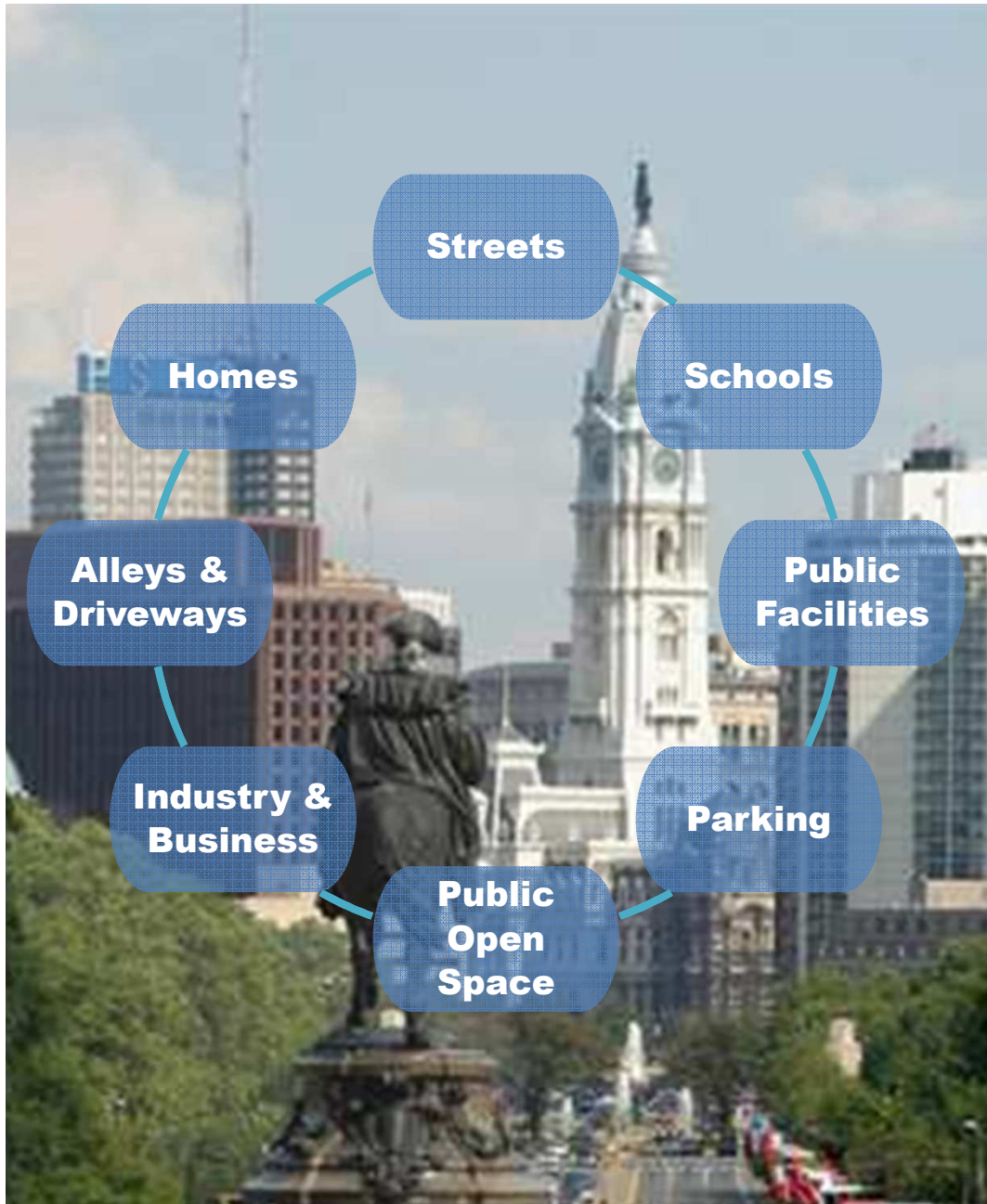


# GREEN INFRASTRUCTURE IMPLEMENTATION

## A Philadelphia Story

Craig Murray, P.E.  
Malcolm Pirnie





# AGENDA

- Two Aspects of Implementation
  - Green Streets
  - Community Outreach
- Challenges
- Benefits

