

# APPENDIX C: COMPLETE SET OF POLICY PAPERS

This appendix provides the complete set of policy papers developed in Phase I of the Plan.

## **Pedestrian Network Policy Papers**

- Sidewalk Design Guidelines
- Sidewalk Furnishings
- Street Crossings
- Pedestrian Signals
- Driveways and Lay-Bys
- Sidewalks in New Development
- Sidewalk Retrofit

## **Bicycle Network Policy Papers**

- Bikeway Network Design
- Bicycle Treatment at Intersections
- Bicycle Parking
- Bicycles on Public Transportation

## **Health and Safety Policy Papers**

- Education
- Enforcement
- Encouragement

## **Management and Monitoring Policy Papers**

- Construction Disruption
- Management of Sidewalk Encroachments
- Pedestrian Network Maintenance
- Bicycle Network Maintenance
- Bicycle Detours
- Bicycles in Buildings
- Crash Reporting and Analysis
- Pedestrian and Bicycle Counts



## **SIDEWALK DESIGN STANDARDS**

### **Current policy and practice**

A variety of standards for minimum clear width are written into the City Code to protect pedestrian passage from certain sidewalk encroachments. The minimum clear width standards vary from 5 feet to 6.5 feet to  $\frac{1}{2}$  the total sidewalk width, and depend on the type of sidewalk encroachment. In some instances, but not all, sidewalk ventilation grates are excluded from the minimum clear width that must be maintained. There are no minimum requirements for Furnishing Zones to buffer pedestrians from traffic or to provide space for landscaping.

The most stringent minimum clear width standard is for vendor carts in Center City, which are supposed to leave 6.5 feet clear, not including the width of any ventilation grate. Sidewalk vendor carts outside of Center City typically are required to leave 6 feet clear width, as are newsstands. Store owners in certain areas can set up stands on the sidewalk but are limited to using just 40 inches in front of their stores and must leave at least 5 feet of clear width for pedestrians. Sidewalk cafes must leave a minimum clear width of just 5 feet, unless the sidewalk is more than 13 feet wide, in which case they are required to leave one-half the total sidewalk width clear for pedestrians. Ventilation grates do not count as clear sidewalk space in the case of sidewalk cafes.

### **Goal**

Provide an attractive pedestrian environment that includes adequate sidewalk space for pedestrians to walk comfortably and safely, separated from traffic, and accommodate pedestrian amenities and necessary utilitarian functions with the least possible impact on pedestrians.

### **Objectives**

- Establish a sidewalk zone system with minimum dimensions for pedestrian walking area and for buffer zones from traffic.
- Tie new sidewalk standards to a street classification system so that the standards will reflect the nature and level of pedestrian activity.

### **Establish a sidewalk zone system with minimum dimensions for pedestrian walking area and for buffer zones from traffic.**

#### **Strategies:**

The sidewalk can be divided into three zones for the purpose of design guidelines: the Walking Zone, the Furnishing Zone, and the Building Zone. The Walking Zone is the space referred to in the City Code as the “minimum clear width” that must be maintained on the sidewalk, free of obstructions, for pedestrians to walk. The Furnishing Zone is the area of the sidewalk closest to, and including, the curb. It is called the Furnishing Zone because so many amenity and utility street furnishings are typically situated here, but it also often serves as a buffer between pedestrians and moving traffic. The Building Zone is the area of the sidewalk closest to the property line. In some cases, there is no Building Zone because the edge of the sidewalk is immediately adjacent to a lawn.



**SIDEWALK ZONES**

Because accommodating pedestrian flow is the primary function of sidewalks, an adequate **Walking Zone** is the most important design standard for the sidewalk. The average width of a pedestrian is 2 ½ feet, without encumbrances such as bags and umbrellas. Two people will need 5 feet of sidewalk width and, when encountering another person, will need about 8 feet to pass without dropping into single-file. When walking near walls, fixed obstructions or the curb, extra space called “shy distance” is needed.



**2 people take up 5 feet of width**



**3 people take up 8 feet of width**

The Walking Zone standard ideally depends on the number of pedestrians using or expected to use a particular sidewalk. In general, 5 feet of clear width for the Walking Zone should be the minimum for any new construction in low to moderate density areas.

For sidewalks with relatively intensive pedestrian use, either in commercial corridors or in row house neighborhoods, six feet or half the total sidewalk width, whichever is greater, is recommended for the Walking Zone.

On certain designated streets having very heavy pedestrian volumes, 8 feet or half the total sidewalk width, whichever is greater, should be the minimum Walking Zone.

For the few streets with great symbolic importance and major ceremonial functions: Broad Street, Market Street, and the Benjamin Franklin Parkway, 10 feet should be required in the Walking Zone. This will allow a truly generous pedestrian space, where one couple approaching another couple will be able to pass easily without anyone having to drop into single file.

The Walking Zone does not include ventilation grates or vault covers; however, tree grates or tree trenches that are solidly constructed and level with the sidewalk surface may extend into the Walking Zone. For tree pits or raised tree enclosures, intrusions into the Walking Zone must be limited to 2 feet in width for a length of 4 feet at a minimum spacing of 30 feet, provided that ADA standards are followed.

Two other possible intrusions include transit shelters and a 1-foot reduction in the width of the Walking Zone for stormwater planters, except on major pedestrian streets and civic/ceremonial streets. Beyond these exceptions, the Walking Zone standards should not be compromised by reducing clear width on existing sidewalks, or by building new sidewalks that are narrower than adjacent sidewalks.

The **Furnishing Zone** plays many functions: a buffer from traffic, a space to plant street trees and grass and absorb storm water runoff, storage space for snow and trash cans, and space for

street furniture such as transit shelters, honor boxes, and bike racks, to name just some of the most important uses.

The importance of the Furnishing Zone varies depending on the adjacent land use, the type of roadway, the speed and volume of traffic, and the presence of parking at the curb. For major arterials, a minimum 5-foot Furnishing Zone is recommended to ensure adequate separation of pedestrians from traffic. The major arterials where the largest Furnishing Zone is recommended often have large sign poles with footings that would intrude on the Walking Zone if there were not a generous Furnishing Zone available.

At a minimum, the Furnishing Zone must accommodate such utilitarian objects as fire hydrants, utility poles, and road signs. The Streets Department typically requires most furnishings installed a minimum of 18" off the edge of the curb. As a result, the Furnishing Zone usually requires at least 3 feet.

The **Building Zone** is the area of the sidewalk immediately adjacent to the building face, wall or fence marking the property line, or in less dense residential areas, a lawn. Minimum width standards cannot be recommended for the Building Zone, because of this variability. However, the Building Zone is often significant, either because of architectural elements, such as steps, stoops, bay windows, or planters, or because the property owner wants to use the Building Zone for commercial purposes, for example, a sidewalk café or sidewalk sales. On streets where numerous permanent encroachments into the Building Zone already exist, the recommendation would be to allow new encroachments into the Building Zone to the extent that they respect the prevailing alignment of the existing encroachments.

### **Tie new standards to a street classification system so that the standards will reflect the nature and level of pedestrian activity.**

#### **Strategies:**

Develop a system to classify streets into types that will facilitate the creation of sidewalk design standards. The proposed street types take into account the traditional roadway classification, land use characteristics including density of development, and pedestrian activity levels. Eleven street types are defined: Civic Ceremonial, High-Volume Pedestrian, City Neighborhood Street, Walkable Commercial Corridor, Urban Arterial, Auto-Oriented Commercial/Industrial, Scenic Drive, Park Road, Low Density Residential, Local, and Shared Narrow Street. (See Chart of Street Types and Sidewalk Width Standards.) The street types and sidewalk design standards should be incorporated into the proposed Complete Streets Design Manual to ensure that all City regulations acknowledge and support pedestrian needs.

For each street type, a minimum Walking Zone is recommended as described above, to allow for pedestrian comfort and safety based on the expected level of pedestrian activity. Some exceptions to the minimum Walking Zone are provided to accommodate street trees, stormwater planters, and transit shelters, however, these exceptions are limited and minimum ADA dimensions must always be met.

Minimum Furnishing Zones are recommended in most cases, for varying purposes: for buffering from traffic on Major Arterials and Minor Arterials without adjacent parking; and for accommodation of furnishings.

Total width recommendations are included for many of the street types. The total recommended sidewalk width may be greater than the sum of the minimum Walking Zone and the minimum Furnishing Zone; this could allow either of those zones to be wider, or it could allow for a Building Zone, although no minimum Building Zone is specified. Since Philadelphia's sidewalk network is mostly in place, and widening sidewalks would be difficult, many sidewalk widths will not change even if they do not meet the standards. Nevertheless, the standards can be used to prevent

further deterioration of walking conditions and to ensure that new development provides a better quality sidewalk environment.

The sidewalk design standards should be applied to the development of new sidewalks and the reconfiguration of old sidewalks wherever feasible. Among the new standards, the Walking Zone minimum should be given the highest importance in evaluating sidewalk designs because this standard ensures that the sidewalk fulfills its basic transportation function for pedestrians.

The sidewalk standards also should be used, where possible, to limit sidewalk encroachments to ensure an adequate Walking Zone. This would address any illegal and many new sidewalk encroachments to protect adequate space for pedestrians. (This topic is addressed in the Management of Sidewalk Encroachments paper.)

## **Resources**

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE, 2010  
Smart Transportation Guidebook, PennDOT and NJ DOT, 2008  
Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO, 2004  
San Francisco Better Streets Plan, 2009: [www.sfbetterstreets.org](http://www.sfbetterstreets.org)  
NYC DOT Street Design Manual, 2009:  
<http://www.nyc.gov/html/dot/html/about/streetdesignmanual.shtml>  
Chicago Mobility Streets Zoning Ordinance, 2003,2005  
Pedestrian Safety Guide for Transit Agencies, FHWA, 2008:  
[http://www.trb.org/news/blurb\\_detail.asp?id=9132](http://www.trb.org/news/blurb_detail.asp?id=9132)  
Designing Sidewalks and Trails for Access, 2001



## **SIDEWALK FURNISHINGS**

### **Current policy and practice**

There are many different types of sidewalk furnishings on City sidewalks. In general, there is little policy guidance for the placement of these furnishings. Some sidewalk furnishings are regulated as sidewalk encroachments. Some are installed by City government with few standards to guide their placement.

Sidewalk furnishings may be located in either the Furnishing Zone or the Building Zone, although most will be in the Furnishing Zone. Sidewalk furnishings may be placed on curb extensions (bumpouts) provided they do not obstruct the Walking Zone, access to curb ramps, or sight distance at the intersections. Certain clearance requirements apply generally to all street furniture and objects in the public right-of-way to allow people with vision impairments to travel safely along the sidewalk. Also, it is important that the Furnishing Zone be kept clear at transit stops to avoid conflicts with unloading of passengers.

### **Goal**

Ensure that sidewalk furnishings enhance the pedestrian environment to the maximum extent possible; reduce sidewalk clutter, especially at corners.

### **Objectives**

- Encourage street trees and other sustainable street furnishings to control storm water and heat-island effect
- Accommodate necessary utility infrastructure
- Allow for amenities that enhance the pedestrian environment
- Provide for bicycle parking
- Accommodate commercial enterprise that enliven the street life of the neighborhood

### **Encourage street trees and other sustainable street furnishings to control storm water and heat-island effect**

#### **Street Trees**

Street trees planted in the Furnishing Zone are desirable because they create a more attractive streetscape, act as a buffer between pedestrians and moving traffic, reduce the heat island effect, provide shade, dampen vehicle noise, help manage storm water, and improve air quality. However, establishing standards is important because trees consume considerable sidewalk space and can encroach on the required Walking Zone. Street tree planting and removal requires the permission of the Parks and Recreation Department. Trees are typically planted in individual tree pits spaced evenly along a block. Interconnected tree pits, which allow more room for tree root development, can also be used. Regular maintenance is required to ensure that tree branches are trimmed to allow a clearance of 8 feet above sidewalks and parking lanes, and 13 feet above bicycle and traffic lanes. (Best practices: Portland, OR; Washington, D.C.; *Anacostia Waterfront Design Guidelines*; *Smart Transportation Guidebook PA and NJ*; *Designing Sidewalks and Trails for Access*; *NYC Street Design Manual*; *ITE Designing Walkable Urban Thoroughfares*)

#### **Planters**

Raised planters placed in either the Furnishing or Building Zones can be used when it is impractical to plant street trees. Developing guidelines for planters is necessary to ensure the use of durable, visually appealing materials and to protect the Walking Zone from obstruction. Planters should be constructed of materials that complement the surrounding sidewalk and buildings, and be able to stand up to temperature changes and the weight of the planting. Plants should not extend beyond the edges of the planter unless they allow 7 feet of clearance above the sidewalk. On heavily sloped streets, planters can be terraced to avoid soil erosion and to provide a distinctive landscape feature. (Best practices: Cambridge, MA)

## **Other Landscaping**

A strip of grass is commonly planted in the Furnishing Zone. Grass is easy to maintain and comfortable for pedestrians to walk on when necessary. Green stormwater infrastructure manages stormwater in systems that mimic natural processes. One type of green stormwater infrastructure practice used to manage runoff in the right-of-way is the stormwater planter. These are low-walled, vegetated systems within the curb/buffer area that capture stormwater from the street and sidewalk. Careful consideration must be given to plant selection in stormwater planters. Stormwater planters must be used with care to ensure that adequate space is left in the Walking Zone, and that the landscaped area will not become a tripping hazard for people with low vision. When entrance steps extend into the sidewalk, landscaping may be installed in the Building Zone to limit further constraints on the Walking Zone. (Best practices: *Anacostia Waterfront Design Guidelines*; *Smart Transportation Guidebook PA and NJ*, *NYC Street Design Manual*)

## **Accommodate necessary utility infrastructure**

### **Street Lighting**

Good street lighting can help define the urban character of a street, and it supports active nighttime street use and safety. Streetlights at intersections are needed to illuminate pedestrian crossings. Pedestrian-scaled streetlights (generally between 12-15 feet in height) can also serve to light roadways that are less than 45 feet wide. Desirable streetlights are those that maximize ground lighting while minimizing the amount of light pollution directed upwards. Street trees should be pruned so that branches do not interfere with lighting. Business owners should be encouraged to keep storefronts lighted after hours to supplement streetlights. Similarly, in residential areas, property owners should be encouraged to use lights at front doors or porches. (Best practices: Washington, DC; *San Francisco Better Streets Plan*; *Smart Transportation Guidebook PA and NJ*)

### **Traffic Control Equipment**

Traffic signs, signals, and controller boxes are essential elements of a safely functioning street system. They are located in the Furnishing Zone adjacent to the crosswalks. Signs and signals must be visible by their target audience but, at the same time, must not block views of other road users. Another goal for the location of traffic control equipment is to minimize the likelihood of vehicular damage. For this reason, traffic signs and signals should be set back 3 feet from the curb line. The City's new traffic controller boxes measure nearly six feet tall, on a 2 foot by 2 foot base, and have a substantial visual impact. They should be placed in the Furnishing Zone rather than the Building Zone, and they should be kept a minimum of 5 feet measured along the curb line from street trees, bus stops, building entrances, and crosswalks.

### **Utility Poles and Structures**

Sidewalks are greatly impacted by the city's network of utility infrastructure. It is important that utility poles and all other utility-associated equipment be installed outside the Walking Zone in locations that do not interfere with driver or pedestrian visibility. Utility vaults and access boxes can be slipping and tripping hazards. They should be located outside the Walking Zone, installed flush with the sidewalk (in conformance with ADA requirements), and made with non-slip materials. (Best practices: Cambridge, MA; *Designing Sidewalks and Trails for Access*; *AASHTO Pedestrian Guide*)

## **Allow for amenities that enhance the pedestrian environment**

### **Transit Shelters**

Transit shelters are an important amenity in the pedestrian environment. They provide protection



from rain and wind, information about bus routes and frequency, and sometimes include seating. Transit shelters do, however, take up a significant amount of space in the Furnishing Zone and cannot fit on every sidewalk. The development of narrow shelters for narrow sidewalks should be encouraged. The minimum floor area for a transit shelter is 4 feet by 2 ½ feet. Space is needed, either inside the shelter, or adjacent to it, for wheelchair access to the transit vehicle. In Philadelphia, transit shelters are supported through an advertising contract, and there is a limit to the number of shelters the advertising market can support. (Best Practices: *Smart Transportation Guidebook PA and NJ*; *AASHTO Pedestrian Guide*)

### **Benches**

Benches can be a valuable amenity in the pedestrian environment because they provide places for pedestrians to sit, rest and socialize. Benches are particularly well-suited for busy pedestrian locations, such as retail shopping corridors, at transit stops, in plazas, or near cultural institutions and tourist destinations. The design of benches should discourage sleeping. Multiple benches placed adjacent to one another should be spaced at least 3 feet apart, to allow for pedestrian passage between them and avoid creating a barrier. Seating areas should include trash cans wherever possible. (Best Practices: *Anacostia Waterfront Design Guidelines*; *Cambridge, MA*; *Smart Transportation Guidebook PA and NJ*; *San Francisco Better Streets Plan*; *NYC Street Design Guidelines*)

### **Bollards**

Bollards prevent vehicles from damaging street furniture and prevent vehicles from driving on sidewalks or into other pedestrian-only spaces. When properly designed, they can add to an attractive streetscape. The City's design standard for bollards simply requires a pipe post filled with concrete and capped. In most cases, the cap is omitted. A more attractive set of standards should be developed and enforced. In certain settings, bollards should be designed to be removable, to allow access by emergency vehicles or to underground vaults. (Best Practices: *Anacostia Waterfront Design Guidelines*)

### **Trash Cans**

Public trash cans should be placed in the Furnishing Zone near food service establishments, bus stops, intersections, and benches or seating areas. They should also be located in public plazas and near major activity generators, such as civic and cultural destinations. As the Streets Department develops protocol, recycling bins should also be installed alongside trash cans. (Best Practices: *Anacostia Waterfront Design Guidelines*; *Cambridge, MA*)

### **Provide for bicycle parking**

#### **Bike Racks**

Bike racks should be installed in such a way that they and the bikes attached to them do not block pedestrian flow. In most cases this means bike racks should be installed so that bicycles are positioned parallel to the curb when locked. However, on streets with very wide sidewalks, racks may be installed such that bikes are positioned perpendicular or diagonal to the curb as long as parked bicycles do not impinge upon the required Walking Zone. Bike racks should be installed 2 to 3 feet from the curb to allow for bikes to use both sides of the rack while avoiding encroachment on the Walking Zone. Bike racks should be kept clear of transit zones, street trees, fire hydrants, transit stops and other objects in the Furnishing Zone. (Best practices: *Cambridge, MA*; *NYC Street Design Manual*; *Anacostia Waterfront Design Manual*)

### **Allow for commercial enterprise that enliven the street-life of the neighborhood**

#### **Sidewalk Vending**

Sidewalk vending can be an amenity for pedestrians but it often takes up valuable space that is needed for walking. The City Code governing sidewalk sales is overly complicated and difficult to

understand. Sidewalk sales by property owners are limited, but where allowed, take place in the Building Zone; all other sidewalk sales take place in the Furnishing Zone. The Code requires a minimum amount of clear sidewalk width: 6 ½ feet in Center City and 6 feet elsewhere. However, this is typically not enforced as most vending carts have wheels and shelves that extend beyond the basic 4-foot width allowed. The biggest problem, though, occurs when customers at food carts line up blocking the sidewalk. A few vendors have put signs on their carts asking their customers to line up so as not to block the sidewalk. Such signs should be required on all food carts. The most effective way this works is when a food cart has no window facing the sidewalk, but has a window at either end of the cart, so that customers form two lines along the curb, one for placing the order, and one for picking up the food. This type of cart should be encouraged.

