



Massachusetts Water Resources Authority

*Presentation to the*

**Town of Arlington Board of Selectmen**

***An MWRA Overview***

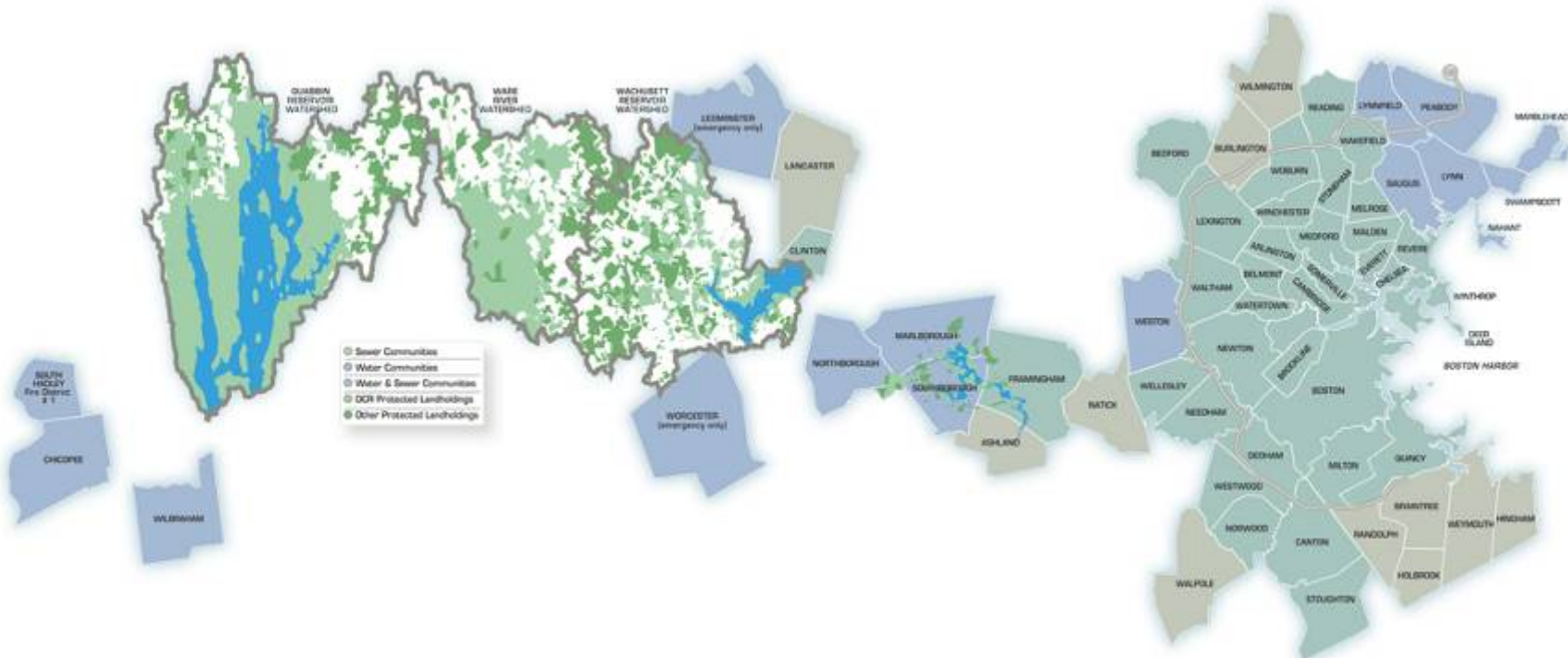
**Frederick A. Laskey  
Executive Director**

**November 27, 2006**



## MWRA Service Area

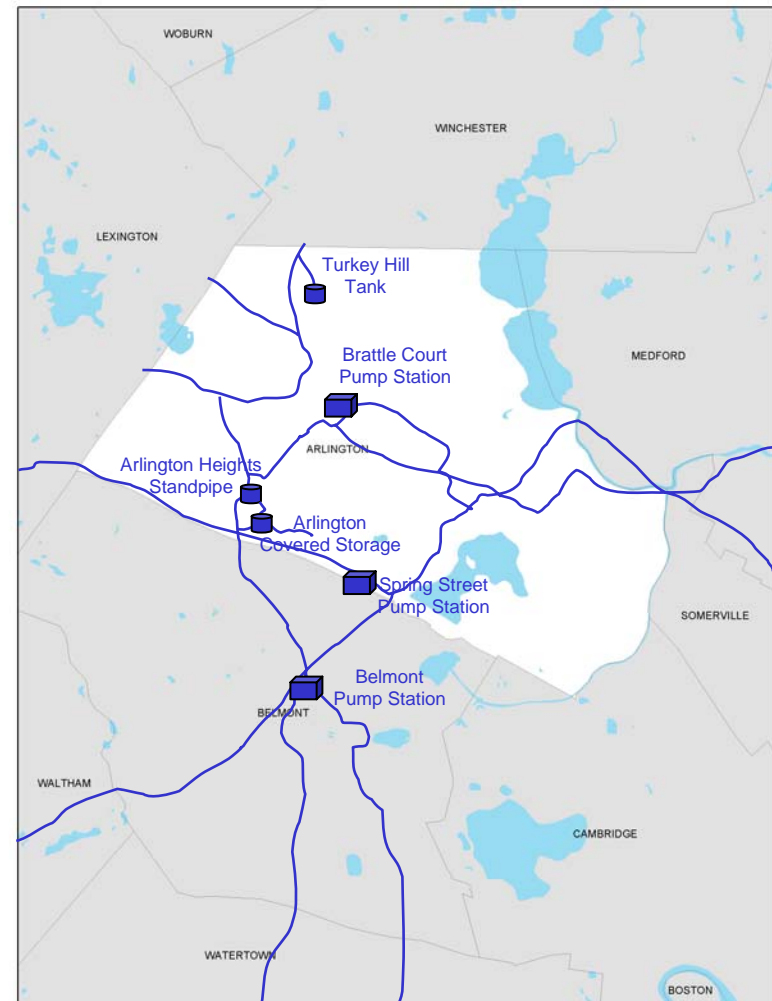
- MWRA provides wholesale water and wastewater services to over 2.5 million customers in 61 communities
- On average, MWRA delivers 225 million gallons per day to its water customers, with a peak demand of 350 million gallons
- MWRA collects and treats an average of 350 million gallons of wastewater per day, with a peak capacity of 1.2 billion gallons





