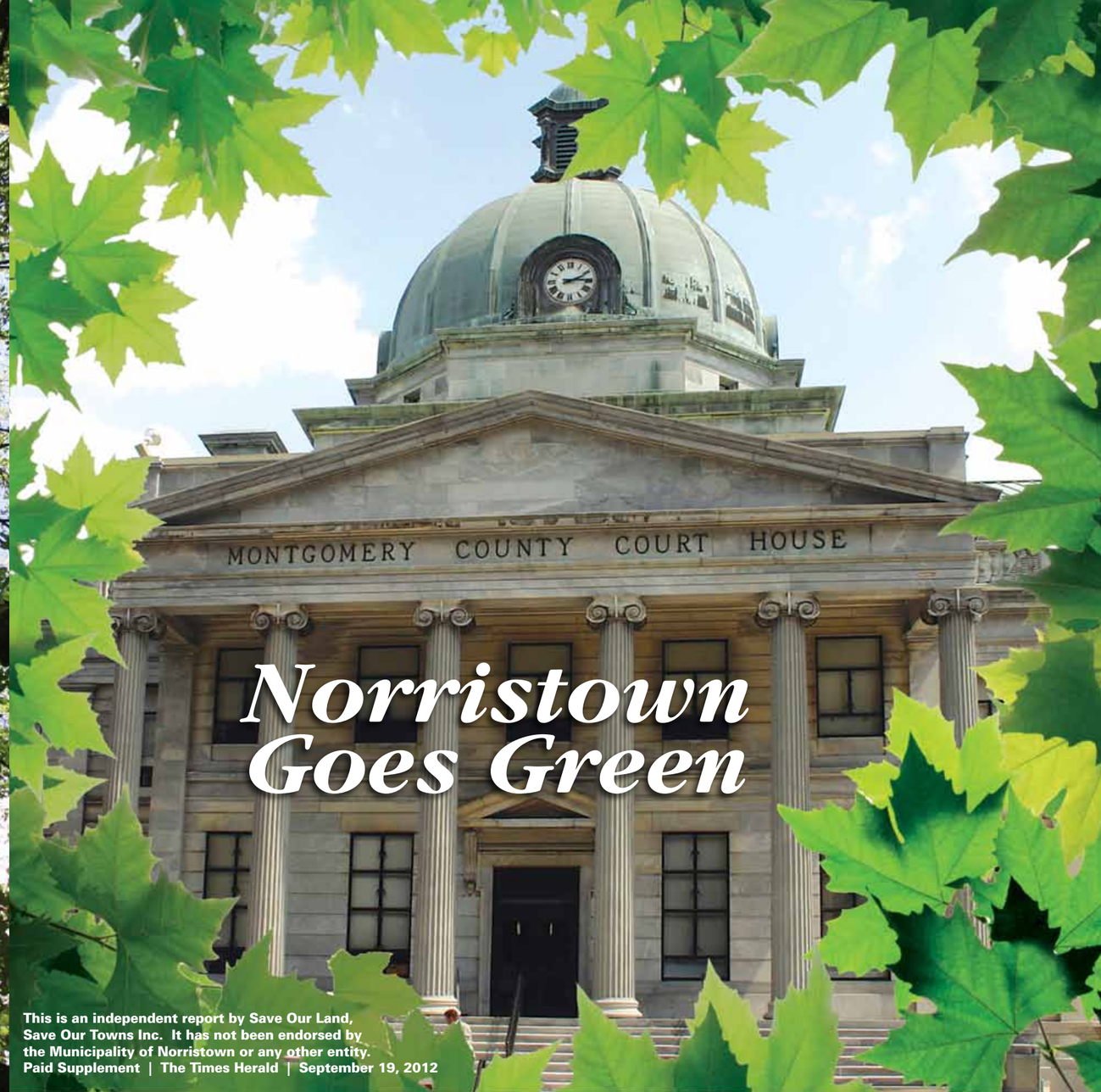
Trees

Cool the atmosphere
Reduce energy consumption
Decrease storm water runoff
Soften the urban environment
Filter pollutants from the air
Inhale carbon dioxide, exhale oxygen



Norristown Goes Green

This is an independent report by Save Our Land, Save Our Towns Inc. It has not been endorsed by the Municipality of Norristown or any other entity.
Paid Supplement | The Times Herald | September 19, 2012

NORRISTOWN GOES GREEN Paid supplement | Times Herald | September 19, 2012
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PENNVEST funds innovative programto create green infrastructure in Norristown

Earlier this year, Norristown embarked on an innovative program to cleanse its air and water funded by a $2.2 million grant from the Pennsylvania Infrastructure Investment Authority (PENNVEST). Since April, landscapers have planted 2,078 shade trees in Norristown parks and on school grounds, in riparian areas near Stony Creek and Saw Mill Run, and along Norristown streets. (Trees were also planted in four other southeastern Pennsylvania municipalities as part of the grant.) As the trees grow over the next 50 years, they will absorb millions of gallons of storm water and prevent it from overwhelming the municipality's sewer systems.

A recently planted maple tree on West Main Street.

Since its creation by the General Assembly in 1988, PENNVEST has dispensed $6.5 billion in loans and grants to Pennsylvania municipalities and utilities for water and sewer treatment plants, storm and sanitary sewer systems, and other infrastructure to supply clean water and protect the environment.

Storm water management programs typically involve a labyrinth of big pipes and artificial drainage areas, costing tens of millions of dollars, to control the flow of water in rainstorms. In recent years, PENNVEST has begun investing in "green" infrastructure as well. The Norristown project is one of 16 PENNVEST has funded for trees rather than conventional bricks-and-mortar installations to control storm water runoff.

Partners

With the endorsement of Norristown Council, the Delaware Valley Regional Planning Commission and the Pennsylvania Horticultural Society partnered to apply for the grant last year. After the grant was approved, the horticultural society oversaw the project, buying the trees from local nurseries and contracting to have them planted. The locations were scouted and chosen by the Montgomery County Conservation District, the Montgomery County Planning Commission, and the Norristown Shade Tree Commission.

Goals

The vast area of impervious surfaces in Norristown (rooftops, parking lots and streets), combined with Norristown's location on a steep hillside overlooking the Schuylkill River, creates a huge volume of water during rainfalls that is difficult to control. When it rains, runoff drains downhill directly into streams and the Schuylkill River, accumulating oil, solvents and trash along the way.

