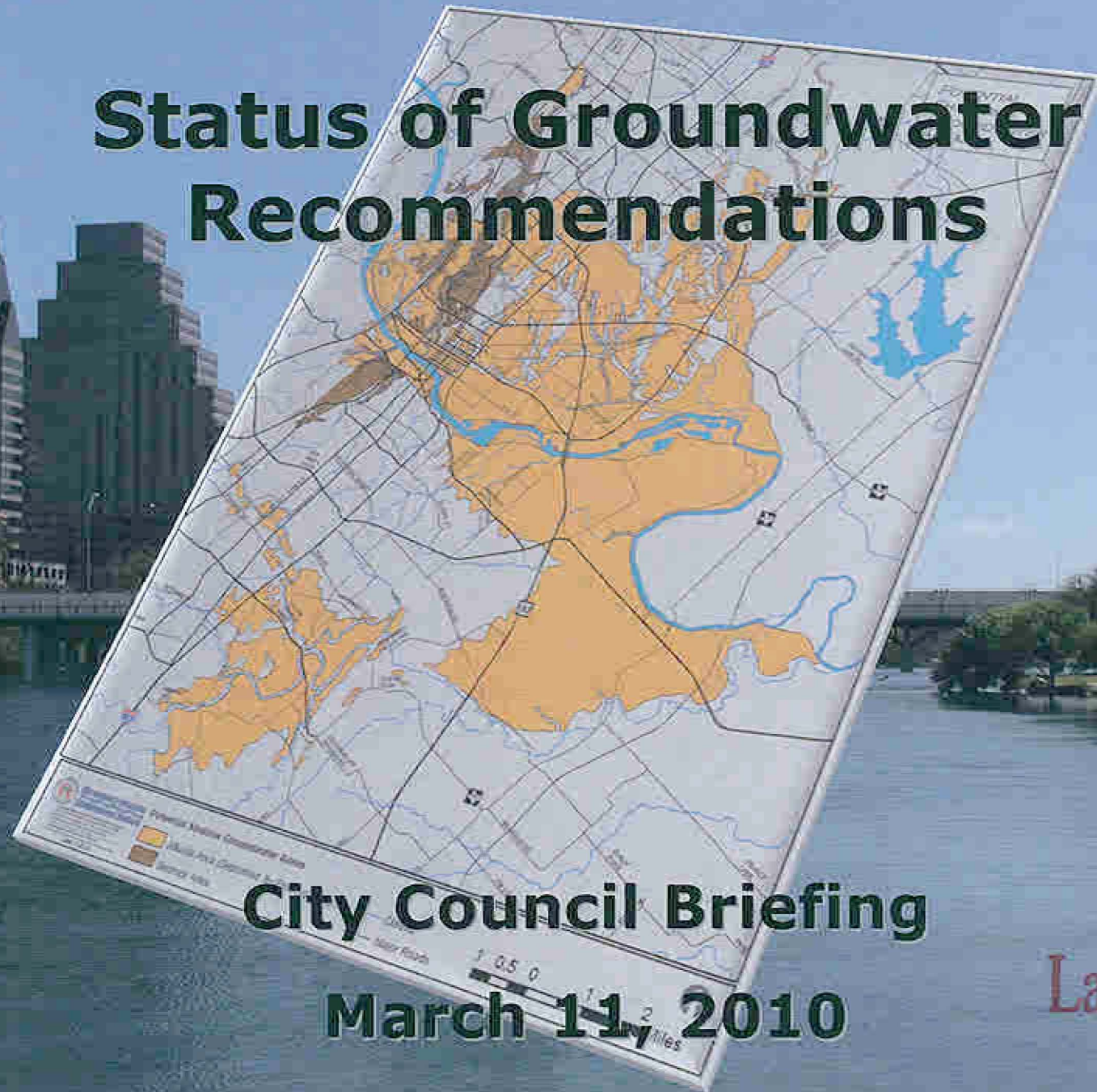


# Status of Groundwater Recommendations



**City Council Briefing**  
**March 11, 2010**

Late Backup

# Resolution 20080306-041

- In 2008, Council adopted a resolution in association with clarification of impervious cover exception for subsurface structures in urban core
- Directed City Manager to provide a report regarding underground structures and groundwater