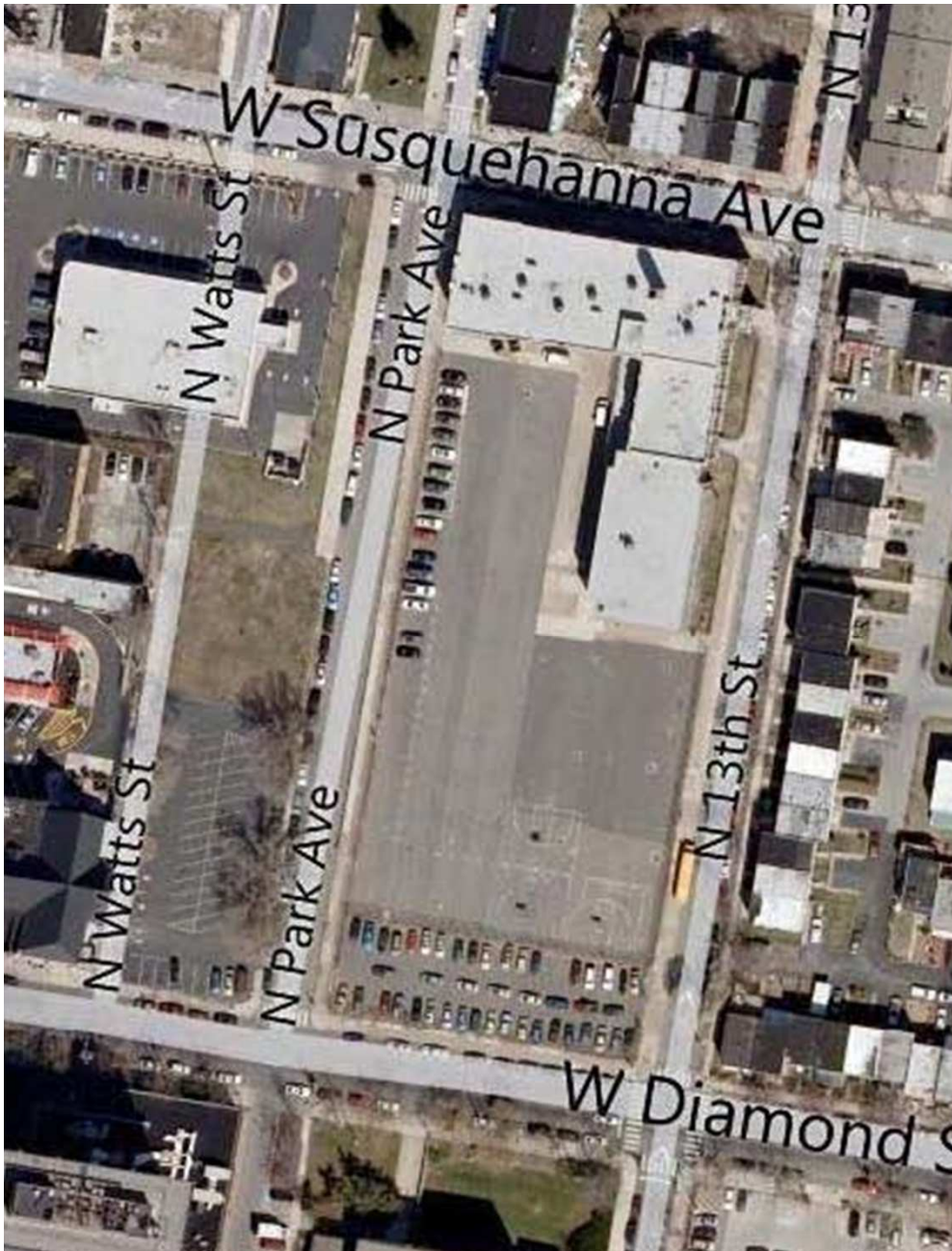


# Green Streets

Green Streets emphasize the capture of stormwater runoff from public right-of-ways...

