GUIDANCE DOCUMENT

Capital Improvement Plan
For
Public Water Systems

August - 2010

FINAL

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF MUNICIPAL SERVICES

FOREWORD

This capital improvement planning (CIP) document can be utilized to identify and document capital projects for a public water system. The CIP is divided into six (6) categories and gathers existing engineering and planning information. The CIP is designed to provoke a thought process for capital needs for the water works system that may not be apparent from existing engineering or evaluative documents.

This 'short form' CIP document is primarily intended to outline capital project needs for the existing water works system structures and components. Completion of the Massachusetts Department of Environmental Protection 'long term' Facilities Action Plan and Capital Improvement Program Guidance Document is intended to provide detailed answers to longer term planning needs, utilizes this 'short term' CIP document as data towards identifying capital needs projects and completes an Asset Management Plan for water works assets.

GENERAL INFORMATION

a. **Name of Public Water System**: _____

Mass PWS Id No. - MA_____

b. Street _____ Town/City _____ Zip _____

c. Contact Name _____ Telephone _____

d. Contact email address: _____

****

Interviewed by: Name _____ Firm: _____

Month/ Year Developed _____

****

Sources of Supply Type (Check all that apply) Ground ___ Surface ___ Purchased ___ GWUI ___ Other ___

Population Served _____

Type Large ___ (100,001) Medium ___ (3301 -100,000) Small ___ <3300

Ownership Type ___ Municipal ___ Investor or Private

___ Other - Type _____

****

Number of Connections (residential, municipal, industrial, commercial and other) _____

Miles of water mains distribution _____ miles transmission _____ miles

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Table of Contents

0. **Available Information - Engineering and Evaluative Information**

Please provide an outline of available engineering or evaluative information and documentation from the public water system that addresses needed public water system capital projects.

Document
No. Name of Document Title Mo/Year

1. Engineering Reports _____ _____
   Author _____
   Description _____

2. Engineering Correspondence
   Type Evaluations _____ _____
   Author _____
   Description _____

3. Design Costs Documents
   (if available for projects) _____ _____
   Author _____
   Description _____

4. Facilities Planning Reports _____ _____
   Author _____
   Description _____

5. State Revolving Fund Submittals
   and/or Loan Applications _____ _____
   Author _____
   Description _____

6. Environmental Impact Report and
   Environmental Notification Form(s)
   _____ _____
   Author _____
   Description _____

7a. Capital Improvement
   Plans and Reports _____ _____
   Author _____
   Description _____

7b. Master Planning
   Reports _____ _____
   Author _____
   Description _____

Document No.	Name of Document	Title	Mo/Year
8.	Preliminary Engineering Reports	_____	_____
	Author	_____	
	Description	_____	
9a.	Administrative Consent Orders	_____	_____
	Author	_____	
	Description	_____	
9b.	Notice of Non (NON) Compliance	_____	_____
	Author	_____	
	Description	_____	
10.	General Accounting Standard Board (GASB) No. 34 Report	_____	_____
	Author	_____	
	Description	_____	
11.	Emergency Response Plans-	_____	_____
	Author	_____	
	Description	_____	
12.	Vunerability Assessments	_____	_____
	Author	_____	
	Description	_____	
13.	Sanitary Surveys	_____	_____
	Author	_____	
	Description	_____	
14.	Other Available Reports	_____	_____
	Author	_____	
	Description	_____	
15.	Monitoring Results	_____	_____
	Author	_____	
	Description	_____	
16.	Engineering Estimate or Bid Results	_____	_____
	Author	_____	
	Description	_____	

17. Comprehensive Performance Evaluation (CPE) _____ _____
    Author _____
    Description _____

18. Intended Use Plan _____ _____
    Author _____
    Description _____

19. State SRF Priority List_____ _____
    Author _____
    Description _____

20. Source Approval Process (SAP) _____ _____
    Author _____
    Description _____

21. Other
    _____ _____ _____
    Author _____
    Description _____

22. Water Main Break and Repair Reports_____ _____
    Author _____
    Description _____

23. Water Storage Tank Inspection Reports _____ _____
    Author _____
    Description _____

I. SOURCE(s)

Inventory

Please list the existing sources of supply, and include any potential sources of supply that have not yet been identified.

Type of Source	Total Number	Safe or Firm Yield (mgd)
Wells or Springs	_____	_____
Reservoirs	_____	_____

Please list individual sources of supply and existing yields as directed. The Facility No. can be utilized to identify capital needs throughout the CIP document.

S = Surface G = Groundwater GWUI = Groundwater Under the Influence

Facility No.	Name of Facility	Type S/G/GWUI	Yield (mgd) Firm or Safe
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____
1f.	_____	_____	_____
1g.	_____	_____	_____
1h.	_____	_____	_____
1i.	_____	_____	_____
1j.	_____	_____	_____
1k.	_____	_____	_____
1l.	_____	_____	_____
1m.	_____	_____	_____
1n.	_____	_____	_____

A. Water Quality - Please check and briefly outline quality issues that exist at any of the sources of supply AND indicate future capital project need(s) for the specific site on the Summary Sheet for Capital Projects provided at the end of this section.

Existing water quality - Are there changes or water quality upward trends or exceedances of Maximum Contaminant Levels (MCL) under 310 CMR 22.00 ?

Facility No. (from above)

a. <u>Primary Standards</u>

1.	Arsenic ___	___	___	___	___	___	___	___	___	___	___
2.	Chromium ___	___	___	___	___	___	___	___	___	___	___
3.	Copper ___	___	___	___	___	___	___	___	___	___	___
4.	Disinfection By Product a) Stage 1 ___ b. Stage 2 ___	___	___	___	___	___	___	___	___	___	___
5.	Groundwater Rule ___	___	___	___	___	___	___	___	___	___	__
6.	Ground Water Under the IInfluence ___	___	___	___	___	___	___	___	___	___	___
7.	Lead ___	___	___	___	___	___	___	___	___	___	___
8a.	Nitrates ___	___	___	___	___	___	___	___	___	___	___
8b.	Nitrites ___	___	___	___	___	___	___	___	___	___	__
9.	PCP ___	___	___	___	___	___	___	___	___	___	___
10.	Perchlorate ___	___	___	___	___	___	___	___	___	___	___
11.	PCE ___	___	___	___	___	___	___	___	___	___	___
12.	Radon Rule ___	___	___	___	___	___	___	___	___	___	___
13.	Radionuclides ___	___	___	___	___	___	___	___	___	___	___
14.	Total Coliform ___	___	___	___	___	___	___	___	___	___	___
15.	VOC ___	___	___	___	___	___	___	___	___	___	___
16.	SOC ___	___	___	___	___	___	___	___	___	___	___
17.	IOC ___	___	___	___	___	___	___	___	___	___	___
18.	PPCP___	___	___	___	___	___	___	___	___	___	___
19.	Other _____	___	___	___	___	___	___	___	___	___	___
20.	Other _____	___	___	___	___	___	___	___	___	___	___

<u>Surface Water Treatment Rules (SWTR)</u>

20.	Surface Water Treatment Rule or Interim ___	___	___	___	___	___	___	___	___	___	___
21.	Filter Backwash Rule or Recycling ___	___	___	___	___	___	___	___	___	___	___
22.	Long Term 1 Enhanced Surface Water Treatment	___	___	___	___	___	___	___	___	___	___
23.	Cover or Treat Finished Water Reservoirs	___	___	___	___	___	___	___	___	___	__
24.	Other SDWA or Water Long Term 2 Enhanced	___	___	___	___	___	___	___	___	___	___
25.	No Reservoir Covers	___	___	___	___	___	___	___	___	___	___

b. **Secondary Standards**

26 Any other water quality issue such as?

Facility No.

