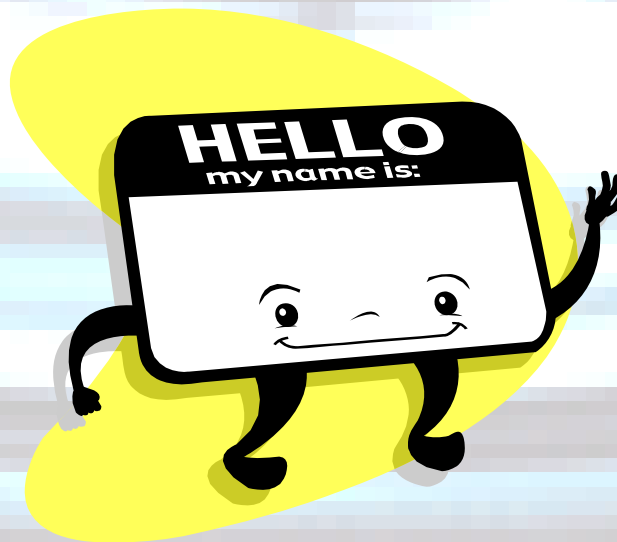


City of Cambridge Stormwater Management Program

Phase II NPDES
Stormwater Management Program
Public Meeting
March 28, 2007

Introductions

- Catherine Daly Woodbury, Cambridge DPW, Stormwater Project Manager
Cwoodbury@cambridgema.gov (617) 349.4818
- Owen O'Riordan, City Engineer, Assistant Commissioner for Engineering
- James Wilcox, Director of Engineering Services



Agenda

- Why are we here – NPDES *The Big Picture*
- What does this mean for Cambridge
- Program Requirements
- How are we doing?

Why are we here?



- **National Pollutant Discharge Elimination System (NPDES) permit program authorized by the Clean Water Act (CWA)**
 - **1972: first round of NPDES permits**
 - Regulate point discharges from municipal, industrial, and other facilities that discharge directly into surface waters
 - **1990: Phase I NPDES Stormwater Management Program**
 - Stormwater discharges from medium and large municipal separate storm drainage systems with populations greater than 100,000 people
 - **1999: Phase II NPDES Stormwater Management Program**
 - Stormwater discharges from small municipal separate storm drainage systems with populations of at least 50,000 and density of 1,000 people per square mile
 - Cambridge is Phase II Community

The Big Picture

- Why is the EPA doing this?
 - Preserve, protect, and improve the nation's water sources from polluted stormwater runoff by instituting controls on unregulated discharge sources.
- What does this mean to all of us?
 - Reduce contaminated discharges from getting to receiving waters

- **Less than 1%** of water on earth is drinkable
- **30%** of known pollution to nation's waters is attributable to stormwater runoff.



Runoff Discharges
to Nearby Waters



What is stormwater?

Runoff from natural precipitation, such as rain and snow melt that runoff surfaces during and after a storm.



Source: www.dann-online.com

How does Stormwater become a Problem?

Developed and disturbed land contributes to problems:

- Water Quantity
- Water Quality



What does this mean for Cambridge?

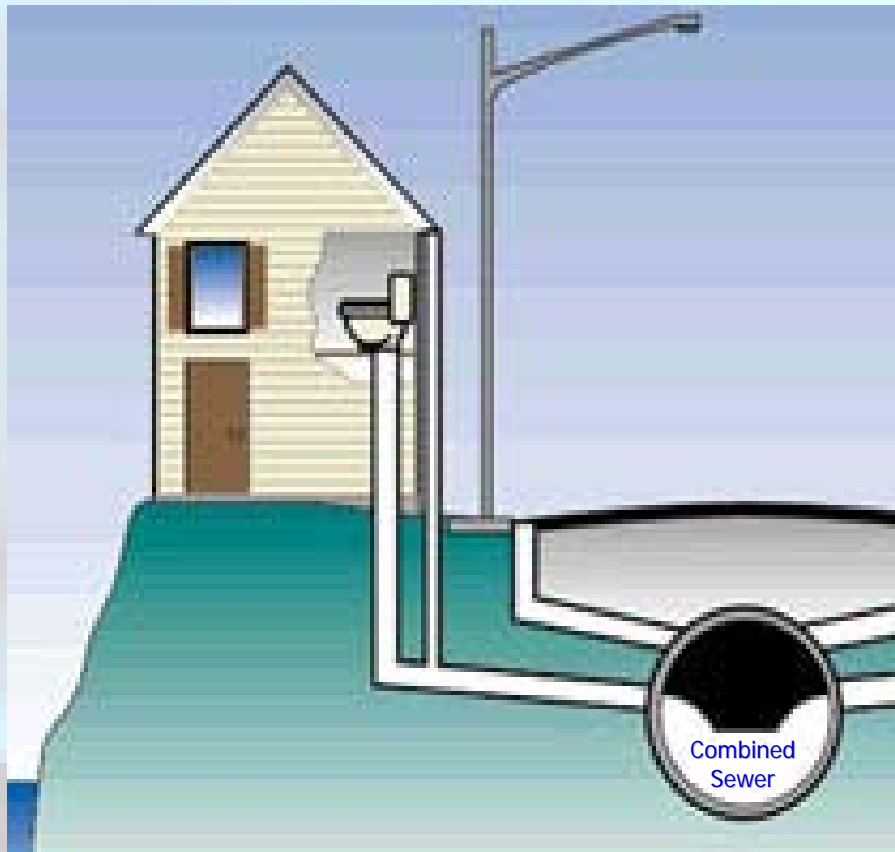
- Phase II community
- NOI submitted July 2003
- Currently completing Year 4
- Revised SWMP in 2006

Phase II Requirements

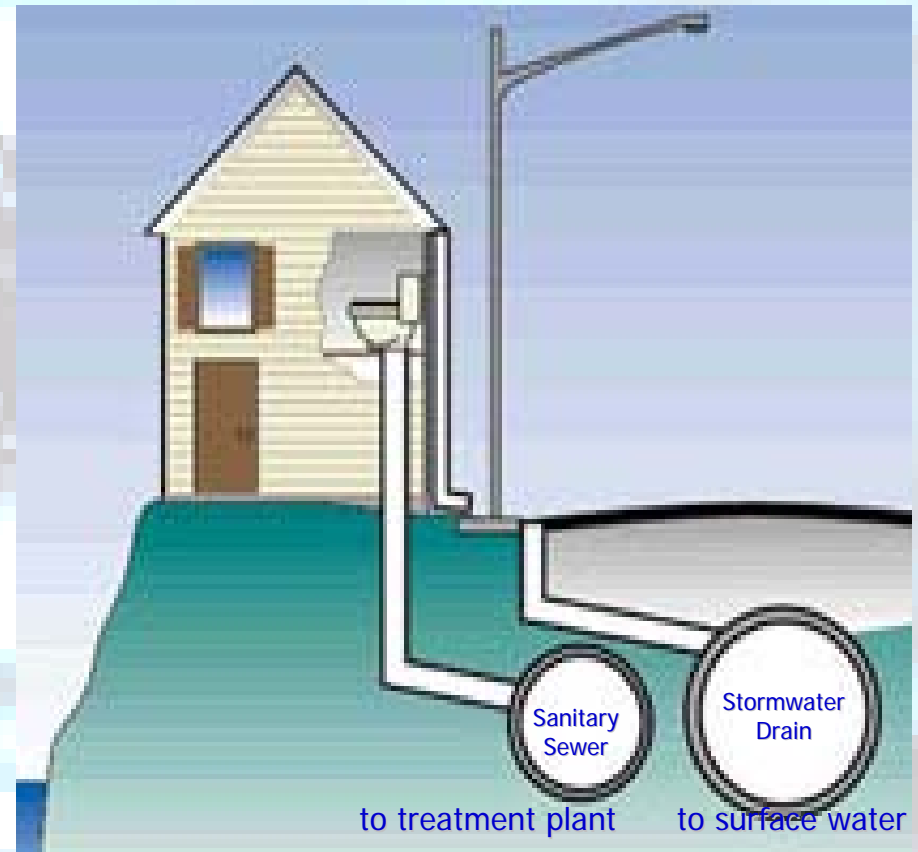
Reduce discharges of pollutants from a regulated stormwater system (MS4) to the *maximum extent practicable*, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.



What is a regulated MS4 system?

