**Building, Infrastructure, or Facility Request**
**CIP-BIFX**

| **Project Title** | **Brook and Culvert Repair and Maintenance** | | | **Fiscal Year** | **2011 - 2015** |
|---|---|---|---|---|---|
| Requestor | Public Works - Engineering | | | | |
| Location | Various | | | Project Category | I |
| Funding | GF | CPA Eligible | No | Department Priority | |
| Partners | Com Com | | | | |
| Project Description | Water way improvements | | | | |
| Anticipated Result | Reduce flooding | | | | |
| Alternatives | | | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | 48 | Consultant | | A, D, & E | |
| New Construction Addition (increase in size and/or function) | | Engineering and Design Phase | 12 | Industry References | | Site Development | |
| Reconstruction or Repair | X | Construction Phase | 36 | In-House | X | General Contractor | 650,000 |
| Court, Federal or State Order | X | Close Out Process | | Other | | Project Management | |
| Health or Safety | | Next Phase | | | | F, F, & E | |
| New Technology | | | | | | Technology | |
| Performance Measure | | | | | | Other* | |
| Estimated Useful Life→ | | | 25 Years | | | Total Budget | 650,000 |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | | | | | |
| Construction | 100,000 | 100,000 | 100,000 | 100,000 | 250,000 |
| | | | | | |
| **Total** | **100,000** | **100,000** | **100,000** | **100,000** | **250,000** |
| 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*

| Building, Infrastructure, or Facility Request<br>CIP-BIFX | | | |
|---|---|---|---|
| **Project Title** | **Brook and Culvert Repair and Maintenance** | **Fiscal Year** | **2011 - 2015** |
| Operating Budget Impact→ | | | B |
| Additional Information | | | |

The severe storms of October 1996, June 1998, June 2006 and July 2008 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 neglected for many years. Lack of routine maintenance 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 impacts on 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.

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. FY11 Request is for construction for Perry Gorge and water quality improvements.

<u>Future Projects include, but are not limited to, the following locations:</u>

Winding River
Locust Lane
Fuller Brook
Oxbow Road
Webster & Howland Streets
Brookside Road & Forest Street
Chestnut Street & Carriage Lane
Emerson Place
Pennsylvania Avenue

FY2015 – Rosemary Brook Retaining Wall Rehabilitation. Walls are currently in poor condition and starting to fall into the brook impeding the flow.

## Building, Infrastructure, or Facility Request
## CIP-BIF

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Title** | **Town Wide GIS Monument Grid System** | | | | | **Fiscal Year** | **12-15** |
| Requestor | Public Works - Engineering | | | | | | |
| Location | Town Wide | | | | | Project Category | I |
| Funding | GF | | CPA Eligible | | No | Department Priority | |
| Partners | | | | | | | |
| Project Description | Develop monumentation in town with GPS to incorporate into the Town's existing GIS system | | | | | | |
| Anticipated Result | More accurate mapping of town infrastructure and reduction in workload for Town of Needham departments | | | | | | |
| Alternatives | | | | | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | X | Total Project Duration | 24 | Consultant | x | A, D, & E | 49,700 |
| New Construction Addition (increase in size and/or function) | X | Engineering and Design Phase | | Industry References | | Site Development | |
| Reconstruction or Repair | X | Construction Phase | | In-House | X | General Contractor | |
| Court, Federal or State Order | | Close Out Process | | Other | | Project Management | |
| Health or Safety | | Next Phase | | | | F, F, & E | |
| New Technology | X | | | | | Technology | 28,500 |
| Performance Measure | X | | | | | Other* | |
| Estimated Useful Life→ | | | 10-15 years | | | Total Budget | 78,200 |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | | | 49,700 | | |
| Construction | | 28,500 | | | |
| **Total** | | **28,500** | **49,700** | | |

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**

This program is intended to develop a monumentation grid system for the Town utilizing the Town's global positioning system to allow all future construction to be easily tied into the Town's existing GIS system. Currently, new subdivisions are not incorporated into the Town's GIS system. The program would include the purchase of new monumentation and GPS equipment to provide greater coverage throughout the Town.
FY12: GPS Equipment (Permanent base station and repeater): 28,500
FY13: Survey work and mapping: 49,700

| Building, Infrastructure, or Facility Request CIP-BIF | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Title** | **Retaking Monumentation of Street Layouts** | | | | | | | **Fiscal Year** | | **2011- 2015** | |
| Requestor | Public Works - Engineering | | | | | | | | | | |
| Location | Various | | | | | | | Project Category | | I | |
| Funding | General Fund | | CPA Eligible | | | No | | Department Priority | | | |
| Partners | | | | | | | | | | | |
| Project Description | Establish Controls for town Streets in layout of that street | | | | | | | | | | |
| Anticipated Result | Give clear marking of town owned streets | | | | | | | | | | |
| Alternatives | | | | | | | | | | | |
| Purpose | | Timeline | | Method to Determine Cost | | | | Project Budget | | | |
| Acquisition | | Total Project Duration | 12 | Consultant | | | | A, D, & E | | 294,625 | |
| New Construction Addition (increase in size and/or function) | | Engineering and Design Phase | 12 | Industry References | | | | Site Development | | | |
| Reconstruction or Repair | X | Construction Phase | | In-House | | X | | General Contractor | | | |
| Court, Federal or State Order | | Close Out Process | | Other | | | | Project Management | | | |
| Health or Safety | | Next Phase | 2011 | | | | | F, F, & E | | | |
| New Technology | | | | | | | | Technology | | | |
| Performance Measure | x | | | | | | | Other* | | | |
| Estimated Useful Life→ | | | 100-Years | | | | | Total Budget | | **294,625** | |

| Project Funding Schedule | | | | | |
|---|---|---|---|---|---|
| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
| Engineering & Design | 65,625 | 75,000 | 84,000 | | 70,000 |
| Construction | | | | | |
| **Total** | **65,625** | **75,000** | **84,000** | | **70,000** |
| 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→ | NO | |

