CITY OF NEWTON

BOARD OF ALDERMEN

COMMITTEE OF THE WHOLE AGENDA

WEDNESDAY, FEBRUARY 29, 2012

7:00 PM
NNHS LECTURE HALL

AGENDA

1) The Executive Office and the Department of Public Works will present a strategic plan for repairing the City's Water, Sewer, and Storm Water Systems.

February 17, 2012

Newton's Underground Plumbing: A Strategic Plan
Basic Facts and Goals

The Department of Public Works has developed a long-term (20 year) strategic plan to repair the City's underground water, sewer and stormwater infrastructure. The following are some basic facts and issues to help inform the more detailed presentation on the elements of that plan.

SEWER SYSTEM: Each time we flush or wash something down a drain, we create sewage (also known in polite society as wastewater). The City of Newton must maintain an extensive sewer system that collects wastewater and takes it to the MWRA wastewater treatment facility. Customers are billed for these services.

Sewer System Elements:
284 miles of sewer pipes
75 miles of underdrain pipes
24,500+ connections to homes and businesses
9,100 manholes
10 pump stations
19.4 million gallons of average daily flow

FY12:

Operating Budget:	$ 6 million
Assessment paid to MWRA:	$19.7 million
Debt Payments:	$1.4 million
Infrastructure (Capital) Investment:	$2.2 million
Recommended Reserve level at 15% of regular operating revenues, or no less than two months of operating revenues (best practice):	Two months = $4.4 million
Reserves at end of FY11:	$1.9 million
Employees	32.6

Sewer System Issues:
- Aging sewer pipes (39% of pipes more than 90 years old)
- One of the highest rates of infiltration in the MWRA system: extraneous water entering through cracks in pipes (estimate of approximately 60% of fluids going to the MWRA treatment facility is clean rain/ground water)
- Sewer overflows and backups during storm events
- Reoccurring problem areas cost money and engage maintenance personnel
- Increasing sewer payments assessed by the MWRA
- Decreasing funds available from MWRA for needed capital repairs

WATER SYSTEM: Each time we turn on the tap, we get clean water. The City of Newton must maintain an extensive water delivery system that transports clean water -- via the MWRA from Quabbin Reservoir and treated with ozone at the John Carroll Water Treatment Plant in Marlborough -- to each of our homes and businesses. Customers are billed for these services.

Water System Elements:

318 miles of water mains
165 miles of unlined cast iron pipes (older water mains constructed of unlined cast-iron pipe need to be replaced or cleaned and lined to prevent tuberculation (rust build-up) and potential bacteria growth)
8.76 million gallons of daily flow
3 elevated water storage tanks @ 400,000 gallons each
1 underground reservoir @ 10.4M gallons
3 water booster stations
2,500 +/- fire hydrants

FY12:

Operating Budget:	$ 6.2 million
Assessment paid to MWRA:	$ 8.9 million
Debt Payments	$ 3.5 million
Infrastructure (Capital) Investments:	$1.3 million
Recommended Reserve level at 15% of regular operating revenues, or no less than two months of operating revenues (best practice):	Two months = $3.0 million
Reserves at end of FY11:	$1.8 million
Employees	33.8

Water System Issues:

- Insufficient flow volumes for firefighting in some areas
- Needed investments to clean/line/replace pipes to assure water quality
- 47% of pipes unlined (165 miles) and only lining 1.3 miles per year (cost of $1 million per mile); Newton in the bottom third of MWRA communities in percentage of unlined pipes
- Looping dead ends in the system need to be repaired for improved water quality
- Increasing water payments assessed by the MWRA
- Decreasing funds available from MWRA for needed capital repairs
- Current pace of pipe upgrade to reach industry standards City-wide = 80 yrs
- Older pipes/joints can contain lead which is not the industry standard today

STORMWATER SYSTEM: Each time it rains or snows, the precipitation has to be collected to avoid flooding and to clean contaminants. The City of Newton has a stormwater system that manages this runoff. All customers who benefit from the drainage system are billed a flat rate per year for these services.

Stormwater System Elements:
320 miles of drain pipe
12,750 catch basins cleaned every two years
2 Pump Stations
155 major outfalls (discharge pipes leaving City limits and/or to the Charles River; monitored as required by the EPA)
200 +/- interior outfalls (discharge pipe from watershed to local water body such as brooks, streams or ponds)
7 miles of streams (many with retaining walls)

FY12:

Operating Budget:	$ 750,000
Infrastructure (Capital) Repairs:	$ 2,000
Goal for Reserve Account:	~2 major projects/yr = $500,000
Reserves at end of FY11:	$ 514,528
Employees	6

Stormwater System Issues:

- Aging infrastructure with most of its condition not yet assessed
- System reliability uncertain, requiring emergency repairs
- Increasing pollution prevention controls mandated by Federal/State regulations
- Insufficient funds to maintain the system; fees only cover operating costs with almost no funds available for capital infrastructure rehabilitation and replacement
- Fee structure has not been based on impervious surface which generates the runoff

GOALS OF THE STRATEGIC PLANS: The strategic plan to be presented at Board of Aldermen meeting on February 29, 2012 addresses the significant needs of these critical systems. The plan allows Newton to achieve the level of predictable maintenance, achieving the capital investment to upgrade infrastructure, while controlling rates to moderate level of growth. More specifically, the plan leads to:

FIXING THE PIPES AND THE INFRASTRUCTURE (WATER, SEWER, STORMWATER)
EFFECTIVELY SEPARATING SEWER AND STORM WATER SYSTEMS WHERE NEEDED
MINIMIZING STORMWATER INFLOW AND INFILTRATION INTO SEWERS
ENSURING FIRE SAFETY REQUIREMENTS FOR FLOW AND PRESSURE
BUILDING RESERVES TO AN APPROPRIATE LEVEL
ACHIEVING PREDICTABLE, ONGOING LEVELS OF MAINTENANCE
STABILIZING THE RATES OF OUR BILLS IN THE SHORT TERM WHILE DECREASING THE GROWTH IN OUR RATES IN THE LONGER TERM