

CONNECT

Philadelphians CONNECT
seamlessly to the region
and the world.



Transportation 102

- Transit 4.1
- Complete Streets 4.2
- Streets and Highways 4.3
- Airports, Seaports, and Freight Rail 4.4



Utilities 122

- Consumption, Capacity, and Condition 5.1
- Broadband Infrastructure 5.2

CONNECT

In 2035, people, goods, and ideas move effortlessly between neighborhoods, the region, and the world, driving economic prosperity. Reliable and efficient transportation serve a population that is more energy conscious than ever before.



30th Street Station Gateway



Provide a **safe and efficient road network** that supports planned land uses



Transportation

Improve transportation safety, efficiency, and convenience



Utilities

Adapt utility services to changing technology and consumption patterns

Upgrade Transit Service to Airport



PHL Expansion

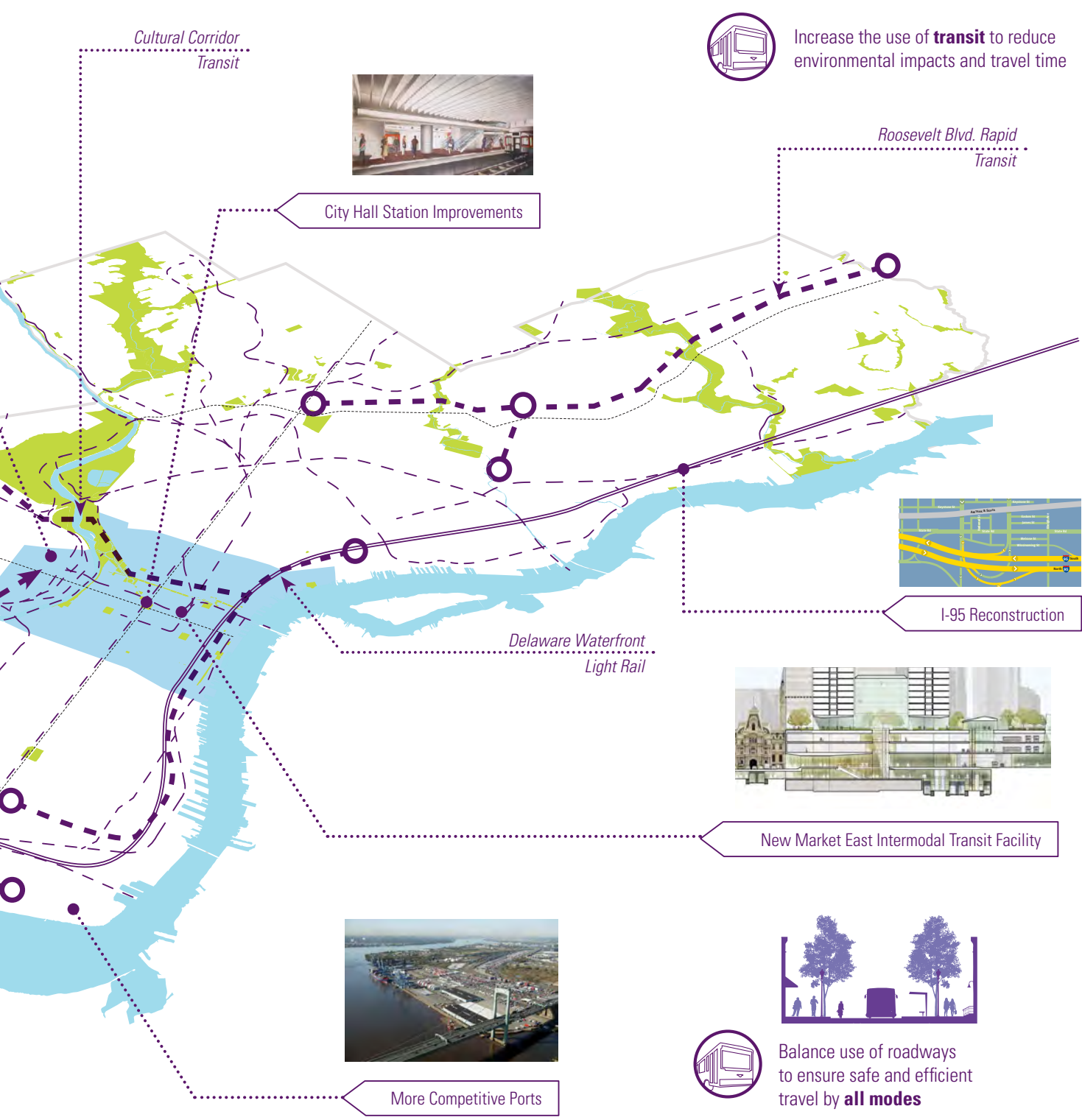
Broad Street Extension to Navy Yard



Reinforce access to and use of **broadband** telecommunications infrastructure as a vital public utility



Provide environmentally supportive, affordable, and reliable **utility services** to all customers



Increase the use of **transit** to reduce environmental impacts and travel time



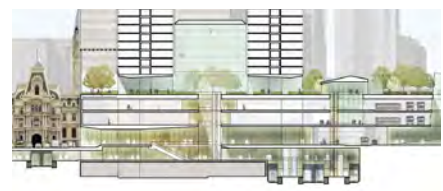
City Hall Station Improvements

Roosevelt Blvd. Rapid Transit



I-95 Reconstruction

Delaware Waterfront Light Rail



New Market East Intermodal Transit Facility



More Competitive Ports



Balance use of roadways to ensure safe and efficient travel by **all modes**



Enhance the city and regional economy by reinforcing **airports, seaports, and freight rail**

--- Existing Rail (freight and passenger)

○- Proposed Transit

> Transportation

Improve
transportation
safety,
efficiency, and
convenience

Transportation plays a vital role in our daily lives and in the economy of our city and region. Our transportation system determines our options for how we get from our homes to our places of work, and how we travel to schools and libraries, places of worship, restaurants and shopping, medical and business appointments, parks and playgrounds, museums and movies, and to visit friends and family.

Transportation is critical to the economy because it delivers workers to jobs, and products and customers to markets. Transportation brings tourists to Philadelphia to enjoy the many attractions of the city. Philadelphia International Airport is one of the busiest airports in the world and among the fastest growing in the United States, while Amtrak's Northeast Corridor is the busiest passenger rail corridor in the U.S. Freight-related employment in the region totals over half a million jobs (U.S. Bureau of Economic Analysis, 2008).

Historically, transportation infrastructure has been a major determinant of urban form. William Penn's grid system now extends through much of the city and provides a well-connected network that offers drivers, bicyclists, and pedestrians many alternative routes. Buses, trolleys, and trackless trolleys also use the street network to transport thousands of transit passengers, many of whom have no alternative (e.g., no-car households, the elderly, students). The larger transportation facilities—major railways and highways built in the 19th and 20th centuries, as well as rivers, seaports, and airports—provide regional and national mobility, yet may be barriers to movement between bordering neighborhoods.

Because our transit network is a regional system, and because many transportation projects receive federal funds, planning for transportation requires coordination with many agencies outside City government, including the Delaware Valley Regional Planning Commission, the Pennsylvania Department of Transportation, the Southeastern Pennsylvania Transportation Authority, the Delaware River Port Authority, the Philadelphia Regional Port Authority, and Amtrak.



4.1 Transit

Goal: Increase the use of transit to reduce environmental impacts and travel time

Philadelphians benefit from an extensive network of light and heavy rail, trolleys, trackless trolleys, and bus service. These systems have been in place for decades and are becoming more important as fossil-fuel resources diminish and gas prices fluctuate sharply, and as more people move to urban environments. In addition to its convenience and service options, the advantages of transit ridership include its ability to relieve automobile congestion and to reduce air pollution.

