Poquessing Creek Watershed

ACT 167

STORM WATER MANAGEMENT PLAN

Watershed Plan Advisory Committee (WPAC) Meeting No. 2

September 29, 2010

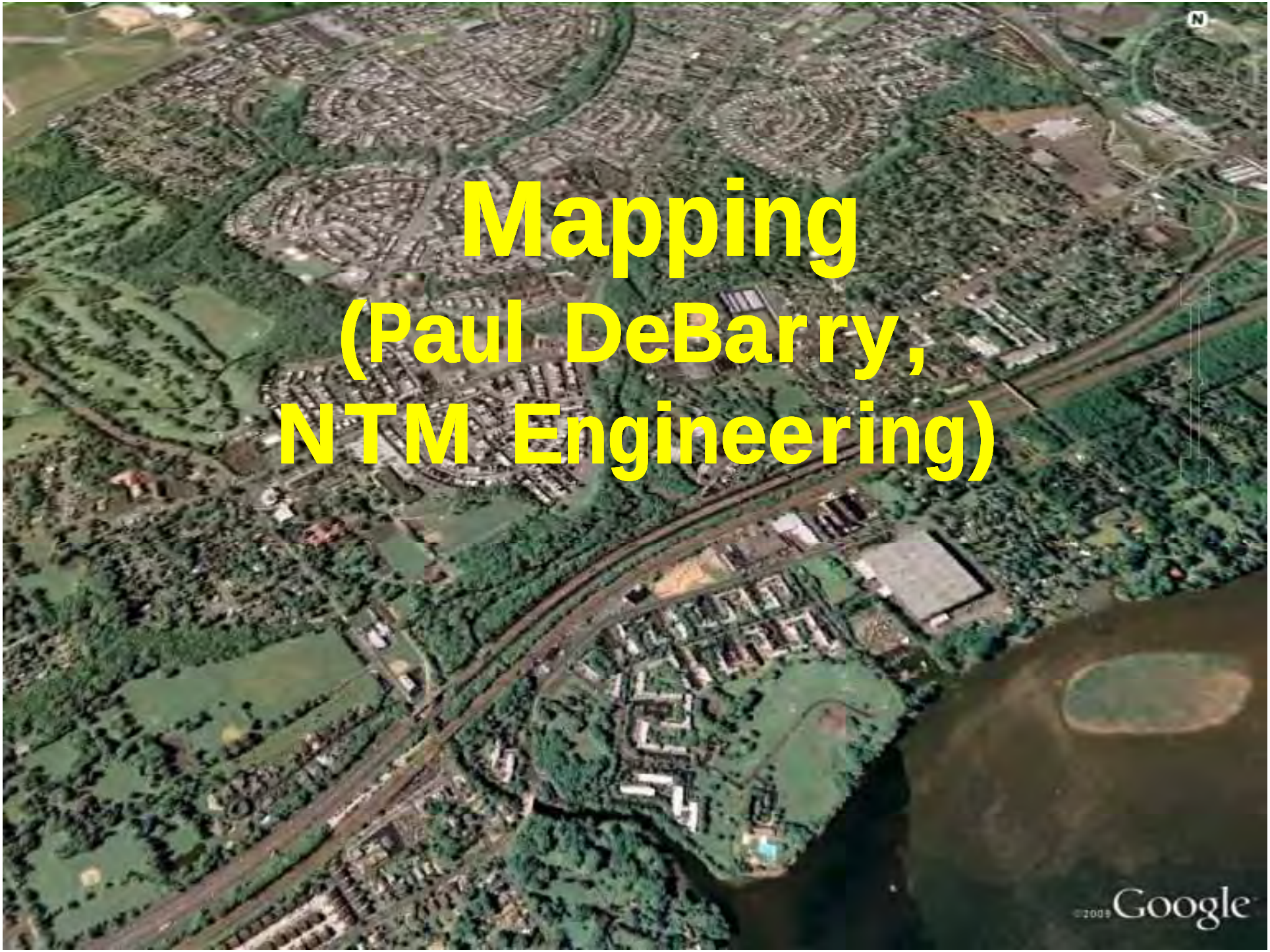
AGENDA

Watershed Plan Advisory Committee (WPAC) Meeting No. 2.
Status Meeting
September 29, 2010
10:00 A.M.
Glen Foerd Mansion,
Philadelphia, PA

- Attendee Introductions (Joanne Dahme, PWD)
- Partnership Updates (Paul Racette, PEC)
- Mapping (Paul DeBarry, NTM Engineering)
- Municipal Data Collection Forms (Paul DeBarry, NTM Engineering)
- Problem Areas (Paul DeBarry, NTM Engineering)
- Modeling (James Knighton, PWD)
- Coordination with the Pennypack Act 167 Plan (Jeff Featherstone, Temple)
- Sample Act 167 SW Ordinance (Tacony) Distribution & Highlights (Paul DeBarry, NTM Engineering)
- Next Steps (Paul DeBarry, NTM Engineering)