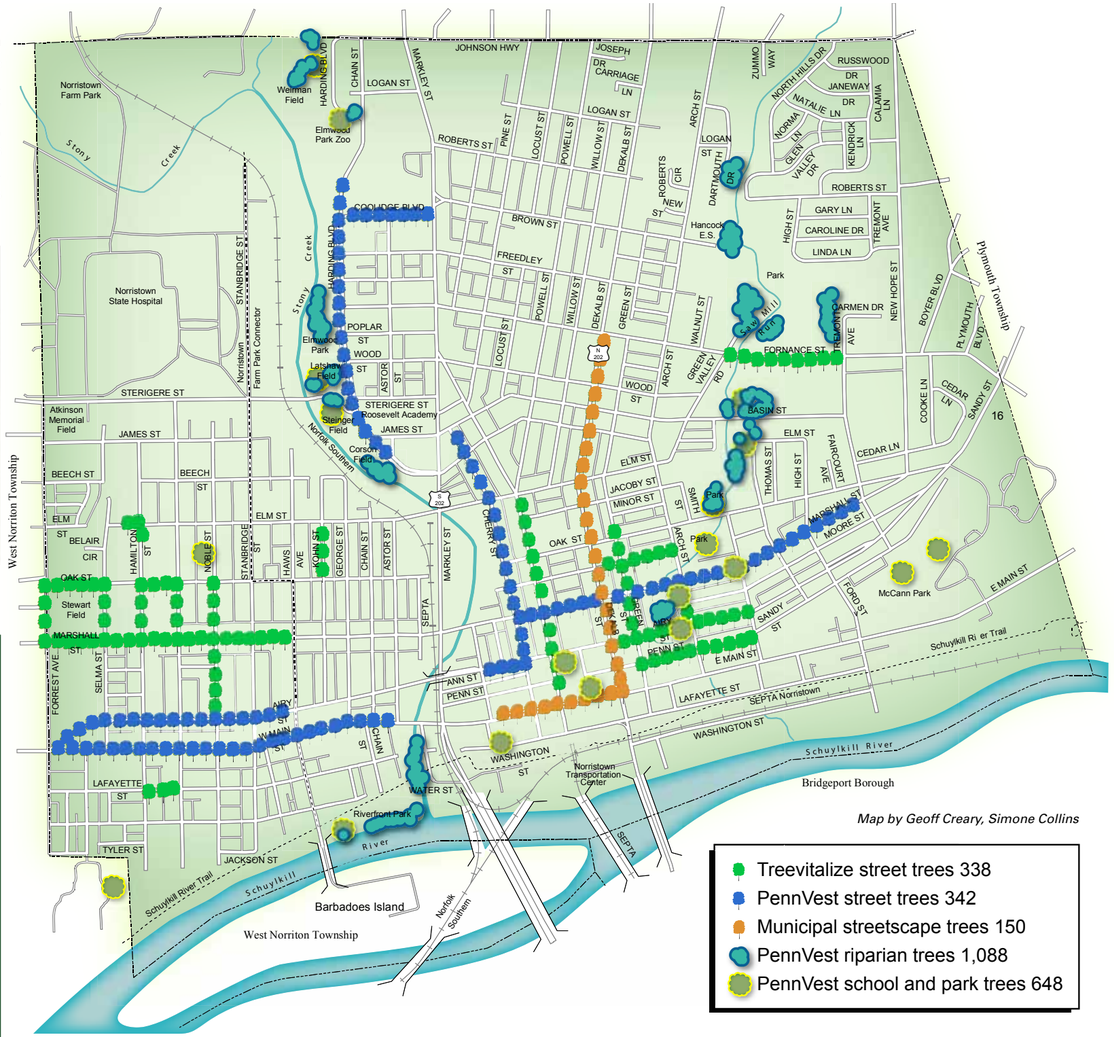
Because Norristown, like many older towns, has aging sewer systems, the heavy flow of water during storms infiltrates sanitary sewer lines as well as flooding storm sewer lines. Although the municipality is modernizing its system, it will take many years and millions of dollars.

The Delaware Valley Regional Planning Commission convinced PENNVEST that the most cost effective method to alleviate storm water runoff is tree planting. Trees intercept storm water on their leaves and allow it to slowly filter into the ground. In riparian areas, trees prevent storm water from washing into creeks and rivers and prevent the erosion of their banks. They also filter pollutants from water as its permeates the soil.

Riparian trees, protected from animals by netting, have been planted at Bartasch Park.

NORRISTOWN GOES GREEN REPORT

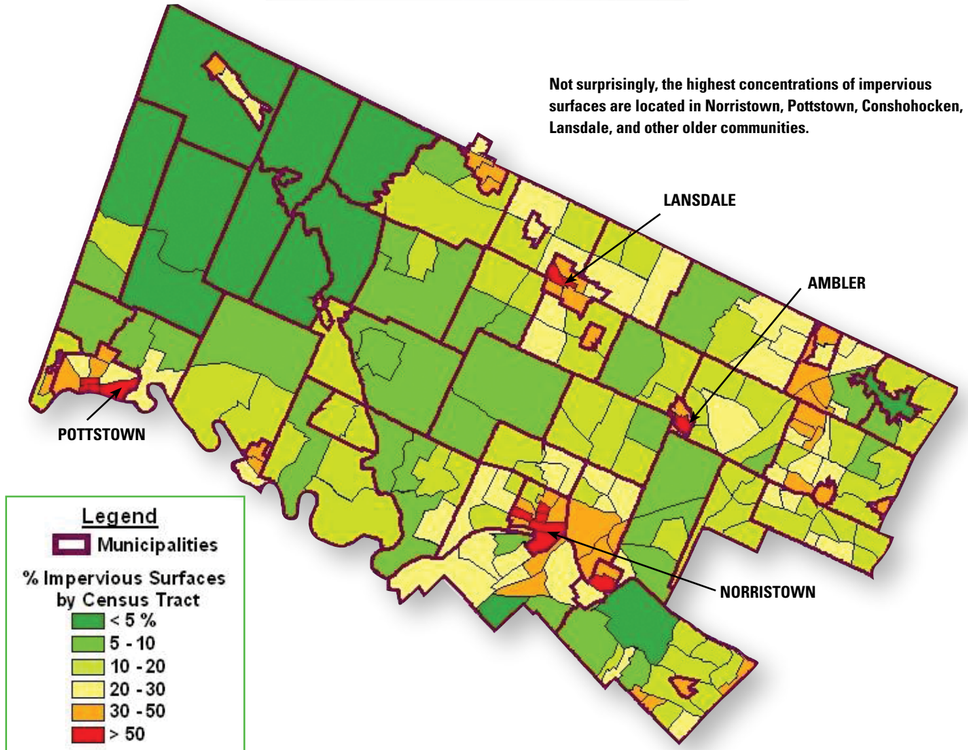
This newspaper tabloid, distributed as a paid supplement to the Norristown Times Herald, was sponsored and funded by Save Our Land, Save Our Towns Inc. as part of its mission to promote Pennsylvania's traditional towns and preserve its countryside. An essential element to fostering healthy and beautiful communities is an abundant, well-maintained urban forest. This publication has not been authorized or endorsed by the Municipality of Norristown, PENNVEST, the Delaware Valley Regional Planning Commission, the Pennsylvania Horticultural Society, or any other agency. Save Our Land is solely responsible for its content. The supplement was written and designed by Thomas Hylton, a Pulitzer Prize-winning journalist who is pro bono president of Save Our Land, Save Our Towns Inc.



Excess impervious surfaces intensify storm water runoff

Like most older Pennsylvania towns, Norristown has an abundance of impervious surfaces. Closely spaces houses, wide streets and sidewalks, parking lots, and bare shopping centers all form barriers to prevent rain water from seeping into the ground.