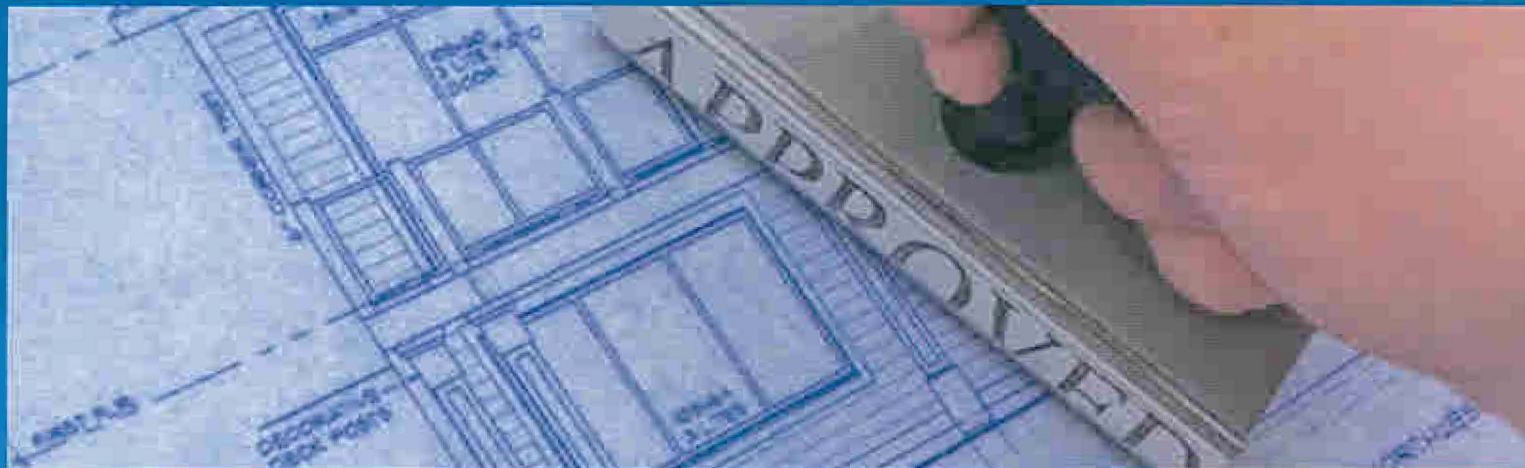


# Resolution 20090827-059

- In 2009, Council received the “Groundwater Characteristics and Challenges for Subsurface Structures in Austin’s Urban Core” report.
- Council adopted a 2<sup>nd</sup> resolution addressing the recommendations of the report and the Environmental Board
- The resolution included:
  - 9 recommendations
  - Required a 6-months status update

# Recommendation 1

- *Ensure groundwater discharge review by the One Stop Shop to provide more scrutiny of groundwater discharges from subsurface structures and to ensure that subsurface structures comply with drainage requirements.*





