

*Dedicated to
George Dolph 1948–2005*

Getting Around Philadelphia

A Survey of Five
Areas of Transportation

Transit Working Group
Green Party of Philadelphia

This publication is dedicated to the memory of *George Dolph*, longtime member of the Green Party of Philadelphia and organizer of the original Transit Working Group. In August 2004 George suffered his first of several health setbacks, just as the working group was beginning to resume the work he had initiated, organized and led until May 2001. In his last email to the working group, George forwarded to us an article on free public transit in the December 18, 2004 edition of the *Philadelphia Inquirer* and added the remark, "This ought to be a central plank in any Green urban program. Of course the next thing you know people will demand that things like medical care and public schools should be free too." George, we miss you, your guidance, wisdom and tireless progressive spirit.

We invite readers to comment on this publication.
Please contact us at transit@gpop.org with your
suggestions, criticism and questions.

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Contents

Aims of the Transit Working Group	1
Introduction	2
WALKING in Philadelphia	5
BIKING in Philadelphia	9
RIDING PUBLIC TRANSIT in Philadelphia	13
DRIVING in Philadelphia	19
TRAVELING to and from Philadelphia	26
Security and Transportation in Philadelphia	32
Recommendations	35
What We can Do	37
Appendices:	
A. Contacts in City Government	39
B. <i>U.S. Mayors Climate Protection Agreement of March 30, 2005</i>	44
C. <i>Ten Key Values of the Greens</i>	46
D. Green Party of the United States: <i>National Platform on Transportation Issues</i>	48
E. Abbreviations	51
F. Notes	52

Aims of the Transit Working Group

The Transit Working Group seeks to understand the transportation needs of all people who live, work or spend time in Philadelphia. This includes people from all walks of life, from the poor to the wealthy, from the very young to senior citizens, as well as people of all abilities and disabilities. We work to promote everyone's right to transportation that is safe, clean, affordable, convenient and environmentally sound.

The Transit Working Group advocates a combination of transportation forms that will minimize harm to the environment and promote a healthy lifestyle. This "multimodal" approach includes walking, bicycling, use of public transit systems and car-sharing with hybrid vehicles. We call for public investment in systems and infrastructure that promote non-polluting and city-friendly modes of transportation. This will require changes in Philadelphia's transportation priorities. By working on the local level, the Transit Working Group seeks to show how various forms of transportation interact and how they are connected to environmental and political concerns on the regional, national and international levels.

The Green Party of Philadelphia is a political party and a grassroots activist organization. It organizes working groups like the Transit Working Group. It values ecological wisdom and social justice. Greens support businesses with sustainable, future-oriented development, technology and fiscal policies. In addition, the Green Party of Philadelphia supports candidates for election who share these values.

Introduction

Getting Around Philadelphia is a guide and resource for the general public, community activists and interested groups and organizations. It presents a brief overview of five areas of personal transportation—walking, bicycling, public transit, driving and regional travel—and discusses their environmental and economic impact on people living and working in Philadelphia. (Freight transport is mentioned only in passing.) *Getting Around Philadelphia* also discusses accessibility to transportation and to the information we need to make decisions about its use. It addresses the nexus of security and transportation. Finally, the appendices provide useful information for those who want to become involved in improving transportation in the City or to address specific transportation-related problems in Philadelphia. See Appendix for contacts in City government.

According to a recent analysis, Americans will spend one-sixth of their adult lives in an automobile, almost as much time as they will spend eating or being with their families. The automobile has a major impact on global warming, air pollution, resource depletion, energy consumption and the general health of the population, among a whole host of related issues. It is now widely accepted that world oil reserves have peaked or are peaking, a fact that strikes at the very heart of our car-based society. Replacing automotive traffic with other forms of mobility, such as walking, public transit and biking, can reduce oil dependency and improve the quality of life of drivers and non-drivers alike.

Philadelphia faces a host of environmental issues, and among the most significant are those related to transportation. The automobile dominates the cityscape of Philadelphia, even though more than a third of Philadelphia households are car-free. This domination comes with a high social price, particularly for those of more modest means.

Non-drivers in Philadelphia have fewer options in terms of jobs, housing and social activities. The City needs more transportation choices so that all of its citizens can move about safely without overextending their pocketbooks.

There are some signs that Philadelphians are beginning to make investments in a more sustainable future. More locally-grown foods are becoming available at farmers markets and food co-ops, thus reducing transport costs. The bicycle has recast its former image as a purely recreational vehicle and is now being used more frequently for getting to work, to school, and going shopping. In early June 2005 the mayor of Philadelphia, John F. Street, signed the U.S. Mayors Climate Protection Agreement, which commits signatories to reduce greenhouse gas emissions to 7% below the level of 1990 by the year 2012 (the full agreement is in Appendix B).¹

The City of Philadelphia has already begun to implement a coordinated response in the transportation sector to help reduce greenhouse emissions. The Street administration has added hybrid vehicles to the City fleet and reduced its size overall by hundreds of vehicle through car-sharing.² Streetcar (trolley) service, long absent from most Philadelphia streets, has been restored using vintage vehicles in North Philadelphia, West Philadelphia and Port Richmond. On the State level, funding for various transportation projects has been proposed that will positively impact the lives of pedestrians, above all school children.³

Much, however, remains to be done. *Getting Around Philadelphia* shows that our City and State lack strong public and private entities to which people can turn for improvements in getting around Philadelphia. Moreover, Philadelphians have few effective means for redressing this lack of representation. Issues of mobility thus reflect larger social issues and are in need of critical and creative voices. We hope the information and perspectives presented in this

survey will encourage readers to become those voices of change.

We believe *Getting Around Philadelphia* is an example of local research that can be conducted throughout the State. Similar research would provide a fuller picture of transit issues across urban, suburban and rural boundaries. It would also show the need for thinking regionally about transit policies and the need for more fairly distributed transit funding state-wide.

We would like to express our thanks to the many persons in advocacy groups and city government for the valuable information and insights they provided, above all to John Hadalski (formerly of the Managing Director's Office, City of Philadelphia) and John Madera (Delaware Valley Regional Planning Commission). We extend special thanks to the many residents and workers of the City who shared with us their experiences and frustrations with the current transportation system and who inspired us with their visions of a better Philadelphia.

This survey was written by Hillary Aisenstein, Christina Cantrill and David Odell with research and editorial assistance from Isabelle Buonocore, Rich Garella and Emilio Reccio. Graphics were provided by Emily Cantrill. Final responsibility for content rests with the writers. We invite input and feedback to help us improve future editions. ■



Local initiatives, organizations and other resource groups that make positive contributions to transportation in Philadelphia are highlighted at the end of each section with a flower icon.

Walking in Philadelphia

Economic impact. Walking is a natural, widespread and economically important form of transportation. Many types of personal business are conducted entirely or partially on foot (shopping, eating in restaurants, attending concerts and so on).⁴ Thirty-seven percent of Center City residents walk to work.⁵ However, due to its ubiquity, walking is rarely viewed as a valuable transportation mode in its own right, and its economic impact often goes unrecognized. Thus efforts to improve the situation of walkers have no major identifiable industry backing. Walkers are represented by only a small number of advocacy groups. In spite of the overall importance of walking, it receives scant federal, state, or municipal financial backing.

Walking habits. With exceptions, non-recreational walking in an urban environment generally involves distances of only up to one half mile. For greater distances, people in Philadelphia generally use motorized forms of transportation, including taxicabs, public transit and, predominantly, privately-owned vehicles. It is thus not surprising that so many Philadelphians are overweight.

Infrastructure. Philadelphia has an extensive, partly non-contiguous array of publicly accessible walkways, many of which date back to colonial times. These include not only sidewalks and pedestrian-only streets but also the rural setting of Fairmount Park with an area of almost 37 km² within the City limits. Philadelphia has many small, narrow, grid-patterned, tree-lined and one-way streets. These conditions offer an ideal setting to promote walking and traffic calming.⁶ However, with the continued domination of the cityscape by the automobile, insufficient maintenance of existing walkways, inadequate enforcement of municipal regulations and high crime rates, the City falls far short of this ideal.⁷

The physical condition of walkways and the walking environments generally have a great impact on how often and where people walk in the City. Green lights at intersections in Center City are often very brief and thus crossing is intimidating to the elderly and handicapped. Many walkways are poorly lit or not properly maintained. Blight, including graffiti, abandoned cars, trash-strewn lots and abandoned buildings, destroys the aesthetic quality of the environment and thus the desire to spend time walking outdoors. Blight adversely affects the quality of life of the poor, working-class and minority neighborhoods, including their children, elderly and disabled. Walking to, or waiting at, a bus stop, subway or rail line can be unsafe, especially at night. Blighted environments thus reduce transportation choices.

Clean, well-kept neighborhoods can promote walking. As the number of walkers increases, so too does the safety and attractiveness of our neighborhoods.⁸ With its 2,400 murals (the most in any U.S. city) and wealth of historically significant sites, Philadelphia offers ample incentive for walking. Increased planting of trees not only helps beautify city streets, but also has an important traffic-calming function, among many other advantages.⁹ The Mayor's Neighborhood Transformation Initiative and the Green City Strategy help in stabilizing and greening vacant lots.¹⁰

In Philadelphia, the walking environment is sustained by various groups. Construction, maintenance and cleaning of public walkways is the responsibility of adjacent property owners. Crosswalks and related traffic lights and timers are installed, evaluated and maintained by the City Streets Department. Monies from capital funding of the City Streets Department may be used for special walkway projects. Curb cuts, which make it easier to use wheelchairs when crossing streets, are mandated by the Americans with Disabilities Act (ADA). Some walkway projects are

funded through the Pennsylvania Department of Transportation's (PennDOT) Congestion Mitigation and Air Quality program funds that are part of the federal Transportation Equity Act for the 21st Century (TEA-21). The maintenance of trees on streets and in parks (an important ingredient in the walking environment) is the jurisdiction of the Fairmount Park Commission.

Children. Many children in Philadelphia are ferried to school in cars because parents consider the streets unsafe (lack of sidewalk or crosswalk, wide roads, complicated traffic conditions, improper parking and speeding drivers).¹¹ In some areas of Philadelphia, school children are particularly vulnerable to violence on the streets when walking to school. The School District of Philadelphia, Police Department and public transit police attempt to create "safe corridors" for these children in South and West Philadelphia. These efforts include adult volunteers who stand guard along these routes.¹²

Safety. Increased federal funding under TEA-21 is available for pedestrian safety. However, for the period 1998-2002, only 0.4% of these monies was spent to fund safety measures and facilities for pedestrians and bicyclists in Pennsylvania, in spite of the fact that together they make up 12.2% of all traffic deaths in this state.¹³

In 2001, the Philadelphia metropolitan area ranked among the most dangerous metropolitan areas for pedestrians.¹⁴ According to statistics reported by the National Center for Statistics and Analysis (NCSA), 72% of walker fatalities in car crashes nationally were in urban areas in 2003; 4,749 walkers were killed in crashes (one walker every 111 minutes) and 70,000 walkers were injured during the year. Another study shows that nationwide almost 11% of pedestrian deaths were children. And although representing just 12% of the population nationally, African Americans made up 20% of all pedestrian fatalities in 2001. One reason for

this is that proportionately they walk more than do whites. Over one quarter of fatalities in Pennsylvania were elderly (over age 70).¹⁵

Information. The City of Philadelphia has no public data on walker traffic fatalities that citizens can readily access.¹⁶ In addition, Philadelphia citizens in general have only limited ability to interact with municipal officials in walking-related matters. As of spring 2006, Philadelphia remains without a full-time dedicated office or staff in charge of traffic calming or walker/bicyclist issues.¹⁷ No public meetings are held by the Department of Streets for walkers and no community advisory board exists to provide them an opportunity to present their ideas and criticism.