Instead, when it rains, the water flows across the pavement to the nearest storm sewer inlet, and from there it is piped directly into creeks and the Schuylkill River. The storm water picks up pollutants as it flows across the asphalt. The lack of water permeating the ground makes droughts worse. In times of heavy rain, the flow of water overwhelms storm water systems and causes creeks and rivers to overflow their banks.



Trees absorb storm water, filter out pollution and reduce flooding

Drawings by Alan MacBain

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Remove excess pavement, allow treesto absorb rainwater and cleanse the air

Many sidewalks in Norristown are much wider than they need to be. Except for the busiest downtown streets, five feet is the maximum any sidewalk needs to be. That's room for two people walking abreast. The sidewalk along DeKalb Street, right, has much more pavement than necessary.

Removing the pavement and replacing it with planting beds would allow for a double row of large shade trees, cooling the sidewalk, street, and adjacent parking lots. There are no wires or buildings to restrict the canopy.

Princeton's main shopping street, Nassau Street, far right, has a double row of trees where the sidewalk borders Princeton University. It gives a calming, part-like atmosphere to an otherwise bustling part of town.

A vacant lot was donated to a non-profit group in Pottstown for use as a low-maintenance park.

The U.S. Forest Service promotes trees as an effective stormwater management device.

Hamilton Street in Norristown's west end is typical of many American residential streets: It's twice as wide as it needs to be. At one time, traffic engineers thought wide streets promoted safety, but experience shows they only promote speeding. They also promote storm water runoff by preventing rain water from soaking into the ground.

Traffic safety experts now advocate "traffic calming" devices such as landscaped medians to slow down traffic, above right.

The asphalt was removed and 35 red maple trees were planted in two feet of topsoil with a crushed stone surface.

Ten years later, the trees enhance the neighborhood and the park acts as a water retention area.

Excess pavement has been artfully removed as part of the recent tree planting on DeKalb Street.

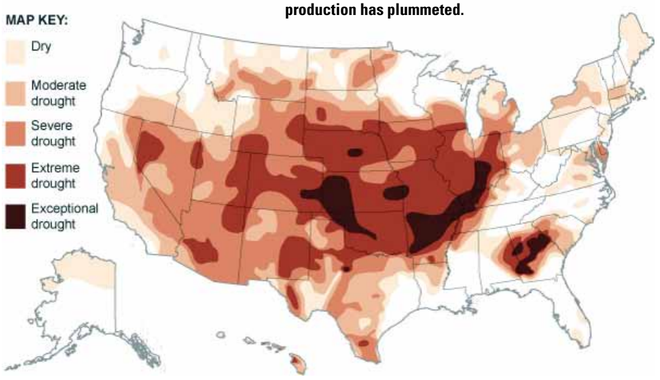
Urban trees needed more than ever as global warming accelerates

The earth is getting warmer. Nine of the ten warmest years on record have occurred since 2001. Here in the United States, the summer of 2012 is shaping up to be the warmest on record.

Global warming will mean more weather extremes, from flooding to droughts. Rising sea levels will inundate coastal areas, affecting millions of Americans.

Trees are perhaps the most cost-effective method to help mitigate global warming. Trees absorb carbon dioxide, the leading greenhouse gas causing global warming. In built up areas, trees cool down buildings and pavement, reducing energy consumption for air conditioning.

This summer's drought has affected nearly 80 percent of the nation. Temperatures in the Plains states were so high they broke a record set in the Dust Bowl years in the 1930s. Crop production has plummeted.



Colorado wildfires early this summer burned thousands of acres and destroyed hundreds of homes. The entire state is suffering through a severe drought.

Last year, a prolonged drought in Texas killed 5 million urban shade trees and an additional half billon trees in parks and forests.

Last summer, Vermont experienced the worst flooding in state history as the remnants of Hurricane Irene swept through the state.

In 2007, the United Nations Intergovernmental Panel on Climate Change concluded that global warming is "unequivocal" and human activities are "very likely" the cause.

SCIENCE PANEL SAYS GLOBAL WARMING IS 'UNEQUIVOCAL'

CITES HUMAN ROLE

3-Year Study Foresees Centuries of Rising Temperatures

By ELISABETH ROSENTHAL and ANDREW C. REVKIN

PARIS, Feb. 2 — In a grim and powerful assessment of the future of the planet, the leading international network of climate scientists has concluded for the first time that global warming is "unequivocal" and that human activity is the main driver, "very likely" causing most of the rise in temperatures since 1950.

They said the world was in for centuries of climbing temperatures, rising seas and shifting weather patterns — unavoidable results of the buildup of heat-trapping gases in the atmosphere.

But their report, released here on Friday by the Intergovernmental Panel on Climate Change, said warming and its harmful consequences could be substantially blunted by prompt action.

While the report provided scant new evidence of a climate apocalypse now, and while it expressly avoided recommending courses of action, officials from the United Nations agencies that created the panel in 1988 said it spoke of the urgent need to limit looming and momentous risks.

"In our daily lives we all respond urgently to dangers that are much less likely than climate change to affect the future of our children," said Achim Steiner, executive director of the United Nations Environment Program, which administers the panel along with the World Meteorological Organization.

"Feb. 2nd will be remembered as the date when uncertainty was removed as to whether humans had anything to do with climate change on this planet," he went on. "The evidence is on the table."

The report is the panel's fourth assessment since 1990 on the causes and consequences of climate change, but it is the first in which the group asserts with near certainty — more than 90 percent confidence — that carbon dioxide and other greenhouse gases from human activities have been the main causes of warming in the past half century.

In its last report, in 2001, the panel, consisting of hundreds of scientists and reviewers, said the confidence level for its projections was "likely," or 66 to 90 percent. That level has now been raised to "very likely," better than 90 percent. Both reports are online at www.ipcc.ch.

The Bush administration, which until recently avoided directly accepting that humans were warming the planet in potentially harmful ways, embraced the findings, which had been approved by representatives from the United States and 112 other countries on Thursday night.

Administration officials asserted Friday that the United States had played a leading role in studying and combating climate change, in part by an investment of an average of almost $5 billion a year for the past six

Possible surface temperature increases for the 21st century, based on a midrange scenario for greenhouse gas emissions.

2020-29

2090-99

0 2 4 6 8 10 12 14°

Source: Intergovernmental Panel on Climate Change

The New York Times

Continued on Page A5

Polar ice caps are melting at an ever increasing pace, faster than NASA climate models predicted just a few years ago.

Greenhouse gas emissions have increased dramatically in recent years, especially as third world countries industrialize. China, which builds a new coal-fired power plant every month, surpassed the United States in 2007 as the world's No. 1 greenhouse gas producer.

China topped the United States as the world's biggest car market in 2009. India is the world's second fastest growing car market. Increasing car use in these developing countries will dramatically increase worldwide auto emissions, even as individual cars pollute less. Left, a traffic jam in Mumbai, India.

Trees can counteractthe 'heat island' effect

As the world becomes warmer, Norristown will feel the effects of global warming more than most communities.

