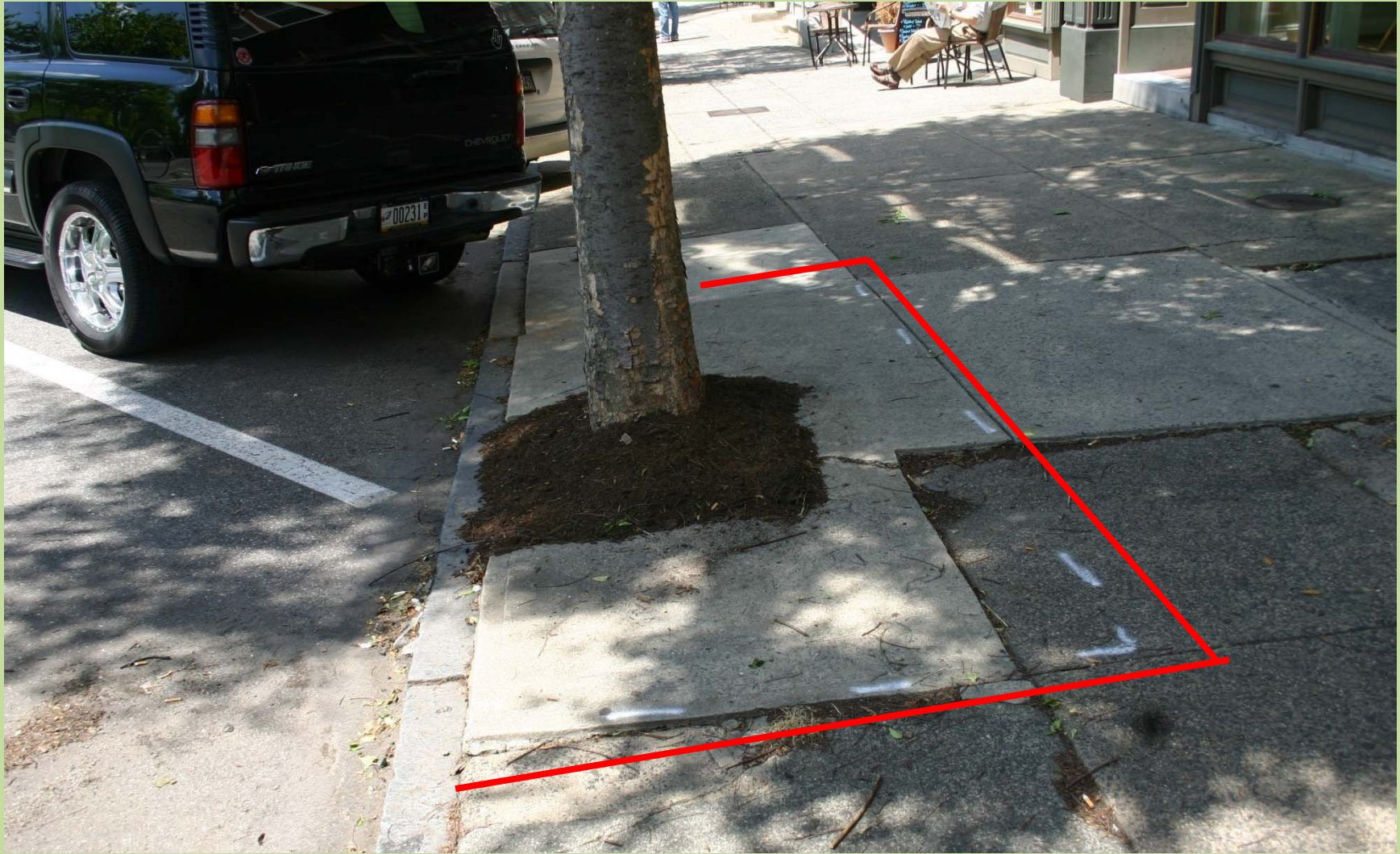




The first step to repairing a sidewalk damaged by a tree is to enlarge the tree pit.





Many sidewalks are far wider than they need to be. Enlarging a tree pit not only gives tree roots more room to grow, increasing the amount of pervious surface allows more rainwater to percolate into the ground.