## MWRA Water Service to Arlington

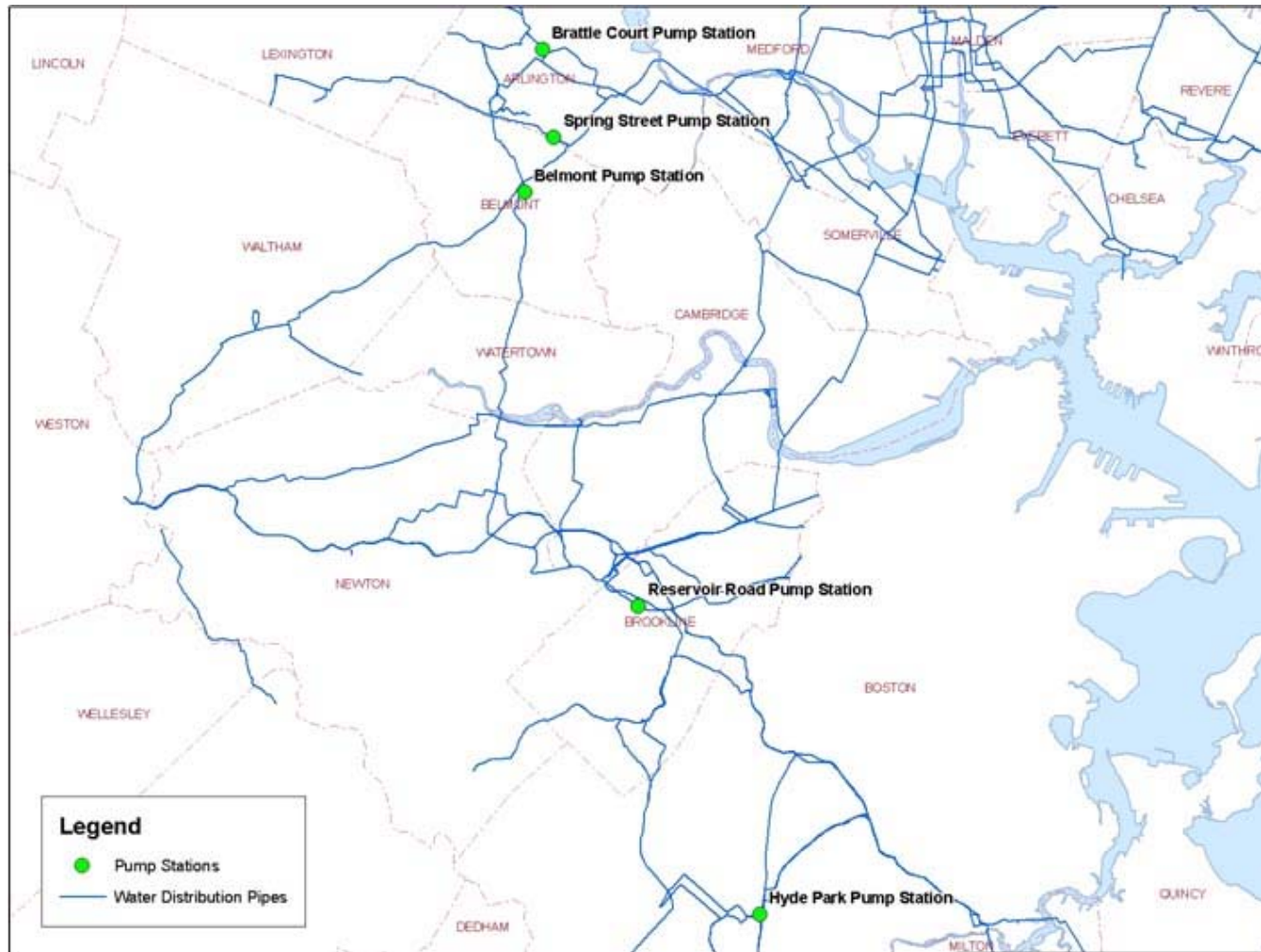
- Arlington is served by the Northern High, Intermediate High and Low Pressure Zones
  - The Weston Aqueduct Supply Main 3 supplies water to the Spring Street and Brattle Court Pump Stations
  - Water is pumped up from these stations to the Turkey Hill Tanks and Belmont Pump Station up to the Arlington Covered Storage
- Arlington uses an average of 4.3 million gallons of water per day, accounting for 2.1% of total system usage





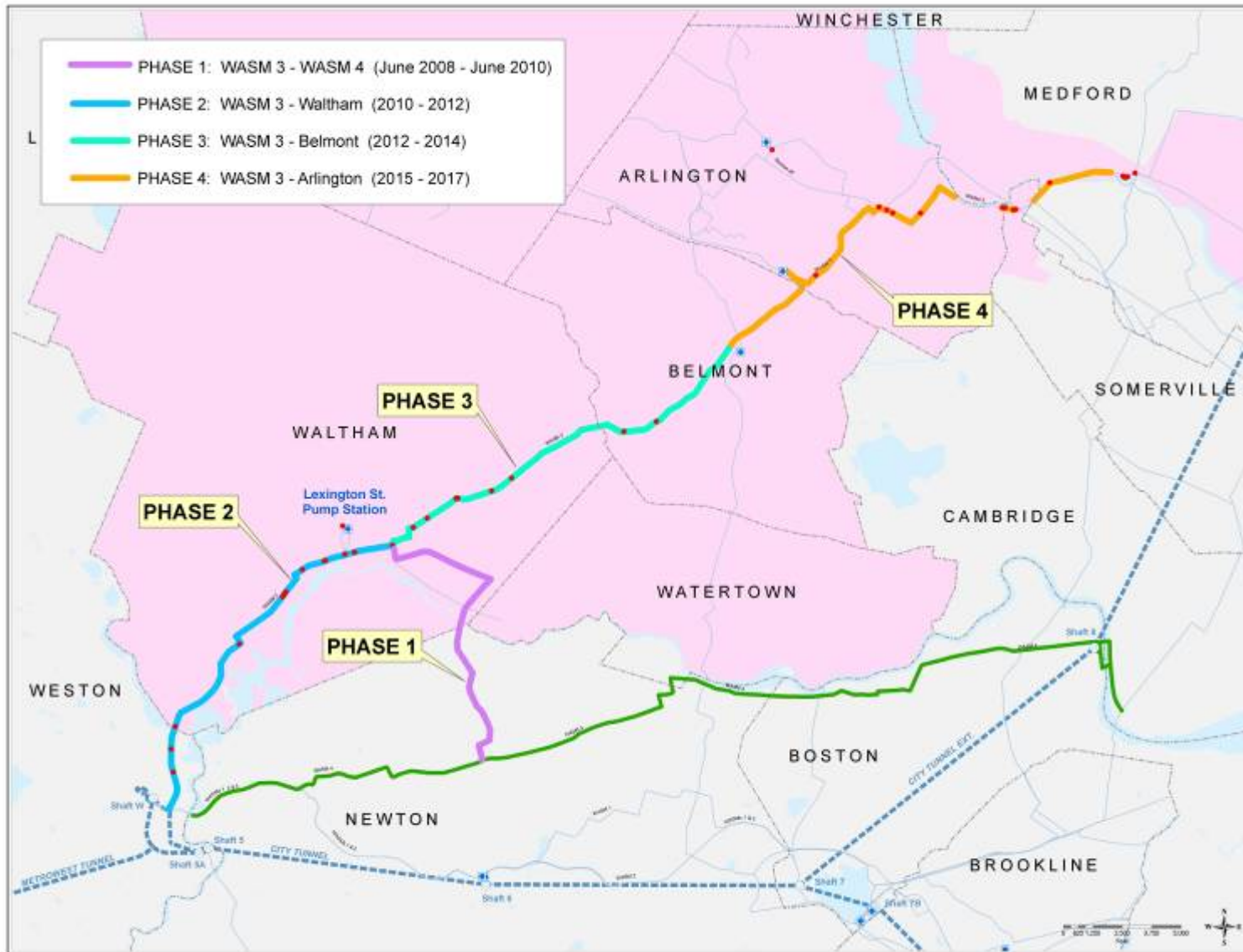
# Rehabilitation of Water Pump Stations

- Contract awarded in September 2006 - \$18 million





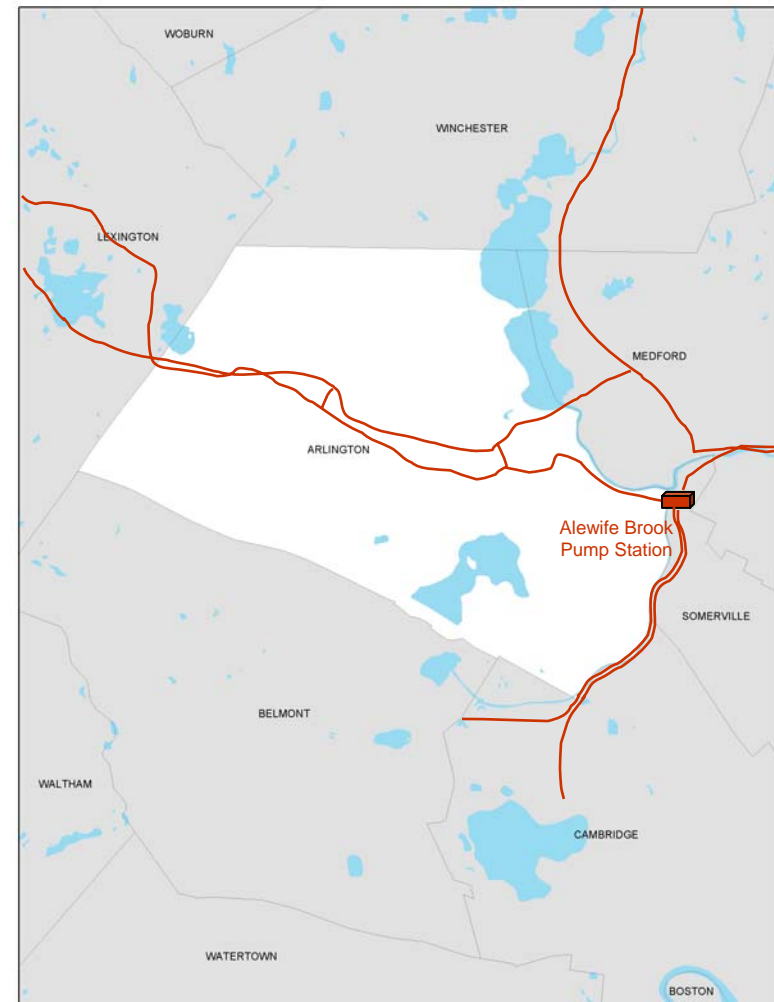
# Weston Aqueduct Supply Main 3 Rehabilitation