Trends. Like other large cities, Philadelphia's downtown area is growing, somewhat offsetting the trend toward suburbanization. This growth is largely attributed to retiring baby boomers who are returning to the City, as well as young professionals who live and work downtown. This has brought with it more attention to "curb appeal" within the downtown area. This means there are currently new potential lobbies and resources for focusing on walker issues. The Segway Human Transporter is becoming a more common sight in Center City. Its future role as competitor or ally of the walker in the battle for space with the automobile is as yet unclear. Philadelphia's attempts to attract tourists to its historical and artistic resources, brings with it some additional focus on promoting a walkable downtown with multimodal connections to Philadelphia's neighborhoods. ■



The *Center City District (CCD)*, a public/private business improvement venture, has a "Walk! Philadelphia" campaign that provides walker-oriented signage for residents and visitors to Philadelphia. CCD is active in making Center City more pedestrian-friendly.

A noteworthy initiative in recent years is the creation of the Schuylkill River Park on the east side of the river extending from Locust Street to the Art Museum, which makes up an important section of the East Coast Greenway. *Free Schuylkill River Park* is a citizen's group currently working to secure safe and legal street-level access to the park. (www.freetheriverpark.org)

PhillyWalks is an all-volunteer Philadelphia walking advocacy group that is part of larger national project, AmericaWalks. It works for a safe and functional walking environment, promotes walking as an activity and mode of transportation, educates government and transportation officials and the general public about walker concerns and creates greater public awareness of walker issues. Philly Walks is a member of AmericaWalks. (www.americawalks.org/member_groups)

Biking in Philadelphia

Biking habits. In 2000, the most recent year for which statistics are available, 3.1% of Philadelphians commuted to work on bikes.¹⁸ According to AmericaBikes.org, 1.5 million adults in Pennsylvania ride bicycles at least once a month between May and September. Bicycle paths, walking paths, and trails accounted for 13.1% of trips. Less safe methods of bicycle travel such as riding on shoulders, sidewalks and unpaved roads accounted for the remaining 81.7% of bicycle travel. Nationally, 52% of Americans have indicated a desire to increase bicycle use.¹⁹

Infrastructure. To date, only 200 of the 2,393 miles of streets and roads in Philadelphia have bike lanes and none of them are buffered (protected). A mere 3 miles of bike lanes are in Center City. There are an additional 54 off-road trail miles. Bicyclists have only limited access to

bridges to New Jersey. While the Tacony-Palmyra Bridge is open 24 hours a day to bikes except in bad weather, the Ben Franklin is normally accessible only during daylight hours, and there is no biker access whatsoever to the Betsy Ross and Walt Whitman bridges. Bike parking—particularly in indoor facilities—is still scarce in Philadelphia, even as the numbers are increasing. The City has an estimated 1,000 public bike racks installed and another 2,000 are planned by the summer of 2007.²⁰

Of the few bike lanes in Philadelphia, many tend to be clustered in certain neighborhoods such as West Philadelphia around the University of Pennsylvania and Drexel University, and in North Philadelphia around Temple University. Although Lower and Central North Philadelphia have had major arterial streets like North Broad Street and Germantown, Erie and Diamond Avenues evaluated for the bicycle network, there has been little progress on these lanes since 2002. This leaves Upper North Philadelphia (except for Lehigh and Allegheny Avenues) completely devoid of safe riding areas.

Thanks in large part to the work of the Bicycle Coalition of Greater Philadelphia, the Southeastern Pennsylvania Transportation Authority (SEPTA) now accommodates bicycles on many public transit vehicles, thus offering an important means of multimodal transportation.²¹ However, use can be restricted based on form of transit (bus, train, trolley), available assigned spaces, and hours and day of the week. Parking facilities shelter bicycles from the elements at major transportation centers and regional rail stops. In addition, SEPTA advertises the proximity of on-road and off-road bike trails near its stations.

Economic impact. The bicycle is a \$5.6 billion industry in the U.S.²² In the 1890's, some 190 bicycle manufacturing businesses were located in Pennsylvania, almost half of them were in Philadelphia.²³ Today, Bilenky Cycle Works is

the sole manufacturer of bicycles in the City (since 1981). Fuji Bikes moved its corporate headquarters here in 2004.

In 2006, the City of Philadelphia has 31 bicycle dealers that contribute to the local economy through the sales of bicycles, bike parts and accessories, repairs and other services.²⁴ Bike courier companies are being used increasingly, especially in Center City.²⁵ Philadelphia is also home to two pedicab businesses: Philadelphia Pedicab Company and Chariots of Philly.²⁶ Bicycle racing also brings in thousands of bikers and visitors. The Philadelphia International Cycling Championship alone brings \$15 million to the City each year.²⁷

Safety. If riders feel safe, they are likely to ride more often. Many Philadelphians who would otherwise commute to work on their bikes, do not do so for safety reasons. Bicycle lanes can end abruptly and the lack of appropriate signage means bicyclists are often uncertain how to continue their trips. Bike lanes, if they do exist, are usually poorly maintained and the prohibition of cars on them is rarely enforced. Incorrectly parked or double-parked cars or construction activity in bicycle lanes force bicyclists into car traffic. Insufficient police enforcement allows car drivers to continue to treat bicyclists as second-class citizens in many types of everyday encounters, whether they are driving fast, crowding bicyclists as they pass, or honking impatiently from behind. And bicyclists are "doored" by motorists exiting their vehicles—an all-too common and dangerous occurrence on Philadelphia streets.

According to the Pennsylvania Motor Vehicle Code, bicyclists have the same rights and responsibilities as car and truck drivers.²⁸ However, the City has not sufficiently promoted multimodal designs for the streets that reflect this standing. Nor does the City take sufficient measures to ensure bicyclist safety. Without proper attention to contiguous and safe bike routes, it is unavoidable that bicyclists

use sidewalks, which in turn endangers and further alienates the walking public. For safety reasons, children and elderly riders have little choice but to confine their biking activity to the few safe, quiet, designated lanes available to them. Even with an increase in the number of bike lanes, it is unlikely that these groups will feel comfortable alongside car traffic without buffered zones or considerably more traffic-calming efforts.

Advantages. There are many advantages to bicycle riding. Biking promotes health. Bicycles require no fuel, produce no emissions, and are cheap to own, use and maintain. Building and providing upkeep to the biking infrastructure (i.e., streets, parking) is also far less of a burden on the taxpayer. Due to their much smaller size, bikes reduce traffic congestion considerably. The use of bicycles on the streets contributes to an overall traffic-calming effect. There are social advantages as well. Bicycles are less dangerous to other traffic participants than are automobiles. Riders can communicate better among themselves and with others. It is easier to request and provide assistance in case of breakdowns.

Trends. The role of the bicycle in Philadelphia is undergoing a transformation. Three-wheelers and bike trailers give evidence of increasing orientation to practical activities such as grocery shopping without reliance on the automobile.

Bicyclists currently have a vulnerable status, however. While they are becoming more courageous in taking to the streets and asserting their rights as participants in city traffic, they have not yet been fully accepted by car drivers. Bicycles are in many cases—and increasingly—a speedier, less expensive, and more practical means of getting to work and school. But car drivers have invested many times the money in their choice of vehicle and thus expect a higher "return" on their investment in the form of a more

privileged status on the streets. This is a status they will not likely be willing to concede. To help resolve this situation, city departments (planning, police, streets, health, etc.) and citizens organizations will be called upon for their counsel and expertise. The practicality of bicycles will likely bring them increased recognition as a viable means of transportation on Philadelphia's streets. ■



The *Bicycle Club of Philadelphia* (BCP) encourages all aspect of bicycling and sponsors recreational activities and promotes rights and safety practices of bikers (www.phillybikeclub.org).

The *Bicycle Coalition of Greater Philadelphia* (BCGP) is an advocacy and educational group in Philadelphia. BCGP runs the Bicycle Education and Enhancement Program, the largest in-school bicycle education program in the nation. It helps produce an annual regional bicycling map and evaluate new bike lanes and related proposals. (www.bicyclecoalition.org)

Neighborhood Bike Works is a program for Philadelphia youth that recycles used bikes and offers education, recreational, and career-building opportunities through bicycling (www.neighborhoodbikeworks.org).

Riding Public Transit in Philadelphia

Philadelphia has a long history of mass transit, beginning with horse-drawn carriages in the 1830's. SEPTA was created by the Commonwealth of Pennsylvania in 1964, and today it runs the fifth largest public transit system in the nation.

Transit volume. In addition to SEPTA, Philadelphia is served by New Jersey Transit and the Port Authority Tran-

sit Corporation (PATCO). Together, these three transit systems carry an average of 272,109 passengers downtown each weekday. Seventy percent of Center City office workers commute using public transportation.²⁹ SEPTA services include subway, trolleys, buses, light rail and regional rail. The system transports over 416 million passengers each year. Daily riders include: 50,000 seniors, 15,000 college students, 35,000 middle and high school students, and 300,000 workers and employees. The School District of Philadelphia transports 40,000 students (about 14% of all school children) daily in diesel-fueled school buses.³⁰ Another 33,000 students receive free or subsidized SEPTA tokens.³¹ Since 2005, the Center City District (CCD) has managed its Phlash trolley, which transports visitors to 20 Center City locations.³²

Transit monopoly. SEPTA enjoys a virtual monopoly of transit services inside the City. It is one of the region's largest employers, with a workforce of about 8,900 employees, yet its management lies outside the direct control of the municipal government. The 15-member independent SEPTA board is made up of 2 appointees from each of the 5 counties it services, giving Philadelphia 20% of the county representation. The remaining 5 members are appointed by the governor and the house and senate majority and minority leaders.

Funding. Like most other major transit systems, SEPTA's operating budget comes from federal, state, and local sources. And, like all modes of transportation, public transit requires significant government subsidies. However, SEPTA's subsidies from federal and state sources have steadily declined over the past 20 years. The City of Philadelphia and riders have thus had to bear much of the responsibility for funding transit because by law, SEPTA must derive at least half of its operating budget from riders.

At the federal level, the U.S. Department of Transportation is the primary agency responsible for transit funding and policy. Since 1998, the primary legal authority for funding public transit has been the TEA-21 bill. Despite its name, this act provides a large source of funds for highway construction and road maintenance and considerably less for public transit. On the national front, investments in public infrastructure have declined, thus affecting SEPTA.

Capital funds for construction and development of transit infrastructure are also provided at the federal level and, like other funds, are packaged with funding for parallel improvements in roads and bridges. The Transportation Infrastructure Finance and Innovation Act (TIFIA) is the primary legal authority of federal funds for capital improvements.

At the State level, the Commonwealth of Pennsylvania provides funding for public transit as part of the general budget allocation each year. With the exception of 0.5% of sales tax revenue, there is no dedicated source of funding for public transit at the State level. This is of major concern to transit advocates because traditionally, the State was the primary source of funding for transit. The State share of transit funding has decreased over the past 20 years.

The unpredictable nature of the State subsidy has created ongoing tension between SEPTA, the State, and the ridership for the past twenty plus years during both Democratic and Republican administrations. Each year the State allocates funding based on a small annual increase, which is less than inflation, resulting in an actual loss of funds from year to year. Decisions about allocations are made from year to year, making long-term planning difficult for SEPTA. In order to meet demand with a shrinking budget, SEPTA has had to cut back its workforce by over 1,000 positions in the last five years, reduce service and increase

fares, all of which results in fewer riders and thus less funding.