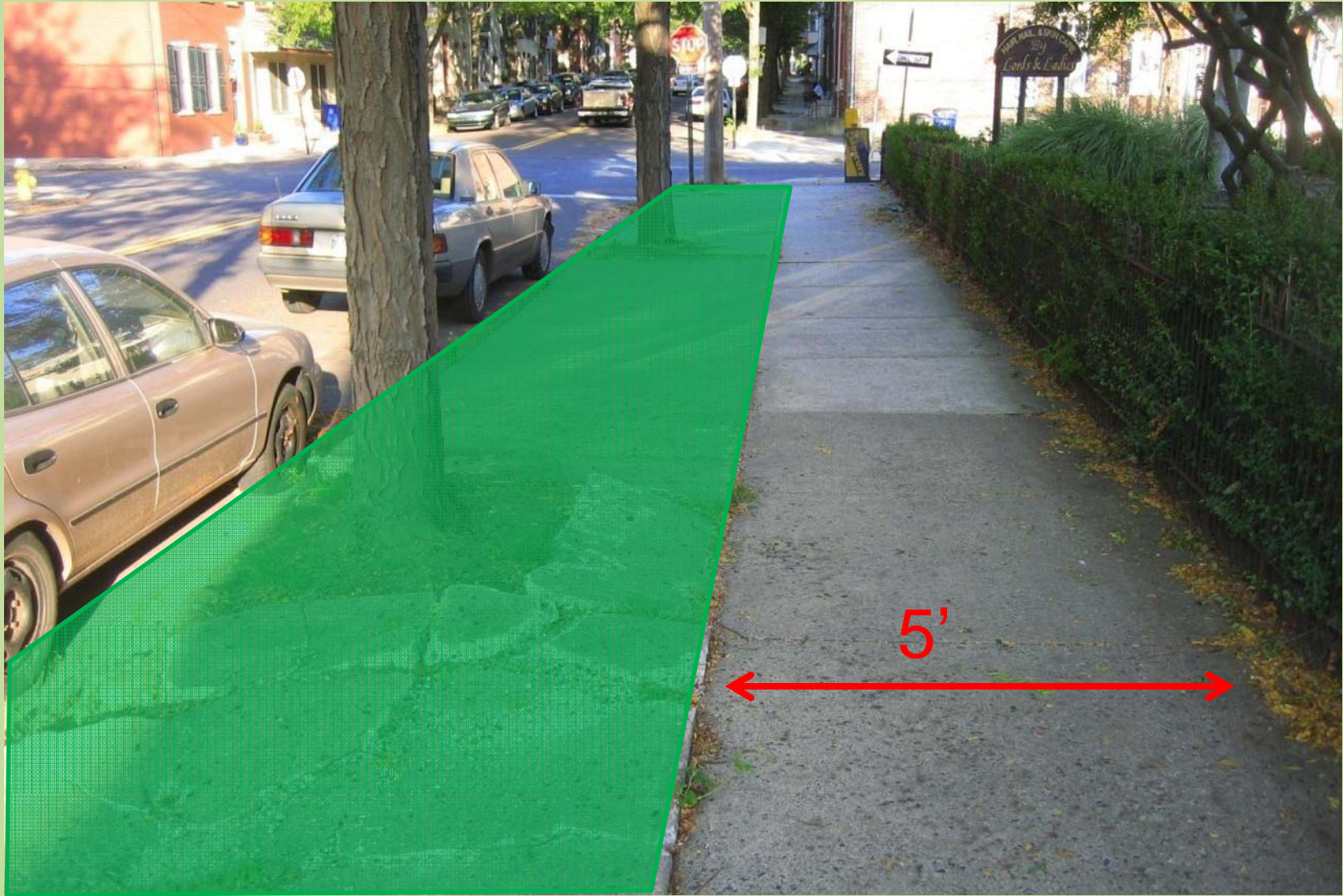




Here, damaged sidewalks are repaired simply by enlarging the tree pit.

The enlarged pit can then be filled with gravel, mulch, grass, or other ground cover.





Many older towns have far more impervious surface than necessary. Excess concrete can be removed to create planting strips and still leave plenty of room for pedestrians.





This planting strip accommodates 60-year-old plane trees.





This tree pit has been enlarged, but there is still a raised portion of the sidewalk to be repaired. Rather than replace sound concrete, it is often more cost effective to remove the tripping hazard.



In fact, about two-third of sidewalk damage consists of concrete panels that can be remediated without replacing them.

