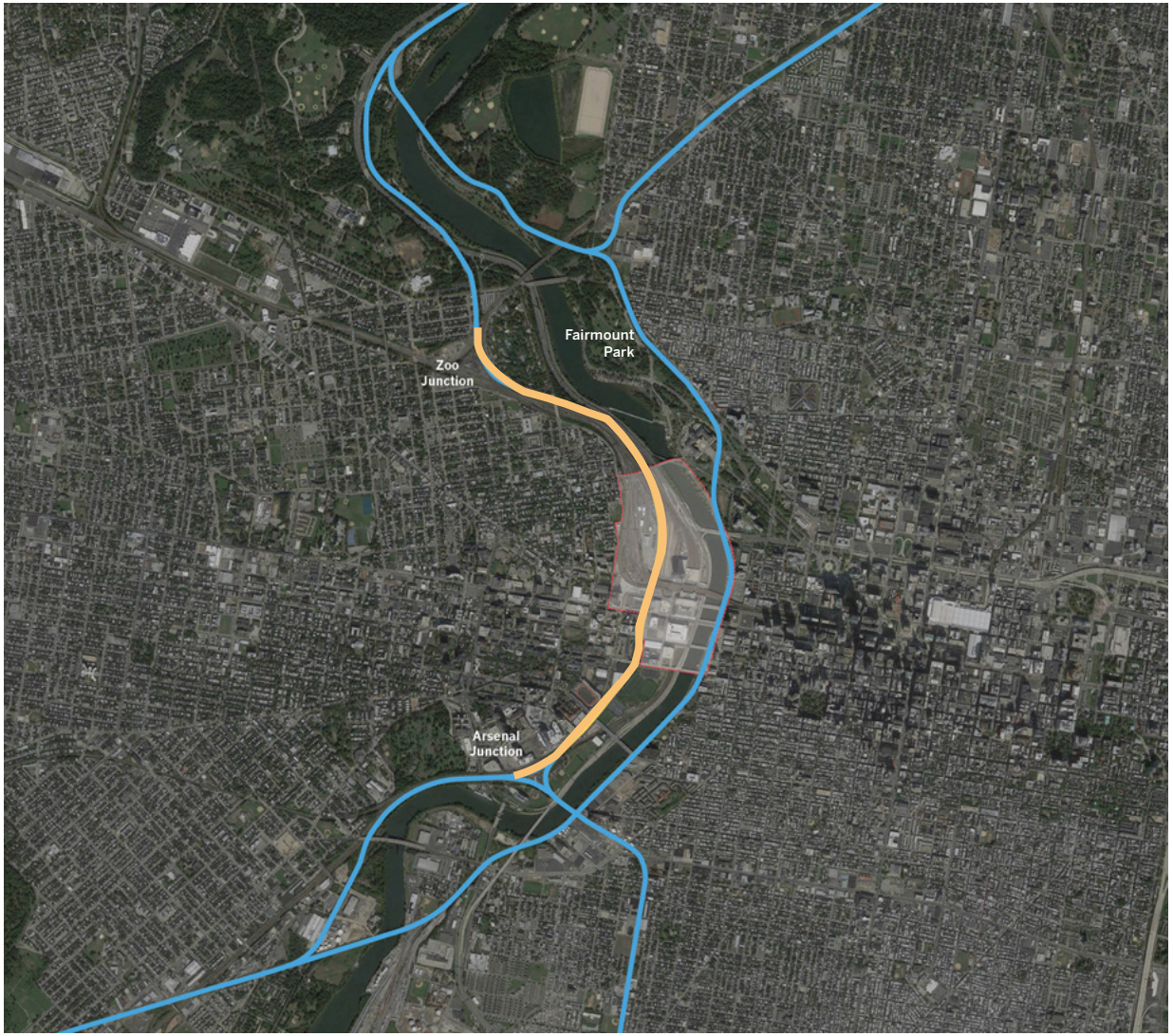


FIGURE C.5 ALTERNATIVE 5 - BURY THE HIGH LINE
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