## Sewer Collection in Arlington

- Sewage from Arlington is collected into MWRA interceptors and transported directly to Deer Island for treatment
- The average sewer flow from Arlington is 6.8 million gallons per day, accounting for 1.8% of total system usage





## An Environmental Success Story

- In 2002, the 15-year, \$3.8 billion Boston Harbor Project was completed
- About 350 million gallons of wastewater is treated at the new Deer Island Treatment plant every day
- Treated wastewater is discharged 9.5 miles out into the deeper waters of Massachusetts Bay
- Sludge is transported to Quincy where it is recycled into fertilizer





## The Harbor is Recovering

- Water quality in Boston Harbor has improved dramatically
  - Sewage solids discharged from Deer Island have been reduced by 85%
  - Toxic pollutants have been reduced by 90%
  - Water is twice as clear

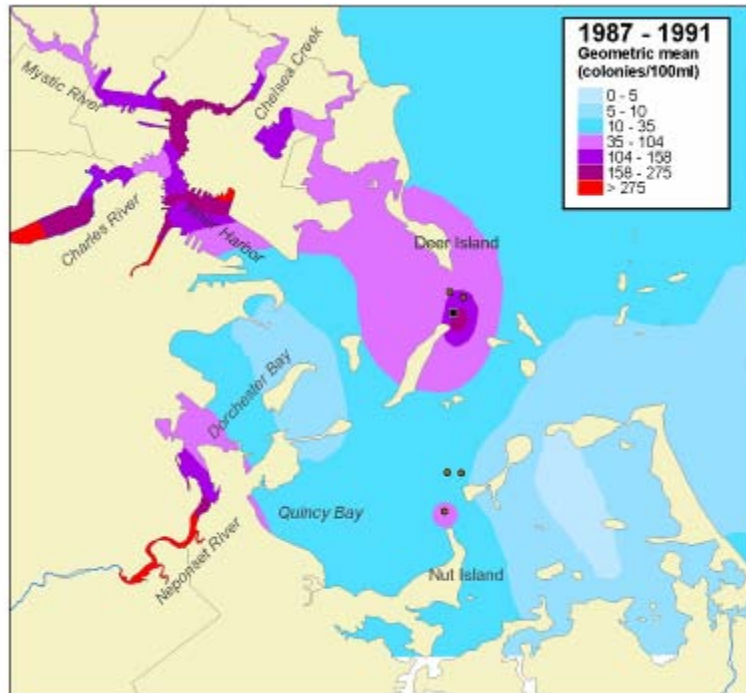




# Dramatic Improvements In Bacterial Water Quality

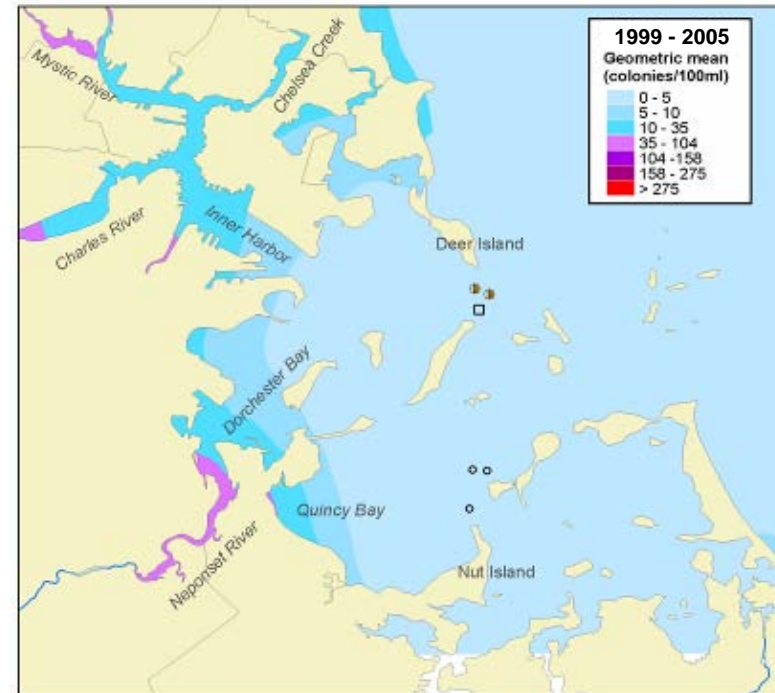
## 1987-1998 (Before Secondary Treatment and South System transfer)

