Greening Raises Values in Philadelphia

The Philadelphia Federal Reserve Bank Conference on Reinventing Older Communities: People, Places, Markets
April 5-7, 2006 Philadelphia, Pennsylvania
Presenters:

Susan Wachter
University of Pennsylvania – The Wharton School

J. Blaine Bonham, Jr.
The Pennsylvania Horticultural Society
Philadelphia
Strategic East Coast Location
History, Arts & Culture
Thriving Business Districts
Diverse Housing
Rivers and Parks
The City of Neighborhoods
Philadelphia’s Challenges
Philadelphia’s Challenges

Vacant Residential Structures in 2001

10.6% vacancy rate
Operating Principles

• Concentrate resources to maximize impact

• Leverage existing and ongoing investments

• Identify opportunities for high impact

• Promote partnerships & collaborations
PHS/NTI Green City Strategy

Transform Philadelphia neighborhoods by managing our vacant land and improving our open spaces.
Mission

The Pennsylvania Horticultural Society motivates people to improve the quality of life and create a sense of community through horticulture.
One Organization ~ Four Lines of Business

• Education Services/Publications
• Meadowbrook Farm
• Philadelphia Flower Show
• Philadelphia Green
PHILADELPHIA GREEN

Creating, restoring, and caring for open spaces.

32 Years of Building Community through Horticulture
Green City Strategy

Quality open space promotes urban revitalization
Philadelphia Green

The Green City Strategy

- Vacant Land Management
- Community Gardens
- Gateways and Corridors
- Trees and Streetscapes
- Parks
VACANT LAND Management

Turning a Liability into an Asset
Ten year history of work around Vacant Land Management
Cost Benefit Analysis

• 30,900 vacant lots

• $1.8 million spent annually with little impact

• A 20 year investment cost of $106.7 million could yield $158.7 million tax revenue benefit
Vacant Land in Philadelphia

All vacant lots clustered together represent...

an area the size of Center City Philadelphia.
Why manage vacant land?

• Improve “Curb Appeal”
• Retain existing residents
• Attract new residents
• Attract community investment
New Kensington

Testing a Neighborhood Model
The Situation in New Kensington 1996

- Over 50% population decline in 40 years
- 1,100 vacant lots
- More than 70% of vacant property - privately owned and tax-delinquent
- Despair and anger in neighborhood
New Kensington Project Goal

Create a community-based vacant land management system to address local problem and test a model for other neighborhoods
Community Gardens
Side Yards
Community Garden Center
Philadelphia Vacant Land Management and Reclamation

Urban agriculture
Greensgrow
50% of vacant lots now maintained by New Kensington CDC and community residents
Demonstrated dramatic effects of vacant land management on the neighborhood
The American Street Empowerment Zone

Adapting the Model
American Street Empowerment Zone

- ‘Clean and Green’ vacant lots along corridors and business areas
- Partners: city agencies, Philadelphia Green and community-based organizations
- Funded by the Philadelphia Empowerment Zone and State of Pennsylvania
Philadelphia Vacant Land Management and Reclamation
American Street Empowerment Zone

Results

- 423 Parcels /13 acres
- Maintained by landscape contractor and Ready, Willing & Able
- Support from Empowerment Zone and local businesses
The Neighborhood Transformation Initiative (NTI)

Going to Scale
Mayor John F. Street’s 
*Neighborhood Transformation Initiative*

A five year plan to rebuild Philadelphia’s neighborhoods as thriving communities with clean and secure streets, recreational and cultural outlets, and quality housing.
NTI Investment:
- 2003 - $4 Million
- 2004 - $2.5 Million
- 2005 - $2.3 Million
- 2006 - $2.6 Million

Additional funding from:
- Department of the Interior/US Forest Service
- Housing and Urban Development
Six Target Areas

- South Philadelphia
- West Philadelphia
- Eastern North Philadelphia
- North Central Philadelphia
- Mt. Airy/Germantown/Tioga
- Frankford
NTI Vacant Land Stabilization

Criteria for Site Selection

• Prominent locations
• Community interest
• Adjacent to development

• Major thoroughfares
• Pedestrian routes
• Size of lots
Community Based Vacant Land Maintenance

- Basic Housekeeping for abandoned lots
- Complementary program to ‘Clean and Green’
- Seasonal employment for local residents
Ready Willing & Able
NTI Results
Vacant Land Management

• 3000 lots clean and green (4 million square feet)
• 2500 cleaned lots maintained
• 70 residents hired
Challenges

• Long term maintenance
• Dedicated funding stream
• Attracting private investment
Stormwater Management

Models for Stormwater Management on Reclaimed Vacant Land in Philadelphia

3rd St. & Berks St.  16,000s.f.  Completion Fall 2004

3rd St. & Dauphin St.  22,500s.f.  Completion Spring 2005
Stormwater Management

Why Manage Stormwater?

Combined Sewer Overflows

Stream Erosion and Pollution
- Fertilizers, herbicides, and insecticides
- Oil, grease, and toxic chemicals
- Sediment
- Bacteria and nutrients

The Environmental Protection Agency estimates that this type of pollution is now the single largest cause of the deterioration of our nation's water quality.
Stormwater Management On Stabilized Land

Mimic the natural water cycle by using small-scale, decentralized practices that infiltrate, evaporate, and transpire rainwater.