Iron ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Manganese ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Taste ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Color ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Please transfer identified capital project needs to Summary Sheet for Water Quality Capital Projects.

c Water Quality Issues Queries

Please answer question and outline needed capital project(s) and then transfer to Summary Sheet for Water Quality Capital Projects sheet at end of this section.

27. Any water quality issues such as Percholorate - Bio film - Boil Orders?
___ Y ___ N
Facility No.
___ ___ ___ ___ ___ ___ ___ ___ ___ ___

28 Are existing Surface Water Waiver(s) intact?
___ Y ___ N
Facility No.
___ ___ ___ ___ ___ ___ ___ ___ ___ ___

29 Any WTF upgrades needed specifically to meet water quality standards (primary or secondary) ?
___ Y ___ N
Facility No.
___ ___ ___ ___ ___ ___ ___ ___ ___ ___

30. Any water quality issues due to degraded media and/or replacement need?
___ Y ___ N
Facility No.
___ ___ ___ ___ ___ ___ ___ ___ ___ ___

31. Is there a need to rehab any water treatment facility (WTF) for new or upcoming Mass 310 CMR 22.00 or Safe Drinking Water Act (SDWA) water quality standards?

___ Y ___ N

Facility No.

___ ___ ___ ___ ___ ___ ___ ___ ___ ___

32. Any need for the addition of aeration units to minimize carbon dioxide and lessen chemical usage or for treatment of organics such as VOC's?

___ Y ___ N

Facility No.

___ ___ ___ ___ ___ ___ ___ ___ ___ ___

33a. Are there any sources of supply that exist (utilized or unutilized) that need treatment in order to be used?

___ Y ___ N

Facility No.

___ ___ ___ ___ ___ ___ ___ ___ ___ ___

33b. For unutilized sources of supply - to what extent is treatment needed?

_____
_____
_____

33c. What is the total mgd _____ a. Type of Treatment _____
b. Type of Treatment _____
c. Type of Treatment _____

WATER QUALITY
SUMMARY SHEET FOR
CAPITAL PROJECTS

PROJECT NAME	SOURCE NAME	AGE	Type of Need	No.	MGD - MG	Yr.	Cost Estimate	Documentation Type No.
	or MA Number	YRS.		Needed	or kW	Needed	In Millions	(From Available Info)

B. **<u>Water Quantity</u>**: Please answer the questions to address needed capital projects, Then transfer capital projects to the summary table at the end of the section.

a. **<u>Existing Conditions :</u>** Please provide the total design capacity of the sources of supply.

Total Design Capacity (Maximum Flow) _____ mgd
Total Safe Yield Capacity _____ mgd

1. Do the existing sources of supply meet present day and max day demands?
___ Y ___ N

2. If not - what is the mgd deficit?

	Average Day	Maximum Day
	<u>mgd</u>	<u>mgd</u>
	_____	_____

3. How can the public water supply make up the deficit?
_____
_____
_____

4a. Are any new or replacement wells needed to meet existing quantities?
___ Y ___ N

4b. Have the sites been identified to install wells?
___ Y ___ N

	Potential Yield
Name of Site _____	____ mgd
Name of Site _____	____ mgd
Name of Site _____	____ mgd

5. What is the status of Source Approval or testing for additional sources of supply?

<u>Name</u>	
Source _____	Status _____
Source _____	Status _____
Source _____	Status _____

6. Has the Source Approval Process (SAP) for additional groundwater sources been started or completed?
___ Y ___ N

<u>Name</u>	
Source _____	Status _____
Source _____	Status _____
Source _____	Status _____

7. Has the SAP received MEPA approval?

___ Y ___ N

Name Date Approval

Source _____ Status _____
Source _____ Status _____
Source _____ Status _____

8. Has MassDEP approved and completed SAP or other testing Needs Report?

___ Y ___ N

Name

Source _____ Status _____
Source _____ Status _____
Source _____ Status _____

9. Does the PWS have the ability to purchase from other public water suppliers?

___ Y ___ N

Name of Potential PWS _____ ___ mgd
Name of Potential PWS _____ ___ mgd
Name of Potential PWS _____ ___ mgd

b. **Future Needs**

	Existing mgd	**Population Year 2031 mgd**	**Build Out Yr. 2061 mgd**
1. What are the projected needs - water volumes for the next 20 and 50 years? (Population projections and separately - build out based upon existing community zoning)	_____	_____	_____

2. What are the Water Management Act Program permit requirements?

Existing Permit _____ mgd Future Needs _____ mgd

3. Any ground water under the influence sources of supply received any MassDEP approval for future treatment needs?

___ Y ___ N

Name

Source _____ Status _____
Source _____ Status _____
Source _____ Status _____

4. Are there any needs to consolidate water supplies to maintain compliance due to water quality standards violations (MCL of 310 CMR 22.00)?

___ Y ___ N

Name

Source _____ Status _____
Source _____ Status _____
Source _____ Status _____

5. What existing sources need new facilities due to water quality or operational condition changes?

Facility No.	Type of Change
_____	_____
_____	_____
_____	_____

6. Are there any plans for utilizing desalination to meet water quantity needs?

___ Y ___ N

Site Name	Potential Yield
_____	_____
_____	_____
_____	_____

WATER QUANTITY
SUMMARY OF
CAPITAL PROJECTS

PROJECT NAME	SOURCE NAME	AGE	Type of Need	No. Needed	MGD - MG kW	Yr. Needed	Cost Estimate	Documentation Type
	or MA Number	YRS.					In Millions	(From Available Inf

D. Sources of Supply: This section evaluates sources of supply and provides an outline of needed capital projects. If proposed capital project is not in a report, provide a brief explanation of why the project is needed.

Y = Yes N = No

1. Detailed Information

Provide a very brief operational description of the existing public water systems sources of supply.

_____

_____

_____

2. Are there any sources of supply not presently utilized. If so - which ones have contaminants that may require treatment, improvements or operational changes?

Facility No.	Type of Treatment
_____	_____
_____	_____
_____	_____

2. For Surface Waters

Please outline issues that may pertain to identifying capital improvements to surface water sources of supply.

1. Existing Surface Sources		Volume	(mgd)	WMAP Permit or Registration
Facility No.				
1a. Name	_____	Firm Yield	_____	___ P ___ R
1b. Name	_____	Firm Yield	_____	___ P ___ R
1c. Name	_____	Firm Yield	_____	___ P ___ R
1d. Name	_____	Firm Yield	_____	___ P ___ R

2. Are there any detailed engineering evaluations needed for the existing and long term needs of the reservoirs such as:

		Estimated Cost
a. dredging	__	_____
b. expansion	__	_____
c. connections to diversion works or	__	_____
to other potential or existing sources	__	_____
d. storm water discharge units	__	_____
e. clean out of brooks/streams that add inflow or aid discharge	__	_____

f. overflow structures __ _____
g. other_____ __ _____

3. Are there any approved for use surface source development needs that require capital project needs? ? If so, what type of engineering solution can be implemented?

___ Y ___ N

Facility No.	Type of Capital Projects Needed
1a.__	_____
1b.__	_____
1c.__	_____
1d.__	_____

4. Are there any periodic limits to withdrawals from intakes due to lowered surface water levels? If so, what type of engineering solution can be implemented?