Elevated bacteria around outfalls, rivers, Inner Harbor, shoreline



## 1999 - 2005 (After Secondary Treatment and New Outfall)

Most of Harbor well within swimming criteria, most remaining problems in rivers



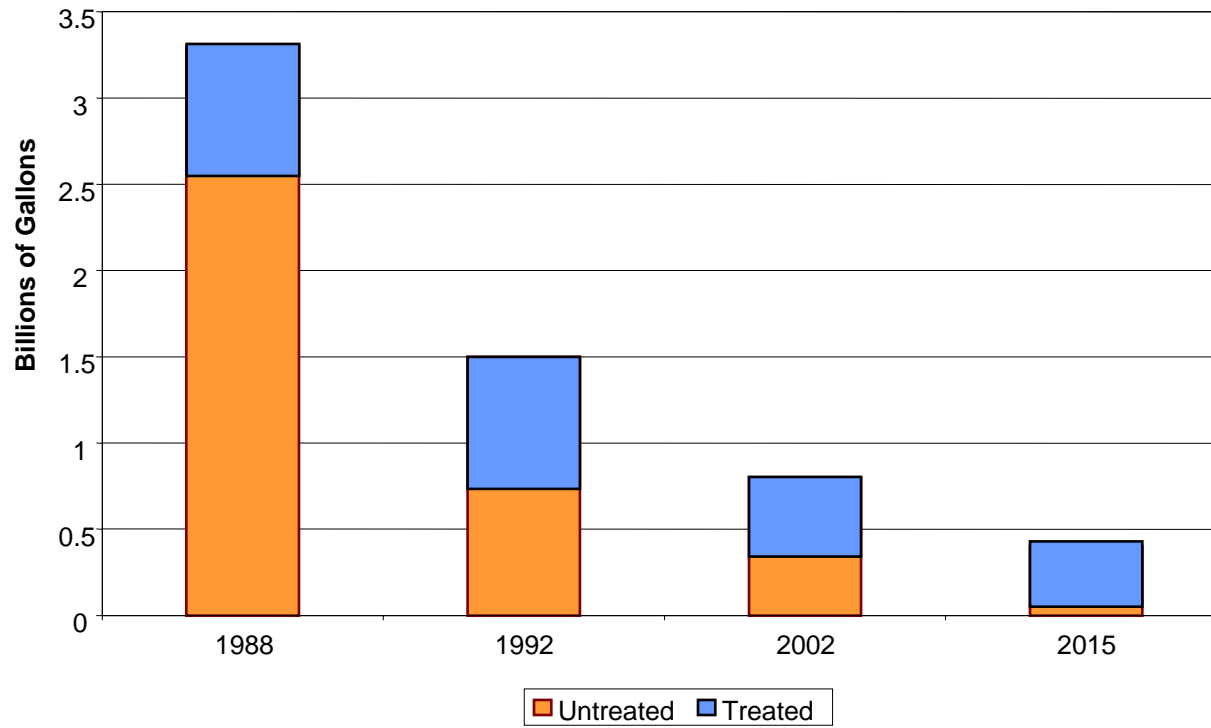
*The lighter the blue, the better.*





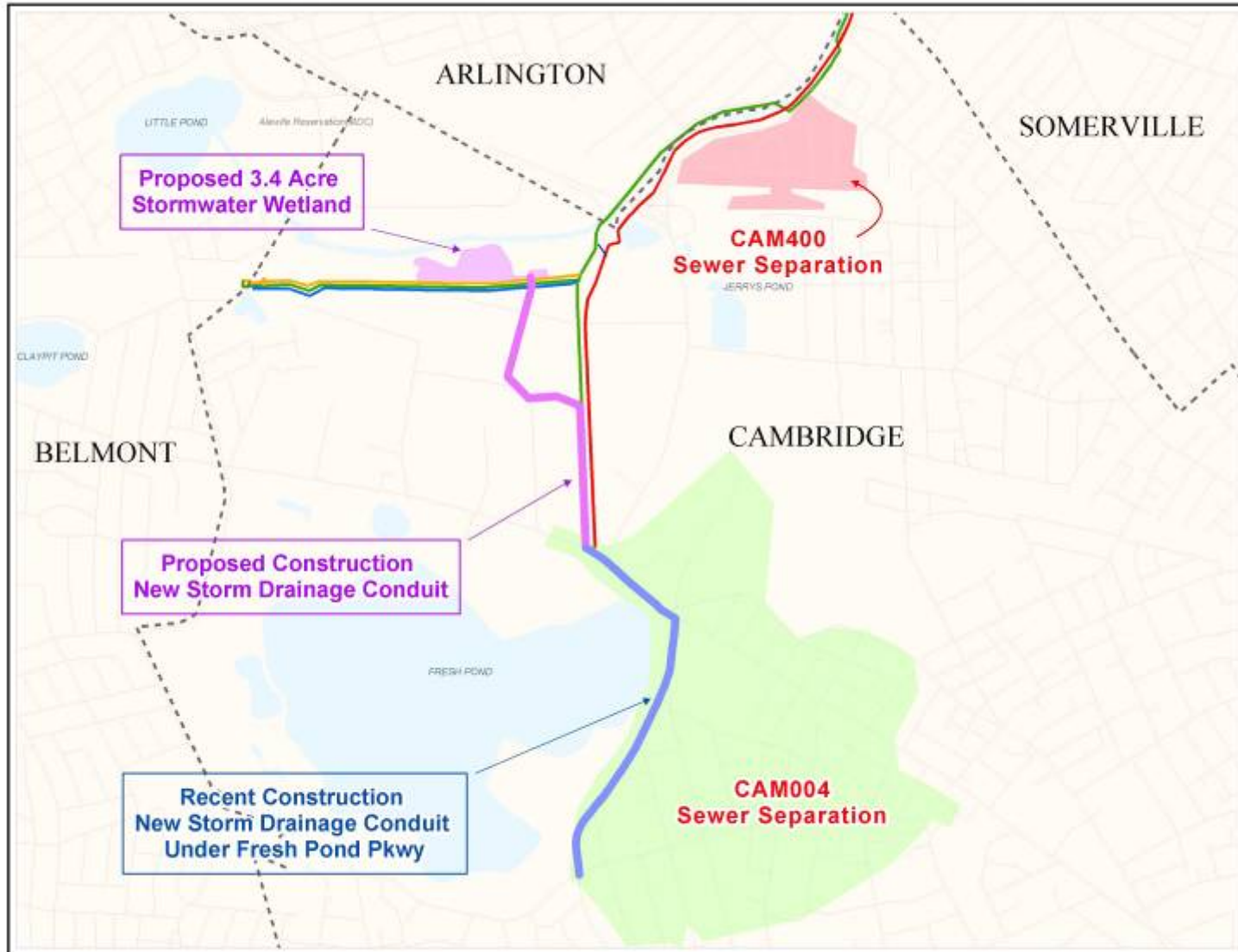
## Annual CSO Volume has Been Reduced Dramatically

- Annual CSO volumes have already been reduced by 2.5 billion gallons
- By 2015, 95% of the remaining CSO flows will be treated