Concrete panels are typically 4 inches thick. If a panel is lifted, up to 2 inches can be removed with a special saw to provide a smooth walking surface without compromising the integrity of the concrete. Beveling uneven concrete panels is about a quarter of the cost of replacing them.







The bevel provides a suitable surface for wheelchairs and is ADA compliant.

The special beveling work is performed in Pennsylvania by a company called Always Safe Sidewalks. The same service is offered nationwide by affiliates of Precision Concrete Cutting Inc.





Several hundred sidewalks have been remediated in Pottstown using special saws.

In recent years, this method has been used throughout Pennsylvania.

## POTTSTOWN



John Strickler/The Mercury

A carved sidewalk on Chestnut Street in Pottstown.

## Sidewalk repairs may be on the cutting edge

By Evan Brandt  
ebrandt@pottsmmerc.com

POTTSTOWN — A plan to address buckled sidewalks in town that borough council recently agreed to examine is quite literally on the cutting edge.

The common rub in Pottstown is that many sidewalks are buckled by tree roots.

And that's true.

But more than half the buckled sidewalks in town got that way for reasons that have nothing to do with trees, according to a recent study.

In either case, the fix is usually the same, pull up the concrete, address the underlying problem, and put down more concrete. But that gets expensive.

Tom Sweitzer, co-founder of Always Safe Sidewalks, recently told borough council that there are nearly 3,000 trip hazards amid the borough's dilapidated sidewalks that are "not beyond repair."

Fixing them all the conventional way would cost about \$890,000.

But there is another method, one that would only cost about \$210,000, and that is to use a special saw to trim the concrete down to the point that the trip hazard is eliminated.

Sweitzer said he began his precision concrete cutting company in 2007 and has done work in Lancaster, York, State College, and the University of Pennsylvania, Drexel and Penn State and that his crews can address "50 hazards per day."

"Essentially, Pottstown has too much sidewalk and overall, they're in very poor condition," he said, estimating that "50 percent is beyond any type of repair."

He added that "trees definitely play a role, but they are not, by far, the only reason" for sidewalk problems.

Please see SIDEWALKS on A4

# THE MERCURY

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## Pottstown sidewalk repairs may be on the cutting edge

SIDEWALKS, from A1

The cuts are usually no more than two inches, but smooth out bumps enough to not only eliminate tripping hazards, but also to meet federal Americans with Disabilities Act regulations, Sweitzer said.

The procedure also causes no structural damage to the sidewalk, an assertion supported by Doug Yerger, Pottstown's public works director.

The cost to property owners, who are legally liable for the conditions of the sidewalk in front of their property, can be as low as \$50, \$70 for wider sidewalks, Sweitzer said.

"It seems like a very viable, cost-effective solution," Council Vice President Jeff Chomnuk told Sweitzer following his presentation.

"It looks like a good idea to me," seconded Councilman Jody Rhoads. "I don't think there's a problem with it."

The idea Rhoads endorsed was brought to Pottstown by former shade-tree commission chairman Thomas Hylton.

Hylton said he discovered the sidewalks where work had been done completely by accident while walking in places like Franklin and Marshall College, University of Pennsylvania, Drexel University, and the

Morrisville School District.

He received permission from Borough Manager Jason Bobst to try the process on some "demonstration projects" in down on sidewalks damaged by tree roots, using \$7,500 from Trees Inc., the non-profit organization which does some tree maintenance in Pottstown.

"It's less expense and it's a lot easier than replacing the sidewalk," he told council in introducing Sweitzer.

"I just wanted people to be aware of this alternative," he said.

Council President Stephen Toroney appointed Councilman Mark Gibson, along with Rhoads and Chomnuk to form a committee to "identify what areas in the borough would be addressed" in a further demonstration project, Bobst wrote in an e-mail to The Mercury.

Toroney "appointed these three Councilors since the majority of the areas identified in Tom's study are in the first, third and sixth wards. Council seems very supportive of the concept and hopes it can address our sidewalk concerns where applicable," Bobst wrote.

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However, some sidewalks are so damaged they need to be replaced. Asphalt makes a much better replacement material than concrete.



After the concrete is removed, it is occasionally necessary to grind down surface roots.

However, unlike concrete, it is often possible to ramp over tree roots with asphalt rather than remove them.







Unlike concrete, asphalt does not need time to cure.