### **Newsstands**

Newsstands not only sell newspapers and magazines but also candy, cigarettes, and lottery tickets. The lottery ticket sales sometimes create queues blocking the sidewalk, similar to food carts. Signs should be required on all newsstands that sell lottery tickets, requesting customers to line up so they don't block the sidewalk. Newsstands are permitted to be immediately adjacent to the crosswalk, unlike vendor carts, which must be 10 feet away to allow for better visibility. Ideally, this rule should be changed, although it would be difficult since many newsstands are electrified and cannot be easily moved. Newsstands should not be permitted to interfere with transit stop zones.

### **Honor Boxes**

Honor boxes offer convenient access to newspapers but, like many other types of sidewalk furniture, they have proliferated and are often not properly maintained. The use of honor box corrals installed by the Center City District has been helpful in bringing some order to the honor boxes. Honor boxes should not be placed in locations where the minimum sidewalk width cannot be maintained or so close to intersections that they impede pedestrian crossings or curb ramps. Honor boxes should not be placed in transit zones where they may block passengers getting off transit vehicles.

### **Sidewalk Cafes**

Outdoor cafes are a very popular amenity, adding life to the pedestrian environment, but many of the City's sidewalk cafes operate illegally and the existing standards for clear width for sidewalk cafes are inadequate. Sidewalk café regulations should be revised to provide adequate space in the Walking Zone and the regulations should be enforced. While cafes are usually in the Building Zone, some restaurants do have tables in the Furnishing Zone. An addition of a curb extension through removal of parking is a potential solution to providing space for an outdoor café. (Best Practices: FHWA course)

### **Resources:**

Anacostia Waterfront Initiative: Transportation Architecture Design Guidelines, DDOT, 2008  
NYC DOT Street Design Manual, 2009  
San Francisco Better Streets Plan, 2009  
Boston Streetscape Guidelines for Major Roads, 1999:  
[www.cityofboston.gov/transportation/accessboston/pdfs/streetscape\\_guidelines.pdf](http://www.cityofboston.gov/transportation/accessboston/pdfs/streetscape_guidelines.pdf)  
Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE, 2010  
Pedestrian Safety Guide for Transit Agencies, FHWA, 2008:  
[http://www.trb.org/news/blurb\\_detail.asp?id=9132](http://www.trb.org/news/blurb_detail.asp?id=9132)

## STREET CROSSINGS

In 2009, 32 pedestrians were killed by automobiles on Philadelphia streets, one-third of all persons killed in roadway crashes in Philadelphia. Pedestrians constituted 20% of the persons injured in Philadelphia motor vehicle crashes. If Philadelphia wants to reduce the number of persons killed or injured in traffic crashes, it must make its streets safer for pedestrians.

Pedestrian crashes are associated with pedestrian efforts to cross a street or roadway. A major analysis of pedestrian crashes in the United States found that over half of all reported pedestrian crashes occurred when pedestrians attempted to cross a street or highway. This analysis was based on crashes occurring in different types of environments, including over 1/3 in rural areas; the experience in Philadelphia likely involves a far greater share of crossing crashes.

### Current policy and practice

Crosswalks are marked to provide guidance to pedestrians who are crossing roadways by delineating a crossing route. Crosswalks also alert other road users of a designated pedestrian crossing point, especially important at a location that is not controlled by traffic signals or STOP or YIELD signs.

The Streets Department marks and maintains pedestrian crosswalks at traffic controlled intersections throughout the City. The department stripes two types of crosswalk markings: a standard crosswalk and a continental crosswalk. The highly visible continental treatment is typically used at high priority intersections, such as those that are adjacent to schools or to subway-el stations served by two or more transit lines, and at all crosswalks in business districts. Currently the only decorative crosswalk favored by the City is integral thermo-plastic, because of its visibility and durability.

The City has begun to move stop bars back ten feet from all crosswalks at signalized intersections. This setback improves visibility between pedestrians and vehicles, particularly important when trucks or other large vehicles are turning. The added visibility is also important on roads with two or more traffic lanes where a car or truck that has stopped for a pedestrian can block the view of the pedestrian for drivers in other lanes. Recessed stop bars also create de facto bike boxes where bicyclists can change lanes to make turns.

Both PennDOT and Philadelphia provide curb ramps at crossing locations to assist persons with special mobility needs. All curb ramps must be reconstructed to meet current ADA standards, including the provision of truncated domes that alert visually disabled pedestrians of the presence of a street crossing. When crosswalks are provided, they should be located so that the curb ramps are within the extension of the crosswalk markings.

Mid-block crosswalks and crosswalks at unsignalized intersections that cross approaches not controlled by a STOP or YIELD sign, present complex pedestrian safety issues, which were thoroughly explored in a 2002 FHWA study. The study found that marking crosswalks without providing additional pedestrian safety improvements led to a higher incidence of pedestrian crashes on roads with more traffic lanes (especially four lanes or more), where speeds were over 40 mph, or on roads with high traffic volumes. The FHWA study was used by the City and PennDOT to evaluate and revise uncontrolled crossings on Roosevelt Boulevard.

The City has installed mid-block crosswalks and crosswalks at uncontrolled approaches to unsignalized intersections. It does not have a fixed policy regarding when such crosswalks should be installed but instead relies upon engineering analysis of locations where a crosswalk has been requested or where experience indicates that a crosswalk may be appropriate. Many streets in Philadelphia, however, have only one or two traffic lanes and may have appropriate locations for crosswalk installation based on the FHWA study.

PennDOT encourages and provides in-roadway “Yield to Pedestrians” signs for use at uncontrolled locations with extensive pedestrian activity. The City has used the signs in limited locations, including Roxborough, Manayunk and Chestnut Hill, where local partners have agreed to install and maintain them.

Every school has been visited by traffic engineers to ensure that pavement markings and school crossing signs have been upgraded if necessary. Parking has been prohibited adjacent to schools during school hours. The School District now consults with the Streets Department during the design phase of all new schools to avoid or minimize traffic safety problems.

The City prefers the smallest turning radius that still allows access to the larger vehicles using the street. Many existing curb radii are 10 to 12 feet or smaller. The zoning code for subdivisions requires a 15 foot minimum radius at intersections. The Streets Department takes into account several factors when determining a curb radius, including the volume of pedestrians, the length of the pedestrian crossing, the size and location of required curb ramps, and the frequency with which turns are made by buses or large trucks.

Curb extensions (bumpouts) at intersections reduce pedestrian crossing distances, encourage slower operating speeds, make pedestrians more visible to drivers and physically prevent cars from parking or standing within the portion of an intersection required for sight distance. As a result, the City supports the provision of curb extensions and has used them in traffic calming projects, Safe Routes to School projects, and other locations where appropriate to enhance pedestrian and motor vehicle safety. Use of bumpouts is limited mainly by the cost and complexity of reworking the drainage at the intersection. On the other hand, curb extensions can be designed to also serve in the management of stormwater from the City’s streets.

The FHWA study recommended the provision of medians or pedestrian refuge islands to assist pedestrians to cross streets with higher traffic volumes or multiple travel lanes. The Streets Department considers these features on a case-by-case basis. Maintenance cost in particular is a deterrent to creating new facilities, as are the City’s narrow streets and rights-of-way. Many of the existing medians are thermo-plastic pavement striping and not curbed or raised. The FHWA crosswalk study indicates that raised islands are needed to enhance pedestrian safety.

Other cities and states have made extensive use of circular intersection designs and found that such designs can substantially reduce both the number of pedestrian crashes and the severity of those crashes. In Europe, where large numbers of roundabouts have been installed over the past 20 years, a Dutch study found that pedestrian crashes declined by 70% and serious pedestrian injuries by 90% as a result of roundabout conversions. United States experience with roundabouts has yielded similar results. The City of Seattle has also had dramatic reductions in pedestrian crashes on neighborhood streets by installing neighborhood traffic circles.

## **Goal**

Reduce the incidence of pedestrian injuries and fatalities by designing crossing locations for greater safety and pedestrian comfort.

## **Objectives**

- Maintain a robust crosswalk network
- Refine policy for marking crosswalks at mid-block and uncontrolled intersection crossings.
- Design intersections so that geometries and traffic operations maximize pedestrian safety and comfort
- Expand use of traffic calming to reduce speeding and protect pedestrians.

## **Maintain a robust crosswalk network**

A crosswalk is the portion of a roadway that has been designated as being available for the use of pedestrians to cross a street. At intersections, crosswalks, whether marked or unmarked, exist at any location where a sidewalk abuts at least one side of a street. Intersection crossings may be controlled or uncontrolled, depending on whether traffic control devices, such as signals or stop signs, govern the intersection.

### **Strategies**

Maintain Philadelphia's extensive existing crosswalk infrastructure and mark crosswalks at any signal or STOP-controlled intersection that lacks them.

Analyze life-cycle cost of crosswalk treatments. Do a life-cycle analysis of integral thermo-plastic treatments versus continental crosswalk markings to determine which type of marking is more cost-effective over its useable lifespan. Establish a 7-year cycle of repainting and repair for existing crosswalks, prioritizing continental crosswalks and areas with the highest pedestrian traffic. (Best Practices: Washington, DC; Seattle, WA)

When marking continental crosswalks, place markings either aligned with the edges of travel lane lines or at the center of travel lanes so that the majority of vehicle tires will not pass over the markings, thereby extending their useful life.

Install ADA-compliant curb ramps at all marked and unmarked crosswalks. At T-intersections, curb ramps are required at the top of the T even though there are no street corners. Ramps must include a truncated dome or other tactile surface in accordance with ADA requirements. Construction of new ramps provides the City with the opportunity to assess the feasibility of additional pedestrian safety improvements at intersections.

## **Refine policy for marking crosswalks at mid-block and uncontrolled intersection crossings.**

A pedestrian crossing at a location other than an intersection is a mid-block crossing. Many crossings occur at intersections that are not traffic-controlled on all approaches. In such locations, a decision must be made as to whether a crosswalk is appropriate, and if so, what further treatments may be necessary to insure pedestrian safety at the crossing.

### **Strategies:**

Establish a policy for the use of crosswalks at uncontrolled locations, including a "toolbox" of engineering treatments for locations where crosswalk markings alone are not sufficient. Mid-block crosswalk or crosswalks at uncontrolled intersections should be carefully planned and, where necessary, supplemented with appropriate enhanced safety measures, such as raised medians, median refuge islands, traffic calming treatments, lighting, traffic signals, signage and/or warning beacons. The City should adopt a set of evaluation criteria to determine when uncontrolled locations deserve consideration for a marked crosswalk. Initial criteria should include the number of pedestrians crossing, the number of traffic lanes, pedestrian destinations, the prevailing traffic speed, the distance to the nearest marked crosswalk, and sight distance. Several of these factors should be considered in context with one another; for example, the threshold level for pedestrian crossings would be reduced if the pedestrian destination is a school or senior center, and the minimum distance to the nearest crosswalk would be reduced on streets with fewer lanes. After the initial scan, other factors may be analyzed, such as gaps in traffic, illumination, and the needs of special populations, before deciding whether a marked crosswalk is appropriate, and whether or not additional pedestrian safety measures are needed. (Best Practices: Sacramento, CA; Seattle, WA; Boulder, CO; Washington, DC; Springfield, VA;)

Crosswalk markings may be inappropriate at some locations that can still be provided with other features to improve the safety of the crossing for pedestrians who do choose to cross there. Such features would include curb ramps, refuge islands or raised medians.

The City should track accidents and injuries sustained at mid-block crosswalks and perform field surveys of new mid-block crosswalks within one year of installation to evaluate the crossing's safety and recommended further improvements, if necessary.

### **Design intersections so that geometries and traffic operations maximize pedestrian safety and comfort**

The curb radius of an intersection corner is an element of intersection geometry that is important to turning vehicles and pedestrian crossing distances. Larger curb radii allow for larger vehicles, such as buses and trucks, to make right turns at the intersection without encroaching on opposing lanes of traffic or the sidewalk, but increases the crossing distance for pedestrians. Smaller curb radii create shorter pedestrian crossings but can cause challenges for larger vehicles that need to navigate the intersection.

A curb extension (also known as a bumpout or bulbout) is an expansion of the sidewalk out into the street, usually the full width of the street's on-street parking lane. Extensions shorten pedestrian crossing distances, improve visibility for both drivers and pedestrians, prevent cars from parking in the crosswalk, and can induce slower vehicle speeds through roadway narrowing. Adding curb extensions can also help in the provision of curb ramps that comply with ADA guidelines. Extensions provide space for longer, lower-slope curb ramps, which are easier to use for pedestrians pushing strollers or using mobility assistance devices.

Medians and pedestrian refuge islands provide spaces for pedestrians to safely wait or rest, and allow pedestrians to cross opposing streams of traffic in separate movements. Studies indicate that providing this refuge can increase the number of available traffic gaps tenfold. Medians and median refuge islands are especially valuable on large, multi-lane roadways where the entire street crossing may not be possible in one pedestrian phase. They also allow for particularly difficult crossings to be separated into two or more shorter, simpler crossings. Curbed and raised medians provide the best pedestrian safety benefits. The provision of refuges enhances the safety and reduces the crossing time on all roadways, and can be provided even where a crossing problem has not been identified.

### **Strategies:**

Retain small curb radii at intersections to shorten crossing distances for pedestrians and to lower vehicle turning speeds. Adopt AASHTO Green Book standards for curb radii at intersections with minimal truck traffic. The guidelines recommend 10-15 foot curb radii at such locations, which minimizes pedestrian crossing distances, and is similar to many existing City intersections. Subdivision regulations should be revised to allow for curb radii smaller than 15 feet to be constructed in new residential development where truck, bus and other large vehicle traffic will be infrequent.

Use the effective curb radius to accommodate larger vehicles. Minimize actual curb radii at intersections where on-street parking lanes and/or bike lanes allow the intersection to function with a larger effective turning radius. (Best Practice: Sacramento, CA)

Increase provision of curb extensions. Install curb extensions at a rate of 10 per year. Evaluate the feasibility of installing curb extensions when curb ramps are installed at crosswalks, or when an intersection is reconstructed as part of a road project. (Best Practice: Portland, OR)

Provide curb extensions at transit stops. Partner with SEPTA to evaluate, design and build curb extensions (also known as "bus bulbs") at transit stops. Curb extensions can ease passenger boarding and alighting and avoid the need for transit vehicles to merge in and out of traffic at stop locations, plus they provide additional sidewalk space at busy intersection corners. (Best Practice: San Francisco, CA)

Include green infrastructure in curb extension projects. Incorporate stormwater planters into curb extensions where feasible. (Best Practice: Portland, OR)



Provide curb extensions at mid-block crosswalks. Curb extensions should be provided at mid-block crosswalks, if possible, to prevent cars from parking in the crosswalk and to improve sight distance for both motorists and pedestrians. Mid-block curb extensions should be considered for other locations to calm traffic, especially where demand for parking is low, or to provide space for green infrastructure, or for bicycle parking.

Establish guidelines for the use of raised medians. Adopt the guidelines outlined in the Smart Transportation Handbook, a joint effort of PennDOT and NJ DOT, which recommends that raised medians always be considered at pedestrian crossings when total roadway width exceeds 60 feet.

Incorporate pedestrian safety and mobility standards into median design. New medians should be at least 6 feet in width, with a preference for 8 feet or more if the median will serve as a pedestrian refuge. To be effective, medians should be designed to discourage motor vehicles from encroaching onto them. As a result, they are appropriate locations for trees and other fixed objects that can both calm traffic and help to prevent vehicle encroachments.

Older medians should be rebuilt to this standard during road reconstruction projects. Medians should include an at-grade pedestrian cut-through and a median “nose” for pedestrian safety and access. An at-grade cut-through makes the median more accessible to pedestrians with disabilities, or people crossing with bikes or strollers. The cut-through width should be equal to, or greater than, the clear width of the sidewalks that lead to the crossing. (Best Practice: Portland, OR)

Where space is available, provide Z-shaped median crossings on wide high-speed roadways, to discourage pedestrians from attempting to cross the entire highway at once and force pedestrians to separately analyze the safety of each crossing.

Use medians as a location for green infrastructure. Medians provide an opportunity for additional street trees, grass or native plantings that can filter stormwater and provide aesthetic appeal to the streetscape. Height restrictions on plantings are necessary near intersections so that trees or plants do not obstruct the sight lines of drivers, bicyclists or pedestrians.

Where expressway ramps enter the urban street network, intersections should be designed as urban intersections with attention to pedestrian and bicyclist safety. Right-angle intersections are preferable in order to improve visibility, reduce crossing distances, and slow vehicle turning speeds. If intersections are unsignalized, pedestrian crossing warning signs should be used.

Avoid multiple turning lanes wherever possible. Multiple turn lanes create hazardous crossing situations for pedestrians and sometimes result in the removal of crosswalks.

## **Expand use of traffic calming to reduce speeding and protect pedestrians.**

### **Strategies:**

Select traffic calming treatments appropriate to a street’s functional classification and adjacent land use. On major or minor arterials, replacing signalized intersections with modern roundabouts can significantly reduce crashes. Raised crosswalks, raised intersections, and residential traffic circles should be tested to improve the safety of crossings on lower volume roadways and near schools. (Best Practice: Seattle, WA)

**Resources:**

FHWA "Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations", 2002  
AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004  
NJDOT and PennDOT Smart Transportation Guidebook, 2008  
Pennsylvania's Traffic Calming Handbook, PennDOT, 2001  
Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, Institute of Transportation Engineers, 2010  
Pedestrian Safety Guide for Transit Agencies, FHWA, 2008:  
[http://www.trb.org/news/blurb\\_detail.asp?id=9132](http://www.trb.org/news/blurb_detail.asp?id=9132)  
Designing Sidewalks and Trails for Access: Best Practices Design Guide, FHWA 2001

## **PEDESTRIAN SIGNALS**

### **Current policy and practice**

In 1990, the City reached an agreement with PennDOT to install pedestrian signals if a crossing was at least 40' wide, or had more than 2 moving lanes, and had at least 100 people crossing per hour for 4 hours. The City is moving to countdown signals as the new standard; this may require revision of the agreement.

The City's preferred signal cycle is 60 seconds. This reduces delay for pedestrians, but it is not always possible on the wider streets. As the City moves to comply with new MUTCD requirements for longer pedestrian crossing times, signal cycles may lengthen at some other intersections.

With pedestrian signals, there is often a trade-off between minimizing delay to pedestrians, providing longer crossing times, and providing more separation of pedestrian and vehicular movement. Minimizing pedestrian delay is not just a matter of convenience, since pedestrian delay tends to increase the incidence of jaywalking.