___ Y ___ N

Facility No,	Type of Capital Projects or Solution Needed
1a.__	_____
1b.__	_____
1c.__	_____
1d.__	_____

5. Are there any reservoir diversion sources with pumping limitations or other needs?

	Facility No.
a. intake size	___ ___ ___ ___
b. pump volumes	___ ___ ___ ___
c. legislative or permit conditions that limit drawdown levels	___ ___ ___ ___
d. Other ___	___ ___ ___ ___
e. Other ___	___ ___ ___ ___

6. Are there <u>any tie ins</u> to other surface or ground water supplies that need or to be constructed or upgraded? ___ Y ___ N

Facility No.	Type of Capital Projects Needed	Size (inch)	Length (feet)	Other Works	Type
1a.__	_____	___	_____	_____	_____
1b.__	_____	___	_____	_____	_____
1c.__	_____	___	_____	_____	_____
1d.__	_____	___	_____	_____	_____

7. Are there any emergency tie ins could be constructed or need to be upgraded?

___ Y ___ N

Facility No.	Type of Capital Projects Needed	Size (inch)	Length (feet)	Other Works	Type
1a.__	_____	___	_____	_____	_____
1b.__	_____	___	_____	_____	_____
1c.__	_____	___	_____	_____	_____
1d.__	_____	___	_____	_____	_____

Please evaluate mechanical systems that may have exceeded their useful life.

Note the improvement need along with age, replacement year of need and what would be done.

R = Replace Rh = Rehabilitate or upgrade N = New

	Facility No.	Age _____	Replacement Year	R - R or N	Type of Improvement
8. Intakes	___a.	_____	_____	_____	_____
	___b.	_____	_____	_____	_____
	___c.	_____	_____	_____	_____
	___d.	_____	_____	_____	_____

9. Are there any existing physical conditions and issues with any of the intakes?

___ Y ___ N

Facility No.	Type of Capital Projects Needed
1a.__	_____
1b.__	_____
1c.__	_____
1d.__	_____

10. Are there needs for replacement and deepening due to water level drops?

___ Y ___ N

Facility No.	Type of Capital Projects Needed
1a.__	_____
1b.__	_____
1c.__	_____
1d.__	_____

11. Are there Air level systems for water level measurement and instrumentation needs?

___ Y ___ N

Facility No.	Type of Capital Projects Needed
1a.__	_____
1b.__	_____
1c.__	_____
1d.__	_____

12. Is there any needed or existing vacuum system for non flooded suction/centrifugal pumps that need to be upgraded or replaced?

___ Y ___ N

Facility No.	Type of Capital Projects Needed
1a.__	_____
1b.__	_____
1c.__	_____
1d.__	_____

13. Are there any needs to provide or upgrade aeration of reservoirs needed for destratification?

___ Y ___ N

Facility No.	Type of Capital Projects Needed
1a.__	_____
1b.__	_____
1c.__	_____
1d.__	_____

14. Intake buildings or other out buildings status – Any need to upgrade, rehabilitation or new construction of these facilities?

	___ Y	___ N	Facility No.			
			____	____	____	____
a. roofs	___		____	____	____	____
b. windows	___		____	____	____	____
c. lights	___		____	____	____	____
d. internal	___		____	____	____	____
e. electrical	___		____	____	____	____
f. screens	___		____	____	____	____
g. control valves	___		____	____	____	____
h. other	___		____	____	____	____
i. other	___		____	____	____	____

N = New Rh = rehabilitation R = Replace

15. What is the status and age of intakes pumps?

Fac. No.	Intake Pumps	Age	Year to Replace	Back Up Doc No. (from Pg. 4 - 6)	N/R/Rh
__a.	_____	_____	_____	_____	_____
__b.	_____	_____	_____	_____	_____
__c.	_____	_____	_____	_____	_____
__d.	_____	_____	_____	_____	_____
__e.	_____	_____	_____	_____	_____

16. Are there existing Instrumentation and control system status and replacement or upgrade needs?

	Site Name	Age	Type of Need	Year of Need	Back Up Doc No.	N/R/Rh
__a.	_____	____	_____	____	_____	_____
__b.	_____	____	_____	____	_____	_____
__ c.	_____	____	_____	____	_____	_____
__d.	_____	____	_____	____	_____	_____
__e	_____	____	_____	____	_____	_____

17. What are the conditions of the reservoir overflow systems and any capital project needs?

Fac. No.	Overflow Name	Age	Type of Need	Year of Need	Back Up Doc No.	N/R/Rh
__a.	_____	____	_____	_____	_____	_____
__b.	_____	____	_____	_____	_____	_____
__c.	_____	____	_____	_____	_____	_____
__d.	_____	____	_____	_____	_____	_____
__e.	_____	____	_____	_____	_____	_____

18. Are there any diversion works and needs associated with them?

Fac No.	Diversion Name	Need	Year of Need	Doc No	N/R/Rh
__a.	_____	_____	_____	_____	_____
__b.	_____	_____	_____	_____	_____
__c.	_____	_____	_____	_____	_____
__d.	_____	_____	_____	_____	_____
__e.	_____	_____	_____	_____	_____

19. Are there any surface water crossings (raw - diversion) that need to be replaced - rehabilitated or upgraded?

Overflow Name	Age	Need	Year of Need	Doc No.	N/R/Rh
a.					
b.					
c.					
d.					
e.					

20. Are there any water main (raw) 'old' connections to remove (get rid of) due to cross connections or other concerns?_____

Connection Name	Age	Need	N/Rh/R	Doc No	Est. $
a.					
b.					
c.					
d.					
e.					

21. Are there any existing Infiltration Galleries that need to be upgraded or rehabilitated?

Gallery Name	Age	Need	N/Rh/R	Doc No	Est. $
a.					
b.					
c.					
d.					
e.					

22. Any need to upgrade or replace internal piping and valving systems at raw water transmission water mains?

Name	Age	N/Rh/R	N/Rh/R	Doc No	Est. $
a.					
b.					
c.					
d.					
e.					

23. Does the water system have canals or similar transport systems that act as overflows or diversions that need repair or replacement?

	Name	Age	N/Rh/R	Year of Need	Doc No	Est. $
_a.						
_b.						
_c.						
_d.						
_e.						

24. Are there any pumping systems to other surface sources with capital project needs?

	Name	Age	N/Rh/R	Year of Need	Doc No	Est. $
_a.						
_b.						
_c.						
_d.						
_e.						

25. Are there existing emergency sources of supply with capital project needs? Describe existing condition and need.

	Name	Age	N/Rh/R	Year of Need	Doc No	Est. $
_a.						
_b.						
_c.						
_d.						
_e.						

26. Please identify capital projects that may include needs planning, permitting or construction needs for other potential emergency sources of supply.

	Name	Age	N/Rh/R	Year of Need	Doc No	Est. $
_a.						
_b.						
_c.						
_d.						
_e.						

27. Is there a need for reservoir water treatment components – algae treatment (copper sulfate or carbon) that need boat or physical applicator units?

	Name	Age	N/Rh/R	Year of Need	Doc No	Est. $
a.	_____	____	_____	____	_____	_____
b.	_____	____	_____	____	_____	_____
c.	_____	____	_____	____	_____	_____
d.	_____	____	_____	____	_____	_____
e.	_____	____	_____	____	_____	_____

28. Is there a need for reservoir expansion to meet future needs or to increase capacity?

	Overflow Name	Age	Need	Year of Need	Doc No	Est. $
a.	_____	____	_____	____	_____	_____
b.	_____	____	_____	____	_____	_____
c.	_____	____	_____	____	_____	_____
d.	_____	____	_____	____	_____	_____
e.	_____	____	_____	____	_____	_____

29. Is there a need to increase capacity of surface water reservoirs by dredging or other earth removal activities?

___ Y ___ N

	Name	Age	Need	Year of Need	Doc No	Est. $
a.	_____	____	_____	____	_____	_____
b.	_____	____	_____	____	_____	_____
c.	_____	____	_____	____	_____	_____
d.	_____	____	_____	____	_____	_____
e.	_____	____	_____	____	_____	_____

3. For Groundwater Systems

Rehabilitation or replacement of wells due to diminished specific capacity greater than 20% is reasonable) and/or over 20 years of age is justification for replacement of source rather than just rehabilitation.

a. Please list year to be replaced based on projected specific capacity and age.