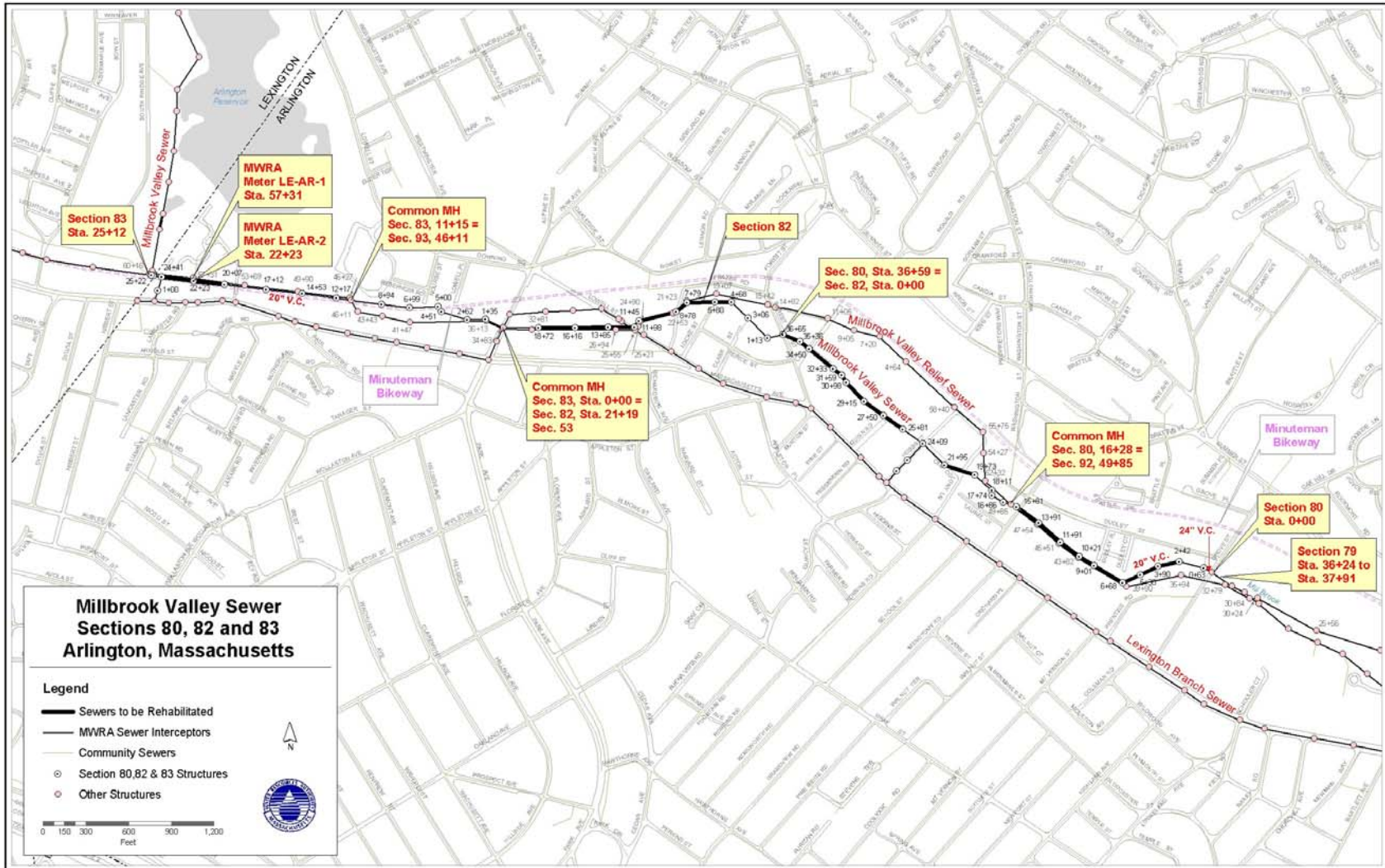


# Alewife Brook CSO Control: CAM002-004 Sewer Separation



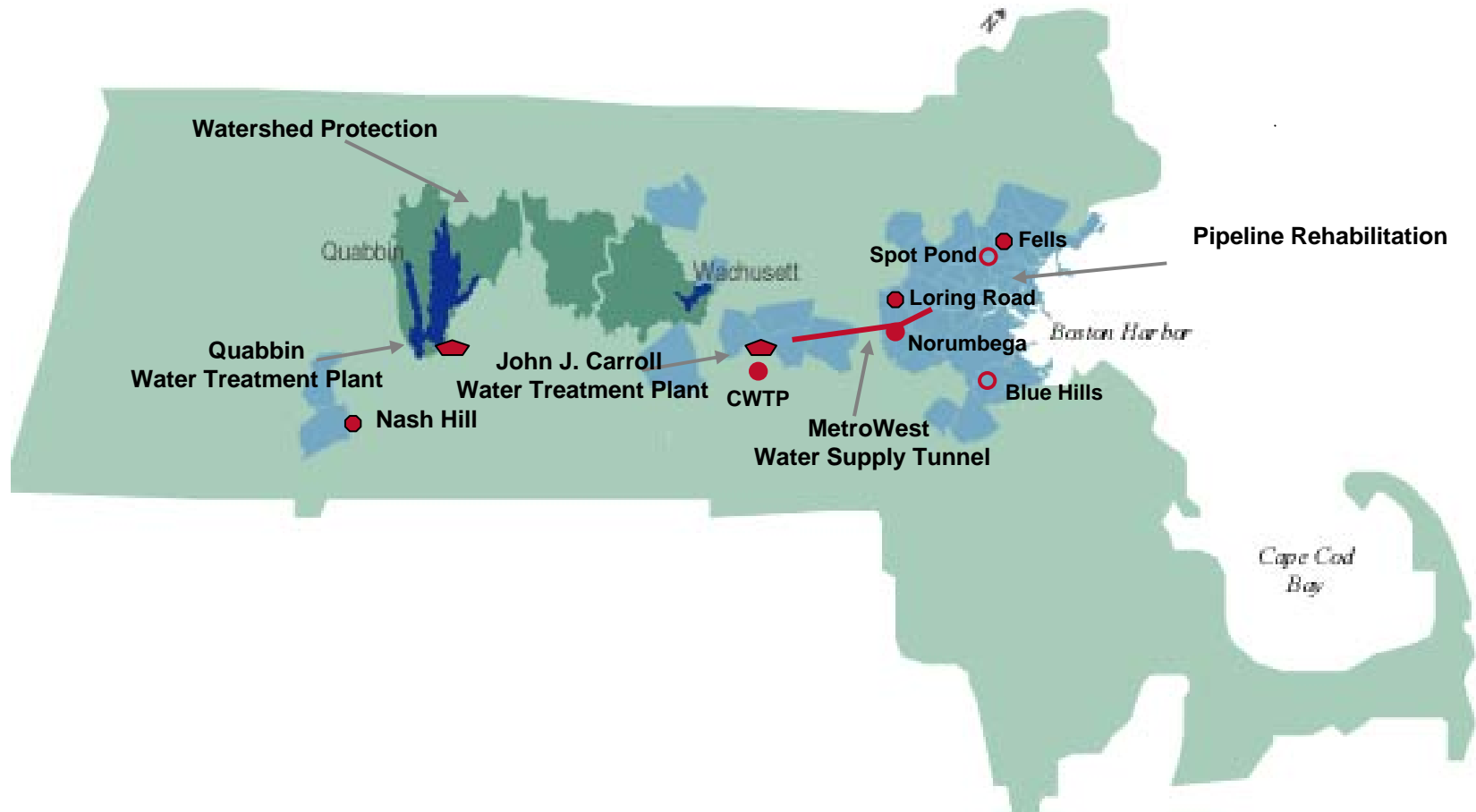


# Millbrook Valley Relief Sewer: Section 80, 82 and 83





# Integrated Water Supply Improvement Program





## The Reservoirs

### Quabbin Reservoir

Storage: 412 billion gallons

Depth: 150 feet

Length: 17.9 miles

Width: 3 miles



### Wachusett Reservoir

Storage: 65 billion gallons

Depth: 129 feet

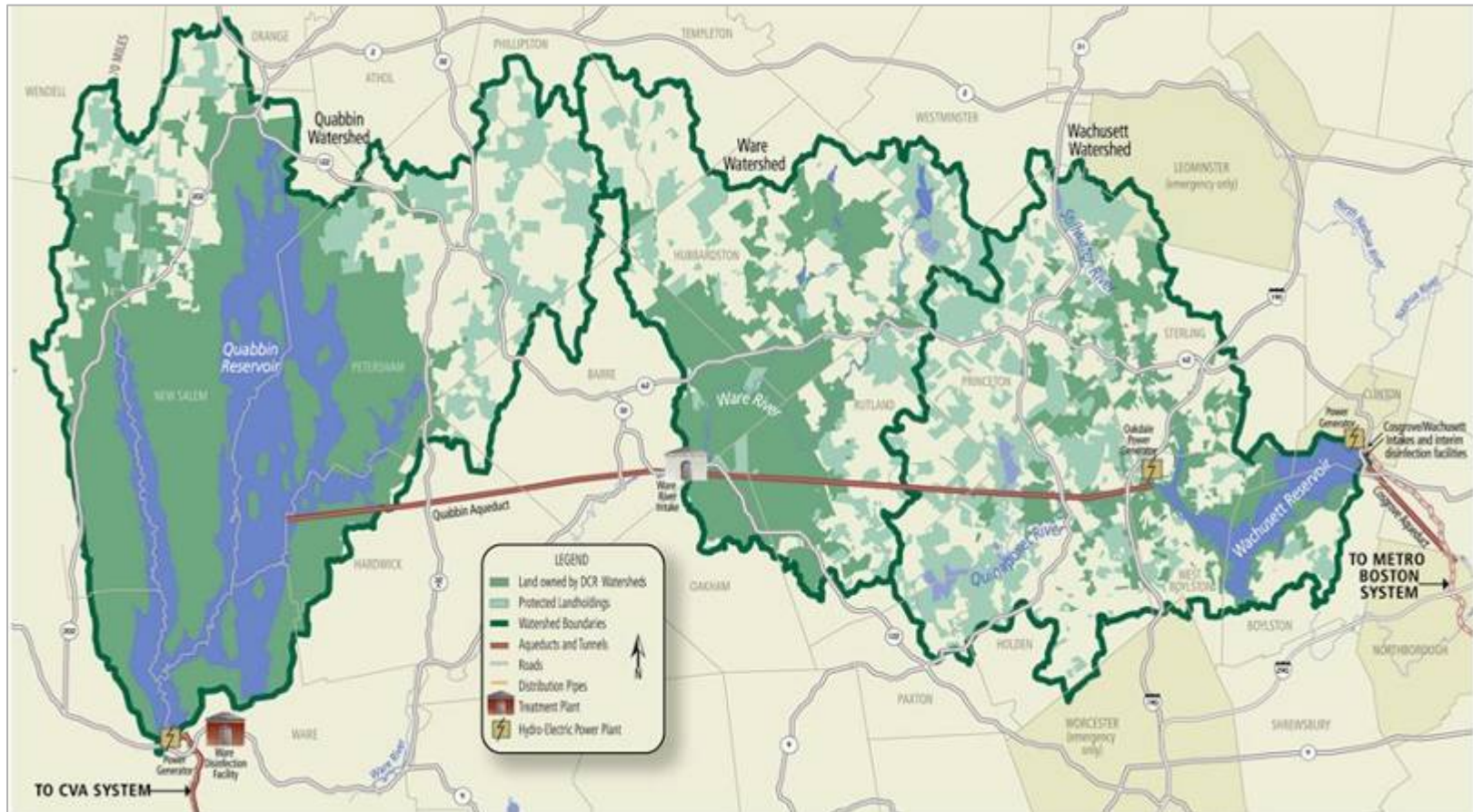
Length: 8.5 miles

Width: 1 mile





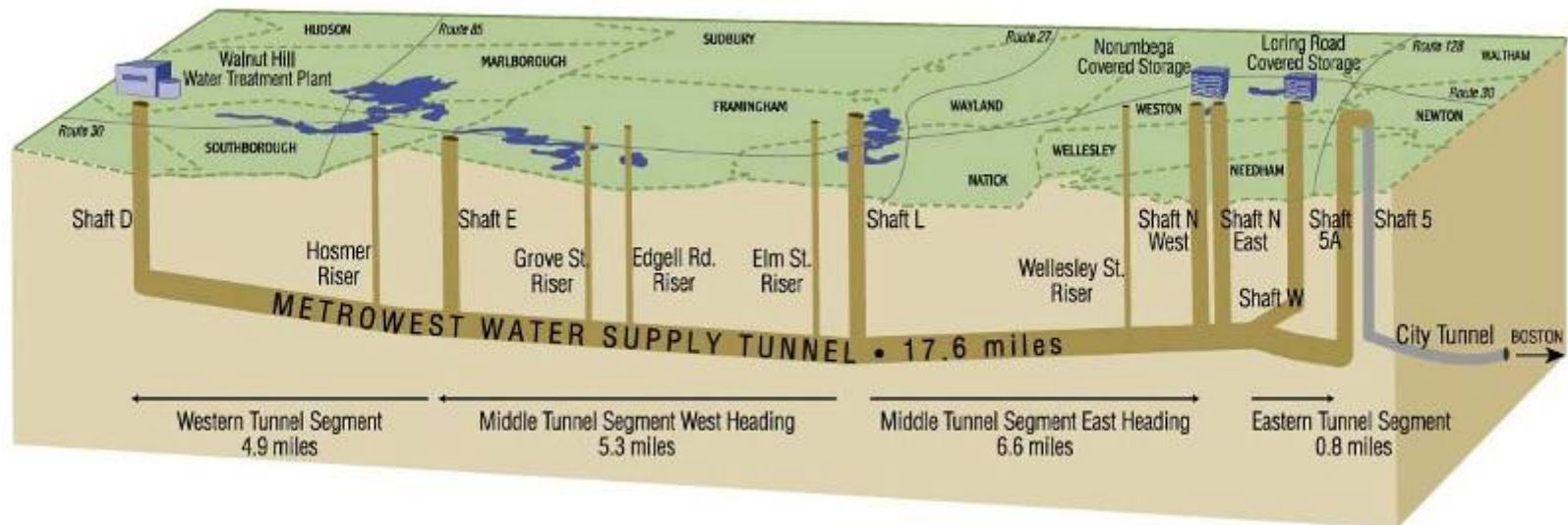
# The Watersheds





## MetroWest Water Supply Tunnel

- The MetroWest Water Supply Tunnel was brought on-line in November 2003
- By March 2004, the Tunnel was being fully utilized allowing the shutdown of the Hultman Aqueduct