All-way pedestrian crossings are not favored, except in very limited instances, by the Streets Department or Planning Commission staff, because of the delay they cause to pedestrians as well as drivers. Leading Pedestrian Intervals (LPIs), which allow pedestrians a 3-4 second head start, are used at a few intersections in the City. The Streets Department is open to expanding the use of LPIs, but believes that the need for them may have diminished because countdown signals have improved driver behavior. The Streets Department has also used a "modified LPI", which stops conflicting traffic for the full WALK interval, and then lets drivers move during the pedestrian clearance interval.

Audible Pedestrian Signals have been tested in Philadelphia, but the City does not have a policy for them as yet. There are five on Broad Street and some near the Veterans Hospital. A couple of different types have been piloted.

Actuated pedestrian signals are used only in a few locations, mostly where there is no vehicular demand during the pedestrian phase.

The City follows PennDOT guidelines for Right on Red Restrictions. At school locations, the City often uses time-limited signs saying No Turn on Red 6AM-6PM.

### **Goal**

Design traffic and pedestrian signals so that they provide clear information to pedestrians, adequate time to cross, and minimize delay for pedestrians waiting at the curb.

### **Objectives**

- Expand the provision of pedestrian signals.
- Prioritize pedestrian safety and mobility in signal timing and traffic control.

### **Expand the provision of pedestrian signals.**

#### **Strategies:**

Increase provision of pedestrian signals. Reevaluate the thresholds for installation of pedestrian signals, based on the safety benefits of countdown signals.

Establish a schedule for the installation of countdown signals. Countdown signals have been adopted as the standard installation for pedestrian signals in the City. Convert signals to countdowns at a rate of 30 per year until all have been converted. (Best Practice: Washington D.C.; Cambridge, MA)

Develop criteria for when to use audible pedestrian signals. The Streets Department should develop a policy for evaluating locations where audible signals should be utilized and for addressing requests for APS installation. Policy can be based on the 2009 MUTCD recommendations for audible signals. Audible pedestrian signals may be appropriate at any intersection where visually-impaired pedestrians cannot rely on hearing a traffic surge to know when it is appropriate to cross. This includes intersections with pedestrian exclusive phases, leading pedestrian intervals, or at signal-controlled mid-block crosswalks.

Install audible signals near medical facilities and as part of comprehensive pedestrian treatments at crossings. Install audible signals at intersections adjacent to hospitals or other medical facilities where a higher number of pedestrians with disabilities may seek to cross the street.

Test new technologies for traffic control such as Rapid Flash Beacons, Hawk Crossings, and automated pedestrian detection. These techniques all are intended to permit pedestrians to safely cross roadways without the traffic interference of a regularly scheduled traffic signal. They are newer techniques that minimize delay to vehicular traffic and, in some cases, to pedestrians, but create higher visibility for the pedestrian crossings and thus improve safety.

## **Prioritize pedestrian safety and mobility in signal timing and traffic control.**

### **Strategies:**

Keep signal cycles as short as possible. The City should maintain its 60 second preferred signal cycle to minimize pedestrian delay at intersections. Proposals to use longer cycle lengths should not be implemented without weighing the effects on pedestrians.

Ensure that clearance intervals are properly timed. MUTCD is now requiring that clearance intervals be calculated based on slower walking speeds. Countdowns help by giving walkers more information but, in some instances, the existing clearance interval is too short.

Develop criteria for LPI signal phasing. The City should develop standards for where LPI signals, or modified LPIs, are appropriate, based on crossing volume, turning traffic volumes, and safety history at intersections.

Increase use of LPI signal phasing. The Streets Department should increase the provision of LPI signals. In many cases, implementing an LPI interval only requires a re-timing of the existing signal cycle. LPIs should be considered after the installation of countdown signals, since the countdown alone may improve the situation.

Consider use of all-way pedestrian signals at locations where the benefits to pedestrian mobility compensate for the added delay. For example, at some intersections, this treatment would allow pedestrians to cross an approach that would otherwise have to be prohibited. T-intersections with forced turns are other likely applications.

Right turn on red restrictions should apply at all times of the day. A study of Right Turn On Red (RTOR) restrictions at intersections in Arlington, Va. found that prohibiting RTOR at all times was the most effective and most obeyed form of RTOR restriction.

Minimize the use of push-button actuated signals because pedestrians lack faith that they will work. Where actuated signals are used, add a response feature to the signal actuation to let pedestrians know the request has been received, especially if the signal cycle is 90 seconds or longer.

**Resources:**

Institute of Transportation Engineers Alternative Treatments for At-Grade  
Pedestrian Crossings, 2001

AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004

NJDOT and PennDOT Smart Transportation Guidebook, 2008

FHWA Pedestrian Facilities Users Guide, 2002

Pedestrian Safety Guide for Transit Agencies, FHWA, 2008:

[http://www.trb.org/news/blurb\\_detail.asp?id=9132](http://www.trb.org/news/blurb_detail.asp?id=9132)

## **DRIVEWAYS AND LAY-BYS**

### **Current policy and practice**

Driveways can be managed by regulating their width, spacing, number, or location. To the extent possible, it is City policy to locate driveways on service streets rather than on streets that are important for traffic or pedestrians. The Code limits or prohibits driveways on certain important pedestrian streets in Center City, and also on Kelly Drive. Increasingly, City policy limits driveways in the front of rowhouses.

The City does not have a written policy about lay-by lanes. Typically, if there is not an adjacent parking lane that can be converted to loading, lay-bys are allowed for hospitals and often for hotels. In most instances, however, they are discouraged because of the loss of pedestrian space on the sidewalk.

### **Goal**

Protect the sidewalk as a safe space for pedestrians by minimizing the vehicular intrusion of driveways and lay-by lanes.

### **Objectives**

- Minimize points of conflict between motor vehicles and pedestrians.
- Protect the safety and comfort of the sidewalk, especially on major pedestrian streets.
- Reduce vehicular conflicts and traffic congestion through access management.
- Minimize the impact of driveways on the natural environment.

### **Minimize points of conflict between motor vehicles and pedestrians.**

#### **Strategies**

**Extend maximum driveway width standards to cover all development zones.** Two-way driveways should not be wider than 24 feet, and one-way driveways should not be wider than 14 feet. Driveways for single-family residences should not exceed 12 feet in width. Exemptions may be permitted for driveways to loading bays where the cartway is less than forty feet wide, or where the applicant shows that the design vehicle needs additional space for the required movements. (Best Practice: Boston, MA; New York State; ITE, Designing Walkable Urban Thoroughfares)

**Establish standards to limit the number of driveways.** Limit the number of driveways to no more than two driveways for every 200 feet of lot frontage per property. This would allow a driveway for parking and a driveway for loading to be directly adjacent, but would not allow the nearly continuous driveway that characterizes some uses.

### **Protect the safety and comfort of the sidewalk, especially on High-Volume Pedestrian streets.**

#### **Strategies**

**Strictly limit lay-by lanes to protect sidewalk space for pedestrians.** Lay-by lanes should not be permitted for residences. They should only be considered for uses that have an urgent need for loading space at the entrance, such as hospitals and hotels. The construction of lay-by



lanes must preserve the recommended minimum walking zone width, plus several additional feet to accommodate the car door and the anticipated loading activity. If this width cannot be preserved, a lay-by lane should not be permitted. Where new buildings are constructed and a lay-by lane is desired, the full width of the existing sidewalk must be maintained adjacent to the lay-by; that is, the building must be set back at the ground floor level. Loading zones should be used instead of lay-by lanes whenever possible; however, if a lay-by is needed in a parking lane, the maximum intrusion into the sidewalk shall be three feet.

**Continue to enforce the driveway restrictions on protected streets in Center City.** Parking facility access to these streets: Chestnut, Walnut, Locust, Spruce east of Broad, Broad, Market, and the Parkway is limited under the zoning code and should be provided from the side or rear, preferably through service streets. Expanding the driveway restrictions to other streets should be carefully considered. (Best Practice: Chicago, IL)

**Establish standards for driveway construction.** Driveways that cross the sidewalk must be at the same level as the sidewalk. The driveway material must change at the building line to demarcate the transition to the sidewalk. Sidewalks should be visually continuous across driveways to indicate pedestrians have the right-of-way. Where possible, driveways should align with existing intersections. All driveways must meet accessibility requirements. Curb returns for driveways are prohibited because they create tripping hazards. Driveways should be at least 18 feet deep past the right-of-way line, so that vehicles do not encroach onto the sidewalk. (Best Practice: Portland, OR; Colorado Springs, CO; AASHTO Pedestrian Guide; ITE, Designing Walkable Urban Thoroughfares)

**Limit parking pads or garages in the front of houses.** Except where front parking is the predominant existing pattern both in the adjacent neighborhood and on the specific block, parking should be placed in the rear of residential properties. For front loaded garages, the house should be at least 20 feet wide, with the garage door comprising no more than 40% of the first floor facade, and with a full size window provided at street level so there can be eyes on the street. Where front driveways are permitted, it is recommended that garages and curb cuts be mirrored/paired to lessen the impact on the sidewalk and preserve on street parking.

**Warning devices at parking garage exits should be directed at drivers, not pedestrians.** Signs, mirrors, flashing lights, or other warning signals may be needed at garage exits where they cross the sidewalk. However, it should always be clear that vehicles must yield to pedestrians on the sidewalk. Stop signs should be used where sight distance is restricted. (Best Practice: AASHTO Pedestrian Guide)

**Reduce vehicular conflicts and traffic congestion through access management.**

### **Strategies**

**Require a minimum distance from intersections.** Driveways should be at least 20 feet from unsignalized intersections or crosswalks and 40 feet from signalized intersections. Commercial properties may have only one driveway within 100 feet of an intersection, which must be as far as practicable from the intersection. Two driveways would be allowed in cases where necessary to avoid placing a driveway on a protected street where driveways are prohibited. (Best Practice: Boston, Cambridge, MA)

**Restrict grandfathering of driveway and lay-by permits.** If the property is vacant for more than three years, or if the property use changes, permits should automatically expire and new applications should be required.

**Minimize the impact of driveways on the natural environment.**

### **Strategies**

**Encourage the use of permeable surfaces in driveways.** In residential areas, permeable paving can be used for driveways, or a center green vegetative strip can reduce the impervious surface. (Best Practice: Boston, MA)

**Allow green bumpouts in unusable sections of curb parking lanes.** When driveways are placed on streets with curb parking, leftover spaces of less than 15 feet long may be created that are too short to park a car at the curb. These spaces can be combined with the furnishing zone and greened with planters, vegetation strips, or tree wells.

### **Resources**

AASHTO Pedestrian Guide, 2004

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE, 2010

Best Practices Survey on Lay-By Lanes, PCPC, 2009

## **SIDEWALKS IN NEW DEVELOPMENT**

### **Current policy and practice**

City Code requires that property owners on all streets, public and private, maintain a paved sidewalk [§11-505(1)]. It does not matter if it is a new or existing street. The width of the paved sidewalk is determined by the Streets Department but the minimum is 5 feet. If a developer builds a new street, sidewalks are required; however, the City has occasionally waived the sidewalk requirements so that developers can more easily meet Water Department regulations for stormwater management. This occurs most often in the Wissahickon watershed or in large developments over 15,000 square feet. The Streets Department publishes standard specifications for roadway design and sidewalk design, but not for sidewalk dimensions. A sidewalk buffer strip is not currently required.

### **Goal**

Expand the City's pedestrian/sidewalk network into all new residential, commercial and mixed-use developments.

### **Objectives**

- Require sidewalks in new developments that follow the standards established in the *Pedestrian and Bicycle Plan* for sidewalk design based on the new street classification system.
- Promote sustainable development practices for new sidewalks.

**Require sidewalks in new developments that follow the standards established in the *Pedestrian and Bicycle Plan* for sidewalk design based on the new street classification system.**

### **Strategies**

New developments should include sidewalks that meet or exceed the recommended standards for Walking Zone and Furnishing Zone widths. The Streets Department and Planning Commission should adopt these standards as the basis for evaluating proposed sidewalks.

### **Promote sustainable development practices for new sidewalks**

### **Strategies**

Address stormwater management issues through the use of permeable sidewalk surfaces and green infrastructure in the Furnishing Zone without sacrificing the recommended minimum Walking Zones. The Streets Department is researching permeable pavement treatments for use in the City.

## SIDEWALK RETROFIT

### Current policy and practice

The City has the legal authority to require property owners to provide sidewalks [§11-505(1)] but only does so when it deems the existing situation to be hazardous. When replacing sidewalks, property owners need to get permission from the Streets Department. By implication, property owners cannot remove sidewalks without the permission of the City; however, this has occurred within the *Pedestrian and Bicycle Plan*'s study area in recent years.

### Goal

Fill in gaps in the City's pedestrian/sidewalk network.

### Objective

Establish guidelines for requiring property owner retrofit of sidewalks.

### Strategies

Utilize the recommendations put forth in *Pedestrian and Bicycle Plan* to identify streets that are the highest priority for sidewalk retrofitting. Update the list of highest-priority sidewalk projects every 5 years. (Best Practice: Charlotte, N.C.)

Establish a goal of installing sidewalks on five percent (5%) of the *Plan*'s identified high-priority sidewalk gaps per year.

## BIKEWAY DESIGN STANDARDS

### Current Policy and Practice:

The Philadelphia Streets Department currently follows the 2009 version of the Manual of Uniform Traffic Control Devices (MUTCD) standards and 1999 AASHTO Guide for the Development of Bicycle Facilities to design facilities for bicycling in Philadelphia. It also has the *Bike-Friendly Design Guidelines Manual* published in August 2000. The Streets Department has installed bicycle lanes, designated shared lanes, colored bike lanes in conflict zones and multi-use paths. Several contra-flow lanes are also employed in very limited circumstances.

### Bicycle Lanes

Most bicycle lanes in Philadelphia are 5' wide, which is the minimum width when the lane is adjacent to parked cars or the curb. Some bike lanes are 6', where the street space allows, such as the Spruce and Pine Street bike lanes, and proposed lanes on the South Street Bridge. Aramingo Avenue has a 7' bike lane between Castor Avenue and Margaret Street.

### Designated Shared Lanes

"Shared lanes" is a broad term that encompasses several kind of facilities. Chestnut Street between 18<sup>th</sup> and 6<sup>th</sup> Streets is a shared bike and bus facility that is signed "Bike and Bus" and "Right Turns Only" and marked with a large bike stencil in the middle of the lane. Columbus Boulevard between Race and Spring Garden Streets is one of the city's earliest bicycle facilities that was marked with an earlier version of a shared lane marking which was simply the bike lane and directional arrow stencils without the bike lane stripe. The 2009 MUTCD has adopted a "Shared Lane Marking" symbol consisting of a bike stencil with two chevrons on top, also known as a "Sharrow".

### Shared-use Paths

Paved paths are physically separated from motor vehicle traffic, generally outside the road's right of way, and are often shared with pedestrians and other non-motorized users. The Streets Department and Fairmount Park have constructed and maintain these types of facilities, such as the Kelly Drive path, the Martin Luther King Drive path, and the West Bank Greenway.

### Goal:

Establish up-to-date and comprehensive bikeway and shared lane design guidelines for city agencies and their consultants working on street and bridge projects in Philadelphia.

### Objectives :

- Adopt the latest best practices for full array of bikeway facilities, including currently used facilities and emerging designs
- Develop appropriate maintenance standards for existing and emerging bicycle facilities (Also see Bicycle Network Maintenance policy paper)
- Assure periodic professional training of City engineers and planners in bicycle facility design (Also see Education policy paper)

### **Adopt the latest best practices for full array of bikeway facilities, including currently used facilities and emerging designs**

### Strategies:

Develop a Philadelphia Complete Streets Design Manual to replace the *Bike-Friendly Design Guidelines Manual* and typical street design guides currently used by the Streets Department. The new manual will draw from the documents and reports below and will provide instructions regarding how treatments should be implemented on streets in Philadelphia. The Mayor's Office of Transportation & Utilities is currently retaining a consultant to assist it in developing this manual.

Several guide books have either recently been published or are anticipated to be published in the coming year. Philadelphia should be prepared to adopt these innovative concepts as they become available. Publications include:

- The 2009 edition of the Manual of Uniform Traffic Control Devices
- The 2010 edition of the AASHTO Guide for the Development of Bicycle Facilities (Currently under final review)
- Publications of peer cities including guidelines from Chicago (Chicago Bike Lane Design Guide), Portland, Oregon (Portland Bikeway Design and Engineering Guidelines), and New York City (Street Design Manual).
- A proposed NACTO Urban Bikeway Design Guide that will present a best practices handbook for urban areas
- Design Manual for Bicycle Traffic, published by CROW, which presents best practices that have been developed in the Netherlands over the past 30 years
- Smart Transportation Guidebook PA and NJ

The new Complete Streets Design Manual will present typical cross sections that would accommodate bicyclists on different street classifications and widths. The manual should include innovative designs to handle conflict zones at intersections where bike lanes have to cross motor vehicle lanes serving turning traffic. Designs could include treatments such as colored bike lanes and “mixing zones”.

Bicycle design guidelines in the Complete Streets Design Manual should include:

- Bicycle lanes. To accommodate streets of different widths, uses, or classifications, several bike lane designs should be adopted. The designs should include enhancements such as marked buffers (e.g., the Spruce/Pine bike lanes) and/or coloring to better highlight lanes to motorists.
- Marked Shared Lanes. Where street corridors are appropriate for designation as part of the bicycle network, but not wide enough to accommodate separate bicycle lanes, use sharrows markings to indicate the proper location for bikes and to highlight the fact that motor vehicles must share the road.
- Shared-use paths. Where appropriate, shared-use paths can be useful to connect local streets to larger networks. A sidepath is a subset of a shared-use path that is adjacent to the Right-of-Way or roadway.
- Trails. Trails are natural-surfaced paths.
- Cycle Tracks. These bikeways are physically separated from both the adjacent travel lane and the sidewalk by a physical barrier such as parked cars, delineator posts, bollards or landscaping. These types of facilities are best suited for roadways where a) higher traffic speeds and/or volumes have increased the desire by bicyclists for physical separation or b) encroachment on bike lanes by motorists are an issue.
- Contra-flow lanes. In these types of lanes, bicyclists travel in the opposite direction from motorists on a one-way street. A contra-flow bike lane on the motorists left must be separated either physically or by double-yellow line. Contra-flow lanes are sometimes used to provide a more direct route with reduced travel times. They also can provide alternatives to hilly or hazardous routes, reduce wrong-way riding and sidewalk riding, and optimize access to high-use destinations.
- Climbing lanes. This treatment is for use on a two-way street on a hill that is not wide enough for bike lanes on both sides of the street. A bike lane is used in the uphill direction of travel, and a sharrows is used on the opposite side.
- Bicycle-Friendly Streets. Low-volume and low-speed streets that have been optimized for bicycle travel through treatments such as traffic calming, signage and pavement markings, and intersection crossing treatments. These are typically on residential streets.



**Develop appropriate maintenance standards for existing and emerging bicycle facilities.** (Also see Bicycle Network Maintenance policy paper.)

**Strategies:**

Identify methods for removing snow and debris and adopt as standard practice.

Keep facilities in good repair. If clump of cement gets dropped in lane, remove and straighten it.

Incorporate striping refreshment into operating budgets.

Treat repair of potholes and failing utility trenches with the same response time as potholes and failed trenches situated within motor vehicle travel lanes

**Assure periodic professional training of City engineers and planners in bicycle facility design.** (Also see Education policy paper)

**Strategies:**

Provide periodic bicycle and pedestrian design and planning training sessions. Staff from the Streets Department, Planning Commission and Mayor's Office of Transportation & Utilities should attend major annual meetings such as Pro-Walk/Pro-Bike and the National Safe Routes to School Conference.