38% of the impervious area in the City is Streets





# SELECTION CRITERIA

- Stormwater Issues
- Large Parcels
- Limited Community Impacts
- “Utility Friendly”



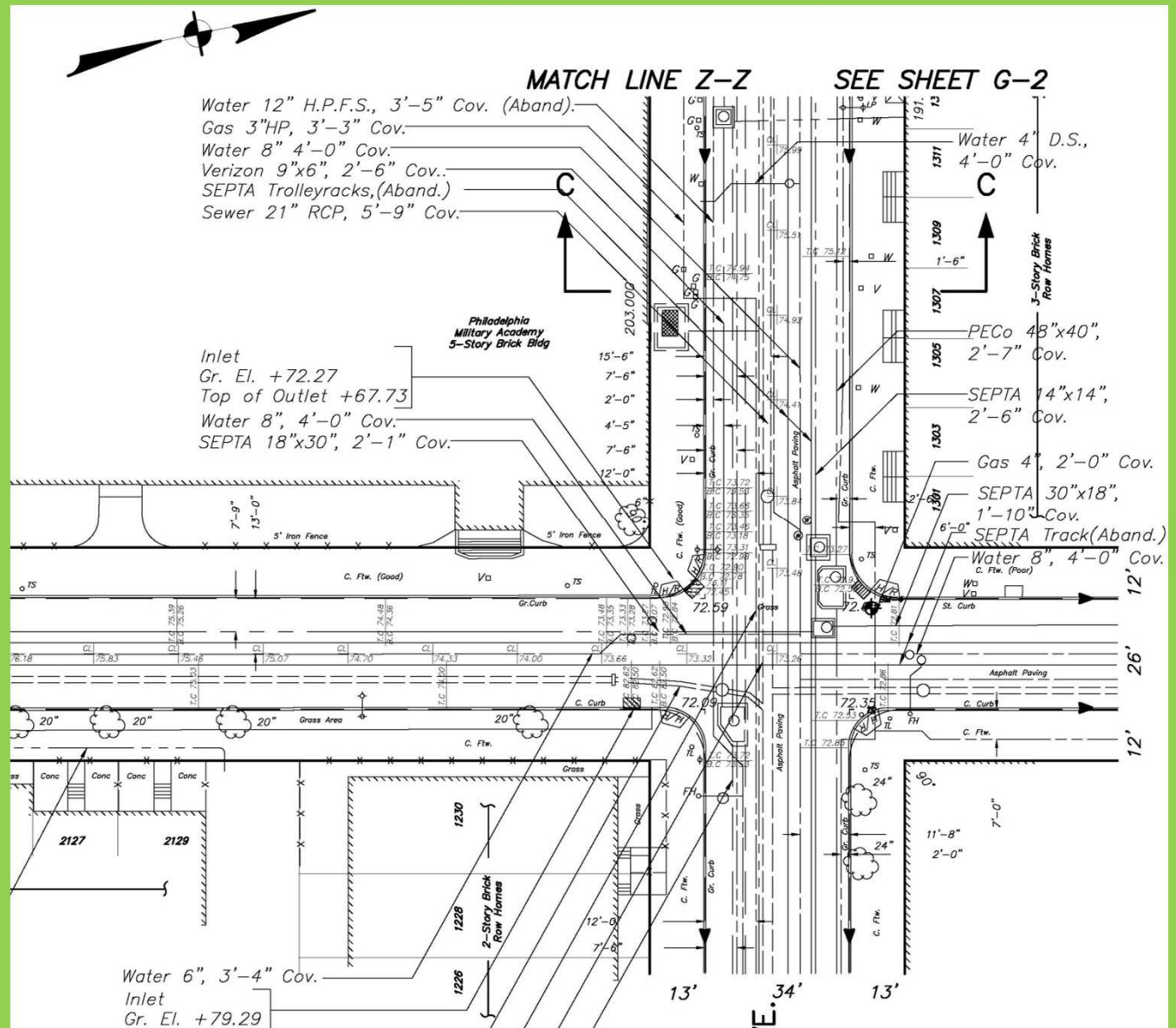
**2011 WINTER CONFERENCE**

February 1-4, 2011