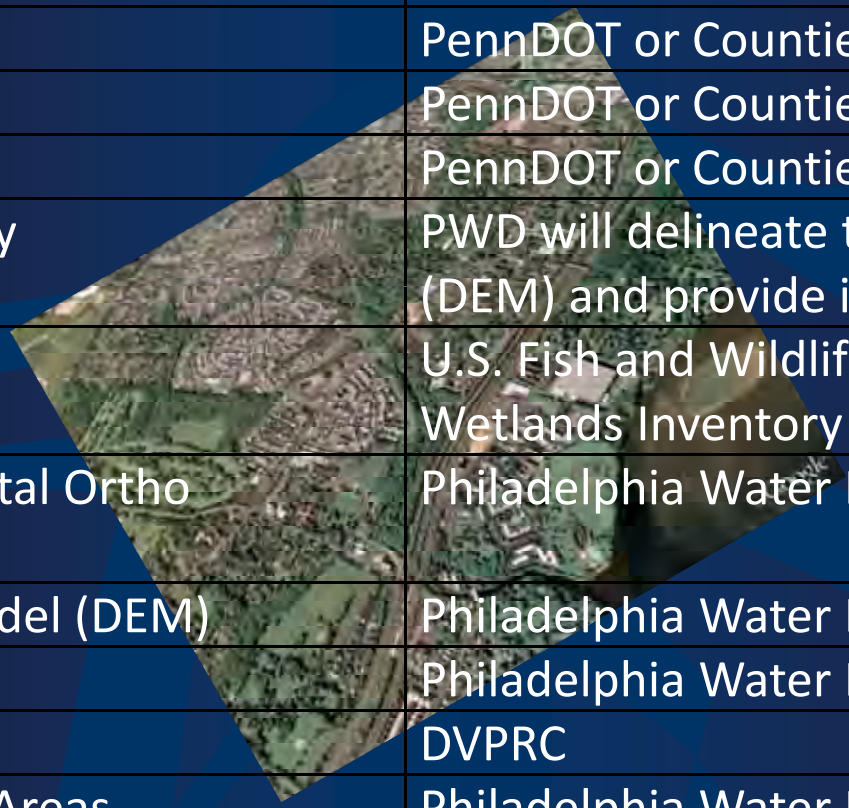
Welcome & Introductions

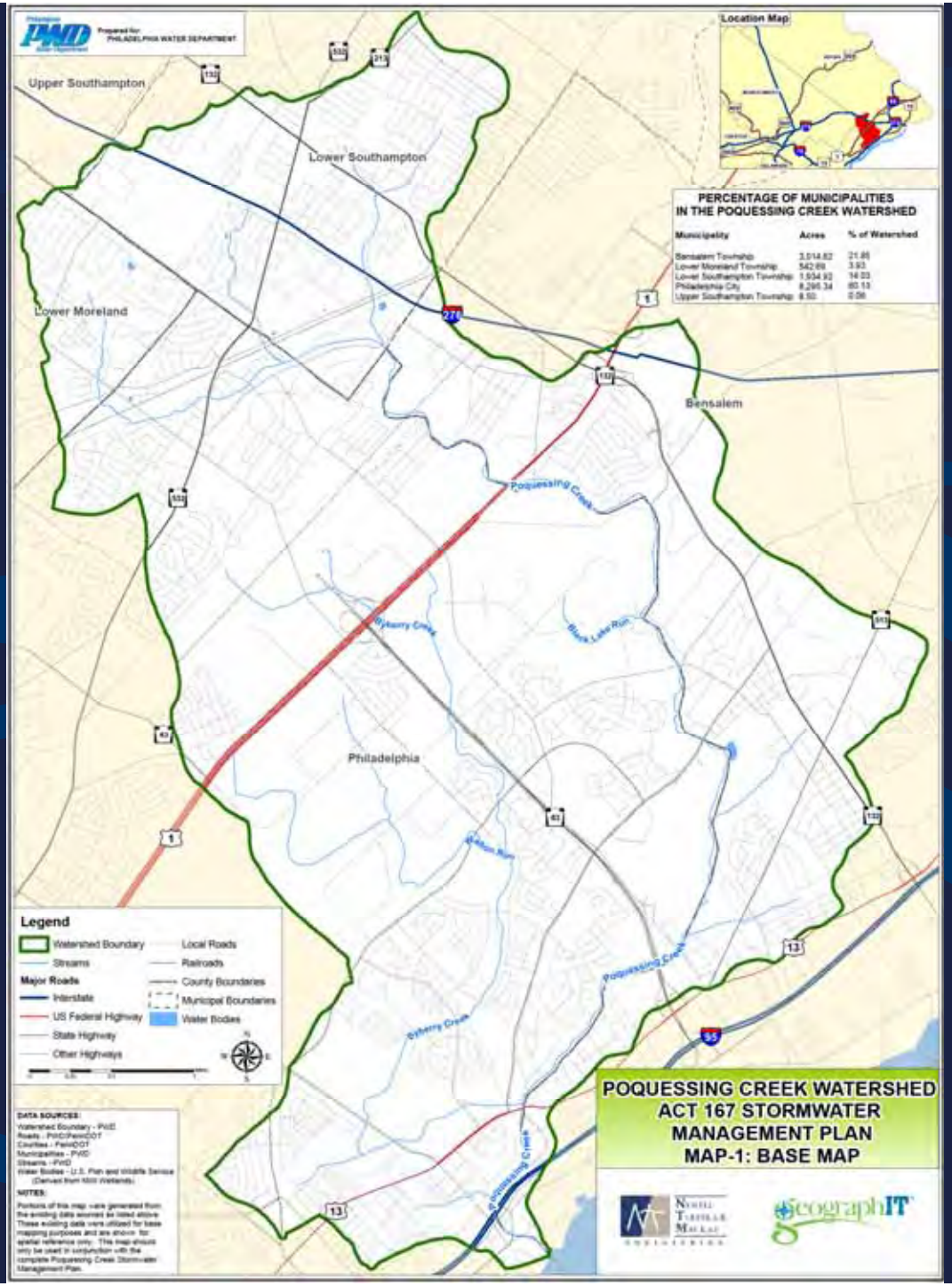
Partnership Updates
(Paul Racette, PEC)