When the Complete Streets Design Manual is complete, provide a variety of training opportunities for City design and maintenance employees as well as consultants and others responsible for planning, designing, constructing, operating and/or maintaining streets with bicycle facilities.

## BICYCLE TREATMENT AT INTERSECTIONS

### Current Policy and Practices:

Intersections and intersection-related locations, where bicyclists are exposed with the greatest frequency to potential conflicts with other vehicles, account not surprisingly for more than half of bicycle-motor vehicle crashes. Bike lanes are sometimes dropped at approaches to intersections with exclusive right turn lanes (Photo 1), which may cause unpredictable movements and conflicts between bicyclists and motorists. At intersections without exclusive right turn lanes, bike lanes are brought up to the stop line, leaving through bicyclists exposed to conflicts with right turning motorists. Bicyclist vulnerability is most acutely felt at long, high-speed weave sections where bike lanes are also typically dropped. Left-turning bicyclists (and right-turning bicyclists on the left side of a one-way street) often cannot find a suitable gap in which to merge in preparation for the turn. Offset intersections are difficult to cross because they require the through bicyclist to merge left or right on the cross street.

Innovative designs to mitigate these problems have been implemented and evaluated throughout the country, with good results. These innovations include combined bicycle lane/right turn lanes, colored bike lanes, bicycle-only center turn lanes, and advanced stop bars (the “bike box”). The City of Philadelphia has implemented blue bike lanes at several locations, and has recently adopted a policy to pull back the stop bars at some intersections. Bicycle traffic signals can reduce delay for bicyclists by providing a head start. They may also be used to provide a signal phase for through bicyclists on a physically separated bike lane to manage conflicts with turning motor vehicles.

### Goal:

Improve bicyclist safety and comfort through intersections with tested engineering solutions.

### Objectives:

- Reduce confusion and conflicts
- Increase motorist awareness of bicyclists
- Facilitate bicycle through and turning movements

### Strategies:

Implement mixing zones, which are a combination of a bicycle lane and a right turn lane within a constrained right-of-way. (Best practice: Washington, DC; New York, NY (Photo 2))

Carry bike lanes across right-turn lanes by marking them as solid green and installing supplemental regulatory signage (such as yield bars) to increase motorist yielding. (Best practice: Portland, OR (Photo 3))

Install signage at conflict points. (Best Practice: Portland, OR (Photo 3))

Implement advanced stop bars (“bike boxes”) with bold demarcation at intersections with high bicyclist and motor vehicle volumes, especially on multi-lane arterials. (Best practice: Eugene, OR; New York, NY (Photo 4))

Install bicycle-only center turn lanes on cross streets along popular bike routes interrupted by right offset intersections. (Best practice: Portland, OR (Photos 5 and 6))

Install chevrons and/or dashed lines across intersections. (Best Practice: New York, NY (Photo 7))

Consider bicycle signals for intersections with heavy bicycle traffic. (Photo 8)



Photo 1 Bike Lane Disappears At Intersection – Philadelphia



Grand St, New York, NY

Photo 2 Mixing Zone -



Photo 3 Crossover Green Bike Lane - Portland, OR



Photo 4 - Bike Box (Advanced Stop Bar) - Portland, OR





Photo 5 Center Left Turn Lanes - Portland, OR



Photo 6 - Right Offset Intersection with Center Left Turn Lanes - Portland, OR



Photo 7 - Dashed Lines and Chevrons through Intersection - Grand St, New York, NY





Photo 8 - Bicycle Signal and Left Turning Vehicle - New York, NY

**Resources:**

Hunter, W.W., J.C. Stutts, W.E. Pein, and C.L. Cox. *Pedestrian and Bicycle Crash Types of the Early 1990's*. United States Department of Transportation, Federal Highway Administration: Washington, DC, 1996. [FHWA-RD-95-163]

## **BICYCLE PARKING**

### **Current Policy and Practices:**

In the 1990s, the Streets Department installed 1,200 racks in the public right of way. In 2008, the Streets Department let the Adopt-A-Rack contract to install 1,400 inverted U racks. These racks were installed if a business, property owner or non-profit agreed to maintain the racks should they become damaged. A 2008 assessment of bike parking capacity by the Bicycle Coalition of Greater Philadelphia found a shortage of bike racks at many privately and publicly owned locations. Since then, the Philadelphia Parking Authority has installed racks in several of its garages and will be converting 1600 meter poles to bike racks during the summer of 2010. Bike racks are available at some regional rail stations, subway/elevated stations and transportation centers and terminals. SEPTA currently does not maintain bicycle lockers at transit centers, because of security concerns. Bike racks are available at every New Jersey station on the PATCO line except for Camden City Hall. No bike racks are provided at the Center City Philadelphia PATCO stations.

In 2009, City Council passed and Mayor Nutter signed legislation mandating that new developments install bicycle parking. The legislation amended the Philadelphia Code Chapter 14-1400 Parking and Loading Facilities to:

- 1) Create three classes of bicycle parking spaces according to how they protect against theft and inclement weather
- 2) Require the establishment of standards for racks and bicycle parking spaces.
- 3) Require that bicycle parking spaces be provided by:
  - All non-residential uses with gross floor area greater than 7,500 square feet
  - Multiple-family dwellings when 12 or more are provided on a lot
  - Public parking lots
  - Low occupancy facilities with 6 or more employees
- 4) Reduce the number of required off-street automobile parking spaces by one for every five sheltered bike parking spaces provided on a lot, with a maximum reduction of 10%.

### **Goal:**

Encourage bicycle ridership through provision of convenient, secure places to park.

### **Objectives:**

- Increase on-street bicycle parking;
- Provide off-street bicycle parking;
- Establish bike stations;
- Integrate bicycle parking with transportation facilities;
- Provide bicycle parking for large events.

### **Increase on-street bicycle parking**

#### **Strategies:**

Place bike racks at a rate of 1,500 per year for five years for a total of 7,500 additional racks. The Philadelphia Streets Department has installed approximately 2,600 racks over the past ten years. There are currently plans to install an additional 500 racks in 2010. (Best Practice: Chicago, IL)

Expand the successful Adopt-a-Rack program by establishing a permanent "Request-a-Rack" program with on-line form for residents and businesses to suggest rack locations. (Best Practice: Chicago, IL)

Convert existing meter posts to create a space suitable for two bicycles whenever the Philadelphia Parking Authority replaces parking meters with multiple-space meter parking. (Best Practice: Arlington, VA)

Establish bike corrals to hold eight bicycles in the parking space for one car in high demand areas. (Best Practice: Portland, OR; Williamsburg, Brooklyn, NY)

Provide signage indicating where bicycle parking is available. A branded logo would keep visual clutter to a minimum by creating a distinctive look to identify bicycle parking. (Best Practices: Washington, DC, Metrorail)

## **Provide off-street bicycle parking**

### **Strategies:**

Encourage existing buildings, both residential and commercial, to voluntarily evaluate the potential for adding interior or on-site sheltered bicycle parking.

Establish guidance on bicycle signage, especially for signs placed in buildings stating clearly that bikes are not allowed to be confiscated without warning.

## **Establish bike stations**

### **Strategies:**

Provide bicycle stations convenient to commuters to allow for showers, lockers, secure bike storage and repair facilities. Potential sites are subway concourses, major transfer centers, parks and plazas, transit-oriented development, university campuses and hospitals. (Best Practice: Berkeley, CA, Berkeley Bikestation; Long Beach, CA, Long Beach Commuter Bikestation; Seattle, WA, Seattle Bikestation; Chicago, IL, McDonald's Cycle Center at Millennium Park)

## **Integrate bicycle parking with transportation facilities**

### **Strategies:**

Post signs at stations to indicate bicycle parking locations, bicycle entrances, and elevators.

Create multiple parking opportunities for employees and travelers who want to arrive and depart by bicycle at the Philadelphia International Airport.

Encourage SEPTA to provide bike parking shelters to allow passengers to park their bicycles safely out of the weather for the day at SEPTA stations that serve park-and-ride or kiss-and-ride commuters and transit-oriented development, as well as transfer stations. (Best Practice: King County, WA, Metro Transit; San Diego, CA, Ridelink; Washington, DC Metro)

Encourage SEPTA and Amtrak to provide secure long-term parking, either lockers or guarded, at stations for travelers arriving and departing by bicycle. (Best Practice: Portland, OR; San Jose, CA)

Encourage SEPTA to place bicycle racks inside the paid areas of Market-Frankford El and Broad Street Subway stations if sufficient space is available.

## **Provide bicycle parking for large events**

### **Strategies:**

Require secure bicycle parking as a requirement for obtaining a special events permit from the Managing Director's office. (Best Practice: Palo Alto, CA; Chicago, IL; San Francisco, CA - San Francisco requires "[monitored bike parking](#)" at any permitted event with over 2000 participants.)

Require the provision of bike parking at a rate of 1 space for every 100 attendees at large public assembly buildings for cultural and sporting events through the city maintenance code. (Best Practice: Denver, CO)

### **Resources:**

Bicycle Parking: Key to a Green Philadelphia, Bicycle Coalition of Greater Philadelphia, May 2008

City of Chicago Bike 2015 Plan: [http://www.bike2015plan.org/chapter3/chap3\\_obj1.html](http://www.bike2015plan.org/chapter3/chap3_obj1.html)

Bike Parking Requirements Comparison of 145 jurisdictions, 2002:

<http://www.massbike.org/bikelaw/parkcomp1.htm>

Association of Pedestrian and Bicycling Professionals:

<http://www.bikearlington.com/docs/Bicycle%20Parking%20Guidelines.pdf>

Washington Nationals Stadium:

<http://washington.nationals.mlb.com/was/ballpark/directions.jsp?loc=bike>

## **BICYCLES ON PUBLIC TRANSPORTATION**

### **Current Policy and Practice:**

#### **SEPTA**

SEPTA encourages bicyclists to use its services. However, in the interest of customer safety and convenience, SEPTA places limitations on when and where bicycles are permitted. SEPTA defines bicycles as “two-wheeled manually powered or electrically assisted vehicles”.

At stations, riders with bicycles must use elevators or stairways, not escalators. Bicycles may not be ridden inside any SEPTA station.

Folding bicycles must be fully collapsed before they may be carried onto SEPTA vehicles as luggage. Otherwise, guidelines for non-folding bicycles will apply.

#### **Buses and Trackless Trolleys**

All SEPTA buses and trackless trolleys are equipped with front-mounted bike racks. These racks hold two bicycles at a time, and may be used by customers at any time. If the rack is full, riders must wait for the next bus. SEPTA does not allow bicycles to be brought inside any of its buses.

#### **Market-Frankford and Broad Street Subway Lines**

Full-size bicycles are permitted on these lines during weekday off-peak hours (before 6 a.m., between 9 a.m. and 3 p.m., and after 6 p.m.), and at all times on weekends and major holidays. Folding bikes are permitted at all times.

#### **Trolleys**

No bicycles are permitted at any time on any of SEPTA's trolley lines. This includes Routes 10, 11, 13, 15, 34, 36, 101 and 102.

#### **Norristown High Speed Line**

The Norristown High Speed Line (Route 100), permits bicycles during weekday non-peak hours and at all times on weekends and major holidays. Two bikes per train-car are permitted. Bikes must be stored in the rear vestibule of the vehicle.

#### **Regional Rail**

SEPTA's Regional Rail services permit full-size bicycles at all times except for trains designated as peak-hour trains on an individual route's schedule. The maximum is two bicycles per train-car. Folding bicycles can be brought on board at all times and should be stowed in the train's luggage storage areas. Full-size bicycles must use a train's "Priority Seating" area, which is also designated for use by customers with disabilities and senior citizens. Bicyclists must yield this space to these passengers at all times, and will not be allowed to board or remain on the train if all "Priority Seating" areas are needed to serve these customers. SEPTA can accommodate cyclist groups who plan to ride Regional Rail as long as the group notifies SEPTA of their plans at least five days in advance of their trip.

#### **PATCO**

The PATCO Speedline allows bicycles to board at all times. Bikes should be kept in the non-platform side door area. Passengers with bicycles are instructed to yield to all other passengers on the train. Five PATCO stations (15-16<sup>th</sup> Locust, 8<sup>th</sup> and Market, Broadway, Woodcrest and Lindenwold, and soon 9<sup>th</sup>-10<sup>th</sup> Locust) are fully ADA-compliant, with elevators and extra wide fare gates that are wide enough to allow a cyclist to walk a bike through the gate without needing to lift it over a turnstile.

#### **NJ Transit**



**Buses**

All NJ Transit buses in its Southern Division, which includes its Center City Philadelphia service, have front-mounted bike racks that can accommodate two bikes per vehicle. Bikes are permitted in these racks at all times.

**Trains**

Foldable bikes are permitted on all NJ Transit trains at all times. NJ Transit's Atlantic City Line allows regular bicycles and Segways on board at all times, with a maximum of two bikes per train car. Bikes must be stored in the accessible area of the train, and if passengers with disabilities request the space, the bicyclist must yield.

**Goal:** Promote both bicycling and transit use by making bicycle access to transit as simple and unrestricted as possible.

**Objectives:**

- Expand bicycle access to transit vehicles and stations
- Improve information about rules regarding bicycle access to transit.

**Expand bicycle access to transit vehicles and stations****Strategies:**

Install bicycle securing devices inside all SEPTA rail vehicles.

Bicyclists should be allowed to occupy underused sections of railcars such as the center compartments of Silverliner IV trains if the space is available.

Explore the development of a Boston-style bicycle car on the Regional Rail system for tourism use (see photo below).



Encourage Amtrak to allow full bicycle access on trains on its Keystone and Northeast Corridor services.



Integrate bike stair channels on stairways in public transit facilities where appropriate to provide access to platforms. (see photo below)



Adopt “universal design” principles wherever possible at regional rail and rapid transit stations by removing barriers for access for persons with disabilities. Universal design helps all passengers including persons with disabilities, persons with bicycles, persons with rolling suitcases and persons with baby strollers.

### **Improve information about rules regarding bicycle access to transit**

#### **Strategies:**

Post signage inside transit vehicles that identifies where bicycles may be stored, and explains the hierarchy of use.

Post signs at stations to indicate bicycle parking locations and elevators.

## EDUCATION

### Current policy and practice

The City of Philadelphia does not have a comprehensive safety education program for pedestrians or bicyclists. Although there are some safety education programs currently operating within the city there is a great need to expand such programming for both the adult and student populations. The current programs lack coordination and work independently at different levels of efficiency. The city has an active bicycle advocacy group (Bicycle Coalition of Greater Philadelphia), which is involved with providing safety education, but does not have any equivalent pedestrian or transit related groups.

Just recently, the City has received a large grant from the Department of Health and Human Services that will fund a host of programs to encourage physical activity, particularly bicycling and walking. These activities will be coordinated through the Philadelphia Health Department and include helping to convene the new Pedestrian and Bicycle Safety Committee; promoting active transportation and public transit through media campaigns; and working with the Bicycle Coalition to provide pedestrian safety education to all 2nd graders and bicycle safety education to all 5th graders in public schools, using a Train the Trainer model.

The Bicycle Ambassadors are a successful adult education program working to encourage adults to ride more often and ride more safely as well as providing bicyclists and motorists with tips for sharing the road. The Ambassadors currently work from May to September in the neighborhoods of Center City, University City and Fairmount Park. The Bicycle Coalition is currently contracted with the City of Philadelphia to implement this program.

The Bicycle Coalition has taken over management of the School District of Philadelphia's bicycle education program and re-launched BEEP (Bicycle Education Enhancement Program) in the spring of 2010. BEEP, renamed as Safe Routes Philly, is a youth based education program focusing on bringing safe bicycling education to the children. With a dedicated instructor, this program is a direct educational model serving charter and non-public schools. Safe Routes Philly focuses on students in the 5<sup>th</sup> grade and teaches basic bicycle safety and covers the basic rules of the road. Students are educated on bicycle safety, such as proper helmet use and fitting, as well as basic road skills, such as signaling turns, lane positioning and general road signage.

Neighborhood Bike Works (NBW) currently hosts youth Earn a Bike classes at seven locations throughout the city. The classes include fourteen two-hour after-school lessons, free to participants. There are ten sessions that cover bike repair & maintenance, and two sessions that cover riding safety, bike handling skills, and riding in traffic. The course also includes a lesson that covers health, nutrition, transportation choices, and the environment. After a few lessons, students select the bike that they will fix up to keep after graduation. NBW also offers adult education focusing on bicycle maintenance through their location at 40<sup>th</sup> and Locust during the evening hours (also know as the Bike Church).

Street Smarts is a traffic safety program funded through highway safety funds from PennDOT and sub-contracted through the City of Philadelphia. PennDOT disburses the funds to the Department of Behavioral Health's Office of Addiction Services who then subcontracts with Philadelphia Health Management Corporation to conduct the Street Smarts program. The Street Smarts program, which has existed in various forms for over 20 years, began as the Buckle-Up Baby program, the city's first car seat awareness program. After the funding mandate changed, the program re-emerged as Buckle-up Philadelphia and now currently functions as the Street Smarts program. Based on the crash data they receive from Philadelphia each year, PennDOT determines the goals, and target areas for each year of funding. The Street Smarts program has been funded for the Oct-Sept 2009-10 season to focus on the following five areas: impaired driving, unrestrained driving (driving w/o a seat belt), older drivers (65-74 and 75+), pedestrian fatalities, and speeding crashes. In addition to providing health education to the public, the program also acts as a consultant to the Philadelphia Police Department in identifying areas where increased enforcement of DUI and aggressive driving efforts regulations could be established. In

2008 Street Smarts was in 410 sites and made contact with over 17,000 people. Street Smarts aims to prevent traffic related fatalities and injuries by educating the community on topics such as: proper use of safety belts and child safety seats; improved pedestrian safety; prevention of underage drinking and driving under the influence; motorcycle/bicycle safety; safe driving characteristics; aggressive driving; and school bus safety. The program also uses the following means to educate the public: City-wide public education and awareness campaigns; business and community programs; school programs; day care center presentations; and City-wide media campaigns.

There are 726 schools in the Greater Philadelphia area and nearly 300 schools within Philadelphia County that educate elementary and middle-school children on pedestrian safety through School Safety Patrols. AAA Mid-Atlantic and the Mid-Atlantic Foundation for Safety & Education support the program by providing safety patrol materials and equipment worn by all AAA School Safety Patrols. In addition, the Mid-Atlantic Foundation for Safety and Education sponsors five AAA School Safety Patrol Officers' Training Camps in conjunction with local police departments each summer. Each year, AAA School Safety Patrols are recognized with an Outstanding AAA School Safety Patrol Awards Luncheon throughout the AAA Mid-Atlantic territory. Selection criteria for choosing an Outstanding AAA School Safety Patrol include leadership, sound academics, promptness, neatness and industriousness. Each honoree receives a plaque recognizing their accomplishment and \$150 in U.S. Savings Bond. If a school is considering this program they are asked to contact AAA themselves and speak with the regional representative, John Long, who organizes the training in the Philadelphia region.