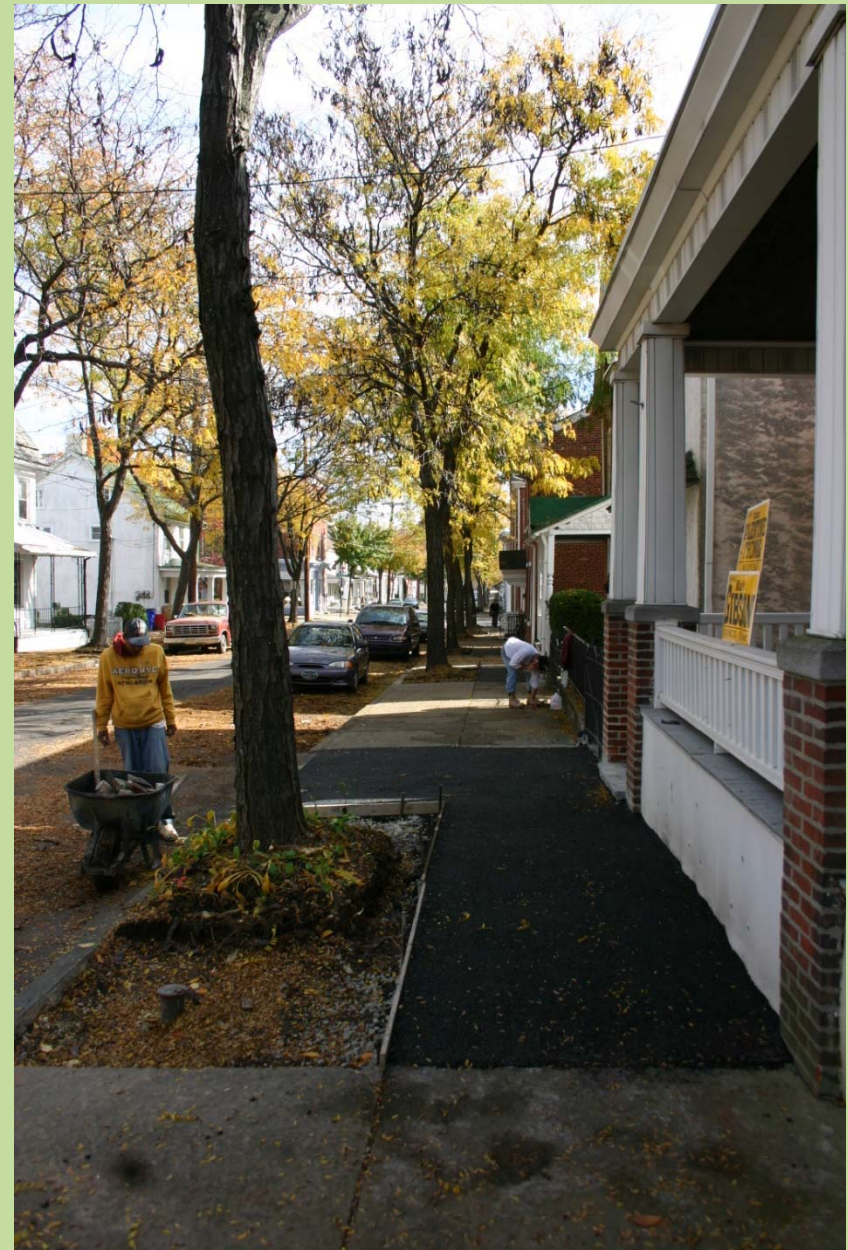
Once it is spread out and tamped down, it can be used immediately.







Enlarging the tree pit should always be part of repairing a sidewalk.





Although many communities leave their asphalt sidewalks untouched, an epoxy coating is available to color asphalt.

New York City, for example, uses beige and lime green coatings for its bike lanes and sitting areas that have been reclaimed from travel lanes, such as Broadway in Manhattan, right.



Strategically placed planters, weighing 600 to 1,000 pounds, help protect people on an esplanade from wayward traffic.

## Front-Row Seats on Broadway, if You Dare

Warming to an Esplanade, With a Wary Eye on Traffic

By WILLIAM NEUMAN

As if New York wasn't stimulating enough already, the city has provided a new kind of thrill right in the heart of Midtown: an esplanade carved into Broadway where people can sit and relax as cars and trucks whiz by.