**Additional Information**

The program would fund the survey and drafting efforts required to determine and record the layout of various streets throughout the Town. A retaking plan and installation of stone bounds are included in the project.
FY11 - Broad Meadow Road -65,625
FY12 - Hunnewell Street - 75,500
FY13 - Webster Street Phase 0 – 84,000

## Building, Infrastructure, or Facility Request
## CIP-BIF

| | | | | | |
|---|---|---|---|---|---|
| **Project Title** | **Needham Center / Chestnut Street Reconstruction Streetscape & Pedestrian Facility Improvements** | | | **Fiscal Year** | **2011- 2015** |
| Requestor | Public Works - Engineering | | | | |
| Location | Needham Center/Chestnut Street | | | Project Category | I |
| Funding | GF | CPA Eligible | No | Department Priority | |
| Partners | Needham Business Association, Planning Board | | | | |
| Project Description | Sidewalk, Roadway, Streetlight and landscape improvements | | | | |
| Anticipated Result | Down Town improvements | | | | |
| Alternatives | | | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | | Consultant | | A, D, & E | 392,100 |
| New Construction Addition (increase in size and/or function) | x | Engineering and Design Phase | 18 | Industry References | | Site Development | |
| Reconstruction or Repair | X | Construction Phase | 4 | In-House | X | General Contractor | 3,804,900 |
| Court, Federal or State Order | | Close Out Process | 2017 | Other | X | Project Management | |
| Health or Safety | X | Next Phase | 2012 | | | F, F, & E | |
| New Technology | | | | | | Technology | |
| Performance Measure | X | | | | | Other* | |
| Estimated Useful Life→ | | | 20 Years | | | Total Budget | **4,197,000** |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 82,100 | 150,000 | | 160,000 | |
| Construction | 54,900 | | 1,250,000 | | 2,500,000 |
| **Total** | **137,000** | **150,000** | **1,250,000** | **160,000** | **2,500,000** |

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→ | Savings | |

**Additional Information**

In 1995 the Needham Design Guidelines Partnership consisting of members of the Planning Board, the Design Review Board and the Needham Business Association secured funding from public and private sources to produce a report entitled "Town of Needham Design Guidelines for the Business Districts". Utilizing a consultant, this group held several meetings including workshops where both public and private participants could provide input to develop this guideline. This guideline is offered to private developers to encourage them to incorporate these treatment recommendations as their properties undergo improvements. Several of these recommendations have been incorporated into the recent reconstruction of the Great Plain Ave near Pickering St. and the Highland Ave/Chapel St. /May

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Needham Center / Chestnut Street Reconstruction Streetscape & Pedestrian Facility Improvements** | **Fiscal Year** | **2011- 2015** |

St. intersection, the reconstruction of Chapel St., the Chestnut St. Parking Lots and proposed Chestnut Street reconstruction project from Marsh road to the MBTA bridge. This has allowed property owners to enhance their rear entrances or improve their entrance areas such as on Chapel St, as prescribed in the guidelines. There is a separate section devoted to public improvements. These improvements include recommendations for improved streetscape character involving the use of pedestrian-scale light fixtures, landscaping, including additional trees and plantings, and other public amenities such as benches, trash receptacles and bicycle racks. More significantly, it recommends more public accessibility. These are accomplished with wider sidewalks, additional crosswalks and safer crossing at intersections. This work is proposed to be undertaken in 3 stages. First the development of conceptual plans in order to determine the desired outcome followed by engineering / design, then the construction. Funding for the construction could be sought from the State under a special program, however, funds for these are not in large amounts and competition is heavy.

The Downtown Study Committee has recently completed their recommendation for the theme of visual improvements for the Downtown area.

The proposed funding for 2011 is intended to fund the first phase of preliminary design and construction under this Capital Item

The proposed funding for 2012 is intended to fund the first phase of preliminary traffic signal design under this Capital Item.
For Great Plain Ave @ Chapel St. & Chestnut St.; Great Plain Ave @ Dedham Ave & Highland Ave.

The proposed funding for 2013 is construction For Great Plain Ave @ Chapel St. & Chestnut St.; Great Plain Ave @ Dedham Ave & Highland Ave.

The proposed funding for 2014 Design phase of Chestnut Street Reconstruction From Marsh road to Great Plain Ave.

The proposed funding for 2015 Construction phase of Chestnut Street Reconstruction From Marsh road to Great Plain Ave.