Though Philadelphia has great transit “bones,” there is room for improvement. As transit options are enhanced, ridership will increase, and fare structure and service options can be adjusted to encourage even greater service and use. The transit strategies that follow lay out a plan to capitalize on existing transit assets, enhance service options, and address important gaps in service that should be bridged over the next 25 years.

Objectives >

4.1.1 Invest in existing infrastructure to improve service and attract riders.

- a Install a system-wide, seamless, unified fare structure with modern electronic fare collection.
 - Make transfers free or nominally priced.
- b Continue implementation of Transit First policy at the rate of 1-3 routes per year, pending successful results of pilot enhancement project
 - Prioritize routes with a high rate of delay and data demonstrating the benefits of stop consolidation, such as the Route 34 trolley.
- c Support ongoing efforts to improve real time information and wayfinding.
- d Maintain a state of good repair, improve security, and continue to make stations clean, accessible, and safe.
- e Improve transit stops and stations using universal design principles wherever possible.
- f Provide and/or expand secure park-and-ride facilities at regional rail stations where appropriate.
- g Expand the intermodal transit center at 30th Street Station to connect bus, regional rail, high speed rail, and pedestrian and bicycle networks.
- h Rehabilitate City Hall and 15th Street Subway Stations.
- i Expand the intermodal transit center at Market East to connect intra- and inter-city systems and consolidate inter-city buses.
- j Utilize existing regional rail infrastructure to create “City Rail”, an enhanced regional transit network with frequent service and extended hours.
- k Support restoration of regional-rail service to points outside the city.
- l Transform existing trolley infrastructure into a modern network with new ADA-compliant vehicles, level boarding, off-board fare collection, and other operational improvements.
- m Maintain existing transportation infrastructure in districts and corridors where transit can support future land development; remove abandoned infrastructure where no longer needed.

See [THRIVE 1.1.3](#) for more information on transit-oriented development.

4.1.1.d

Definition | *State of Good Repair*

An important goal for the City to achieve is to maintain its built infrastructure in a “state of good repair.” With a constrained budget and aging systems, this is not a small feat, but one that is necessary to keep our roads safe, our transit efficient and functional, our water and sewers flowing, and to ensure that the City continues to provide services to all citizens. In 2009, Greenworks Philadelphia set a goal to bring 80 percent of all City infrastructure into a state of good repair by 2015. This includes modernizing and adapting infrastructure to meet stricter energy efficiency requirements and to ensure that it meets the needs of both current and future users.



Queen Lane Station

4.1.1.h

Rehabilitate City Hall and 15th Street Stations

City Hall and 15th Street Stations are gateways that serve nearly 60,000 subway passengers daily. They also are important junction points with regional rail lines. Heavy usage underscores the need to improve these stations and keep them clean and safe.



*15th Street Station Rendering
(Source: SEPTA Capital Program, 2010)*

4.1.1.i Case Study Market East Intermodal Center

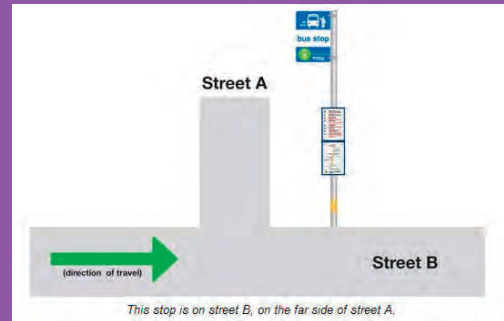
The 2009 strategic plan for Market Street East by the PCPC envisions the district as Philadelphia's Main Street with focused improvements on intermodal transportation. Among many recommendations, the plan calls for replacement of the existing Greyhound Bus facility with an intermodal transit center.



The new center would be physically connected to a redesigned Gallery Mall permitting regional rail and subway passengers to access inter-city buses more easily, thereby improving ridership. Bus traffic to the center would be reoriented, with several blocks of the Filbert and Arch Streets converted to two-way traffic to accommodate local and regional commuter buses. This has the added benefit of reducing bus congestion by two-thirds during peak hours on Market Street, improving air quality and reducing traffic noise along Market Street. Improved signage would direct passengers between the modes of transportation.

4.1.1.b Case Study Transit First

The City's Transit First policy is defined as, "the prioritization of the safe, comfortable, reliable, and efficient movement of transit vehicles and riders." The City and SEPTA are collaborating on implementing Transit First through a variety of methods that have the potential to positively impact all components of the city's transit network. As part of the concept, the City is considering strategies such as modifying and consolidating bus stops and reallocating parking spaces. One pilot route under evaluation calls for the use of far side stops where there is high bus ridership and frequent scheduling delays. In a far-side stop, the bus passes through the intersection to stop on the far-side of the traffic light, making it easier for it to pull back into traffic, and reducing the chances of the bus blocking vehicles while stopped. The resulting benefits are decreased travel times for both bus passengers and drivers sharing the roadway, improved schedule reliability, and reduced roadway congestion.



(Source: <http://www.translink.com.au/travel-information/how-to/how-to-find-your-bus-stop>)

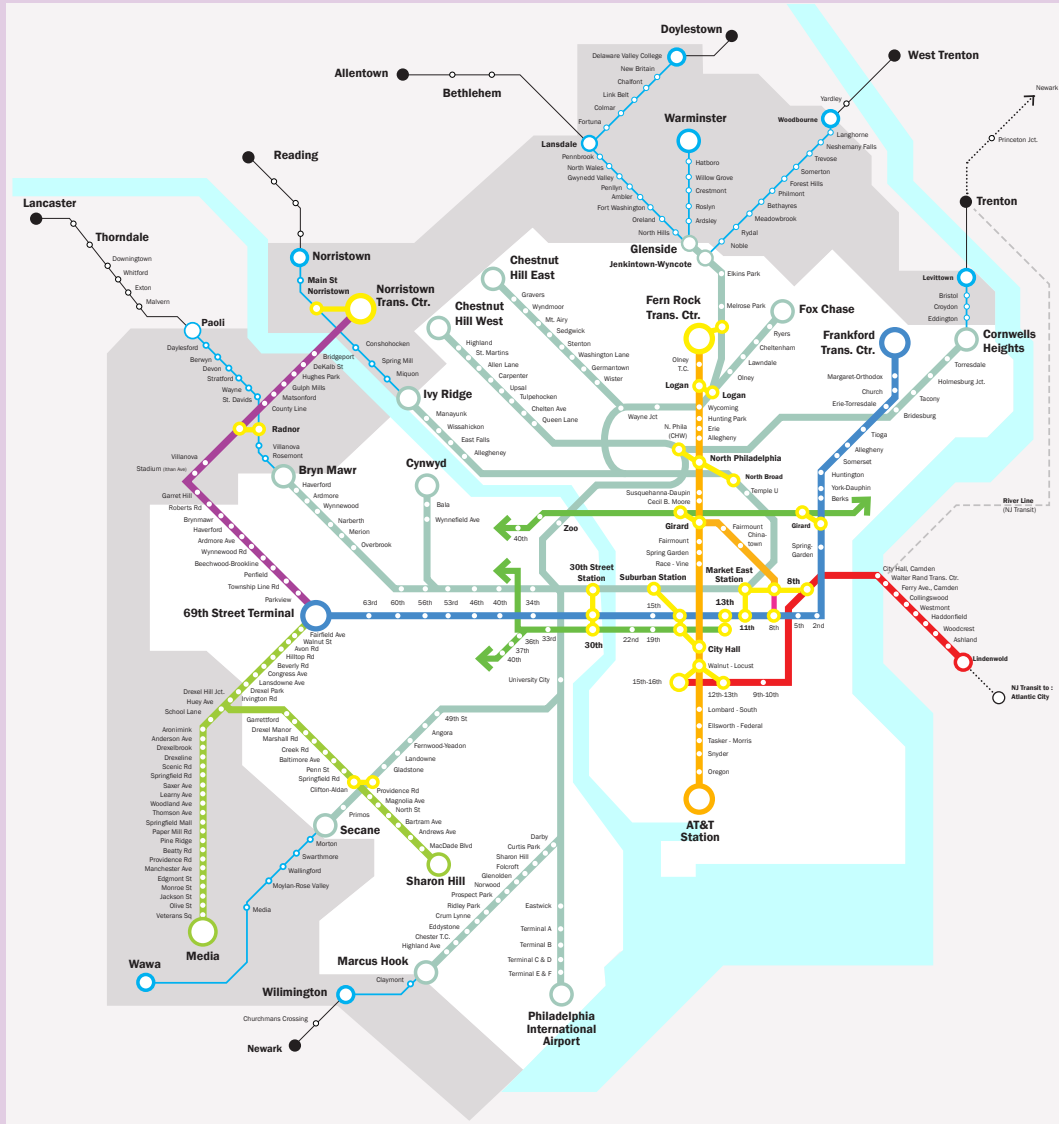
4.1.1.g Case Study 30th Street Station Gateway