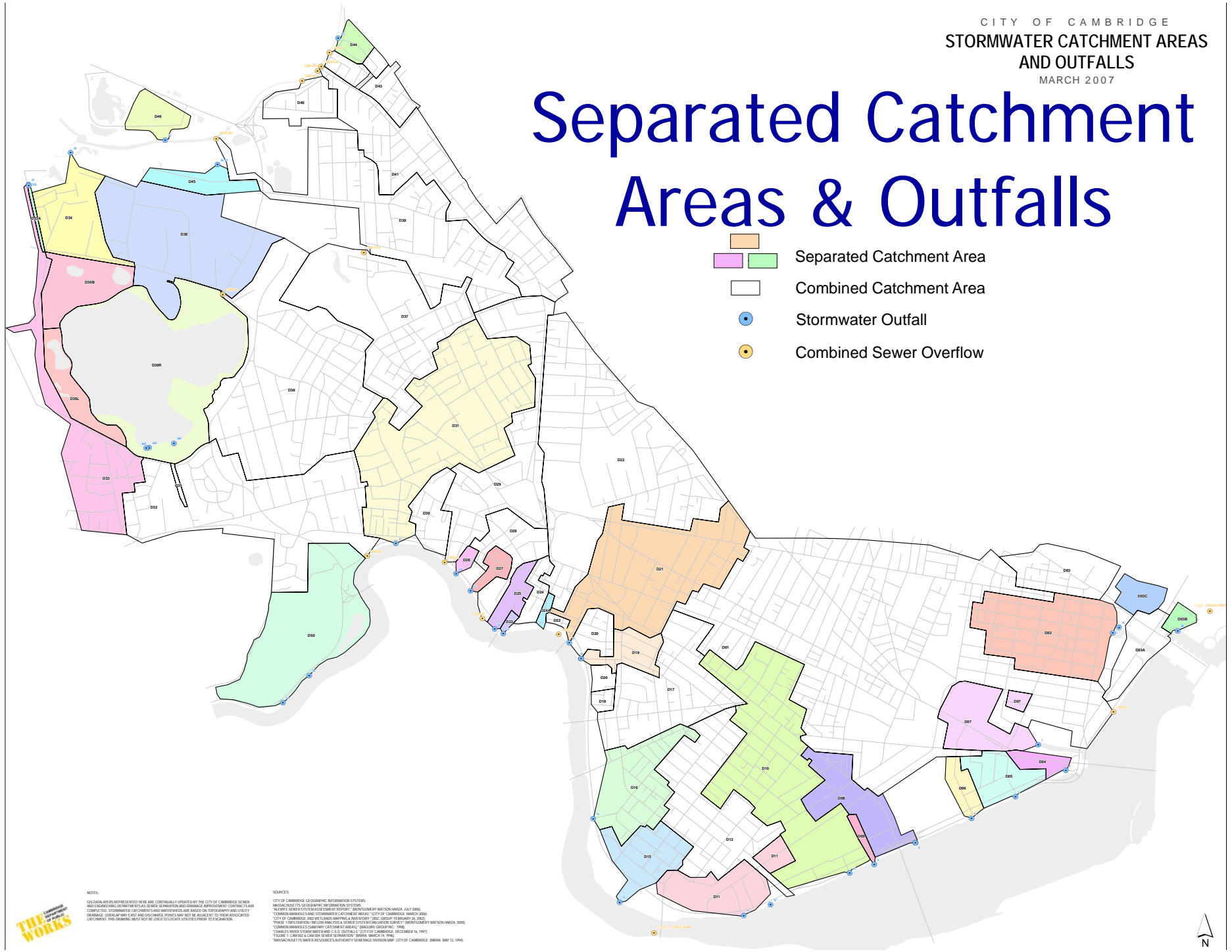


Combined system



Separated system (MS4)

Separated Catchment Areas & Outfalls



NOTES:

NOTES:

GIS DATA LAYERS REPRESENTED HERE ARE CONTINUALLY UPDATED BY THE CITY OF CAMBRIDGE SEWER AND ENGINEERING DEPARTMENT'S AS SEWER SEPARATION AND DRAINAGE IMPROVEMENT CONTRACTS ARE COMPLETED. STORMWATER CATCHMENTS AND WATERSHEDS ARE BASED ON TOPOGRAPHY AND UTILITY DRAWINGS. OVERLAP MAY EXIST AND DISCHARGE POINTS MAY NOT BE ADJACENT TO THEIR ASSOCIATED CATCHMENT. THIS DRAWING MUST NOT BE USED TO LOCATE UTILITIES PRIOR TO EXCAVATION.

SOURCES

SOURCES

CITY OF CAMBRIDGE GEOGRAPHIC INFORMATION SYSTEMS
MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEMS
"ALTERNATE SEWER SYSTEM ASSESSMENT REPORT," BUCKLEY WATSON HARZA, JULY 2000
"COMMON HANDLES AND STORMWATER CATCHMENT AREAS," (CITY OF CAMBRIDGE, MARCH 2000)
"CITY OF CAMBRIDGE 2002 BENCHMARKING AND INVENTORY," (ES&P GROUP, FEBRUARY 26, 2002)
"PHASE 1 REPLETION/INFLOW ANALYSIS AND SEWER SYSTEM VALUATION SURVEY," (MONTGOMERY WATSON HARZA 2000)
"COMMON HANDLES/ CATCHMENT CATCHMENT AREAS," BUCKLEY GROUP INC., 1990
"CHARLES RIVER STORM WATER AND C.S.O. OUTFALLS," (CITY OF CAMBRIDGE, DECEMBER 18, 1997)
"FIGURE 1: CAM 002 & CAM 004 SEWER SEPARATION," (BARRA, MARCH 14, 1996)
"MASSACHUSETTS WATER RESOURCES AUTHORITY SEWER RAGE DIVISION MAP," CITY OF CAMBRIDGE, (BARRA, MAY 13, 1996)



Cambridge Watersheds

Mystic River Watershed

Fresh Pond
SubWatershed

Charles River Watershed

Fresh
Pond

Charles River



NOTES:

GIS DATA REPRESENTED HERE ARE CONTINUALLY UPDATED BY THE CITY OF CAMBRIDGE SENIOR GIS ENGINEERING DEPARTMENT. DATA SOURCES: TERRACON AND ORNAMENT. IMPROVEMENT CONTRACTS ARE COMPLETED. INFORMATION TO CITY DEPARTMENTS AND WATERSHEDS ARE BASED ON TERRACON AND UTILITY DRAWINGS. INFORMATION MAY VARY FROM ORNAMENT. PLOTS MAY NOT BE ACCURATE TO THEIR ASSOCIATED ORNAMENT. THIS DRAWING MUST NOT BE USED TO LOCATE UTILITIES PRIOR TO EXCAVATION.

SOURCES:

CITY OF CAMBRIDGE GEOGRAPHIC INFORMATION SYSTEMS
MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEMS



City Watersheds, Outfalls and Pollutants:

Receiving Water	Watershed	No. of Outfalls	Impaired ?	Impairment
Alewife Brook (includes Little River)	Boston Harbor: Mystic	5	YES	Metals, Nutrients, Organic Enrichment/Low Dissolved Oxygen, Pathogens, Oil and Grease, Taste, Odor and Color, Objectionable deposits
Charles River	Charles River	22	YES	Unknown Toxicity, Priority Organics, Metals, Nutrients, Organic Enrichment/Low Dissolved Oxygen, Pathogens, Oil and Grease, Taste, Odor and Color, Noxious Plants Turbidity

City Watersheds, Outfalls and Pollutants

Receiving Water	Watershed	No. of Outfalls	Impaired ?	Impairment
Wellington Brook	Boston Harbor: Mystic River	2	NO	
Fresh Pond & Little Fresh Pond	Fresh Pond	3	NO	
Blacks Nook	Fresh Pond	0	YES	Nutrients Noxious Plants
Unnamed Tributary ("Millers River")	Charles River	0	YES	Organics Metals Oil and Grease Taste, odor, color

How does the Phase II Program protect waterways?

Develop a Stormwater Management Program

- Address 6 Minimum Control Measures
 1. Public education/outreach
 2. Public involvement/participation
 3. Illicit discharge detection/elimination
 4. Construction Site stormwater runoff control
 5. Post-construction stormwater management
 6. Pollution prevention/good housekeeping for municipal operations
- Develop and implement Best Management Practices to address each program area

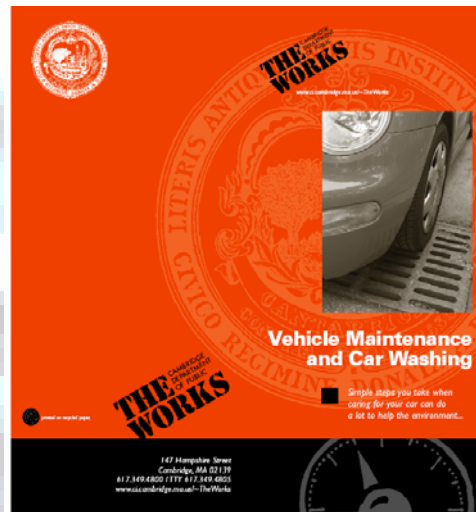
#1. Public Education & Outreach

Conduct outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater



#1. What have we been doing:

- Educating Children, Residents and Businesses
 - meetings, brochures, web site, school visits
 - posting information on web site
 - evaluating mass media efforts
 - PSA on CAT TV-8
 - Partnering with Think Blue Think Again Program
 - Stormwater Marker Program



Water washing over the land, whether from rain, snow melt, car washing or the watering of lawns and gardens, picks up an array of contaminants including oils, metals, and bacteria. This runoff finds its way into the Charles River of the Little River/Alewife Brook either directly or through the stormwater drain system. The Environmental Protection Agency has determined that pollution from stormwater runoff is the single largest cause of our nation's water quality problems. Everyday personal actions you take can have a significant impact on the water quality in our rivers.

The City of Cambridge Department of Public Works sponsors Household Hazardous Waste Collection Days. Contact DPW at 617.349.4800 for the date of the next collection day. If you witness illegal dumping of waste materials into catch basins, call DPW immediately – and confidentially – at 617.349.4800.

For more information on used oil recycling, contact the DPW Recycling Program at 617.349.4800 or visit www.ci.cambridge.ma.us/~TheWorks

Did You Know?

- Many car care products contain toxic chemicals that can contaminate surface and groundwater resources.
- Motor oil, antifreeze, battery acid, gasoline, car waxes, degreasers, radiator flushes, and rust preventatives can all contribute to contamination, and pose direct threats to fish and other aquatic species.
- A single quart of motor oil can contaminate up to two million gallons of drinking water. A gallon of oil can create an eight-acre oil slick.
- Contaminates in stormwater runoff can impact fishing and swimming conditions.
- Cars can pollute indirectly through emissions-borne metals and other pollutants.