**Building, Infrastructure, or Facility Request**
**CIP-BIF**

| | | | | | |
|---|---|---|---|---|---|
| **Project Title** | **Needham Heights Streetscape & Pedestrian Facility Improvements** | | | **Fiscal Year** | **2015** |
| Requestor | Public Works - Engineering | | | | |
| Location | Needham Heights | | | Project Category | I |
| Funding | GF | CPA Eligible | No | Department Priority | |
| Partners | Needham Business Association, Planning Board | | | | |
| Project Description | Lighting and Sidewalk improvements | | | | |
| Anticipated Result | To carry the theme from Chestnut St Reconstruction to the Heights | | | | |
| Alternatives | | | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | 18 | Consultant | | A, D, & E | 50,000 |
| New Construction Addition (increase in size and/or function) | x | Engineering and Design Phase | 18 | Industry References | | Site Development | |
| Reconstruction or Repair | X | Construction Phase | 20 | In-House | | General Contractor | 700,000 |
| Court, Federal or State Order | | Close Out Process | 36 | Other | | Project Management | |
| Health or Safety | X | Next Phase | | | | F, F, & E | |
| New Technology | | | | | | Technology | |
| Performance Measure | X | | | | | Other* | |
| Estimated Useful Life→ | | | 20 Years | | | Total Budget | **750,000** |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | | | | | 50,000 |
| Construction | | | | | 700,000 |
| **Total** | | | | | **750,000** |

| | |
|---|---|
| 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**

In 1995 the Needham Design Guidelines Partnership consisting of members of the Planning Board, the Design Review Board and the Needham Business Association secured funding from public and private sources to produce a report entitled "Town of Needham Design Guidelines for the Business Districts". Utilizing a consultant, this group held several meetings including workshops where both public and private participants could provide input to develop this guideline. This guideline is offered to private developers to encourage them to incorporate these treatment recommendations as their properties undergo improvements. Several of these recommendations have been incorporated into the recent reconstruction of the Chapel St. and the Chestnut St. Parking Lots. This has allowed property

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Needham Heights Streetscape & Pedestrian Facility Improvements** | **Fiscal Year** | **2015** |

owners to enhance their rear entrances as prescribed in the guidelines. There is a separate section devoted to public improvements. These improvements include recommendations for improved streetscape character involving the use of pedestrian-scale light fixtures, landscaping, including additional trees and plantings, and other public amenities such as benches, trash receptacles and bicycle racks. More significantly, it recommends more public accessibility. These are accomplished with wider sidewalks, additional crosswalks and safer crossing at intersections. This work is proposed to be undertaken in 3 stages. First the development of conceptual plans in order to determine the desired outcome followed by the engineering and designs then the construction. There are 2 separate submittals being proposed to address the downtown area: Needham Center/Chestnut St. Business Districts, and the Needham Heights area. Funding for the construction could be sought from the State under a special program, however, funds for these are not in large amounts and competition is heavy.

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Kendrick Street Bridge Repairs** | **Fiscal Year** | **2011** |

| | | | | | |
|---|---|---|---|---|---|
| Requestor | Public Works - Engineering | | | | |
| Location | Kendrick Street | | | Project Category | I |
| Funding | GF | CPA Eligible | No | Department Priority | I |
| Partners | City of Newton | | | | |
| Project Description | Repair bridge deficiencies found through Mass Highway's Bridge Inspection Program | | | | |
| Anticipated Result | Fix deficiencies & Safety issues | | | | |
| Alternatives | | | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | | Consultant | | A, D, & E | |
| New Construction Addition (increase in size and/or function) | X | Engineering and Design Phase | 18 | Industry References | | Site Development | |
| Reconstruction or Repair | X | Construction Phase | 24 | In-House | X | General Contractor | 850,000 |
| Court, Federal or State Order | | Close Out Process | 24 | Other | X | Project Management | |
| Health or Safety | X | Next Phase | | | | F, F, & E | |
| New Technology | | | | | | Technology | |
| Performance Measure | X | | | | | Other* | |
| Estimated Useful Life→ | | | 75 years | | | Total Budget | **850,000** |

| Project Funding Schedule | | | | | |
|---|---|---|---|---|---|
| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
| Engineering & Design | | | | | |
| Construction | 850,000 | | | | |
| **Total** | **850,000** | | | | |
| 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**

Surrounded on three sides by the Charles River, the Town jointly maintains a number of bridges with neighboring communities. The Massachusetts Bridge Inspection Program has identified a number of bridges that have some level of deficiency and has recommended repairs. This program is essential to improve the structural and/or surface integrity of all bridges throughout Needham. The Kendrick Street Bridge is in need of repair. Capital Project costs will include surveying, engineering evaluation, design, and repair or reconstruction. Recent reports from Mass Highway indicate that the conditions of the Kendrick Street bridge have been worsening, and the bridge is in immediate need of repair. Bridges are one of the infrastructure assets whose value and depreciation are now tracked under

| Building, Infrastructure, or Facility Request<br>CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Kendrick Street Bridge Repairs** | **Fiscal Year** | **2011** |

the GASB 34 program. A contract has been signed with the Town's consultant in conjunction with the City of Newton to perform the engineering services and a more accurate cost estimate for the repairs will be available at Town Meeting.