## Norumbega Covered Storage Facility

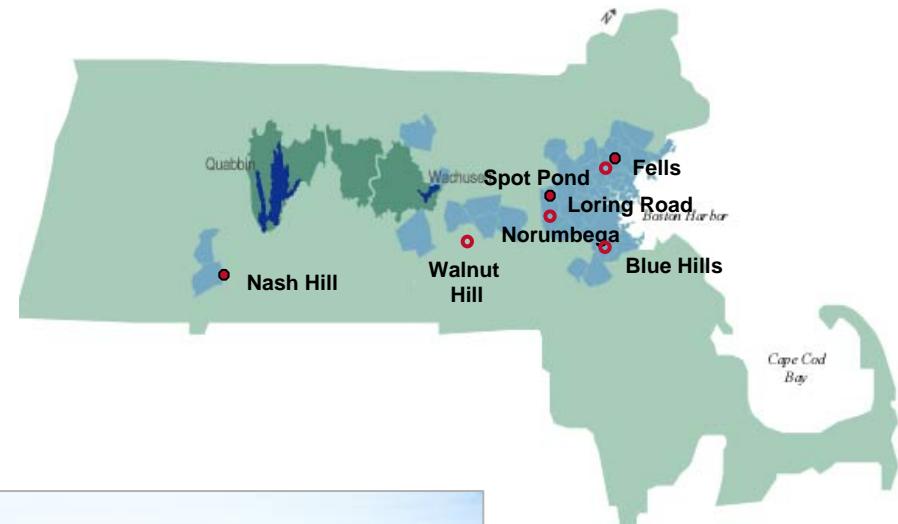
- The tank was completed in May 2004
- It provides 115 million gallons of storage for metropolitan Boston





## Covered Storage Projects

- MWRA is building seven new covered storage tanks to replace all open reservoirs
- Five are completed and on-line
- Blue Hills design/build contract awarded in November





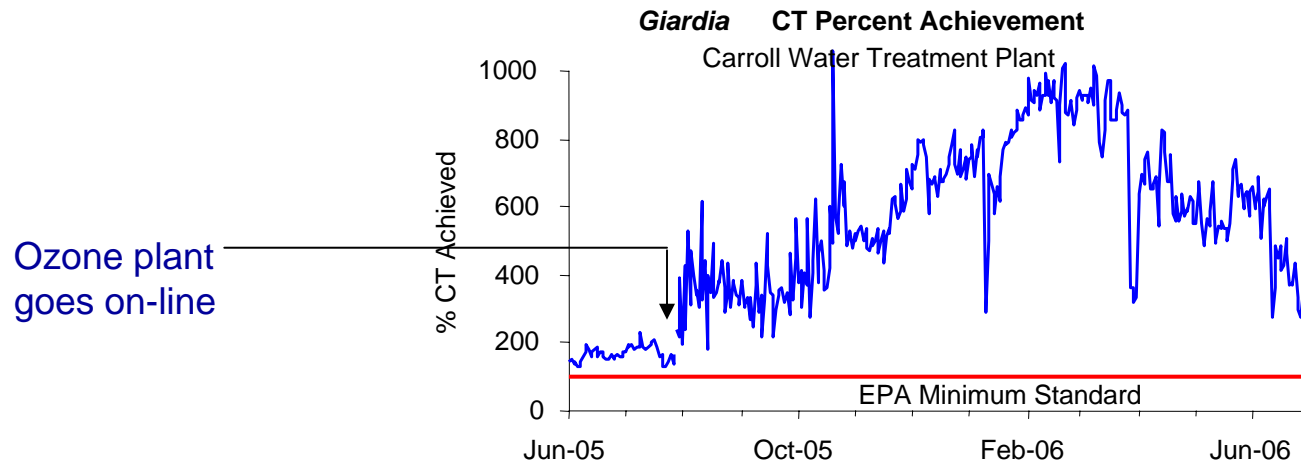
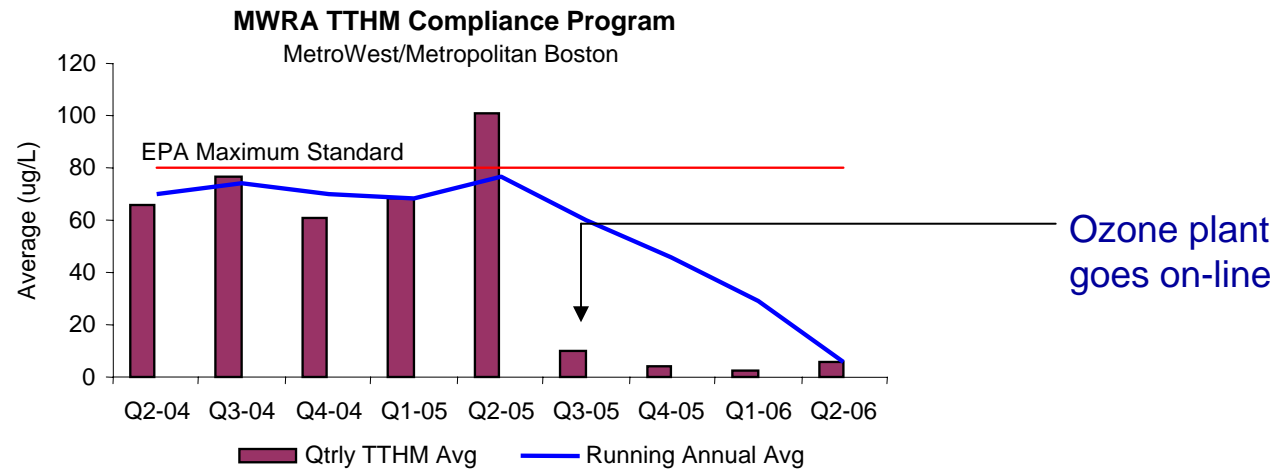
## John J. Carroll Water Treatment Plant



- Completed and on-line in July 2005
- Treatment Processes:
  - Ozonation for primary disinfection
  - Corrosion control
  - Chloramination for secondary disinfection
  - Fluoridation