And while the esplanade seems to have become an instant hit with office workers and tourists — the metal benches, tables and chairs (some under red umbrellas) were rarely empty on Monday morning, even though they have been out for only a few days — many eyed the traffic warily.

"I think it's dangerous," said Vicki Lee, who nonetheless sat with two friends eating lunch at a cafe table on the esplanade just south of 38th Street.

Ms. Lee, a clothing designer at a Midtown fashion company, was careful to sit so that she could keep an eye on the traffic heading downtown.

Her concern, she said, centered on the gray plastic planters arrayed every few feet along the edge of the esplanade as a buffer for the passing traffic. The planters were filled with soil, flowers and other plants and were too heavy for one person alone to budge. Yet they did not make Ms. Lee feel safe.

"You hear so many accidents of the cars going out of control and all they have here is plastic pots," she said, but she dug into her salad and added, "We're going to roll the dice and eat lunch here today."

Not far away, Eric Sachinis and

Grace Ong sat on two metal chairs pulled up to the edge of the esplanade closest to the traffic. They ate sandwiches and gazed at the passing cars.

"It's a death trap," Mr. Sachinis, a network administrator for a garment company, said with a laugh. "It'll be up for a month and then somebody'll get hit and they'll take it down."

"I like it, though," said Ms. Ong, an administrative assistant, who observed that a pedestrian would be no safer on the sidewalk than on the esplanade if a car lost control. Besides, she said, the esplanade was a good spot for people watching. "That's why you live in New York," she said, "to watch everything go by."

Continued on Page B4





Trees Inc. covers its asphalt sidewalks with the same epoxy coating used in New York City.







The gray color used is similar to newly poured concrete, below.







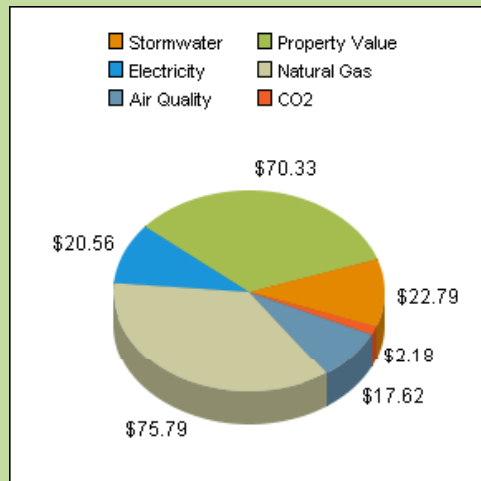
Asphalt makes it possible to repair even badly lifted sidewalks. Although the sidewalk above is ramped, the slope still conforms to ADA standards.





Using the computer program developed by the U.S. Forest Service, it is possible to calculate the benefits of individual street trees.

That way, a cost/benefit analysis can be performed for a single tree or small groups of trees.







Sidewalk remediation  
Cost/benefit analysis  
For Downtown Pottstown  
Using i-Tree benefits calculator



The Pottstown Downtown Improvement District Authority was created in 1987 to provide special services in the downtown area, supported by a special fee assessed on 134 properties. The following year, the borough and Trees Inc. planted 115 trees in the downtown district along with installing new sidewalks, benches, and street lights.





Sidewalk remediation  
Cost/benefit analysis  
For Downtown Pottstown  
Using i-Tree benefits calculator



Twenty-five years later, the panels of some sidewalks had been lifted by tree roots. Using a specialized saw, contractors for Trees Inc. beveled the edges of the lifted panels to remove the trip hazards. The sidewalks are now code and ADA compliant.  
Total cost = \$1,554.



The cost of remediating the sidewalks, **\$1,554**, was less than 15% of the annual benefits provided by the 115 trees, **\$13,336**.



# Sidewalk remediation Cost/benefit analysis

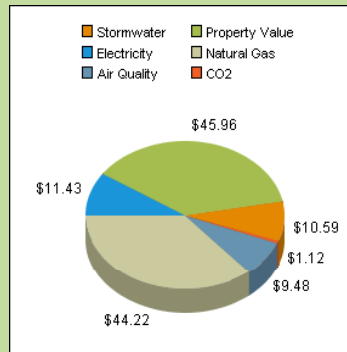
200 block Walnut Street

15 honey locusts

Total annual benefits: \$3,561

Cost to remediate sidewalks:  
\$11,214

Years to amortize cost: 3.3







## Callery pear trees along Hill School High Street Sidewalk remediation Cost/benefit analysis

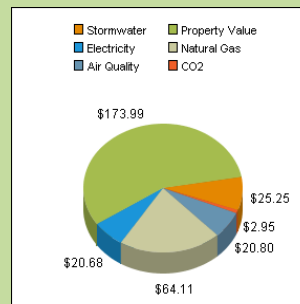


In 1985 and 1996, Trees Inc. planted 48 callery pear trees along High Street adjacent to the Hill School.