Need = R = Replace Rh = Rehabilitation N = New

Total Number of Wells _____ SC = Specific Capacity in gpm

Fac. No. or Name	Safe Yield(s) mgd	Installed Yr, ___	Original SC	Existing. SC	% Diff.	Age	Yr. of Improv.	N/Rh/R
1a. _____	____	_____	_____	____	_____	_____	____	____
1b. _____	____	_____	_____	____	_____	_____	____	____
1c. _____	____	_____	_____	____	_____	_____	____	____
1d. _____	____	_____	_____	____	_____	_____	____	____
1e. _____	____	_____	_____	____	_____	_____	____	____
1f. _____	____	_____	_____	____	_____	_____	____	____
1g. _____	____	_____	_____	____	_____	_____	____	____
1h. _____	____	_____	_____	____	_____	_____	____	____
1i. _____	____	_____	_____	____	_____	_____	____	____
1j. _____	____	_____	_____	____	_____	_____	____	____
1k. _____	____	_____	_____	____	_____	_____	____	____
1l. _____	____	_____	_____	____	_____	_____	____	____
1m _____	____	_____	_____	____	_____	_____	____	____
1n _____	____	_____	_____	____	_____	_____	____	____
1o _____	____	_____	_____	____	_____	_____	____	____
1p _____	____	_____	_____	____	_____	_____	____	____

b. Please identify well pump and motor information and need to be replaced (N or R) or rehab (Rh).

Fac. No. or Name	Yr. ___	Motor. Age	Motor Date	Rehab Est. $	Pump Age	Rehab Date	Need N/R/Rh	Yr. of Need	Est. $
1a. _____	____	_____	_____	____	_____	_____	____	____	____
1b. _____	____	_____	_____	____	_____	_____	____	____	____
1c. _____	____	_____	_____	____	_____	_____	____	____	____
1d. _____	____	_____	_____	____	_____	_____	____	____	____
1e. _____	____	_____	_____	____	_____	_____	____	____	____
1f. _____	____	_____	_____	____	_____	_____	____	____	____
1g. _____	____	_____	_____	____	_____	_____	____	____	____

1h. _____ ____ _____ _____ ____ _____ _____ ____ ____
1i. _____ ____ _____ _____ ____ _____ _____ ____ ____
1j. _____ ____ _____ _____ ____ _____ _____ ____ ____
1k. _____ ____ _____ _____ ____ _____ _____ ____ ____
1l. _____ ____ _____ _____ ____ _____ _____ ____ ____
1m _____ ____ _____ _____ ____ _____ _____ ____ ____
1n _____ ____ _____ _____ ____ _____ _____ ____ ____
1o _____ ____ _____ _____ ____ _____ _____ ____ ____
1p _____ ____ _____ _____ ____ _____ _____ ____ ____

c. Are there any new wells that need to be constructed to meet current demands?

___ Y ___ N

Name	Construction Year	N	Expected Yield (mgd)	Document No.
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____

4. Building(s) Status - This section should evaluate the existing buildings and outline any needed or anticipated capital improvement needs.

a. Any needs for roof, doors, windows, vents, drainage, fuel tanks, etc.

___ Y ___ N Facility No.

a. roofs	___	____	____	____	____
b. windows	___	____	____	____	____
c. lights	___	____	____	____	____
d. internal	___	____	____	____	____
e. electrical	___	____	____	____	____
f. screens	___	____	____	____	____
g. control valves	___	____	____	____	____
h. other	___	____	____	____	____
i. other	___	____	____	____	____

b. Upgrades to other building components such as new chemical treatment systems at any of the existing pumping stations?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

c. Any flooding of well/building or similar type improvement needs?

___ Y ___ N

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

d. Status of roadway(s) into well builgings.

___ Y ___ N

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

e. Conditions of gates and fencing?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

f. Electrical service upgrading needs?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

g. Security Needs

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

h. Other Needs

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

i. Meter pits or yard piping, valves, hydrant and other appurtenant type needs?

Facility No.	Need	N/R/Rh	Document	Cost $
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

j. Any need to abandon any existing sources of supply? Demolish building, in accordance with DEP regulations regarding abandonment of well(s)?

Facility No.	Need	N/R/Rh	Document	Cost $
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

k. Are there any emergency power back up - construction needs (replace, rehabilitate, upgrade)?

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

l. Are there any system dynamic changes that would require change over of well pumps (new tanks or elevated head changes)?

___ Y ___ N

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

m. What are the well screens conditions - any pictures? - any planned upgrade to wells to increase caission diameter to slow velocities in the screens?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

n. Are there any water main needs for interconnections of sources in yard?

___ Y ___ N

Facility No.	Connection Pts.	Size	Length	Cost $

o. Are there any venturi or measuring metering system - status - age - upgrade?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

p. Are there any water quality (iron and manganese) issues that may require water treatment?

___ Y ___ N

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

q. Are there other potential wells as sources of supply that are identified and need to be implemented as a capital improvement?

___ Y ___ N

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

r. Are there capital investment needs to conduct a groundwater investigation?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

5. Watersheds and Site Conditions

a. Are there storm water discharges within Zone 1, 2 or 3's that have been identified and needs for capital improvements to ensure or improve water quality?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

b. Is there any need to reconstruct wetlands ?

___ Y ___ N

Facility No.	Need	N/R/Rh	Document	Cost $

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

c. Is there any need for observation wells to be installed? _____

Site	How Many	Average Cost	Document	Code
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

d. Are there any existing Water Management Act Program Permit requirements that will require capital needs investment?

___ Y ___ N

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

e. Based on issues answered in Section B - Water Quantity, are there needs for new pumping stations?

Site Names	Size mgd	Chemical Feeds Systems
___ Y ___ N		

Facility No.	**Need**	**N/R/Rh**	**Document**	**Cost $**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

SOURCES OF SUPPLY
SUMMARY SHEET FOR
CAPITAL PROJECTS

PROJECT NAME	SOURCE NAME	AGE	New - Rehab - Replace - Expand	Type of Need	No. Needed	MGD - MG kW	Yr. Needed	Cost Estimate	Documentation Type No.
	or MA Number	YRS.						In Millions	(From Available Info)

II. TREATMENT

II. Treatment

This section is intended to prompt internal and external needs for existing water treatment facilities that generally include filtration and/or aeration and generate capital project needs. In addition, equipment should be evaluated for age and replacement over a 20 year time period.

a. Water Treatment Facilities (WTF) S = Surface G = Groundwater

1. Provide a brief description of any existing facilities

WTF No.	Year Built	WTF Name -	S -G or S/G	Facility Type
1a.	_____	_____	_____	_____
1b.	_____	_____	_____	_____
1c.	_____	_____	_____	_____
1d.	_____	_____	_____	_____
1e.	_____	_____	_____	_____

2. Please provide a comment on the aging and conditions of the water treatment facilities and what type of capital improvements may be necessary. i.e. - Is there a need to upgrade the WTF in order to meet 310 CRM 22.00 or SDWA water quality (primary or secondary) standards; worn out equipment; expansion is required; or other needs.

Facility No.	Brief Comments on Capital Needs
1a. _____	_____
1b. _____	_____
1c. _____	_____
1d. _____	_____
1e. _____	_____

3. What are the Intake chambers status? Any need for a location change? Is there excessive icing or water quality concerns at the existing intake? Any railway or other potential hazardous concerns. Does the intake need new bar racks or other improvements?.