The cost will be shared with the City of Newton MA

FY10 - Kendrick Street Bridge Evaluation and Design - 125,000 Approved

FY11 - Kendrick Street Bridge Construction - 850,000

**Building, Infrastructure, or Facility Request**
**CIP-BIF**

| | | | |
|---|---|---|---|
| **Project Title** | **Energy Supply Conversion of DPW Facility** | **Fiscal Year** | **2011** |
| Requestor | Public Works - Engineering | | |
| Location | Town Properties on Dedham Ave | Project Category | I |
| Funding | GF / CPA Eligible: No | Department Priority | |
| Partners | | | |
| Project Description | Bring Natural Gas to town Properties on Dedham Ave | | |
| Anticipated Result | Lower Town's bills and better reliability | | |
| Alternatives | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | 12 | Consultant | | A, D, & E | |
| 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 | | General Contractor | 250,000 |
| Court, Federal or State Order | | Close Out Process | | Other | x | Project Management | |
| Health or Safety | | Next Phase | 2011 | | | F, F, & E | |
| New Technology | X | | | | | Technology | |
| Performance Measure | x | | | | | Other* | |
| Estimated Useful Life→ | | | 100 Years | | | Total Budget | **250,000** |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | | | | | |
| Construction | 250,000 | | | | |
| **Total** | **250,000** | | | | |

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→ Savings

**Additional Information**

The Town is proposing to change out the existing oil heating systems that serve the DPW site. The current onsite oil burning heating systems are old, inefficient and expensive to maintain due to the frequent breakdowns. Construction is in progress on modernizing the Water Building's oil heating units to a propane fired system. Propane fuel for this system will be delivered by propane delivery truck on a schedule basis to the site. In addition, plans are proposed to change out the Administration and Garage Building's oil burning heating system to a gas fired system as well.

| Building, Infrastructure, or Facility Request<br>CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Energy Supply Conversion of DPW Facility** | **Fiscal Year** | **2011** |

This project will extend the existing Nstar gas main that is located in Green Street at the intersection of South Street to Dedham Avenue to the Dedham Ave DPW site. Extending the gas line will give the town the capability of operating natural gas emergency generators and building heating systems via gas line transmission. The end result will reduce delivery and fluctuating supply charges that are normally associated with propane gas and eliminate the need for fuel oil storage tanks at the DPW site. The existing fuel oil tank is a 24 year old single wall fiberglass tank and will require more frequent testing to confirm its integrity. The fuel oil tank is known to be below the groundwater elevation. Removal of the tank before any soil or groundwater contamination occurs is a high priority. The existing boiler is original to the DPW building (circa 1960) and has been requiring significantly increased maintenance. Installing a modern energy efficient gas furnace will reduce costs.

Natural gas is a cleaner burning fuel than oil and will reduce the carbon foot print of town buildings on Dedham Avenue and continue the DPW's green building initiative effort.

**Building, Infrastructure, or Facility Request**
**CIP-BIF**

| | | | |
|---|---|---|---|
| **Project Title** | **Storm Drain Discharge Improvements – Water Quality (EPA)** | **Fiscal Year** | **2011 - 2015** |
| 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 | 220,500 |
| 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 | 73,500 |
| 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 | 294,000 |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 42,000 | | 68,500 | | 110,000 |
| Construction | | 73,500 | | | |
| | | | | | |
| **Total** | **42,000** | **73,500** | **68,500** | | **110,000** |

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

| Building, Infrastructure, or Facility Request<br>CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Storm Drain Discharge Improvements – Water Quality (EPA)** | **Fiscal Year** | **2011 - 2015** |

entering into a Memorandum of Understanding (MOU) with the EPA to commence a Town-wide investigation and to the development of a Stormwater Master Plan. This Master Plan was completed in 2002. Incorporated into this Stormwater Master Plan are improvements to the Storm 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 EPA Stormwater Discharge Permit took effect, there were a number of projects identified to better manage stormwater quality. The first projects that have been identified include:

FY11 - DPW Facility SWMP , Engineering / Design / Permitting 42,000
FY12 - DPW Facility SWMP, Construction 73,500
FY13 – Water Shed Management Plan 68,500
FY14 – No Work Proposed
FY15 – Rosemary Lake Sediment Removal – Engineering & Design 110,000

| Building, Infrastructure, or Facility Request CIP-BIF | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Project Title** | **Storm Water Master Plan Drainage Improvements (Capacity)** | | | | | **Fiscal Year** | **2011 -2 015** | |
| Requestor | Public Works | | | | | | | |
| Location | Various | | | | | Project Category | I | |
| Funding | GF | | CPA Eligible | | No | Department Priority | | |
| Partners | | | | | | | | |
| Project Description | Improve Capacity of Existing Drainage Systems | | | | | | | |
| Anticipated Result | Reduced Street & Property Flooding | | | | | | | |
| Alternatives | | | | | | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | 5 years | Consultant | | A, D, & E | 159,800 |
| New Construction Addition (increase in size and/or function) | | Engineering and Design Phase | 4 years | Industry References | X | Site Development | |
| Reconstruction or Repair | X | Construction Phase | 3 years | In-House | X | General Contractor | 524,000 |
| Court, Federal or State Order | | Close Out Process | | Other | | Project Management | |
| Health or Safety | | Next Phase | | | | F, F, & E | |
| New Technology | | | | | | Technology | |
| Performance Measure | | | | | | Other* | |
| Estimated Useful Life→ | | | 80 Years | | | Total Budget | 683,800 |

| Project Funding Schedule | | | | | |
|---|---|---|---|---|---|
| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
| Engineering & Design | | 68,000 | 41,800 | | 50,000 |
| Construction | | | 324,000 | | 200,000 |
| **Total** | | **68,000** | **365,800** | | **250,000** |
| 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 Other Considerations section* | | |
| Operating Budget Impact→ | B | |

**Other Considerations**

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

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Storm Water Master Plan Drainage Improvements (Capacity)** | **Fiscal Year** | **2011 -2 015** |

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.