The Roosevelt Boulevard Safety Task Force is a joint task force between the City and PennDOT, formed to address auto and pedestrian crashes on the roadway. Efforts have included a comprehensive public information and education campaign directed at both drivers and pedestrians. This is the most recent such education program the City has undertaken; it was carried out in conjunction with stepped-up enforcement efforts and the installation of red-light cameras. The program involved a full advertising campaign plus evaluation through telephone surveys and focus groups.

The University of Pennsylvania's Department of Public Safety engages in a regular Share the Road Campaign. This campaign is launched twice a year through a press conference including local partners such as the City of Philadelphia's Pedestrian and Bicycle Coordinator, a representative from the Bicycle Coalition, the Chief of Penn Police and a few other local representatives. Police and public safety officers from the University of Pennsylvania provide information for the weeks following the press conference to bicyclists and have select enforcement and education for vehicles.

Professional training in pedestrian and bicycle facility design has been offered over the years to engineers and planners in the Philadelphia region through PennDOT and NJDOT. DVRPC sometimes hosts training provided by others or serves as a site for webinars. The Federal Highway Administration provided funding for a series of courses on Pedestrian Safety Action Plans in 2006-2008. In 2009, PennDOT District 6 used Transportation Enhancement funds to offer a National Highway Institute course on Bicycle Pedestrian engineering. In the past three years, ADA issues have been the main emphasis for ped/bike training offered by PennDOT. In 2006, the Planning Commission arranged for a 2-day training course in pedestrian and bicycle facility design, which was attended by approximately 30 City planners and engineers.

Standard training for new SEPTA operators covers pedestrian issues, but not as a separate module. Operators are taught to be particularly alert for passengers running to catch a bus and to double check for passengers exiting the bus when taking off. A film is used for training on how to deal with bicycles on the road. When the bike lanes were first installed there was some discussion of bus/bike conflicts at intersections. There is no formal refresher training. The only time a driver is retrained is when he or she has been off the job for more than 6 months.

The Philadelphia Parking Authority (PPA), which is in charge of taxi operations in Philadelphia, has posted materials promoting bicycle awareness and safety in various locations where taxi drivers congregate at PPA facilities. The PPA also adapted its driver training program to mention driver courtesy and respect to bicyclists when encountered on the city's streets. Currently, PPA is getting ready to update its taxi driver training program and has requested suggestions about how it might be revised for more attention to the needs of pedestrians and bicyclists

## **Goal**

Reduce pedestrian and bicyclist injuries and fatalities through public safety education and through training of staff whose jobs affect pedestrian and bicyclist safety.

## **Objectives**

- Enhance and expand current education programs focusing on pedestrian and bicycle safety.
- Create an awareness campaign emphasizing the rules of the road pertaining to bicycles and pedestrians as a part of the larger transportation community.
- Improve training of staff whose jobs affect pedestrian or bicyclist safety, in order to implement the Plan.
- Educate bicyclists on strategies and techniques for safe bicycle locking.

## **Enhance and expand current education programs focusing on pedestrian and bicycle safety.**

### **Strategies:**

Expand the Bicycle Ambassadors program. (Best Practice: Chicago, IL)

- Expand staff. With additional funding, the Ambassadors program will be able to hire more Ambassadors (8-10). Additional staff would allow the program to hire Ambassadors with language skills (beyond Spanish) to round out the team and expand areas of outreach.
- Extend program. The Bicycle Ambassadors program is currently funded through September of 2010.
- Extend the season. The program is currently running from May through September; additional funding would provide the opportunity to keep some staff on through the entire year.
- Expand to additional neighborhoods. Currently, the Ambassadors program is restricted to Center City, University City and Fairmount Park. With additional funding it can expand to neighborhoods including those with large ridership and large non-English speaking communities including South Philadelphia, Southwest, Northern Liberties, Fishtown, East Falls, Manayunk and the Cobbs Creek Parkway area.

Extend the Safe Routes Philly program (previously known as BEEP) so that pedestrian and bicycle safety education is available for all Philadelphia elementary and middle school students on a continuing basis. Safe Routes Philly is modeled after the national Safe Routes to School initiative. (Best Practices: Portland, OR; Chicago, IL; Bike Texas; Bicycle Coalition of Maine; WalkSafe, Miami, FL; Bike New York, NYC, NY; League of American Bicyclists, Washington, DC)

- Extend the program. Funds available through December 2011. The longer the program can run, the more flexible the schools will become with the program and the greater the opportunity to make effective change within those schools.

Partner with local universities to target new college students with pedestrian and bicycle safety education. College-age students are more likely to walk and bike, but they tend to take more risks than other age groups because they have a strong perception of "invincibility". Furthermore, many students are biking and walking in an urban setting for the first time, and they may need to learn new safety rules and practices. (Best Practices: Univ. of North Carolina, Univ. of Kentucky, College of New Jersey)

Target older Philadelphians for safety messages through senior centers, retirement communities, healthcare clinics/hospitals, libraries, churches, and through established organizations, such as Philadelphia Corporation for Aging.

Ensure that informational materials are made available in multiple languages as needed.

## **Create an awareness campaign emphasizing the rules of the road pertaining to bicycles and pedestrians as a part of the larger transportation community.**

### **Strategies:**

Create a public awareness campaign drawing on models from other cities and national best practices. The campaign should clarify traffic and safety rules and emphasize the importance of protecting the most vulnerable roadway users. Behaviors that should be considered for targeting include but are not limited to:

- motorists failure to yield right of way to pedestrians or bicyclists;
- bicyclists failure to yield right of way to pedestrians;
- motorists passing too closely to bicyclists;
- motorists opening car doors into bicyclists lane of travel;
- bicyclists riding the wrong direction;
- bicyclists riding on the sidewalk;
- Pedestrians failure to follow the rules of the road;
- Motorists speeding;
- Motorists and bicyclists failure to stop at red lights;
- Encourage helmet use;

(Best Practices: Washington, D.C.; New York, NY; Portland, OR; Portland, ME; Edmonton, Canada; Tucson, AZ)

## **Improve training of staff whose jobs affect pedestrian or bicyclist safety, in order to implement the Plan.**

### **Strategies:**

Promote the goals, objectives, and strategies of the Plan to key staff from the City and sister agencies. Implementation of the Pedestrian and Bicycle Plan depends on the support of key city and related agency staff, including the Streets Department, the City Planning Commission, the Mayor's Office of Transportation and Utilities, the Water Department, the Parks and Recreation Department, the Police Department, SEPTA, and DVRPC.

Take advantage of bicycle and pedestrian facility design courses provided through PennDOT and DVRPC. Each year, the City should provide a 1-2 day training session or design charrette focusing on walking and/or biking. The training should be required for City engineers and planners and should be open to outside consultants and community representatives for a modest fee. Continuing education credits should be provided, if possible.

Collaborate with SEPTA and with the Taxicab and Limousine Division of the Philadelphia Parking Authority to ensure that drivers understand both laws and safety considerations regarding pedestrians and bicyclists. (Best Practices: Chicago, IL)

Implement a continuing education program for the police force on bicycle and pedestrian rights. This course needs to include a refresher on the rights of both pedestrians and bicyclists in relation to their role as traffic. Police officers should also review all ticketable offenses and implementation strategies for enforcement. (Best Practices: MassBike)

## Educate bicyclists on strategies and techniques for safe bicycle locking.

### Strategies:

The best way to prevent bicycle theft is through education. Educate bicyclists on appropriate types of bicycle locks, how to use them, and other ways to make bicycles difficult to steal, including where to park and how best to prevent bicycle theft in general. Other helpful tasks would be to determine the amount and types of bicycle theft that occurs in Philadelphia. Developing a format of documenting bicycle theft by neighborhood in Philadelphia will help determine which target communities to begin bicycle theft prevention courses. This plan will also help determine the estimated annual costs of an effective anti-theft campaign as well as help identify the responsibilities of various agencies by region.

### Resources

- Washington D.C. Metro area Street Smart campaign:
  - <http://www.bestreetsmart.net/>
  - [http://bestreetsmart.net/resources/2004/SS\\_summary2004.pdf](http://bestreetsmart.net/resources/2004/SS_summary2004.pdf)
- Look NYC campaign:  
<http://www.nyc.gov/html/look/html/home/home.shtml>
- "Every Corner is a Crosswalk":  
<http://www.portlandonline.com/mayor/index.cfm?c=49278&a=248292>
- Pedestrian Safety Campaign Planner:  
[http://safety.fhwa.dot.gov/local\\_rural/pedcampaign/guide.htm](http://safety.fhwa.dot.gov/local_rural/pedcampaign/guide.htm)
- The University of North Carolina's "Yield to Heels" campaign - Campus Wise Cycling - Safety Tips 101: <http://www.hsrc.unc.edu/y2h>
- Philadelphia Health Management StreetSmarts:  
[http://www.phmc.org/site/index.php?option=com\\_content&view=article&id=48&Itemid=506](http://www.phmc.org/site/index.php?option=com_content&view=article&id=48&Itemid=506)
- School Safety Patrols: <http://www.aaamidatlantic.com/Foundation/SchoolSafetyPatrol>
- Mayor Daley's Bicycling Ambassadors: [www.bicyclingambassadors.org](http://www.bicyclingambassadors.org)
- Bicycle Coalition of Greater Philadelphia: [www.bicyclecoalition.org](http://www.bicyclecoalition.org)
- Bicycle Ambassadors: [www.bicycleambassadors.org](http://www.bicycleambassadors.org)
- Safe Routes Philly: [www.saferoutesphilly.org](http://www.saferoutesphilly.org)
- University of Pennsylvania Share the Road Campaign:  
[http://www.publicsafety.upenn.edu/PhotoGallery/Share\\_The\\_Road\\_09/default.asp](http://www.publicsafety.upenn.edu/PhotoGallery/Share_The_Road_09/default.asp)
- Neighborhood Bike Works: [www.neighborhoodbikeworks.org](http://www.neighborhoodbikeworks.org)
- <http://www.massbike.org/projectsnew/law-officer-training/>
- [http://www.chicagobikes.org/video/?loadVideo=buses\\_and\\_bicycles](http://www.chicagobikes.org/video/?loadVideo=buses_and_bicycles)
- FHWA Pedestrian Safety Campaign Planner



## ENFORCEMENT

### Current policy and practice

Rules of the road are intended to create a safe place for all road users. Bicyclists and pedestrians are part and parcel of the entire transportation network and need to be seen as such. However, many people may not be familiar with how the laws apply to bicyclists and pedestrians. In order to cut down on the chaos, two things are necessary. First, all road users need to recognize their place in the larger transportation network. Second, police need to have an enforcement presence to “encourage” users to abide by the legally adopted rules.

In Pennsylvania, as in all states, a bicycle is considered a legal vehicle and, as such, must follow all the rules of the road that govern motor vehicles. In addition, there are some rules crafted specifically for bicycles, for example, lights at night, audible signals, brakes, and helmets for children under the age of 12. There are some differences between State and City laws regarding bicycling. Philadelphia’s Code retains the “mandatory sidepath law” which prohibits bicycling in the roadway if there is an adjacent sidepath. Pennsylvania eliminated this provision several years ago. State law allows bicyclists to ride two abreast while City law requires single file riding outside of dedicated bicycle facilities. The City Code is also more restrictive in prohibiting bicycling in the roadway while wearing Bluetooth devices, although there are conflicting sections of the Code regarding this provision.

Due to a much higher density of pedestrians, City law is more restrictive about bicycling on sidewalks, prohibiting anyone over the age of 12 from sidewalk cycling anywhere in the City, while the State only prohibits bicycling on sidewalks in business districts (for people of any age). In the spring of 2009, the City Code was revised to allow the Streets Department to permit sidewalk bicycling by regulation, but it is anticipated this will be limited to a small number of locations.

The law does not give anyone the right of way - it cites conditions under which someone must yield right of way to someone else. Drivers and bicyclists must yield the right of way to pedestrians crossing legally (for example, not against a red light) in a crosswalk. If a sidewalk abuts at least one side of an intersection, then a legal crosswalk exists, whether marked or not. Drivers and bicyclists who are turning at intersections, including signalized intersections, must yield to pedestrians who are crossing. Furthermore, drivers at a signalized intersection may not enter an intersection, which means they may not cross over the crosswalk, unless they can assure that they will be able to exit the intersection before the light changes. Drivers may not block the crosswalk at an intersection, even if the driver thought he or she could clear the intersection before the traffic light changed.

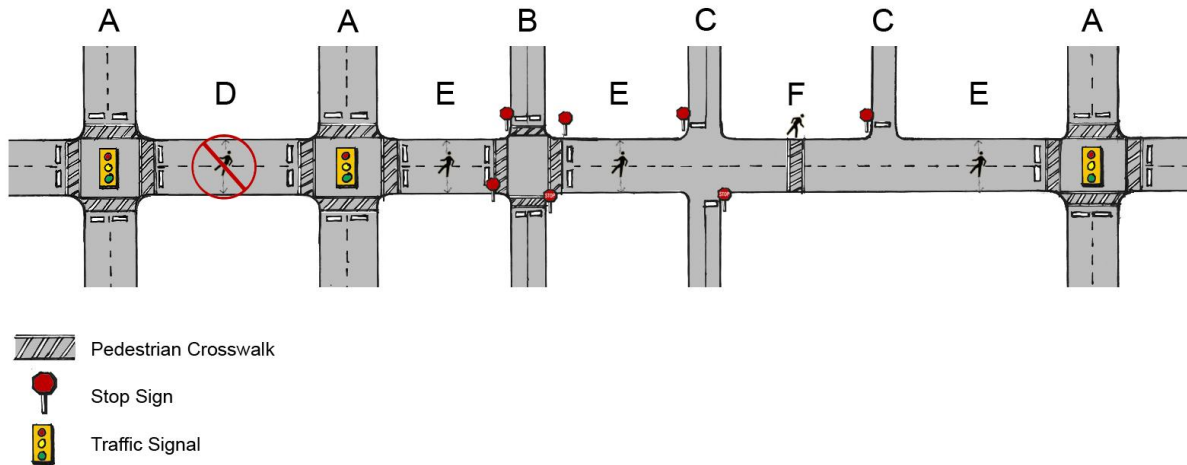
In Pennsylvania, a driver entering or exiting a driveway, alley or private road must yield the right-of-way to any pedestrian approaching on a sidewalk. Furthermore, in Philadelphia the driver of a motor vehicle entering onto a street from a driveway is required to come to a complete stop before crossing the sidewalk area as well as yield the right-of-way to any pedestrian on the sidewalk.

Crosswalks that are marked at non-intersection (mid-block) locations also require vehicles to yield to pedestrians. At non-intersection locations without a marked crosswalk, pedestrians must always yield to vehicles. Between adjacent intersections in urban districts at which traffic-control signals are in operation, the law is even stricter: it says that pedestrians shall not cross at any place except in a marked crosswalk. (See diagram on Page 2) However, vehicles must always yield the right-of-way to any totally or partially blind pedestrian carrying a clearly visible white cane or accompanied by a guide dog.

Many states model their traffic codes on the Uniform Vehicle Code, a model code created and maintained by a national committee of traffic experts. A key provision of the Uniform Vehicle Code is the “due care provision” which says: “Notwithstanding other provisions of this chapter or the provisions of any local ordinance, every driver of a vehicle shall exercise due care to avoid colliding with any pedestrian or any person propelling a human powered vehicle and shall give an audible signal when necessary, and shall exercise proper precaution upon observing any child or any obviously confused, incapacitated or intoxicated person”.



## CROSSING MAIN STREET: WHO HAS THE RIGHT-OF-WAY?



A: Signalized Intersection: Pedestrians must follow signal indications. Turning drivers and bicyclists must yield to pedestrians.

B: All-Way Stop: Drivers and bicyclists must yield to pedestrians crossing, even if it means losing their “turn”.

C: Unmarked Crosswalk at Intersection: Drivers and bicyclists must yield to pedestrians crossing. Pedestrians may not walk or run into the path of a vehicle which is so close as to constitute a hazard.

D: Mid-block Location - between two adjacent signalized intersections in an urban district, it is illegal for a pedestrian to cross the street.

E: Mid-block Location – between unsignalized intersections, or between a signalized intersection and an unsignalized intersection, or outside an urban district, pedestrians may legally cross, but must yield to motor vehicles and bicycles

F: Marked Mid-block Crosswalk – Drivers and bicyclists must stop or yield to pedestrians crossing.

The City of Philadelphia is currently rated as the #1 city for bicycle theft in the country (rating given by Kryptonite Locks, the industry leader in quality locking systems). There are very few policies in place regarding bicycle theft. The University of Pennsylvania offers a registration system for all students and employees to assist with recovery of bicycles. UPenn Public Safety also attempts to educate incoming students on safe locking tips. The City of Philadelphia also runs a program called Operation B.I.K.E. This voluntary program (currently operating in the Northeast police division) focuses on registration, identification and recovery of bicycles. At the district citizens may complete a registration form containing their name, address, etc., and information about their bikes. This form is numbered to correspond with a pre-printed sticker issued to the owner to be affixed to the bike. This same number is then stamped onto the bike using a metal punch. If the bike is stolen, the bike owner can not only report the theft to the police, but can also send out emails to local bike shops with the registration number.

Traffic enforcement tends to be a low priority for the Police Department, given budgetary pressures and constant concerns about reducing violent crime. Traffic enforcement resources must be carefully targeted and generally cannot be assigned to specific programs on a long-term basis.

The Police Department has been active in a couple of safety task forces over the past few years where pedestrian safety is a concern: the School Safety Zone Task Force and the Roosevelt Boulevard Safety Task Force. The School Safety Zone Task Force is a joint task force of the City and the School District. It has worked to make sure that the Police Department and the School District are both aware of any crashes involving school children, and that all such crashes are fully investigated. As part of the task force's efforts, Police officers have been stationed at schools on a rotating basis to enforce traffic laws, particularly during the first few months of each school year. The Roosevelt Boulevard Safety Task Force focuses on reducing crashes on this high-volume, high-speed arterial through enforcement, education, and engineering. Enhanced enforcement of speeding, red light running, and aggressive driving has resulted in many citations, and has been funded through special allocations from PennDOT and Congressional appropriations.

Recently the City received a generous grant from the Department of Health and Human Services that will fund a host of programs to encourage physical activity, particularly bicycling and walking. These activities will be coordinated through the Philadelphia Health Department and include helping to convene the new Pedestrian and Bicycle Safety Committee recommended below.

## **Goal**

Improve pedestrian and bicyclist safety by increasing enforcement of traffic laws regulating the interaction between vehicles, bicyclists, and pedestrians.

## **Objectives**

- Improve enforcement of traffic and parking laws that affect pedestrians and bicyclists.
- Reduce incidence of bicycle theft.
- Update Philadelphia laws to conform to state traffic law and the Uniform Vehicle Code regarding bicycling and walking, except where different rules are appropriate to Philadelphia's urban conditions.

## **Improve enforcement of traffic and parking laws that affect pedestrians and bicyclists.**

## **Strategies**

Establish a Philadelphia Pedestrian and Bicycle Safety Committee to be in charge of reducing bicycle and pedestrian deaths by 50% by the year 2020. This Committee will be responsible for the development of safety education campaigns and improving enforcement of traffic laws that affect pedestrians and bicyclists. Identify traffic violations that particularly endanger pedestrians and bicyclists. The most common causes of bicycle and pedestrian crashes, and the types of illegal motorist, cyclist, and

pedestrian behavior that contribute to crashes in Philadelphia need to be identified in order to focus education and enforcement activities.