The 2900 block of Market Street comprises a monumental gateway into the city and a key segment of the Market Street corridor. The segment connects Center City to the University City section of West Philadelphia, and its adjacency to 30th Street Station provides a key arrival point to visitors of the city. Currently, the area is dominated by automobile traffic, offering few amenities that would suggest a desirable destination for other travelers. Planned improvements to this area, coined "Station Square," intend to create a grand public space that will signify the ceremonial arrival and departure functions of the train station and mark a transition between Center City and West Philadelphia.



*30th Street Station looking east on Market Street
(Source: Station Square Urban Design Study, 2008)*

4.1.1.j City Rail Concept



(Source: SEPTA with revisions by PCPC)

Philadelphia has a wealth of regional rail infrastructure that could be leveraged to improve service and to attract potential riders who are currently bypassed by rail transit. The City Rail concept is a proposal for a new two-tiered service arrangement with (1) additional stations in a core area to offer more frequent and extended service to local travelers and (2) a more traditional express and limited schedule outside of the core area that would accommodate longer distance commuters. The system could be rebranded and the fare structure streamlined to increase ridership and improve overall regional mobility. On the above graphic, the two shaded areas represent the two-tiered structure and inner-and outer-ring rail areas. Potential implementation steps include:

- Continue to install high-level platforms at all Regional Rail stations to facilitate faster turnaround and ADA accessibility
- Identify locations where the re-opening of shuttered Regional Rail stations would increase ridership
- Identify locations within city limits where new Regional Rail stations can open to provide rail service to neighborhoods presently served only by bus
- Expand the “central zone” of Regional Rail fare to include all stations within Philadelphia County to increase transit equity for all residents
- Pilot higher-frequency service on one Regional Rail line between Center City and an intermediate point with high ridership
- Expand this higher-frequency City Rail line to multiple lines pending success of pilot
- Rebrand select Regional Rail lines as part of the rapid-transit system

4.1.1.g 30th Street Station: Critical Transit Hub



30th Street Station is a key gateway connecting 3.7 million passengers per year with extended locations and 20,000 commuters per day within the city and region. It is among the busiest Amtrak Stations in the U.S. Its location along the Schuylkill waterfront and proximity to major institutions provide a unique opportunity to combine planning efforts and improve access to the local community as 30th Street renovations are underway.

Station	Total Annual Ridership (2009)
New York (Penn Station)	7,832,874
Washington, D.C. (Union Station)	4,278,930
Philadelphia (30th Street)	3,675,761
Chicago	3,080,564
Los Angeles	1,475,920
Boston (South Station)	1,287,615
Baltimore (Penn Station)	932,827

(Amtrak National Fact Sheet, 2009)

4.1.2 Extend and introduce new technological advances to the transit network to serve new markets.

- a Build a new transit extension along Roosevelt Boulevard corridor through Northeast Philadelphia.
- b Build a new subway station on West Market Street between 15th and 30th Street Stations.
- c Study and implement a transit connection between Center City and cultural attractions on the Benjamin Franklin Parkway and in the Centennial District, choosing the most appropriate mode relative to demand, cost, urban design, and transit-equity considerations.
 - Commission a feasibility study of potential alignments and appropriate modes for service connecting to the Waterfront Line at a proposed Convention Center stop, including options along and parallel to the Parkway.
 - Examine the possibility of a light rail or bus rapid transit network building off the proposed Waterfront Line, utilizing the existing Route 15 right of way, the to-be-determined Centennial service alignment, as well as previously proposed extensions from Pier 70 to AT&T Station.
 - Consider proposed changes in land use along these lines when modeling projected ridership, including transit-oriented development at the Sports Complex and the Girard Avenue El Station, and higher density development along the Central Delaware as proposed in DRWC's Plan for the Central Delaware.
 - Examine intermodal opportunities at 52nd Street and Lancaster Avenue with reopening of the Regional Rail station.
- d Build Delaware waterfront light rail transit with direct connections to existing lines.
 - Consider utilizing Arch and Race Streets for the Center City alignment, studying the long-term possibility of a transfer station in the 13th Street underpass of the Convention Center.
- e Extend the Route 36 light rail to the Eastwick Transportation Center.
- f Extend the Broad Street Subway south to the Navy Yard.
- g Link proposed Delaware waterfront light rail to the Broad Street Subway at AT&T Station.
- h Support continued investment in existing and updated rail infrastructure in the Northeast and Keystone rail corridors to link Philadelphia to Washington, D.C., Boston, Pittsburgh, and intermediate points by high speed rail.
 - Encourage increased investment in high speed rail to decrease travel times between major metropolitan areas and increase the connections between Philadelphia and other east-coast cities.

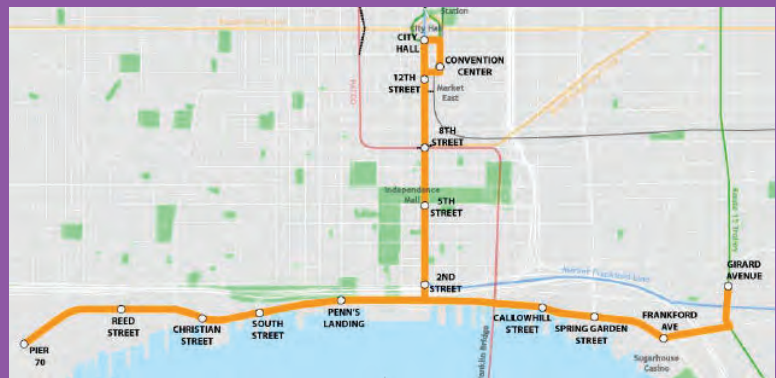
4.1.2.c Case Study Cultural Corridor Transit

Philadelphia boasts an exceptional collection of cultural, recreational, and entertainment opportunities stretching north and west from Center City along the Benjamin Franklin Parkway and across the Schuylkill River into the southern reaches of West Fairmount Park. These popular institutions, including the Philadelphia Museum of Art, Philadelphia Zoo, Please Touch Museum, and Mann Center draw thousands of locals and tourists alike, but sometimes severe congestion and indirect transit service make access difficult. The 2005 Fairmount Park Centennial District Master Plan envisioned a new transit connection stretching from 52nd Street and Lancaster Avenue to Center City, linking these major visitor destinations and the surrounding neighborhoods while taking advantage of existing roads, bridges and rights-of-way. The 52nd Street/Center City (City Branch) Corridor Alternatives Analysis, undertaken by SEPTA and the City in the same year, identified and evaluated alternative modes and alignments to improve transit service and access in this vitally important corridor.