Transit usage. Pennsylvania was ranked 8th among states in terms of the percent of workers 16 years and over who traveled to work using public transit in 2005.³³ In Philadelphia, 27% of workers commute to work using public transportation.³⁴ As in most American cities, use of public transit in Philadelphia falls far behind other urban areas around the world.

Environmental impact. SEPTA has perhaps the most wide-ranging, positive environmental impact of any organization in the Delaware Valley, but makes little attempt to showcase this side of its operations. Its choice of loud, heavily-polluting diesel buses also does not enhance its image as a "green" force in the region.³⁵ However, public transportation is a very efficient way of moving large numbers of people around the City. It preserves Philadelphia's historic character and reduces congestion, fuel consumption and pollution.

For every passenger mile traveled by Americans, public transportation consumes about one-half the fuel and energy of private automobiles, SUVs and light trucks. For every passenger mile traveled by Americans, public transportation produces only five percent as much carbon monoxide, less than ten percent as much volatile organic compounds, and little more than half as much carbon dioxide and nitrogen oxides. (*American Public Transportation Association*)³⁶

Every SEPTA bus removes 40 cars from the road, while every train removes 120 cars. This means fewer vehicles on the road, saving of fuel, and a significant reduction in emissions. Compared with private cars, SEPTA vehicles produce 95% less carbon monoxide per passenger mile traveled. Once a common sight on Philadelphia streets, electric streetcars (trolleys) have far less negative impact

on the environment than buses and are making a comeback in many American cities.³⁷

Some government programs are in place to encourage the use of transit and help the environment. The Delaware Valley Regional Planning Commission administers TransitChek, a commuter benefit program that provides financial support to users of public transit.³⁸ City employees also enjoy a special pre-tax benefit for transit use through a third-party provider.³⁹

Transit and social status. SEPTA also supports a basic transportation need for all—for those without cars as well as those who choose not to drive daily. Additionally, one fourth of the citizens of Philadelphia live below the poverty level (almost twice the national average), 13% are over the age of 65, and 22.1% have disability status.⁴⁰ This presents a challenge for the City to provide affordable, user-friendly transportation. At the same time it is an opportunity and incentive to find creative long-term solutions to meet the needs of all Philadelphians. The SEPTA bus fleet is 100% accessible to those with disabilities and senior citizens. Through contract carriers it also provides ADA Paratransit Service for persons unable to use regular buses and a shared-ride program for seniors and residents of Philadelphia traveling within the City. Many regional rail and transit stations have handicapped-accessible platforms and/or elevators.

Economic standing and race are strong predictors of transit use. In Philadelphia and many other American cities, public transit is used mostly by the poor and by minorities.⁴¹ The somewhat longer travel times of some forms of public transit compared with the automobile puts these groups at a disadvantage. However, the transit system can improve its time advantage through infrastructure changes, e.g., extending rail networks and increasing the number of bus

lanes. Better transit results in more equality between rich and poor, black and white.

Service complaints. Complaints about SEPTA service are many and include lack of route schedules at bus stops, complicated pricing system, infrequent and delayed service, loud diesel buses,⁴² lack of information about service delays/disruptions, insufficient number of venues for purchasing fare instruments, and inconvenient stop and station locations.

Citizen input. SEPTA has two main sources of citizen input, both of which are inadequate: public hearings and the Citizen Advisory Committee. Public hearings are usually held with little public notice, in places and at times inconvenient for the general public. They give citizens an opportunity to present their opinions, but not to discuss them with SEPTA officials. The advisory committee is a 26-member body appointed by the Mayor of Philadelphia and the County Commissioners of the four surrounding counties.⁴³ Philadelphia has 16 members on the committee or 62% of the voting power. For many years now this committee has been ineffective at bringing any serious challenge to SEPTA decisions. Philadelphia has no organized consumer advocacy group that represents transit riders, just as it has no mechanism through which these concerns can be negotiated with SEPTA management on an ongoing, permanent basis.

As gas prices continue to rise and commuters increasingly use public transit to get to work, mass transit systems will be forced to create new routes and offer more frequent service. While it is certainly a challenge for the City to provide affordable, user-friendly transportation, it is at the same time an opportunity and incentive to find creative long-term solutions to meet the needs of all Philadelphians.⁴⁴ ■



Philadelphia-based *Clean Air Council* (CAC) is active with other groups such as Pennsylvania Public Interest Research Group (PennPIRG) on a "dump diesel" campaign to phase out the use of dirty diesel-powered city SEPTA buses in favor of quieter compressed natural gas buses. The campaign is urging SEPTA to convert its entire fleet to compressed natural gas buses by 2020. (www.cleanair.org/Air/diesel.html)

The *Delaware Valley Association of Rail Passengers* (DVARP) released a 59-page report in January 2005 detailing significant problems and concerns as well as potential recommendations and solutions for reforming SEPTA operations. (www.dvarp.org)

The *Green Party of Philadelphia* (GPOP) has long advocated improvements to SEPTA service and reduced or stabilized fares, taking leadership in an effort to secure a permanent, dependable source of revenue for SEPTA. In 2004, during contentious budget negotiations in Harrisburg, GPOP members helped form the Philadelphia Transit Coalition that then grew into a larger Pennsylvania group advocating for funding reform. (www.gpop.org)

Driving in Philadelphia

Cars. According to a 2002 U.S. Census Bureau estimate, 209,284 households in Philadelphia have no vehicle available, 239,086 households have one vehicle, 111,926 have two and 26,106 have three or more. More than one third of Philadelphia households (36%)⁴⁵ and 52% of Center City residents⁴⁶ do not own a vehicle. Philadelphia has 670,124 registered vehicles with an estimated population of 1,463,281 (U.S. Census Bureau estimate for 2005).⁴⁷

Roads. An even more commanding presence than the cars themselves is the vast network of streets, roads and high-

ways that serve them. Philadelphia has 2,393 miles of roads, highways, and bridges, 1,975 miles of city streets, 65 miles of Fairmount Park roads, and 353 miles of state highways.⁴⁸ Roads take up many times the space needed to serve pedestrians, bicyclists, public transit, rail and air transportation.⁴⁹ The main inbound arteries into Philadelphia are for cars only: I-95 from the north and south and I-76 from the west. Both empty directly into the downtown area, along with a number of major state roads. Of these, only the four bridges from New Jersey currently require tolls. No active consideration is being given to convert state highways—for example I-76 (Schuylkill Expressway)—into toll roads at the present time.⁵⁰

Philadelphia's roads have a major impact on the infrastructure of the City. North-south I-95 cuts off the downtown district from the Delaware riverfront. East-west I-676 (Vine Street Expressway) consigns most of the City's Chinatown neighborhood to a narrow enclave between Vine and Arch Streets, and has isolated one of the City's four historic park squares, Franklin Square. Another park square, Logan Square, and the connected Benjamin Franklin Parkway are so completely dominated by the automobile that in 2005, actor and race car aficionado Paul Newman considered using it for the site of an annual race car event.

We all pay. Money for building and maintaining highways and streets comes from 1) user fees such as federal and state gasoline taxes, tolls and registration fees, and 2) subsidies paid for by the taxpayers whether they have cars or not. These subsidies can be direct or indirect:

- a) *Direct.* A trackable flow of money to fund construction, maintenance and operation of roads from general tax revenues i.e., federal and state income taxes, and state and local property taxes.

- b) *Indirect.* Air, water and noise pollution, injuries and deaths ("externalities"). These are environmental and social ills that are borne by all taxpayers.

Road conditions. Philadelphia roadways are generally considered to be unsatisfactory in terms of both design and upkeep. Road maintenance is divided between federal (interstate), state, and local authorities. Poor road conditions lead to crashes and damage to vehicles, decrease fuel efficiency and cause higher vehicle replacement rates. Potholes have been widespread, but on April 10, 2006 a new "Operation Smooth Streets" was launched with the promise to repair street defects by the next business day.

Dangers. The City has the dubious distinction of having two of the ten most dangerous intersections in the entire nation in its Northeast section: Red Lion Road and Roosevelt Boulevard, and Grant Avenue and Roosevelt Boulevard.⁵¹ In 2004, there were 121 fatalities in Philadelphia traffic, up from 113 in the year 2003.⁵² The social costs of the automobile are considerable. Nationally, deaths and injuries resulting from motor vehicle crashes are the leading cause of death for persons of every age from 2 through 33 years old (based on 2000 data). Automotive fatalities account for more than 90% of transportation-related fatalities. Many of these crashes are caused by excessive speed and distractions while driving, e.g., by cell phone use. According to recent studies, drivers who use cell phones are more likely than nonusers to be involved in crashes.⁵³ Stress associated with traffic congestion, the negative impact on air quality and thus on health, and noise pollution are additional concerns. Most affected by this pollution are the elderly, young children and the sick. Car driving is thus a significant factor in driving up the costs of health care.

Pollutants emitted by cars are also dangerous to the drivers themselves. Several studies comparing car, train, bus, bicycle and walking have found that those sitting inside

automobiles were subject to the highest levels of emissions.⁵⁴

Building new roads does not solve the problem. Numerous studies, including a 2001 study by PennEnvironment, show that road building actually makes congestion worse,⁵⁵ thus exacerbating all of the social ills associated with the automobile.

Parked cars. The automobile creates difficulties even when it is not in motion. Since 1980 there has been a dramatic 40% increase in available off-street parking spaces in Center City, including both parking garages and parking lots. During this period there was a 45% increase in parked cars in the same area.⁵⁶ Currently Center City has over 523 parking lots and garages with 48,000 off-street parking spaces.⁵⁷ Only 11 Center City facilities are operated by the Philadelphia Parking Authority.

Center City has 7,000 on-street metered and non-metered timed parking spaces and an estimated 6,100 free spaces. The number of residential parking permits issued in Center City in 2006 is 6,480.⁵⁸ No figures are available for on-street parking spaces for the City as a whole. The city introduced smartcards and electronic meters for on-street parking in 2005. Vukan R. Vuchic, Professor of Transportation Engineering at the University of Pennsylvania, writes that in view of the combination of extensive roadways and an already available network of parking opportunities in Philadelphia and other cities, the "construction of more parking facilities does not alleviate, but actually aggravates congestion." Large parking garages, he continues, "also render entire blocks pedestrian-unfriendly and deaden their surroundings. This is true regardless of how 'aesthetically sensitive' the garages are made."⁵⁹

Compared with peer cities San Francisco, Chicago and Boston, Philadelphia has the lowest parking user fees for both

monthly (unreserved) and daily parking. Current parking rate structures encourage long-term parking (and thus automotive commuting) rather than short-term parking. Drivers seek on-street parking due to its relatively low cost. The demand for street parking outweighs availability, however, and competitive searching for spots increases traffic congestion and pollution in the downtown area. Valet parking companies make automobile use more convenient for drivers, thus further contributing to congestion in Center City. They also compete with motorists looking for on-street parking.

The car economy uses vast amounts of space not only on the road and in lots and garages. The Philadelphia area has 244 often sprawling new and used auto dealers, 217 gas stations, 51 auto washing and polishing shops, 458 auto parts retail stores, 67 tire retail stores and 53 taxicab services.⁶⁰ Other car-related businesses include road-building and paving, insurance, towing companies, car rentals and body shops.

Philadelphia also has a sizeable population of "dead" cars. Abandoned vehicles are unsightly and a safety hazard for children. These vehicles make the neighborhood itself appear "abandoned" and thus a magnet for further littering and crime.