# One Stop Shop

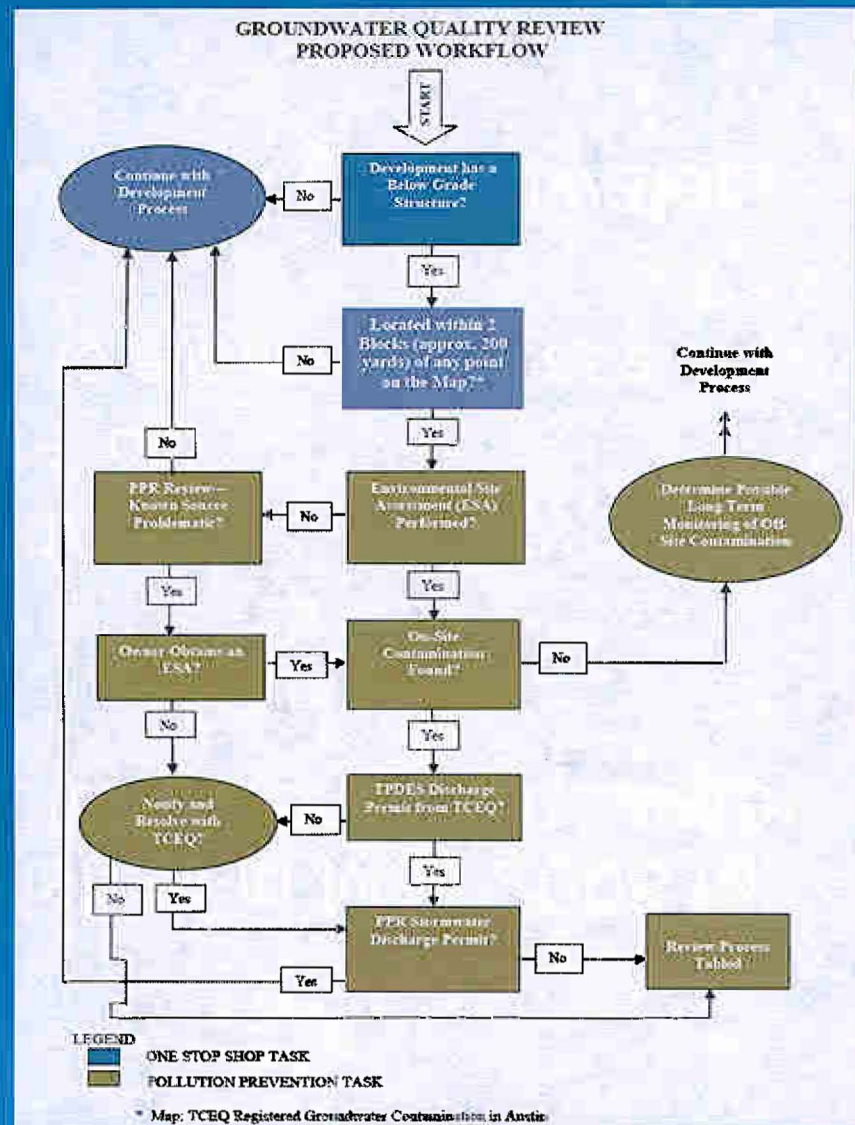
- New procedures established in May 2008 to review subsurface structures for groundwater discharges
- OSS reviewers now address
  - Downstream conveyance, or
  - Alternative methodology to eliminate release
- Additional training on potential groundwater contamination