4.1.2.d Case Study Delaware Waterfront Light Rail

The Central Delaware Waterfront is perhaps one of the most valuable city assets that can be transformed in the near future. There are several plans to revitalize the waterfront, many of which include improved means of public access through transit. In a 2010 study, Delaware Waterfront Transit Alternatives Analysis, DRPA/PATCO projects that by 2030 about 33,700 jobs will exist within a half-mile of the waterfront. A proposal to establish a new light rail line along Delaware Avenue would improve access to these jobs from around the city and the greater Philadelphia region and



(Source: Delaware Waterfront Transit Alternatives Analysis, 2010)

promote smart development of the waterfront amenities. Three service routes are being studied: (1) Waterfront Route (Girard Avenue Market-Frankford Station to Pier 70); (2) South Route (City Hall/Convention Center to Pier 70); and (3) North Route (City Hall/Convention Center to Girard Avenue Market-Frankford Station).

4.1.2.f Case Study Broad Street Subway Extension to Navy Yard

The Navy Yard is emerging as an important employment center for Philadelphia. More than 100 companies are located on the one-thousand-acre site generating over 7,000 jobs. In the 2004 Master Plan for the Navy Yard, Philadelphia Industrial Development Corporation (PIDC) projected future growth of up to 25,000 jobs. That plan presents a vision of the Navy Yard as a 24/7 urban mixed-use center with commercial, industrial, and limited residential uses predicated on energy efficiency and sustainable practices with less dependency on automobiles. To achieve this vision, a reliable mode of rapid transit to the Navy Yard is needed. The site is currently accessible only by car and by SEPTA shuttles connecting to the AT&T Station on a limited service schedule.

A 2008 study by Parsons Brinckerhoff determined a 1.5-mile extension of the Broad Street Subway from its terminus at AT&T Station to the Navy Yard as feasible. As proposed, the extension would be built with two new stations at the Navy Yard: one at the Corporate Center and the second at a marina district proposed in the 2004 master plan. The two stations would support the full build-out of the Navy Yard Master Plan and generate ridership of approximately 8,000 daily boardings by 2035. The cost of the extension is estimated at approximately \$350 - \$375 million. PIDC is exploring funding for the extension, including federal, state, local, and private sources.



(Source: Broad Street Line Extension Feasibility Study, 2008)

The two stations would support the full build-out of the Navy Yard Master Plan and generate ridership of approximately 8,000 daily boardings by 2035. The cost of the extension is estimated at approximately \$350 - \$375 million. PIDC is exploring funding for the extension, including federal, state, local, and private sources.

4.1.2 Major Transit Improvement Proposals

Philadelphia's mass transit network serves much of the city, but some areas remain unconnected. The major transit proposals indicated here would extend quality, high-speed transit service to major new markets across the city. This would help reduce auto dependence and congestion, and improve connections between residences, employment, and recreation for city and regional riders.



4.1.2.h Case Study High Speed Rail in Philadelphia

Philadelphia is ideally positioned in the center of the Northeast Megaregion and would greatly benefit from high-speed rail service (HSR). The Northeast Corridor route has a culture of rail ridership, population growth, and a demand for inter-city travel that cannot be met by current transportation modes. The Amtrak Northeast Corridor route has historically been the most popular route in the national passenger operation system. Recent national momentum is building towards true high-speed rail, which could reach speeds of up to 220 mi/hour and travel the entire distance of Boston to Washington, D.C., in less than 3.5 hours. In 2010, Amtrak created



(Source: Amtrak)

a high-speed rail department in Philadelphia and, in early 2011, requested proposals for financing a new high-speed corridor from Boston to Washington, D.C. Projects in Philadelphia as a result of a high-speed rail system could include a seven-mile tunnel beneath the city connecting the International Airport and Market East Station and new tracks and station infrastructure to accommodate the system. The proposed HSR system would bring 10.5 million additional people within one hour of Philadelphia, which will enable Philadelphia businesses to draw from a larger workforce and allow for new levels of collaboration across industries.

High Speed Rail in the Northeast Megaregion: From Vision to Reality (Source: PennDesign 2011)

4.1.3 **Coordinate land use decisions with existing and planned transit assets to increase transportation choices, decrease reliance on automobiles, increase access to jobs, goods, and services, and maximize the economic, environmental, and public health benefits of transit.**

- a Assist transit operators in drafting an official transit-oriented development (TOD) policy to clarify roles in the process.
- b Assess and digitally catalog locations and status of fixed transit infrastructure to create a database to enable the City, transit operators, communities, and developers to make informed decisions regarding everything from site layout to ingress/egress configurations to placement and design of transit stop locations and amenities.
 - Identify funding for consultants or new staff to complete fixed transit infrastructure disposition and database.
- c Assess and digitally catalog current transit operator's and the City's current property holdings to create an accurate record of entitlements to enable development of a database of TOD opportunities and best understand options for disposition.
 - Identify funding for consultants or new staff to complete property entitlement assessment and database.
 - Establish several TOD priority sites within the City and take steps to ensure timely and successful development.
- d Encourage collaboration across the Mayor's Office of Transportation and Utilities (MOTU), PCPC, and transit operators to draft transit-oriented (or transit-friendly) development guidelines to assist the development community in crafting appropriate proposals for different types of TOD nodes.
- e Engage MOTU, transit operators, and communities throughout the district planning process as TOD nodes are identified and classified, and surrounding land use and zoning recommendations are developed.
- f Investigate seed funding for a Transit Revitalization Investment District (TRID) fund that developers could access to offset the cost of initial infrastructure investments for TOD projects.
- g Improve inter-modality at TOD nodes by improving bicycle and pedestrians facilities at stations (bicycle parking, signage, crosswalks, etc.).
- h Facilitate active transportation by establishing safe, marked walking and biking routes between stations and other key destinations such as schools, recreation centers, waterfronts, and neighborhood centers.
- i Maximize mobility for seniors, children, and other transit-dependent and vulnerable populations by mixing residential and commercial uses around stations where feasible.
 - The proposed Zoning Code provides a bonus for developments that incorporate mixed-income housing within TOD nodes on parcels zoned CMX-3, which allows mixed-use development.

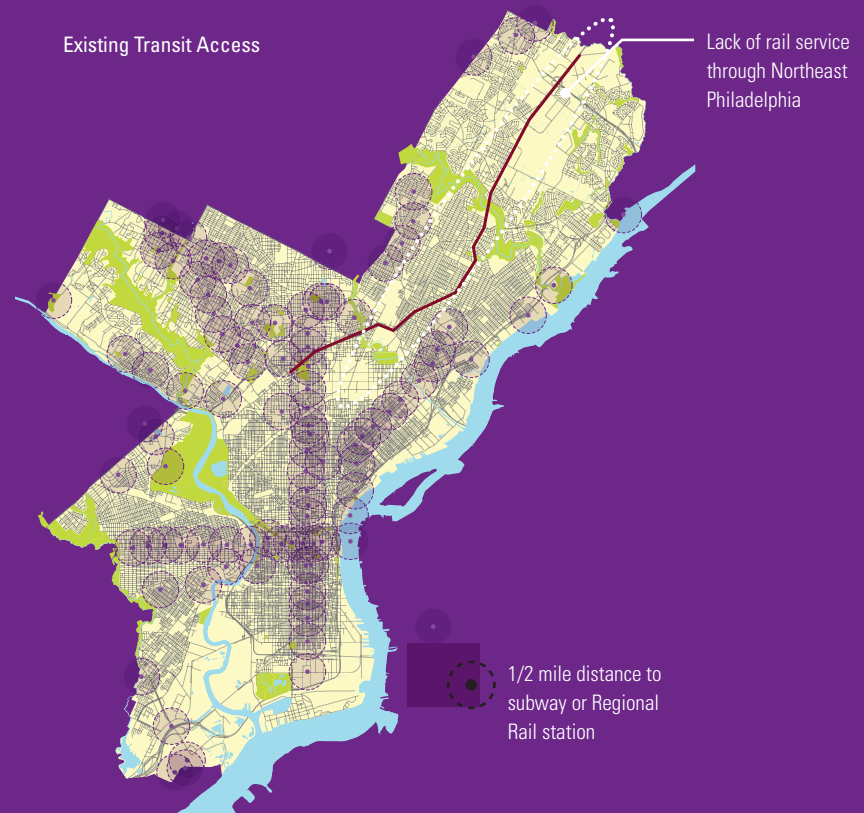
4.1.2.a Urban Design Study Roosevelt Boulevard Transit Proposals

Northeast Philadelphia still remains one of the least connected areas of the city in terms of transit access. Although 25 percent of residents depend on public transportation, long travel times and the need for multiple transfers greatly hinder the use of transit. Many residents of Philadelphia support a transit extension to Northeast Philadelphia.