FY11 – Bradford Street System (Area 1)- Eng. & Construction – moved to Roadway Infrastructure Program

FY12 - Taylor Street/Central Ave (Undesignated) – Eng. 31,400,
Carey Road (Area 2) - Eng. 36,600

FY13 - Foxhill Rd., Canterbury Lane, South St., and X-Country (Area 10) – Eng. 41,800
Carey Road (Area 2) – Construction 156,800
Taylor Street/Central Ave (Undesignated) - Construction 167,200

FY14 – No work proposed

FY15- Lower Hunnewell Drainage improvements Eng. & Construction 250,000

Future Areas to be considered, but not yet prioritized:
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)

**Building, Infrastructure, or Facility Request**
**CIP-BIFX**

| | | | | | |
|---|---|---|---|---|---|
| **Project Title** | **Roadway Infrastructure Program** | | | **Fiscal Year** | **2011 - 2015** |
| 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 | Eternal | Consultant | | A, D, & E | 462,000 |
| 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 | 6,325,600 |
| 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 | **6,787,600** |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 122,000 | 85,000 | 0 | 125,000 | 130,000 |
| Construction | 1,265,600 | 1,115,000 | 1,300,000 | 1,275,000 | 1,370,000 |
| **Total** | **1,387,600** | **1,200,000** | **1,300,000** | **1,400,000** | **1,500,000** |

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 |
| 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**

Roadway Reconstruction

This program will provide the necessary funding for the inspection, engineering and design for the rehabilitation or reconstruction of the roadway network including

| Building, Infrastructure, or Facility Request CIP-BIFX | | | |
|---|---|---|---|
| **Project Title** | **Roadway Infrastructure Program** | **Fiscal Year** | **2011 - 2015** |

drainage, traffic control and other incidental roadway improvements. Roadway improvements may include full construction or other standard rehabilitation methods. Many of the main roads may require structural and geometric improvements. Improvements in the business district could include new traffic signals, sidewalk improvements, pedestrian lighting, granite curbs and other features.

The annual request for Engineering & Design funding is in the 450,000-500,000 range. The annual request for Construction funding is 3,300,000.

Estimated Useful Life 60 to 80 Years. Estimated 5 Year Capital Cost is approximately 18.0 Million.

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-09 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 current program requested funding of $254,000 for Construction in Fiscal Year 2010.

The request for Construction funding in FY 2011 is 175,000; in FY 2012 is 250,000; in FY 2013 is 271,000; in FY2014 is 623,000, and in FY2015 is 577,000

Estimated Useful Life 10 to 15 Years. Estimated 5 Year Capital Cost 1,896,000

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.

Dedham Ave. @ Harris Ave, this intersection has been identified as requiring intersection improvements. The engineering and design estimate is $75,000. *(Funded FY10)*

FY11 – Construction - Dedham Ave. @ Harris Ave., intersection improvements. 335,000.

Design - High St @ Greendale Ave, This intersection has been identified as requiring traffic signals. This request is for intersection and traffic signal engineering and design. The engineering and design estimate is 80,000.

| Building, Infrastructure, or Facility Request<br>CIP-BIFX | | | |
|---|---|---|---|
| **Project Title** | **Roadway Infrastructure Program** | **Fiscal Year** | **2011 - 2015** |

FY12 – Construction - High St @ Greendale Ave, intersection improvement and new traffic signal installation. 408,000.

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 85,000.

FY13 – Construction - Great Plain Av @ Greendale Av, this existing traffic signal may require intersection improvements and updating some of the existing traffic signal components. 500,000

FY14 – Design - Forest Street/Central Ave intersection. 125,000

FY 15- Construction of Forest Street/Central Ave. intersection improvements estimated at 295,000.
Design – Engineering Estimate 130,000

Estimated Useful Life 25 Years Estimated 5 Year Capital Cost 1,958,000.

<u>Sidewalk Repair & Resurfacing School Walking Routes</u>

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 periodically. 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.

DPW consults with the School Dept on school walking routes.

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

Highway staff performs detailed functions such as loam and seed operations to minimize contractor costs.

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

FY11 – Webster St., South St. to Dedham Ave. (East side), Harris Ave. from Great Plain Ave. to Coulton Pk.(both sides), Bradford St from Dedham Ave. to Harris Ave. (West side), Glenwood Rd. from Bradford St. to the Pollard School Parking Lot (North side), High St. (both sides),
Eng. & Const. 410,000.

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. Sylvan Rd. from Linden St. to Fairview Rd. (North side),
Eng. & Const. 429,000.

| Building, Infrastructure, or Facility Request CIP-BIFX | | | |
|---|---|---|---|
| **Project Title** | **Roadway Infrastructure Program** | **Fiscal Year** | **2011 - 2015** |

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.

Estimated Useful Life 20 to 30 Years. Estimated 5 Year Capital Cost 2,146,000.

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.

FY11-FY15 – 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., Mellen St., Washburn Ave., Wilshire Pk., and Woodledge Rd.

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.

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. Storm Water Master Plan Drainage Improvements (Capacity) for FY11 have been included under this program. The remainder of the drainage capacity improvements program will be incorporated into the roadway infrastructure program in future years.

FY11 – Bradford St. System (Area 1) – Eng. & Const. 287,600.