Environment. The automobile has had a negative impact on our environment. For example, highway construction is a major factor contributing to sprawl in the outlying communities and thus to the destruction of farmland, forests and open space.⁶¹ "Hardscaping" the land also reduces water retention and increases the risk of flooding. Vehicle emissions from private automobiles pollute the air we breathe and are one of the top contributors to global warming. Fuel efficiency of passenger vehicles in the U.S. has declined by more than 5% since 1987. The average new car gets about 20 miles to a gallon and therefore can pro-

duce up to 43 metric tons of carbon during its "lifetime." Petroleum products used to power automobiles are nonrenewable and require large amounts of energy in order to be extracted from the earth, refined, and then distributed around the globe. Increased fuel efficiency of newer vehicles is offset in part by the sheer volume of automobiles and the inefficiency of their use.

Philadelphia ranks fifth among U.S. cities in terms of length of commuting time (29.4 minutes).⁶² In 2003, each Philadelphian lost an average of 38 hours annually on average due to congestion, for a total of 112,309,000 hours for all those in Philadelphia and the surrounding communities. This represents an excess of 60.3 million gallons of fuel due to idling and start-and-go congestion and an economic loss of \$1.9 billion.⁶³

Almost one half (44%) of all petroleum products consumed in the U.S. are for motor gasoline.⁶⁴ Therefore, more cars mean increasing risks of accidents and harm during the already environmentally disruptive processes of extracting, refining and distributing oil. The oil spill of the tanker Athos I on November 26, 2004 on the Delaware River is but one example. Drilling for oil in the Arctic National Wildlife Refuge would be another.

It is often overlooked that apart from the fuel that cars consume, the vehicles themselves are also resource-intensive products. Steel, petroleum-based plastic, rubber, various other synthetics and, increasingly, silicon-based computer chips are all components of car manufacturing and each presents its own environmental hazards. Unusable vehicles create an enormous waste problem in the form of tires, batteries, junk cars and oil. Vast amounts of additional resources are used in building roads, maintaining them and keeping them free of plant growth (using harmful herbicides). During an average winter, PennDOT uses for the Commonwealth of Pennsylvania about 600,000

tons of salt and 1 million tons of anti-skid, 400,000 gallons of calcium chloride and nearly 500,000 gallons of magnesium chloride.⁶⁵

The cost of personally owning and operating an automobile is considerable. Philadelphia has the second-highest car insurance premiums in the nation. Runzheimer International, a management consulting firm specializing in transportation reimbursement, estimates the annual costs of owning an automobile in Philadelphia at \$10,672, of which \$4,142 goes toward insurance costs.⁶⁶ The automobile club AAA estimates total annual costs of car ownership nationwide at \$13,403. This figure does not include the purchase of the vehicle itself or any accessories.⁶⁷

If a completely car-free lifestyle is not possible for some, more responsible use of motor vehicles is. The taxicab is an option for those who want to live without a car but whose travel needs include locations and times for which public transit is not convenient. Moreover, taxi use has the advantage of creating jobs. Car-sharing is also available in Philadelphia as an alternative to private car ownership for short-distance driving. Limousine service and car rentals are available for long-distance trips.

There are a number of alternatives to traditional automobile ownership. Fuel-efficient SmartCars and some hybrids offer environmental advantages. Two-wheeled vehicles (motor scooters, mopeds and motorcycles) have some practical advantages, but also present problems due to emissions and noise.⁶⁸ From an environmental perspective, however, all these alternatives are inferior to transit. ■



The *Green Party of Philadelphia* (GPOP) in June 2006 introduced an initiative to encourage Philadelphians to seek alternatives to private car ownership. A GPOP pamphlet that helps readers calculate the costs of car

ownership is available at www.gpop.org/transit.

PhillyCarShare is a Philadelphia-based non-profit organization that works to maximize the economic, environmental, and social benefits of reduced automobile dependence in the Philadelphia region through community-based car sharing. According to one source, each PhillyCarShare vehicle in Philadelphia takes 11 private cars off the streets, and allows a further 12 PhillyCarShare members to avoid buying an automobile.⁶⁹ (www.phillycarshare.org)

Traveling to and from Philadelphia

Philadelphia is home to a major passenger rail center and two airports. Passenger traffic by water is largely restricted to recreational use. Bureau of Transportation Statistics figures from 1995 (most recent year available) indicate that domestic person trips of 100 miles or more (one way) were undertaken from the Philadelphia Metropolitan Area with personal use vehicles 76.4% of the time, by plane 20.1%, with buses 1.7%, and by trains also 1.7% of the time.⁷⁰ In addition to passenger traffic, Philadelphia is also an important hub for shipping freight via truck, rail, air, and water throughout the U.S. and worldwide.

Rail. Philadelphia has one of the major rail centers on the eastern seaboard. Amtrak's 30th Street Station, built in 1934, is the second busiest railway station in the U.S.⁷¹ In 2005, Amtrak ridership to and from Philadelphia was in excess of 3.7 million passengers or over 10,000 per day.⁷² Like all public transportation, Amtrak—the national passenger railroad—is dependent on government subsidies. New Jersey Transit provides rail service between Philadelphia (30th Street Station) and Atlantic City. SEPTA provides regional rail service north and east to Trenton and West Trenton, New Jersey (R7 and R3 lines), south to Wilmington and Newark, Delaware (R2), and west to Thorndale,

Pennsylvania (R5), along with service to nearby outlying counties.

Light rail. The Port Authority Transit Corporation (PATCO) provides a high-speed light rail service from 16th and Locust Streets in Philadelphia to Lindenwold, New Jersey. SEPTA has a high-speed line from 69th Street Terminal to nearby western suburbs (Route 100 high speed line). SEPTA also has trolley service to counties south of Philadelphia (routes 101 and 102).

Bus. SEPTA buses connect Philadelphia with Bucks, Chester, Delaware and Montgomery counties. NJ Transit provides bus service between Philadelphia and points in New Jersey such as Camden, Cherry Hill, Trenton and Cape May. Commercial bus lines, such as Greyhound, Peter Pan Trailways and New Century Travel (connecting Philadelphia and New York Chinatowns) provide service to additional points outside of Philadelphia.

Personal use vehicle. This mode includes cars, vans, non-commercial trucks, recreational vehicles, sport utility vehicles and motorcycles. In 1995 (most recent figures available) a total of 9.9 million trips of over 100 miles or more (one way) originated in Philadelphia for a total distance of 4.9 billion miles.⁷³

Water. The Delaware River waterfront is used mainly for shipping goods and supplies. In 2004, the most recent year for which figures are available, \$11.4 billion worth of foreign trade freight entered and departed from the Port of Philadelphia.⁷⁴ Passenger ships are used for vacations and recreational use. CruisePhilly docks at locations in New England, Nova Scotia, Bermuda and the Caribbean. The number of passengers for the years 2003-2005 were 50,000, 67,000 and 92,000 respectively, with 131,000 anticipated in 2006.⁷⁵ Travel by water may be increasing as an alternative to air travel since September 11, 2001.⁷⁶

Air. Philadelphia International Airport is owned by the City of Philadelphia and operated by the Department of Commerce's Division of Aviation. It is located in the southwest area of the City mostly within Philadelphia proper and occupies 2,302 acres of land, part of which earlier provided wetland habitat for wildlife. The airport has 7 terminals and 4 runways. In 2004 it had a total volume of 12.5 million boarders (originating and connecting passengers),⁷⁷ with 54 daily departures to 28 international cities and 620 domestic flights to 87 cities.⁷⁸ The foreign trade freight was valued at \$9.4 billion in 2004.⁷⁹ The airport's ranking among the top 50 U.S. airports has risen from 24th in 1994 to 16th in 2004.

A second, much smaller airport, the Northeast Philadelphia Airport, also known as Philadelphia Executive Airport, is located within the City limits in Northeast Philadelphia. This airport is also operated by the Department of Commerce's Division of Aviation. It is the third-busiest airport in Pennsylvania (behind Pittsburgh International Airport) and provides private, corporate and charter service.

The aviation industry, like the nation's highways, is heavily subsidized by the federal government. Less than half of Federal Aviation Administration costs are borne by users of the system. The rest is financed by taxpayers—many of them non-flyers—out of the general revenue fund. Airlines pay no tax on fuel. Air travel also creates considerable problems with noise for the surrounding communities. In contrast with other major forms of long-distance transportation, air travel is not possible using sustainable (renewable) sources of fuel such as solar and wind. Its emissions, like those of ships, are also not covered by the Kyoto Protocol, in spite of the fact that air travel is one of the fastest-growing contributors to climate change.

Air travel also attracts cars. In spite of an extensive network of public transit connections to the Philadelphia International Airport (R1 rail and buses), most travelers access the airport by automobile, using the main highways I-95 and I-76. New and ever larger parking garages, which are controlled by the Philadelphia Parking Authority, have accompanied the expansion of the airport at every stage since the 1970's. This airport is also a center for car rental fleets. Taxi service to the airport from Center City is a flat rate of \$25. Convenient limousine service adds to the automotive congestion. All major rent-a-car services do business at the airport.

Environmental aspects. Most Americans prefer long-distance travel with their own personal vehicles. Table 1 shows all trips taken of 50 miles or more in the year 2001:

Table 1. Long distance trip-miles by mode in 2001⁸⁰

<i>Mode</i>	<i>Percent</i>	<i>Person-miles (millions)</i>
Personal vehicle	55.9	760,369
Air	41.0	557,621
Bus	2.0	27,094
Train	0.8	10,546
Other	0.4	5,120

The federal government provides subsidies to state and local governments for some major modes of transportation. Table 2 shows the dollar amounts of these grants in fiscal year 2002 (most recent figures available):

Table 2. Federal transportation subsidies in 2002⁸¹

<i>Mode</i>	<i>Subsidy</i>
Highway	\$31,322,000
Air	2,860,000
Bus ⁸²	-
Rail	43,000

Among these modes of transportation, rail travel receives 0.13%, air travel 8.4% and highways 92% of the federal subsidies. Put another way, highways receive 11 times more than air travel, which in turn receives 67 times more than rail travel.

These fiscal priorities do not support energy-efficient, less polluting forms of transportation, as shown in Tables 3 and 4 below:

Table 3. Fuel (BTUs) consumed per passenger-mile⁸³

<i>Mode of transportation</i>	<i>BTU's</i>
Commercial airline	3,890
Transit motor bus	3,698
Passenger car	3,597
Rail	2,100

In 2003, twenty-seven percent of greenhouse gases emitted in the U.S. came from the transportation sector, with highway vehicles responsible for 82% of this amount.⁸⁴ The principle greenhouse gas, CO₂, makes up 85% of all greenhouse gases. In a comparison of various modes of transportation, rail travel has the lowest emissions. This is shown in Table 4:

Table 4. Average CO₂ emissions by mode⁸⁵

<i>Mode of transportation</i>	<i>Pounds of CO₂ per passenger-mile</i>
Short-haul air	0.64
Automobile	0.39
Bus	0.27
Rail	0.17

Regional travel has considerable impact on the quality of life of Philadelphia's inhabitants. Both the mode of transportation and means of accessing it (e.g., traveling to the bus depot, train station or airport with public transit or private vehicle) can have a major effect on air quality, congestion, and noise levels to which the City's residents are subjected. ■



There are many advocacy groups around the country that support regional rail transportation for reasons of environment, its rich history, the aesthetics of rail travel, and even nostalgia.

The *Delaware Valley Association of Rail Passengers* works to retain, improve and expand rail service for both regional and local transit, including SEPTA, and keeps its members up-to-date with a monthly newsletter. (www.dvarp.org)

Friends of Amtrak is an online advocacy group that informs citizens about legislative and other activity related to the national passenger railway system since 1995 (www.FriendsOfAmtrak.com).