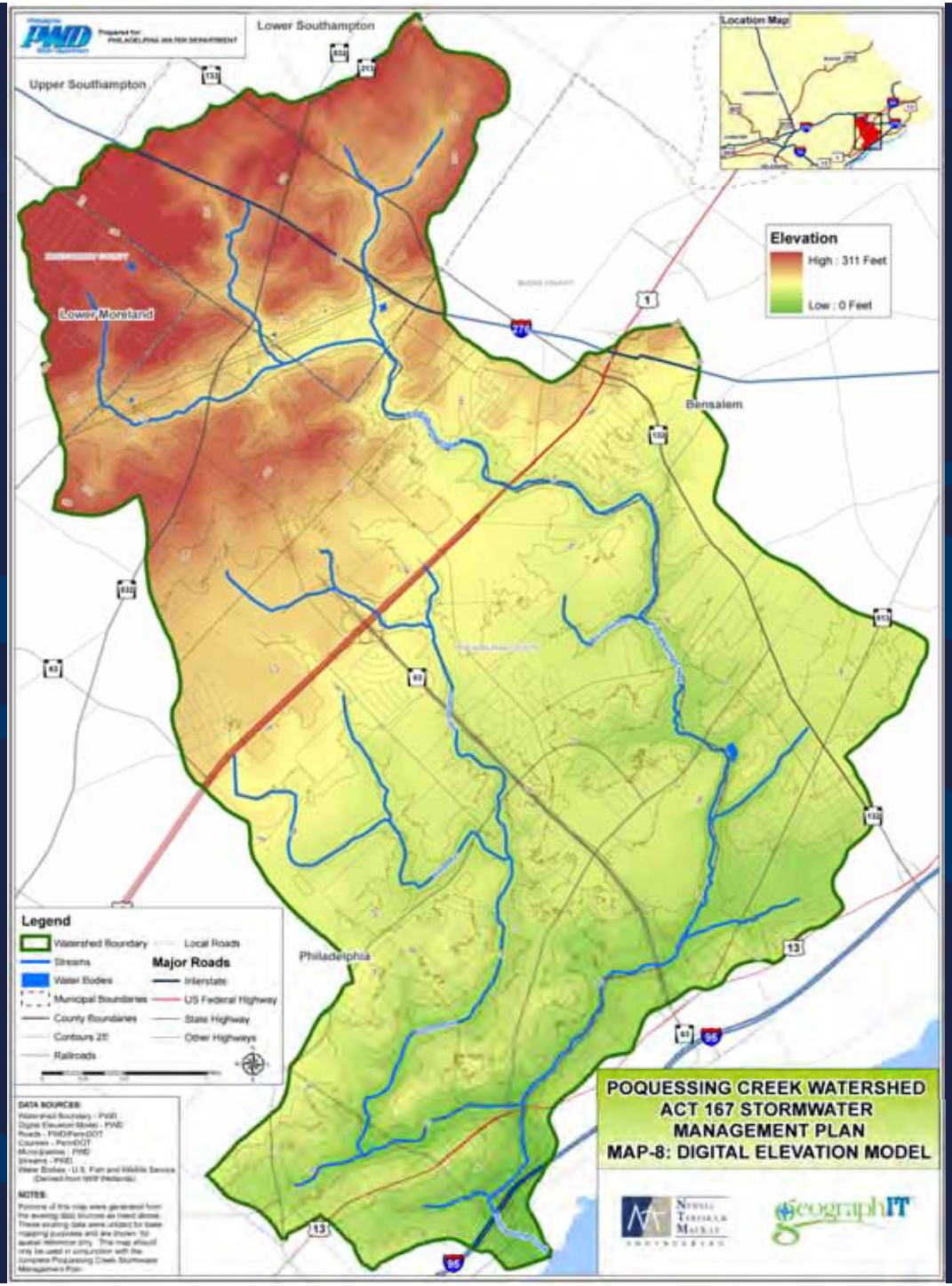

Mapping
(Paul DeBarry,
NTM Engineering)
©2009 Google

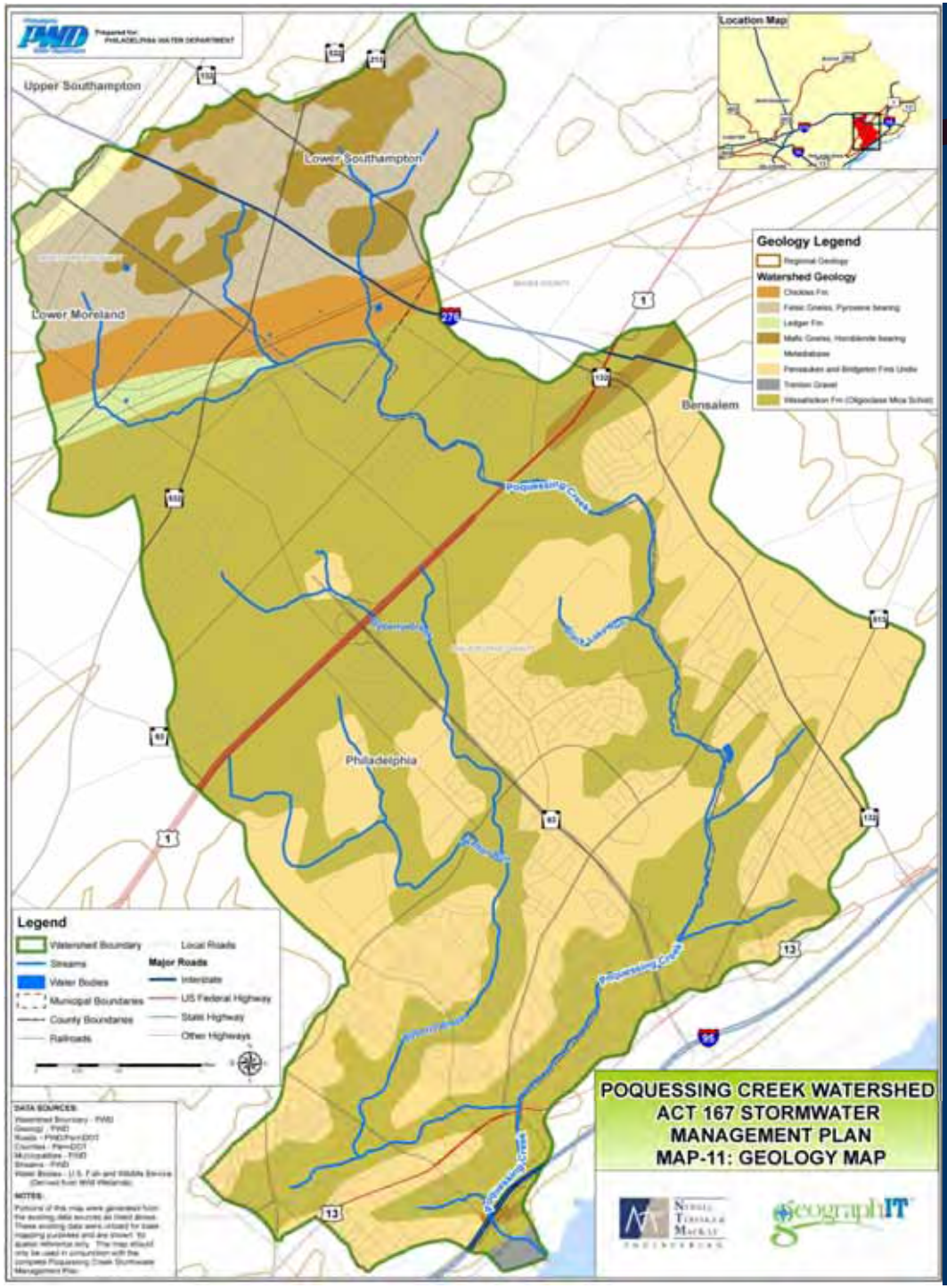
Task 2 – GIS Mapping

GIS Data	Likely Source
County and municipal boundaries	PennDOT or Counties
Road centerlines	PennDOT or Counties
Streams	PennDOT or Counties
Water bodies	PennDOT or Counties
Watershed boundary	PWD will delineate the watershed from (DEM) and provide it to NTM.
Wetlands	U.S. Fish and Wildlife Service National Wetlands Inventory (NWI)
High Resolution Digital Ortho Photographs	Philadelphia Water Dept. or DVPRC
Digital Elevation Model (DEM)	Philadelphia Water Dept.
Existing Land Use	Philadelphia Water Dept.
Future Land Use	DVPRC
Impervious Surface Areas	Philadelphia Water Dept.
Hydrologic Soil Groups	Philadelphia Water Dept.
Geology	Philadelphia Water Dept.
Obstructions	Philadelphia Water Dept.
Floodplains (FEMA Q3)	PASDA




Prepared for:
PHILADELPHIA WATER DEPARTMENT
Location Map
Upper Southampton
Lower Southampton
Lower Moreland
Bensalem
Philadelphia
Poquessing Creek
Byberry Creek
Blues Lake Run
Rhawn Run
PERCENTAGE OF MUNICIPALITIES
IN THE POQUESSING CREEK WATERSHED
Municipality
Acres
% of Watershed
Bensalem Township 3,514.82 21.46
Lower Moreland Township 542.69 3.93
Lower Southampton Township 1,934.92 14.03
Philadelphia City 8,296.34 60.13
Upper Southampton Township 8.50 0.06
Legend
Watershed Boundary
Streams
Major Roads
Interstate
US Federal Highway
State Highway
Other Highways
Local Roads
Railroads
County Boundaries
Municipal Boundaries
Water Bodies
DATA SOURCES:
NOTES:
POQUESSING CREEK WATERSHED
ACT 167 STORMWATER
MANAGEMENT PLAN
MAP-1: BASE MAP
GeographIT


Lower Southampton
Upper Southampton
Location Map
Elevation
High : 311 Feet
Low : 0 Feet
Lower Moreland
Bensalem
Philadelphia
Legend
Watershed Boundary
Streams
Water Bodies
Municipal Boundaries
County Boundaries
Contours 2ft
Railroads
Local Roads
Major Roads
Interstate
US Federal Highway
State Highway
Other Highways
DATA SOURCES:
NOTES:
POQUESSING CREEK WATERSHED
ACT 167 STORMWATER
MANAGEMENT PLAN
MAP-8: DIGITAL ELEVATION MODEL
geographIT