**Building, Infrastructure, or Facility Request**
**CIP-BIF**

| | | | |
|---|---|---|---|
| **Project Title** | **Wastewater Pump Station Improvements** | **Fiscal Year** | **2011 - 2015** |
| Requestor | Public Works – Water & Sewer | | |
| Location | Various | Project Category | I |
| Funding | SF — CPA Eligible: No | Department Priority | 1 |
| 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 | 422,300 |
| 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 | 10,042,450 |
| 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 | **10,464,750,** |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 261,250 | 0 | 52,250 | 108,800 | 0 |
| Construction | 5,016,000 | 2,403,500 | 261,250 | 271,700 | 2,090,000 |
| **Total** | **5,277,250** | **2,403,500** | **313,500** | **380,500** | **2,090,000** |

Project Manager→ Permanent Public Building Committee/Publiic 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.

Canister pump stations at Lake Drive, Cooks Bridge (Milo Circle), Warren Street and Reservoir "A" are at or beyond their design lives. Constant maintenance

| **Building, Infrastructure, or Facility Request<br>CIP-BIF** | | | |
|---|---|---|---|
| **Project Title** | **Wastewater Pump Station Improvements** | **Fiscal Year** | **2011 - 2015** |

and emergency shutoffs occur more frequently and require greater amounts of personnel time and emergency funds to keep running. The remaining canister station at Richardson Drive is scheduled to be eliminated when gravity sewer construction is complete but will need maintenance until then. The design of the elimination of the Richardson Drive Station is completed.

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. 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. New enhancements must now be contemplated in anticipation of the addition of 350 residential units at 300 Second Avenue (Charles River Landing) proposed for completion in the next few years.

| | | |
|---|---|---|
| FY11 | Reservoir St. "B" - Construction | 5,016,000 |
| | Cooks Bridge - Engineering & Design | 261,250 |
| FY12 | Cooks Bridge - Construction | 2,403,500 |
| FY13 | Reservoir St. "A" - Engineering & Design | 52,250 |
| | Reservoir St. "A" - Construction | 261,250 |
| FY14 | Lake Drive – Engineering & Design | 54,400 |
| | Lake Drive – Construction | 271,700 |
| | Alden Rd - Engineering & Design | 54,400 |
| FY15 | Alden Rd. Construction | 2,090,000 |

| Building, Infrastructure, or Facility Request CIP-BIF | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Title** | **Sewer Service Connection Installation/Replacement** | | | | | **Fiscal Year** | **2012 - 2015** |
| Requestor | Public Works – Water & Sewer | | | | | | |
| Location | Various | | | | | Project Category | I |
| Funding | SF | | CPA Eligible | | NO | Department Priority | 3 |
| 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 | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| 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 |
| *All **"YES"** responses must be explained under the Additional Information section* | | |
| 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 my 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 reimbursable 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

| Building, Infrastructure, or Facility Request<br>CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Sewer Service Connection Installation/Replacement** | **Fiscal Year** | **2012 - 2015** |
| 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** | **SCADA System** | | **Fiscal Year** | **201 - 2012** |
| Requestor | Public Works – Water & Sewer | | | |
| Location | West St. Pump Station | | Project Category | I |
| Funding | SF | CPA Eligible NO | Department Priority | 4 |
| 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. i | | | |
| Alternatives | | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | | Consultant | | A, D, & E | 62,700 |
| 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 | **768,100** |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 62,700 | | | | |
| Construction | | 705,400 | | | |
| **Total** | **62,700** | **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? | | |
| 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

| **Building, Infrastructure, or Facility Request CIP-BIF** | | | |
|---|---|---|---|
| **Project Title** | **SCADA System** | **Fiscal Year** | **201 - 2012** |

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 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 incredibly complex, such as a system that monitors all the activity in a nuclear power plant.

For example the Charles River Water Treatment Facility 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 ten sanitary sewer pump stations to a central collection point (West St. Pump station) that will also alert the appropriate emergency response personnel as required.

| Building, Infrastructure, or Facility Request CIP-BIF | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Title** | **Sewer System Rehabilitation - Infiltration & Inflow Removal Program** | | | | | **Fiscal Year** | **2011 - 2015** |
| Requestor | Public Works – Engineering | | | | | | |
| Location | Various | | | | | Project Category | I |
| Funding | SF | | CPA Eligible | | No | Department Priority | 2 |
| 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 | 1,434,000 |
| New Construction Addition | | Engineering and Design Phase | 12 | Industry References | | Site Development | |
| Reconstruction or Repair | X | Construction Phase | 12 | In-House | | General Contractor | 3,760,000 |
| 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 | **5,194,000** |

| Project Funding Schedule | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 225,000 | 150,000 | 77,000 | 888,000 | 94,000 |
| Construction | | 1,000,000 | 1,100,000 | 320,000 | 1,340,000 |
| **Total** | **225,000** | **1,150,000** | **1,177,000** | **1,208,000** | **1,434,000** |

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** | **2011 - 2015** |

(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.

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 will also include 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.

<u>INFILTRATION</u>
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

<u>Previously Funded Areas</u>

| | |
|---|---|
| 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

<u>Proposed Funded Areas</u>

| | |
|---|---|
| FY11- Area 16 Preliminary Engineering | 80,000 |
| Area 22 - Design - | 75,000 |
| Area - Not Identified - Construction | 0 |
| FY12 - Area 16 - Design – | 75,000 |
| Area 22 - Construction - | 750,000 |
| FY13 – Area 16 - Construction - | 800,000 |
| FY 14 – New Townwide I/I Study | 800,000 |
| FY 15 – Area Determined by Study | 1,000,000 |

<u>INFLOW</u>

| Building, Infrastructure, or Facility Request<br>CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Sewer System Rehabilitation - Infiltration & Inflow Removal Program** | **Fiscal Year** | **2011 - 2015** |

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.

