

GIS FOR GREEN

Philadelphia introduces parcel-based storm water billing and corresponding online application

By Caitlin Cunningham

After 15 years of development and planning, on July 1, 2010, the city of Philadelphia adopted a new approach for assessing nonresidential property owners' storm water management fees. Over the course of three years, the Philadelphia Water Department (PWD) will phase in a parcel-based storm water billing system that charges owners based on total property area and impervious surface coverage. To support its new fee structure, PWD teamed up with Philadelphia-based software design and development firm Azavea, a partner on other city agency data management projects, to launch the complementary online public storm water GIS application phillystormwater.org.

The Application

[Phillystormwater.org](http://phillystormwater.org) equips property owners with tools for understanding how PWD calculates their storm water fees. The application details each new billing component and how it will be phased in. Users can visualize

their properties in high-resolution orthophotography and display transparent overlays that illustrate impervious area, gross area, PWD account info, credits and a charge summary for fiscal years 2011 to 2014.

"We knew that the transition from meter-based billing for storm water to parcel-based billing would be a challenging concept for many of our customers," said Joanne Dahme, public affairs manager for PWD. "Our goal was to make this information available both visually—so that customers could take a look at their parcel and gain a good understanding about its physical characteristics related to their storm water fees—and also as an opportunity to ensure that the information we have on their parcel is as accurate as possible."

The parcel-based billing system is intended in part to expand PWD's customer base and to make customers' cost of service more equitable. Some property owners are seeing a decrease or increase in their storm water bills, but most charges are comparable to those

issued prior to the July 2010 switch, according to PWD.

Bill payers can submit appeals through phillystormwater.org if they wish to dispute a property's gross or impervious area measurements, which are researched and managed by three PWD staff members who update the GIS layers that feed the website. PWD can use the application to track the progress status of customer appeals—under review, review complete, decision issued or disposition letter sent—and promptly correct any parcel data errors.

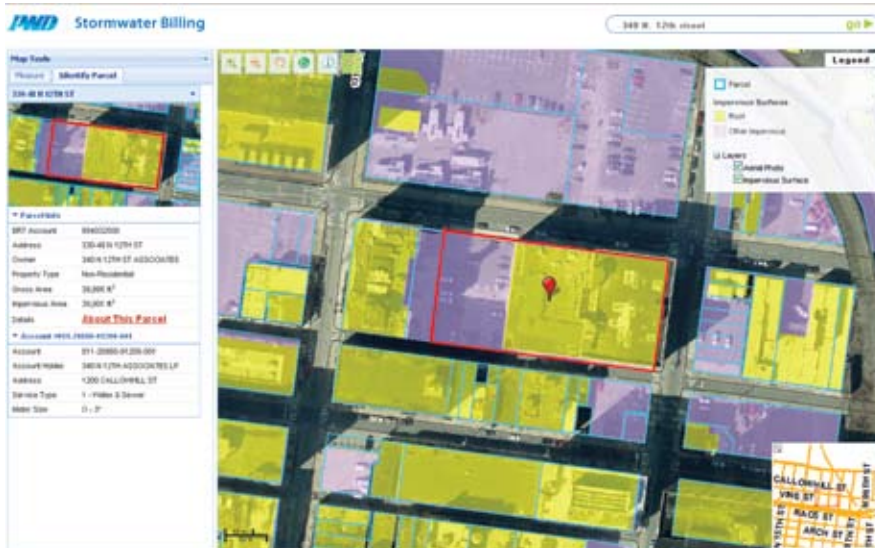
Phillystormwater.org also offers steps owners can take to reduce fees via a financial credits program that rewards the implementation of specified onsite water management practices. Plans are in motion to add a "Credits Explorer" feature that acts as a storm water charge calculator to further incentivize greener properties.

"Customers will be able to select sections of impervious area on their property and see the impact on their storm water charge if that impervious area was managed," said Casey Thomas, PWD's storm water billing planning manager. "The tool will assist customers in their cost-benefit analyses when they are contemplating making capital investments to manage storm water."

Promotion & Response

PWD has informed its customers about the application via mailers, messages on bills, bill inserts, civic and public meetings, business forums, e-mail lists, call centers and media coverage. It is the department's hope that phillystormwater.org makes billing more transparent and easy for customers while improving PWD's effectiveness.

"As customers have gained more information about the program and its goals, they are generally accepting of the fairness and science-based



Phillystormwater.org allows users to explore parcels on an interactive map and provides a charge summary for each parcel.

principal of the parcel-based formula; however, their enthusiasm over this transition usually depends on whether or not their own storm water fees are increasing or decreasing based on their parcel characteristics,” Dahme said. “We are doing our best to work with our impacted customers to find ways to mitigate their increased costs through our corresponding credits program and low-interest loan program for storm water mitigation, in addition to exploring other opportunities such as storm water mitigation banks.”

Response to phillystormwater.org has been strong within the software engineering and support field, according to Robert Cheetham, founder and chief executive officer of Azavea, who also noted the environmental and community benefits of the collaboration.

“The water department’s shift to billing based on storm water runoff rather than water usage has the potential to improve the water quality of our rivers and streams as well as improve water infiltration across the city and potentially avoid the construction of expensive treatment facilities,” Cheetham said. “We are grateful to have an opportunity to make a contribution to such an important project.”

City of Sustainability Love

In a city the size and age of Philadelphia, building more and larger gray infrastructure is not the answer to storm water management challenges—that would carry too hefty a price tag. Instead, the city is taking a more natural approach, encouraging property owners to adopt green onsite management practices to reduce impervious pavement coverage and promote water filtration via soil and vegetation.

Philadelphia’s \$2-billion Green City, Clean Waters program aims to reduce storm water and sewage overflows into area waterways during rain events, partly by achieving an annual reduction in the city’s impervious surface coverage. By 2029, PWD plans to replace at least one-third of the city’s impervious surfaces with green storm water infrastructure

as part of its Greenworks Program, an ambitious plan to transform Philadelphia into a national model for urban sustainability.

“The ultimate goal is to regain the vital water resources that have been lost due to urbanization, while simultaneously addressing regulatory compliance in a cost-effective manner,” Dahme said. “Altogether, [our] principles will help us enjoy

clean, safe and accessible streams and rivers.” **SWS**

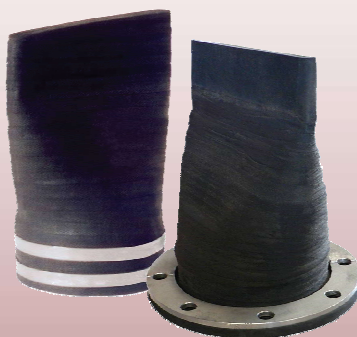
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