Common Stormwater Best Management Practices

- Disconnectivity
- Stormwater Harvesting
- Bioretention Systems
- Open Swales
- Infiltration Systems
Using Vacant Land to Manage Stormwater Run-off

• Pennsylvania Department of Environmental Protection
  – Growing Greener Grant ($200,000)

• Partners: Pennsylvania Horticultural Society, Philadelphia Water Department, Neighborhood Transformation Initiative

• Goal: Demonstrate that vacant land can be used to reduce runoff and improve groundwater recharge
Site Selection Criteria for Stormwater Management Parcels

- Contiguous parcels > 5,000 square feet
- 50 feet away from buildings
- Long-term open space

Pilot Project:
5 sites totaling 86,400 Square Feet
Infiltration testing
Fine grading stormwater swales
MODELS FOR STORMWATER MANAGEMENT ON RECLAIMED VACANT LAND

8th STREET & NORRIS ST 23,375 S.F.
Conserving and Growing Community Assets:

Greening Philadelphia Neighborhoods
The Bottom Line: 
Innovation and Demonstration

“While it’s no secret that a little greenery can perk up a sagging stoop or improve the curb appeal of a house past its prime, the Wharton study conducted in Philadelphia’s New Kensington neighborhood shows that plantings on vacant lots can boost a community’s property values by a significant amount.”

The Pennsylvania Gazette
July/August 2005
Challenge and Response

- Problem: The growing number of abandoned properties
- Response: The City’s Neighborhood Transformation Initiative taking it to scale to improve neighborhood quality of life
- Response: PHS partnering with neighborhood groups and the city to develop clean and green model
- Impact: Wharton measures the impact of greening partnership
Public/Private Partnerships
to Conserve and Improve Community Assets

• Problem and potential: how to realize the enormous benefits of reinvesting in blighted lands

• Private spaces: individuals respond with their own decisions and actions

• Public spaces: require shared governance and citizen stewardship for community action and public/private cooperation
Why the Study?

- Need to quantify impact of policy
- Deficit in hard data
- Provide evidence as a tool for advocating for good policy
Quantification Methods

• Data on house sales and location of greening investment from City and Pennsylvania Horticultural Society

• Event study - before and after investment impact on house prices, controlling for variables

• Innovative spatial econometric methods - developed at Wharton’s Geographic Information Systems Lab
Multivariate Hedonic Regression Analysis

With the first 3 interactive terms measuring the effects of proximity to greenspace, then the estimated regression results are:

\[ P_i = 45,000 + 9,923 \times (\text{New Tree}) + 1,164 \times (\text{Bordering Park}) + 10,750 \times (\text{Greened Lot}) + \ldots + \beta_k X_k \]

\[ (3.87) \quad (1.29) \quad (1.55) \]

More than 30 variables are in the regression specification including: building and lot square footage, number of stories and fireplaces, garage, central air, type and condition of exterior, year of sale, census tract, distance to CBD (City Hall), and number of years since last transaction.

Adj. R2=0.60
N=70,000

This regression only used data from 2000-2005. Similar regressions using data from 1980-2005 used over 200,000 sales records in the estimation.
Study Results

• Vacant-land improvements: surrounding housing values jump up 40%

• Tree-plantings: property values up 10%

• New Kensington neighborhood: $4 million gain in property value through tree plantings and a $12 million gain through lot-improvements
# Gains to Community

## Effects of Greening on Home Values: City-Wide

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjacent to Vacant Lot</td>
<td>-20%</td>
</tr>
<tr>
<td>Adjacent to Clean &amp; Green Lot</td>
<td>30%</td>
</tr>
<tr>
<td>&lt;= 50 Feet of New Tree</td>
<td>12%</td>
</tr>
</tbody>
</table>
Greening Gains: 
*Direct and Indirect Benefits*

- Quality of life gains
  - From an eyesore to an amenity
  - Brings nature to the neighborhood

- Expansion of the city’s property-tax base

- Action sparks re-investment and neighborhood renewal
### Summary of Estimated Impact on House Value, Based Upon the 2004 Median Priced Philadelphia Home of $82,700

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent Impact</th>
<th>Dollar Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 1/4 mile to a commercial corridor in &quot;excellent&quot; condition</td>
<td>36%</td>
<td>$29,772</td>
</tr>
<tr>
<td>1/4-1/2 mile to a commercial corridor in &quot;excellent&quot; condition</td>
<td>20%</td>
<td>$16,540</td>
</tr>
<tr>
<td>Near a new tree planting</td>
<td>9%</td>
<td>$7,443</td>
</tr>
<tr>
<td>New streetscaping</td>
<td>28%</td>
<td>$23,156</td>
</tr>
<tr>
<td>Adjacent to vacant lot</td>
<td>-20%</td>
<td>($16,540)</td>
</tr>
<tr>
<td>Adjacent to a stabilized and greened lot</td>
<td>17%</td>
<td>$14,059</td>
</tr>
<tr>
<td>1% increase in crime index</td>
<td>-15%</td>
<td>($12,405)</td>
</tr>
<tr>
<td>High school dropout rate</td>
<td>-5%</td>
<td>($3,970)</td>
</tr>
<tr>
<td>Located in BID</td>
<td>30%</td>
<td>$24,397</td>
</tr>
<tr>
<td>&lt;=1/8 mile to a subway station</td>
<td>3%</td>
<td>($2,481)</td>
</tr>
</tbody>
</table>
Specific Study Contribution: 
*Innovative Way of Measuring Neighborhood Gains*

- Identifies quality of life improvements through neighborhood price change and willingness to pay
- Precise information of where and when greening investment occurs
- Contribution of greening investment to neighborhood values
- Informed policy discussions on the future of city community-revitalization efforts
What have we learned?

• Measuring value of neighborhood economic gains by modeling with precise data works

• Useful to educate, inform, and gain support for private/public action

• Quantification, measurement, and identification can help raise support for good results of public/private partnerships

• Contributes to and informs the policy dialogue on the future of city community-revitalization efforts
The Spring Gardens