Previously Funded Areas

FY08 - Area 19-1, Area 22, Are 16 - Preliminary Inflow Engineering

FY09 and FY10 – No funding requested

Proposed Funded Areas

| | | |
|---|---|---|
| FY11 – Area 19-1 – Design | | 70,000 |
| FY12- | Area 22 - Engineering & Design | 75,000 |
| | Area 19-1 – Construction | 250,000 |
| FY13 - | Area 16- Engineering & Design | 77,000 |
| | Area 22 – Construction | 300,000 |
| FY14 - | Areas 1,3 & 4 – Engineering & Design | 88,000 |
| | Area 16 - Construction | 320,000 |
| FY 15 – | Areas 2, 24 & 21(L) – Engineering & Design | 94,000 |
| | 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 3.0 m.g.d. with peak I/I; the volume can exceed a rate of 15.0 m.g.d. These spikes are attributable to the inflow component and can total as much as 300 m.g.d. 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** | **Water System – Fire Flow Improvements** | **Fiscal Year** | **2011 - 2015** |
| Requestor | Public Works – Engineering | | |
| Location | Various | Project Category | B |
| Funding | WF; CPA Eligible: No | Department Priority | 1 |
| Partners | | | |
| Project Description | | | |
| Anticipated Result | | | |
| Alternatives | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | 48 | Consultant | X | A, D, & E | 783,750 |
| 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 | **7,943,750** |

Project Funding Schedule

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 313,500 | | | 261,250 | 209,000 |
| Construction | | | 5,070,000 | 1,254,000 | 836,000 |
| **Total** | **313,500** | | **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:
FY11 – St. Mary's Street Pump Station improvements/Engineering & Design **-** 313,500
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

**Building, Infrastructure, or Facility Request**
**CIP-BIF**

| | | | |
|---|---|---|---|
| **Project Title** | **Water System Improvements- 14" Main Replacement (Construction)** | **Fiscal Year** | **2013 - 2015** |
| Requestor | Public Works- Engineering | | |
| Location | Central Ave | 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 | 487,600 |
| 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 | 3,459,700 |
| 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 | **3,947,300** |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | | | | 487,600 | |
| Construction | | | | | 3,459,700 |
| **Total** | | | | **487,600** | **3,459,700** |

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 original project relines the 14" transmission watermain from the CRWTP to School Street that was installed in 1936 -1939. The current main is made of steel and lined with a type of bitumastic or coal tar coating that appears to be breaking down. This will cause failure in the steel pipe, interrupting flow and the ability to provide adequate fire protection. Water quality is also a concern, as the lining break-down is a source for potential contamination.

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

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Water System Improvements- 14" Main Replacement (Construction)** | **Fiscal Year** | **2013 - 2015** |

Road and a section between Oak Street and Chestnut Street, to School Street.

FY08 – FY 11 Phase I, II III, IV were combined and 1,900,000 was approved for Relining of the water main. In the fall of 2008 DPW did a small section from the water treatment plant to Grove St. During this time DPW learned that the Bitumastic lining could not be scraped out and removed. There was no way to tell when video taping if there was ductile Irion pipe or steel pipe or the cement coating to be applied as designed. Due to these facts the engineering consultant recommended a change to dig and replace the water line. The change was made to the project to go from a clean and reline to a dig and replace the 14" water main with a standard waterman of 16". The 1,900,000 approved in Phase I, II, III and IV will take us to Pine St. @ Central Ave.

SRF Funding is available for this project and DPW has submitted a package for this funding to complete the project to School St.

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Filter Media Replacement** | **Fiscal Year** | **2012 - 2015** |
| Requestor | Public Works – Water & Sewer | | |
| Location | Charles River Water Treatment Facility | Project Category | F |
| Funding | WF / CPA Eligible: | Department Priority | 5 |
| 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 | 670,750 |
| 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 | 670,750 |

| Project Funding Schedule | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 0 | 0 | 0 | 0 | 0 |
| Construction | 0 | 156,750 | 163,800 | 171,200 | 179,000 |
| | | | | | |
| **Total** | **0** | **156,750** | **163,800** | **171,200** | **179,000** |

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 |
| *All **"YES"** responses must be explained under the Additional Information section* | | |
| Operating Budget Impact→ | | |

**Additional Information**

It was recommended by the design consultant that the filter media (greensand) used for manganese removal at the Charles River Water Treatment Facility be replaced every 5 years. This has appeared to be the situation in other municipalities.

This program is intended for the replacement of manganese greensand with a new product, Greensand Plus. Greensand Plus is a substitute for manganese

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Filter Media Replacement** | **Fiscal Year** | **2012 - 2015** |

greensand. Greensand Plus may be able to withstand wider variations in operating conditions therefore may reduce the frequency of media replacement.

Based upon consultant analysis currently underway, other system improvements may be needed to the filtration system to maximize the life of the filter media.

This program replaces one filter's media once every 5 years and is proposed to begin FY12.

