Five Year Department Submissions
Section Index
FY 2012 - FY 2016

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Town of Needham
Capital Improvement Plan
January 2011

Building, Infrastructure, or Facility Request CIP-BIF					
Project Title	**Public Works Infrastructure Program**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works-Highway				
Location	Various			Project Category	I
Funding	General Funding	CPA Eligible	No	Department Priority	
Partners					
Project Description	Bridges, Intersections, Roads and Sidewalks Maintenance Program				
Anticipated Result	Improve Safety, Mobility and Minimize Future Repair Costs				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	ongoing	Consultant		A, D, & E	292,600
New Construction Addition (increase in size and/or function)		Engineering and Design Phase	12 months	Industry References		Site Development	
Reconstruction or Repair	X	Construction Phase	12 months	In-House	X	General Contractor	7,755,600
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	X	Next Phase	2011			F, F, & E	
New Technology						Technology	
Performance Measure	X					Other*	
Estimated Useful Life→		Varies				Total Budget	**8,048,200**

Project Funding Schedule

	FY2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design		119,800		130,000	42,800
Construction	1,300,000	1,311,600	1,674,000	1,620,000	1,850,000
Total	**1,300,000**	**1,431,400**	**1,674,000**	**1,750,000**	**1,892,800**

Project Manager→ Highway Superintendent

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
As Permanent Employees?		X
Independent Contractors?		X

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Public Works Infrastructure Program**	**Fiscal Year**	**2012 - 2016**

Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

*All **"YES"** responses must be explained under the Other Considerations section*

Operating Budget Impact→ B

Other Considerations

Street Resurfacing

This program is essential to improve the structural and surface integrity of the Town's network of accepted streets. The primary strategy in this program is asphalt paving and incidental work directly associated with paving. Incidental work could include corner reconstruction, handicap ramps, leveling, structural overlays, utility adjustments, minor drainage improvements, some drain extension work, street sign replacement, asphalt curbing with grass shoulders and pavement markings.

Many streets have insufficient pavement thickness, are poorly shaped, lack curbing and require some drainage improvements. Applying this repair strategy in a timely manner will help defer costly and disruptive street reconstruction significantly on all but the most highly traveled roadways. Paving roadways in a timely manner will extend the useful life of the roadway system in the most cost effective manner.

This program would provide funding to pave about 8 lane miles of roadway based on CY-12 contract prices. A lane mile is 5,280' by 12' or 7,040 S.Y.

Other paving strategies may be funded under this program.

The request for Street Resurfacing Construction funding in FY 2012 is 365,000; in FY 2013 is 671,000; in FY 2014 is 400,000, and in FY 2015 is 872,000; in FY 2016 is 805,000.

Estimated useful Life 10 to 15 Years. Estimated 5 Year Capital Cost 3,113,000.

Traffic Signal & Intersection Improvements

The costs are estimated by Engineering and require conceptual scope of work for project level costs that have not yet been determined.

This program will fund Traffic Signal Improvements & intersection improvements for existing intersections and provide funding for new Traffic Signals where none currently exist.

FY12 – Construction - High St @ Greendale Ave, intersection improvement and new traffic signal installation. 408,000. (The design was funded in FY11).

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Public Works Infrastructure Program**	**Fiscal Year**	**2012 - 2016**

FY13 - Design - Great Plain Ave @ Greendale Ave, this intersection has been identified as requiring intersection improvements and replacement of traffic signals. The engineering and design estimate is 88,400.

FY14 – Construction - Great Plain Av @ Greendale Av, this existing traffic signal may require intersection improvements and updating some of the existing traffic signal components. 520,000

FY15 – Design - Forest Street/Central Ave intersection. 130,000

FY16- Construction of Forest Street/Central Ave. intersection improvements estimated at 310,000.

Estimated useful life 25 years estimated 5 Year capital cost 1,456,400.

Sidewalk Repair & Resurfacing School Walking Routes

This program includes funding to construct 10 to 15 handicap ramps.

There are over 160 miles of sidewalk of which 52 miles are designated as school walking routes. The school walking routes are reviewed annually with the School Department. Over half of the sidewalks require significant work. Most of the existing sidewalks do not comply with ADA or AAB laws and regulations or Town of Needham specifications.
Current conservative estimates identify nearly $20 million of sidewalk work required, Town wide.

Depending on the workload in the Engineering Division, private surveyors may be required to provide layout services.

FY12 - Harris Ave. from Dedham Ave. to Bradford St. (both sides), School St. from Chestnut St. to Warren St. (North side), Dedham Ave. opposite Grant St. to Bradford St. (North Side), Warren St. from School St. to Great Plain Ave. (West side)
Eng. & Const. 357,000.

FY-13 - Harris Ave. from Bradford St. to Coulton Pk. (both sides), Pinewood Rd. (West side) –
Eng. & Const. 429,000.

FY14 – Grant St. from Dedham Ave. to Junction St. (East side), Oak St. from Chestnut St. to Marked Tree Rd. (North side), Greendale Ave. from Nevada Rd. to High St. (South side)
Eng. & Const. 552,000.

FY15 – Enslin Rd. (North Side), Doane Ave. (West side), Grosvenor Rd. (North side) Oakland Ave. (both sides), May St. (both Sides Webster St. to Highland St.; North side Garden St. to Nehoiden St.), Thornton Rd. from Broad Meadow Rd. to Birds Hill Ave. (East side).
Eng. & Const. 398,000.