What You Can Do

- When changing fluids from your car, drain into a clean and unbreakable container, seal it and label it. Take the fluids to a hazardous waste collection site.
- Never pour any chemicals or hazardous substances from cars down catch basin (stormwater drains), on the ground, or leave in driveways or parking lots.
- Recycle used oil by returning it to the point of purchase with your receipt. The law (MGL Ch 21 S. 52A) requires retailers to accept it and recycle at no cost to you.
- Quickly contain and clean up spills. Don't wash it away with a hose.
- Check your car regularly for leaks.
- Car pooling, public transportation, walking or using a bicycle for transportation helps reduce all kinds of car emissions-borne pollutants.
- Don't "top off" when fueling your car.
- Use a car wash to clean cars. They're connected to the sanitary sewer system, and often conserve water by recycling rinse water.
- If you wash your own car, use a shutoff nozzle on your hose, use detergent and water sparingly, use non-phosphate, biodegradable detergents, and wash on a pervious surface area that will absorb the water (such as grass) whenever possible.



A green lawnmower with a black engine and a yellow toolbox containing various tools and a rake.

- Provide educational materials in different languages
- Post NOI, Annual Reports on web page
- Enhance distribution of materials to wider audience

[illegible]

Alternative Languages

Recycling & Trash Guidelines

- English
- Portuguese
- Spanish
- Chinese
- Haitian



gid cambridge sou risyiklin

pouki risyiklin?

Risyiklin ede w fè ekonomik, li kreye travay e redwi chanjman nan klima a.

Pou chak ton li nou resyiklè, nou sowe 17 pye lwa, 2 banik wet, 7000 galon dlo ak pils ke 3000 li kontaminan nan li a.

Nan ane 2005, nou resyiklè 6280 ton papye, pils ke 4000 ton boutay ak feblan, ak 1850 ton fatra lakou. Efo ou sowe frè pou yon kote pou yo jete ak yon revni de pils ke \$257,000.

Mè ane pase, nou voye jete pils ke 2000 ton papye ak bwat katon. Sonje, si ou ka chire li, resyiklè li. Pa malanje li ansanm ak manje oswa plastik.

Mes, e kontinye resyiklè!

konsej enpotan:

• Mete risyiklin deyo avan 7 he dimanch sou jou yap fè koleksyon an osinon apre 6 he deswa lavye. Rantre bwat resyiklin yo avan 6 he deswa jou resyiklin lan.

• **Pa mete chache plastik:** Pa mete fatra lakou, papye, osinon resyiklan/veso nan sache plastik.

• Pandan semen sonje koleksyon an ap fèt lan jou apre a.

• "Close the loop." ("Fèmen sikilaj la") Achte pwodwi ki fèt ak materyo ki deja resiklè.

Sant kote ou ka depoze [drop off] pwodwi pou resiklè yo:

Lokalize nan fon laka DPW a. Li sant lan fèmen, plis ke paka rantre nan lakou a.

Loun: Mad & Jet 4 he a 7 he 30 di swa Samd 9 he di matin a 4 he nan apre midi

Nou aksepte li: bwat feblan & boutay, bwat katon, red, drapo, aparay mizaj, anpil flouren, lavi modèl, bati non alikati, papye, moso fòm pou anpakle nan bwat, papye plastik, li aparay kay, (monitè odora oswa televizyon), e li moso metal (pa egzanp sèso an fè).

Prez rezidans obligatwa si yo munde li.

papye & bwat katon:

Sonje, si ou ka chire li, resyiklè li. Pa malanje li ansanm ak manje oswa plastik.



ve/glas, metal & veso plastik:

Mete veso, li rense, nan bwat resiklaj la. Ou ka bezwen mare yo. Pa mete chache plastik.



fey & fatra lakou:

Mete fatra lakou nan baki yo san ke yo mare ansamb oswa nan sache retire, pa mete yo nan chache plastik.



kisa pou ou resiklè:

- bwat katon (bwat pizza pa ladan li)
- bwat papye (sereal, papye fin & bwat soulye, etc.)
- papye journal & magazin (papye ki klere a ok)
- liv telefòn & reklam lapòs (CD ak plastik ki vlope li pa ladan li)
- boutey soda, bwat soda, boutey lèt/ji an katon
- liv ki pa gen kouveti di
- tout papye biwo (plan desin pa ladan li)

Li pa nèse pou retire...

... agraf, klips papye, mosi plastik sou anviwo, e menm moso plastik ki nan bwat ji ak lèt!

kisa pou ou resiklè:

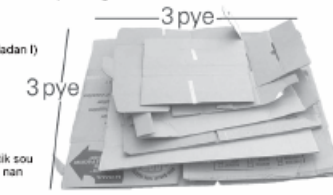
- aliminyòm, (plat tat, plato & papye aliminyòm)
- boutey flit ki vid
- resipyan/veso ve (tout kouli)
- masit feblan (fèblan, fè & aliminyòm)
- galon plastik ki di, #1-7 (pa mete chache plastik oswa stiwofòm)
- po plant plastik (#1-7, fòk yo pwep)

Ki sa pou resiklè:

- fey, gazon & plant
- branch tipelwas & ti branch (mwon epe ke pou ou, mwon kout ke bra ou)
- pa likid, chouk vwa, woch, te, sab, manje osinon fatra

jan pou ou pare papye yo:

- pa mete yo nan sache plastik (li malanje)
- mete tout diferan kalite papye yo nan yon chache papye
- mete papye ki chire nan ti moso nan yon chache papye ki klipse e ki gen etiket sou li



bwat katon: li pa aaaa si difisil ke sa!

ou gen dwa:

1. plati yo, koupe yo 3 pye x 3 pye, mete yo anba oswa ant bwat plastik resyiklaj yo pou yo **pa jete** tout kote
2. plati, pliyè & boutey yo nan yon sache papye oswa yon "toter" an papye
3. OSWA, pote nan Sant Drop-off la gwo bwat katon ki pwep. Yo pa aksepte bwat pizza sòf si retire pati bwat la ki gen gres e ou mete li deyo ak papye miks yo.

fason pou ou prepare galon plastik ak feblan yo:

- place galon plastik ak feblan yo, san ke ou **pa mare yo ansam**, e apre ou rense yo nan bwat resyiklaj la
- okenn sache plastik oswa papye
- retire bouchon & tèt feblan yo
- li li posib, pase yo twal nan bwat feblan yo pou retire tout vil la net
- **pa jete** okenn gres oswa lwil nan okenn tiyo

fason pou ou prepare fatra lakou w:

- pa mete chache plastik
- mete yo nan baki, san ke nou pa mare yo ansam, ki make ak yon dekal wou fatra lakou Vil la pou li bay sou la ri a (dekal la), osinon
- mete yo nan yon chache papye blan ki fèt pou fatra lakou (pa klipse oswa tepe chache a)
- mare gwo branch bwa ansamb 2 pye X 2 pye

YARD WASTE ONLY

Rele nan 617-349-4800 pou jwen dekal wou fatra lakou an gratis. Yap komanse ramase yo nan premye semen nan mwa avril e li pral kontinye jis desyèm semen mwa desamb.

www.cambridgema.gov/theworks

... risyiklin se yon bagay ki fasil e se la lwa (Seksyon 8.24.070).

Rele nan

617.349.4800:

- rate risyiklin lan
- rate risyiklin fatra lakou
- pou komanda yon bwat risyiklin
- pou dekal fatra lakou
- pou yon kesyon an jeneral

bagay ke yo pap aksepte pou resiklaj sou totwa:

- okenn bwat pizza
- okenn sache plastik*
- okenn stiwofòm
- okenn stiwofòm ki pou anpakle*
- okenn moso ve ki krazè
- okenn fenèt an glas
- okenn sèso rad*
- okenn asyet oswa ve
- okenn anpou limye
- okenn jwèt
- okenn rad*
- okenn plato papye ke yo delivre manje ladan yo
- okenn liv a kouveti di*

*Yo aksepte atik ki make ak stiwofòm lan nan Sant "Drop off" la pandan li ouvab

yo pap ramase bwat ki malanje:



sonje:

- kanpe papye ak galon/feblan apa
- rense galon/feblan yo e mete yo, san ke ou **pa mare yo ansam**, nan bwat resyiklaj la
- mete papye nan yon sache papye

Pa mete sache plastik, stiwofòm osinon lòt fatra.

Web Page Development



Stormwater Management



Management Plan

Presentations

Projects



Brochures, Reports

Stormwater management is how we control the quantity and quality of stormwater through the use of structural controls like pipes, detention basins and catch basins and non-structural controls like public education and monitoring. U.S. Environmental Protection Agency (EPA) studies have demonstrated that stormwater pollution is one of the most significant sources of water pollution today. When it rains or snow melts, the resulting stormwater picks up or dissolves pollutants and washes them into stormwater conveyance systems. Polluted stormwater runoff is often discharged into local rivers and streams without treatment. Common pollutants include oil, grease and metals from cars and roadways; pesticides and fertilizers from lawn maintenance activities; sediment from construction sites; and the improper disposal of litter including cigarette butts, paper wrappers and plastic bottles. Stormwater can impair waterways, degrade animal habitat, pollute drinking water, increase flooding, cause erosion of streambeds or siltation of waterways, and decrease the amount of water recharged to aquifers.