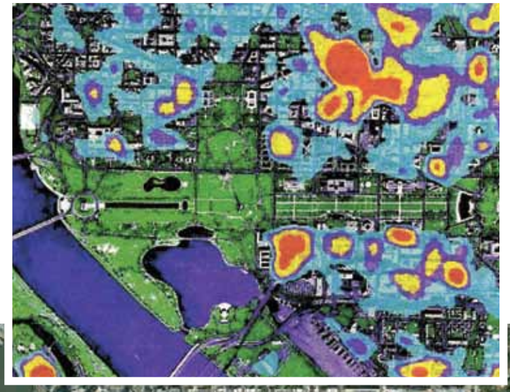
Downtown Norristown and many of its older neighborhoods consist almost entirely of buildings, streets, and parking lots. Lawns are small or non-existent. The sun beating down on this concentration of asphalt and rooftops typically raises temperatures 5 degrees or more above surrounding suburban areas in the summer – a phenomenon known as the "heat island" effect.

MIT'S TECHNOLOGY REVIEW

The heat island effect not only makes it unpleasant to walk Norristown's streets, it requires the frequent use of air conditioning. About 20 percent of the electricity consumed in the United States goes to cool buildings at a cost of tens of billions of dollars annually.

Higher temperatures also increase the rate at which pollutants from cars and smokestacks "cook" into ozone, an irritating gas that inflames the eyes, damages lungs and is particularly dangerous to those with respiratory and heart ailments.

A study by four experts with the U. S. Department of Energy, reported in the Massachusetts Institute of Technology Review, found the most cost-effective way to reduce the heat island effect is to plant millions of deciduous canopy trees in urban areas nationwide. They estimated that reducing the heat island effect would not only decrease ozone formation, it could reduce energy consumption nationally by 10 percent over a 20-year period.



An infrared satellite image of Washington, D.C., left, shows surface temperatures by color. The coolest areas are green and become progressively warmer to blue, purple, and yellow, with the hottest areas in red. The coolest areas are the National Mall, memorial parks, and White House grounds; the hottest spot is a convention center northeast of the White House.

The same area taken from Google Earth.

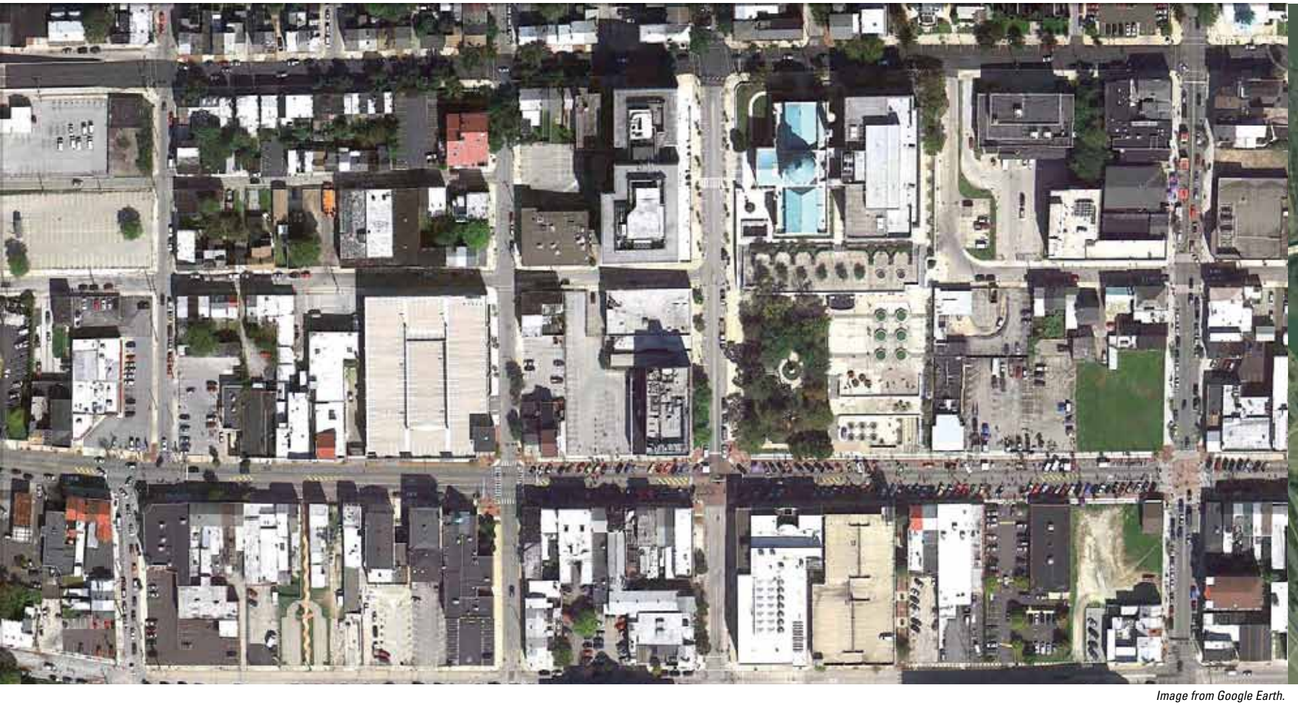
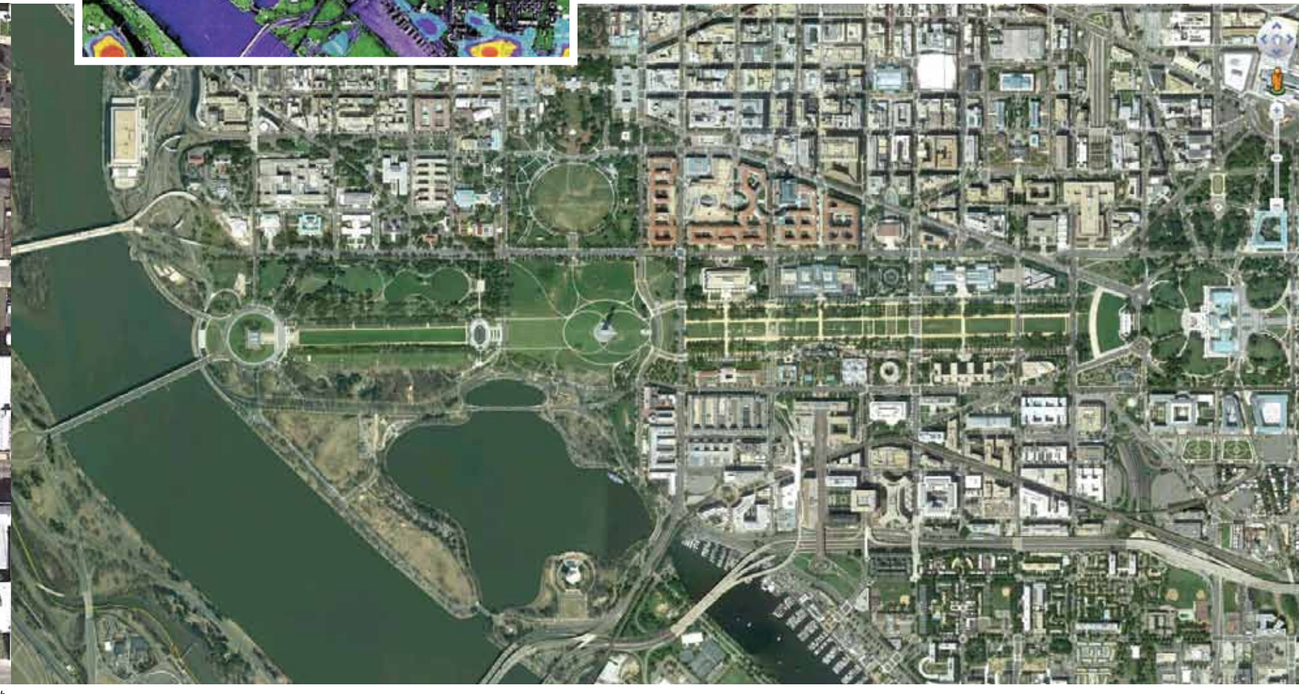


Image from Google Earth.