*The Water Division of ARCADIS*

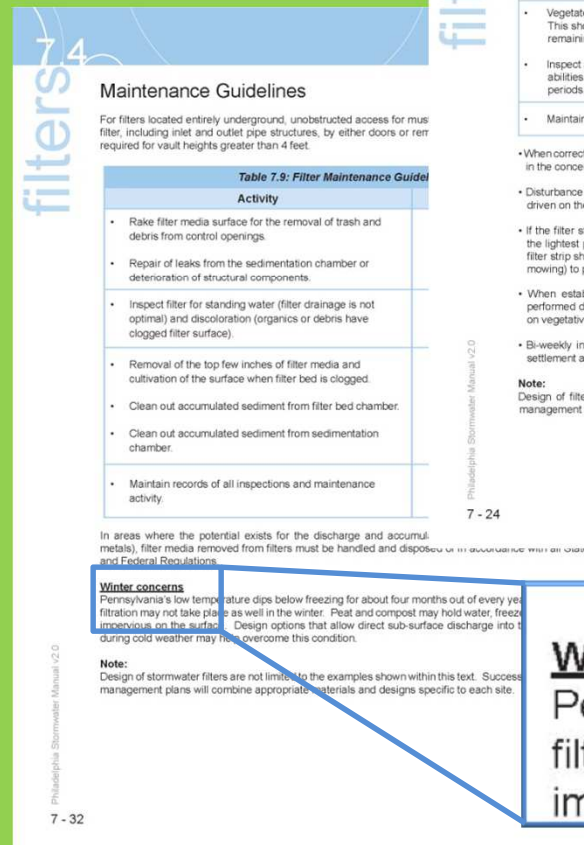
# The Real Story....





# OTHER CHALLENGES

- Quality of as-built information
- Maintenance
- Climate Impacts
- Protection
- Scope Creep