The 2003 Roosevelt Boulevard Corridor Transportation Investment Study examined ways to enhance the livability of Northeast Philadelphia by improving the transportation system. The study investigated a variety of transportation alternatives including options for heavy-rail and light-rail transit, highway improvements, and express-bus transit. The preferred alternative that emerged proposed a new heavy subway/elevated line along Roosevelt Boulevard that connected directly into the Broad Street Line's express tracks, for rapid travel to Center City. In addition, that recommendation includes construction of a one-mile extension of the Market-Frankford Line connecting the Frankford Transportation Center to the Roosevelt Boulevard Line. A transfer between the two extensions would be provided at a new Bustleton Avenue Station.

A new heavy-rail transportation option on Roosevelt Boulevard could attract an estimated 124,500 daily boardings and also divert about 83,300 daily trips from automobiles to transit, reducing traffic on Roosevelt Boulevard and I-95. The ridership numbers are comparable to the patronage on SEPTA's two other heavy rail lines.

Since 2003, funding opportunities for major new heavy-rail type projects have diminished significantly. As such, further study is being conducted to determine alternative forms of transit along Roosevelt Boulevard that would be more cost-effective and have the ability to be phased — or built incrementally over time.



The *Roosevelt Boulevard Corridor Transportation Investment Study* (2003) proposed a subway and elevated line in the center median.

4.2 Complete Streets

Goal: Balance use of roadways to ensure safe and efficient travel by all modes.

Pedestrian and bicycle modes of travel are vital to Philadelphians. Trips on foot, transit, or by bike make up 44 percent of total trips, and walking accounts for over one quarter of all trips. In 2010, Philadelphia was rated the fourth most walkable city in the U.S. according to Walk Score. Bicycle use is also growing rapidly, with 2.2 percent of workers commuting by bicycle in 2009 (U.S. Census Bureau). Walking and biking are affordable and active modes of transportation that contribute to a healthy population and improved air quality. Commuting via active modes, as a primary mode or in tandem with public transit, helps residents achieve recommended levels of physical activity by integrating it into daily routines. Bicycle, transit, and pedestrian commuting also lower household costs associated with car ownership and emissions from private automobiles.

Because walkers and bicyclists are the most vulnerable users of the street system, the City adopted a “complete streets” policy to focus attention on making streets safe and comfortable for all user types. Much of the city was developed before the automobile, with narrow streets that are overwhelmed by modern-day demands of traffic and parking. Full accommodation of all modes in these narrow streets is challenging, and not every street can accommodate every mode. However, the adoption and implementation of a complete streets policy will reallocate street space, “calm” traffic, and create a more balanced roadway network for all users.

4.2 One-Way Complete Street



4.2 Definition | Complete Street

Complete streets are roadways designed to provide safe and comfortable travel and designated right-of-way for all users. On June 4, 2009, Mayor Nutter signed an executive order that established Philadelphia as the first city in Pennsylvania to have a complete streets policy. The policy decrees that every city agency should adopt complete streets strategies to balance the needs of multiple users on city streets, with particular attention to the health and safety of the most vulnerable users.

4.2.1 Examples of Complete Streets



Sidewalk standards ensure adequate space for pedestrians to walk comfortably



Spruce Street Bike Lane

4.2.2 Definition | Bike Parking Ordinance

In 2009, City Council passed a bill that requires bicycle parking in various types of development for every 10,000 sq. ft. of floor area; every three dwelling units for a residential building of more than 12 units; every 20 employees in a low-occupancy facility; or every 10 car spaces in public parking lots. In addition, minimum parking requirements for new development can be reduced by up to 40 percent by including car-share spots and up to 10 percent by including bike parking spaces.

Objectives >

4.2.1 Implement a complete streets policy to ensure that the right-of-way will provide safe access for all users.

- a Prepare a complete streets manual as a guide for City agencies and developers.
- b Reconsider width standards for new streets; ensure that there is adequate space for pedestrians, bikes, parking, buses, and cars.
- c Adopt a context-sensitive design classification system for streets to accommodate multiple user groups.
- d As streets are programmed for reconstruction, redesign and rebuild them as complete streets with integrated transit and pedestrian, bicycle, and vehicular safety measures, while minimizing visual clutter.

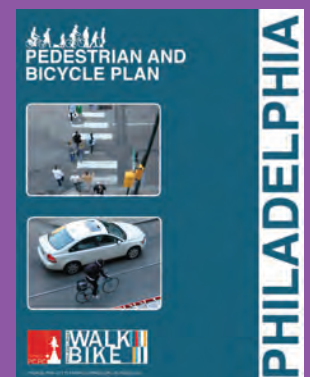
4.2.2 Expand on- and off-street networks serving pedestrians and bicyclists.

- a As recommended in the *Pedestrian and Bicycle Plan for Philadelphia* (2010), build the planned network of bikeways on city streets, including bike lanes, marked shared lanes, and bicycle-friendly streets, supplemented by shared-use sidepaths where appropriate, and connected to the off-street trail network.
- b Fill in key gaps in the sidewalk network and improve the overall surface quality.
- c Add bike racks and bike stations citywide.
- d Require that bicycle parking be included with transportation facilities.
- e Implement a bike sharing program.
- f Identify funding to implement a complete streets and transit furniture system, including covered transit stops, benches, trash cans, and real-time travel information.
 - Consider the city's growing population of residents age 55 and older in prioritizing street furniture improvement.

4.2.2.a Case Study | Pedestrian and Bicycle Plan for the City of Philadelphia

The Philadelphia City Planning Commission released Phase I of the Pedestrian and Bicycle Plan for the City of Philadelphia in 2010, which covers Center City, North Philadelphia, Northwest Philadelphia, and South Philadelphia, and includes citywide policy recommendations. Phase II of the plan will be completed in winter 2012.

The plan analyzed bicycle and pedestrian demand in the study area and established eleven street types in Philadelphia. Pedestrian recommendations include design standards by street type, increased pedestrian signalization, decreasing pedestrian crossing distances, upgraded pedestrian lighting, and sidewalk zone and width standards. Key bicycle recommendations from the plan include bicycle network recommendations by type on major streets in the city, including marked shared lanes, bike lanes, contra-flow facilities, and bicycle friendly streets.



(Source: *Pedestrian and Bicycle Plan for the City of Philadelphia, 2010*)

4.2.3 Improve safety for pedestrians and bicyclists and reduce pedestrian and bicycle crashes.

- a Adopt new sidewalk standards, tied to a street classification system that reflects land use and the levels of pedestrian activity.
See RENEW 9.1.1 for more information on preserving the walkable scale of the city.
- b Revise and enforce the City Code to better protect pedestrian space from sidewalk encroachments and construction disruption.
- c Limit driveways and lay-by lanes in order to protect sidewalks and minimize points of conflict between pedestrians and motor vehicles.
- d Prohibit front-loaded parking in dense residential zoning districts to reduce conflicts with pedestrians, improve streetscape, and preserve on-street parking options where appropriate.
- e Assure that intersections are designed so that traffic operations maximize pedestrian and bicyclist safety and comfort.
 - Create standards for marking crosswalks at mid-block and uncontrolled intersection crossings.
 - Discourage jaywalking by keeping signal cycles short and providing frequent crossing opportunities.
- f Develop a safety education campaign that explains the rules of the road and stresses courtesy for all road users combined with improved enforcement of traffic and parking laws that affect pedestrians and bicyclists.
- g Expand the use of traffic-calming devices to slow traffic and increase safety for all roadway users; Examples include ADA curb ramps, curb extensions, safety signage, median islands, and speed cameras.
- h Launch a pedestrian plaza program, modeled after programs in New York City and San Francisco, that identifies locations to re-allocate excess automobile right-of-way for pedestrian use to improve safety and create attractive open spaces for pedestrians.
 - Build capacity between the Streets Department, the Mayor’s Office of Transportation and Utilities, the Commerce Department, the Philadelphia City Planning Commission, and the Department of Public Health to review, approve, implement, and maintain plazas.