Except for the courthouse plaza and a vacant lot at Main and DeKalb streets, downtown Norristown consists almost entirely of rooftops and pavement.



Trees are the most cost-effective method to raise property values

In the mid 1980s, nearly 2,000 street trees were planted in Pottstown Borough by a non-profit corporation called Trees Inc. Today those trees have transformed the appearance of the community. Pottstown now has about 3,000 street trees. Assuming those trees have raised residential property values just 3 percent, Pottstown's urban canopy is worth more than $30 million.

Hanover Street in Pottstown in the mid 1980s.

Ten years later.

Twenty years later.

Which street is more attractive and likely to have higher property values? Kohn Street in Norristown, below left, or Cherry Street in Philadelphia, right? A study by the Wharton School of the University of Pennsylvania in the Kensington neighborhood of Philadelphia found that an adjacent street tree could raise the value of a property by 10 percent.

Two of the most densely populated neighborhoods in America, below, have among the highest property values in the country. At left is the Georgetown section of Washington. Below is the Beacon Hill section of Boston. Both have ample street trees.

Trees can create a cathedral ceiling for our towns' outdoor rooms

When we build houses …

We divide our living spaces into rooms separated by walls

Historically, when we built our cities and towns, we made our streets into outdoor rooms, with walls formed by the buildings on either side, like Walnut street in Pottstown (right), Delft (below), or Paris (below right). Outdoor rooms can have ceilings of green formed by tree branches.

Consider the magnificent cathedral. Symbolic tree trunks of stone form pillars on either side of the nave, below left. Stone latticework, left, imitate the branches of a tree canopy overhead. With large canopy trees like these planes, below, we can turn all of our streets into cathedrals of green.

To form ceilings, trees should grow 60 feet tall or more and have their lowest branches trimmed well above the street and sidewalk. In Paris, trees are already tall when planted and have their lower branches removed, right. Little trees like dogwoods, second from right, just won't do for a street tree.

To cool buildings and provide high ceilings, trees should grow above two and three story buildings.

With large canopy trees, every street can feel like a park

Although Norristown has 12 parks boasting playing fields, picnic areas, and even a zoo, few people visit a park on a daily or even a weekly basis. But Norristown residents use streets every day, especially the ones closest to home.

For most of human history, streets have been gathering places where adults socialize and conduct business. It has only been in the last century that streets have been dominated by cars. With large shade trees and appropriate landscaping, however, streets can serve as parks and greenways and still carry cars. Pedestrians can coexist with cars, as long as the cars are moving slowly.

In Rome, shade trees are planted in the streets and cars park in between. This slows down traffic speeds and unfurls a green canopy over the entire street.

A restaurateur has appropriated a wide sidewalk along Pennsylvania Avenue in Washington for an outdoor café.

Boulevard St. Michel is a place for Parisians to shop, eat, and socialize under a green canopy.

In densely populated Paris, every street is an opportunity to provide a park.

Queens Boulevard, in Charlotte, at right, carries four lanes of traffic but still feels like a park, thanks to a median and rows of huge willow oak trees.

The Ringstrasse in Vienna, above top, has three traffic lanes, a lane for trolleys, two parking lanes, and separate lanes for both pedestrians and bicyclists. This heavily used transportation corridor feels like a park, thanks to four rows of linden trees.

Young people play hockey on a quiet residential street in Pottstown, above.

Abundant shade trees can transform asphalted parking lots into leafy groves

Surface parking lots cover a substantial amount of Norristown's land area. Because parking is usually provided at every possible destination, Norristown has far more parking spaces than it has cars. That means most parking stalls are empty most of the time – an enormous waste of space.

Parking lots are not only land consumptive, they're ugly, and they're bad for the environment. They bake Norristown in the summer and block rain water from seeping into the ground all year long.

But parking lots can be transformed into green spaces that cool Norristown and absorb rainwater with the creative use of trees. Simple geometry makes this possible: The footprint of even a humongous tree seldom exceeds five square feet, but its trunk can rise up five stories and unfurl a canopy the breadth of a house. If necessary, shade trees can be distributed throughout a parking lot without sacrificing a single parking space.

Image Provided by Pictometry International Corp

Norristown Area High School is bordered by acres of parking on bare asphalt. It is one of dozens of parking lots in Norristown and surrounding areas that need a green canopy.

The Montgomery County Housing Authority planted one tree for every two stalls in its parking lot next to its high-rise for the elderly in Pottstown. Less than 10 years after the trees were first planted, left, the parking lot already resembles a leafy grove, right.

A park for people in Chicago is not much different from an adjacent park for cars.

By using the space in between rows of parked cars, trees can be added to parking lots without losing any stalls.

The Keeneland Racetrack in Lexington, Kentucky, has one of the few parking lots in America with a complete tree canopy.

This parking lot serving a Lancaster business campus shows the beauty of trees even when they are not in leaf.

Lifted sidewalks are leading reasonfor premature removal of healthy trees

Concrete slabs lifted by tree roots, below, are the most common reason for the removal of healthy trees. Trees along West Marshall Street, top right, were removed by municipal workers last year because of lifted sidewalks. The street is now rather stark and unattractive, below right.

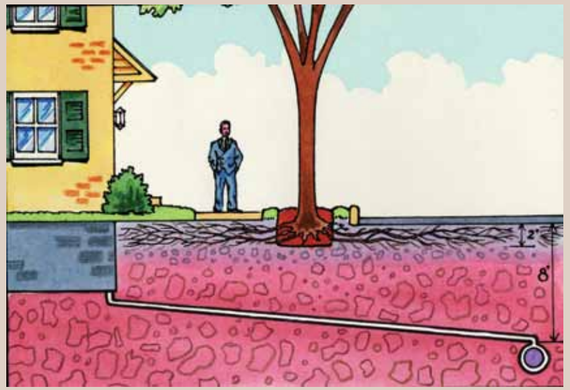
Rather than remove lifted concrete panels, lifts of 2 inches or less can be beveled by a firm called Always Safe Sidewalks. Using a patented technology, the firm can remove the trip hazard and keep the sidewalk compliant with ADA standards.

Using special saws, sidewalks can be repaired in a few minutes. More than 50 sidewalks can be repaired in a day. It is favored by agencies like housing authorities and colleges because it is far less expensive and messy than removing and replacing concrete.

This is a completed sidewalk repair in front of the Hill School in Pottstown.

Tree roots are only one cause of lifted sidewalks. Most sidewalks are lifted because of freezing and thawing ground or the improper installation of underground pipes.