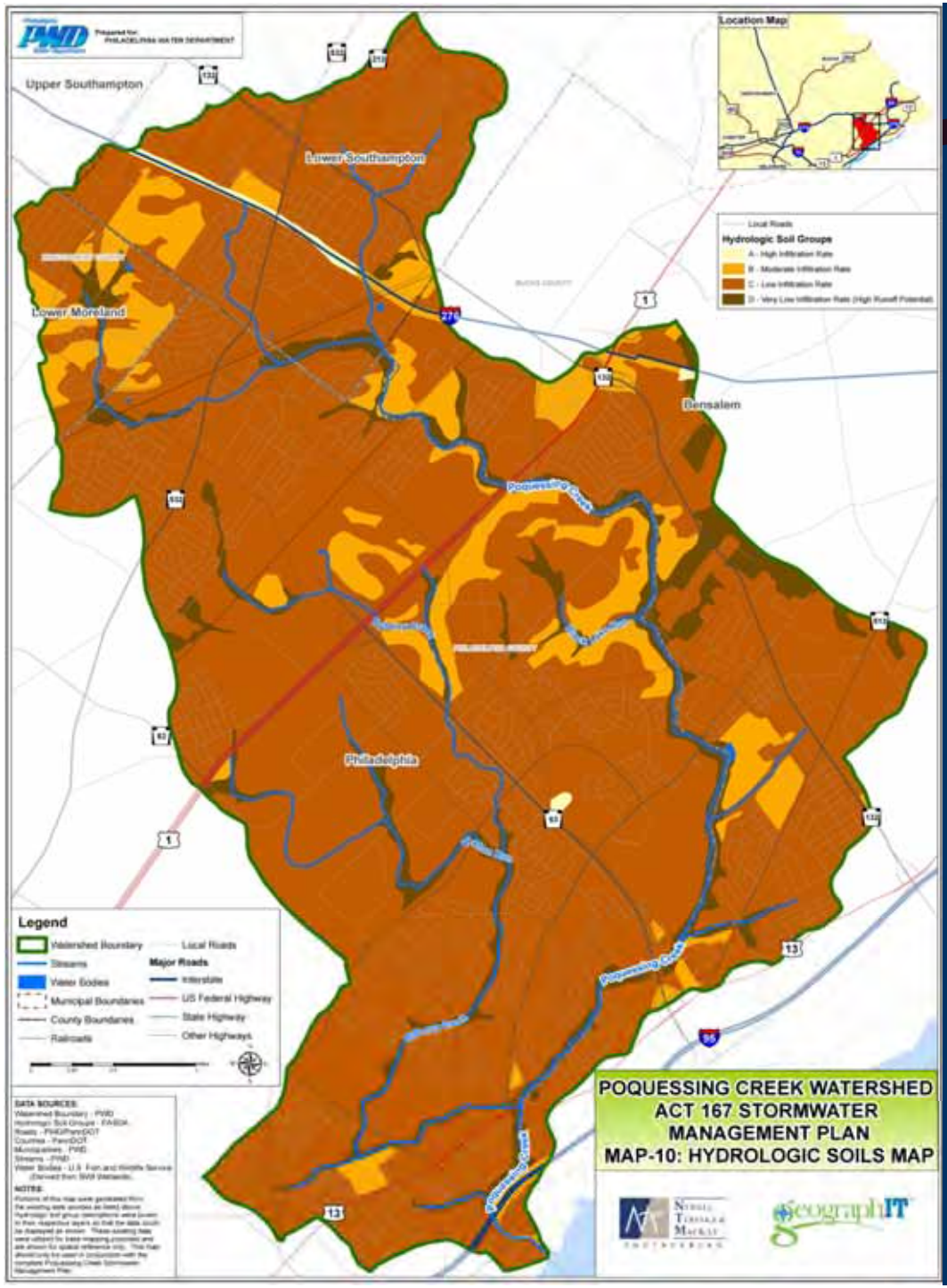


Geology Legend

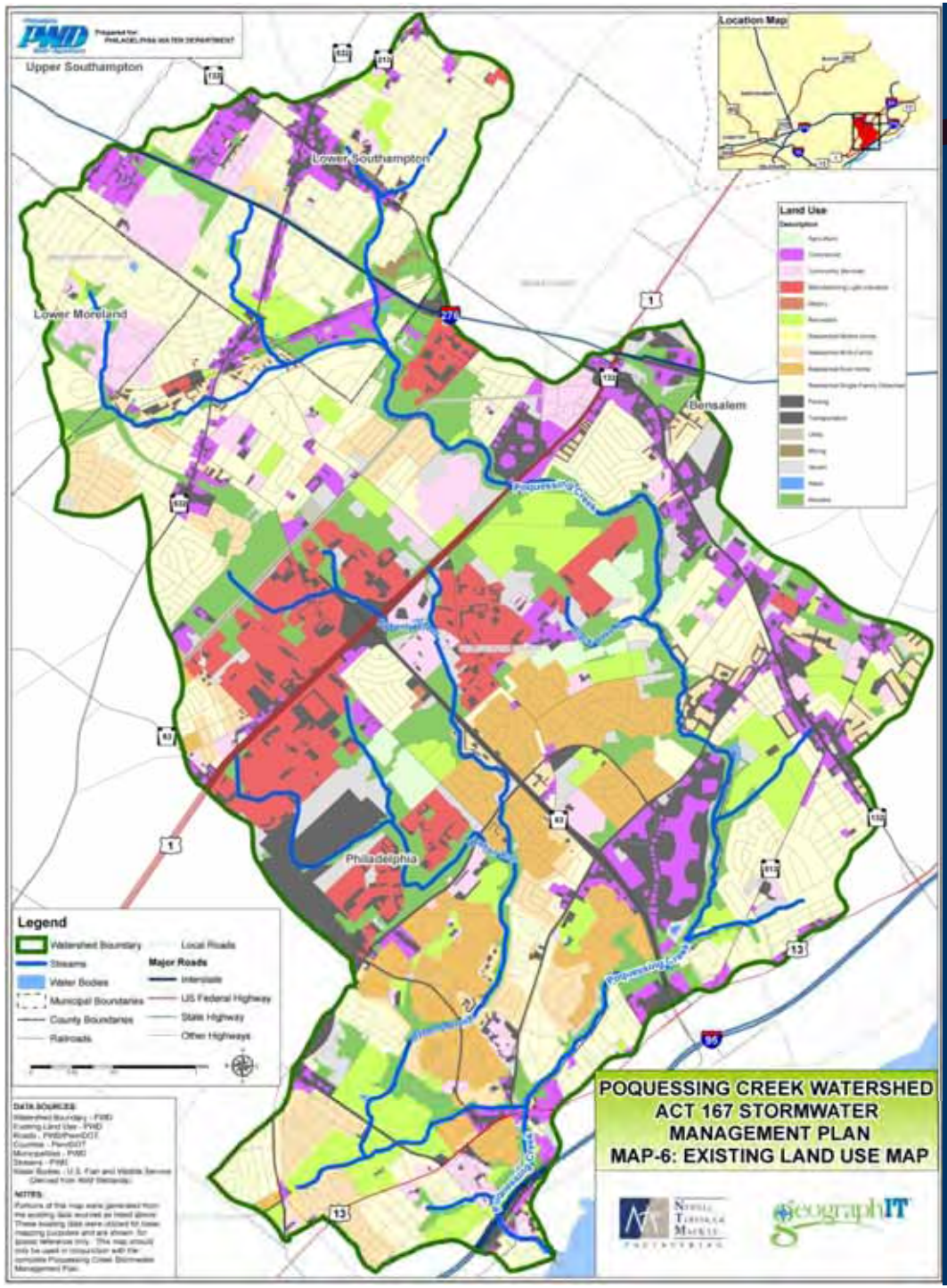
Regional Geology

Watershed Geology

- Chickies Fm
- Felsic Gneiss, Pyroxene bearing
- Ledger Fm
- Mafic Gneiss, Hornblende bearing
- Metadiabase
- Pensauken and Bridgeton Fms Undiv
- Trenton Gravel
- Wissahickon Fm (Oligioclase Mica Schist)


Location Map
Upper Southampton
Lower Southampton
Lower Moreland
Bensalem
Philadelphia
Poquessing Creek
Local Roads
Hydrologic Soil Groups
A - High Infiltration Rate
B - Moderate Infiltration Rate
C - Low Infiltration Rate
D - Very Low Infiltration Rate (High Runoff Potential)
Legend
Watershed Boundary
Streams
Water Bodies
Municipal Boundaries
County Boundaries
Railroads
Major Roads
Interstate
US Federal Highway
State Highway
Other Highways
DATA SOURCES:
NOTES:
POQUESSING CREEK WATERSHED
ACT 167 STORMWATER
MANAGEMENT PLAN
MAP-10: HYDROLOGIC SOILS MAP