Stormwater Hotline:

Report illegal dumping into catch basins or dirty looking discharges from outfalls to the DPW by calling (617) 349-4800 or (617) 349-4846, or by e-mail to:

TheWorks@cambridgema.gov

Related Links

Distribute information more widely

- Articles in CityView
- Public Service Announcement on City – TV8
- Attended Home & Energy Fair
- Classroom Presentations



Poseidon Drill Tests Emergency Preparedness



The Poseidon drill enabled first responders to work on interagency communications.

In September, the City of Cambridge participated along with various local, state and federal public health and safety agencies in a homeland security training exercise called Operation Poseidon. The City's Emergency Operations Center was activated by the City Manager at 5:30 a.m. The drill, which consisted of simulated acts of terrorism in various locations, gave first responders and management personnel the opportunity to gauge the effectiveness of response, training and equipment. The purpose of this emergency preparedness exercise was to assess the tools and training that first responders currently possess, make improvements where needed, and reinforce skills and equipment that work well. Improving interagency communications and collaboration is also an important part of this process.

Emergency Preparedness Brochure Offers Helpful Tips

The Cambridge Public Health Department's Advanced Practice Center for Emergency Preparedness and the City of Cambridge have produced a new brochure with helpful information on preparing for an emergency. It has been direct mailed to all Cambridge households. If you did not receive a copy or would like additional copies, please contact

is continued on page 7



Thousands of Cambridge families enjoyed amusement rides, arts and crafts, the energy adventure trail, music, and the fall dog, sheep and rodeo at the 11th Annual Denbury Park Family Day. The community event is coordinated through the City Manager's Office.

Traveling Exhibits

Waste Disposal

- Dispose of used oil, antifreeze, paints, and other household chemicals properly, not in storm drains or catch basins.
- Keep litter, pet wastes, leaves, and debris out of street gutters and storm drains.



Stormwater Hotline:
Report illegal dumping into catch basins or dirty looking discharges from outfalls to the DPW by calling (617) 349-4800 or (617) 349-4846, or by e-mail to:

TheWorks@cambridgema.gov



Remember -Don't pour household products that contain chemicals on the ground, into catch basins or down the drain. Products such as insecticides, pesticides, oil-based paint, solvents, and used motor oil and other auto fluids must be properly disposed. The City of Cambridge sponsors several Household Hazardous Waste collection events each year.

Pet Care

Pet waste can be a major source of bacteria and excess nutrients in local waters. Waste dumped or washed into catch basins is carried directly to our waterways and contributes to excessive growth of algae and aquatic weeds.

Always **clean up** after your pet and dispose of the waste in the trash, in a sealed or tied plastic bag, or in a toilet. Encourage your neighbors and other pet owners to **be responsible**.



- Don't use pet waste as a fertilizer. Bacteria in pet waste does far more harm than good.
- Don't add pet waste to compost piles. The pile will never get hot enough to kill disease causing organisms.



Healthy Household Habits for Clean Water

Water washing over the land, whether from rain, snow melt, car washing or the watering of lawns and gardens picks up an array of contaminants including oils, metals and bacteria. These contaminants are deposited directly into local waterways overland or transported through catch basins. In Cambridge this runoff finds its way to the Charles River and to the Alewife Brook. The Environmental Protection Agency has determined that pollution from water runoff is the single largest cause of our nation's water quality problems. Everyday personal actions you take can have a significant impact on the quality of water in our local rivers.



Photo courtesy of Springfield Realty

Lawn and Garden Care

Excess fertilizers and pesticides applied to lawns and gardens can wash off and pollute local waterways. In addition, yard clippings, leaves and bare soils can also wash off further contributing to local water pollution problems.



- Apply pesticides and fertilizers **sparingly** and according to directions. If you must fertilize **test** your soil first.
- Purchase and use **nontoxic** and **biodegradable** products whenever possible.
- Avoid applications if the forecast calls for rain.
- **Vegetate** bare spots in your yard to prevent soil erosion.
- Select **native** plants and grasses that are drought and pest resistant. Native plants require less water, fertilizer and pesticides.
- **Sweep up** yard debris, rather than hosing down areas.
- **Recycle yard waste** and place in barrels with City stickers or in paper yard waste bags, or let your grass clippings lie and mulch fall leaves.

▪ Don't over water your lawns and gardens. Water during the **cool** times of the day, and don't let water run off into the catch basins. Install a rain barrel or cistern to **capture** the rainwater from your roof for use in your yard.

▪ **Cover** piles of dirt and mulch being used in landscape projects to prevent these from being blown or washed into catch basins.



Auto Care

Washing your car, degreasing auto parts and doing tune-ups at home can send detergent, oil and other contaminants to local waterways. Dumping automotive fluids into catch basins has the same results as dumping the materials directly into the Charles River and Alewife Brook.



- Clean up **spilled fluids** such as brake fluid, oil, grease, and antifreeze with absorbent materials. Don't wash spills into nearby catch basins. Remember to properly dispose of the absorbent material.
- Use a commercial car wash or wash your car on a lawn or other unpaved surface to **minimize** the amount of dirty, soapy water flowing into catch basins.
- Check your car, motorcycle and other machinery and equipment for leaks and spills. Make repairs as soon as possible.



- **Recycle** used oil and other automotive fluids. Don't dump them down the catch basin or dispose of them in your trash.
- **Reduce automobile use** by carpooling, riding public transportation, riding your bike or walking. When it rains, air pollution turns into stormwater pollution.



#2. Public Participation & Involvement

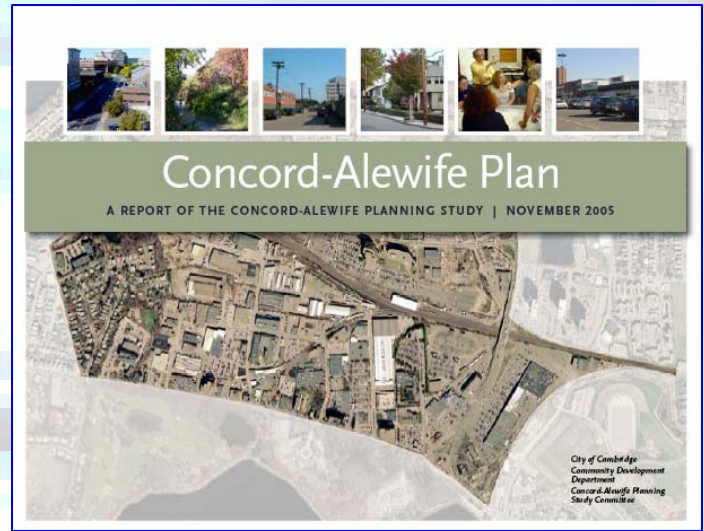
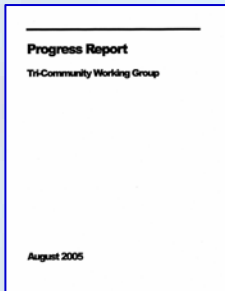
Provide opportunities for the public to participate in stormwater program



#2. What have we been doing:

- Support volunteer efforts

- sampling
- grant support
- clean ups
- plantings
- public meetings



- Participate in Watershed & Planning efforts

- Concord-Alewife Planning Effort
- Tri-Community (A B C Flooding Group)

- Recycling & Household Hazardous Waste Programs



#2. What's new?

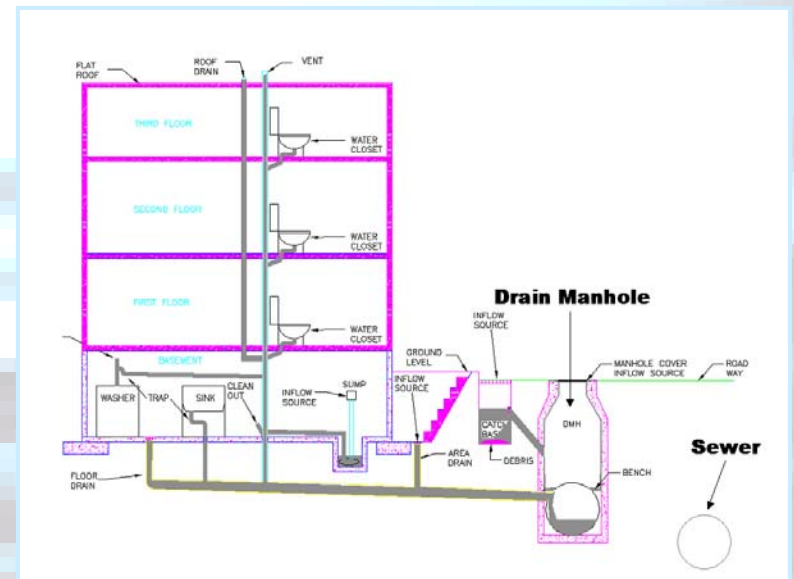
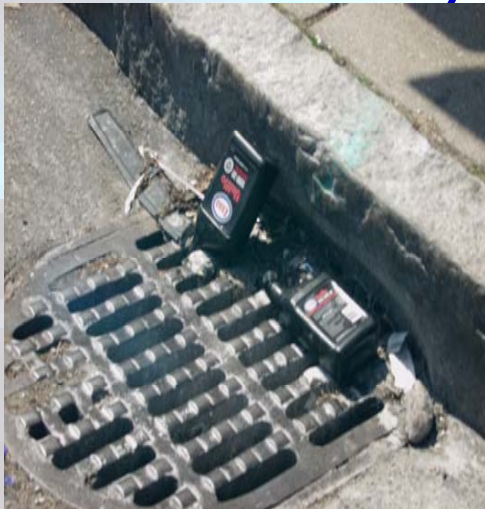
- Developed LID Guidelines for the Concord-Alewife area
- Volunteer Planting at Little Fresh Pond