Concrete sidewalks are also susceptible to spawling.



About 90 percent of a tree's roots grow in the top 30 inches of soil, well above sewer pipes, which are generally buried 6 feet or more below the surface.

Defective sewer lines can attract tree roots

Tree roots can clog sewer lines. But roots will not invade an undamaged line. When a sewer pipe breaks or leaks because of age or improper installation, nutrients and water ooze into the surrounding soil. This will attack nearby roots, which will thrive and may even enter the defective pipe.

Many older sewer pipes, especially those installed prior to the 1950s, are made of clay and can develop cracks over time because of soil settlement. Sewer lines installed in recent decades, mostly of plastic, will not allow roots to penetrate lines unless they are improperly installed.

Concrete ill-suited for pedestrians and trees. Seamless asphalt is superior for walking

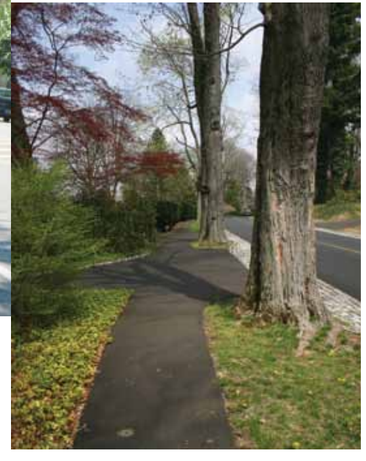
Because concrete is rigid and poured in slabs, it makes for hazardous walking. The freezing and thawing of the ground, and settling soil from underground pipe installations, can easily make the slabs uneven and create tripping hazards. Tree roots are only one of several reasons concrete slabs can become unsafe for walking.

Right: Asphalt curbing can actually go around trees because it is flexible.

Below: Asphalt is so flexible tree roots can grow right through it without creating a trip hazard.

When Pottstown installed bike lanes on its main street in 2003, joggers, unsteady walkers, and people on wheelchairs started using the bike lanes rather than the sidewalks. Asphalt has no seams to trip over.

Asphalt is by far the most common walking surface on trails and greenways, such as the Schuylkill River Greenway.



Asphalt sidewalks can even be found in one of Montgomery County's wealthiest communities, Bryn Athyn, above.

It is used in public parks and gardens such as Longwood Gardens in Chester County.

Concrete sidewalks are rarely seen in Europe, where paving blocks or asphalt is used. Above, an asphalt sidewalk in Paris

Asphalt sidewalks are frequently used in New England towns from Connecticut to Maine. Left, downtown Montpelier, Vermont.

It is quite common on college campuses such as Bryn Mawr, Princeton, and Harvard Yard, left.

Damaged sidewalks can be repaired with colored asphalt

1. A badly heaved sidewalk in Pottstown was repaired by enlarging the tree well and replacing the concrete sidewalk with asphalt.

2. The concrete was broken up and removed.

3. The highest portion of a protruding root was ground down slightly but not removed.

4. An asphalt sidewalk was ramped over the tree and root, taking care to ensure the slope met ADA requirements.

5. Although the tree well was more than tripled in size, enough space remained for a four foot wide sidewalk.

6. An epoxy solution was applied the same color as new concrete. The epoxy color is permanent, although it will darken in time to match the adjacent concrete sidewalk.

1. Asphalt was used to replace 11 broken concrete sidewalks in another Pottstown demonstration project.

2. Once the concrete was removed, it was discovered there were no roots protruding above the surface that needed to be ground down.

3. The tree wells were enlarged and new sidewalks were poured with asphalt.

4. The epoxy solution was sprayed on the concrete. Two coats are needed, but both can be applied in one day.

5. The new asphalt sidewalks are far more flexible than the old concrete sidewalks.

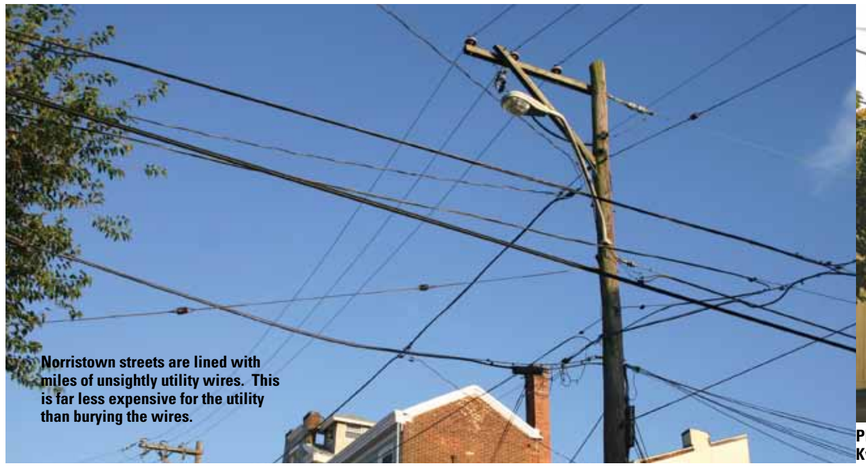
6. Enlarging the tree wells minimizes the chance of any further damage and allows more rainwater to seep into the ground, decreasing storm water runoff.

Utility poles and unsightly wires can be mitigated by creative use of street trees

The greatest eyesore in every traditional Pennsylvania city and town is aerial labyrinth of utility wires supported by poles alongside most streets. Poles range typically range from 35 to 75 feet high, depending on how many cables they are carrying and the voltage of the energized wires. Each building along the street is connected to the wires for cable, phone, and electric service.

In virtually all communities built in the last 60 years, utility wires have been placed underground. This has seldom been done in older towns, except in high traffic business districts. The reason is simple: Underground wiring is far more expensive than running wires on poles.

Ironically, it is less expensive for a utility company like PECO to serve customers in traditional towns like Norristown than it is in the suburbs, because there are many more customers per mile of service line. Therefore, because everyone pays the same rates, Norristown residents are essentially subsidizing the service for people living in the low density suburbs.



Norristown streets are lined with miles of unsightly utility wires. This is far less expensive for the utility than burying the wires.

PECO and other electric companies promote the planting of very low growing trees like these Kwanson cherries under their wires. However, low-growing trees provide much less shade and environmental benefit than large canopy trees. Also, the trees do nothing to mitigate the visual blight created by long lines of poles and wires.

Utility lines are buried in virtually all postwar suburbs, eliminating the visual blight and hazards of downed wires.

In center city Philadelphia and nearby affluent historic residential neighborhoods, utility wires have been buried despite the cost.

If a tree potentially grows high enough to reach its wires, PECO trims tree branches a set distance away from their wires, depending on the species of tree and the voltage running through the wires. Above, the linden trees on the left have been given a "flat top" cut more than 15 feet below the closest energized lines. Note the contrast with the appearance of the uncut linden trees on the right side of the street.

Utility poles usually carry three or four sets of wires. The highest wires are "primary" wires carrying thousands of volts of electricity. Tree limbs must be trimmed to avoid contact with these wires. Below the primary wires are cylindrical "transformers" which reduce the voltage to "secondary" electric wires, below, which provide electric service directly to buildings along the route. PECO will usually not trim branches for secondary lines, which typically carry 240 volts of electricity, unless they are located under primary wires. Below the electric lines, the wires closest to the ground provide phone and cable service. These lines rarely need any clearance from tree branches.