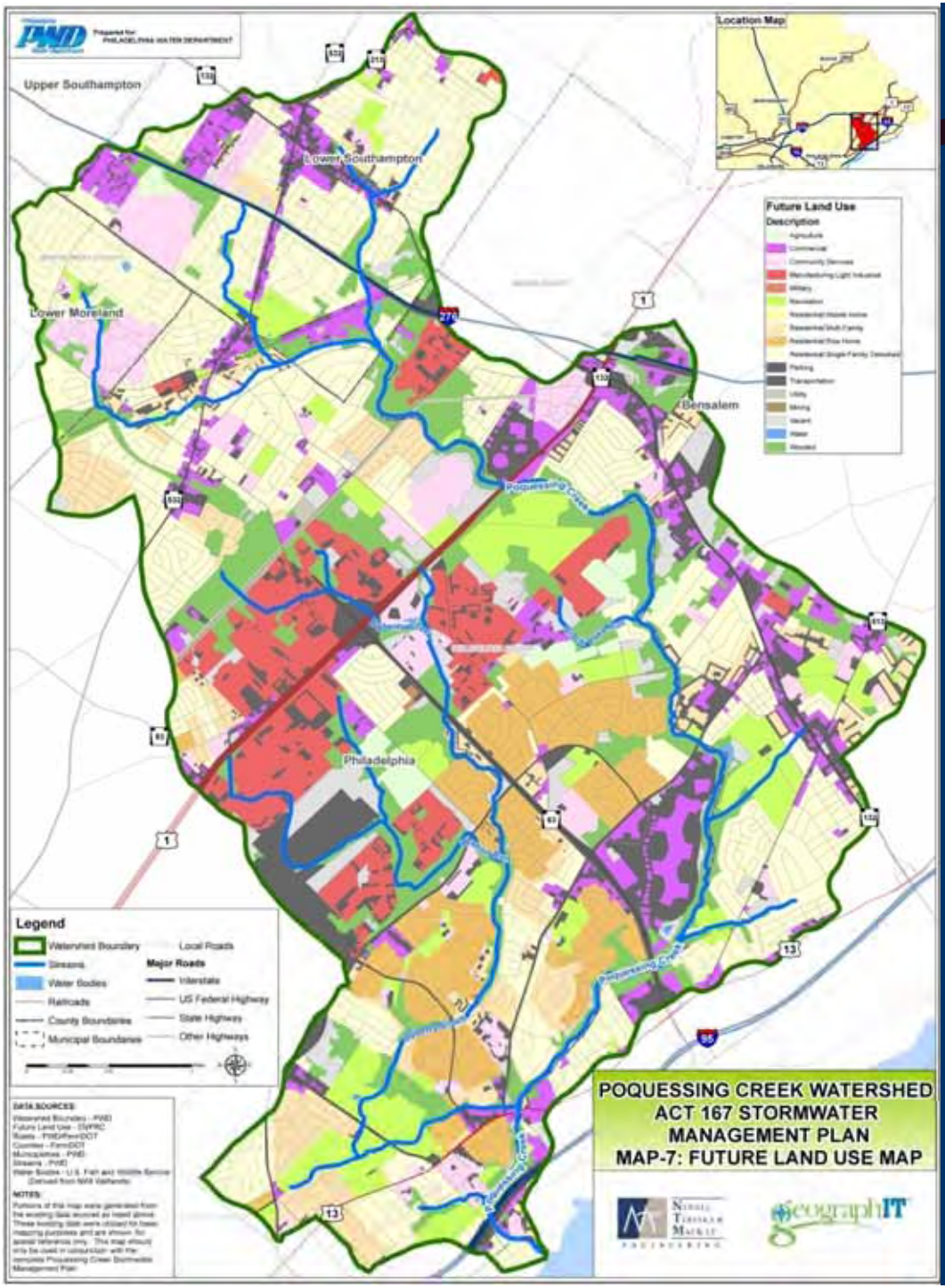

Local Roads
Hydrologic Soil Groups
A - High Infiltration Rate
B - Moderate Infiltration Rate
C - Low Infiltration Rate
D - Very Low Infiltration Rate (High Runoff Potential)



Land Use

Description

- Agriculture
- Commercial
- Community Services
- Manufacturing:Light Industrial
- Military
- Recreation
- Residential:Mobile Home
- Residential:Multi-Family
- Residential:Row Home
- Residential:Single-Family Detached
- Parking
- Transportation
- Utility
- Mining
- Vacant
- Water
- Wooded

