Boston Porous Alley Project

Public Meeting
09/26/2013

Boston Public Works Department
The Mayors Office of Neighborhood Services
Project Goals

- Part of Boston’s goal to be a “greener” city
- Help to protect Boston’s water resources from stormwater runoff
- Help replenish groundwater
- Develop maintenance protocol to ensure effectiveness of the system
- Replicate system in other locations in the City
- Assess the effectiveness of porous alleys in comparison to cities like Philadelphia, New York, Chicago, Baltimore
Project Summary

- **Project** - Implementation of a porous alley retrofit in the City of Boston
- **Partnership** - CRWA, Boston Public Works Department and Boston Groundwater Trust partnering to implement and monitor pilot project
- **Funding** - Grant from Mass DEP to CRWA + match provided by City of Boston and BGwT
- **Design/ Engineering** - Vanasse Hangen Brustlin Inc. – project engineering design
Project Benefits

- **Flood Reduction** or elimination
- **Groundwater recharge** – protects building foundations
- **Aesthetics & accessibility** improvement in the Public Alley
- **Stormwater runoff pollution control** - reduction of polluted discharge into ground or harbor
- **Design Standards** - Porous Pavement design, installation, maintenance, benefits data collection

Example of a porous asphalt alley retrofit (Boston Alley #444)

Source: CRWA
Porous Pavement Benefits

- Water goes through pavement into the ground instead of running off into the street and storm drains
- Increased groundwater helps preserve building foundations
- Pavement base acts as a big filter so water is cleaner

Source: Andy Potts CH2M Hill

BOSTON POROUS ALLEY
When it rains, it recharges

Public Alley # 543
Charles River Watershed Association
Boston Public Works Department
Boston Groundwater Trust

Project funded by Massachusetts DEP and designed by Vanasse Hangen Brustlin
Why Alley 543?

- Low groundwater
- Nearby connection to storm drain
- Minimal underground utilities
- No overhead wires to interfere with construction.
- Good site where adjacent areas are paved minimizing grit and silt run-on
- Easy access for construction equipment
- Good opportunities to monitor results
Monitoring

- Boston Groundwater Trust has begun monitoring groundwater levels at two new observation wells installed in July 2013
- Data logging to be conducted in the period prior to and after construction
- Expected increase in groundwater levels
- CRWA will monitor water quality and recharge
Site Area Delineation

Public Alley

Private Alley
Plan of Alley 543

PUBLIC ALLEY NO. 543
(PUBLIC - 10.00' WIDE)

PUBLIC STREET
(PUBLIC - 50.00' WIDE)

METHUNIAN MANOR

KEY
- BUFFER STRIP
- POROUS ASPHALT
- STANDARD ASPHALT

Vanasse Hangen Brustlin, Inc.

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Pavement Cross Section

Depth 3-5 ft

Porous Asphalt Pavement Section

Source: VHB

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Pavement Cross Section

POROUS ASPHALT (2 LIFTS)
AASHTO No. 57 AGGREGATE
(CHOKER COURSE)

WASHED AASHTO No. 2 OR
No. 3 STONE
(RESERVOIR COURSE)

XX.XX ELEV

IMPERMEABLE LINER

EXISTING SUBGRADE

UNCOMPACTED SUBGRADE (URBAN FILL)
PVC PERFORATED UNDERDRAIN,

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Construction Sequencing

1. Remove existing pavement
2. Truck materials off Site
3. Excavate and install base & underdrains
4. Install monitoring equipment
5. Repave Public Alley and grade into Private Alley
Project Issues

• **Project limits** – Porous alley is within the City owned Right of Way

• **Parking** - Working with BTD for alternative parking location/s

• **Dumpster** - Temporarily relocated to one end of alley

• **Dust Control** - the contractor will be required to complete continual dust control with water during construction

• **Noise** – Construction activities will occur during weekday only from 7:30 AM to 3 PM

• **Rodents** – A rodent control plan will be implemented
Project Issues

- **Safety** - the contractor will be responsible for securing the entire site during work and non-work hours
- **Emergency access** - will be maintained at all times
- **Snow Removal** – no change to standard City procedures
Project Tasks / Timeline

- **June 2013**: Site Selection and Survey
- **September 2013**: Groundwater Monitoring + Education and Outreach
- **January 2014**: Engineering and Design
- **April 2014**: Project Bid
- **June 2014**: Construction
- **June 2015**: Water Quality Monitoring

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**BOSTON POROUS ALLEY**

*When it rains, it recharges*

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Thank You!

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