FY 16 – Roads to be determined – Eng. & Const. $385,000

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Public Works Infrastructure Program**	**Fiscal Year**	**2012 - 2016**

Estimated Useful Life 20 to 30 Years. Estimated 5 Year Capital Cost 2,121,000.

Sidewalk Repair & Resurfacing Non-School Walking Routes

This program would provide funding for sidewalk repair and resurfacing not covered under the "school walking route" program.

There are over 160 miles of sidewalk. Over half of the sidewalks require significant work. Most of the existing sidewalks do not comply with ADA or AAB laws and regulations or Town of Needham specifications. In future years more funds will be dedicated to this part of the program from the school routes.

Current conservative estimates identify approximately $20 million of sidewalk work required, Town wide.

FY12-FY16 – Attention will be directed to non-school walking routes. Examples of these roads are:
Birds Hill Ave., Coolidge Rd., Glendoon Rd., Great Plain Ave., Hillcrest Rd., Maple St., Mark Lee Rd., Washburn Ave., Wilshire Pk., and Woodledge Rd.

Estimated Useful Life 20 to 30 Years Estimated 5 Year Capital Cost 500,000.

Storm Drain Capacity Improvements

This program includes funding to improve roadway drainage capacity. The March 2002 Storm Water Master Plan, identified a number of areas throughout the Town where improvements are required to resolve flooding problems and illicit discharges. Locations for improvements have been prioritized within the Plan. Drainage improvements to Bradford Street and Carey Road were determined to be most critical. The funding request also includes installation of additional storm drains between Lantern Lane and Gayland Road and to replace, increase capacity and extend storm drains on Manning St, Hoover Rd and Concord Rd & Burnside Rd. Since the issuance of this report numerous multi-unit developments have been built or planned in the Town of Needham. These developments incorporate new roads with drainage structures and roof or sump connections which are then connected to the existing town owned system. These new connections have increased the load on the current system and causes flooding in some areas.

FY12 – No funding requested

FY13 - Taylor Street/Central Ave (Undesignated) – Eng. 31,400,

FY14 – Taylor Street/Central Ave (Undesignated) - Construction 174,000

FY15- No funding requested

FY16 Carey Road (Area 2) - Eng. 42,800

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Public Works Infrastructure Program**	**Fiscal Year**	**2012 - 2016**

Future Areas to be considered, but not yet prioritized:
Carey Road (Area 2) – Construction 156,800
Foxhill Rd., Canterbury Lane, South St., and X-Country (Area 10) – Eng. 41,800
Lower Hunnewell Drainage improvements Eng. & Construction 305,000
Foxhill Rd., Canterbury Lane, South St., and X-Country (Area 10) – Construction
Concord St., Greendale Ave., Woodbine Cir. System (Area 4) – Eng. 100,000
Oak St. (Area 8), Mackintosh Ave. (Areas 3 & 7), Oxbow Rd. (Area 9), West St. (Area 11)
Fairfield St., Elmwood Rd. (Area 5)

Brooks and Culverts – Repair and Maintenance

The severe storms of October 1996, June 1998, June 2006, July 2008 and March 2010 have resulted in numerous complaints and subsequent investigations of the Town's brooks, streams and culverts. The conditions observed were significant. The DPW has developed a repair and maintenance program which is a combination of contracted work and use of town forces. It is the intention of the DPW to expend Capital Funds to address the issue of flooded and poor draining brooks, streams, waterways and culverts throughout the Town that have been severely damaged by heavy rains/storms for many years. Prior funding has funded cleaning and debris removal. Flooding in March 2010 has caused the failure of retaining walls, loss of soils behind the walls, and brooks have become silted allowing the overgrowth of vegetation that has impacted the level of the water flows. This neglect has resulted in the loss of useable abutting property and flooded basements. The current conditions are beyond the means of DPW equipment and personnel. It will require a detailed investigation, a plan of recommended improvements, a design drawing and specifications, environmental permitting and bidding of construction to be overseen by the Town's Engineering Division. This will return the waterways to a condition that the DPW will be able to maintain.

EPA is currently finalizing stronger requirements for stormwater and permitting under the NPDES permit. The Town will need to continue to demonstrate its efforts regarding cleaning and improvements to water quality of brook and culverts to avoid fines from the EPA.

Funding for this program since FY06 has included cleaning of Hurd Brook and culverts, from Central Avenue to the Wellesley line and a portion of Alder Brook.
In FY09 Cleaning from Chestnut Street to Maple Street was completed

Future Projects include, but are not limited to, the following locations:
Mallard Road
Winding River
Locust Lane
Fuller Brook
Oxbow Road
Webster & Howland Streets
Brookside Road & Forest Street
Chestnut Street & Carriage Lane

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Public Works Infrastructure Program**	**Fiscal Year**	**2012 - 2016**
Emerson Place Pennsylvania Avenue FY 2015 and FY 2016 – Rosemary Brook Retaining Walls Rehabilitation. Walls are currently in poor condition and are collapsing into the brook impeding the flow.			