Security and Transportation in Philadelphia

Security issues in Philadelphia are closely related to transportation infrastructure and operations. Due to the widespread use of oil-based fuels, the transportation sector is contributing to a depletion of petroleum resources at an ever-increasing rate. This consumption can impact security issues in the City in two major ways:

1. Social and political tensions. The amount of readily-available oil is peaking or has already peaked.⁸⁶ This leads to higher prices for oil products and more competition for ever-dwindling petroleum resources. The resulting tension among oil consumers such as car drivers and trucking companies will likely increase aggression at the pump and on city streets. Internationally, rising prices and intensified competition for scarcer resources may increase the likelihood of regional, as well as international, conflicts.⁸⁷

2. Effects on weather. The vast amounts of petroleum-based vehicle fuel contribute to the warming of the earth's climate. Climate changes cause more localized disruptions in the weather. They can even increase the severity of hurricanes⁸⁸ and thus the likelihood of evacuations from coastal areas to Philadelphia. Philadelphia itself sustained extensive damage from Hurricanes Hazel (1954), Agnes (1972) and Gloria (1985).⁸⁹ The Pennsylvania Emergency Management Agency records 16 storm systems and flooding events affecting Philadelphia since 1954 that have required action by the governor or U.S. president, seven of them occurring within the last 10 years.⁹⁰

Major needs. Conflicts over resources as well as local storms can place enormous demands on transportation systems in Philadelphia. In both cases, two major needs of transportation will be critical: 1) Access of emergency ve-

hicles (ambulances, police, fire department) to locations within the City where they are needed and 2) evacuation of the general population of Philadelphia to outlying areas largely using privately owned vehicles and public transit. In case of severe Atlantic storms, Philadelphia may also have to accommodate evacuees from coastal areas.

These two transportation needs were not met in New Orleans during Hurricanes Katrina and Rita in August 2005. There was widespread obstruction of emergency vehicles inside New Orleans due to flooding and debris, and gridlock from the masses of vehicles that blocked the streets. Major routes leading out of the City almost immediately became large parking lots. Plans to use mass transportation, to prioritize use of buses and high-occupancy vehicles, or to provide transport for persons with special needs (i.e., the elderly, infirm and handicapped) did not exist or failed.

Everyday problem. On a dramatic scale, these emergency response scenarios reflect common occurrences on the streets of Philadelphia on any given workday. Congestion slows or halts emergency vehicle access within the City. It causes bumper-to-bumper gridlock and miles of slowly-moving vehicles during rush hours on routes leading in and out of the City. In case of an evacuation, masses of non-commuters would be leaving the City at the same time as commuters.

City preparedness. In 2005, the City of Philadelphia commissioned a major review of its emergency readiness and response systems in the wake of Hurricanes Katrina and Rita. The resulting *Emergency Preparedness Review Committee Report* published on June 30, 2006, identified transportation as one of the "critical infrastructures" of the City.⁹¹ Of particular relevance for our discussion here are the following points:

- 1) The report recognizes that emergency planning is closely related to the efficient operation of city services under normal, everyday circumstances. It finds that security planning can have a beneficial effect on "standardization and efficiencies in daily operations" of government. (p. 125)
- 2) The report does not discuss difficulties that the existing transportation infrastructure already has in handling high-volume movement on roads, rail and trolley lines. This is required before an assessment can be made of the City's preparedness to manage a large-scale evacuation.
- 3) The report does not discuss the strong reliance of Philadelphia's residents and workforce on public transit. More than one third of City residents and most non-resident commuters will have no vehicle available in case of an evacuation.
- 4) The report states that a "comprehensive educational campaign" should be a sustained commitment that is implemented "every day, every year." (p. 85) The ability to respond to an emergency is also based on familiar patterns of behavior. With little experience in the use of public transit under normal circumstances, few people would be inclined to depend on it in the event of a city-wide catastrophe. Educational efforts are more successful if the public is already familiar with, and trustful of, group travel.⁹²

Other information. Other sources of information about the City's security planning must also be viewed critically from a transportation perspective. The City of Philadelphia's "Emergency Preparedness and Response"⁹³ website is completely oriented to automotive transport and makes no mention of the crucial role of mass transit in evacuating the City. Philadelphia's Office of Emergency Management

has no website. The Pennsylvania Department of Homeland Security website has no current information on citizen safety and the use of mass transit, and none of its content is specific to Pennsylvania or Philadelphia.⁹⁴

Traffic calming and security. Cities with low volume of private cars and trucks can more easily move emergency vehicles to locations where they are needed. Traffic calming can encourage the reduction of vehicles over the long term and enhance the ability of the infrastructure to respond to a crisis. For example, building trust in, and respect for, dedicated bus, bicycle and emergency lanes now can help reduce confrontational or chaotic motorist behavior in the event of a crisis. The same holds true for strict regulation of traffic flow to prioritize high-occupancy vehicles. ■

Recommendations

In *Getting Around Philadelphia* we have discussed five modes of transportation—walking, biking, riding transit, driving and regional travel. We found clear indications that Philadelphians have few choices for moving about in ways that promote their health, have a low impact on the environment, and are easy and inexpensive to use. Instead, the City is dominated to a troubling degree by the car and automotive landscape. Basic citizen rights of mobility are being denied as long as this domination persists.

In considering these five areas of transportation, we discussed their economic and environmental impact on the City, significance for citizen health and safety, and availability of avenues for Philadelphians to express their needs and concerns. We found serious deficiencies in all five areas.

GPOP's Transit Working Group recommends the following changes to improve the way we get around Philadelphia:

Traffic calming

- Dedicated car-free streets
- Creation and strict enforcement of bike lanes
- Moratorium on new parking garages
- No parking space requirements for new residential construction
- Redesigned intersections to favor pedestrian and bicyclist traffic
- Creation and proper maintenance of pedestrian crossings
- Protected bicycle parking facilities

Education and enforcement

- Education on pedestrian and bicyclist rights upon acquisition and renewal of driver's license
- Increased traffic fines for blocking pedestrian and bicyclist traffic
- Strict enforcement of idling restrictions

Attractiveness of transit

- Dedicated public funding for statewide transit
- Reduced and simplified transit fares with goal of fare-less transit in Center City
- Replacement of buses with quiet, non-polluting streetcars (trolleys)
- Dedicated lanes for public transit buses
- Improved public transit signage and scheduling information

Citizen involvement and advocacy

- More democracy and transparency at SEPTA
- Readily available data on traffic fatalities and injuries
- Full-time staff in the City Streets Department with expertise on pedestrian and bicycling issues
- Better City representation in transit agencies ■

What We Can Do

Every reader of *Getting Around Philadelphia* can get involved in a transportation issue. The first step is to identify areas where you can be most effective. Here are some suggestions:

- ▶ Inform your City Council members about transportation problems in your own neighborhood. Be persistent until appropriate action is taken. See Appendix A for contacts.
- ▶ Get together with neighbors to offer ideas and help organize creative citizen actions that focus on specific problems such as lack of safety for pedestrians and bicyclists.
- ▶ Demand establishment of an office for a public advocate who supports input, speaks on behalf of walkers and bicyclists, and addresses their many safety-related concerns. This office can cut through the complex bureaucracy at the municipal level that now intimidates or thwarts citizen input. See Appendix A for contacts.
- ▶ Stay abreast of SEPTA issues.⁹⁵ The quality and accessibility of public transit must be improved on many levels, from bus stop signage to fare structure and

state funding. Equitable representation on the SEPTA Board and appropriate means for democratic participation in SEPTA governance should be established, such as the development of a riders' union or establishment of town meetings on SEPTA issues.

- ▶ Consider the many options to car ownership in Philadelphia. A car-free lifestyle can free up many thousands of dollars annually. And it more than covers the costs of alternatives such public transit, taxis, or car sharing options. Download GPOP's flyer on this topic at www.gpop.org/transit.
- ▶ Participate in regular meetings of GPOP's Transit Working Group. Discuss transit issues and help outline actions to address them. Contact the group at transit@gpop.org. ■

Appendices

Appendix A

Contacts in City Government

The following information is included to encourage all readers to take an active part in addressing transportation issues in Philadelphia.

Immediate concerns:

The *Department of Streets* is responsible for the construction, maintenance, lighting and cleaning of all roadways, footways and tunnels owned by the City of Philadelphia. It also installs signage and installs, maintains and operates all devices that regulate vehicular and pedestrian traffic. It collects and compiles traffic data, and is responsible for public education in traffic safety issues. Many issues can be addressed to the Customer Affairs Unit at the City Streets Department at (215) 686-5560. Concerns related to traffic design may be addressed to Thomas Branigan at (215) 686-5514.

Longer-term concerns:

The *Philadelphia City Planning Commission* (PCPC), through its Community Planning Division, can provide information and technical assistance to citizens on planning issues such as street design, parking garages, zoning, environmental concerns and historic preservation. It forwards citizen needs and desires to the municipal government. PCPC is located at 1515 Arch Street, Philadelphia 19102 and can be reached by phone at (215) 683-4615.

Philadelphians are represented by the 17 members of City Council. Citizens can seek to introduce transportation-related bills to amend the Philadelphia Code (the City's body of municipal legislation) by contacting council mem-

bers or the relevant standing committee.⁹⁶ Two such committees are:

1. Committee on Streets and Services⁹⁷
2. Committee on Transportation and Public Utilities⁹⁸

A current listing of council members and contact information is on the council website at www.phila.gov/citycouncil/index.html.

(☎) For the following telephone numbers, first dial 215 unless otherwise indicated.

General administrative contacts:

City Council President	☎ 686-3412	No website
City Streets Department	☎ 686-5453	www.phila.gov/streets
Consumer Affairs	☎ 686-7598	No website
City Planning Commission	☎ 683-4615	www.philaplanning.org
Police Department	☎ 686-3053	www.ppdonline.org

Agencies, organizations:

Bicycle Coalition of Greater Philadelphia	☎ 242-9253	www.bicyclecoalition.org
City Streets Department, traffic design	☎ 686-5514	thomas.branigan@phila.gov
Clean Air Council	☎ 567-4004	www.cleanair.org
Mayor's Bicycle Advisory Task Force	☎ 683-4643	debby.schaaf@phila.gov
New Jersey Transit	☎ 1-800-772-2222	www.njtransit.com
PATCO	☎ 218-3750	www.drpa.org/patco
Public Health / Air Management Services	☎ 685-7580	www.phila.gov/health/units/ams/index.html
Phila. Parking Authority	☎ 683-9600	www.philapark.org
SEPTA	☎ 580-7800	www.septa.org

Reporting problems, obtaining information

(☎) For the following telephone numbers (except 911), first dial 215 unless otherwise indicated.