As the trees grew, by 2012, a number of concrete sidewalk panels had been lifted by tree roots.



Using a specialized saw, contractors for Trees Inc. beveled the edges of the lifted panels to remove the trip hazards. The sidewalks are now code and ADA compliant. Total cost = \$2,043



Using the i-Tree calculator developed by the US Forest Service, Trees Inc. calculated the annual benefits of the trees ranged from \$44 to \$308 annually, for a combined total annual benefit of \$5,651.



The cost of remediating the sidewalks, **\$2,043**, was less than half the annual benefits provided by the 48 pear trees, **\$5,651**.





Northern red oak tree  
1153 High Street

Sidewalk remediation  
Cost/benefit analysis



Annual benefits: \$232

Cost to remediate sidewalk: \$911

Years to amortize cost of remediating sidewalk:  
3.9 years







London plane tree  
762 High Street  
Sidewalk remediation  
Cost/benefit analysis



Annual benefits: \$296  
Cost to remediate sidewalk: \$690  
Years to amortize cost of remediating sidewalk:  
2.4 years





## Callery pear trees along North Charlotte Street at Grace Lutheran Church

Sidewalk remediation  
Cost/benefit analysis



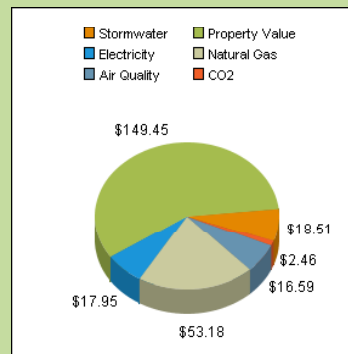
In 1985, Trees Inc. planted 13 callery pear trees along North Charlotte Street adjacent to Grace Lutheran Church.

As the trees grew, by 2012, a number of concrete sidewalk panels had been lifted by tree roots.



Using the i-Tree calculator developed by the US Forest Service, Trees Inc. calculated the annual benefits (energy savings, air quality, stormwater reduction, property value) of the trees ranged from \$135 to \$308 annually, for a combined total annual benefit of \$2,878.

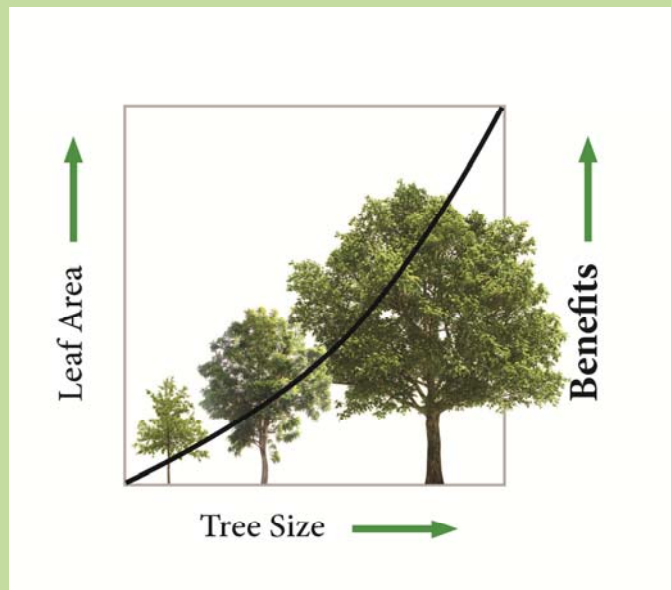
The cost of remediating the sidewalks, **\$1,248**, was less than half the annual benefits provided by the pear trees, **\$2,878**.





It is commonly believed that street trees should not lift concrete sidewalks.

But the larger the tree, the more environmental and economic benefits it provides. Brick and asphalt sidewalks can co-exist with large trees much better than concrete.



But if sidewalks occasionally need to be repaired, the cost is more than repaid by the benefits provided by large trees.