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Storm Drain Discharge Improvements – Water Quality (EPA)**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works - Engineering				
Location	Various			Project Category	I
Funding	GF	CPA Eligible	No	Department Priority	
Partners					
Project Description	Stormwater Quality Improvements				
Anticipated Result	Less Polluted Stormwater Runoff				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	5 years	Consultant		A, D, & E	178,500
New Construction Addition (increase in size and/or function)		Engineering and Design Phase	5 years	Industry References		Site Development	0
Reconstruction or Repair	X	Construction Phase	12 months	In-House	X	General Contractor	2,073,500
Court, Federal or State Order	X	Close Out Process		Other		Project Management	
Health or Safety	X	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→		80 Years				Total Budget	2,252,000

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design		68,500		110,000	
Construction			73,500		**2,000,000**
Total		**68,500**	**73,500**	**110,000**	**2,000,000**

Project Manager→ Town Engineer

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
As Permanent Employees?		X
Independent Contractors?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

*All **"YES"** responses must be explained under the Additional Information section*

Operating Budget Impact→ B

Additional Information

In 1995 the DPW was under order from the EPA to embark on a stormwater discharge investigation for all illicit discharges to the Charles River. Illicit Discharges identified in this investigation were pursued and improvements undertaken to eliminate them in 1996 and 1997. This investigation led to the Town entering into a Memorandum of Understanding (MOU) with the EPA to commence a Town-wide investigation and to the development of a Stormwater Master

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Storm Drain Discharge Improvements – Water Quality (EPA)**	**Fiscal Year**	**2012 - 2016**

Plan. This Master Plan was completed in 2002. Incorporated into this Stormwater Master Plan are improvements to the Stormwater Drainage System to upgrade the quality of the water discharged to the Charles River in Needham. Further investigation and sampling continues year to year.

When the 2003 EPA NPDES Stormwater Discharge Permit took effect, it incorporated several requirements identified in the MOU. There were a number of projects proposed to manage stormwater quality effectively. The second permit to be issued by the EPA is expected in December 2010.

Past projects completed to improve storm water Discharge with a variety of methods are

- Town Library
- High School
- Chestnut Street Reconstruction
- Highrock School
- Lake Drive

Design completed, awaiting construction

- DPW Drainage improvements
- Sportsmen's Pond/Rosemary Glen

FY12 – No funding requested
FY13 – Water Shed Management Plan 68,500
FY14 - DPW Facility SWMP, Construction 73,500
FY15 – Rosemary Lake Sediment Removal – Engineering & Design 110,000
FY16 – Rosemary Lake Sediment Removal – Construction 1,000,000 to 2,000,000

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Wastewater Pump Station Improvements**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works – Water & Sewer				
Location	Various			Project Category	I
Funding	SF	CPA Eligible	No	Department Priority	
Partners					
Project Description	wastewater pumping stations upgrades and improvments				
Anticipated Result	Improve reliability and reduce cost				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	48	Consultant		A, D, & E	315,000
New Construction Addition	X	Engineering and Design Phase	12	Industry References		Site Development	
Reconstruction or Repair	X	Construction Phase	24	In-House	X	General Contractor	7,937,000
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	X	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure	X					Other*	
Estimated Useful Life→		50 Years				Total Budget	**8,252,000,**

Project Funding Schedule

	FY2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design		262,000			53,000
Construction	**5,017,000**		2,640,000		280,000
Total	**5,017,000**	**262,000**	**2,640,000**		**333,000**

Project Manager→ Permanent Public Building Committee/Public Facilities Department/Department of Public Works

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

*All **"YES"** responses must be explained under the Additional Information section*

Operating Budget Impact→

Additional Information

As part of the Wastewater System Master Plan, several of the wastewater pumping stations were evaluated to determine their current physical condition, capacity vs. current & future flow projections and compliance with current codes or standards of operation. The Master Plan recommends that at least 7 of the 10 stations require work. These include major improvements and replacement of the Reservoir St. "B" Station (this is the 2nd oldest station in the system). Its standby generator has failed and pumps need constant maintenance.

The great amount of activity in the Needham Business Center will have a tremendous impact on the Kendrick St. & Reservoir St. "B" Stations. The Kendrick St.

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Wastewater Pump Station Improvements**	**Fiscal Year**	**2012 - 2016**

Station had been renovated to accommodate some of the initial redevelopment currently underway in the area tributary to this station. This renovation was undertaken and funded by the proponents for the redevelopment of 140 Kendrick St. Enhancements have been completed for the 350 residential units at 300 Second Avenue (Charles River Landing).

Canister pump stations at Lake Drive, Cooks Bridge (Milo Circle), Warren Street and Reservoir "A" are at or beyond their design lives. Constant maintenance and emergency shutoffs occur more frequently and require greater amounts of personnel time and emergency funds to keep running. The canister station at Richardson Drive was eliminated when gravity sewer construction was completed in the spring of 2010.

Sewer flows are increasing and upgrades are needed to keep up with the increased flow. By keeping up with flows we avoid damage claims for sewer backup into home.