Aerial of the District
Source: Brandywine Realty Trust

APPENDIX D SCHUYLKILL EXPRESSWAY ASSESSMENT

The streets flanking 30th Street Station District serve as the entrance and exit for I-76 (Schuylkill Expressway) and I-676 (Vine Street Expressway), which borders the eastern boundary of the Primary Study Area along the Schuylkill River. Schuylkill Avenue, bounding the station to the east, is the on-ramp to the Schuylkill Expressway and Vine Street Expressway. Arch Street, bounding the station to the north, is the exit route from the Expressways. As a result of the entrance and exit ramp configurations, vehicles are forced to circulate around the station, a situation that is particularly acute during the peak morning and evening hour.

A traffic study performed by the Project Team clearly identified Schuylkill Avenue and the entrance to I-76/I-676, where four lanes of traffic merge to one, as the principal cause of the observed congestion around the station. The competition for a short merge space by buses, taxis, and personal vehicles congests the entire connected street network of JFK Blvd, Market Street, Chestnut Street, Walnut Street and numbered streets from 30th through 34th.

The Project Team condcuted a concept-level assessment of automobile trip redistribution likely to result from four alternatives, as summarized in Table D.1 Based on these findings, the Project Team recommends Alternative 2, modify the traffic configuration around 30th Street Station.

The four alternatives are described as follows::

1. **Baseline Alternative - Maintain I-76/I-676 entrance as is:** This alternative assumes the entrance to I-76/I-676 remains in its existing configuration.
2. **PREFERRED - Modify the traffic configuration around 30th Street Station (see p. D-4):** This alternative proposes to modify traffic flow configurations to introduce more two-way streets and more street grid connections.
3. **Close I-76/I-676 entrances and exits to vehicles:** This alternative proposes to close the on- and off-ramps to all traffic or to all traffic except for buses and emergency vehicles.
4. **Relocate and Submerge I-76 west of the District (see p. D-5):** This alternative proposes to shift the alignment and submerge below ground the Schuylkill Expressway between the Grays Ferry Avenue / University Avenue exit (346B), south of the District Study Area, and the Girard Avenue / Philadelphia Zoo exit (342) north of the District Study Area.