#3. Illicit Discharge Detection & Elimination

Prohibit, identify and remove illicit connections and discharges

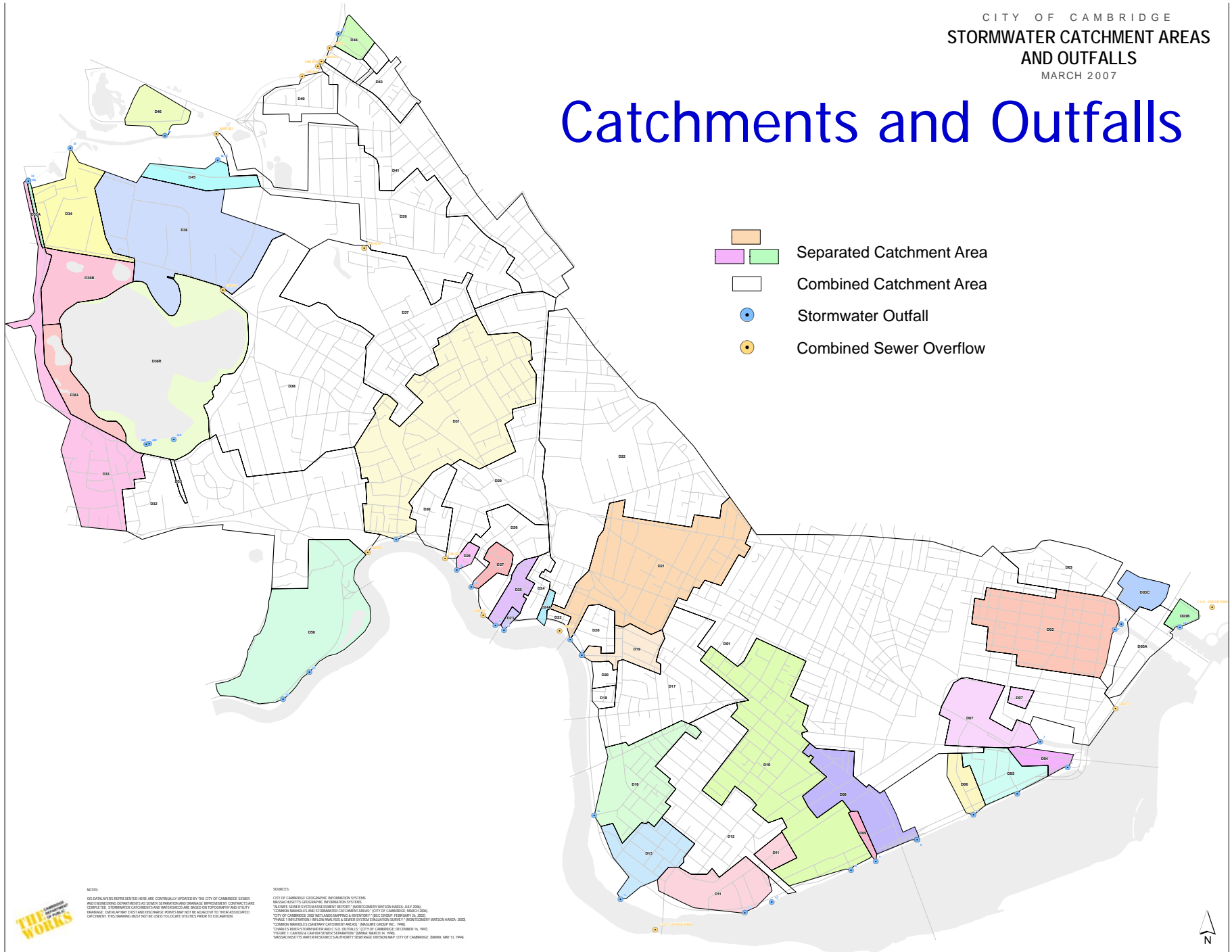
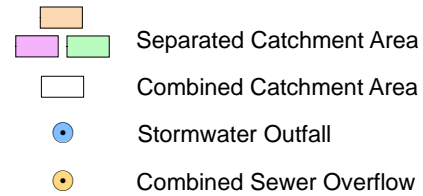
- What are illicit discharges
 - improper disposal of auto and household toxics
 - sanitary wastewater



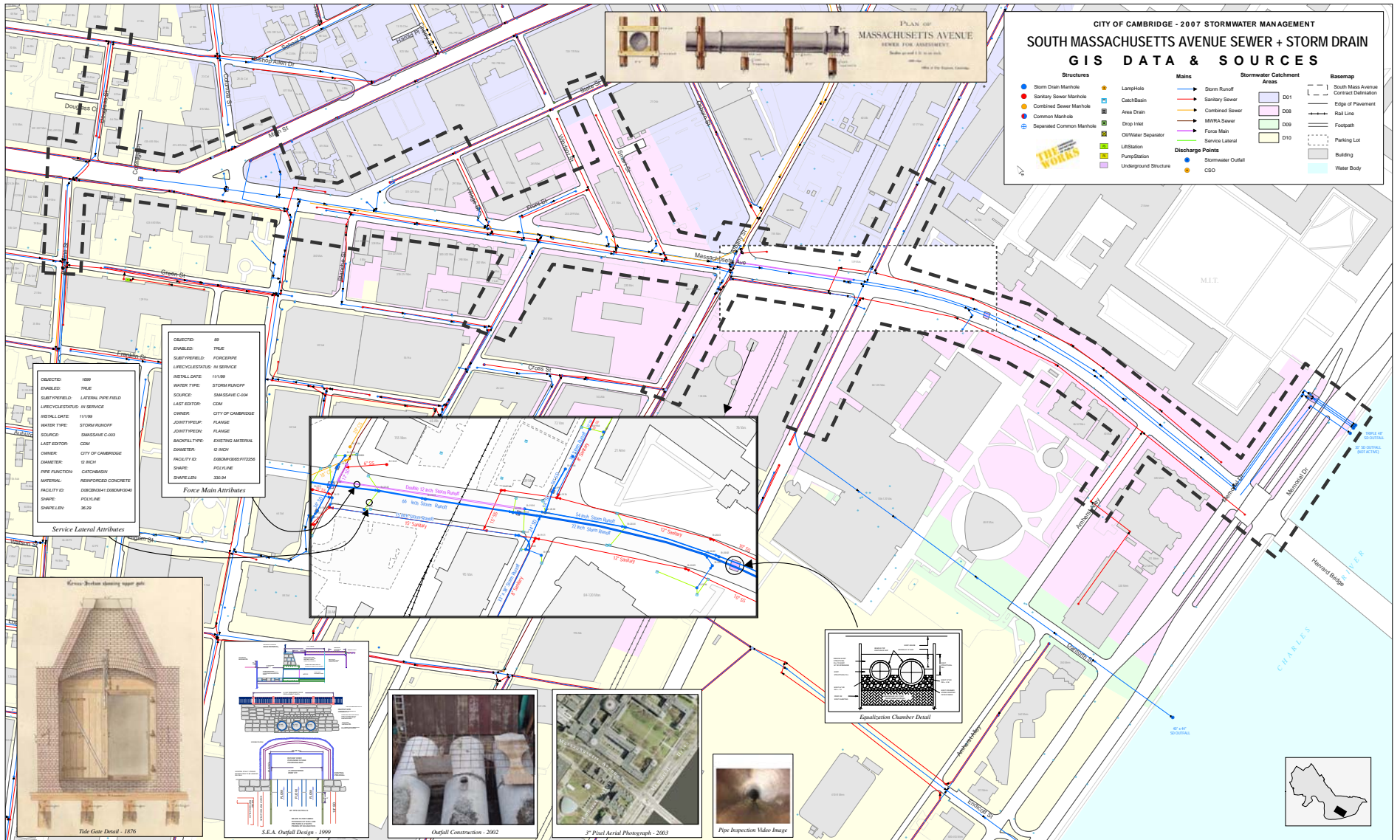
#3. What have we been doing?

- GIS mapping of our system with catchment, outfall and pipe information
- Building and TV inspections, die testing, sampling, and removal of illicit
- Separation of Common Manholes
- Reviewing existing regulations and drafting revisions
- Hotline for illicit discharges