4.2.2.e Definition | Bike Sharing

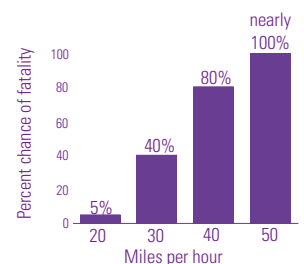
Bike sharing is a system of short-term bicycle rentals where users can access bikes conveniently located at stations and return the bikes to other stations in the system. Bike sharing is currently successful in Montreal, Mexico City, and several European cities. The Philadelphia Bikeshare Concept Study (2010) estimates the cost of a bike sharing system in Philadelphia at \$4.4 million for 1,750 bicycles in and near Center City.



Trial bike share kiosk, Philadelphia

4.2.3 Transportation Fatality Rates

Pedestrian fatalities in vehicle crashes are directly linked to the speed of traffic. This underscores the need to reduce speed by calming traffic on city streets.



(Source: Helsinki Planning Department, 1992)

4.3 Streets and Highways

Goal: Provide a safe and efficient road network that supports planned land uses

Streets and highways connect us to jobs, homes, shopping, recreation, and each other, both locally and outside the region. They provide a convenient and flexible transportation option, and add economic vitality to businesses that thrive on vehicular access.

Since Philadelphia is largely built-out, the City must make upgrades, while striving to bring the roadway system into a state of good repair. In order to keep traffic moving and minimize the negative impacts of idling, the City also needs to limit automobile use in areas that are already congested.

Despite the connectivity that streets and highways bring, they can sometimes act as barriers, especially for people on foot and bicycle. Potential solutions range from identifying highway sections that can be capped to allow direct crossings, to making underpasses safe and comfortable places for pedestrians and bicyclists. The strategies below will help improve access for both passengers and freight and keep everyone traveling safely, comfortably, and efficiently.

Many of these strategies will increase opportunities for physical activity by encouraging people to integrate walking and cycling into their everyday routines, thereby improving public-health outcomes.

Objectives >

4.3.1 Upgrade and modernize existing streets, bridges, and traffic control infrastructure to ensure a high level of reliability and safety.

- a Prepare and implement a long-term infrastructure plan for the street and highway system.
- b Incorporate green streets infrastructure into street and highway improvements wherever practicable, including curb extensions, stormwater planters, and street tree plantings that are compatible with adequate clear width for pedestrians.
- c Rebuild deteriorating sections of I-95 in conjunction with other city and regional transportation improvements to ensure a high level of passenger and freight mobility along the Northeast Corridor and to correct the disconnect between residents and the waterfront.

4.3.1

Highway Network

Philadelphia's interstates create important connections to the region and beyond.



4.3.2 Control automobile congestion through traffic management and planning.

- a Add parking maximums to the zoning code and rent or sell parking separately from housing units in new residential-development projects.
- b Require traffic and parking studies for rezoning requests and new development over certain thresholds.
- c Adjust on-street pricing at meters and kiosks to keep occupancy at 85 percent of capacity, so that one or two spaces per block are always available.
- d Discourage the creation and provision of surface parking lots along pedestrian-friendly and transit-accessible corridors to encourage non-automotive transportation in neighborhood centers.

4.3.2.c Parking Kiosk

Parking kiosks typically add several parking spaces per block and allow flexibility in parking pricing.



4.3.3 Improve highway access for goods movement.

- a Improve signage and infrastructure (e.g., highway ramps) to improve access to local multi-modal facilities.

4.3.4 Improve pedestrian connections across major rights-of-way.

- a Work with PennDOT to improve existing right-of-way crossings, and add crosswalks, pedestrian and vehicle signals, lighting, and sidewalks where right-of-ways intersect with neighborhoods.
- b Work with PennDOT as highway segments, such as I-95 Interchanges, are rebuilt to identify design solutions that will improve pedestrian crossings and access between neighborhoods and park and waterfront amenities
- c Hold design competitions to produce creative solutions for improving pedestrians' experience on pedestrian highway crossings; make Philadelphia known for its approach to this issue (see Race Street Connector case study).

4.3.4.b Case Study | I-95 Interchange Improvements

The I-95 Corridor through Pennsylvania, parts of which were completed 50 years ago, faces a long and expensive period of reconstruction and modernization. Due to physical deterioration and outdated design features, I-95 between Race Street in Center City and Bleigh Avenue in Holmesburg was selected by PennDOT in 1999 as the first segment of the corridor to be rebuilt. This segment incorporates five interchanges and total estimated construction costs of \$2 billion. PennDOT is designing projects within this segment to ensure high levels of highway reliability and safety, improve traffic flow, and reduce environmental impacts on adjoining neighborhoods. For example, the 1.4 mile long Cottman-Princeton (CPR) section of the project features: new exit and entrance ramps; four continuous thru-lanes in each direction; reconstruction of bridge structures supporting the main highway; improved connections between neighborhoods west of I-95 and the Delaware River to the east; storm water management; and traffic signal upgrades and improved pedestrian crossings on surrounding streets. Completion of Section CPR is expected by 2017.



4.4 Airports, Seaports, and Freight Rail

Goal: Enhance the city and regional economy by reinforcing airports, seaports, and freight rail

Airports, seaports, and freight rail facilities are responsible for a great deal of the economic activity in the city and region. These facilities act as gateways to the world, providing versatile options for travel, goods movement, and communication. As air and shipping traffic increases, the City will compete to maintain and expand its share of international and domestic goods and passenger traffic.

Major plans are underway to accommodate increased air, marine, and freight rail traffic. The Philadelphia International Airport (PHL) has an expansion plan, the Capacity Enhancement Program (CEP), to reduce delays in air travel and enhance capacity of the airport. The plan includes strengthening current ground connections to PHL and making use of neighboring land for compatible uses. The CEP will increase the sizable impact that PHL has on the regional economy and transportation infrastructure and reinforce the role of PHL as a major Philadelphia gateway for goods and visitors alike. The Philadelphia Regional Port Authority is dredging the Delaware River, is planning to add a large new port facility, and is improving intermodal connections. The Delaware Valley Regional Planning Commission (DVRPC) and Pennsylvania Department of Transportation (PennDOT) maintain long-range visions for freight that involve modernizing rail assets in the city. Implementation of these rail plans in partnership with rail operators will ensure that Philadelphia's port and rail system work together to provide efficient goods and passenger movement.

4.3.4.b Case Study | Race Street Connector

This is an early action project of the Delaware River Waterfront Corporation (DRWC) and will be one of the first major public improvements completed as part of the Master Plan for the Central Delaware Waterfront. The Race Street Connector links the Race Street Pier with Old City through lighting, artwork, signage, a new bike lane, and an improved sidewalk. Public and private foundation money was secured to fund design and implementation, and a competition for public artwork was critical to the collaborative nature of the process. This proactive and coordinated approach to design and implementation serves as a model for future connectors. Both public and private investment is needed to make future connections successful between neighborhoods and waterfront recreation, open space, and entertainment.