FY 12	Reservoir St. "B" - Construction	5,017,000
FY13	Cooks Bridge - Engineering & Design	262,000
FY14	Cooks Bridge - Construction	2,640,000
FY15	No Funding	0
FY16	Reservoir St. "A" - Engineering & Design	53,000
	Reservoir St. "A" - Construction	280,000

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Sewer System Rehabilitation - Infiltration & Inflow Removal Program**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works – Engineering				
Location	Various			Project Category	I
Funding	SF	CPA Eligible	No	Department Priority	
Partners	WPAT – SRF (2%Loan) / MWRA(Loan/Grant)				
Project Description	Identify and remove Infiltration and Inflow (I/I) in existing sewer systems.				
Anticipated Result	Reduce ground water getting into sewer system				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	24	Consultant		A, D, & E	1,258,000
New Construction Addition		Engineering and Design Phase	12	Industry References		Site Development	
Reconstruction or Repair	X	Construction Phase	12	In-House		General Contractor	2,212,000
Court, Federal or State Order	X	Close Out Process	36	Other		Project Management	
Health or Safety		Next Phase	2012			F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→		25 Years				Total Budget	**3,470,000**

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design		1,000,000	75,000	88,000	95,000
Construction	575,000		250,000	682,000	705,000
Total	**575,000**	**1,000,000**	**325,000**	**770,000**	**800,000**

Project Manager→ Town Engineer

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

*All **"YES"** responses must be explained under the Additional Information section*

Operating Budget Impact→

Additional Information

The Town of Needham, along with numerous other communities, is under Administrative Orders from the DEP to identify and remove Infiltration and Inflow (I/I) in existing sewer systems. Infiltration is defined as groundwater or storm water runoff that enters the system thru deteriorated pipe or manhole structures that by definition need to be repaired. As a result of this order, I/I studies have been undertaken to determine the locations and volumes of I/I entering the sanitary sewer system. The I/I analysis (1985 & 1989) and the Sewer System Evaluation Survey (SSES) (1991) have identified, by flow measurement, the areas of the collection system which are contributing high volumes of I/I to the system. On the basis of volumes of flow and knowledge of local sewer system overflows

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Sewer System Rehabilitation - Infiltration & Inflow Removal Program**	**Fiscal Year**	**2012 - 2016**

(SSO) or basement flooding, an order of priority has been established to determine the scheduling of the engineering, design and remediation work. The highest priorities relate to locations of known surcharging with sewage overflow or release or basement flooding. The remediation proceeds in stages starting with the preliminary engineering, followed by the rehabilitation design and concluding with the rehabilitation construction.

Work in prior years has been undertaken in Areas 11, 14, 19-1, 22, 3, 4, 30, 31, 2, 24, 21L, 1, 16. The priority was based on areas that the I/I analysis had recorded the highest levels of infiltration. The field work was conducted in 1984, and supplemented in 1986 and 1987. The study results are now approaching 25 years old. The earliest repair work that was undertaken is approaching 20 years old, and the remaining sections identified in the original study show significantly less I/I per length of sewer main. There is a strong probability that the original high leakage areas are contributing greater amounts of infiltration than the remaining sections left to repair identified in the original study. The study must be updated at this time to effectively expend resources to address current infiltration and inflow.

INFILTRATION
The work to date has focused on infiltration removal. This program will continue as an infiltration removal effort. A separate program is being presented for Inflow removal

Previously Funded Areas

FY08 - Engineering, Design & Construction (Various Locations)	1,740,300
Infiltration Construction - Area 2, 24 & 21(L)	
Area 22(Prelim. Design - Infiltration)	66,500
	1,806,800

FY09 and FY10 No funding requested

Previously Funded Areas

FY11 - 155,000 Area 16 and 22 Started

Proposed Funded Areas

FY12 - Area 16 - Area 22 - Construction (continuation) -	575,000
FY13 – New Townwide I/I Study and Master Plan	1,000,000
FY 14 – No request	
FY 15 – Area Determined by Study	360,000
FY 16 – Area Determined by Study	365,000

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Sewer System Rehabilitation - Infiltration & Inflow Removal Program**	**Fiscal Year**	**2012 - 2016**

INFLOW

Inflow is defined as clean, non-septic water, which is introduced to the system. This water is generally produced by residential sump pumps that drain basements. The inflow removal program is being presented separately from the infiltration removal program. Much of this work could address inflow to include extending or expanding the storm drain system to accept groundwater from household sump pumps. Needham's most significant problem is believed to be from these private sources. The program will initiate with an education and information campaign to inform and prepare the homeowners as to the nature of the problem. The cost impacts to the community, the legal implications, the likely solutions and the responsibilities of the homeowner and the potential enforcement actions by the Town, the MWRA, the DEP and the EPA will need to be communicated. The preliminary engineering will likely take the form of smoke testing and flooded dye testing to determine any direct or indirect interconnections between the sewer and the storm drain system. It also includes a door-to-door investigation of households to determine where violations are occurring. Typical violations include, but are not limited to, sump pumps or open clean-outs where non-sanitary flow is discharging directly to the sewer system as well as foundation drains, yard drains, roof leaders and other cross connections.

Previously Funded Areas

FY09 and FY10 – No funding requested

FY11 – 70,000 Area 19-1 Design

Proposed Funded Areas

FY12- No Funding Requested	0
FY13 – Area 19-1 – No Funding Requested	0
FY 14 Area 22 - Engineering & Design	75,000
Area 19-1 – Construction	250,000
FY15 - Areas 1,3 & 4 – Engineering & Design	88,000
Area 16 - Construction	322,000
FY 16 – Areas 2, 24 & 21(L) – Engineering & Design	95,000
Areas 1, 3 & 4 – Construction	340,000

Beginning in FY 1996, the MWRA assessment included a component that reflects the volume of wastewater discharged. The total I/I has been measured to be as much as 60% of Needham's total wastewater flow. Normal daily wastewater volume is approximately 3.0mgd with peak I/I; the volume can exceed a rate of 15.0mgd. These spikes are attributable to the inflow component and can total as much as 300mgd annually in a typical rainfall year. The remaining 75% is flow that occurs throughout the year as infiltration and can approach 1 billion gallons per year. This is approximately 25% of the total I/I in the system.