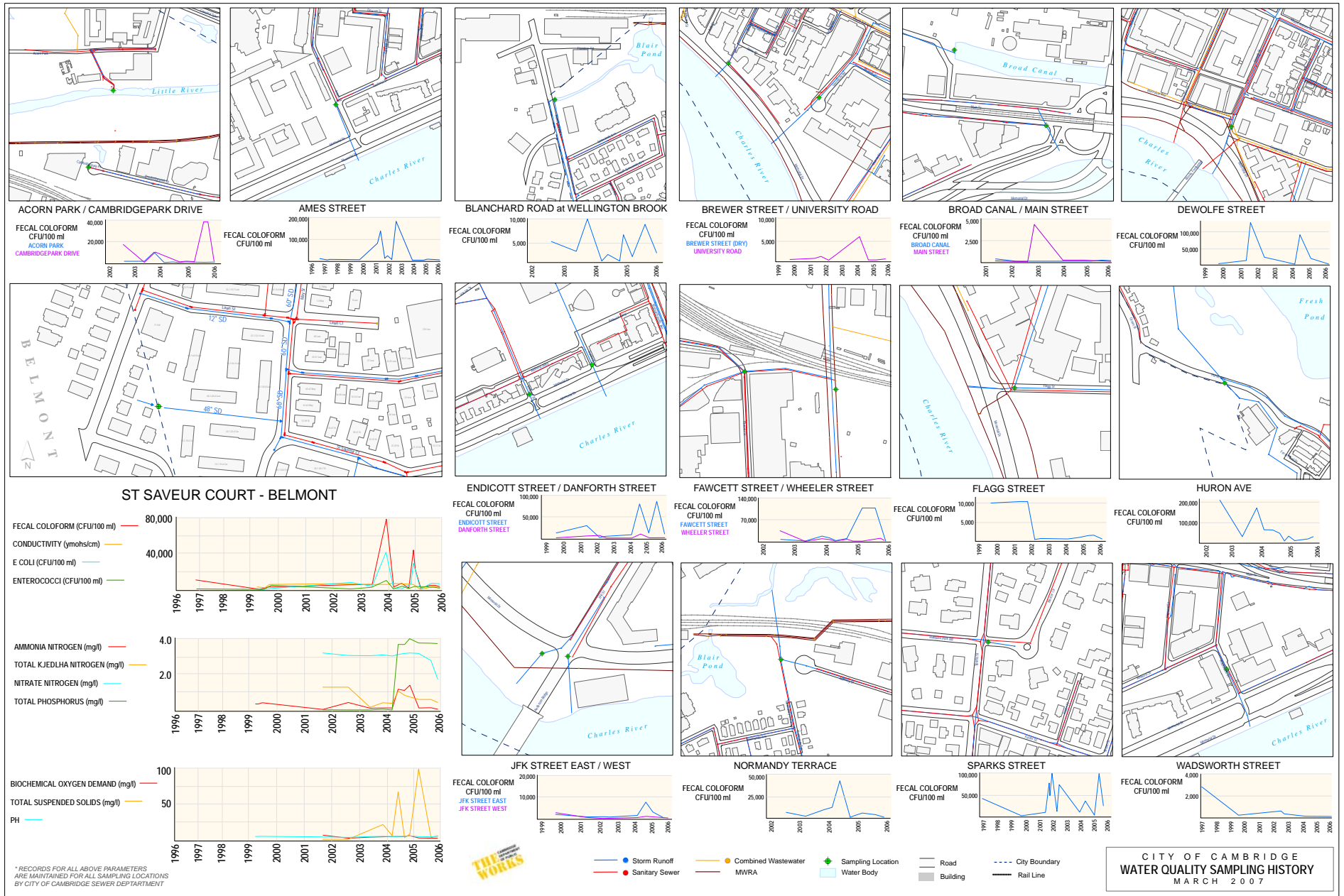





GIS information



Water quality sampling History

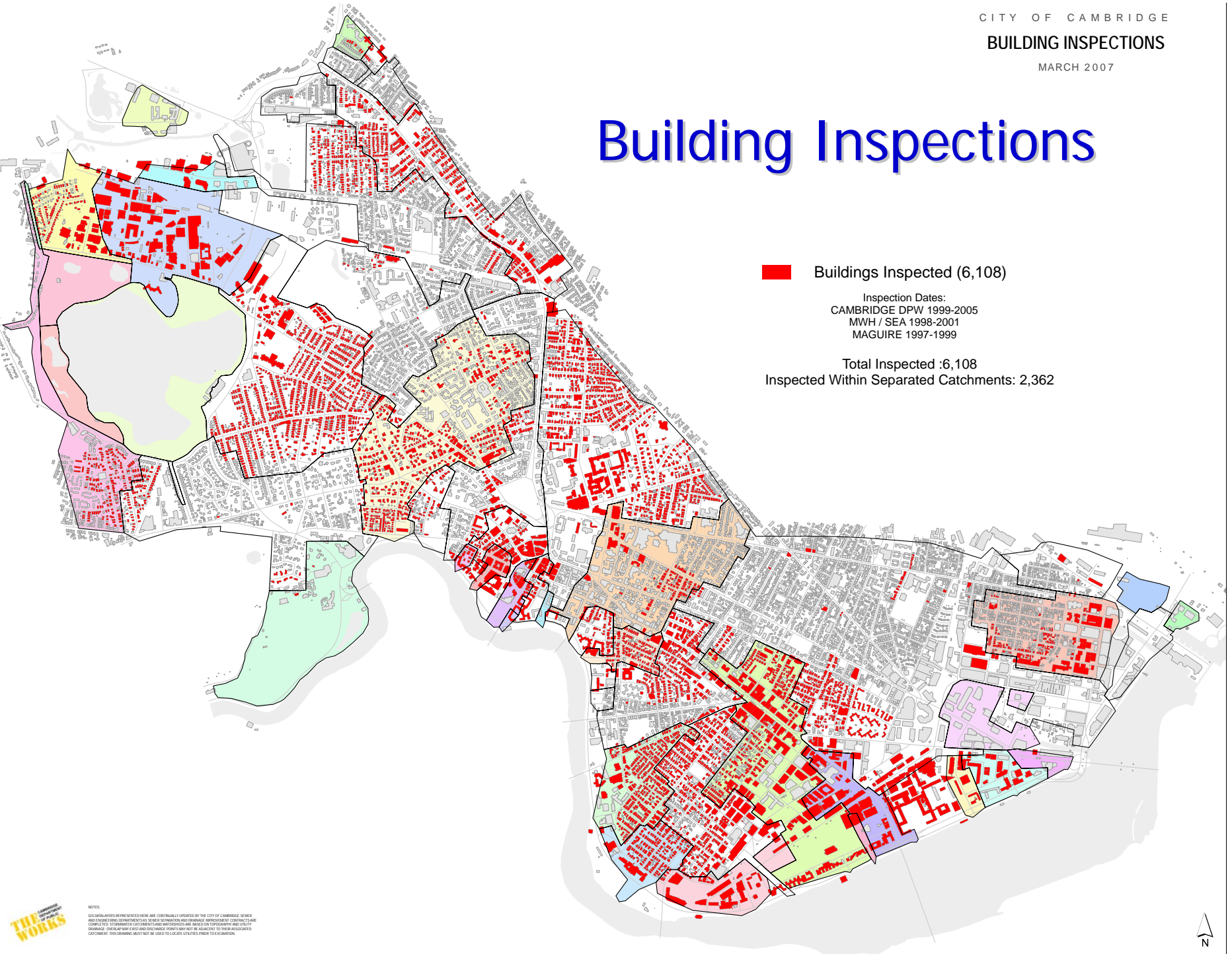


Building Inspections

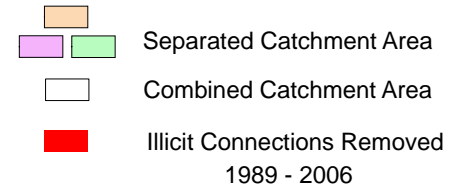
 Buildings Inspected (6,108)

Inspection Dates:
CAMBRIDGE DPW 1999-2005
MWH / SEA 1998-2001
MAGUIRE 1997-1999

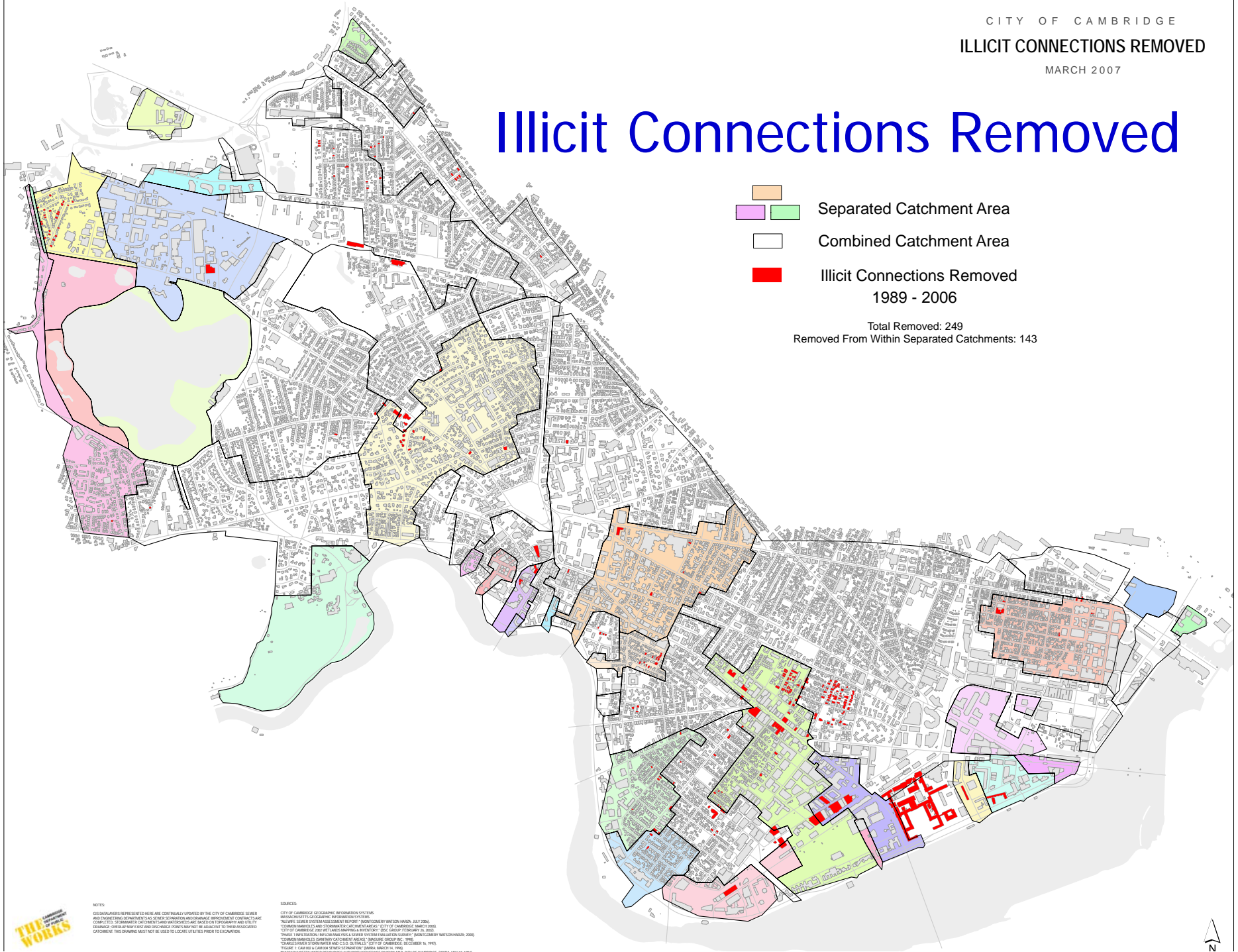
Total Inspected :6,108
Inspected Within Separated Catchments: 2,362