(Source: Delaware River Waterfront Corporation)

Objectives >

4.4.1 Strengthen the airports' global and local connections.

- a Enhance the capacity of Philadelphia International Airport (PHL) to reduce delay by implementing the Capacity Enhancement Program.
 - Implement airfield improvements.
 - Embark on longer-term land-side improvements beyond current PHL footprint.
- b Integrate PHL more fully with the region's bus system.
- c Upgrade transit service between PHL and the Metropolitan Center, particularly at 30th Street.

See [THRIVE 2.1.2](#) for more information on strengthening PHL as a part of metropolitan subcenter.
- d Support continued enhancement of Philadelphia Northeast Airport (PNE) as a key reliever for PHL and as a corporate airport serving Philadelphia and surrounding counties.

4.4.1.a Case Study PHL Capacity Enhancement Program

The Philadelphia International Airport is a major transportation asset connecting over 30 million people annually to the nation and the world. In 2009, PHL was the 11th-busiest airport in the world, but also the 6th-most delayed large-hub U.S. airport. The Capacity Enhancement Program (CEP) will reduce this problem through improvements to the airfield, terminals, and other property, as well as to the roadways on or near the airport.



Philadelphia International Airport

4.4.2 Elevate the competitive position of Philadelphia ports on the Eastern Seaboard.

- a Implement the Philadelphia Regional Port Authority *Southport Master Plan*.
- b Preserve and enhance the multi-modal capacity serving the port to move goods faster between destinations.
 - Implement better signage and ensure reliable access for trucks.
 - Maintain and repair multi-modal infrastructure.
- c Complete dredging and maintain the Delaware River channel depth at a minimum of 45 feet to allow the passage of large ships.

4.4.3 Modernize freight rail assets to ensure efficient goods movement to and through Philadelphia.

- a Support recommendations in DVRPC and PennDOT's long-range vision plans for freight.
 - Reinstate freight rail access on 60th Street industrial track.
 - Accommodate double-stacked containers.
- b Coordinate with planned improvements to passenger rail.

4.4.2 Major Mid-Atlantic Seaports



The Greater Philadelphia port system is a major competitive center of maritime industrial commerce on the East Coast.

Port Volumes (short tons, 2008)

New York/New Jersey	153,480,226
Baltimore	43,412,662
Paulsboro	36,351,709
Philadelphia	32,282,853
Marcus Hook	26,670,971
New Castle	6,867,709
Camden-Gloucester	6,262,945
Chester	4,121,776
Wilmington	3,979,109
Trenton	1,384,119
Greater Philadelphia	115,921,191

(Source: American Association of Port Authorities, 2008)

4.4.2.a Case Study Philadelphia Regional Port Authority (PRPA) Southport

Port activity in Philadelphia contributes to over 5,000 jobs, generates at least \$1 billion worth of economic output to the region, and adds \$12 million in tax revenues to city coffers annually. The Philadelphia port system remains competitive due to its proximity to a dense population base, a strong labor force, an expansive network of road and rail infrastructure, and its specialization in the “perishables” market. The City supports the efforts of PRPA to dredge the Delaware River to a minimum of 45 feet and to build the Southport Marine Terminal with new terminals, berths, and cranes to capitalize on a growing international shipping market.



(Source: Philadelphia Regional Port Authority)

> Utilities

Adapt utility services to changing technology and consumption patterns

Public and private utility companies and City agencies process and distribute energy, information, water, heating and cooling, and handle the disposal and recycling of wastewater and solid waste for Philadelphia's residents and businesses. This is accomplished through a vast infrastructure of cables, conduits, pipes, sanitary- and storm-sewer lines, transmitters, signals, vehicles, buildings, tanks, and wireless infrastructure. Some of these systems rely on infrastructure that is literally hundreds of years old (e.g., some sewer and water lines), whereas other infrastructure is new and changing rapidly (e.g., best management practices for stormwater and technology innovations).

How society consumes and conserves energy and nonrenewable resources is a topic of much concern. Cities, by design, are both significant and efficient consumers. The consumer base is large, but there is potential for efficient utility networks because of density of development. Like many older cities that experienced their greatest growth during the late-19th and early-20th centuries, Philadelphia has a dense core surrounded by less-dense, more recent development. The denser areas offer opportunity for efficient delivery of services, but are typically where older infrastructure exists. Conversely, newer infrastructure is located in places where the development is more sprawling. As the objectives in this section demonstrate, utility users in Philadelphia will benefit greatly from utility efficiency measures, reduction and reuse of resources, investment in emerging energy-reduction innovations, and strategic investment in utility infrastructure upgrade and expansion.



5.1 Consumption, Capacity, and Condition

Goal: Provide environmentally supportive, affordable, and reliable utility service to all customers

Most residential, business, and institutional consumers are concerned with utility cost, availability, and quality. For utility providers, these concerns translate directly into responsibilities that address consumption patterns, system capacities, and the condition of existing and planned infrastructure.

Regardless of the utility, increased consumption generally means increased monetary and environmental costs. The City aspires not only to comply with, but exceed state and federal environmental regulations while becoming a model for efficiency in the management of energy, water, and waste.

Utility capacity, roughly defined as the ability to provide adequate, reliable, and efficient service to meet demand, is a core function of cities. For Philadelphia, this includes efforts to accommodate a growing demand for cleaner energy alternatives and to advance innovation in the fields of cogeneration and waste capture.

Perhaps most importantly, the City and utility providers need to address the condition of an aging utility infrastructure. Achieving a state of good repair for all infrastructure is essential to the proper functioning of the city.

Objectives >

5.1.1 Reduce electricity, natural gas, and water consumption to reduce financial and environmental costs.

a Implement energy and water conservation measures.

See RENEW 7.1 and 7.2 for more information on improving air and water quality.

- Focus on buildings: retrofit existing buildings and change building and zoning codes to encourage energy efficiency in new development.
- Implement energy-efficiency programs developed by the utility companies and/or identified in *Greenworks Philadelphia*.

b Continue innovative ways to reduce and control stormwater runoff to reduce burden on existing sewer system.

See RENEW 7.2.3 for more information on stormwater management.

5.1.2 Achieve reductions in waste through reuse, recycling, and composting of solid-waste materials.

a Ensure adequate recycling bin/receptacle distribution to homes and apartment buildings to improve recycling participation rates.

- Increase oversight by City agencies to enforce waste reduction and recycling

b Encourage food and organic waste composting on a commercial scale to achieve greater waste reduction rates and environment benefits for compost use.

5.1.1.a

Greenworks Philadelphia

Greenworks Philadelphia (2009) is an ambitious plan that sets 15 sustainability targets in the areas of energy, environment, equity, economy, and engagement to make Philadelphia the greenest city in America by 2015.

Released by the Mayor's Office of Sustainability in the spring of 2009, many facets of the plan have already been initiated, such as adding bicycle lanes to reduce vehicle miles travelled and increasing the number of green roofs to reduce stormwater impacts and keep the city cooler.

5.1.3 Ensure adequate utility capacity to serve customers.

- a Support cleaner energy alternatives by ensuring sufficient land and infrastructure and reducing regulatory barriers.
 - Accommodate future energy distribution and generation needs with appropriate locations and amounts of land zoned for utilities.
 - Support market innovations for powering of alternatively fueled vehicles.
 - Ensure that development regulations allow for solar, wind, geothermal, biogas, and hydro-electric energy production.
- b Increase amount of energy produced by cogeneration and waste capture.
- c Preserve land for water and wastewater facilities and potential expansion.
- d Incorporate appropriate information technology infrastructure in all city projects.
- e Reduce peak demands and the associated need for expensive peak capacity.

5.1.4 Modernize and bring the condition of existing utility infrastructure to a state of good repair.

- a Strategically and systematically replace obsolete water, sewer, natural gas, and communications infrastructure.
 - Use new technologies to better monitor the condition of infrastructure.
- b Continue to coordinate improvements between utility and streets projects.