Primary wires carry up to 34,000 volts of electricity. Tree limbs must be trimmed to avoid contact with these wires.

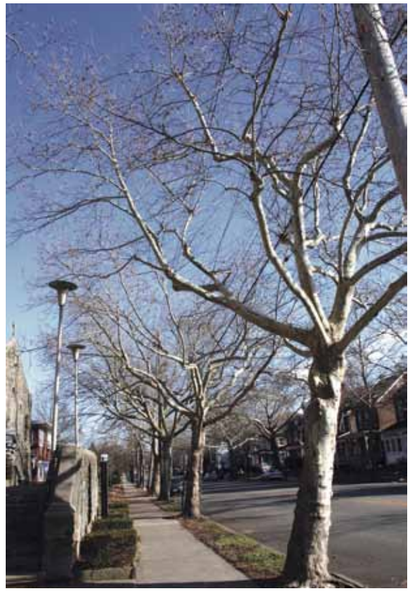
Transformers reduce voltage from primary wires to secondary wires.

Secondary wires typically carry 240 volts of electricity and are connected to buildings. Much less clearance needed. Sometimes no trimming is done.

Communication wires for telephone and cable. No clearance needed and trimming is rarely done.

A plane tree has been hollowed out to provide clearance for widely separated energized wires running from a crossarm perpendicular to the utility poles. Far less clearance would have been needed if PECO had used a tree-friendly "bundled wire" system. (See the following page.)

Enlightened trimming policies needed to protect trees under electric lines



These photos, showing the same trees in both winter and summer, demonstrate how trees can hide utility wires throughout the year. Because the tree limbs have been allowed to grow up and around the power lines, it is difficult to see the wires from the street.

TOP LEFT - Thanks to ash trees on each side of the street, the 600 block of Cherry Street in Norristown, just north of West Marshall Street, is one of the most attractive neighborhoods in the community. But the ash trees on the right side of the street won't look that way for long.

TOP RIGHT - These ash trees in Pottstown were recently trimmed by PECO to clear the wires. This is what the Norristown trees will look like when PECO does its next trimming cycle. The cuts were deemed "outrageous" by a certified forester with 30 years experience in the utility industry hired by Trees Inc. a non-profit group, to review PECO's work. He noted branches were removed well outside the wire zone – something that was totally unnecessary.

BOTTOM RIGHT - Trees can coexist well with utility wires to "camouflage" the poles and wires while assuring safe and reliable electric service. What needs to be done? In urban areas, poles with crossarms need to be replaced with "bundled" wires using spacer cables. Crossarms take up an enormous amount of space, requiring utility tree pruners to disfigure trees to provide enough clearance from the wires. Note the pole at right has a crossarm carrying four wires. But about 50 feet to the right of the crossarm, the wires have been "bundled" together and separated with a cross-shaped plastic "spacer" that separates the wires. Bundled wiring requires far less clearance, because trees can grow around and over bundled wiring.

BELOW RIGHT - Thanks to bundled wiring, this maple tree is growing up and around the electric line. If there were a number of these trees in a row, the utility line would be almost invisible from the street.

NORRISTOWN GOES GREEN
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Wyomissing, State College boast Pennsylvania's finest tree programs

Wyomissing's Berkshire Knitting Mills in the 1940s

State College plants more than 300 new and replacement trees annually

Wyomissing Borough, in Berks County adjacent to Reading, and State College Borough, home of Pennsylvania State University, boast the two finest tree programs in Pennsylvania.

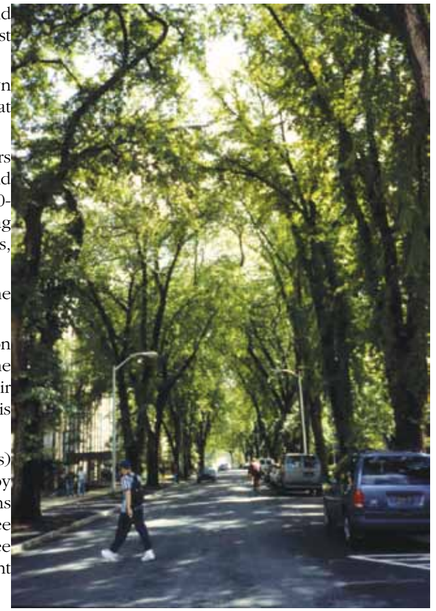
In 1906, Henry Janssen and Ferdinand Thun incorporated the town of Wyomissing to house workers of their Berkshire Knitting Mills, at one time the world's largest manufacturer of women's hosiery.

Wyomissing, a town of 8,600 residents, is familiar to town planners nationwide as one of the best designed communities in America. Laid out by a succession of outstanding landscape architects over a 30-year period, Wyomissing is known for its parks, its two sweeping boulevards, and its extraordinary mixture of housing types and styles, all tied together by 7,700 large canopy shade trees lining its streets.

From its very beginning, Wyomissing Borough assumed the responsibility for planting and maintaining its street trees.

Wyomissing spends nearly $200,000 annually for a three-person crew and their equipment to maintain the borough's street trees. The borough removes dead and dying trees and plants new ones in their place. The program pays for itself many times over. Wyomissing is one of the most desirable communities in Pennsylvania.

State College Borough (population: 42,000, including students) spends about $500,000 annually to maintain its 6,500 large canopy shade trees. This is apart from Penn State University, which maintains all campus trees. Like Wyomissing, State College has a crew of three for routine pruning. It contracts out for stump removal and large tree removal. The borough plants more than 300 new and replacement trees annually.



State College, left, is one of the greenest communities in America.

Wyomissing's shaded streets, below, create a perfect setting for the borough's annual Fourth of July Parade.

The dashed line, above, demarcates West Reading on the left from Wyomissing on the right. Tall shade trees give Wyomissing its unique, park-like atmosphere.

Image Provided by Pictometry International Corp

Municipalities should establishtree maintenance programs

A healthy street tree program can pay for itself many times over.

For example, Pottstown planted about 2,000 street trees in the 1980s and today has more than 3,000 street trees. The total assessed value of all Pottstown residential real estate is about $600 million, with an estimated market value of $1.2 billion. The street trees increase property values by at least 3 percent. Therefore, the value of Pottstown's street trees is more than $30 million. That's a big investment.

State College Borough spends about 3 percent of its $20.6 million general fund annually to maintain its 6,500 street trees. Wyomissing spends 2 percent of its $10 million general fund budget to maintain its 7,700 trees. The aesthetic, environmental and economic benefits of the trees far outweigh their cost.

These two municipalities are among the few statewide that maintain trees. The overwhelming majority of municipalities leave maintenance to the adjacent property owner. That inevitably results in dead and decaying trees as well as disgruntled property owners. Only a municipality can provide the consistent care needed to maintain a flourishing urban forest.

Dead trees are far worse than no trees at all. They are a visible and hazardous form of urban blight.

Like broken windows in houses, deadwood in trees, right, signals that nobody cares.