# Groundwater Review Flowchart

➤ One-Stop-Shop and Watershed Protection working collaboratively

➤ Review process addresses

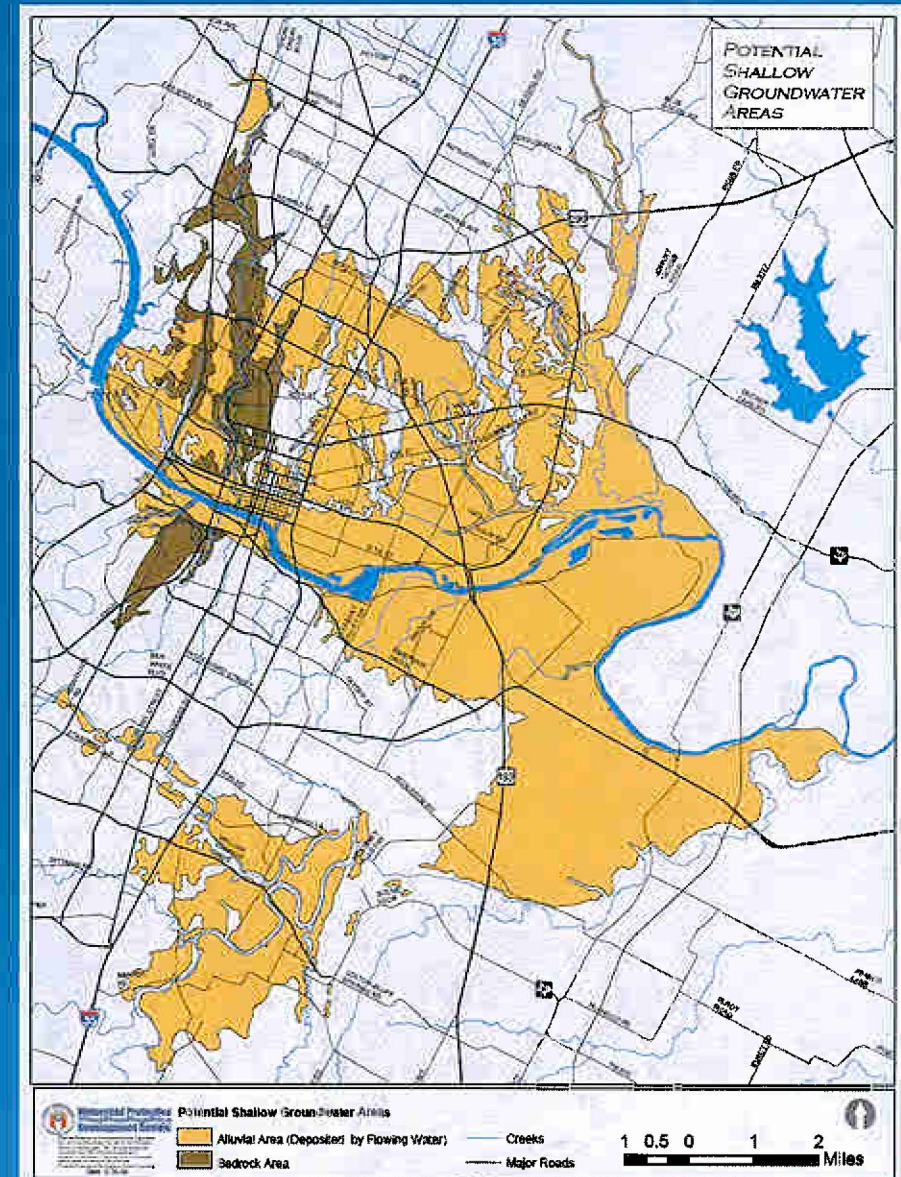
- Groundwater presence
- Groundwater quantity
- Groundwater quality
- Groundwater disposal





# Groundwater Map

- Shows location of alluvial groundwater areas in urban core
- Provides a tool for identification of potential groundwater areas





## Recommendation 2

- *Develop criteria requiring properties along stream corridors to recharge the base flow of the streams by means of linear French drains or infiltration trenches*

## Recommendation 3

- *Evaluate the feasibility of allowing groundwater infiltration as an alternative to discharges to storm sewers.*



# Groundwater Infiltration Study

- Evaluating benefits and feasibility
- Considerations
  - Appropriate conditions
  - Riparian areas
  - Available area
- Infiltration currently allowed
- Potential Code and Criteria amendments



## Recommendation 4

- *Continue to encourage water reuse and evaluate and make recommendations on additional incentives and assistance that would encourage reuse of groundwater discharges.*





# Groundwater Reuse

- Landscape irrigation
- Austin Water Utility
  - Water Conservation Program
    - Educational materials
    - Incentives
- Continuing to investigate additional reuse options



## **CASE STUDY:** **TARRYTOWN UNITED METHODIST CHURCH PARKING GARAGE**

### **Situation:**

Underground spring which began pouring water into excavation for a garage foundation.

### **Solution:**

Under the "Commercial Incentive Program," the City gave Tarrytown \$5,000 to install underground storage tanks to capture and reuse the ground water.