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Sewer Service Connection Installation / Replacement**			**Fiscal Year**	**2013 - 2016**
Requestor	Public Works – Water & Sewer				
Location	Various			Project Category	I
Funding	SF	CPA Eligible	NO	Department Priority	
Partners					
Project Description	Sewer service connections before roads are paved				
Anticipated Result	To Repair Sewer Services prior to paving or roads this will help with Road improvements last longer.				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	48	Consultant		A, D, & E	
New Construction Addition		Engineering and Design Phase		Industry References		Site Development	
Reconstruction or Repair	X	Construction Phase	48	In-House		General Contractor	200,000
Court, Federal or State Order		Close Out Process	48	Other		Project Management	
Health or Safety	X	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→						Total Budget	**200,000**

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design					
Construction		50,000	50,000	50,000	50,000
Total		**50,000**	**50,000**	**50,000**	**50,000**

Project Manager→ Water & Sewer Superintendent

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X
Operating Budget Impact→		

Additional Information

With the initiation of the Road Construction Programs, a component of the overall project that had been overlooked for funding was the installation or replacement of the sewer service building connections. There are still homes that have chosen not to connect to the Sewer System. Should their septic system fail, they could be ordered to connect due to health reasons regardless of any moratoriums on excavations in new construction that may be in-place. The cost for these service installations are typically not included in road construction estimates. In the case of Chapter 90 Projects, these are not considered as a reimbursement eligible expense. However, they are recoverable through a betterment type process typically over a ten (10) year period. These expenses will be included in future local road reconstruction estimates. Homeowners where sewer mains exist will be encouraged to connect prior to the project start. However, for those homeowners who do not connect, a partial connection within the right-of-way will be installed. There is a corresponding request for water service connections.

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Sewer SCADA System**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works –Sewer				
Location	West St. Pump Station			Project Category	I
Funding	SF	CPA Eligible	NO	Department Priority	
Partners					
Project Description	Supervisory Control and Data Acquisition is SCADA. This is a computer system for gathering and analyzing real time data.				
Anticipated Result	Improve use of town resources.				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration		Consultant		A, D, & E	65,700
New Construction Addition	X	Engineering and Design Phase	18	Industry References		Site Development	
Reconstruction or Repair		Construction Phase	12	In-House		General Contractor	705,400
Court, Federal or State Order		Close Out Process	24	Other		Project Management	
Health or Safety	X	Next Phase	2012			F, F, & E	
New Technology	X					Technology	
Performance Measure	X					Other*	
Estimated Useful Life→		10years				Total Budget	**771,100**

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design	65,700				
Construction		705,400			
Total	**65,700**	**705,400**			

Project Manager→ Water and Sewer Superintendent

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X
*All **"YES"** responses must be explained under the Additional Information section*		
Operating Budget Impact→		

Additional Information

The acronym for Supervisory Control and Data Acquisition is SCADA. This is a computer system for gathering and analyzing real time data. SCADA systems are used to monitor and control a plant or equipment in industries such as telecommunications, water supply and wastewater systems, energy, oil and gas refining and transportation. A SCADA system gathers information, such as equipment failures in pump stations, transfers the information back to a monitoring station,

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Sewer SCADA System**	**Fiscal Year**	**2012 - 2016**

alerting on-call personnel that a failure has occurred who responds in a timely manor. SCADA systems can be relatively simple, such as one that monitors environmental conditions of a small office building, or very complex, such as a system that monitors all the activity throughout a region.

For example, at the Charles River Water Treatment Facility the water system SCADA is linked with the Saint Mary's Pump Station and the Town's two water storage tanks with a dedicated fiber optic line for real time monitoring.

The Water and Sewer Division intends to install a second SCADA system that will link its nine sanitary sewer pump stations to a central information collection point (West St. Pump station) that will also alert the appropriate emergency response personnel as required. Alarm triggers that can reduce damage to Town and private property are a high wet well level, power failure, low wet well level (pumps could become air bound), and intrusion alarm. This type of monitoring will allow the on call personnel to better assess the nature of the problem and the appropriate response to reduce damage and claims against the Town due to sewage backups. SCADA systems can reduce environmental and property damage with real time monitoring by transmitting system status and providing remote control.

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Filter Media Replacement**	**Fiscal Year**	**2012 - 2016**
Requestor	Public Works – Water & Sewer		
Location	Charles River Water Treatment Facility	Project Category	F
Funding	WF	CPA Eligible	Department Priority
Partners			
Project Description	Filter Media Replacement		
Anticipated Result	Filter Reliability		
Alternatives			

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration		Consultant		A, D, & E	
New Construction Addition		Engineering and Design Phase	12	Industry References		Site Development	
Reconstruction or Repair	x	Construction Phase	4	In-House	X	General Contractor	295,000
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	X	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→		5 years				Total Budget	295,000

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design	0	0	0	0	0
Construction	**70,000**	72,500	75,000	77,500	**0**
Total	**70,000**	**72,500**	**75,000**	**77,500**	**0**

Project Manager→ Water & Sewer Superintendent

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

*All **"YES"** responses must be explained under the Additional Information section*

Operating Budget Impact→

Additional Information

The filter media (greensand) used for manganese removal at the Charles River Water Treatment Facility is replaced every 5 years.