___ Y ___ N

1a. _____	_____
1b. _____	_____
1c. _____	_____
1d. _____	_____
1e. _____	_____

4. Do the raw transmission pipelines or external systems require upgrades or connection type changes?

___ Y ___ N

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

5. Are there specific water quality issues that require the WTF to change the treatment train in order to meet existing or proposed SDWA requirements? (repeated question)

___ Y ___ N

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

6. Is there a need to improve filtration type and methods for surface and/or ground water supplies or other reasons?

___ Y ___ N

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

7. Is there any need for raw and finished water sampling point(s) service line changes?

___ Y ___ N

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

8. Are there needs for any disinfectant injection point changes?

___ Y ___ N

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

9. Is there a need to improve upon disinfection storage techniques and for changes to the types of disinfectant?

___ Y ___ N

1a. _____ _____

1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

10. Does the clearwell storage at the water treatment facility have any needs such as an increase in volume; baffles; finished water pumps or other upgrades?

___ Y ___ N

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

11. Is there a need for new treatment techniques, application points or chemicals to handle water quality changes or future 310 CMR 22.00 and SDWA needs?

___ Y ___ N

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

12. What are the needs for general upgrades or rehabilitation or replacement of the existing facility? Please go through equipment for treatment train process and note probable needs - such as raw water and finished water pumps?

Rh = Rehabilitation N = New R = Replacement

Rapid Mixers - Flocculators - Backwash Equipment - Other treatment equipment based on age (Over 20 years) or wear?

Facility No.	Unit Name	Age	Probable Need (R - Rh - N)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

13. Is the use of ozone as a disinfectant a desirable addition to the facilty? Have any evaluations been completed? What would be the mgd requirement if so?

___ Y ___ N

Fac. No.	mgd	New Disinfectant Type or Process
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

14. Are the chemical feed systems in need of upgrade/replace - including pumps and feed lines?

Facility No.	Need	Approx. Age (yrs.)	Approx. Useful Life Age (yrs.)	Yr. of N - Rh - R
1a.	_____	_____	_____	_____
1b.	_____	_____	_____	_____
1c.	_____	_____	_____	_____
1d.	_____	_____	_____	_____
1e.	_____	_____	_____	_____

15. Are there any need for additional or new chemical storage tanks?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

16. If there are tube settlers for sedimentation is there any short circuiting and need to replace with varying angular units or new types?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

17. Repeat - is there any need to change from chlorine to hypochlorite or ozone?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

18. Is there any need to replace or add need weirs or baffles in the flash mixers - flocculation - sedimentation basins or improvements to the filtering units - OR - add baffles or piping changes to water treatment train or flow system?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

19. Does the WTF need upgrades or replacement to the: chlorinators, chemicals, chemical storage tanks - etc ?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

20. Is the addition of aeration needed or are units needed to be replaced or upgrade?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____

1e. _____ _____

21. Does the filter media need to be replaced - changed or evaluated for a new type?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

22. Is there a need to replace, increase capacity or rehabilitation the filter media backwash system?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

23. How old is the roof and does the WTF need any building structural changes or new or rehabilitation to the roofing system?

	AGE	Est. $ and Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

24. Does the facility have sludge collectors? What is the age and status - is an upgrade - replacement or rehabilitation needed?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

25. Is there a (repeat) need to increase the existing clearwell storage volume to meet system needs or to allow the water treatment facility to operate over a longer time period to improve operational efficiencies?

___ Y ___ N

Est. $ Need

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

26. What is the condition of the electrical cabinets and switching systems? Is there a need to replace existing transformers or upgrade the overall electrical operational system?

___ Y ___ N

Est. $ Need

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

27. Does the emergency power system need upgrades - What is the age of the generator ? Is a replacement or increased power need at the water treatment facility? How about automatic switching equipment?

___ Y ___ N

Est. $ Need

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

28. Is there a need to bury electrical lines for security or other purpose; to increase electrical capacity; or to modify power service lines at water treatment facility?

___ Y ___ N

Est. $ Need

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____
1e. _____ _____

29. Is there a need to run new electrical conduit to outlying source of supply or other areas at the site?

___ Y ___ N

Est. $ Need

1a. _____ _____
1b. _____ _____
1c. _____ _____
1d. _____ _____

1e. _____ _____

30. Is there a need to replace the emergency power unit's type of fuel from diesel to gas or other fuel sources to improve heating of building, etc.?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

24. Is there a need for internal and external security system upgrades? Can the needs be outlined for each facility? These needs should include lighting, fencing etc.

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

25. Can you outline the HVAC system (Heating- Ventilator - Air Conditioning) age and overall status and outline required upgrades?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

26. Does any of the above work need an engineering evaluation and costs determination?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

27. Has any energy 'savings' evaluations been made? Is there a need for equipment changes to decrease power usages?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____

1c. _____ _____
1d. _____ _____
1e. _____ _____

28. Pressure Relief Valve System operational need and replacement need?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

b. **Residuals Management Systems**

This section should include an evaluation of the existing or required residuals management systems for capital project needs.

1. Describe the existing lagoons and note age - status - fencing - overflows - expansion needs, condition of the lagoon bottoms, need for liner(s), etc. - capital needs.

Facility No.	Type of Existing System	Immediate or Future Capital Needs
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

2. Is there any need to change from lagoons to a sewer discharge system?

___ Y ___ N

	Est. $	Need
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

3. What are the sludge pump(s) age and existing physical and operational status and present adequacy and future capital project needs?

Facility No.	Age	$ Status and Needs
1a.	___	_____
1b.	___	_____
1c.	___	_____
1d.	___	_____
1e.	___	_____

4. Is there a sludge dewatering system and what are any needs associated with this system?

___ Y ___ N

Facility No.	Age	$ Status and Needs
1a.	___	_____
1b.	___	_____
1c.	___	_____
1d.	___	_____
1e.	___	_____

5. Are their applications of residual treatment chemicals and if so, are there any capital project needs association with these chemical feed systems?

___ Y ___ N

Facility No.	$ Status and Needs
1a.	_____
1b.	_____
1c.	_____
1d.	_____
1e.	_____

6. Is there a need for metering components for the measurement of backwash flow?

___ Y ___ N

Facility No. .	$ Status and Needs
1a.	_____
1b.	_____
1c.	_____
1d.	_____
1e.	_____

7. If residuals flow to an existing sewer collection system, are there any improvements to the dewatering and/or pumping system along with needed upgrades or changes?

___ Y ___ N

Facility No. .	$ Status and Needs
1a.	_____
1b.	_____
1c.	_____
1d.	_____
1e.	_____

8. If there are pretreatment or thickening components for the WTF residuals, is there any need to upgrade or replace the chemical feed pretreatment or thickening systems?

___ Y ___ N

Facility No. . $ Status and Needs

1a. _____
1b. _____
1c. _____
1d. _____
1e. _____

9. Is there any need to upgrade at the WTF existing residual (sludge) lagoons or ponds?

___ Y ___ N

Facility No. . $ Status and Needs

1a. _____
1b. _____
1c. _____
1d. _____
1e. _____

10. Are there any existing National Pollutant Discharge Elimination System (NPDES) permit needs that require upgrades to meet water quality conditions?

___ Y ___ N

Facility No. . $ Status and Needs

1a. _____
1b. _____
1c. _____
1d. _____
1e. _____

C. Pumping stations and water treatment systems

This section evaluates the existing pumping and chemical treatment systems to determine replacement and rehabilitation needs for anything over 20 years.

Rh = Rehabilitation N = New R = Replacement

Please review the internal and external component list provided below - for each pump station, that may need replacement, rehabilitation or newly constructed and then place below:

1. Internal Components

Type	Station No. (from A List Sources of Supply)
Water Sampling Service Lines	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Chemical feed system replacements	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Chlorinators?	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Corrosion control systems	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Fluoride system replacement	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Chemical pumps ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Day tanks ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Regular storage ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Feeders (dry and wet ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Hoppers/silo's ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Dust Collectors ___ ___ ____ ___ ___ ___ ___ ___ ___ ___ __
Retaining Walls? ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Scales ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Eduction - injection units ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Mixers/agitators ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Timers ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Controllers units ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Safety equipment ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Access ramps ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Emergency eye wash ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

2. Install new fuel lines for
new generator fuel tanks? ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
Replace tanks? ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
3. Generators Work ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ __
4. Lighting (inside or outside) needs? ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
5. Alarms ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

		Estimated Cost
Total New	____	_____
Total Rh	____	_____
Total R	____	_____

6. <u>External Components</u>

Please evaluate the pump stations building condition. Note age of building, roof condition/status, etc. - expansion needs - enough hatches to remove equip?