Issue	Contact
Abandoned vehicles	→ Cars, abandoned
Air pollution, idling cars, buses and trucks	Philadelphia Department of Public Health, Air Management Services (AMS) ☎ 685-7580
Air quality, current readings and forecasts	Air Quality Partnership (AQP) ☎ 1-800-872-7261 or www.dvrpc.org/AQPartnership/index.htm
ATVs (all-terrain vehicles), trespassing	Philadelphia Police ☎ 911; www.ppdonline.org/rpts/rpts_rollcall_frm.php
Bicyclist advocacy	Mayor's Bicycle Advisory Task Force ☎ 683-4643; debby.schaaf@phila.gov Bicycle Coalition of Greater Philadelphia ☎ 242-9253; www.bicyclecoalition.org
Bicycle lanes, car blocking	Police ☎ 911
Bicycle lanes, repairs	City Streets Dept. Customer Service Unit ☎ 686-5560 or potholes.phila.gov
Bicycle lanes, striping	City Streets Dept., Traffic Engineering Division ☎ 686-5521
Bicycle planning in city	Mayor's Bicycle Advisory Task Force, Chair Debby Schaaf ☎ 683-4643; debby.schaaf@phila.gov .
Bicycle racks, request installation of new	City Streets Dept., Adapt-a-Rack program. Limited funding and installation period: Michelle Webb ☎ 686-5548.
Bicycle racks on buses, use of	www.cleanair.org/Transportation/bikeracks/guide/front.html
Bicyclists, collisions with autos	Police ☎ 911
Bus routes, propose new	SEPTA ☎ 580-7800; email: csevice@septa.org
Bus stops, no signage	SEPTA ☎ 580-7800; email:

	csevice@septa.org
Cars, abandoned	Police ☎ 911; www.ppdonline.org/rpts/rpts_abanauto_frm.php
Cars, alarm noise	Police ☎ 911; PPA ☎ 683-9600
Cars, blocking intersections or bike lanes	Police ☎ 911; PPA ☎ 683-9600
Cars, blocking trolleys	Police ☎ 911; PPA ☎ 683-9600
Cars, excessive idling	Police ☎ 911; PPA ☎ 683-9600; see also → Air pollution
Cars, excessive noise	Police ☎ 911; PPA ☎ 683-9600
Cars, noise	→ Noise, car and motorcycle
Cars, parked on sidewalks	Police ☎ 911; PPA ☎ 683-9600
Children, financial support for using transit	→ Transit, financial support for use of
Crosswalks, striping	City Streets Dept., Traffic Engineering Division ☎ 686-5521. From here you will be referred to the appropriate district.
Demonstrations, police escort for	Civil Affairs Unit ☎ 685-3685
Disabilities, persons with	→ Handicapped access to transit → Transit, financial support for use of
Elderly, transit issues	→ Seniors, general transit issues → Transit, financial support for use of
Exhaust fumes	→ Air pollution
Graffiti removal	Anti-Graffiti Network ☎ 686-2114, www.phila.gov/antigraffiti
Handicapped access to transit	NJ Transit: www.njtransit.com/as.shtml PATCO: www.drpa.org/patco/rfp.html SEPTA: septa.org/inside/customer_service/faqs.html#ACCESS
Handicapped use of transit	→ Transit, financial support for use of
Noise, car and motorcycle	Police ☎ 911; PPA ☎ 683-9600
Parking garages	PCPC: Debby Schaaf ☎ 683-4643;

	debby.schaaf@phila.gov.
Pedestrian crossing signals	City Streets Dept., Traffic Engineering Division ☎ 686-5521.
Seniors, financial support for using transit	→ Transit, financial support for use of
Seniors, general transit issues	Action Alliance of Senior Citizens ☎ 425-6548, www.pasenioraction.org/about-us Philadelphia Corporation for Aging ☎ 765-9040; <a href="http://www.pcaphl.org/programs/trans-
portation.html">www.pcaphl.org/programs/trans- portation.html
Sidewalks, repairs	Contact adjacent property owner
Streets, cleaning	City Streets Dept., Customer Service Unit ☎ 686-5560.
Streets, lighting	City Streets Dept., Street Lighting Division ☎ 686-5515
Street signs	→ Traffic signs
Streets, potholes and repairs	City Streets Dept., Customer Service Unit ☎ 686-5560 or potholes.phila.gov
Students, financial support for using transit	→ Transit, financial support for use of
Traffic lights	City Streets Dept., Traffic Engineering Division ☎ 686-5521
Traffic signs	City Streets Dept., Traffic Engineering Division ☎ 686-5521
Transit, financial support for use of	For seniors, persons with disabilities, children and students. New Jersey Transit: http://www.njtransit.com/sf_tr_fo_reduced.shtml#ReducedForms PATCO: http://drpa.org/patco/fares.html SEPTA: http://septa.org/fares.html See also → TransitChek.
TransitChek	DVRPC ☎ 592-1800. Website at www.dvrpc.org/gettransitchek/index.htm or email at TransitChek@dvrpc.org
Tree planting for sidewalks	Fairmount Park Commission, Tree Management Division ☎ 685-4363

Appendix B

U.S. Mayors Climate Protection Agreement
of March 30, 2005⁹⁹

- A. We urge the federal government and state governments to enact policies and programs to meet or beat the Kyoto Protocol target of reducing global warming pollution levels to 7% below 1990 levels by 2012, including efforts to: reduce the United States' dependence on fossil fuels and accelerate the development of clean, economical energy resources and fuel-efficient technologies such as conservation, methane recovery for energy generation, wind and solar energy, fuel cells, efficient motor vehicles, and biofuels;
- B. We urge the U.S. Congress to pass the bipartisan Climate Stewardship Act sponsored by Senators McCain and Lieberman and Representatives Gilchrist and Olver, which would create a flexible, market-based system of tradable allowances among emitting industries; and
- C. We will strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking actions in our own operations and communities such as:
1. Inventory global warming emissions in City operations and in the community, set reduction targets and create an action plan.
 2. Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities;
 3. Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit;

4. Increase the use of clean, alternative energy by, or example, investing in "green tags", advocating for the development of renewable energy resources, and recovering landfill methane for energy production;
5. Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money;
6. Purchase only Energy Star equipment and appliances for City use;
7. Practice and promote sustainable building practices using the U.S. Green Building Council's LEED program or a similar system;
8. Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel;
9. Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production;
10. Increase recycling rates in City operations and in the community;
11. Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO₂; and
12. Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution. ■

Appendix C

Ten Key Values of the Greens

Ecological Wisdom

A healthy society cannot exist without a healthy environment. Our survival depends on it. Both nature and humanity are worthy of respect and freedom from exploitation.

Social Justice

Poverty, oppression, and discrimination are unacceptable. All persons deserve equal rights and equal opportunity to benefit from the resources afforded us.

Grassroots Democracy

A thriving democracy depends on direct participation by all people in the decisions that affect their lives. Greens make decisions by consensus whenever possible.

Nonviolence

Greens are peaceful, never passive. We promote nonviolent methods of social and political change, and guide our actions towards lasting peace.

Decentralization

Greens support a restructuring of social, political, and economic institutions away from a system which is controlled by and mostly benefits the powerful few.

Community-Based Economics

Greens advocate a vibrant, sustainable economy which emphasizes independently controlled businesses and local resources.

Feminism

Greens believe in legal and personal equality, and encourage full and fair participation and compensation. Coopera-

tion and understanding must replace domination and control.

Diversity

Greens value cultural, ethnic, racial, sexual, religious, gender, generational, and spiritual diversity, and promote the development of respectful relationships across these lines.

Personal and Global Responsibility

Greens demonstrate a commitment to global sustainability and international justice through political solidarity and self-determination. "Think globally, act locally."

Future Focus / Sustainability

We must balance the drive for short-term profits with development, technology, and fiscal policies that consider future generations. ■

Appendix D

Green Party of the United States National Platform on Transportation Issues¹⁰⁰

The Green Party supports a transportation policy that emphasizes the use of mass transit and alternatives to the automobile and truck for transport. We call for major public investment in mass transportation, so that such systems are cheap or free to the public and are safe, accessible, and easily understandable to first-time users.

We need ecologically sound forms of transportation that minimize pollution and maximize energy efficiency. Surfaces impermeable to rainwater, polluted storm run-off; paved over or polluted wetlands, the heat island effect, air pollution, and acid rain are all directly related to a transportation system run amuck. Massive subsidies to the auto and fossil fuel industries, as well as an unworkable approach by urban planners, maintain the auto's dominance of our cityscapes. The present-day approach of upgrading streets to accommodate increased traffic generates new traffic because access is now easier, and people will now take jobs further from their homes or purchase homes further from their jobs. Some people shift from public transit to private cars due to the trip time in cars being shorter. As patronage for public transit decreases, public transit loses funding, becomes less viable, and service deteriorates thus encouraging even more people to use their cars. To counteract these trends and reduce auto use, the Green Party advocates the following strategies:

Pedestrians and Bicyclists

1. Make streets, neighborhoods and commercial districts more pedestrian friendly.
2. Increase the greenery of streets.

3. Utilize traffic-calming methods, where the design of streets promotes safe speeds and safe interaction with pedestrians. Create auto-free zones.
4. Develop extensive networks of bikeways, bicycle lanes and paths. Include bike racks on all public transit.
5. Maintain free community bicycle fleets, and provide necessary support for cyclists.

Mass Transit

6. Redirect resources that currently go to enhancing auto capacity into expanding human-scale transit options.
7. Develop affordable mass transit systems that are more economical to use than private vehicles.
8. Encourage employer subsidies of transit commuter tickets for employees, funded by government Congestion Management grants.
9. Use existing auto infrastructure for transit expansion where possible. Light rail could be established in expressway medians through metropolitan high density corridors.
10. Include land use decisions in transportation issues, with consideration of the need for mass transit to have a market and be viable, and with attention paid to cross-commuting—the practice of people commuting to a place where they could and should live.
11. Expand our country's network of rail lines, including high speed regional passenger service.

Automobiles

12. Place a moratorium on highway widening then use the money for mass transit and facilities for pedestrians and bicyclists.
13. Mandate HOV (High Occupancy Vehicle) lanes on free-ways, and lower toll fees for carpools.
14. Discourage unnecessary auto use by eliminating free parking in non-residential areas well served by mass transit, and establish preferential parking rates for HOV.

15. Substantially increase the taxes on gasoline, but allow some compensation for low income drivers.
16. Support ambitious increases in motor vehicle fuel efficiency, including the use of hybrid electric designs. Legislate a "gas guzzler" tax on new vehicles that get a lower MPG than the CAFE (Corporate Average Fuel Economy) standards and offer "gas sipper" rebates for vehicles that get a higher MPG.
17. Schedule an increase in CAFE standards to 60 MPG for cars and 45 MPG for light trucks by the year 2010.
18. Develop and market to the general public fuel efficient cars as well as solar, electric and other non-fossil fuel powered vehicles for local travel. Support government procurement of high efficiency motor vehicles. Electric components of vehicles should not be put "on the grid" while we still have polluting electricity generation sources providing power to that grid.
19. Encourage carpooling programs, telecommuting, and other creative solutions to reduce commuter traffic congestion. We advocate fair buy-backs of the most polluting and least efficient vehicles to remove them from the road.

Air Travel

20. Make airports accessible by local transit systems.
21. Legislate further incremental reductions in airplane noise and air pollution.
22. Emphasize the use of light and heavy rail for freight transportation.

Freight

23. We call for incentives to get long-distance truck hauling off of our highways and on to railways. We favor the removal of any administrative impediments to efficient long-haul freight transport by rail. Time is lost when switching goods from one railroad to another, even when the trains are the same size and gauge, and this waste can be eliminated. ■

Appendix E

Abbreviations

AAA	American Automobile Association
ACS	American Community Survey
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ATS	American Travel Survey
BCGP	Bicycle Coalition of Greater Philadelphia
BTS	Bureau of Transportation Statistics
CAC	Clean Air Council; Citizen Advisory Committee (SEPTA)
CCD	Center City District
CPDC	Central Philadelphia Development Corporation
DHS	U.S. Department of Homeland Security
DOT	U.S. Department of Transportation
DVARP	Delaware Valley Association of Rail Passengers
DVRPC	Delaware Valley Regional Planning Commission
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EPRC	Emergency Preparedness Review Committee report
FARS	Fatality Analysis Reporting System
FMCSA	Federal Motor Carrier Safety Administration
GPOP	Green Party of Philadelphia
NCSA	National Center for Statistics and Analysis
NHSTA	National Highway Traffic Safety Administration
NTS	National Transportation Statistics
OECD	Organization for Economic Cooperation and Development
OTAQ	EPA Office of Transportation and Air Quality
PATCO	Port Authority Transit Corporation
PCPC	Philadelphia City Planning Commission
PEMA	Pennsylvania Emergency Management Agency
PennDOT	Pennsylvania Department of Transportation
PennPIRG	Pennsylvania Public Interest Research Group
PHL	Philadelphia International Airport
PPA	Philadelphia Parking Authority
SEPTA	Southeastern Pennsylvania Transportation Authority
STPP	Surface Transportation Policy Project
TEA-21	Transportation Equity Act for the 21st Century
TWG	Transit Working Group of the Green Party of Philadelphia

Appendix F

Notes

Some of the information contained in this survey has been adapted from generally accessible websites of the various organizations mentioned, and is not expressly cited. Less accessible sources are included below.