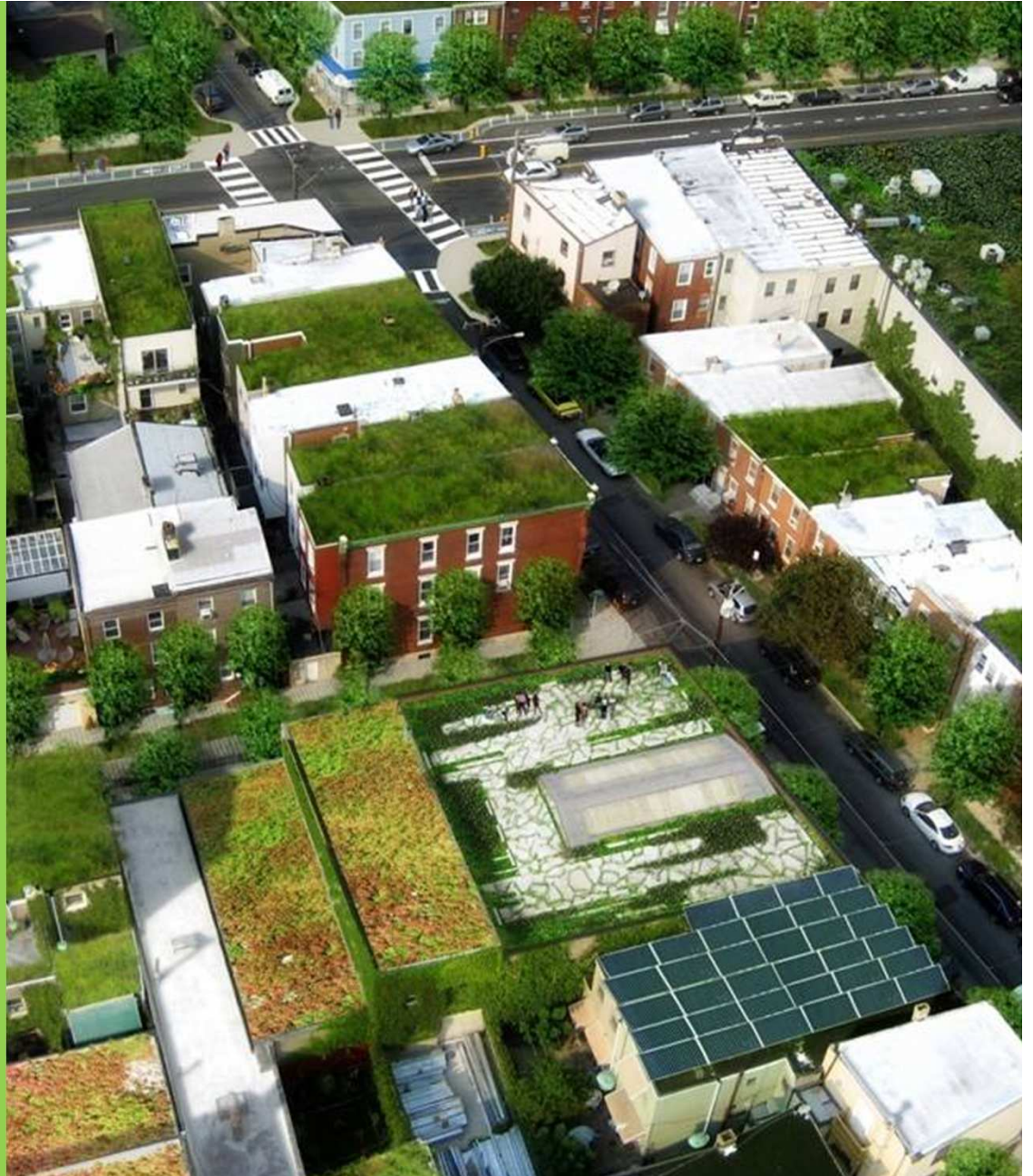


## Winter concerns

Pennsylvania's low temperatures may not take place as well in the winter. Peat and compost may hold water, freeze, and become impervious on the surface. Design options that allow direct sub-surface discharge into the ground during cold weather may help overcome this condition.

# But Streets are Easy...

- 20% of the Impervious Area is Homes
- 6% Alleys, Driveways & Walkways





# COMMUNITY OUTREACH

- Collect Information
- Refine Program direction
- Determine Community Interest
- Identify Pilot Project Opportunities





# APPROACH

- Benchmarking & Best Practices
- Protocol Development
- Community Identification
- Stakeholder Assessment
- Education

## Community Outreach & Neighborhood Planning Consultant

for The City of Philadelphia Water Department

**Monday, March 1, 2010**

Submitted to:

Glen Abrams  
Philadelphia Water Department  
1101 Market St., ARA Tower, 4th Floor  
Philadelphia, PA 19107

Submitted by:



Portfolio Associates, Inc.  
510 Walnut Street, Suite 1411  
Philadelphia, PA 19106  
215-627-3660  
[www.portfolioassociates.net](http://www.portfolioassociates.net)  
Beverly A. Harper, President





# CHALLENGES

- NIMBY and IMBY
- Laws and Regulations
- Public/Private Access Issues
- Methods of Communication



# Benefits – Triple Bottom Line

- ECONOMIC**
- Jobs
  - Capital Savings
  - Property Values

- SOCIAL**
- Recreation
  - Beautification
  - Community Interest

- ENVIRONMENTAL**
- Water Quality
  - Air Quality
  - Power Reduction

# Special Thanks

- Philadelphia Water Department
- Portfolio Associates
- Lager-Raabe-Skafta Landscape Architects