Illicit Connections Removed



Total Removed: 249
Removed From Within Separated Catchments: 143



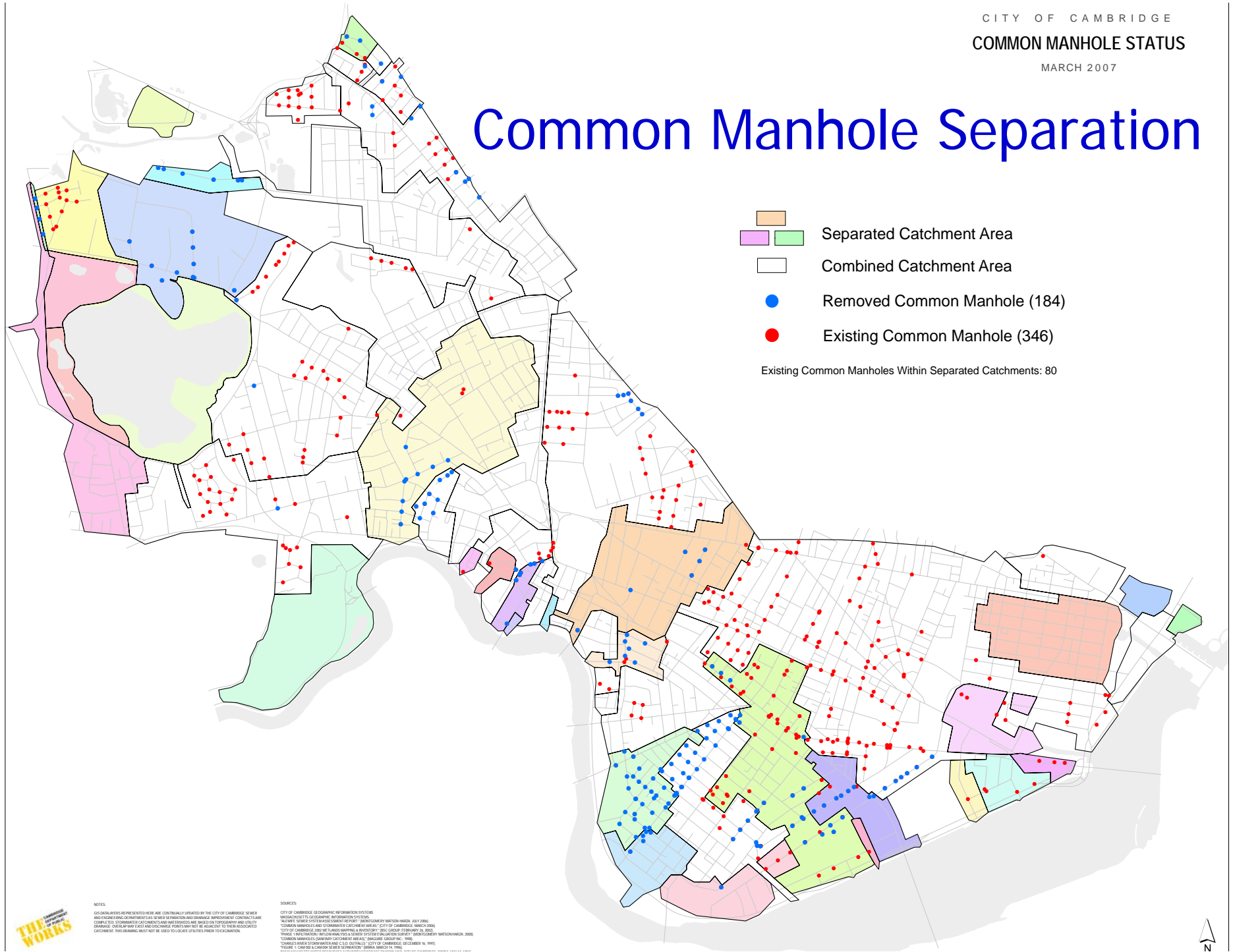
NOTES:

GIS DATA LAYERS REPRESENTED HERE ARE CONTINUALLY UPDATED BY THE CITY OF CAMBRIDGE SEWER AND ENGINEERING DEPARTMENTS AS SEWER SEPARATION AND DRAINAGE IMPROVEMENT CONTRACTS ARE COMPLETED. STORMWATER CATCHMENTS AND WATERSHEDS ARE BASED ON TOPOGRAPHY AND UTILITY DRAINAGE. OVERLAP MAY EXIST AND DISCHARGE POINTS MAY NOT BE ADJACENT TO THEIR ASSOCIATED CATCHMENT. THIS DRAWING MUST NOT BE USED TO LOCATE UTILITIES PRIOR TO EXCAVATION.

SOURCES:

CITY OF CAMBRIDGE GEOGRAPHIC INFORMATION SYSTEMS
MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM
ALL VET. SEWER SYSTEM MAJOR SOURCE REPORT (CAMBOSTGCMR) WATSON HARZA, JULY 2000
COMMON MANHOLES AND STORMWATER CATCHMENT AREAS (CITY OF CAMBRIDGE, MARCH 2000)
CITY OF CAMBRIDGE 2002 BULK FLOODING & INVENTORY? (BSC GROUP FEBRUARY 26, 2002)
PHASE I REIFICATION: INFILTRATION & SEWER SYSTEM EVALUATION REPORT (MONTGOMERY WATSON/HARZA, 2000)
COMMON MANHOLES, GROUNDWATER CATCHMENT AREAS (JANAGINE GROUP INC., 1998)
CHARLES RIVER STORMWATER AND C.S.D. OUTFALLS (CITY OF CAMBRIDGE, DECEMBER 16, 1995)
FIGURE 1: CAM QSD & CANADIAN SEWER DISPOSITION (PARMA MARCH 14, 1996)

Common Manhole Separation



NOTES:

GIS DATA/LAYERS REPRESENTED HERE ARE CONTINUALLY UPDATED BY THE CITY OF CAMBRIDGE. SEWER AND ENGINEERING DEPARTMENTS AS SOURCE OF INFORMATION AND INFORMATION APPROPRIATE TO CONTRACTS ARE COMPLETE TO STORMWATER CATCHMENTS AND WATERSHEDS ARE BASED ON TOPOGRAPHY AND UTILITY DRAINAGE. OVERLAP AND GAPS AND THE PRESENCE OF POINTS MAY NOT BE SUBJECT TO THEIR ASSOCIATED CATCHMENTS. THIS DRAWING MUST NOT BE USED TO LOCATE UTILITIES PRIOR TO CONSTRUCTION.

SOURCES:

CITY OF CAMBRIDGE: GEOGRAPHIC INFORMATION SYSTEMS
MASSACHUSETTS: GEOGRAPHIC INFORMATION SYSTEMS
PLANNING: SOURCE: STORMWATER CATCHMENT MAP (CAMBRIDGE) (MAY 2005)
COMMON MANHOLES AND STORMWATER CATCHMENT AREAS: CITY OF CAMBRIDGE (MARCH 2006)
CITY OF CAMBRIDGE: STORMWATER CATCHMENT MAP (CAMBRIDGE) (MAY 2005)
THOMAS: WATERSHEDS AND STORMWATER CATCHMENT AREAS (CAMBRIDGE) (MAY 2005)
COMMON MANHOLES: COMMON MANHOLES (CAMBRIDGE) (MAY 2005)
CAMBRIDGE: STORMWATER AND C.U. DATA: CITY OF CAMBRIDGE (DECEMBER 16, 1995)
FIGURE 1: COMMON MANHOLES AND STORMWATER CATCHMENT AREAS (MARCH 16, 1995)

#3. What's New?