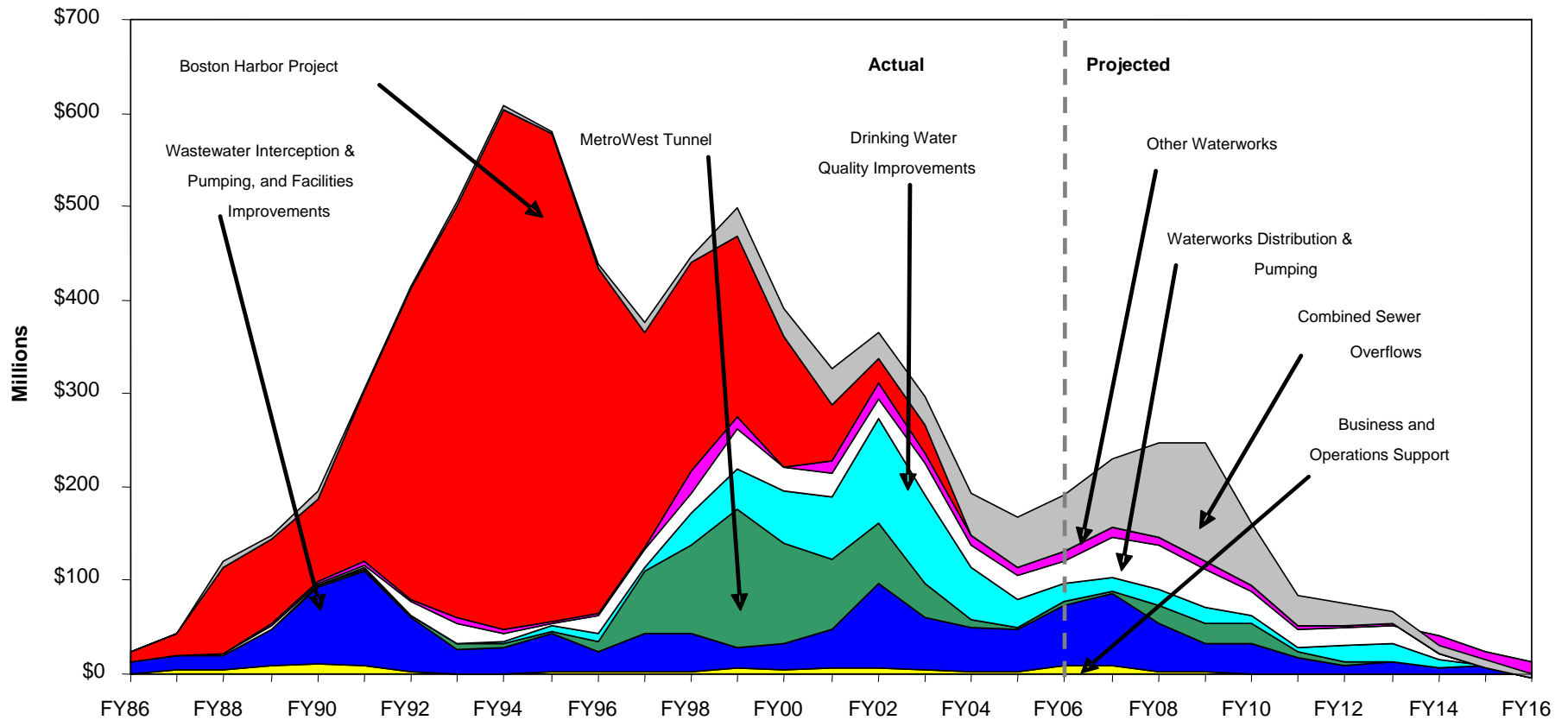


# Chlorine By-products Have Been Reduced, Disinfection Improved With Ozone Treatment



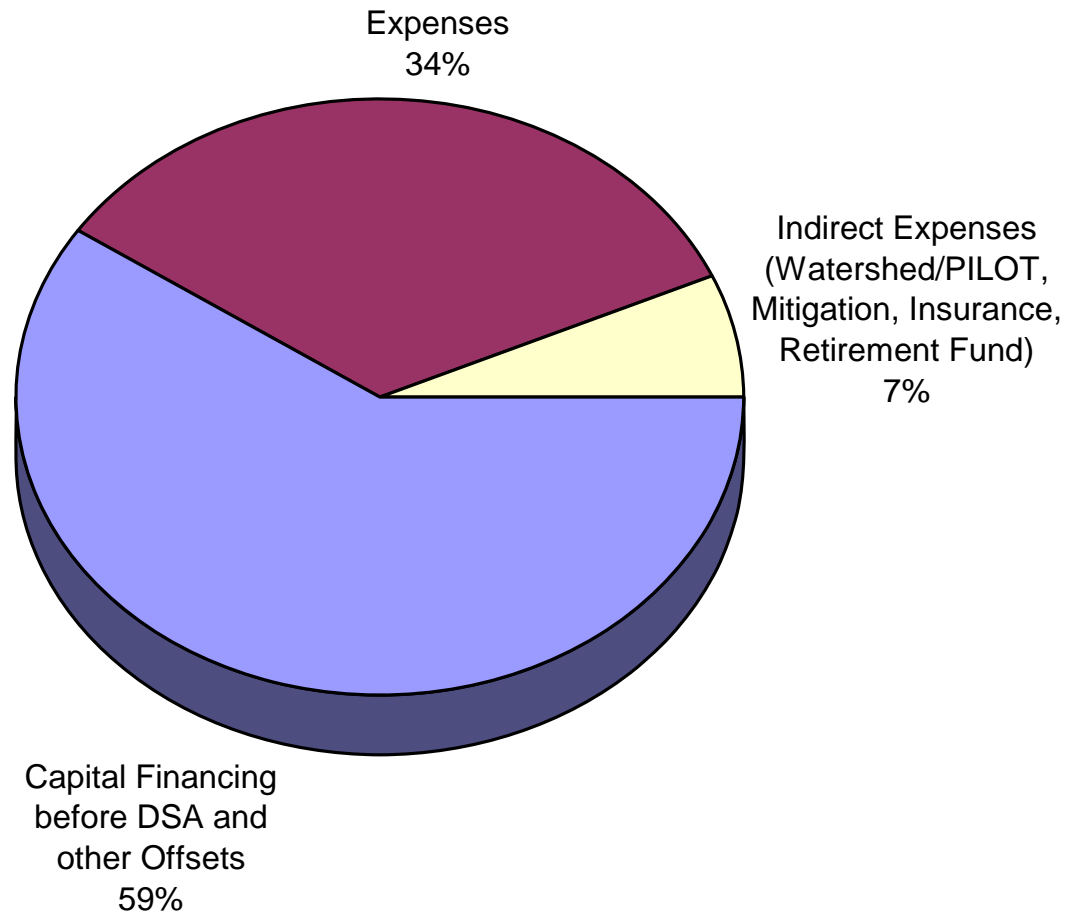


# MWRA's Capital Improvement Program 1986 - 2016





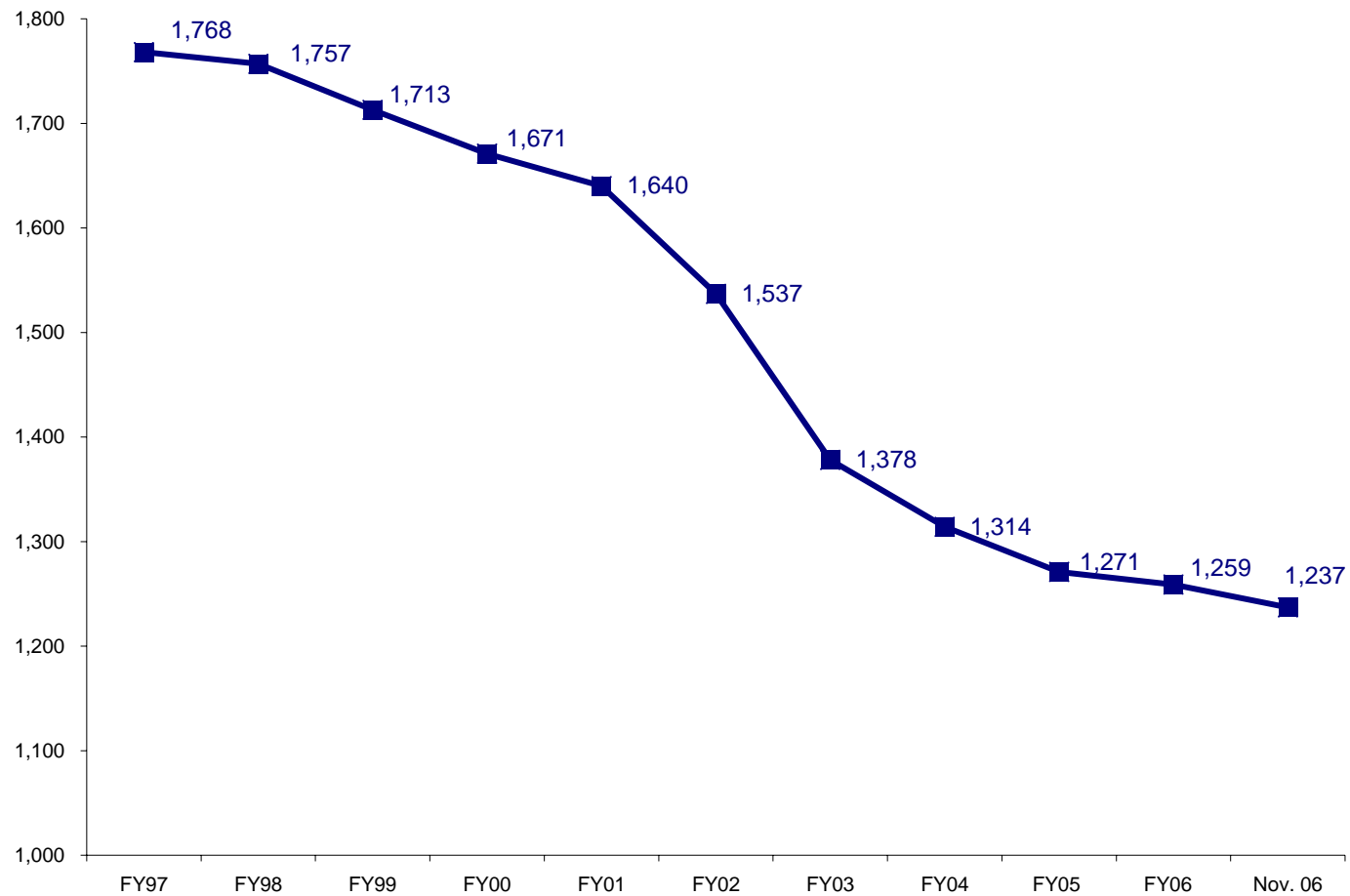
## FY2007 Budget Components





## Controlling Costs: Reductions in Staffing

- MWRA staffing levels have decreased nearly 30% since FY1997





## Continued Cost Control Measures

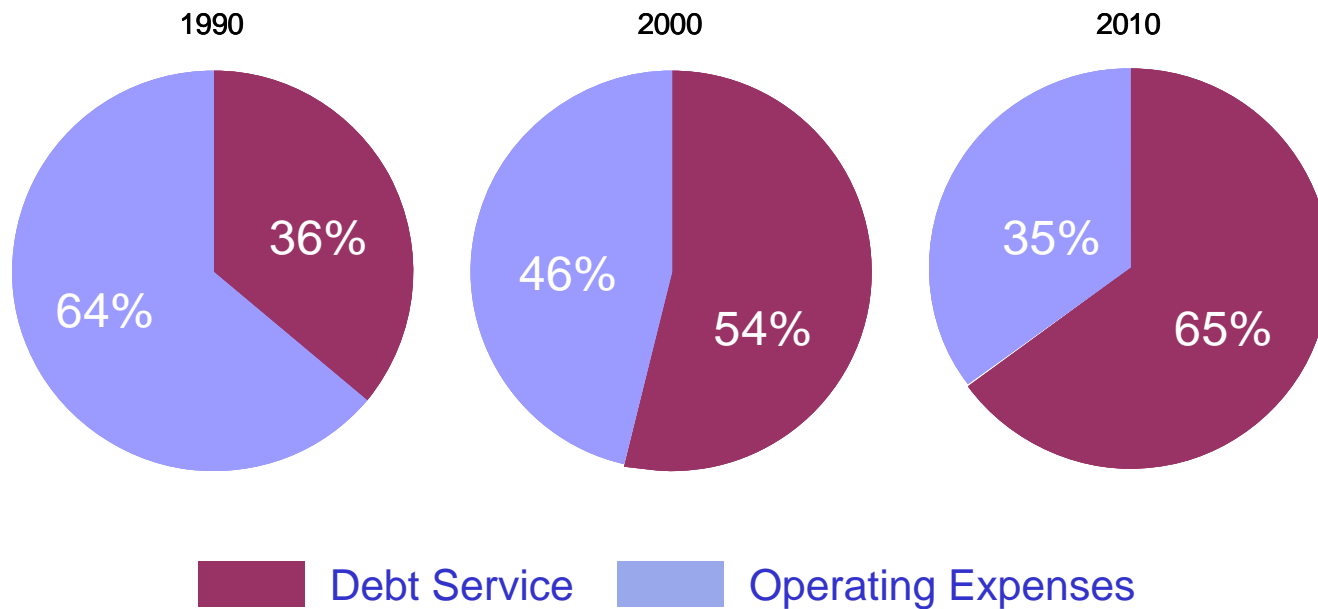
### Reduced Operating Costs:

- Consolidation of 9 Operations & Maintenance Facilities at Chelsea
- Automation of facilities