Please refer to abbreviations on p. 51, which are used to save space. Website addresses are valid as of June, 2006.

¹ GPOP urged Mayor Street to sign this agreement in a letter dated May 24, 2005.

² Source: KYW radio address by Mayor John Street, March 4, 2005, in which he mentioned economic benefits and cleaner air; www.phila.gov/news/prelease.asp?id=107. Philadelphia is also one of the participating cities in the Large Cities Climate Leadership Group, led by the mayor of London, Ken Livingstone, that was launched on August 1, 2006.

³ In May 2006 the State Transportation Commission approved 84 transportation enhancement projects totaling \$46.2 million, 79 Home Town Streets projects totaling \$52.8 million and 35 Safe Routes to Schools projects totaling \$16.2 million. For Philadelphia, the HTS projects total \$7,475,306 and the transportation enhancement projects total \$4,317,500. Source: www.dot.state.pa.us/Internet/pdnews.nsf/PressOfficeHome?openFrameset&Frame=main&src=CurrentYear?OpenView. On child safety, see also the National Safe Kids Campaign at www.ems-c.org/cfusion/ResourceDetailNew.cfm?id=930674656.

⁴ According to the CPDC, "Pedestrian traffic is the lifeblood of most retail businesses. The value of any given storefront is measured, in part, by the amount of people who pass by its doors each day." Source: www.centercityphila.org/docs/pedcountreport.pdf.

⁵ CCD and CPDC, *State of Center City 2006*, p. 28.

⁶ Examples of traffic-calming include curbside tree plantings, priority signaling for pedestrians and bicyclists, mid-block zebra stripes, moving back stop bars from intersections, creation of no-parking zones near intersections, prohibition of cars turning right at red lights, raised intersections, speed bumps, narrowing car lanes/streets and widening sidewalks.

⁷ In 2006, Philadelphia was ranked 31st in the Best Walking Cities Competition sponsored by the American Podiatric Medical Association. Fifteen criteria were used based on a weighting scheme (3 = most heavily weighted). Philadelphia's figure and ranking, respectively, are given for each criterion: 3 rating: adults who walk for exercise (40.43%, 50th), walk for health (92%, 76th), walk to work (9.04%, 7th); 2 rating: total miles² of parks (0.064454, 42nd), percent of adults who participate in organized sports (72.18%, 68th), physical fitness and exercise (101, 60th), bike to work (0.86%, 24th), take public transit to work (25.32%, 8th), points of interest per square mile (0.222074, 13th), crime rates (304, 17th); 1 rating: adults who play golf (10.65%, 63rd), percent of households that own dogs (21.65, 67th), maximum July temperature (80.93, 91st), minimum January temperature (17.16, 80th), and miles of trails per square mile (0.185062, 30th). (http://www.apma.org/s_apma/bin.asp?CID=251&DID=19331&DOC=FILE.PDF). The APMA figure for total miles² of parks is incorrect. It should be 13.91 miles², giving Philadelphia a 3rd-place ranking in that category.

⁸ The "public peace—the sidewalk and street peace—of cities is not kept primarily by the police, necessary as police are. It is kept primarily by an intricate, almost unconscious, network of voluntary controls and standards among the people themselves, and enforced by the people themselves. ... No amount of police can enforce civilization when the normal, casual enforcement of it has broken down." Jane Jacobs, *The Death and Life of Great American Cities*. New York: Random House, 1961, pp. 31-32.

⁹ Trees remove pollutants from the air, lower temperature and thus reduce energy use, attract wildlife, increase our contact with and appreciation of nature, reduce stress and increase property values.

¹⁰ PCPC, *Planning Philadelphia's Open Spaces*, Sept. 30, 2005, p. 4.

¹¹ STPP, *Mean Streets* 2002, p. 15.

¹² Martha Woodall and Susan Snyder, "Shepherding students to safety," *Philadelphia Inquirer*, June 12, 2006, pp. 1, 8. These measures do not include traffic-calming or street-crossing safety, however.

¹³ The figure is \$28,810,613 of \$6,618,789,197; source: AmerikaBikes, www.americabikes.org/images/resource/bicyclefriendly/completestreetsdata.pdf#search=%22tea-21%200.7%25%20pedestrian%22.

¹⁴ STPP, *Mean Streets* 2002, pp. 9, 17.

¹⁵ STPP, *Mean Streets* 2002, pp. 10, 13-15.

¹⁶ Statistics on traffic fatalities are only available at cost from the Research and Planning Unit of the City Police Department.

¹⁷ Unlike other larger cities such as New York, Chicago and Boston, Philadelphia also does not have a Department of the Environment to coordinate and manage environmental programs.

¹⁸ Thunderhead Alliance, *Bicycle Benchmarking Project Draft Report*, August 2004, p. 3.

¹⁹ <http://americabikes.org/images/resource/editorialboard/pa.pdf>

²⁰ Information provided by John Boyle, BCGP (June 2006).

²¹ Due to the efforts of BCGP, CAC, DVRPC and SEPTA: www.septa.org/service/bike_ride.html.

²² National Bicycle Dealers Association (NBDA), *Industry Overview 2006* (2005-06 NBDA Statpak); <http://nbda.com/page.cfm?PageID=34>.

²³ The Wheelmen: www.thewheelmen.org/sections/bicyclebrands/bicyclebrands.asp.

²⁴ <http://yellowpages.superpages.com/listings.jsp?C=bike+stores&PS=15&OO=1&R=N&MC=1&STYPE=S&F=1&L=Philadelphia+PA&CP=Sports+%26+Recreation%5EOutdoor+Sports+%26+Recreation%5ECycling%5EDealers%5E&PP=L&local=on>.

²⁵ The Philadelphia Bike Messenger Association lists 7 companies: www.phillybma.org.

²⁶ Source: www.phillypedicabs.com and www.chariotsofphilly.com.

²⁷ Philadelphia Bicycle News from April 12, 2006; http://bcgp.blogspot.com/2006_04_01_bcg_p_archive.html.

²⁸ *The Vehicle Code* (Title 75), Part III. Operations of Vehicles, Chapter 35. Special Vehicles and Pedestrians, Subchapter A. Operation of Pedalcycles, §3501. Applicability of traffic laws to pedalcycles.

²⁹ CCD and CPDC, *State of Center City 2006*, p. 28.

³⁰ The School District of Philadelphia also has an anti-idling policy for all school buses (www.sshs.phila.k12.pa.us/offices/transportation/papmfiles/UseofVeh.doc). Ultra low sulfur #2 diesel fuel will be required for all school buses beginning in school year 2007/2008: [www.phillycleancities.org/Biodiesel/School%20Bus%20Pollution%20and%20Children's%20Health%20\(new\).pdf](http://www.phillycleancities.org/Biodiesel/School%20Bus%20Pollution%20and%20Children's%20Health%20(new).pdf).

³¹ Source: Coordinator for Student Safety, School District of Philadelphia, phone interview June 8, 2006.

³² www.gophila.com/C/Tours_and_Transportation/401/U/Phlash/1303.html.

³³ U.S. Census data at: http://factfinder.census.gov/servlet/GRTTable?_bm=y&-_box_head_nbr=R0804&-ds_name=ACS_2005_EST_G00_&-format=US-30&-CONTEXT=grt.

³⁴ This is the same rate as Chicago (also 27%) and behind New York (55%), Washington, D.C. (37%) and Boston and San Francisco (31% each). U.S. Census Bureau 2002 ACS, www.census.gov/Press-Release/www/2004/pubtrans_place.xls.

³⁵ Diesel fuel is cheaper and offers better mileage than gasoline, but as a less-refined product it contains more toxic substances, many of which have been identified as likely human carcinogens: www.cleannair.org/Air/diesel_factsheet1_danger.pdf.

³⁶ Robert J. Shapiro, Kevin A. Hassett and Frank S. Arnold, *Conserving Energy and Preserving the Environment: The Role of Public Transportation*, July 2002, p. 29. This report was commissioned by the APTA. Source: www.fypower.org/pdf/RES171664_shapiro.pdf.

³⁷ "We [Philadelphia] were one of the last major cities to abandon much of our extensive trolley system, beginning with the takeover of the PTC [Philadelphia Transportation Company] in 1954 by National City Lines, a straw company owned by General Motors, Firestone Tire and Rubber, and Standard Oil of California. This corporation was formed in the 1940s with the expressed purpose of buying and then abandoning rail systems throughout the country and replacing them with buses from the parent company, fueled and serviced by the

products of the other two parent companies." Jim Foster, "It's Time to Investigate SEPTA," ChestnutHillLocal.com, January 5, 2006.

³⁸ More information at www.dvrpc.org/transportation/commuter/transitcheck.htm.

³⁹ See www.wageworks.com/about/news/archive/20040908.htm.

⁴⁰ According to ACS (2004), U.S. Census Bureau: Fact Sheet for Philadelphia City, Pennsylvania. The respective national figures are 13.1% (poverty), 12.0% (above 65) and 14.3% (disability). http://factfinder.census.gov/servlet/ACSSAFFacts?_event=&geo_id=16000US4260000&_geoContext=01000US%7C04000US42%7C16000US4260000&_street=&_county=phila&_cityTown=philadelphia&_state=04000US42&_zip=&_lang=en&_sse=on&ActiveGeoDiv=&_useEV=&pctxt=fph&pgsl=160.

⁴¹ M. Garrett and B. Taylor, "Public transit planning and Social Equity." *Berkeley Planning Journal* 13 (1999) 6-27; J. Pucher, T. Evans and J. Wenger, "Socioeconomics of Urban Travel: Evidence from the 1995 NPTS." *Transportation Quarterly* 52/3 (1998) 15-33; Genevieve Giuliano, "Travel, Location and Race/Ethnicity." *Transport Research Part A* 37 (2003) 351-372; all of the above cited in Murtaza Haider, Timothy Spurr, "Equity, Accessibility and Transit Use in Large American Cities, August 1, 2004, unpublished paper. See also discussions of transportation and social equity by the Surface Transportation Policy Project, www.transact.org/issues/intro_elc.asp.

⁴² Some SEPTA buses were measured at near and exceeding 90 decibel in a report to Manayunk Neighborhood Council, January 20, 2005. A jackhammer has a 85-decibel level.

⁴³ Source: www.septa.org/inside/partners/cac_members.html.

⁴⁴ One often-cited solution is a proposal to derive new funds from the automotive sector (tolls, fuel taxes etc.) to help promote this important transition, but in its current form the *Constitution of the Commonwealth of Pennsylvania* forbids use of the gas tax to help fund public transit. Article VIII Taxation and Finance, Section 11. Gasoline Taxes and Motor License Fees Restricted, (a).

⁴⁵ Source: U.S. Census Bureau. Selected Housing Characteristics: 2001-2002. Data set: ACS (2002) Summary Tables for Philadelphia County, Pennsylvania. At: Main/Data Set/Geography. (http://factfinder.census.gov/servlet/MYPTable?_geo_id=05000US42101&-qr_name=ACS_2002_EST_G00_MYP14_1&-ds_name=ACS_2002_EST_G00_).