Stumps, below left, are another, common form of urban blight.

Trees growing into buildings, below center, are unsightly and damaging to structures.

Likewise, trees whose lower limbs have not been removed, below right, block the view and get in the way of vehicular and pedestrian traffic.

A systematic tree trimming program eliminates hazards and cultivates beautiful, healthy trees.

Trimming trees back from buildings assures the canopy will grow over the street and sidewalk and, eventually, over the roof rather than into it.

As soon as the trees grow tall enough, branches should be removed 16 to 20 feet above the sidewalk, as practiced in downtown Haddonfield, N.J.

Low branches cover the facades of downtown buildings, creating a claustrophobic atmosphere and discouraging retail trade.

These trees in Wellsboro's downtown shopping district provide plenty of clearance to assure good visibility for signage and provide an airy ceiling over the sidewalk.

Oak Park shows high density housing can be compatible with a flourishing canopy

Image Provided by Pictometry International Corp

Norristown

Image Provided by Pictometry International Corp

Oak Park

Oak Park, Illinois, adjacent to Chicago, has one of the finest urban forests in America. Although Oak Park is as densely populated as Philadelphia – and more densely populated than Norristown -- it enjoys a "green roof" provided by some 20,000 high canopy street trees. The forestry division of Oak Park's public works department prunes trees, removes and replaces dead and diseased trees, and plants new ones.

Although Oak Park has no large parks like Elmwood Park, Bartash Park, or the Norristown Farm Park, more than 50 percent of the town is covered with a tree canopy.

Street trees cool and beautify Oak Park's neighborhoods and make it one of the most desirable residential communities in America.

Norristown, Pennsylvania

Population:	34,000
Area:	3.5 square miles
Population density:	9,714 per square mile
Demographics:	54% white
	34% black
	12% Other
Median household income:	$35,700
Tree canopy:	< 20%

Oak Park, Illinois

Population:	51,000
Area:	4.5 square miles
Population density:	11,333 per square mile
Demographics:	70% white
	22% black
	8% Other
Median household income:	$59,000
Tree canopy:	>50%

Although Oak Park has many apartment buildings, the street trees provide a park-like feel in every area of the community.

Norristown joins growing movementto work with nature, not against it

Norristown plants trees as revitalization strategy

For nearly 10 years, Norristown has focused on planting street trees as part of its revitalization efforts. A seven-block DeKalb streetscape project with new sidewalks, benches and 61 trees was completed in 2007 using more than $1 million in county revitalization funds, community development block grant funds, and state funds. The project was extended with more trees in 2010.

The Norristown Shade Tree Commission has also planted more than 300 street trees in recent years through the state TreeVitalize program. Launched by the Pennsylvania Department of Conservation and Natural Resources in 2004, TreeVitalize has thus far helped municipalities and volunteer organizations to plant 20,000 trees throughout southeastern Pennsylvania.

Norristown created a shade tree commission in 2010 and authorized an inventory of trees along the municipality's gateway streets by the Morris Arboretum, which recommended a long-term tree planting and maintenance program in a 50-page report.

Plane trees lined with stone blocks enhance Main Street west of Swede Street.

Zelkovas were planted in brick strips along DeKalb Street with county and federal funds.

EPA blesses green plan for Philadelphia

Earlier this year, the U.S. Environmental Protection Agency approved Philadelphia's $2 billion plan to manage storm water by removing impervious surfaces, greening vacant lots and rooftops, and planting trees.

The 25-year plan was hailed by the Natural Resources Defense Council as "the most comprehensive green infrastructure program found in any U.S. city."

Like Norristown, Philadelphia has a a major problem with storm water infiltrating its sanitary sewer system. In heavy rains, untreated water pours from more than 150 overflow pipes into the Schuylkill and Delaware rivers. The new plan, funded in part by PENNVEST, is designed to absorb storm water into the ground before it gets into the storm water pipes.

The vegetation planted to absorb water, especially trees, will also beautify the city and cool it down in the summer, reducing the need for energy-consumptive air conditioning.

Besides creating rain gardens and rooftop gardens to absorb storm water, the city hopes to plant 300,000 more trees by 2015, mostly by helping people plant trees in their back yards and encouraging institutions, such as colleges, to plant hundreds or perhaps thousands of trees. The city's ultimate goal is to increase its canopy cover from 15 percent today to 30 percent in 2028.

The Philadelphia Inquirer
philly.com

City embarks on managing storm water the green way

By Sandy Bauers
INQUIRER STAFF WRITER

Philadelphia's $2 billion plan to manage its storm water with green methods — porous pavement, green roofs, and a plethora of trees — got the official nod Tuesday from the U.S. Environmental Protection Agency.

EPA Administrator Lisa Jackson joined Mayor Nutter and other officials at the Fairmount Water Works to sign the agreement for a 25-year plan that has been described as one of the most innovative and ambitious in the nation.

It will transform not only how the city handles storm water — treating it as a resource instead of a waste product — but also how the city looks.

Greenery planted to soak up rainwater will also beautify streets, which could increase property values. Shaded homes will be cooler in summer, which could lower electricity bills. Air quality should improve.

"The city has earned a place as a national and global leader on sus-

See RUNOFF on A4

Trees and green roofs are part of the plan. The EPA said yes on Tuesday.

An urban farm and community garden replaces a vacant lot in the Mill Creek section of Philadelphia.

Freshly planted ginkgo trees line King Street in downtown Lancaster.

New York city will add 1 million trees to its urban forest

Five years ago, New York City Mayor Michael Bloomberg kicked off a program to plant 1 million new trees by 2017. New York already has 5.2 million trees, including about 600,000 street trees, covering about 24 percent of the city's land mass.

The city aims to add 220,000 more street trees and 380,000 more trees in city-owned properties like parks and traffic medians. The city is helping non-profit organizations, businesses and residents to plant the remaining 400,000 trees on private property.

An analysis performed for the city by scientists for the U.S. Forest Service estimated the benefits of New York's trees exceeds $122 million annually in pollution control, reduced energy consumption and storm water runoff, and increased property values.

A newly planted elm along Fifth Avenue is one of thousands of trees planted along New York City streets in 2012 alone.

City of Lancaster adopts green infrastructure plan

Like Norristown and Philadelphia, Lancaster has a major problem with storm water infiltrating its sanitary sewer system. Like Norristown and Philadelphia, Lancaster has concluded the most cost-effective way to manage storm water is removing impervious surfaces.

At present, the city has 6,250 street trees and an 8 percent tree canopy over the city. Lancaster plans to add 250 street trees annually for the next 25 years, hoping to increase the citywide canopy to 40 percent.

In addition to creating infiltration beds under parking lots, the city also hopes to dig tree trenches in parking lots to direct storm water towards trees and to increase the tree canopy over the lots.

Lancaster already has more than an acre of green roofs – vegetation planted on the roofs of buildings – and hopes to add two more acres of green roofs in the next five years. PENNVEST is providing significant financial support for Lancaster's plan to go green.

Two officials look over the green roof on Lancaster's Lafayette Elementary School.

Each tree is tagged with a "One in a million" label. The reverse side of the label gives the name of the tree species.