All four filters were replaced with natural greensand in 2008. This program is intended to establish a five year replacement cycle for the replacement of the filter media, with Greensand Plus, a substitute for natural greensand. Greensand Plus is promoted as being able to withstand wider variations in operating conditions and therefore may reduce the frequency of media replacement.

Preliminary Capital Worksheet					
Title	**Water SCADA System Upgrade and Video Surveillance**				
Year	Column A	Type	Column B	Other Cost	Column C
Funding for FY2012	40,000	Purchase Cost			
Funding for FY2013	335,000	Equipment Cost (aka F,F, & E)			
Funding for FY2014		Design Cost	40,000		
Funding for FY2015		Construction Cost	335,000		
Funding for FY2016		Other Cost*			
Total (must equal column B total)	$375,000	Total (must equal column A total)	$375,000	Total (must equal Other Cost in column B)	$

Questions (All Must Be Answered)	YES	NO
Is this a stand alone request (meaning it is not dependent on passage of any other project or part of a multi-year capital improvement plan e.g., core vehicle replacements)?	X	
Is this a request to acquire by purchase or lease real property (land, buildings, modular, facilities)		X
Is this a request to purchase equipment (other than vehicles or technology)?		X
Is this a request to purchase rolling stock?		X
Is this a request for purchase technology?		X
Is this a request for an extraordinary repair or improvement to a building?		X
Is this a request for an extraordinary repair or improvement to a bridge, road, intersection, or sidewalk?		X
Is this a request for an extraordinary repair or improvement to the Town's sewer system infrastructure?		X
Is this a request for an extraordinary repair or improvement to the Town's water system infrastructure?		X
Are there additional costs to bid, design, construct, complete, and/or use that are NOT included in this request?		X
Will another department be required to provide support (personnel and/or financial), at any point during the process in order to complete the project?	X	
Has the department been consulted before the submission of this request?	X	
Will the requested project if approved require an increase in the operating budget for ANY department?		X
Will additional permanent staff be required if the request is approved?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

Description of the Project

The acronym for Supervisory Control and Data Acquisition is SCADA. This is a computer system for gathering and analyzing real time data. SCADA systems are used to monitor and control a plant or equipment in industries such as telecommunications, water supply and wastewater systems, energy, oil and gas refining and transportation. A SCADA system gathers information, such as equipment failures in pump stations, transfers the information back to a monitoring station, alerting on-call personnel that a failure has occurred allowing a response in a timely manner.

The Charles River Water Treatment Facility is linked with the Saint Mary's Pump Station and the Town's two water storage tanks with an outdated dedicated copper communication line for real time monitoring. The copper lines have had failures and are unreliable. In addition,

Preliminary Capital Worksheet	
Title	**Water SCADA System Upgrade and Video Surveillance**

new technology is not adaptable to the old copper communication lines. Implementing a new system will result in a minimal cost savings. Maintenance of the existing system will result in increasing maintenance and emergency response costs associated with system failures.

This project will update the system and add video monitoring equipment at these locations both inside and out. Currently there are no video cameras. The new system will also provide remote site response. Adding video provides real time information back to the Charles River Water Treatment Facility. The video system will also help with homeland security concerns with the Town's water system.

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Water System Rehabilitation Program**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works – Water & Sewer				
Location	Various			Project Category	I
Funding	WF	CPA Eligible	No	Department Priority	
Partners					
Project Description	Annual Replacement of WaterMains				
Anticipated Result	Improve Water Quality and Reliability				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	12	Consultant	X	A, D, & E	
New Construction Addition (increase in size and/or function)	X	Engineering and Design Phase		Industry References		Site Development	193,300
Reconstruction or Repair	X	Construction Phase	12	In-House	X	General Contractor	1,400,300
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	x	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→		80 years				Total Budget	**1,599,600**

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design		99,300			94,000
Construction	684,500		715,800		
Total	**684,500**	**99,300**	**715,800**		**94,000**

Project Manager→ Town Engineer

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

*All **"YES"** responses must be explained under the Additional Information section*

Operating Budget Impact→

Additional Information

FY12
Lincoln St. – Construction - 684,500
Funds maybe diverted to the Highland Ave Water Main depending on MASSDOT plans

FY13

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Water System Rehabilitation Program**	**Fiscal Year**	**2012 - 2016**

Grant St./Junction St. to Dedham Ave. – New 8' (2500 lf) – Eng. & Design 99,300

FY14
Grant St. - Construction 715,800

FY15
None

FY16

Pleasant St./Howland St. to Dedham Ave. – New 8" (1160 lf) – Eng. & Design 94,000
Norfolk St./Warren St. to Webster St. – New 8" (1300 lf) – Eng. & Design

Future Projects

Pleasant St./Norfolk St. – Construction 627,000

Alfreton Rd./ Highland Ave. to Webster St. New 8" (500 lf) - Eng. & Design 47,000
Bennington St. / High St. to Concord St. New 8" (650 lf) - Eng. & Design

Alfreton Rd./Highland Ave to Webster – Construction
Bennington St./High St. to Concord St. – Construction 519,400

Thorpe Rd./Webster St. to End New 8" (330lf) – Eng. & Design 69,000
Mills Rd./ Sachem Rd. to Davenport Ave. New 8" (500lf) – Eng. & Design
Mayo Ave. Harris Ave to Great Plain Ave New 8" (1060lf) – Eng. & Design