- EPA's Lower Charles IDDE Protocol
 - Purchased equipment
 - Investigate Sparks Street and Lechmere Canal catchments
- Wet weather sampling



#4. Construction Site Runoff Control

Develop a program to reduce pollutants from construction sites that disturb ≥ 1 acre



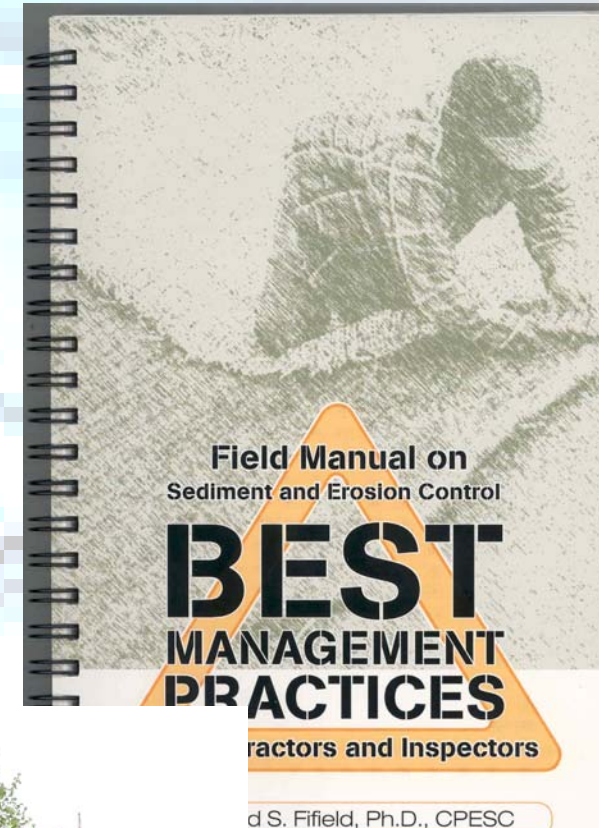
#4. What have we been doing?

■ Develop Regulations

- Reviewed existing regulations
- Conducted Peer Review
- Developed Draft Regulations
- Undergoing internal review

■ Educate Residents and Contractors

- Developed information on landscape practices
- Weekly construction meetings



#4. What is new?

- Stormwater Management Permit
 - Stormwater Management Plan (Quality & Quantity)
 - Erosion and Sediment Control Plan
 - O&M Plan for temporary BMPs
- Develop guidance materials for contractors



#5. Post Construction Stormwater Management

Develop a program that addresses runoff from new development and redevelopment projects that disturb ≥ 1 acre through structural and non-structural BMPs

#5. What have we been doing?

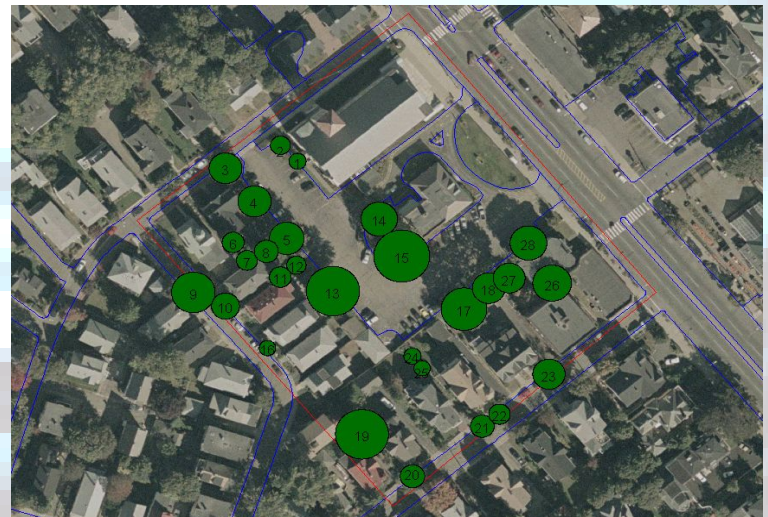
■ Develop Regulations

- Reviewed existing regulations
- Conducted Peer Review
- Developed Draft Regulations
- Undergoing internal review
- Developed Draft Guidelines (LID Alewife)



■ Protect existing Tree Canopy

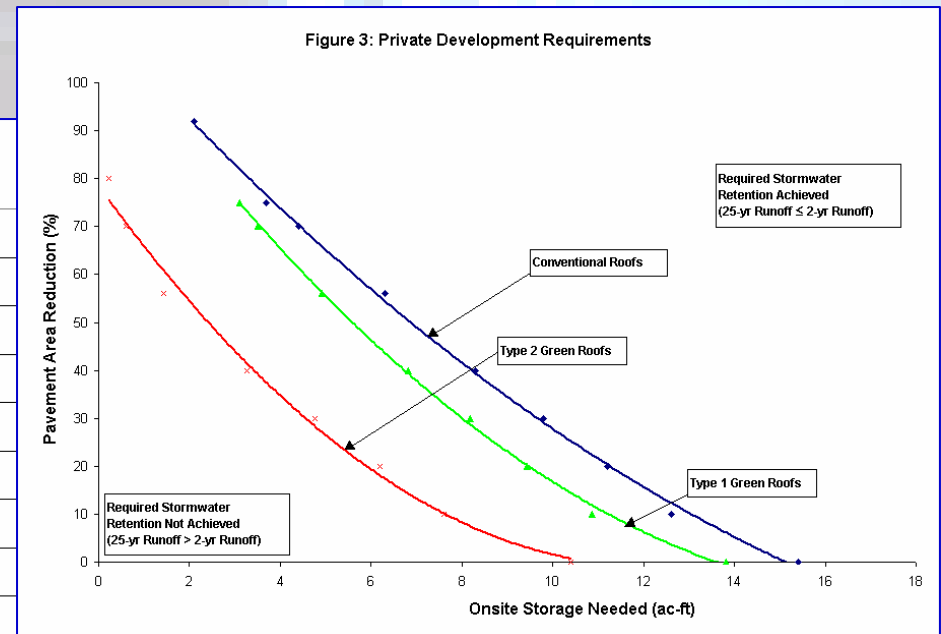
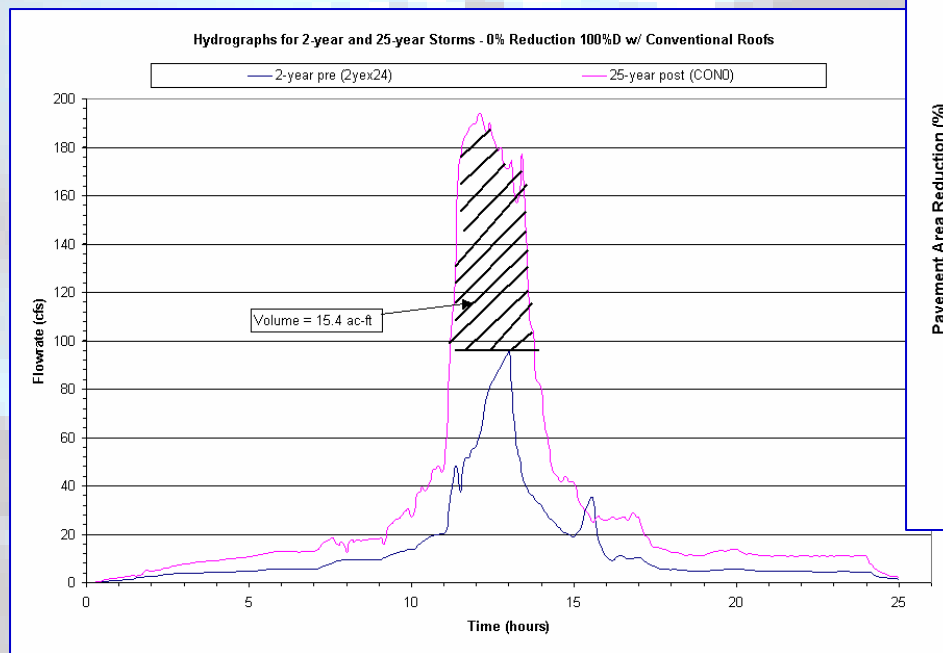
- Tree Protection Ordinance
- Canopy Assessment
- Outreach on tree protection efforts



#5. What is new?

■ Stormwater Management Permit

- Stormwater Management Plan (Quality & Quantity)
- Erosion and Sediment Control Plan
- O&M Plan for temporary BMPs

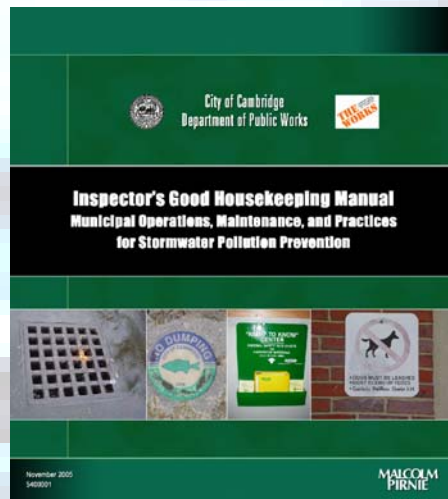
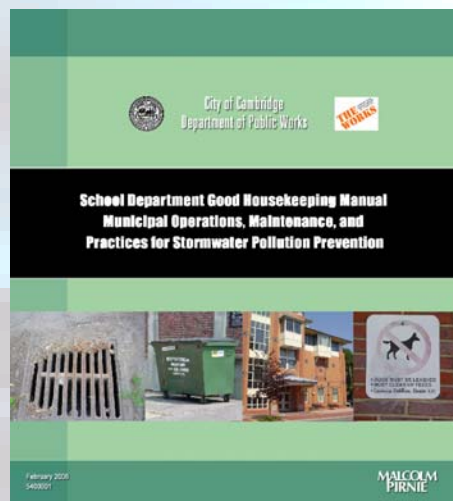


#6. Pollution Prevention & Good Housekeeping for Municipal Operations

Develop an Operations & Maintenance program to prevent or reduce pollutant runoff from municipal operations



#6. What have we been doing?



- Inspected over 60 municipal facilities
- Developed manuals for Inspections (BMPs)
- Trained Department Heads, Facility Managers and Inspectors
- Developed web tools for yearly inspections

Comments/Questions