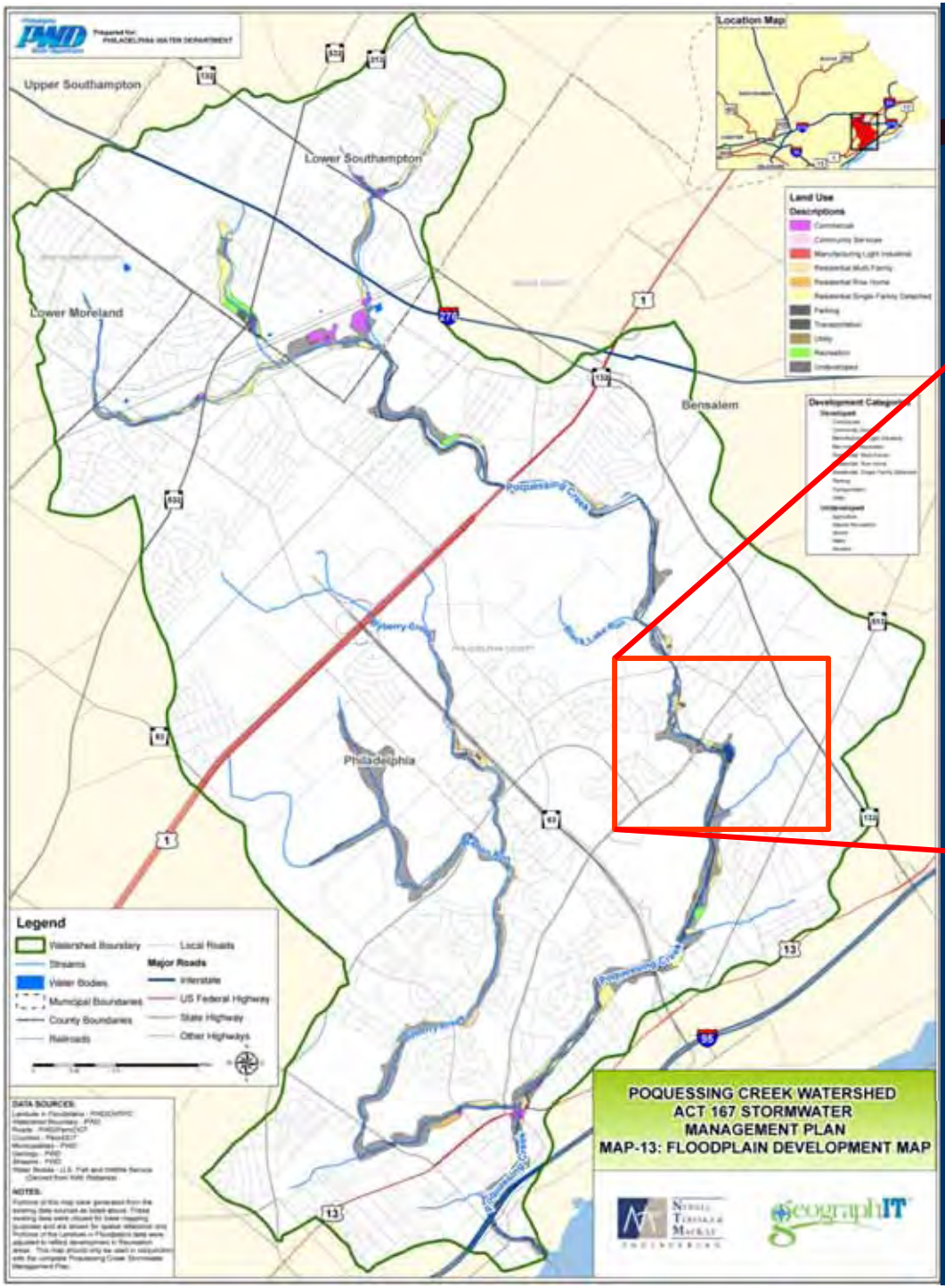


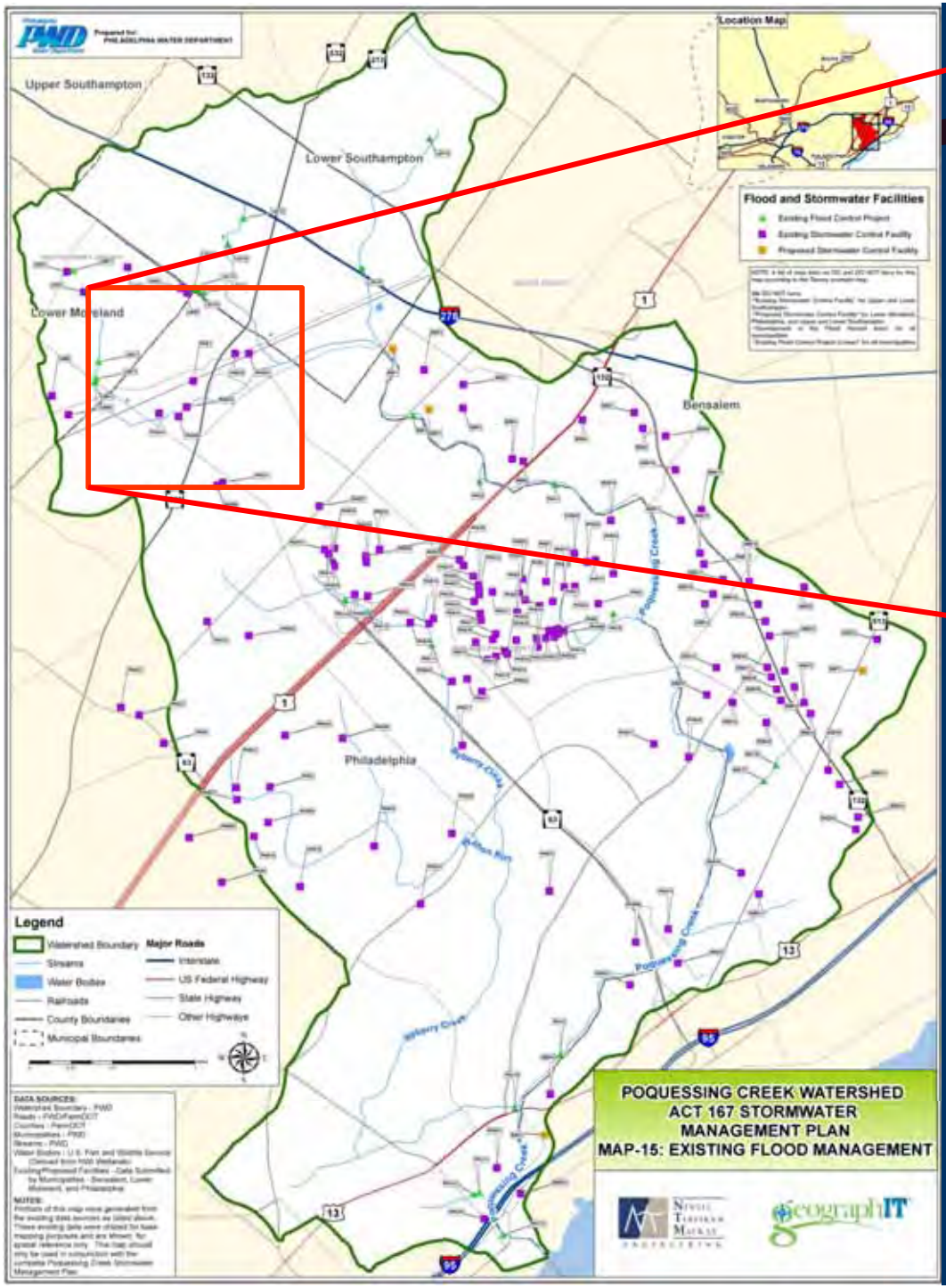
Future Land Use

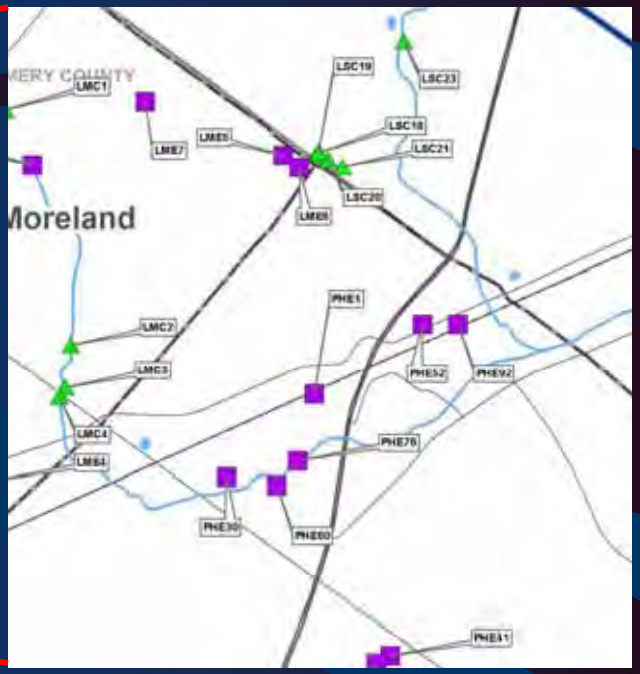
Description

- Agriculture
- Commercial
- Community Services
- Manufacturing:Light Industrial
- Military
- Recreation
- Residential:Mobile Home
- Residential:Multi-Family
- Residential:Row Home
- Residential:Single-Family Detached
- Parking
- Transportation
- Utility
- Mining
- Vacant
- Water
- Wooded