Thorpe Rd./ Mills Rd./ Mayo Ave. – Construction 550,000

Kingsbury St. / Oakland Ave. to Webster St. – Eng. & Design 94,000

Oakland Ave. / May St. to Highland Ave. - Eng. & Design
Fenton Rd. / West St. to Pershing Rd. - Eng. & Design
Greenough St. / Pine Grove St. to Avery St. – Eng. & Design
Pine Grove St. Hillside Ave to existing 8" - Eng. & Design

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Water Service Connections**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works – Water & Sewer				
Location	Various			Project Category	I
Funding	WF	CPA Eligible	NO	Department Priority	
Partners					
Project Description	Primary purpose of this program is to remove lead from the system.				
Anticipated Result	Improve Water Quality and Reliability				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	12	Consultant		A, D, & E	
New Construction Addition		Engineering and Design Phase		Industry References		Site Development	
Reconstruction or Repair	X	Construction Phase	12	In-House	X	General Contractor	200,000/yr
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	X	Next Phase	2012			F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→		60 Years				Total Budget	800,000

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design					
Construction		200,000	200,000	200,000	200,000
Total	**0**	**200,000**	**200,000**	**200,000**	**200,000**

Project Manager→ Water & Sewer Superintendent

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X
Operating Budget Impact→		

Additional Information

The primary purpose of this program is to remove lead from the system. With the initiation of the Road Construction Programs, a component of the project that had been overlooked for funding was the replacement of the water service building connections. This leaves an element of the subsurface infrastructure susceptible to failure before the desired life of the reconstructed roadway has been realized. In the case of Chapter 90 projects, such as Webster St., these are not considered as reimbursement eligible expenses. Should the DPW be successful in continuing the local road reconstruction program, these expenses could be determined and funded on a project by project basis. Water main projects include service replacements as a project expense. The FY 2012 request for no funding reflects the Water Division's completion of water service connections for most of the planned road constructions projects until FY 2013.

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Water System Improvements- 14" Main Replacement (Construction)**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works- Engineering				
Location	Central Ave			Project Category	I
Funding	WF	CPA Eligible	No	Department Priority	
Partners	SRF				
Project Description	Annual Replacement of Watermains				
Anticipated Result	Improve Water Quality and Reliability				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	12	Consultant	X	A, D, & E	260,000
New Construction Addition (increase in size and/or function)	X	Engineering and Design Phase		Industry References		Site Development	
Reconstruction or Repair	X	Construction Phase	12	In-House	X	General Contractor	2,700,000
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	x	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→		80 years				Total Budget	**2,960,000**

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design			260,000		
Construction					2,700,000
Total			**260,000**		**2,700,000**

Project Manager→ Town Engineer

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?		X
If the request is not approved will Town revenues be negatively impacted?		X

*All **"YES"** responses must be explained under the Additional Information section*

Operating Budget Impact→

Additional Information

The total length of the 14" main is approximately 19,000 lf (3.6 miles), extending from Charles River Street, to Pine Street, to Central Avenue, to Marked Tree Road and a section between Oak Street and Chestnut Street, to School Street.

In 2008, the 14" transmission watermain was relined from the CRWTP to Grove Street. In 2010, an upgrade from the original 14" watermain to 16" watermain was installed from Grove Street to Central Avenue.

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Water System Improvements- 14" Main Replacement (Construction)**	**Fiscal Year**	**2012 - 2016**

This request is intended to replace the remaining portion of the existing 14" bitumastic or coal tar lined water main that was installed in 1936 -1939. Water quality is a concern, as the lining break-down is a source for potential contamination.

FY 14 – Funding is proposed for the design of the remaining 11,500lf watermain to be replaced from the intersection of Pine Street and Central Avenue to the intersection of School Street and Chestnut Street.

FY 16 – funding is proposed for the construction of the remaining watermain.

SRF Funding may be available for this project and DPW will submit an application to complete the project.

FY 14 Design	260,000
FY 15	0
FY 16 Construction	2,700,000

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Water System – Fire Flow Improvements**			**Fiscal Year**	**2012 - 2016**
Requestor	Public Works – Engineering				
Location	Various			Project Category	B
Funding	WF	CPA Eligible	No	Department Priority	
Partners					
Project Description					
Anticipated Result					
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	48	Consultant	X	A, D, & E	470,250
New Construction Addition		Engineering and Design Phase	24	Industry References		Site Development	
Reconstruction or Repair	X	Construction Phase	24	In-House		General Contractor	7,160,000
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	X	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure						Other*	
Estimated Useful Life→		50 Years				Total Budget	**7,630,250**

Project Funding Schedule

	FY2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design			261,250	209,000	
Construction		5,070,000	1,254,000	836,000	
Total		**5,070,000**	**1,515,250**	**1,045,000**	

Project Manager→ Town Engineer

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?	X	
If the request is not approved will Town revenues be negatively impacted?	X	

*All **"YES"** responses must be explained under the Additional Information section*

Operating Budget Impact→

Additional Information

The Water System Master Plan has identified a category of improvements for high priority action:
FY12 - No Proposed Work
FY13 – St. Mary's Street Pump Station improvements/construction - 5,070,000
FY14 - Bird's Hill Tank high service area/engineering, design & construction - 1,515,250
FY15 - Dunster Road Tank high service area/engineering, design & construction - 1,045,000
FY16 – No Proposed Work.