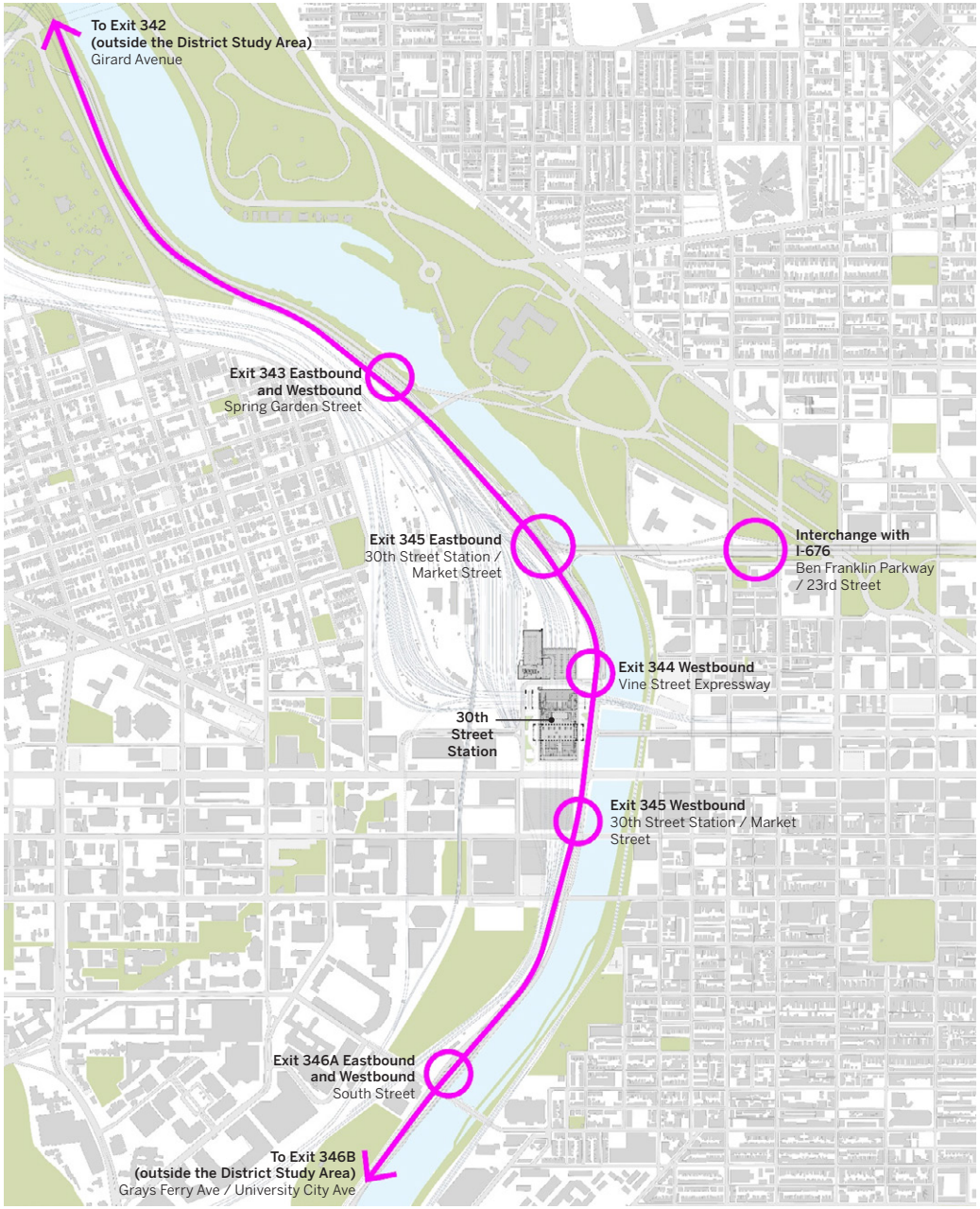


FIGURE D.1 I-76 SCHUYLKILL EXPRESSWAY EXITS NEAR THE DISTRICT STUDY AREA
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