Development in Floodplains







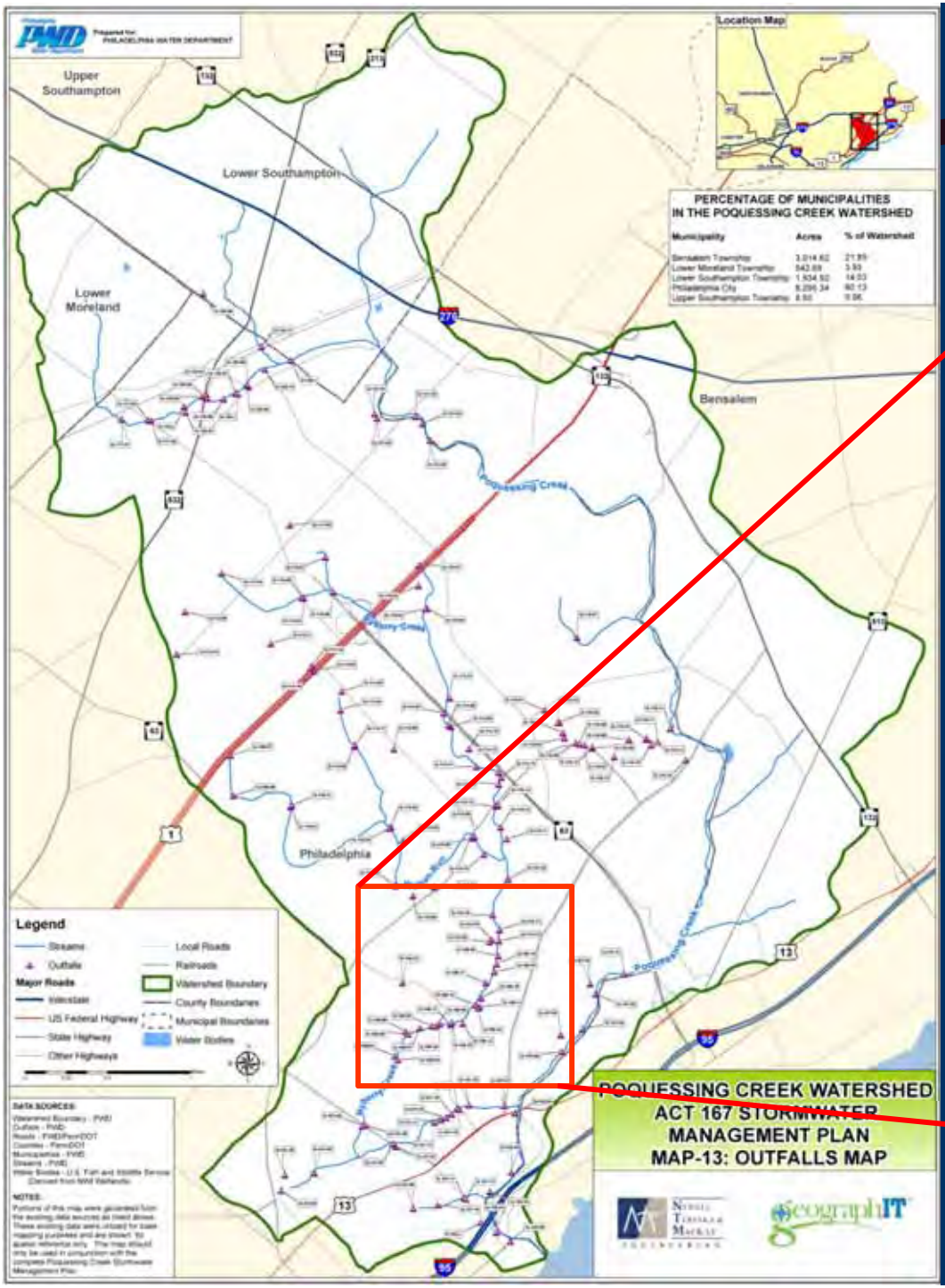
Flood and Stormwater Facilities

- Existing Flood Control Project
- Existing Stormwater Control Facility
- Proposed Stormwater Control Facility

NOTE: A list of map data we DO and DO NOT have for this map according to the Tacony example map:

We DO NOT have:
-"Existing Stormwater Control Facility" for Upper and Lower Southampton
-"Proposed Stormwater Control Facility" for Lower Moreland, Philadelphia, and Upper and Lower Southampton
-"Development in the Flood Hazard Area" for all municipalities
-"Existing Flood Control Project (Linear)" for all municipalities

Outfalls


Upper Southampton
Lower Southampton
Lower Moreland
Bensalem
Philadelphia
Location Map
PERCENTAGE OF MUNICIPALITIES IN THE POQUESSING CREEK WATERSHED
Municipality
Acres
% of Watershed
Legend
Streams
Outfalls
Major Roads
Interstate
US Federal Highway
State Highway
Other Highways
Local Roads
Railroads
Watershed Boundary
County Boundaries
Municipal Boundaries
Water Bodies
POQUESSING CREEK WATERSHED
ACT 167 STORMWATER
MANAGEMENT PLAN
MAP-13: OUTFALLS MAP


Walton Run
Q-110-10
Q-110-15
Q-110-07
Q-110-06
Q-110-16
Q-110-17
Q-110-19
Q-110-18
Q-110-20
Q-106-20
Q-106-19
Q-106-21
Q-106-18
Q-106-17
Q-106-16
Q-106-13
Q-106-14
Q-106-11
Q-106-09
Q-106-08
Q-107-05
Q-106-15
Q-106-12
Q-106-07
Q-106-10
Q-106-22
Q-106-04
Q-107-06

Data Collection Forms

Municipal Participation

–

(Paul DeBarry, NTM)

Data collection and analysis

- Past reports / studies
- Detention basins,
- Municipal data collection,
- Obstructions
- Problem areas

Form	Symbol	Description	Types of Examples	Sources of Information
A		Stormwater Problem Areas	Flooding, Drainage, Erosion/Sedimentation	Existing studies or reports, Township Documentation, Personal memory, Township engineer
B		Obstructions	Bridges. Culverts, Fill, Structures	Owner or structure, township files, subdivision applications, roadmaster, township engineer
C		Existing Flood Control Projects	Channel excavation, rip-rap, floodwalls, etc.	Township records, township engineer, owner of facilitiy
D		Proposed Flood Control Projects	Channel excavation, rip-rap, floodwalls, etc.	Township records, township engineer, owner of facilitiy
E		Existing Stormwater Control Facilities	Detention basins, recharge basins, roof-top stroage	Subdivision files, township engineer, owner of facility
F		Proposed Stormwater Control Facilities	Detention basins, recharge basins, roof-top stroage	Subdivision files, township engineer, owner of facility
G		Existing Stormwater Collection Systems	Storm sewers, man-made channels, diversions	Existing plans, township engineer, owner of system
H		Proposed Stormwater Collection Systen	Storm sewers, man-made channels,	Existing plans, township engineer, owner of

Problem Area Survey

FORM A - STORM WATER PROBLEM AREAS SHEET_____ OF _____

WATERSHED	FORM COMPLETED BY	Before Filling Out Form, See Instructions On Back
Name:	Name:	
Municipality:	Telephone:	For County Use: A-1
County:	Date:	

MAP NO. *	A-	A-	A-	A-	A-	A-	A-	A-	A-	A-	A-	A-
Types of Storm Water Problems												
Flooding												
Accelerated Erosion												
Sedimentation												
Landslide												
Groundwater												
Water Pollution												
Other (Explain)												
Explanation Line No. (On Back)												
Cause (s)												
Storm Water Volume												
Storm Water Velocity												
Storm Water Direction												
Water Obstruction												
Other (Explain)												
Explanation Line No. (On Back)												

Frequency												
Year of Most Recent Occurrence												
Year of First Known Occurrence												
Occurs More Than Once Per Year												
Occurs Less Than Once Per Year												
Only During Major rainfall events (e.g. Hurricane)												
Total occurances in 2003												
Duration (If Applicable)												
Less Than 1 Day												
1 Day + (Enter Days)												
Damage												
Loss of Life/Personal injuries												
Private Property: Damage to Structures (houses/businesses)												
Major Road Closures												
Sinkhole Development												
Minor Road Closures												
Utilities/Infastructure Damage												
Number of Properties Affected												
10 or less												
more than 10												
Public Facilities (schools, parks etc.)												
Solutions												
Planned or Underway												
Explanation(Line No.)												

INSTRUCTIONS

Begin with A.1 as the first map number to identify the first' storm water problem area. Illustrate the defined problem on the watershed map provided, and identify it with its map number.

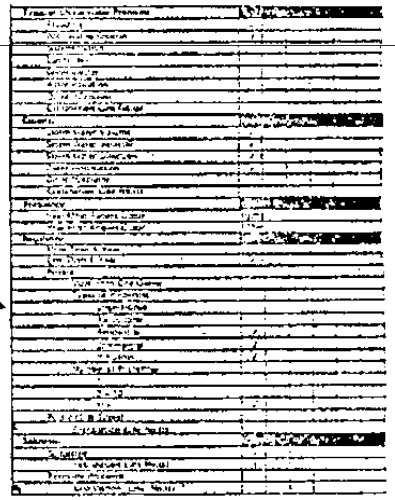
For each storm water problem area within your municipality, enter the map identification number at the head of the column. Describe the problem by placing a check (4 in the appropriate blocks of the column under this map identification number.

When an additional explanation is required, write the line number(s) used in the column marked "Explanation Line No. (s)".Example 1, 2-3, etc.

If storm water problem occurred during and after Agnes, describe the frequency of the problem after Agnes.

Use the explanation lines to list the types of public property damages ,e.g.roadways, hospitals, etc.

Enter the line no. (s) used to list the map ID no. (s) for the proposed facilities.



Definitions

Storm Water Problem Area
An area that defines the farthest extent of a storm water problem, including any area that experiences property damage, inundation, accelerated erosion, surface water pollution, groundwater pollution, landslides, or any other problem as a result of storm water runoff.