## Recommendation 5

- *Research and collate contaminated groundwater data from multiple known sources and produce/maintain a data tracking system and a map of known groundwater contaminated sites that will provide the necessary information on subsurface contamination and the need to conduct Environmental Site Assessments.*



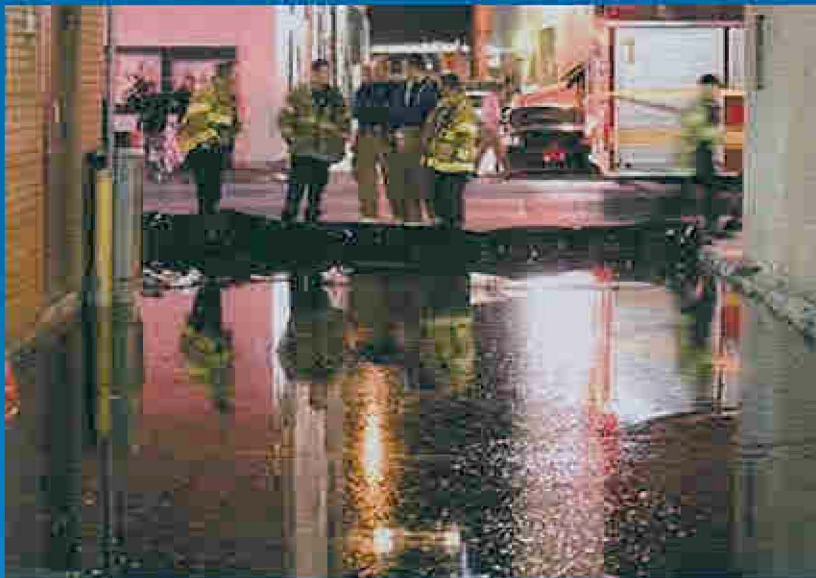
# Potential Contaminated Groundwater Map

- City-wide map showing approximate locations of contamination sites
  - GIS based
  - TCEQ historical data
- Tool to prevent contaminated groundwater discharges
- TCEQ permitting and cleanup
- Map will be updated regularly