- Continued reorganizations and consolidations
- Cross-functionality in operations and maintenance staff
- 10% reduction in vehicle fleet
- Charlestown Navy Yard Headquarters lease reduced from 3 buildings to 1; further reduced from 4 floors to 2.5
- Reduced space needs at the Fore River Shipyard from 180 acres to 20 acres; sale of last parcel pending



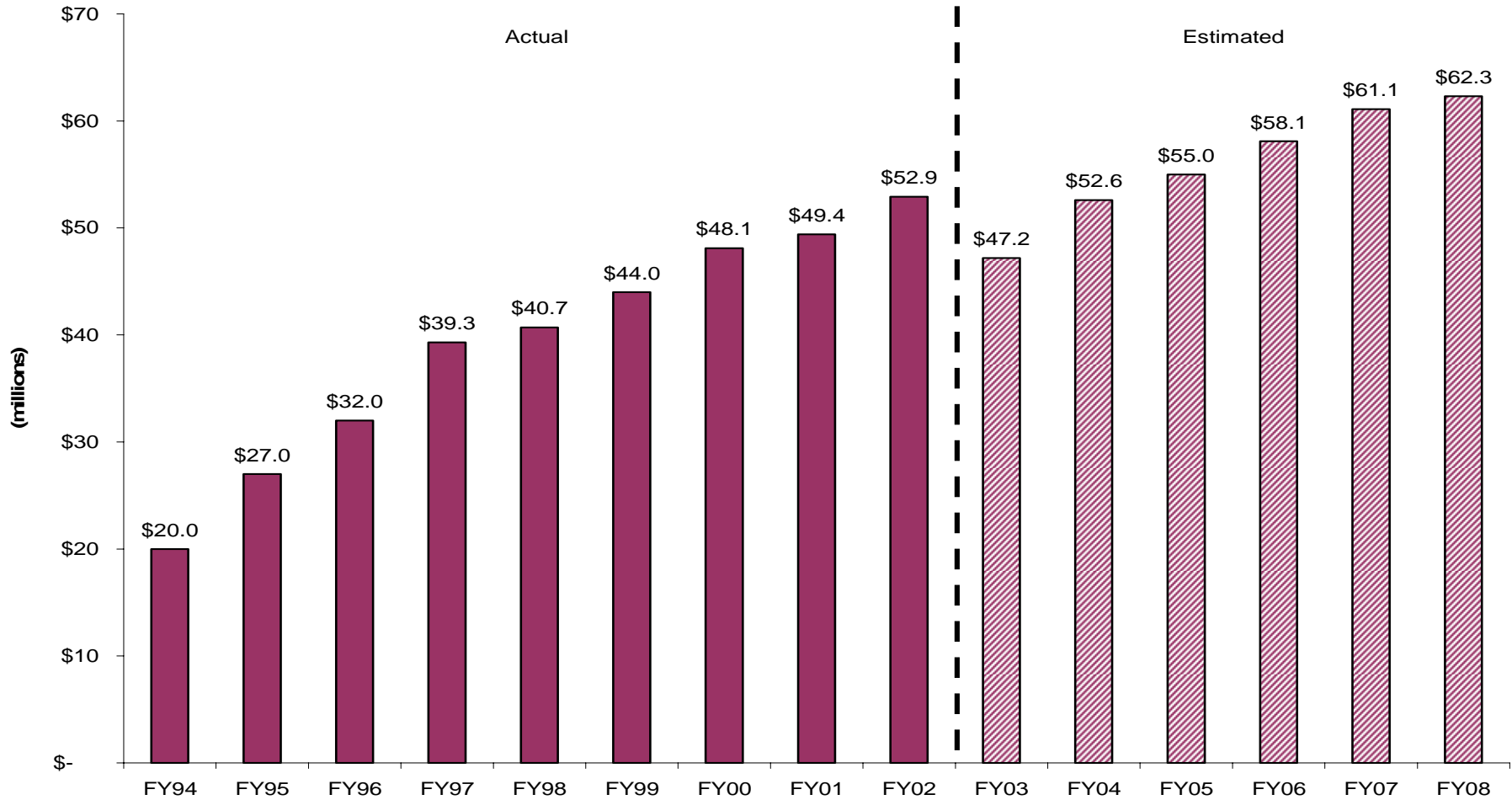
## The Biggest Driver of MWRA Rate Increases is Debt Service

- Debt service as a percentage of total MWRA budget is increasing significantly





# Debt Service Assistance Profile as of June 2002





# Debt Service Assistance Profile as of July 2006