Improve training of police officers and PPA personnel on traffic and parking laws as they relate to bicyclists and pedestrians. One creative and effective way to “refresh” the education of police officers is to produce a brief 10-15 minute video to be shown at their pre-shift morning briefings. A video has the ability to capture “real world” examples and lessen the confusion and gray area that can surround enforcement of bicycle/car and bicycle/pedestrian conflicts. (Best Practices: Wisconsin; Chicago, IL)

Design enforcement campaigns that target locations with high rates of pedestrian or bicycle crashes, and campaigns to target behaviors that endanger bicyclists and pedestrians. For example, one critical intersection where there are regular conflicts between motorists, bicyclists and pedestrians is located where Schuylkill River Trail intersects with Martin Luther King Drive. Enforcement campaigns should start with warnings before tickets are issued. Enforcement is a key addition to the engineering and education improvements which are already taking place. (Best Practices: pedestrian decoy operations used in Washington and New Jersey and pedestrian sting operations used in Atlanta)

Use speed feedback monitors to supplement police enforcement.

Expand use of automated enforcement for red-light running to more locations. (Washington, DC – automated photographs at traffic intersections)

Lobby state legislature for right to use automated enforcement for speeding.

Use Police officers on bicycles to discourage bike lane incursions by motor vehicles, and in enforcing traffic violations by bicyclists.

Publicize enforcement efforts and coordinate them with safety education campaigns, as well as engineering improvements, if appropriate.  
(MLK Take Back the Drive, Spring 2009)

Require the installation of stop signs at driveways in advance of the sidewalk crossing and provide appropriate enforcement. Such a requirement should be applied to all parking facilities with more than 25 spaces.

Use pedestrian sting operations to increase enforcement of stopping law at higher volume all-way stop intersections

Consider video camera enforcement of yield-to-pedestrian law for turning vehicles at signal controlled intersections

## **Reduce incidence of bicycle theft.**

### **Strategies**

Target large bicycle theft rings by equipping “dummy” bicycles with hidden Global Positioning System (GPS) transmitters and receivers to trace thieves. This is an effective, relatively inexpensive way to locate professional bicycle thieves. Similar to motor vehicle chop shops, there are also organized bicycle chop shops. If successful, stage on an annual basis. (Chicago, IL)

Utilize the Bicycle Ambassadors as a resource to educate bicyclists on the best practices to locking and securing bicycles in the city.

The City Bicycling website has the potential to post more informative resources regarding best practices and recommended areas to lock a bike and or purchase the tools to do so. The website could also

include a citywide registration system for those who have had their bicycles stolen. A centralized posting for stolen bikes will make recovery more likely.

Local bicycle shops, universities, and community centers could also play a role in making information about theft prevention more accessible for the bicycle owners of Philadelphia.

**Update Philadelphia laws to conform to state traffic law and the Uniform Vehicle Code regarding bicycling and walking, except where different rules are appropriate to Philadelphia's urban conditions.**

**Strategies**

The following changes to the Philadelphia Code are proposed:

**§12-803. Riding on Bicycles.** Should be repealed. The state offers better language to include child seat carriers and trailers: PA 3504(a) and (b)

**§12-804. Riding on Roadways and Bicycle Paths.** Should be repealed. The state has no mandatory sidepath law and allows riders to ride two abreast: PA 3505(e)

**§12-807. Parking.** Should be modified to allow on-street bike parking as the City develops in-street bike parking spaces. The State has more flexible road parking regulations: PA 3509(b)

**§12-809. Warning Devices and Brakes on Bicycles.** Should be repealed, or substituted with, better language in state law, especially for braking requirements: PA 3507 (b) and (c)

**§12-811. Penalty.** Needs to be updated.

**§12-812. Use of Audio Headphones** - This section conflicts with both State Law and with Section 12-1132, although the latter may be struck down by court challenge. State law already prohibits this, while providing exceptions for devices like Bluetooths, that are limited to use in one ear and that allow surrounding sounds to be heard with the other ear. Also, the fines are much higher than those for other bicycling infractions. PA 3314

**Resources**

NJ Pedestrian Safety Enforcement Program

Metropolitan Washington Council of Governments (MWCOC) StreetSmart

Program: <http://www.mwcog.org/streetsmart>

Speed Trailers, Stings/Pedestrian Decoy Operations Tips on conducting a pedestrian decoy operation:

[http://www.saferoutesinfo.org/guide/enforcement/pedestrian\\_decoy\\_operations.cfm](http://www.saferoutesinfo.org/guide/enforcement/pedestrian_decoy_operations.cfm)

<http://www.dot.wisconsin.gov/safety/vehicle/bicycle/education.htm>

Effective Pedestrian-Bicyclist Safety Enforcement Techniques, John Moffat, NHTSA

Chicago Police Training Video [http://chicagobikes.org/video/index.php?loadVideo=police\\_training\\_2009](http://chicagobikes.org/video/index.php?loadVideo=police_training_2009)

## ENCOURAGEMENT

### Current policy and practice

Philadelphia has been officially committed to promoting bicycle use in the city since 1993 and has carried out that commitment through a series of bicycle safety task forces, varying levels of involvement with Bike to Work Week, but primarily through implementation of the first Bicycle Network Plan. Promotion of walking has rarely occurred at a high level, except for Mayor Street's Office of Health and Fitness. Various studies by the Centers for Disease Control and Prevention show that Americans standard of health has decreased over the past few decades due to poor eating choices and the lack of physical activity, among other things. Creating or enhancing access to places for physical activity involves the efforts of many, as Philadelphia attempts to change the local environment to offer more opportunities for healthy living.

A critical step was taken by Mayor Nutter in hiring a Pedestrian and Bicycle Coordinator in September of 2008. The Pedestrian and Bicycle Coordinator will play a key role in implementing the Pedestrian and Bicycle Plan, including support for encouragement activities. Most recently, the City has received a large grant from the Department of Health and Human Services, which will cover the salary of the Pedestrian and Bicycle Coordinator, and a host of other actions to encourage physical activity, particularly bicycling and walking. These activities will be coordinated through the Philadelphia Health Department and include promoting active transportation and public transit through media campaigns and a Transit Benefit Coordinator; and working with the Bicycle Coalition to provide pedestrian and bicycle safety education to all 2nd and 5th graders in public schools.

In 2001, Philadelphia had an estimated 11,000 daily bicycle commute-to-work trips. The Bicycle Coalition estimates that 36,000 commuters bicycle to work at least once a month in Philadelphia. In 2008, the percentage of Philadelphian commuters who used bikes was 1.6%, up from 0.9% in 2000, and 0.6% in 1990. The percent of walk commuters fell from 10.4% in 1990 to 9.1% in 2000, fell even more to 8% in 2006, but has recovered to 8.6% in 2008. Some of the changes in commute percentages since 2000 may have to do with the shift in sampling methodology; however, the growth in bicycling is confirmed by counts of bicyclists in key locations, primarily the Schuylkill River bridges. Both bicycling and walking are affordable means of transportation, enable active lifestyles, and encourage people to support their local businesses. Establishing walking trails and bike paths, building exercise facilities, and providing more access to existing exercise facilities, will directly encourage more people to choose these modes of travel and utilize these resources.

The organized encouragement activities currently available in the city of Philadelphia are limited. The Bicycle Coalition of Greater Philadelphia offers a Bike to Work Day during national Bike Month (May) as well as an annual car-free event known as Bike Philly held in early September. Both Bike to Work Day and Bike Philly encourage the people of Philadelphia to commute to work by bike and to ride more often.

The City of Philadelphia supports several walking and running events throughout the year. Some of the events, such as the *Walk Against Hunger*, *Aids 5K Run* (held in October), and the *10 Mile Blue Cross Broad Street Run* (held in May) are fundraising activities of corporate businesses in Philadelphia. Other events including the *Philadelphia Insurance Triathlon* (held in June) and the *Danskin triathlon series*, known as She Rocks (held in August), are events that directly encourage people to get out and physically test their own strengths. The shared interest of all of these events, be it a fundraiser or not, are that they encourage physical activity for all participants by way of the individual need to train and prepare for such an event. For training purposes, those living in Philadelphia utilize local gyms and outdoor facilities. Many of the outdoor facilities being utilized, such as Martin Luther King Drive and Kelly Drive regularly attract large numbers of people. One of the strategies the City uses to encourage the usage along the Schuylkill River is through the closures of MLK Drive during the months of April through October. These closures occur during the weekend hours and restrict motor vehicles from using the roadway. Many athletes use this closed off area for training while others take advantage of this area for recreational purposes.

Independence Blue Cross (IBC) sponsors an annual National Walk @ Lunch Day. This past year was its third annual occasion, held in the spring. The nation-wide event encourages people to wear comfortable walking shoes and to simply take a walk at lunch. Many of the Center City business employees participate and are encouraged to spread the word.

Guided and self-guided walking tours are widely available in Philadelphia. Among the best-known are the Lights of Liberty sound-and-light show, the Once Upon A Nation story-telling tours, and the architectural walking tours sponsored by the Center for Architecture and the Preservation Alliance for Greater Philadelphia. The Alliance offers guided tours on weekends from May through October, from a selection of 44 tours, and has three self-guided tours available year-round.

Walk!Philadelphia is a signage program that encompasses over 2,200 sign and map faces for primarily Center City and Old City neighborhoods. These maps consist of directional signs and heads-up diskmaps (with the direction the user is facing at the top of the map). Regional and neighborhood-specific Bike Maps also exist in Philadelphia; however, they are not publicly displayed like the Walk!Philadelphia maps. The most comprehensive regional bike map available is published by the Bicycle Coalition. The Fairmount Park Commission and Center City District have also created bike maps, which focus primarily on City streets and incorporate public transportation routes.

The Robert Wood Johnson Foundation has helped build a healthier Philadelphia through their commission's recommendations and Active Living by Design grant. This grant was awarded in 2004 to the Haddington neighborhood of West Philadelphia through a local partner: To Our Children's Future with Health, Inc. The local partner assisted in organizing a nine-year collaborative including 75 members and five subcommittees supporting the expansion of the active living movement in the neighborhood. The primary focus of this project was to conduct an active living assessment in the community and implement a variety of targeted active living programs focused on walking and biking. The report also included recommendations for how schools can work to make children healthier, including banning junk food from U.S. schools, using federal funds exclusively to purchase nutritious foods and requiring all schools to allow students to engage in at least 30 minutes of physical activity per day. Active Living by Design (ALbD) was founded in 2001 by the Robert Wood Johnson Foundation, and works to create community-led change by working with local and national partners to build a culture of active living and healthy eating.

The Bicycle Coalition of Greater Philadelphia is the beneficiary of two Transportation Enhancement grants to encourage bicycle safety educational programs in Philadelphia. The Bicycle Coalition is currently contracted with the City of Philadelphia to run the Bicycle Ambassadors program. The Bicycle Ambassadors is a successful adult education program working to encourage adults to ride more often and ride more safely as well as providing bicyclists and motorists tips for sharing the road. The Ambassadors currently work from May to September in the neighborhoods of Center City, University City and Fairmount Park. The second Transportation Enhancement grant allowed the Bicycle Coalition to take over management of the School District of Philadelphia's bicycle education program BEEP (Bicycle Education Enhancement Program) in the spring of 2010, and to expand it to non-public schools. BEEP, which has been renamed Safe Routes Philly, is a youth based education program focusing on bringing bicycle safety education to the children. This program helps introduce youngsters to safe bicycle use and encourages active transportation from an early age. The Bicycle Coalition is contracted with the Delaware Valley Regional Planning Commission to run this program.

Neighborhood Bike Works (NBW) currently hosts youth-based Earn-a-Bike classes at seven locations throughout the city. The classes include fourteen two-hour after-school lessons, free to participants. There are ten sessions that cover bike repair & maintenance, and two sessions that cover riding safety, bike handling skills, and riding in traffic. The course also includes a lesson that covers health, nutrition, transportation choices, and the environment. After a few lessons, students select the bike that they will fix up to keep after graduation. NBW also offers adult education focusing on bicycle maintenance through their location at 40<sup>th</sup> and Locust during the evening hours (also known as the Bike Church).



The Philadelphia Department of Health, Division of Chronic Disease Prevention (DCDP) is currently working on three major projects in the city of Philadelphia to encourage healthy living through physical activity. **OPANAC** (Osteoporosis, Physical Activity, Nutrition, and Cardiovascular Disease) is a program contracted with DCDP that encourages the development and implementation of healthy lifestyles through four avenues of intervention: communities, early childhood facilities, schools and worksites. These interventions are designed to help prevent cardiovascular disease, diabetes, osteoporosis, obesity, arthritis, asthma, oral disease and cancer through specific events that encourage physical activity. Specific events include partnering with schools that encourage participation in annual PANA (Pennsylvania Advocates for Nutrition and Activity) events such as Walk to School Day and Move it Outside Day.

**Women Go Red Philly Style** is a collaborative project to improve cardiovascular health through interventions in places where at-risk Philadelphia women work, live, and receive their health care. The goals and objectives of Women Go Red Philly Style are to increase the number of providers who follow clinical cardiovascular risk reduction practice guidelines so that they encourage healthy behavioral changes among women; improve knowledge among at-risk women about cardiovascular health; and improve policies regarding health care and cardiovascular health among women. Specific events include brown bag lunch presentations and starting walking clubs.

**ASIST 2010** is a grant that focuses on changing health behaviors in Philadelphia based upon the Healthy People 2010 measures using a Women's Health and Gender focused approach. The program's purpose is to refine existing collaborations and create a broadened community/academic/governmental collaborative network which will focus upon access and health educational outreach to improve measures in cardiac disease, diabetes care and cancer prevention while concurrently promoting health systems change.

## **Goal**

Promote physical activity and improve community health through increased levels of walking and bicycling.

## **Objectives**

- Promote the benefits of walking and bicycling.
- Conduct and expand events to encourage bicycling and walking.
- Distribute materials encouraging residents and visitors to experience the City of Philadelphia by foot and pedal.

## **Promote the benefits of walking and bicycling.**

### **Strategies:**

Partner with health agencies and other organizations with shared goals to create a marketing campaign similar to Tempe Arizona's "Tempe In Motion", whose slogan is "Bus, Bike, Walk". (Best Practices: Tempe, AZ)

Expand the Bicycle Ambassadors program. (Best Practice: Chicago, IL)

- Expand staff. With additional funding, the Ambassadors program will be able to hire more Ambassadors (8-10). Additional staff would allow the program to hire Ambassadors with language skills (beyond Spanish) to round out the team and expand areas of outreach.
- Extend program. The Bicycle Ambassadors program is currently funded through September of 2010.
- Extend the season. The program is currently running from May through September; additional funding would provide the opportunity to keep some staff on through the entire year.



- Expand to additional neighborhoods. Currently, the Ambassadors program is restricted to Center City, University City and Fairmount Park. With additional funding it can expand to neighborhoods including those with large ridership and large non-English speaking communities including South Philadelphia, Southwest, Northern Liberties, Fishtown, East Falls, Manayunk and the Cobbs Creek Parkway area.

Extend the Safe Routes Philly program (previously known as BEEP) so that pedestrian and bicycle safety education is available for all Philadelphia elementary and middle school students on a continuing basis. Safe Routes Philly is modeled after the national Safe Routes to School initiative. Funds are available through December 2011. The longer the program can run, the more flexible the schools will become with the program and the greater the opportunity to make effective change within those schools. (Best Practices: Portland, OR; Chicago, IL; Bike Texas; Bicycle Coalition of Maine; WalkSafe, Miami, FL; Bike New York, New York, NY; League of American Bicyclists; Washington, DC)

Increase the use of bicycles as part of the City vehicle fleet. Currently the Police Department is the only department to use bicycles as part of its fleet. Other departments could make use of bicycles for short trips. (Best Practices: Orlando, FL; Vancouver, B.C.)

Implement recommendations of the recently completed Bike Sharing study. Bike sharing will be especially useful for short trips, for transit users, and for visitors to Philadelphia. Bike sharing encourages new users to get out and try a bicycle because it removes the barriers of purchasing, maintaining and storing a bicycle in an urban setting. The potential for bike sharing in Philadelphia is summed up in one statistic from Lyon, France: 97% of the users of the bike sharing system there had never ridden a bike in Lyon before. Bike sharing has the potential to double the number of bicyclists in Philadelphia and engage thousands of Philadelphians in a more active lifestyle.

Expand PUFFA (Philadelphia Urban Food and Fitness Alliance) Community Action Plan to an even greater citywide coalition. PUFFA is engaged in encouraging healthy eating and physical activity. The W.K Kellogg Foundation's Food and Fitness Initiative awarded funding to PUFFA Community Action Plan for three years. The goal of this initiative is to implement system changes that will create community environments that support healthy children, youth, and families. As a result of this initiative, PUFFA encourages Philadelphians to reconnect to their surrounding land and to food, to the development of social capital within neighborhood communities to promote healthy eating and physical activity, and to the formation of public policies that support exercise and nutritious eating habits among children. PUFFA focuses on specific plans to improve school food environments, reclaim & revitalize neighborhood parks, support and create community gardens, improve access to healthy foods and create community kitchens.

## **Conduct and expand events to encourage bicycling and walking**

### **Strategies:**

Expand Bike Philly -- One full day of car-free bicycling puts Philadelphia on the map as a bicycle-friendly city. Bike Philly 2009 closed 20 miles of streets through Center City and East Fairmount Park and had over 3000 riders participate. 38% of participants had never been on an organized ride. Bike Philly has the ability to bring in large numbers of new riders and get them passionate and interested in using the bikes for recreation and transportation. For Bike Philly to successfully expand, more than 20 miles need to be closed to traffic. The route should highlight many neighborhoods of Philadelphia as a means of encouraging and inspiring participants to get out and explore their own neighborhoods.

Expand Bike Month activities. In past years, the Bicycle Coalition has been involved with a variety of activities to promote the use of a bicycle for both recreation and transportation. With additional funding, programming could be expanded to include: 1) a commuter challenge (web based, company competition, prizes), 2) Commuter classes that are led by Bicycle Ambassadors, the adult education program held during the months of May through September; and 3) Bike to Work Day service stations throughout the

city. Additional activities could include analysis of census data and counts to identify most frequented commuting routes. (Best Practices: San Francisco, CA; Chicago, IL; New York, NY; Washington, DC; Portland, OR; Greater Valley Forge Transportation Management Association)

Initiate a citywide Walk & Bike to School Day. International Walk & Bike to School Day is in mid-October. The early fall date encourages students who have recently come back to school to use an alternative to the car. Safe Routes Philly, run by the Bicycle Coalition, could implement this program in Philadelphia. Walking School Buses and Bike Trains can be operated on a school by school basis to encourage the largest amount of participation. Since 2003, Pennsylvania Advocates for Nutrition and Activity (PANA) a state-wide organization has been rallying the support of schools, local parks and trails, and communities to focus on the value of healthy eating and physical activity.