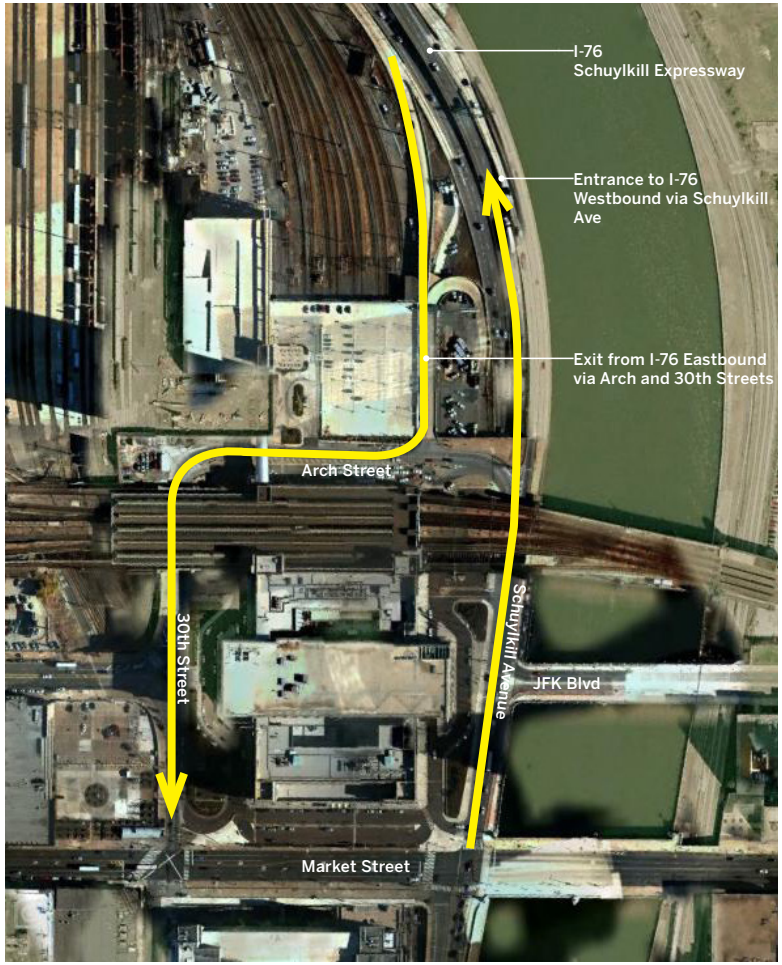


FIGURE D.2 SCHUYLKILL EXPRESSWAY 30TH STREET STATION ENTRANCE AND EXIT
Credit: Imagery from Google Earth

Alternative	Summary of Impacts	Recommended Alternative
1. **Baseline Alternative - Maintain I-76/I-676 entrance as is:** This alternative assumes the entrance to I-76/I-676 remains in its existing configuration.	Peak hour traffic (2,375 vehicles during the morning peak and 2,466 vehicles during the evening peak) continues to congest the entire connected street network of JFK Blvd, Market Street, Chestnut Street, Walnut Street and numbered streets from 30th through 34th.	No
2. **Modify the traffic configuration around 30th Street Station:** This alternative proposes to modify traffic flow configurations to introduce more two-way streets and more street grid connections.	A series of properly calibrated movements - introduction of two-way traffic around the station as well as new street grid connections in the Innovation Neighborhood and the rail yards - can have the combined effect of effecient re-distribution of traffic throughout the District. The Project Team must calibrate these traffic movements to respond to the District Plan's proposed land uses, an ongoing effort as the District Plan vision evolves.	Yes
3. **Close I-76/I-676 entrances and exits to vehicles:** This alternative proposes to close the on- and off-ramps to all traffic or to all traffic except for buses and emergency vehicles.	Peak hour traffic (2,375 vehicles during the morning peak and 2,466 vehicles during the evening peak) redistributes congestion elsewhere in the street network: • Girard Avenue (Exit 342), Spring Garden Street (Exit 343), or South Street (Exit 346A) • 23rd Street interchange with I-676 • Increased local vehicular traffic on Spring Garden Street • Increased local vehicular traffic on Market Street between 32nd and 34th Streets • Vehicles parking at Cira Centre will be significantly re-directed through the City	No
4. **Relocate and Submerge I-76 west of the District (see p. D-4):** This alternative proposes to shift the alignment and submerge below ground the Schuylkill Expressway between the Grays Ferry Avenue / University Avenue exit (346B), south of the District Study Area, and the Girard Avenue / Philadelphia Zoo exit (342) north of the District Study Area.	Eliminates local interchanges along I-76 in the University City area (exits 343, 344, 345, 346A). Results in the same traffic congestion conditions as indicated for Alternative 3. Construction substantially disrupts the neighborhoods near the proposed alignment.	No

TABLE D.1 SUMMARY OF SCHUYLKILL EXPRESSWAY ALTERNATIVES

ILLUSTRATIVE DIAGRAM OF ALTERNATIVE 4 (NOT PREFERRED)