Groundwater
Water in the ground below the water table.

Accelerated Erosion
The removal of the surface of the land through the combined action of man's activities and the natural processes at a rate greater than would occur because of the natural process alone.

Sedimentation
The process by which soil or other surface materials, transported by surface water, is deposited on stream bottoms.

Water Obstruction
Any dike, bridge, culvert, wall, wingwall, fill, pier, wharf, embankment, abutment, or other structure located in, along, across, or projecting into any watercourse, floodway, or body of water.

EXPLANATION LINES (continued)

FORM J - WATER QUALITY PROBLEM AREAS

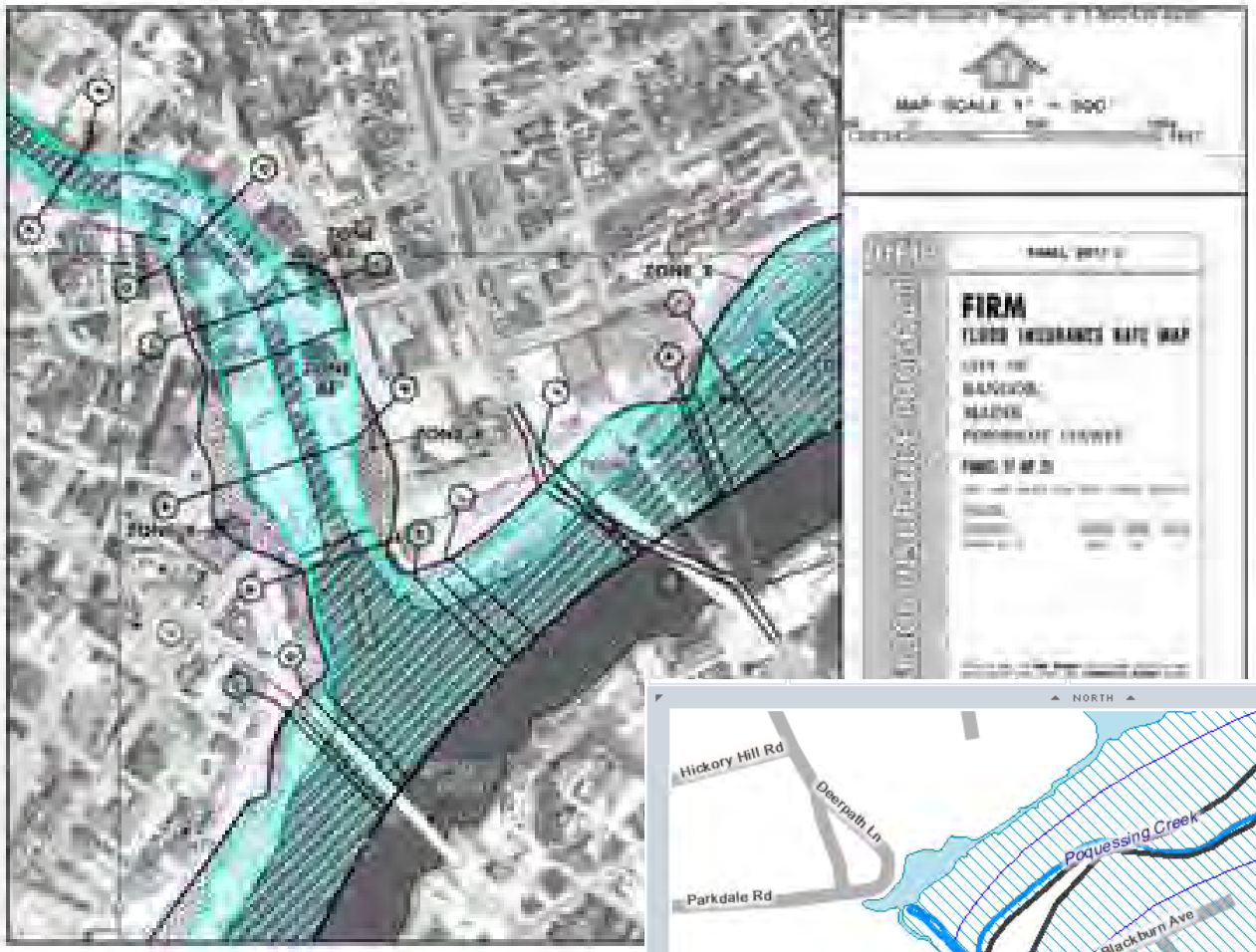
Dec-81		WATER QUALITY PROBLEM AREAS FORM J. SHEET_____ OF _____											
WATERSHED					FORM COMPLETED BY								
Name:					Name:								
Municipality:					Telephone:								
County:					Date:								
SITE		J-	J-	J-	J-	J-	J-	J-	J-	J-	J-	J-	J-
Types of Water Quality Problems													
High Community Tolerence													
High Temperature													
High Turbidity													
Hydrocarbon Pollution													
Low Community Diversity													
Low Dissolved Oxygen													
Low pH													
Nutrient Enrichment													
Poor Habitat													
Other/Explanation Line No.													
Potential Cause(s)													
Agriculture													
Construction Site													
Erosion													
Lake Discharge													
STP Outfall													
Other/Explanation Line No.													
Frequency													
Year Most Recent Occurence													
Year First Known Occurence													
Source of Information													

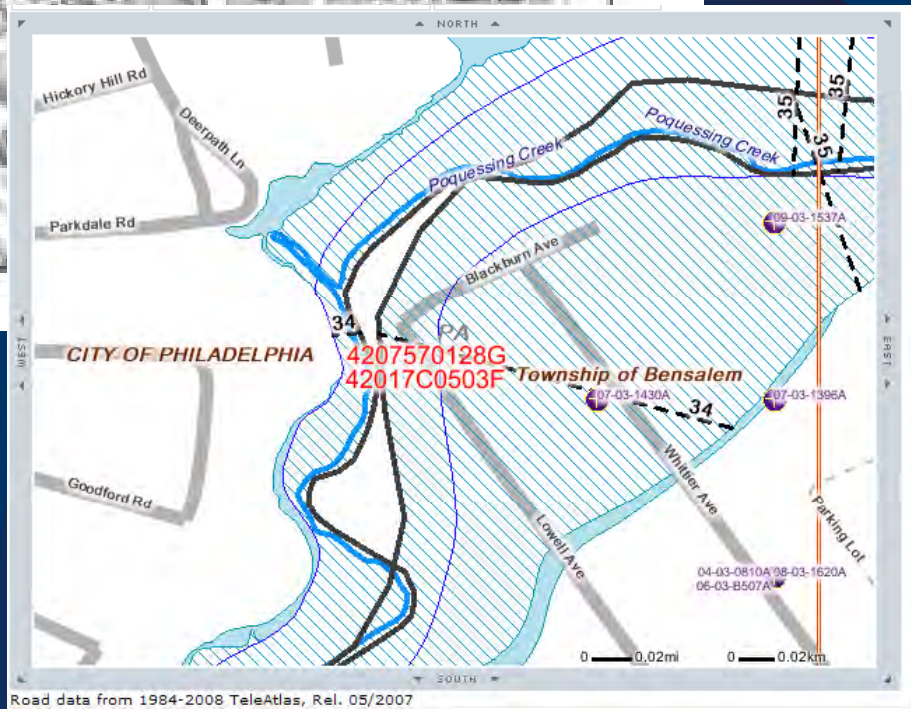
J-1

Problems in the Watershed

- Floodplain encroachment
- Undersized storm drains
- Undersized stream channels
- Erosion/Sedimentation
- Water Quality/Pollution
- Existing Ordinances
- Others ????

DETERMINE LOCAL VERSUS REGIONAL PROBLEMS AND PROPOSED SOLUTIONS





Road data from 1984-2008 TeleAtlas, Rel. 05/2007