Create a Cyclovía in the City of Philadelphia. Cyclovía (also ciclovía) is a Spanish term, meaning "bike path," used in Latin America to mean either a permanent designated bicycle route or a temporary event that closes off the street to automobiles. This allows other road users to exercise on the roads without the stress of motor vehicles. Besides the encouragement of physical activity and healthy living, there are also social, cultural and environmental benefits from using a public space as an open meeting area sans motor vehicles. (<http://en.wikipedia.org/wiki/Ciclov%C3%ADa>) (Portland, OR; New York, NY; Chicago, IL; San Francisco, CA; Bogota, Colombia)

Continue to build on the success of the Philadelphia International Cycling Championship. This event has given bicycling a high profile in Philadelphia for spectators as well as participants. Special activities such as the time trials, the Philadelphia Bicycle Show, the Junior Grand Prix, the Philly Fun Ride, and the Manayunk Hill Climb help to extend the excitement of the race and introduce more people to the fun of bicycling.

Expand participation levels for the annual National Walk @ Lunch Day. Strategies could include better advertisements earlier in the year, more participation and support by business executives, and overall more encouragement for walking during lunch hours throughout the entire year. One strategy of encouragement could be a rewards program run by IBX (Independence Blue Cross) that will excite even more businesses throughout the city to participate in this healthy exercise. This rewards program would encourage people to walk by stimulating their competitive side with a prize. (For example: the business with the largest number of participants throughout the year would win.)

## **Develop materials to encourage residents and visitors to experience the City of Philadelphia by foot and pedal**

### **Strategies:**

Update the City's Bicycling website and create a Walking website. Emphasize the health benefits and environmental benefits of both activities. Include information about laws governing pedestrians and bicycling, and links to SEPTA, the Bicycle Coalition, the Parks and Recreation Department and other partner websites.

Produce an active transportation map - update the City's bicycle map at least every other year and post it on the City's Bicycling website as well as provide print copies to local bike shops, gyms, retail locations, universities and other local organizations for sale or distribution. One side of the map includes preferred bicycle routes and the other side includes a City transit map. (Best Practices: Steve Spindler)

Partner with neighborhood organizations and senior centers to develop self-guided walking tour maps. (Best Practices: Arlington, VA; Seattle, WA)

Ensure that informational materials are made available in multiple languages as needed.

Develop walking and biking signage for Philadelphia neighborhoods. Neighborhood maps should be incorporated into the new street furniture and placed at transit stops and stations.

Develop directional signage for commonly traveled bike routes. This signage can assist residents and visitors alike to navigate the streets and avoid hazardous roads and intersections. (Best Practices: Portland, OR)

## Resources

- Bicycle Coalition of Greater Philadelphia: [www.bicyclecoalition.org](http://www.bicyclecoalition.org)
- Bicycle Ambassadors: [www.bicycleambassadors.org](http://www.bicycleambassadors.org)
- Safe Routes Philly: [www.saferoutesphilly.org](http://www.saferoutesphilly.org)
- Neighborhood Bike Works: [www.neighborhoodbikeworks.org](http://www.neighborhoodbikeworks.org)
- Independence Blue Cross:  
[http://www.ibx.com/news\\_events/events/walk\\_at\\_lunch/index.html](http://www.ibx.com/news_events/events/walk_at_lunch/index.html)
- Walk!Philadelphia: [http://www.centercityphila.org/docs/walkphila\\_infosheet.pdf](http://www.centercityphila.org/docs/walkphila_infosheet.pdf)
- League of American Bicyclists: <http://www.bikeleague.org/programs/bikemonth>
- Sunday Parkways: Helping Minority Communities Connect to Bicycling and Walking:  
<http://www.bicyclinginfo.org/library/details.cfm?id=4349>
- Bike to Work Week: A Case Study in Successful Behavior Change:  
<http://www.bicyclinginfo.org/library/details.cfm?id=4278>
- Tempe in Motion: <http://www.tempe.gov/Tim>
- National Center for Safe Routes to School: [www.saferoutesinfo.org](http://www.saferoutesinfo.org)
- Safe Routes to School National Partnership: [www.saferoutespartnership.org](http://www.saferoutespartnership.org)
- Robert Wood Johnson Foundation: [www.commissiononhealth.org](http://www.commissiononhealth.org)
  - <http://www.activelivingbydesign.org/what-we-do/funders-initiatives/rwjf-jumpstart-grants>
  - Reuters, 4/2/09; RWJF release: <http://www.rwjf.org/newsroom/product.jsp?id=41068>

## **CONSTRUCTION DISRUPTION OF PEDESTRIAN AND BICYCLE TRAVEL**

### **Current Policy and Practice**

In 2008, City Council adopted three ordinances to control construction disruption of sidewalks and streets. These ordinances 1) set time limits for road lane and sidewalk closures and prohibited contractor parking on any closed sidewalk or road lane around a construction site; 2) require sidewalk sheds for construction projects that close sidewalks unless applicants receive a written determination that a covered walkway is impractical or unsafe; and 3) require covered walkways to support 300 pounds per square foot (psf). The Streets Department is developing regulations to implement these new laws.

### **Goal:**

Provide safe, convenient, and accessible pathways for pedestrians and bicycles around and/or through construction sites.

### **Objectives:**

- Improve enforcement of regulations governing temporary closures of sidewalks and streets;
- Ensure that any sidewalk shed or sidewalk closure allows for safe pedestrian passage around and/or through the construction area;
- Protect bikeways from disruption due to temporary street closures.

### **Improve enforcement of regulations governing temporary closures of sidewalks and streets**

#### **Strategies:**

Construction sites should be regularly inspected by City officials to insure compliance with City ordinances and regulations. Sites within Center City should be inspected every business day, with sites in other City locations inspected weekly.

A City inspector should visit a site within 24-hours of a citizen complaint about the site, and an additional 24-hour period should be the maximum time allotted for the owner/developer to remedy any code infractions.

It is recommended that the Streets Department have control over inspections of street and sidewalk right-of-way at construction sites, including the ability to issue citations and fines, including stop work orders. The Streets Department and Licenses & Inspections should write an interagency memo to clarify these responsibilities. The two departments should also develop an administrative procedure for handling citations. Where construction is ongoing, possible penalties include fines, revocation of building permits and stop work orders. On projects where building is complete or suspended, or active sites where builders/developers keep sidewalks closed beyond their approved permit, the City should seek a court order to reopen sidewalks.

In addition to dedicated City staffing resources the City could explore partnerships with special service districts, neighborhood groups, or civic organizations to assist in observing and identifying possible code infractions.

Encourage all other entities or agencies that construct projects that have similar effects on sidewalk and street right-of-way to follow the guidance of this document, even if the agencies are not required to follow the same permitting procedures as private developers. This would include PennDOT and the City's Streets Department projects, among others.

## **Ensure that any sidewalk shed or sidewalk closure allows for safe pedestrian passage around and/or through the construction area;**

### **Strategies:**

Develop regulations to implement the new laws to control construction disruption. These guidelines should be collected into an informational document that is distributed to Philadelphia-area contractors, building owners, civic groups, special service districts, and architecture and planning firms.

The following guidelines are suggested:

Sidewalk sheds must be adequately lighted.

Accessory advertising, which identifies what is being built at a construction site, will generally be allowed on sidewalk scaffolding or other temporary construction rigging. All non-accessory advertising should be prohibited, as it may provide an incentive for builders to retain “temporary” infrastructure beyond permit periods.

The sidewalk shed must not block the view of any traffic control device, including pedestrian signals.

If a sidewalk must be closed during construction, pedestrians must be provided with a reasonably safe and convenient alternative walkway, including access to crosswalks and transit stops. Alternative pedestrian walkways through or adjacent to work zones should be as close as possible to the existing paths, must be accessible to people in wheelchairs and the visually impaired, protected from work site activity and motor vehicle traffic and free of tripping hazards.

Alternative walkways must be clearly identified with MUTCD and ADA-compliant signs at the nearest crosswalk on either side of the work zone. If a sidewalk is to be closed for less than a full block, audible signals should be encouraged at the location where pedestrians have the last opportunity to cross the street.

Sidewalk sheds must have a minimum walkway width of at least 6 feet. Alternative walkways in the roadway must have a minimum walkway width of at least 5 feet.

Street trees, bike racks, and other street furniture must be protected and replaced if damaged.

(Best Practices: Phoenix, AZ; Washington, DC; New York, NY; Charlotte, NC)

## **Protect bikeways from disruption due to temporary street closures**

### **Strategies:**

When parking lanes are closed for construction, the parking should not be relocated into bike lanes.

When closure of a traffic lane is permitted that will require a bikeway detour, signs and detour markings should be posted.

### **Resources:**

Phoenix Traffic Barricades Manual, 2007

Washington, DC DOT Pedestrian Safety and Work Zone Standards: Covered and Open Walkways, 2007

## MANAGEMENT OF SIDEWALK ENCROACHMENTS

### Current Policy and Practice

City Code prohibits certain encroachments without City Council ordinance and permits other types of encroachments through the Department of Licenses and Inspections with Streets Department review by the Right of Way unit. The regulations governing sidewalk sales - vendor carts and table stands placed in front of stores – are extremely complicated. Several categories of sidewalk sales are defined, and each category contains long lists of blocks where vending is permitted or prohibited; however, within these lists there are frequent exceptions.

In the past, concern was expressed that regulations limiting the placement of certain objects on the sidewalks could not be enforced unless they were specifically written into the Code. Certain types of encroachments, such as sidewalk cafes, newsstands, and vendor carts, do have specific design guidelines written into the Code; however, the design guidelines do not provide adequate protection for pedestrian movement on the sidewalks. They do not account for customer activity associated with these types of encroachments. The language specifying the dimensions for vendor carts and newsstands is confusing and may allow some to believe that they are allowed to have shelves, wheels, and canopies extending into the required pedestrian clear width.

Enforcement of sidewalk encroachments is weak because of the small amount of staff and hours dedicated to inspection. Currently, the Streets Department has only three staff members able to perform Right-of-Way inspections, but the majority of their time is spent inspecting the City's utility infrastructure since these hours can be billed directly to the various utility companies. This staff also handles many other duties including block parties and permits for landscaping on medians. The only sidewalk enforcement done by the Streets Department is for sidewalk cafes and that is limited to two "sweeps" a year. Newsstands and vendor carts are enforced by L&I on a complaint basis.

Another type of sidewalk encroachment is parking on the sidewalk. This is prohibited by City Code § 12-913 (1)(a)(ii), with a \$50 fine, but is common in many parts of the City. Sidewalk parking may force pedestrians to walk in the street, an obvious safety hazard, and it also may contribute to more rapid deterioration of sidewalk surfaces and underlying infrastructure.

### Goal:

Improve enforcement of laws and regulations to reduce sidewalk clutter that makes walking difficult, inconvenient, and sometimes dangerous.

### Objectives:

- Recommend changes to the City Code to clarify laws governing sidewalk encroachments and allow for administrative approvals where appropriate.
- Develop an approach to strengthen enforcement of sidewalk regulations..

**Recommend changes to the City Code to clarify laws governing sidewalk encroachments and allow for administrative approvals where appropriate.**

### Strategies:

Revise the City Code to better reflect the level of oversight required for various sidewalk encroachments. The current list of obstructions that require City Council approval, and those that require permits from the Streets Department and L&I lacks clarity and does not reflect current practice. The Code should be revised to allow administrative approval for routine sidewalk encroachments. To begin with, bike racks and benches should be allowed by permit of the Streets Department. Subsequently, planters, drop boxes, lamp posts, and vestibules should be considered for administrative permitting. Sidewalk wheelchair ramps to building entrances, which have informally been treated as "steps", should be specifically addressed in the Code, with permits by both L&I and the Streets Department.



Revise the Code to allow the Streets Department to require higher standards of protection for pedestrian movement on sidewalks, based on the Sidewalk Zone Width Standards and Street Classification recommendations of this Plan. This would expand the minimum clear width required on certain streets for sidewalk vendors, newsstands and sidewalk cafes. (Best Practices: Chicago, IL)

Reorganize sections of the Code that govern sidewalk sales so that permitted and prohibited locations are listed separately, within each major category. Revise the design guidelines for vendor carts and newsstands to make it clear that all extensions such as wheels, shelves, etc., that are less than 7 feet above the sidewalk grade must be outside of the required minimum clear sidewalk width. Newsstands should be required to be located 10 feet from the crosswalk, similar to vendor carts.

Create an interagency Public Space Committee to review permit applications for sidewalk encroachments. The committee should be empowered to advise the Streets Department on permits for sidewalk encroachments that do not need City Council approval. The Public Space Committee would operate in a similar manner to the Committee of Highway Supervisors and would have many of the same members, but with added input from agencies and organizations concerned with the pedestrian environment. (Best Practices: Washington DC)

### **Develop an approach to strengthen enforcement of sidewalk regulations.**

#### **Strategies:**

Publicize City ordinances and regulations to business improvement districts and civic organizations, before enforcement campaign. Building owners should know the clear width standards for sidewalks adjacent to their properties. Create a map of streets with different clear width standards for ease of administration and enforcement.

Establish a new structure of fees and fines to generate revenue to pay for enforcement officers. The fee structure should include a process for revocation of licenses after repeated violations, and a reinstatement fee. (Best Practices: New York, NY; Portland, OR)

Conduct regular enforcement sweeps of all major encroachments including vendor carts, newsstands, and sidewalk cafes, at least 4 times a year.

Facilitate public reports to 311 by creating a standard sign for major encroachment types including cafes, vendor carts, newsstands, honor boxes, merchant displays, so that members of the public will know how to report any problems they may encounter with the encroachment. The sign should include specifics of the law and the permit, for example, the approved plan of a sidewalk café. (Best Practices: New York)

Develop sidewalk markings to delineate the area permitted to be occupied by sidewalk cafes, and by customers queuing for vendor carts and newsstands. Mark a corner clear zone 10 feet on either side of all crosswalks to define an area within which no encroachments except those essential to vehicular and pedestrian safety and flow are permitted. (Best Practices: San Francisco, CA)

Strengthen the renewal application process with questions including specifics to document whether the encroachment is being operated in accordance with regulations. All renewal applications must fully document all encroachments in the vicinity of the proposed encroachment. (Best Practice: New York)

Work with the Center City District's Public Space Collaborative to conduct regular audits of encroachments.

Create a "Don't Block the Sidewalk" campaign with illustrated signs required to be posted on all vendor carts and newsstands, requesting customers to line up parallel to the curb.

Strengthen enforcement against parking on the sidewalk by working with the Philadelphia Parking Authority.

## PEDESTRIAN NETWORK MAINTENANCE

### Current Policy and Practice:

Property owners in the City are responsible for the maintenance and repair of sidewalks that abut their property. This includes keeping the sidewalk in good repair and also keeping the sidewalk clear of ice and snow in winter, and of litter at all times. The Streets Department is authorized to determine when sidewalks require repairs and to notify and assess property owners for some of the cost of repairs. Until the 1970s, the Streets Department used to cite property owners and bid out sidewalk repair work to private contractors. This practice was abandoned because the contractors were unable to collect payment from the property owners, even though liens were placed against the properties. Also, since many of the homeowners were elderly and/or low-income, the cost of sidewalk repair was considered too great a financial burden. Since that time, the laws requiring property owner maintenance have seldom been enforced. Legally, the City may be held liable for sidewalks that are safety problems even if privately owned, if the property owner cannot be found. Over the past three years, the City has paid out \$10.6 million in sidewalk claims.

Sidewalk studies in 2003 and 2004 by The Reinvestment Fund and the Office of Neighborhood Transformation Initiatives estimated it would cost over \$8 million to replace 1% of all sidewalks in the City, and that it would cost at least \$2 million to replace 1% of just the sidewalks adjacent to City owned property. (The City owns nearly 9,600 parcels, of which 9,000 are vacant properties. This figure does not include the cost of curb replacement. ) Among City departments, only Fairmount Park has regularly programmed capital funds for curb and sidewalk repairs, at a level of approximately \$250,000 per year.

While most communities in the U.S. hold property owners responsible for sidewalk maintenance, some help share part of the cost. Baltimore takes a unique approach in assuming full cost for tree root damage, and allocates \$1 million per year in motor vehicle tax revenue for root damage repairs to sidewalks. In Philadelphia, the City Code was amended in 2003 to provide for a 70% City contribution to the cost of sidewalk repairs (§ 11-505 (5) (b)). However, there has never been any funding allocated in the City budget to pay for this.

If substantial work, such as reconstruction, is done on a street, the Streets Department may determine that repair or replacement of sidewalks is a necessary element of the project, and the property owner may only be assessed a small portion of the cost. However, the applicability of this approach is limited since the City has done little street reconstruction in recent years. Public funds have been used to contribute to streetscape projects in commercial areas, and these projects may include sidewalk repairs or replacement as well as pedestrian-scaled street lighting, street trees, etc. The Society Hill Civic Association received a state grant that it is using as a matching fund for homeowners who make repairs to their brick sidewalks. Reimbursement is limited to \$300 per household.

In winter weather, property owners are responsible for clearing ice and snow off of sidewalks on their property within 6 hours of when snow stops falling. The cleared path must be at least 30" wide according to City Code, unless the width of the pavement between the building line and the curb is 36" or less, in which case only a 12" path has to be shoveled. The 30" standard complies with ADA guidelines but not with the Public Rights-of-Way Accessibility Guidelines (PROWAG), a draft guideline that has yet to be adopted. Enforcement of the snow removal ordinance is primarily complaint-based.

**Goal:** Upgrade sidewalk maintenance in the City to enhance pedestrian accessibility and improve the walking experience.

### Objectives:

- Set standards for acceptable sidewalk condition;
- Develop programs for cost-effective sidewalk improvement;

- Engage neighborhood groups in working to improve sidewalks in their areas.
- Upgrade snow-removal policies to improve pedestrian circulation after snowstorms

### **Set standards for acceptable sidewalk condition**

#### **Strategies:**

Adopt standards for acceptable sidewalk conditions. These standards should follow PROWAG guidelines for maintaining an accessible pedestrian pathway. Requirements should include acceptable curb ramp slope, maximum vertical break in the sidewalk slope, slip-resistant sidewalk surface, and standards for replacement of tree trenches or grates that are no longer accessible walking surfaces, if they restrict the Walking Zone. (Best Practice: USDOT: Designing Sidewalks and Trails for Access Best Practices Design Guide)

Require sidewalk inspection when properties are sold. A certification that the sidewalk meets City standards should be a condition of the sale.

### **Develop programs for cost-effective sidewalk improvement**

#### **Strategies:**

Commit City funds to the maintenance of public sidewalks. Conditions of sidewalks on public property should be inventoried and plans to repair them incorporated into improvement plans for public facilities. Public sidewalks in poor condition that serve important links in the pedestrian network should be replaced or repaired on an accelerated schedule.

Add provisos to the sale and other transfers of public property, requiring sidewalks to be improved to good condition within a time frame appropriate to the proposed use. Transfers of public property can revert to the City if conditions of the transfer are not met.

Seek federal funding for eligible sidewalk projects. Virtually all of the streets in Philadelphia are within two miles of an elementary or middle school, making them eligible for Safe Routes to School funds, if on publicly owned property. If additional federal programs are opened up for funding sidewalks, the City should apply for them in order to expand its ability to bring the sidewalk network into a state of good repair.

### **Engage neighborhood groups in working to improve sidewalks in their neighborhoods.**

#### **Strategies:**

Encourage neighborhood groups to collect, organize and submit complaints about sidewalk maintenance to the City. These local organizations can have more “on-the-ground” knowledge about sidewalks in the community, which can help pinpoint the most needed repairs. Complaints and repair requests may also be directed to the City’s 311 call line.