Please summarize the needed capital projects here in this table, or transfer directly to the Summary Sheet, following this section.

1. Please outline existing pump stations pumping equipment.

Facility No.	Name	Yr. Built	Pumps Age	Control Valves	Type and replacement needs over next 20 years
1a.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____

_____ ___ _____ _____ _____ _____
_____ ___ _____ _____ _____ _____

2. Are there any low flow issues from restrictions in the distribution system that require a new pumping station upgrade to existing pumping system?

___ Y ___ N

New Site Name	Pumping Size (mgd)	Description of New Facility
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Are there any pressure losses and fluctuations from problem areas in distribution system?

___ Y ___ N

New Site Name	Pumping Size (mgd)	Description of New Facility
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. In existing high pressure zones - are there any needs to install additional pumps, such as fire flow or constant pressure pumps to maintain or increase zone influence areas?

___ Y ___ N

Site Name	Pumping Size (mgd)	Description of New Facility
_____	_____	_____
_____	_____	_____
_____	_____	_____

5. Are there replacement or rehabilitation projects for existing pumping stations? Please provide projects based on needs for replacement of parts; existing outlined capital program and needs based on breakdowns or interruptions of service.

___ Y ___ N

Pumping Station(s) <u>Internal Components needing work</u>

	Need R/Rh/N	Facility No(s)
a. Chemical feed system replacements	_____	_____

b.	Pumps	_____	_____
c.	Surge Control Valves	_____	_____
d.	Instrumentation	_____	_____
e.	Heating Units	_____	_____
f.	Safety equipment	_____	_____
g.	Ramps	_____	_____

6. Is there any need to add new energy type pumps to existing pumping stations?

___ Y ___ N

Facility No.	Name	Yr. Built	Pumps Age	Control Valves	Type and replacement need
1a.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

7. Any need to add new natural gas lines to replace tanks used for heating or emergency power?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

8. Any need for or to change or upgrade emergency power systems -such as; direct drive power to emergency generator?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

9. Any need for security lighting (inside or outside)?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

10. Are there any security alarm system needs?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

11. External Components - please evaluate the outside of the building and outlined needed capital improvements.

		Need	Station No. 1a.	1b.	1c
a.	Overall pump stations building need.	_____	___	___	___
b.	Roofing	_____	___	___	___
c.	Fencing	_____	___	___	___
d.	Fascia	_____	___	___	___
e.	Hatches	_____	___	___	___
f.	Walls and windows/air vents	_____	___	___	___
g.	Any other needs	____	___	___	___
_____			___	___	___
_____			___	___	___

12. Do the electrical transformers need to be replaced or upgraded?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

13. Are there any underground electrical improvements needed to eliminate poles?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

14. Is there a need to replace diesel tanks or convert to other fuel system?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

15. Is there a need to add spill containment areas?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

16. Any need for improvements to outside or inside metering pit or instrumentation system?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

18. Any need for flow or metering system improvements or upgrades?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

TREATMENT, RESIDUALS AND PUMPING STATION'S SUMMARY FOR CAPITAL PROJECTS

PROJECT NAME	SOURCE NAME	AGE	New - Rehab - Replace - Expand	Type of Need	No. Needed	MGD - MG kW	Yr. Needed	Cost Estimate	Documentation Type No.
	or MA Number	YRS.						In Millions	(From Available Info)

III. FINISHED WATER STORAGE

III. Finished Water Storage Tanks

This section is intended to outline capital needs for all of the public water systems finished water storage tanks. Past inspection reports may highlight storage tank capital project needs.

Sandblasting and painting are capital needs that can be outlined using recommended time periods for this work every (10 to 12 years).

This section will also provide needs for the site buildings, fencing and external water works components that a tank inspection report does not normally address.

Existing data Type E = Elevated S = Standpipe R = Reservoir

Material St = Steel C = Concrete O = Other

	Storage Tank Name	Type	Volume	Yr. Built	Material
1. Storage Tanks					
1a.	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____
1d.	_____	_____	_____	_____	_____
1e.	_____	_____	_____	_____	_____
1f.	_____	_____	_____	_____	_____

2. Please review reports of past storage tank(s) initial inspection and final inspections and list needs for painting - repairs - sandblasting and other needs or recommendations.

	Painting			New Painting	
	Past Inside	Past Outside		New Yr. Date to Paint	
Tank No.	Yr. Date	Yr. Date	Est. $	Inside	Outside
1a	_____	_____	_____	_____	_____
1b	_____	_____	_____	_____	_____
1c	_____	_____	_____	_____	_____
1d	_____	_____	_____	_____	_____
1e	_____	_____	_____	_____	_____
1f	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

	Sandblasting				
	Past Inside	Past Outside		New	Date to Blast
	Yr. Date	Yr. Date	Est. $	Inside	Outside
Tank No.					
1a.	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____
1d.	_____	_____	_____	_____	_____

1e. _____ _____ _____ _____ _____
1f. _____ _____ _____ _____ _____

3. Are there any maintenance issues with the existing tank(s) hatch - handrails - catwalk?

Tank No.	Est. $	Need	Planned Year
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____
1f.	_____	_____	_____

4. Are there any issues with drainage system for overflow and drainage points (erosion or other issues)?

Tank No.	Est. $	Need	Planned Year
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____
1f.	_____	_____	_____

5. Are therer any capital project needs with tank laddering and safety cages?

Tank No.	Est. $	Need	Planned Year
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____
1f.	_____	_____	_____

6. Any cathode and/or anodic protection systems existing status and need?

Tank No.	Est. $	Need	Planned Year
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

1f. _____ _____ _____

7. Any other issues with storage tank roof or body of tank?

Tank No.	Est. $	Need	Planned Year
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____
1f.	_____	_____	_____

8 Altitude Valves and Chambers

Storage Tank No.	Age (yrs)	Type	Needs/Est. $
1a.	____	_____	_____
1b.	____	_____	_____
1c.	____	_____	_____
1d.	____	_____	_____
1e.	____	_____	_____
1f.	____	_____	_____
_____	____	_____	_____
_____	____	_____	_____

9. Instrumentation Needs

Storage Tank No.	Age	Type	Needs/Est. $
_____	____	_____	_____
_____	____	_____	_____
_____	____	_____	_____
_____	____	_____	_____
_____	____	_____	_____
_____	____	_____	_____

Please address other issues that could identify new capital projects.

10. What is the total volume available as storage in the distribution network including clearwells?

_____ mg.

11. What is the 'Needed Storage' volume based upon good engineering practices for public water systems?

_____ or deficit in mg.

12. What is the public water systems total 'Needed Storage' volume based on twenty (20) year future growth needs

_____ mg

13. Please summarize the <u>needed storage tanks</u> required to meet current and future demands. Land required for location of new tanks should be noted along with site conditions that may allow an expansion at existing site;

Storage Volume (mg)	New Tank Site No.	Land Owned ___ Y ___ N	Expansion at Existing Site ___ Y ___ N	Projected Year for Construction
_____	__1N_	_____	_____	_____
_____	__2N_	_____	_____	_____
_____	__3N_	_____	_____	_____
_____	__4N_	_____	_____	_____
_____	__5N_	_____	_____	_____

14. What are the requirements to connect these new tanks to the existing water supply?

Site No.	Water Main Connection Route	Size Pipe (inches)	Length (feet)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

15. Are there any requirements for demolition of old tank(s) or other site conditions that require capital improvements?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

16. Do pressure deficiencies exist throughout the distribution system that would be resolved by constructing new storage vessels?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

17. Would there be newly created pressure deficiencies caused by planned twenty (20) year growth patterns?

___ Y ___ N

Define Solution(s)

_____
_____
_____

18. Please identify any of these items that should be replaced, rehabilitated or newly constructed (after 20 years of useful life).