Building, Infrastructure, or Facility Request
CIP-BIF1

Project Title	**Irrigation Supply Facility / Design**			**Fiscal Year**	**2014**
Requestor	Public Works – Engineering			Budget Request	84,000
Location	Dedham Ave. Reservoir			Project Category	I
Funding	WF	CPA Eligible	no	Department Priority	
Partners					
Project Description	Explore as an alternative irrigation source for the DeFazio Complex, the Pollard School Fields and the Needham Golf Club.				
Anticipated Result	Reduce the demand for irrigation water for the town from Charles River Wells.				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration	12	Consultant		A, D, & E	84,000
New Construction/Addition	X	Engineering and Design Phase Begins	12	Industry References		Site Development	
Reconstruction or Repair		Construction Phase Begins		In-House		General Contractor	
Court, Federal or State Order	X	Target Project Completion	12	Other		Project Management	
Health or Safety	X			Comment		F, F, & E	
New Technology		Estimated Useful Life→	50			Technology	
Performance Measure	X					Other*	
Project Manager→		Town Engineer				**Total Budget**	**84,000**

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities which produce revenue for the Town?	X	
If the request is not approved will Town revenues be negatively impacted?		X
Operating Budget Impact→	B	

Other Considerations

The Water System Master Plan identified all of the sources of water which supply the Town. In the report it was acknowledged that the use of the original supply serving the Town prior to the development of the Charles River St. Well Field had been discontinued. This supply known as the Needham Reservoir/Dedham Ave. Pump Station had been discontinued as an active supply in the 1950's. It has since been formally decommissioned but it has not been completely deactivated. It consists of 2-8' + diameter shallow wells (30'+) deep, which were originally connected through piping under the reservoir to the pump house. The reservoir was constructed as an earth dam impoundment to serve as a recharge for the wells. Its capacity was 400,000 - 500,000 gallons per day. The report recommended that this supply be explored as an alternate for irrigation purposes for the DeFazio Complex, the Pollard School Fields and the Needham Golf Club. Using this source for these seasonal demands could lessen the impact upon the Charles River Well Field or the MWRA water system. The work would involve installing pumping equipment and controls at or near the wells, piping to connect to the irrigation systems and disconnection from the potable water supply. The first phase for this project is for design work.

In addition, the groundwater withdrawal permit for the Town's well field has been limited to no more than 20% above the Town's average winter time use. This request will support the Town's effort to meet that requirement.

Building, Infrastructure, or Facility Request
CIP-BIF

Project Title	**Water Supply Development Engineering & Design**			**Fiscal Year**	**2012-2016**
Requestor	Public Works – Engineering				
Location	Charles River Wellfield			Project Category	Ii
Funding	WF	CPA Eligible	No	Department Priority	
Partners					
Project Description	The development of additional well(s) within the well field would allow the Town to better manage the water within the well field. It preserves the ability for maximizing of the currently permitted withdrawal volume. Exploration of the acquisition of the Elm Bank water supply is included in the study.				
Anticipated Result	Improve the reliance of the existing well field to minimize the use of MWRA water.				
Alternatives					

Purpose		Timeline		Method to Determine Cost		Project Budget	
Acquisition		Total Project Duration		Consultant		A, D, & E	200,000
New Construction Addition	X	Engineering and Design Phase	12 Months	Industry References		Site Development	
Reconstruction or Repair		Construction Phase		In-House	X	General Contractor	
Court, Federal or State Order		Close Out Process		Other		Project Management	
Health or Safety	X	Next Phase				F, F, & E	
New Technology						Technology	
Performance Measure	X					Other*	
Estimated Useful Life→						Total Budget	**200,000**

Project Funding Schedule

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Engineering & Design	0	0	0	200,000	
Construction	0	0	0	0	
Total	**0**	**0**	**0**	**200,000**	

Project Manager→ Town Engineer

Operational Budget Considerations	YES	NO
Are there additional costs to bid, design, construct, complete, and/or use that are **NOT** included in this request?		X
If another department provides support (personnel or financial), has the department been consulted before the submission of this request?		X
Will the requested project require an increase in the next fiscal year operating budget for **ANY** department?		X
Will additional staff be required if the request is approved?		X
Does the request include or require new or additional technology?		X
Does the request support activities that produce revenue for the Town?	X	
If the request is not approved will Town revenues be negatively impacted?		X
*All **"YES"** responses must be explained under the Additional Information section*		
Operating Budget Impact→	B	

Additional Information

The historical demand in water supply is seasonal in nature. The typical usage during non-summer periods is 2-3 million gallons per day (mgd). The summer usage can reach as high as 5-7 mgd. Therefore, the Town must supplement its supply from the MWRA. Ideally the reliance on the MWRA source would be for

Building, Infrastructure, or Facility Request CIP-BIF			
Project Title	**Water Supply Development Engineering & Design**	**Fiscal Year**	**2012-2016**

emergency purposes as a back-up supply. Becoming more self reliant would require the development of additional wells. The process for putting new or additional supply on-line is typically 10 years. Depending upon the conditions in the Watershed, these requests could be limited, conditioned or even denied. This likelihood would have to be determined. Additionally, the development of more wells within the well field would allow the Town to better manage the water within the well field. It preserves the ability for maximizing of the currently permitted withdrawal volume. Routine servicing and maintenance of the wells can occur on a rotating basis while maintaining our permitted withdrawal volumes. This will assist in reducing the reliance on the expensive MWRA water supply. It would also allow the Town to produce additional water during special emergency conditions with only basic water treatment. Exploration of the acquisition of the Elm Bank water supply is included in the study.