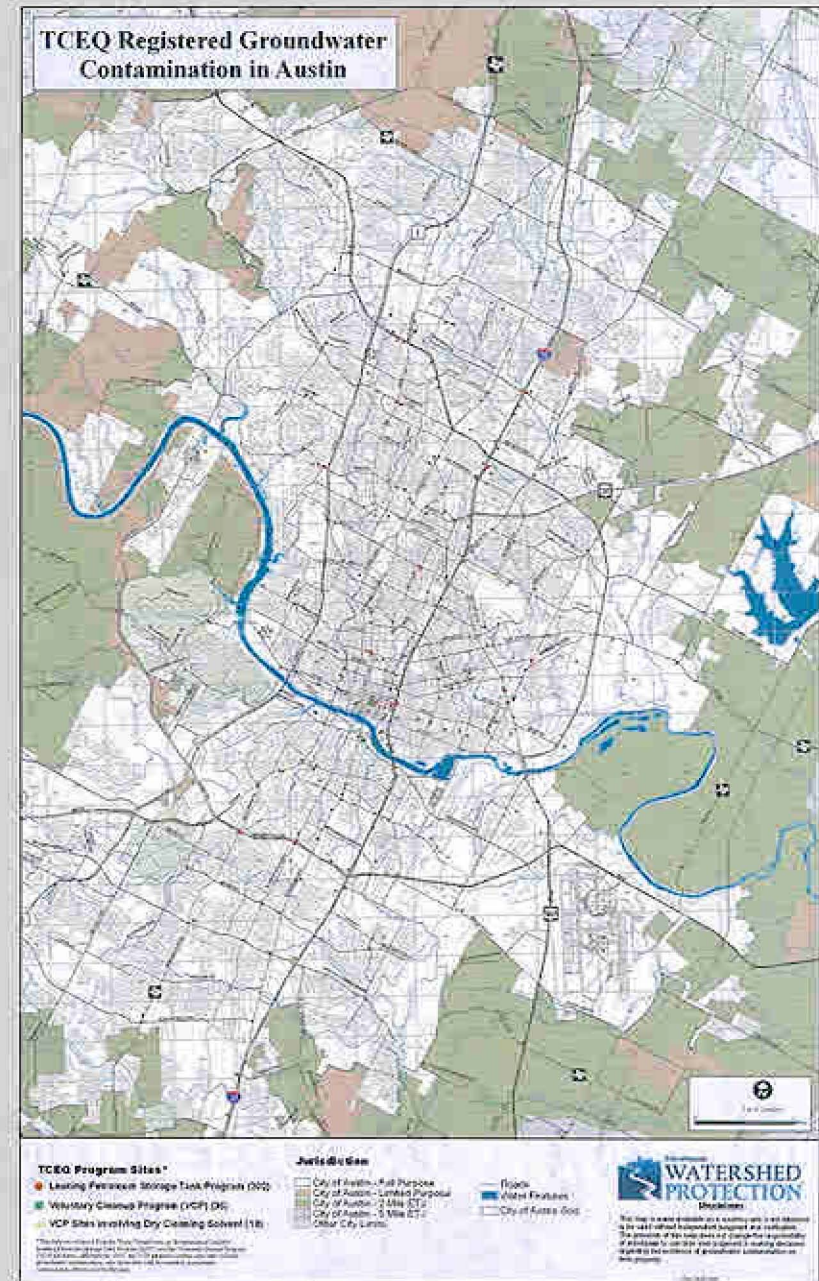


# Mapping of Contaminated Sites

Less than 400 sites Citywide  
(source: TCEQ)  
in addition to over 800 potential  
locations of underground tanks  
(source: historical Council  
minutes)



6th Street Oil Spill; January 2008





# **CASE STUDY:**

## **STRATUS BLOCK 21 GROUNDWATER CONTAMINATION**

### **Situation**

A release of perchlorethylene (PCE), allegedly leaked from a private sewer main



Stratus Block 21 Development

### **Solution**

A large carbon filtration system has been installed that will pretreat an estimated 18,000 gallons of groundwater per day



# Recommendation 6

- *Assess the current drainage fees and make a recommendation on potential increases to provide additional funding for drainage infrastructure improvements.*



# Drainage Fee Increase

- FY 2009-2010 Drainage Fee increase
  - Aging drainage infrastructure
  - Capital Improvement Projects (CIP)
- Funding Examples
  - Transit Oriented Development infrastructure
  - CIP developer participation fund



# Recommendation 7

- *Consider and make recommendations on the implementation of a drainage infrastructure impact fee that can prevent increases in taxes and encourage smart growth in geographically defined areas and help mitigate increased financial burdens from new development placing heightened stress on existing infrastructure*

# Recommendation 8

- *Study the prospect of employing Public Improvement Districts (PID) to implement a funding program, separate from potential impact fees, as a tool to assist in financing utility improvements that might be required to adequately address excess urban groundwater.*



## Recommendation 9

- *Investigate alternative funding and cost-sharing options, to facilitate storm sewer improvements ahead of redevelopment and densification of urban areas.*



# PID Feasibility

- 100% participation required
  - Challenging for non-contiguous redevelopment in urban, densely populated areas
- If feasible
  - City authorized funding of groundwater infrastructure



# Infrastructure Funding Options

## ➤ Regional Stormwater Mgmt. Program

- Fee-in-lieu of on-site improvements.
- Option to construct storm drain improvements
- Not an impact fee
- Participation enhances CIP project funding

## ➤ Community Facilities Contracts

- Implemented ahead of redevelopment and densification
- Subject to CIP purchasing requirements
- Potential to address groundwater issues.

# Other Potential Funding Options

- General Obligation Bonds
- Broker Participation Contract (Chapter 212)
- Impact Fees (Chapter 395)
- Chapter 212 or 395 requires City Ordinance.



# CASE STUDY:

## PEARL STREET GROUNDWATER DISCHARGE

### Situation

Two buildings frequently discharged groundwater to pavement

### Concerns

- Water pooled in the street
- Deteriorated pavement due to the presence of water
- Pedestrian nuisance
- Multiple complaints
- Lost opportunity for reuse



# PEARL STREET TODAY





# Next Steps

- Complete groundwater infiltration feasibility study and implement findings.
- Continue to investigate opportunities for groundwater reuse.
- Develop storm water infrastructure funding strategies for redeveloping areas.