	Need	Site(s) Location	N/R/Rh	Estimated Cost
a.	Fencing needs	_____	_____	_____
b.	Lighting	_____	_____	_____
c.	Pits	_____	_____	_____
d.	Building(s) on site upgrades	_____	_____	_____
e.	Security Systems	_____	_____	_____
f.	Instrumentation needs	_____	_____	_____
g.	Electrical needs	_____	_____	_____
h.	Site building new construction.	_____	_____	_____
i.	New site piping requirements	_____	_____	_____

<u>Standpipe - Reservoir - Elevated Tank</u>

Please answer the following questions and note any capital project needs that may be generated.

19. Is there storage tank stagnation and any need to de-stratify due to short circuiting.

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

20. Are floats or bladders needed to be installed to prevent short circuiting?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

21. Are existing hydraulic grade lines with other storage tanks consistent?

___ Y ___ N

___

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

22. Are there needs for an altitude valve system or other type of control units?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

23. Are there needs to reset pumping elevations through instrumentation upgrades or other type of changes (level controllers)?

___ Y ___ N

__

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

24. Are there insufficient pressures to get water out of tank?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

25. Is there a need to install booster pumps to pull water out of the standpipe or reservoir?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

26. Are connecting water main sizes increases needed to improve flow between storage tanks?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

27. Can all of the storage tanks be filled without effecting other tanks (overflows?)

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

28. Are the tops - roofs - hatches in need or rehabilitation (repeat question)?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

29. Any floating covers - upgrade requirements - aged units and warranties?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

30. Any floating covers that have surface water removal systems needs?

___ Y ___ N

Site Name	Project Required	Estimated Cost
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

31. Are any antennae attached to the tank systems that have caused damage that needs to be repaired?

___ Y ___ N

Site Name	Project Required	Estimated Cost

_____
_____
_____
_____
_____

STORAGE TANKS
SUMMARY SHEET FOR
CAPITAL PROJECTS

PROJECT NAME	AGE	New - Rehab - Replace - Expand	Type of Need	MG	Yr. Needed	Cost Estimate	Documentation Type No.
	YRS.					In Millions	(From Available Info)

IV. PUMPING PROJECTS

IV. Pumping Projects

Booster Pumping Stations

1. Please outline existing booster stations pumping equipment.

Facility No.	Name	Yr. Built	Pumps Age	Control Valves	Type and replacement needs over next 20 years
1a.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

2. Are there any low flow issues from restrictions in the distribution system that require a new booster station or upgrades to an existing system?

___ Y ___ N

New Site Name	Pumping Size (mgd)	Description of New Facility
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Are there any pressure losses and fluctuations from problem areas in distribution system and what could be done to resolve them?

___ Y ___ N

New Site Name	Pumping Size (mgd)	Description of New Facility
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. In existing high pressure zones - are there any needs to install additional pumps, such as fire flow or constant pressure pumps to maintain or increase zone influence areas?

___ Y ___ N

Site Name	Pumping Size (mgd)	Description of New Facility
_____	_____	_____
_____	_____	_____
_____	_____	_____

5. Are there replacement or rehabilitation projects for existing booster pumping stations? Please provide projects based on needs for replacement of parts; existing outlined capital program and needs based on breakdowns or interruptions of service.

___ Y ___ N

Booster Pumping Station(s) <u>Internal Components needing work</u>

		Need R/Rh/N	Facility No(s)
a.	Chemical feed system replacements	_____	_____
b.	Pumps	_____	_____
c.	Surge Control Valves	_____	_____
d.	Instrumentation	_____	_____
e.	Heating Units	_____	_____
f.	Safety equipment	_____	_____
g.	Ramps	_____	_____

6. Is there any need to add fire flow pumps to existing booster pumping stations?

___ Y ___ N

Facility No.	Name	Yr. Built	Pumps Age	Control Valves	Type and replacement need
1a.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

7. Any need to add new natural gas lines to replace tanks used for heating or emergency power?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

8. Any need for or to change or upgrade emergency power systems -such as; direct drive power to emergency generator?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

9. Any need for security lighting (inside or outside)?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

10. Are there any security alarm system needs?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

11. External Components - please evaluate the outside of the building and outlined needed capital improvements.

		Need	Station No. 1a.	1b.	1c
a.	Overall pump stations building need.	_____	___	___	___
b.	Roofing	_____	___	___	___
c.	Fencing	_____	___	___	___
d.	Fascia	_____	___	___	___
e.	Hatches	_____	___	___	___

f. Walls and windows/air vents _____ ___ ___ ___
g. Any other needs____ ___ ___ ___
_____ ___ ___ ___
_____ ___ ___ ___

13. Do the electrical transformers need to be replaced or upgraded?
___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

14. Are there any underground electrical improvements needed to eliminate poles?
___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

15. Is there a need to replace diesel tanks or convert to other fuel system?
___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

16. Is there a need to add spill containment areas?
___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

17. Any need for improvements to outside or inside metering pit or instrumentation system?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

18. Any need for flow or metering system improvements or upgrades?

___ Y ___ N

Facility No.	Name	Type and replacement needs over next 20 years	Year Needed
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____

PUMPING SYSTEMS SUMMARY SHEET FOR CAPITAL PROJECTS

PROJECT NAME	STATION NAME	YEAR	New - Rehab - Replace - Expand	Type of Need	No. Needed	MGD - MG Kw	Yr. Needed
		BUILT					

IV. TRANSMISSION AND DISTRIBUTION WATER MAINS

INVENTORY

Please complete the following inventory sheet.

Transmission and Distribution Inventory

Transmission and distribution projects are the piping needs of a water system. Projects for **valves, hydrants, and meters** that are not part of a transmission or distribution project listed in this table should be recorded in the table on page 7.

On the table below, please provide an estimate of the total feet or miles of pipe in your system, if possible. Completion of this table is not required, but it may be helpful to ensure all potential transmission and distribution pipe projects are considered.

Note: The total feet or miles or pipe in your system is required information if any pipe projects are submitted based solely on survey-generated documentation (documentation codes 10 or 11).

_____ ☐ ☐
Total feet or miles of pipe in system
(Check feet or miles)

Total Pipe in System *(Circle or underline feet or miles)*		<=6 inch		8-12 inch		15-42 inch		>=48 inch	
PVC	___ feet or miles	Amount of PVC by pipe size	_____	feet or miles	_____	feet or miles	_____	feet or miles	_____	feet or miles
	___ % of total pipe	% of this category/size pipe currently in poor condition or beyond useful life	_____	%	_____	%	_____	%	_____	%
Ductile Iron	___ feet or miles	Amount of ductile iron by pipe size	_____	feet or miles	_____	feet or miles	_____	feet or miles	_____	feet or miles
	___ % of total pipe	% of this category/size pipe currently in poor condition or beyond useful life	_____	%	_____	%	_____	%	_____	%

Cast Iron	___ feet or miles		Amount of cast iron by pipe size	_____	feet or miles	_____	feet or miles	_____	feet or miles	_____	feet or miles
	___ % of total pipe		% of this category/size pipe currently in poor condition or beyond useful life	_____	%	_____	%	_____	%	_____	%
Asbestos Cement	___ feet or miles		Amount of asbestos cement by pipe size	_____	feet or miles	_____	feet or miles	_____	feet or miles	_____	feet or miles
	___ % of total pipe		% of this category/size pipe currently in poor condition or beyond useful life	_____	%	_____	%	_____	%	_____	%
Other	___ feet or miles		Amount of other by pipe size	_____	feet or miles	_____	feet or miles	_____	feet or miles	_____	feet or miles
	___ % of total pipe		% of other currently in poor condition or beyond useful life	_____	%	_____	%	_____	%	_____	%

V. Transmission and Distribution - Water Mains

This section outlines needed capital improvements to raw water and finished water transmission water mains, along with distribution system water mains and appurtenances. Separate details on appurtenant systems, such as valves, hydrants and service lines can be provided in VI. - Other.