⁴⁶ PCPC, *Center City Parking Policy Evaluation. Final Report*, July 2005, p. 2-16.

⁴⁷ PennDOT "Report of Registrations" for 2005, Safety Administration, Research and Support, 1101 South Front Street, Harrisburg, PA 17104.

⁴⁸ State highways within the City of Philadelphia include I-76, I-95, I-676 (Vine Street Expressway), Broad Street, Roosevelt Boulevard (Route 1) and Germantown Avenue.

⁴⁹ Adam Lioz, Fernanda Olmedo and Michael Grenetz, *Highway Hold-Ups: How Road-Building Creates Congestion and Wastes Tax Dollars*. PennEnvironment study, August 2001, p. 8.

⁵⁰ See Michael Replogle, Keri Fuderburg, *No More Just Throwing Money Out the Window: Using Road Tolls To Cut Congestion, Protect the Environment and Boost Access For All*. Environmental Defense, 2006: www.environmentaldefense.org/article.cfm?ContentID=4763.

⁵¹ According to the "State Farm Danger Index." at www.statefarm.com/di/danlist00.htm.

⁵² Source: FARS, provided by NHTSA. Figures available by county at www.fars.nhtsa.dot.gov/finalreport.cfm?year=2004&stateid=42&title=States&title2=Crashes_and_All_Victims&SpecialRpt=query1_county&SpecialRpt_lvl=2.

⁵³ Various sources note risks of varying degrees: www.hcra.harvard.edu/cellphones.html; www.mobil1.com/USA-English/MotorOil/Car_Care/Notes/Notes_From_The_Road/Cell_Phone_Crash_Stats_.aspx; www.drivenowchatlater.com/Dont_Drive_And_Talk.html; www.statefarm.com/consumer/cellphone.htm.

⁵⁴ One such report is at www.bfa.asn.au/bfanew/pdf/HPJA_air_pollution_exposure.pdf, where further literature is cited.

⁵⁵ *Highway Hold-ups*, pp. 10-11. The primary reasons for this are greater traffic demand resulting from increased available road capacity and traffic delays caused by construction.

⁵⁶ PCPC, Center City Parking Policy Evaluation, July 2005, pp. 2-4.

⁵⁷ CCD and CPDC, *State of Center City 2006*, p. 29.

⁵⁸ CCD and CPDC, *State of Center City 2006*, p. 29.

⁵⁹ Vukan Vuchic, "To Preserve the Character of Center City, This Town Needs Less Parking, Not More," *Philadelphia Inquirer*, January 2, 2003.

⁶⁰ According to Verizon Areapages.com (<http://yellowpages.superpages.com>). Data as of May 2006. Some categories may overlap.

⁶¹ *Highway Hold-ups*, p. 16.

⁶² U.S. Census Bureau News, March 30, 2005: 29.4 minutes on average, with 2.9% of these commuters ("extreme commuters") spending 90 or more minutes traveling to work. www.census.gov/Press-Release/www/releases/archives/american_community_survey_acs/004489.html

⁶³ David Shrank and Tim Lomax, *The 2005 Urban Mobility Report*. Texas Transportation Institute, May 2005; compare *NTS 2006*, p. 297. Published by the BTS for the DOT. The anti-idling ordinance is in the Philadelphia, Pennsylvania Code and Charter §12-1127(2) (2003).

⁶⁴ EIS figures for the year 2005: http://tonto.eia.doe.gov/dnav/pet/pet_cons_psup_dc_nus_mdbl_a.htm. For Pennsylvania, the total petroleum consumption is 29.8 million gallons/day, of which 14.1 million gallons/day are for gasoline. (<http://tonto.eia.doe.gov/oog/info/state/pa.html>). Motor gasoline accounted for nearly one-half (8.9 million barrels per day) of the 20 million barrels per day of petroleum products consumed domestically in 2004, with 13.6 million barrels per day of that total coming from the transport sector (www.eia.doe.gov/emeu/rctcs/nhts_survey/2001/index.html). One barrel contains 42 gallons.

⁶⁵ No figures for Philadelphia streets were available from the City Streets Department / Highway Division at the time of this writing.

⁶⁶ CNNMoney.com of October 20, 2005: http://cnnmoney.printthis.clickability.com/pt/cpt?action=cpt&title=The+nation%27s+costliest+cities+for+owning+a+car++Oct.+20%2C+2005&expire=&urlID=14993015&fb=Y&url=http%3A%2F%2Fmoney.cnn.com%2F2005%2F07%2F29%2FAuto%2Fcostliest_car_ownership_cities%2Findex.htm&partnerID=2200.

⁶⁷ AAA, "Your Driving Costs 2006". This figure is based on average annual ownership costs of \$5,569 and operating costs of \$7,834 = \$13,403 (at 15,000 total miles per year and a fuel price of \$2.405/gallon); www.aaexchange.com/Assets/Files/2006328123200.YourDrivingCosts2006.pdf; compare BTS *Transportation Statistics Annual Report 2005*, p. 102 and appendix tables 7-1a to 7-2b.

⁶⁸ Some advantages are lower purchase price, low maintenance cost, greater maneuverability and less parking space make gas-driven mopeds/vespas and motorcycles attractive particularly for younger persons. Like other small-engine devices such as leaf blowers, snowmobiles and lawnmowers, these gas-driven vehicles present problems with emissions, safety and noise. On emissions, see: www.bmf.co.uk/briefing/Bikes-Go-Greener.html. On noise, see http://ec.europa.eu/environment/noise/pdf/noise_2wv_position_paper.pdf#search=%22two-wheeled%20emissions%22.

⁶⁹ www.citycarshare.org/download/CCS_BCCTYC_Short.pdf.

⁷⁰ BTS, 1995 *ATS*, publication BTS/ATS95-ESTC/6160, table 1. This data applies to one-way "person trips" of 100 miles and more.

⁷¹ In order of decreasing 2005 passenger volume: New York, Philadelphia, Washington, D.C., Chicago and Los Angeles: amtrak.com (Inside Amtrak / Press & Media / Amtrak Facts).

⁷² CCD and CPDC, *State of Center City 2006*, p. 28.

⁷³ *ATS 1995*, Table 21.

⁷⁴ *NTS 2006*, p. 95.

⁷⁵ www.cruise Philly.com/PDF/ECON%20IMPACT%20CHART%202006.pdf

⁷⁶ Tom Belden, "Cruise Business Booms in Philadelphia," *Philadelphia Inquirer*, April 24, 2005.

⁷⁷ *NTS 2006*, p. 86.

⁷⁸ CCD and CPDC, *State of Center City 2006*, p. 28.

⁷⁹ *NTS 2006*, p. 95.

⁸⁰ BTS *Transportation Statistics Annual Report* Nov. 2005, Table 4-2, p. 245. The data given in our table do not include the standard error. The "Other" category includes watercraft, taxi, bicycle and walking, etc.

⁸¹ *NTS 2006*, Table 3-30a.

⁸² As private businesses, bus companies do not receive federal subsidies. Email communication with the BTS National Transportation Library, August 2, 2006.

⁸³ Figures from 2001 are most recent figures available: *NTS 2006*, Table 4-20. Airline figures for domestic flights only. Rail figures do not include losses through generation and distribution of electric power, which would increase the figure given in the table by 20% from 2,100 to 2,520 (compare Table 4-26).

⁸⁴ BTS *Transportation Statistics Annual Report* Nov. 2005, p. 160

⁸⁵ Our figures in this table were computed from grams per passenger kilometer provided by the Association of Train Operating Companies in the UK (www.atoc-comms.org/Document/c423969.pdf#search=%22car%20emissions%20rail%20air%22). It was not possible to obtain comparable data from Amtrak. Data types and collection methods are not standardized across agencies or modes of transportation, making it difficult both to obtain and interpret such comparisons.

⁸⁶ See e.g. www.energybulletin.net/primer.php or Paul Roberts, *The End of Oil: On the Edge of a Perilous New World* (Houghton Mifflin, May 2004).

⁸⁷ Oil-refining and storage facilities such as the Sunoco refinery in South Philadelphia (all are non-attainment pollution areas) also pose a threat as sites of potential terrorist attacks. Philadelphia is also within a 50-mile radius of three nuclear power plants: *EPRC*, p. 119.

⁸⁸ John Roach, "Is Global Warming Making Hurricanes Worse?" *National Geographic News*, August 4, 2005; http://news.nationalgeographic.com/news/2005/08/0804_050804_hurricane_warming.html.

⁸⁹ PEMA, "Summary of the Commonwealth Hazard Vulnerability Analysis"; www.pema.state.pa.us/pema/CWP/view.asp?A=200&Q=251359.

⁹⁰ www.pema.state.pa.us/pema/cwp/view.asp?a=354&q=180169

⁹¹ Online at www.phila.gov/ready/pdfs/EPRC_Full_Report_Updated_7_14.pdf#search=%22EMERGENCY%20preparedness%20review%20committee%20report%20philadelphia%22.

⁹² This is true both for citizens and government officials: "The integration of emergency management into daily operations is the means by which communities truly become resilient in their preparedness and response capabilities. This new culture will benefit individuals, departments, and agencies within the City government and throughout the community." *EPRC*, p. 125.

⁹³ At www.phila.gov/ready/emergency.htm.

⁹⁴ The PA OHS (www.homelandsecurity.state.pa.us) and Transportation Security Administration (TSA) (www.tsa.gov), which moved to OHS in March 2003, provide no information on the use of mass ground transit.

⁹⁵ Updated information on pending bills affecting SEPTA is at www.savetransit.org.

⁹⁶ The Philadelphia Code is at <http://municipal.codes.lexisnexis.com/codes/philadelphia>. Examples of relevant codes are Title 3 (Air Management Code), Title 11 (Streets) and Title 12 (Traffic Code).

⁹⁷ The Committee on Streets and Services is responsible for "All matters relating to the Department of Streets and its departmental boards; more specifically City streets, bridges, alleyways and driveways, the roads and drives in Fairmount Park; the light of the same; sanitation as to the general cleanliness and health of the City as it relates to the above City streets, etc., including the cleaning of the City streets, the removal and disposal of ashes, garbage, refuse, ice and snow, and the construction, repair, maintenance and operation of incinerators for the disposition of ashes, garbage and refuse; traffic engineering regulations, as to traffic flow and parking on City streets and on the roads and drives in Fairmount Park; the establishment of traffic signs, signals, markings and devices for the regulation and control of vehicular and pedestrian traffic; and all matters relating to the surveying functions of the City." As of June 2006 the committee members are Frank DiCicco (Chair), Juan Ramos (Vice-Chair), Donna Reed Miller, Frank Rizzo, Darrell Clarke and Michael Nutter.

⁹⁸ The Committee on Transportation and Public Utilities is responsible for "All matters relating to transportation facilities of any kind and the charges, regulations and operations of same. Relations with the State Public Utility Commission and the Federal Interstate Commerce Commission; matters relating to tolls and charges on State, Federal and Interstate bridges and highways." As of June 2006 the committee members are Michael Nutter (Chair), (vacant Vice-Chair), Darrell Clarke, Jack Kelly, Donna Reed Miller and Brian O'Neill.

Bills can take different routes. For example, a bill directly related to transportation (walkability, bicycles, safe streets, air pollution) from June 10, 2004, bill 040680, was referred to the Committee on Public Health and Human Services and the Committee on Public Safety.

⁹⁹ The agreement is an initiative begun by Seattle mayor Greg Nickels on February 16, 2005, the same day on which the Kyoto Protocol became law. As of May 19, 2006, 235 mayors had signed this agreement, representing over 45.4 million Americans.

¹⁰⁰ As adopted in June 2004.