5.1.1.a Case Study | Focus on Buildings: Energy Innovation

Philadelphia strives to be a leader in green industry, sustainability, and energy conservation in the United States. This is not a small task for a city that is already built, with many buildings dating back 100 or even 200 years. In order to address the role that buildings play in energy consumption, the Greater Philadelphia Innovation Cluster has secured up to \$130 million in federal grants from the Department of Energy to build a national center for energy-efficient building research, education, policy, and commercialization at the city's innovative Navy Yard. Among the planned projects is one to develop the tools, methods, and policies necessary to transform the building industry into a model of energy efficiency and independence, and another using the Navy Yard's utility network as a test bed for new "smart grid" technologies.



(Source: Philadelphia Industrial Development Corporation)

5.1.2 Reduction of Solid Waste Entering Landfills

One of the biggest differences Philadelphians can make to their environment is through the reduction and recycling of waste. The City aims to divert 70 percent of solid waste from landfills by the year 2015 by encouraging reduction and recycling programs and investigating the potential for energy-from-waste capture. At \$65 per ton of waste, the City currently spends \$47 million annually. These fees, combined with the City's collection expenses, cost the City a total of \$100 million annually. A 70-percent reduction would reduce the City's annual solid waste disposal expenses dramatically.



(Source: Philadelphia Streets Department, 2010)

5.1.1.b Case Study | Philadelphia's Stormwater Management Program

The Philadelphia Water Department (PWD), working collectively with other City agencies, has made great strides in bringing the city's stormwater-management system into the 21st century with award-winning, sustainable practices. Over the next two decades, PWD plans to convert one-third of existing impervious cover in combined sewer areas to pervious cover, to filter rainfall, reduce the burden on infrastructure, reduce overflow to our waterways, and provide citizens with places to play, fish, relax, and reconnect with nature.



(Source: Philadelphia Water Department)

5.2 Broadband Infrastructure

Goal: Reinforce access to and use of broadband telecommunications infrastructure as a vital public utility.

Broadband is loosely defined as a permanent high-speed network connection for transmitting data and telecommunications. The technology has proliferated since the rise of personal computing at the turn of the century and is as vital to commerce and the flow of information as roads and rail. There is virtually no industry or institution not impacted by the power of this new utility to efficiently transfer ideas, images, and data. In an information-oriented economy and culture, innovation is ignited by access to broadband Internet and innovation is a key economic driver. Individuals, businesses, and institutions located in Philadelphia are well positioned to produce technological innovations through a built-out system of fiber, cable, and wireless infrastructure. To foster the economic potential of this infrastructure, the City would benefit from a long-term plan on how best to maintain and utilize broadband in order to attract and retain businesses and citizens, and to reduce the operational costs of government and improve services.

Despite the nearly ubiquitous commercial availability of broadband in Philadelphia, there is a risk of a widening “digital divide” between those who use and benefit from broadband and those who do not. In a city of 1.5 million people, nearly half of Philadelphia residents cannot afford broadband Internet access in their own homes or lack stable housing, and therefore, a dedicated place to access the Internet (Knight Center for Digital Access, 2010). These individuals are likely to be the most economically disadvantaged in Philadelphia and live in neighborhoods with highest rates of unemployment and lowest rates of educational attainment. As the mechanisms by which individuals find and apply for jobs, obtain information about their community, continue their education, and access public services increasingly migrate to the Internet, it is important for the City to recognize that a digital world presents another set of challenges for economically disadvantaged residents of Philadelphia.

Objectives >

5.2.1 Prepare a long-term plan for maintenance and use of City-owned broadband infrastructure and wireless assets.

- a Create and maintain a GIS inventory of broadband services, wireless access points, and public computing centers in Philadelphia including National Telecommunications and Information Administration (NTIA) Community Anchor Institutions.
- b Build upon City government initiatives to maximize use of fiber and wireless assets to reduce the cost of the data and voice communications and to catalog, track, and improve management and delivery of City services.
- c Increase capacity for next-generation broadband connectivity, starting with Gigabit technology and looking beyond to future connectivity innovations.
- d Use existing City-owned wireless assets to enhance public safety and productivity of city employees and to generate revenue from utilities adopting wireless meter systems using the City’s network.

5.2.2 Expand affordable access to broadband and promote digital literacy programs among low-income populations of the city.

- a Support the Freedom Rings Partnership to increase the availability and adoption of broadband by economically disadvantaged residents by expanding collaborations with service providers and community service organizations.
- b Support the Free Library System's Wi-Fi hotspot initiatives and digital literacy programs targeting underserved areas of the city.
- c Create wireless hotspots in the Fairmount Park system and at key public locations using the City's Wi-Fi assets.

5.2.3 Encourage technical innovation and recruitment of high-tech businesses.

- a Strategically deploy advanced digital infrastructure at designated "technology clusters" to attract and retain high-tech business and research and development jobs.
- b Install Wi-Fi services in all public transit systems including city buses and regional trains to ensure uninterrupted telecommunications and productivity during commutes.

5.2.2.a Case Study | Freedom Rings Partnership's Public Computing Centers

The Freedom Rings Partnership is a collaboration of grassroots organizations, City government, and universities that brings Internet access, training and technology to low-income communities across Philadelphia. Initiated by the City's Division of Technology (DOT), the Partnership secured \$6.4 million in funding from the American Recovery and Reinvestment Act's (ARRA) Broadband Technology Opportunity Program in 2010 to

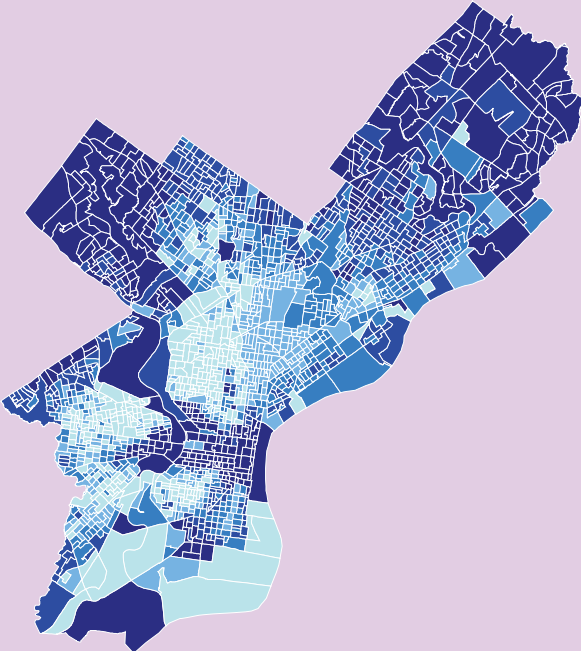
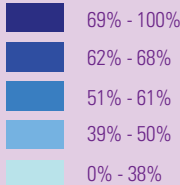


provide free Internet access and hands-on training at 77 computing sites around the city. The sites are a combination of new facilities and expanded, existing computer centers at libraries, community-based organizations, and City recreation centers. Locations were targeted for neighborhoods with high unemployment and poverty rates, and low educational attainment rates. The goal of the Partnership is to encourage in-home broadband adoption rates among low-income Philadelphians. Without broadband access, low-income residents face the challenges of accessing information, consumer services, and job applications now almost exclusively available online in addition to developing skills necessary to obtain and retain jobs in a wired economy. The Partnership has set targets of reaching over 100,000 Philadelphians with information about the relevance of broadband to their daily lives and providing hands-on training and open access to 15,000 people. Partnership members are equally matched in their ability to support the computing sites and their missions are equally served by advancing digital literacy among underserved populations.

5.2.2 Household Broadband Adoption Rates Across Philadelphia

This map illustrates the percentage of households, by Census Block Group, that use some type of broadband service in the home. The data was prepared by the Knight Foundation (2010) as part of a study for the Philadelphia Division of Technology.

Percentage of Households Adopting Broadband Internet Services



Knight Foundation, 2010. U.S. Census Block Groups, 2000. Map prepared by Charles Kaylor, Department of Geography and Urban Studies, Temple University.