Use neighborhood groups as a public education resource to inform property owners of their responsibilities for maintaining the sidewalks abutting their properties.

### **Develop new snow-removal policies to improve pedestrian circulation after snowstorms.**

#### **Strategies:**

Develop a network of “priority clearance sidewalks” to ensure that major pedestrian pathways and access points are cleared early and regularly during snowstorms. Examples would include major trails, bridge sidewalks, and pedestrian medians and refuge areas at street crossings. Responsibility for these priority sidewalks will involve coordination between City Departments including Streets, Parks and Recreation, Public Property, and other agencies.

The City should increase efforts to ensure adequate snow clearance on publicly-owned sidewalks.

To the extent possible, City plow operators should work to clear pedestrian crosswalks as well as traffic lanes, and should not leave piles of snow blocking crosswalks or curb ramps.

Inform corner property owners of their responsibility for clearing snow from curb ramps.

Collaborate with SEPTA to find a way to clear paths between street and sidewalk at bus stops.

## BICYCLE NETWORK MAINTENANCE

### Current Policy & Practice

Philadelphia's Bicycle Network includes all streets, but streets with bike lanes and multi-use trails are of particular concern. Current maintenance of the bike lane network is inconsistent. The problem has been exacerbated in recent years due to widespread suspension of street cleaning, especially in residential neighborhoods. Since most streets are no longer cleaned on a regular basis, most bike lanes also do not benefit from regularly scheduled cleaning.

Restriping of bike lanes has normally been done only when roads are resurfaced, which is on a 10-20 year cycle. Re-striping plans always consider whether a bike lane, wide curb lane, or a "shoulder" can fit. Potholes or other surfacing issues are handled by reporting these instances to 311 or to the customer service division of the Streets Department.

Utilitarian cycling is a year-round all-weather activity. During snow storms, bike lanes are routinely blocked by plowed snow, and bike lanes on heavily used bridges are not cleared. This creates dangerous situations by forcing cyclists to merge with traffic on already slippery roadways. The Parks and Recreation Department routinely clears some multi-use paths such as the Kelly Drive Path and the Pennypack Bikeway, but does not clear other important trails such as the section of the Schuylkill River Trail from the Montgomery County line to Port Royal Avenue.

**Goal:** Bring the bicycle network to a state of good repair and keep it maintained.

**Objective:** Develop standards and procedures for acceptable maintenance of bike lanes and trails.

### Strategies:

**Establish standards for maintenance of bikeways** in accordance with the provisions of the Complete Streets policy, which states that "All City departments and agencies shall...Give full accommodation to the safety and convenience of all users of the transportation system, be they pedestrians, bicyclists, public transit users or motor vehicle drivers; [and] Balance the needs of all users in planning, design, construction, *maintenance*, and operation."*[emphasis added]* This would include regular inspections, replacing worn pavement markings and bike symbols, replacing damaged signs, sweeping away debris, repaving streets, and repairing potholes.

**Incorporate bikeway maintenance into the Streets Department and the Department of Parks and Recreation operating budgets** - Maintenance should include paint refreshment, pavement repair, sign maintenance and debris clearing.

**Develop a Snow Removal Policy For Bike Lanes and Multi-Use Paths** - In Copenhagen, the city ploughs and salts most bike lanes at the same time as the streets. In Boulder, bike lanes are a lower priority during major storms but are eventually plowed clear. Toronto has recently included winter enhanced bike lane maintenance in their operating budget. The clearing of Philadelphia bike lanes should be prioritized by the amount of bicycle traffic the lane carries on a daily basis. A list of high priority bike lanes should be developed for incorporation into the Streets Department's snow removal plan. Linear multi-use paths such as the Wissahickon Bikeway and the Cobbs Creek Path should be included in the Parks and Recreation Department's snow removal plans. (Best Practices: Copenhagen, Denmark; Boulder, CO.)

### Encourage bicyclists and others to report bicycle facilities that are in need of maintenance.

Improve the 311 reporting system by incorporating online tools such as SeeClickFix which allows citizens to report hazards and upload photos onto a map from their mobile phone. Bicyclists should report maintenance requests to the City's centralized 311 service line.

**Empower the Police and the Philadelphia Parking Authority to ticket/remove vehicles and dumpsters parked illegally in the the bike lane.** Enforcing the law to keep bike lanes clear of vehicles has a great potential to educate the public about appropriate treatment of bikeways, but also to reduce maintenance costs by resolving relatively minor problems before they become longer-term issues.

### **Resources**

AASHTO Guide for the Development of Bicycle Facilities (1999)

Chicago Bike Plan

<http://www.bike2015plan.org/>

PADOT PA DOT Mobility Plan (2006)

<http://www.pamobilityplan.com/>

Delaware County Bike Plan (2009)

<http://www.copenhagenize.com/2010/01/snow-clearing.html>



## **BICYCLE DETOURS**

### **Current Policy and Practice**

There is no requirement for providing detours for bicyclists on designated bicycle routes. The Manual of Uniform Traffic Control Devices (MUTCD) states that: "Construction crews working on utility, road and building projects routinely close bike lanes either via an occupancy permit from the Streets Department or by illegally placing construction equipment and waste in the bike lane."

The MUTCD provides further guidance: "The safety of road users, including pedestrians and bicyclists, as well as personnel in work zones, should be an integral and high priority element of every project in the planning, design, maintenance, and construction phases."

PennDOT has issued a Strike Off Letter making it a Department of Transportation policy to provide a detour plan for multi-use trails under construction for two miles or longer. Temporary multi-use paths have been used when construction projects have closed the Kelly Drive multi-use path.

### **Goal**

Provide clear and comprehensive bicycle detour and construction guidelines for city and state transportation agencies and their consultants working on road projects in Philadelphia

### **Objectives**

- Develop criteria for appropriate guidelines for bike facility detours
- Minimize the impact of closed or impassable bike lanes
- Assure proper training of city and state engineers, planners, and consultants in bicycle facility design

### **Develop criteria for appropriate guidelines for bike facility detours**

#### **Strategies**

Require responsible agency/department to prepare detour plans, with public input, for bicycles on multi-use paths, bridge walkway paths or arterial roads with bike lanes. Bicycle detour plans should be publicized using public websites and police safety announcements. (Best practices: Boulder, CO)

Require responsible agency/department to provide optional detour plans, with public input, for collector and local streets if there is a shorter or more appropriate route than the motorized traffic detour. (Best practices: Denver, CO)

Provide a bicycle-accessible shuttle service when the detour route around construction exceeds three miles or if there is no other option for legal bicycle travel.

### **Minimize the impact of closed or impassable bike lanes**

#### **Strategies**

Provide same level of service of bicycle facilities on detour streets.

Penalize contractors who illegally block bike lanes or multi-use paths.

Require "Bike Lane Closed" signs at the previous intersection.

Post temporary "Share the Road" signs at the point of closure.

Require in-kind repair or replacement of bike lanes damaged by construction work.

**Assure proper training of city and state engineers, planners and consultants in bicycle facility design** [See also Education policy paper]

**Strategies**

Provide periodic bicycle and pedestrian design and planning training sessions.

## **BICYCLES IN BUILDINGS**

### **Current Policy and Practices**

Bicycle commuter studies show that a lack of secure bicycle parking is one of the top reasons that would-be bicyclists choose not to commute by bicycle. It is an essential amenity for individuals who want to keep their bikes safe from theft and the weather. Many office buildings forbid bicycles inside their buildings, even if the building has a freight elevator and tenants are willing to allow their bicycling employees space to park their bikes.

In 2009, New York City enacted "The Bicycle Access to Office Buildings" Law (now Section 28-504 of the New York City Administrative Code), which aims to increase bicycle commuting by providing cyclists with the opportunity to securely park their bicycles in or close to their workplaces. The law goes into effect when a tenant sends a formal request to the building manager. The manager is then required to post a bicycle access plan that allows the tenant's employees to bring bikes into the tenant's office space. If the building owner requests an exception from the requirement, they may either arrange for alternate parking accommodations such as a secure bike room, or be granted an exemption by documenting an elevator safety issue.

### **Goal**

Encourage bicycle ridership by providing convenient, secure places to store bicycles within commercial (office and retail) buildings.

### **Objectives**

- Develop a legal process to require office and retail buildings with freight elevators to allow bicycle access
- Encourage building managers to increase off-street parking options.

### **Develop a legal process to require office and retail buildings with freight elevators to allow bicycle access.**

#### **Strategies**

Develop an ordinance that requires building managers with freight elevators to allow bicycle access upon request from a tenant. (Best practice: New York City, NY)

Allow for partnerships with nearby buildings or parking garages (within 750 feet).

### **Encourage building managers to increase off-street parking options.**

#### **Strategies**

Provide outreach to educate building managers about the benefits of bicycle parking.

Develop a process by which tenants and employees can formally request building managers to provide bicycle access.

Provide technical assistance to building managers that wish to install a secure bicycle parking facility.

### **Resources**

New York City Bicycle Access to Office Buildings Law:

<http://www.nyc.gov/html/dot/html/bicyclists/bikesinbuildings.shtml>

## CRASH REPORTING AND ANALYSIS

### **Current Policy and Practice:**

Improving pedestrian and bicyclist safety includes a 3-step sequence of reporting, analyzing and implementing. Accurate and complete crash reporting allows for more meaningful analysis that is, in turn, more likely to result in improved safety, regardless of whether crash-reducing strategies address engineering, enforcement or education needs. It is important to know where the crashes are taking place, who is involved, and the types of actions that led up to the crashes, as well as environmental conditions. This policy paper identifies specific improvements in reporting, analysis and implementation ranging from changes to existing systems and adapting systems used by other cities.

#### *Reporting*

Philadelphia's Police Department uses the Commonwealth of Pennsylvania Police Crash Reporting Forms. The Police Department's Research and Planning section collects the police reports and enters them into a database. The Streets Department gets the Police Department's database when requested. PennDOT also collects the reports and enters them into their own database. DVRPC uses PennDOT's database for doing crash studies. The crash report form is markedly lacking in information for reporting bicycle crashes. Specific information not reported on the form includes "hit bicyclist" as a general crash description, "trail crossing" as an intersection type, and any references to either bike lanes or dooring.

#### *Analysis*

Both Philadelphia's Streets Department and DVRPC use crash data from existing reporting to analyze locations in the city with pedestrian and bicyclist safety concerns. Using crash data from the Police Department, along with other data, the Streets Department analyzed 54 intersections with an average of more than two pedestrian crashes per year over a 6-year period and identified common characteristics: heavy traffic volume, long crossing distances, transit nodes, and shopping strips. Broad Street, mainly North Broad, was the location of the largest number of these high crash intersections. DVRPC subsequently prepared a crash analysis of North Broad Street using the Pedestrian and Bicycle Crash Analysis Tool (PBCAT), developed by the National Highway Traffic Safety Administration. This database program classifies pedestrian and bicycle crashes by the type of location, actions and circumstances contributing to the crash, however it does not include data categories that would help determine whether the motorist or the pedestrian actually had the right of way in many cases of turning vehicles or whether a motor vehicle ran a red light. Consequently, the tool's analytical capabilities are limited, although the key recommendations of the North Broad Street crash analysis using PBCAT appear to be valid.

#### *Implementation*

The City attempts to implement recommendations of crash studies as funding is available. In the case of North Broad Street, the main recommendations of the DVRPC study were enhancing the lighting of crosswalk areas and targeting enforcement of yield-to-pedestrian laws. This was followed up a Road Safety Audit that made other recommendations including the installation of median pedestrian refuges and pedestrian countdown signals. Enhanced lighting, countdown signals, and median refuge islands have been installed or are planned for much of North Broad Street. Increased enforcement has not yet been part of the response. FHWA's PBCAT tool does not include automated enforcement cameras among the countermeasures recommended on its website.

**Goal:** Improve crash data collection and analysis in order that countermeasures may be effectively designed to improve pedestrian and bicycle safety.

### **Objectives:**

- Improve the coverage and detail of bicycle and pedestrian crash reporting;
- Improve the precision of crash analysis for better focus on countermeasures;
- Improve Police Department and Streets Department response and countermeasures to reduce crash rates.

## **Improve the coverage and detail of bicycle and pedestrian crash reporting**

### **Strategies:**

Revise the Commonwealth crash report form to include information needed for analysis of bicycle and pedestrian crashes. The Police Crash Reporting Form lacks details to describe bicycle crashes. The following information should be added to the form:

**3. Location Type: Intersection Type:** "Trail Crossing"

**12. People Information: A. "Bicyclist"**

**15. General Crash Information: Relation to Roadway:** "In Bike Lane"

**16. Unit Event Information: Harmful Events:** "Doored by Unit"

**18. Contributing Information: Environmental/Roadway Potential Factors (E/R):** "Pavement Markings Missing or Obstructed", "Manhole cover removed", "Rumble Strips"; add "or Not Working" to "TCD Obstructed"

**18. Contributing Information: Driver Action (D):** Add "Failure to Look Before Opening Door in Travel Lane", "Driving in Bike Lane", "Failure to Yield to Pedestrian in Crosswalk While Turning", "Failure to Yield to Pedestrian in Crosswalk While Going Straight", "Slowing/Stopping", "Changing Lanes", "Merging/Overtaking", "Avoiding Object on Road", "Riding on Sidewalk", "Riding in Shoulder". Change #13 "Illegally Stopped on Road" to "Stopped on Road".

Crashes of bicycles with other bicycles or with pedestrians should be reported and included in the database, as should single bicycle crashes that result in injury or death.

## **Improve the precision of crash analysis for better focus on countermeasures**

### **Strategies:**

When pedestrian and bicycle counts are available at a sufficient number of intersections, combine count data with crash data to evaluate the relative danger of different locations.

Seek improvements to PBCAT to make it more useful, in particular, separation of signalized intersections from sign-controlled intersections and indication of motorist running red lights (as with bicycle crash typing).

## **Improve Police Department and Streets Department response and countermeasures to reduce crash rates**

### **Strategies:**

The Bicycle and Pedestrian Safety Committee (see Enforcement paper) should regularly review crash analyses to plan for countermeasures including education, enforcement, and engineering improvements.

Consider adopting a TrafficStat program such as the one used by New York City to reduce traffic crashes, injuries, and fatalities; to identify dangerous highway engineering conditions and ensure their correction; and to increase safety education efforts for children, bicyclists, pedestrians, and motorists. NYC's TrafficStat holds meetings at police headquarters to discuss such issues as crash patterns and the correction of conditions at locations with high incidence of crashes.

## **PEDESTRIAN AND BICYCLE COUNTS**

### **Current policy and practice**

The City of Philadelphia does not currently have a comprehensive Bike and Pedestrian Count plan. The Bicycle Coalition of Greater Philadelphia has conducted consistent bicycle counts at a limited number of locations since the early 1990s. The first count occurred in 1990 and follow-up counts occurred in 1997 and in each year from 2005-2008. These counts have been conducted at key intersections in Center City and University City and on the Schuylkill River Bridges during commuter peak periods. The counts covered number of bicycles, direction of travel, gender, helmet use, and riding on sidewalk. Direction of travel data also included enumeration of wrong-way bicyclists on the street.

The Center City District conducts annual lunchtime pedestrian counts on Center City sidewalks. The locations have been quite consistent from year to year. The Planning Commission has conducted lunchtime pedestrian counts on downtown sidewalks on an irregular basis. PCPC arranged for DVRPC to conduct pedestrian and bicycle counts at 22 high-crash intersections throughout the project study area in the spring of 2008. Increasingly, PCPC requests that pedestrian counts be included in the base data collected for traffic studies submitted to the City. Such counts would typically be crossing counts at intersections.

Fairmount Park collects continuous trail use data from four counters installed on the Schuylkill River Trail. The counters are motion sensitive devices that do not distinguish between pedestrians and bicyclists. The counters were installed by the Schuylkill River Greenway Association, but have recently been taken over by Fairmount Park. Park staff collects and analyzes the data for park management purposes and transmits the data to the Schuylkill River Greenway Association.

**Goal:** Collect accurate and consistent data on walking and bicycling activity across the City and over time. This data is needed to help determine where pedestrian and bicycling improvements are most needed; to evaluate the results of such improvements; and to identify trends in the use of walking and biking as transportation modes.

### **Objectives**

- Identify additional resources for counting walking and bicycling
- Develop appropriate methodology for pedestrian and bicycle counting program

### **Identify additional resources for counting walking and bicycling**

#### **Strategies:**

Seek assistance through DVRPC's work program for counts using new equipment they have recently procured. This includes sensitive wires or tubes that can register bicycles traveling in a road or path, and microwave detection systems to count pedestrians.

Request that DVRPC's Household Travel Survey be repeated on a recurring 10-year cycle. Census data only captures work trips, which only represent about 15% of total trips. Walk trips, because they are so short, are particularly poorly represented among work trips. Only a travel survey that captures all trips can fully measure the level of non-motorized travel in the City. DVRPC should also be asked to collect travel survey data about trip segments rather than total trips. Many walk trips form only a portion of a larger trip that may also include transit or roadway vehicles.

Require that all intersection traffic counts conducted as part of traffic studies submitted to the City, including studies prepared by developers, include pedestrian and bicycle counts.



Seek grant funding for more trail counters for Fairmount Park. Additional counters should be placed on MLK Drive, Forbidden Drive, the Pennypack Trail, and possibly the Cobbs Creek Trail. New counters should be capable of distinguishing between bicyclists and pedestrians and should be capable of accurately counting individuals within groups of pedestrians or cyclists.

Work with DRPA to install an automatic counter on the Ben Franklin Bridge Walkway.

## **Develop appropriate methodology for pedestrian and bicycle counting program**

### **Strategies:**

Develop a database for all pedestrian and bicycle counts in the City. While the existing counts are sparse compared to vehicular traffic counts, there are enough bicycle and pedestrian counts that a consistent database should be initiated.

Conduct a pilot program using DVRPC's new counting equipment. This equipment is not suited to counting crosswalks or intersections. Counts must yield hourly data and should capture peak period activity.

Criteria for the selection of locations for the pilot program should include:

- Control and Comparison - Include some locations that have been previously counted by other means. One or two locations should be counted repeatedly over the course of the year in order to develop adjustment factors for future sample counts.
- Key Locations - Include locations of interest because of bicycling or pedestrian issues that have been identified by staff, the Bicycle Coalition, or previous studies. These might include areas with high volumes of walking or bicycling; locations near proposed bicycle or pedestrian improvements; and locations where pedestrian or bicycle crash numbers are high.
- Baseline Coverage – Fill in with locations that have never been counted, to begin to create a Citywide pedestrian and bicycle count database.

Evaluate the results of the pilot program and create a plan for continuing counts going forward. The plan should include: completion of baseline counts throughout the City; a schedule for repeating counts; and, the selection of specific locations for annual counts. The Bicycle Coalition has already created a small sample of key locations that are manageable with volunteers. A similar sample should be developed for annual pedestrian counts. The evaluation of the pilot program will include an analysis of variation across times of day and months of the year and this will be taken into consideration in deciding when future counts should be taken, especially manual counts.

### **Resources**

National Bicycle & Pedestrian Documentation Project <http://bikepeddocumentation.org/>