**Building, Infrastructure, or Facility Request**
**CIP-BIF**

| | | | |
|---|---|---|---|
| **Project Title** | **Fire Hydrant Replacement Program** | **Fiscal Year** | **2011** |
| Requestor | Public Works – Water & Sewer | | |
| Location | Various | Project Category | I |
| Funding | WF / CPA Eligible: NO | Department Priority | 4 |
| Partners | | | |
| Project Description | The goal of the program is to remove and replace older and out-dated fire hydrants | | |
| Anticipated Result | Improve Safety and Reliability | | |
| Alternatives | | | |

| Purpose | | Timeline | | Method to Determine Cost | | Project Budget | |
|---|---|---|---|---|---|---|---|
| Acquisition | | Total Project Duration | 12 | Consultant | | A, D, & E | |
| New Construction | | Engineering and Design | | Industry References | | Site Development | |
| Reconstruction or Repair | X | Construction Phase | 12 | In-House | X | General Contractor | 100,000 |
| 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→ | | | | | | Total Budget | 100,000 |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 0 | 0 | 0 | 0 | 0 |
| Construction | 100,000 | 0 | 0 | 0 | 0 |
| **Total** | **100,000** | 0 | 0 | 0 | 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 goal of the program is to remove and replace older and out-dated fire hydrants with new and more reliable fire hydrants within the community by developing an ongoing revolving cycle of replacing approx. 50 fire hydrants per year (by contractor). There are approximately 20 unreliable fire hydrants remaining out of 217 initial hydrants that are out-dated and ungated poured lead-joints. During the annual fall hydrant inspection (dry testing), older fire hydrants have been determined to be potential freezing hazards due to their lack of ability to either properly drain or efficiently shut down.

With prior years funding (300,000) it was intended to have hydrant replacements privately contracted. With reprioritization and coordination the first & second

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Fire Hydrant Replacement Program** | **Fiscal Year** | **2011** |

year's project was successfully completed with Town forces. By utilizing Town forces, this provided the ability to install an estimated 60% more hydrants replaced than originally anticipated. Barring unforeseen circumstances, it is anticipated that this program will be completed by the end of FY11.

| Building, Infrastructure, or Facility Request CIP-BIF1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Project Title** | **Irrigation Supply Facility / Design** | | | | | | **Fiscal Year** | **2011** |
| Requestor | Public Works – Engineering | | | | | | Budget Request | 80,000 |
| Location | Dedham Ave. Reservoir | | | | | | Project Category | I |
| Funding | WF | | CPA Eligible | | no | | Department Priority | 6 |
| 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 | 80,000 |
| 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** | **80,000** |

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

## Building, Infrastructure, or Facility Request
## CIP-BIF

| | | | |
|---|---|---|---|
| **Project Title** | **Water Service Connections** | **Fiscal Year** | **2011 - 2015** |
| Requestor | Public Works – Water & Sewer | | |
| Location | Various | Project Category | I |
| Funding | WF / CPA Eligible: NO | Department Priority | 2 |
| 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 | 200,000/yr. |

**Project Funding Schedule**

| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | | | | | |
| Construction | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| **Total** | **200,000** | **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 |
| *All **"YES"** responses must be explained under the Additional Information section* | | |
| 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.

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Water Supply Development Engineering & Design** | **Fiscal Year** | **2015** |
| Requestor | Public Works – Engineering | | |
| Location | Charles River Wellfield | Project Category | Ii |
| Funding | WF; CPA Eligible: No | Department Priority | 7 |
| 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 | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|---|---|---|---|---|---|
| Engineering & Design | 0 | 0 | 0 | 0 | 200,000 |
| Construction | 0 | 0 | 0 | 0 | 0 |
| **Total** | **0** | **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<br>CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Water Supply Development Engineering & Design** | **Fiscal Year** | **2015** |

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.

| Building, Infrastructure, or Facility Request CIP-BIF | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project Title** | **Water System Rehabilitation Program** | | | | | **Fiscal Year** | **2011 - 2015** |
| Requestor | Public Works – Water & Sewer | | | | | | |
| Location | Various | | | | | Project Category | I |
| Funding | WF | | CPA Eligible | | No | Department Priority | 3 |
| 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 | 487,600 |
| 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 | 2,971,700 |
| 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 | **3,459,300** |

| Project Funding Schedule | | | | | |
|---|---|---|---|---|---|
| | FY2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
| Engineering & Design | 178,300 | 99,300 | 94,000 | 47,000 | 69,000 |
| Construction | 425,000 | 684,500 | 715,800 | 627,000 | 519,400 |
| **Total** | **603,300** | **783,800** | **809,800** | **674,000** | **588,400** |
| 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

**<u>FY11</u>**

| | |
|---|---|
| Garden St. – New 8" (1070 lf) - Eng. & Design | 80,000 |
| Garden St. - Construction | 425,000 |
| Kimball St./Grant St. to Pleasant St. – New 8" (800 lf) – Eng. & Design | 98,300 |

| Building, Infrastructure, or Facility Request CIP-BIF | | | |
|---|---|---|---|
| **Project Title** | **Water System Rehabilitation Program** | **Fiscal Year** | **2011 - 2015** |

Lincoln St./Garfield St. to Dedham Ave – New 8" (1700 lf) – Eng. & Design

**FY12**

| | |
|---|---|
| Kimball St./Lincoln St. – Construction - | 684,500 |
| Grant St./Junction St. to Dedham Ave. – New 8' (2500 lf) – Eng. & Design | 99,300 |

**FY13**

| | |
|---|---|
| Grant St. - Construction - | 715,800 |
| 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 | |

**FY14**

| | |
|---|---|
| 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 | |

**FY15**

| | |
|---|---|
| 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 | |