Relocate and Submerge I-76 west of the District

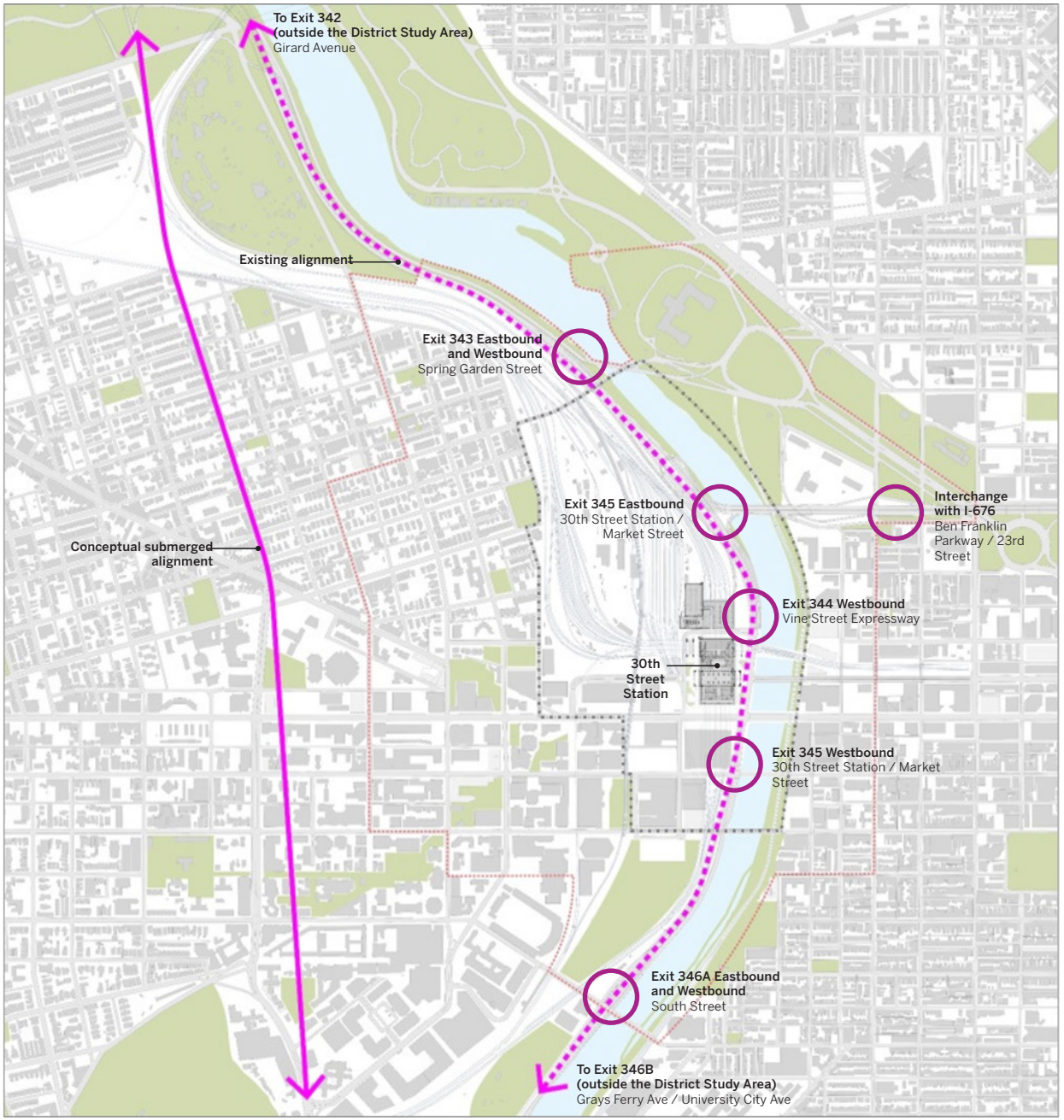


FIGURE D.3 ILLUSTRATIVE DIAGRAM OF CONCEPTUAL REALIGNED SCHUYLKILL EXPRESSWAY
Credit: SOM in association with Parsons Brinckerhoff, OLIN and HR&A

Chestnut Street
Source: Drexel

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30TH STREET STATION DISTRICT PLAN