This section is intended to document identify needed water main capital projects and to define other areas within the piping system that may need to be improved upon.

a. Raw Water Transmission Mains and Appurtenant Systems

This section outlines the water mains from sources of supply to pumping and/or treatment facilities.

1. Provide a description of any raw water transmission main needs along with the age and condition.

G = Gravity P = Pumped

Raw No.	Piping Route Name	Age (yrs.)	Length	G or P	Needed Improvements
1a.	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____
1d.	_____	_____	_____	_____	_____
1e.	_____	_____	_____	_____	_____

2. Have the raw water transmission main(s) been 'leak' surveyed?

___ Y ___ N

Raw	Year	Results (% Loss)	Needed Improvements
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

3. Are there buried water mains located in water or wetlands?

___ **Y** ___ **N**

Raw No.	Piping Route Name	Length (ft.)	Needed Improvements
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____

1e. _____ _____ _____

4 For these transmission water mains, do they need upgrades, replacement or installation of control valve systems?

Raw No.	N - R - Rh	Length	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

5. Are there any capital improvements needed for raw water transmission water mains that are needed to bring water to the existing pump station or water treatment facilities?

___ Y ___ N

Raw. No.	Piping Length	Size (inch)	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e	_____	_____	_____

6. Do the transmission water main pumping systems need replacement or rehabilitation due to age, underperformance or other issues?

___ Y ___ N

Raw No.	R - Rh - N		Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

b. Finished Water Transmission Water Mains

This section outlines the water mains from pumping and/or treatment facilities to the distribution network.

1. Provide a description of any finished water transmission mains needs along with the age and condition.

G = Gravity P = Pumped

Finished No.	Piping Route Name	Age (yrs.)	Length (ft.)		Needed Improvements
1a.	_____	_____	_____	_____	_____
1b.	_____	_____	_____	_____	_____
1c.	_____	_____	_____	_____	_____
1d.	_____	_____	_____	_____	_____
1e.	_____	_____	_____	_____	_____

2. Have the finished water transmission main(s) been 'leak' surveyed?

___ Y ___ N

Finished No.	Year	Results (% Loss)	Needed Improvements
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

3. Are there buried water mains located in water or wetlands or eastments?

___ **Y** ___ **N**

Finished No.	Piping Route Name	Length (ft.)	Size and Needed Improvements
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

4 For these finished transmission water mains, do they need upgrades, replacement or installation of control valve systems?

Finished No.	N - R - Rh	Length	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

5. Are there any capital improvements needed for finished water transmission water mains that are needed to bring water from the existing pump station or water treatment facilities to the distribution network?

___ Y ___ N

Finished No.	Piping Length	Size (inch)	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e	_____	_____	_____

6. Do the finished water transmission mains need replacement or rehabilitation due to age, underperformance or other issues?

Finished No.	R - Rh - N		Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____
1e.	_____	_____	_____

C. Diversion Works

1. What is the status of any diversion works - status - age - new needs - construction - upgrades.

Facility No.	Name	Year Built	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____

2. Are there any pump or gravity feed control buildings - Status and upgrade or replacement needs?

Diversiony No.	Pumps	Type	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____

3. Is there emergency power or direct drive engines at the site and is there a need to upgrade or replace?

   Please lists needs for each system (if KW is not known use KW=Hp times 0.746 x 1.5 to get rough value of need)

Diversion No.	Power kW or Direct Drive	Type (gas/diesel)	Age and Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____

4. List generator sizing improvements to sizing - age - replace or rehab - and fuel status.

Diversion No.	Generator Size	kW	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____

5. Is there a need to improve or change the generator or direct drive fuel service lines or tank?

   ___ Y ___ N

Diversion No.	Generator or Direct Drive	R-Rh-N	Identified Needs
1a.	_____	_____	_____
1b.	_____	_____	_____
1c.	_____	_____	_____
1d.	_____	_____	_____

6. Please outline any needs for building improvements at diversion works:

	Component	Need 1a	1b	1c	1d	Description of Need
a.	Building roof	__	__	__	__	_____
b.	Building fascia	__	__	__	__	_____
c.	Fencing	__	__	__	__	_____
d.	Lighting	__	__	__	__	_____
e.	Security	__	__	__	__	_____
f.	Instrumentation	__	__	__	__	_____
g.	Other_____	__	__	__	__	_____

D. Water mains

1a. Are there identified water main replacement projects?

___ Y ___ N

Street	Size (inch)	Length (feet)	New Size (Inch)	Street	Size (inch)	Length (feet)	New Size (inch)

1b. Are these capital projects listed in an engineering report or other document? If so, please list the document Number - from pages 4 through 6.

Document No. _____ Document No. _____

Document No. _____ Document No. _____

2a. Are there any Identified cleaning and lining projects?

___ Y ___ N

Street	Existing Size (inch)	Length (feet)		Street	Size (inch)	Length (feet)	

2b. Are these capital projects listed in an engineering report or other document? If so, please list the document Number - from pages 4 through 6.

Document No. _____ Document No. _____
Document No. _____ Document No. _____

3a. Are there identified looping water main projects?

___ Y ___ N

Street	Size (inch)	Length (feet)	New Size (inch)	Street	Size (inch)	Length (feet)	New Size (inch)

3b. Are these capital projects listed in an engineering report or other document? If so, please list the document Number - from pages 4 through 6.

Document No. _____ Document No. _____
Document No. _____ Document No. _____

4a. Arre there any water main replacement needs due to pce/vinyl lining or asbestos?
___ Y ___ N

Street	Size (inch)	Length (feet)	New Size (iInch)	Street	Size (inch)	Length (feet)	New Size (inch)

4b. Are these capital projects listed in an engineering report or other document?
If so, please list the document Number - from pages 4 through 6.

Document No. _____ Document No. _____
Document No. _____ Document No. _____

5a. Are there any needed replacement of 6 inch to 8 inch or greater water main projects?
___ Y ___ N

Street	Size (inch)	Length (feet)	New Size (iInch)	Street	Size (inch)	Length (feet)	New Size (inch)

__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________

5b. Are these capital projects listed in an engineering report or other document? If so, please list the document Number - from pages 4 through 6.

Document No. ____________ Document No. __________
Document No. ____________ Document No. __________

6. Are there bleeders that need to be replaced or installed at another location?
___ Y ___ N

Street	Bleeder Size (inch)	New Size (inch)		Street	Bleeder Size (inch)	New Size (inch)	
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________
__________	_____	________	_________	_________	_____	_______	_________

7. Is there a need to install meters and pits at bleeder locations in order to record water volumes that are flushed to waste?

___ Y ___ N

Street	Meter Pit Size (inch)		New Size (inch)	Street	Meter Pit Size (inch)		New Size (inch)

8a. Please list areas in distribution system that have low pressures that need upgrades and replacement.

Street	Size (inch)	Length (feet)	New Size (inch)	Street	Size (inch)	Length (feet)	New Size (inch)

8b. Are these capital projects listed in an engineering report or other document? If so, please list the document Number - from pages 4 through 6.

Document No. _____ Document No. _____
Document No. _____ Document No. _____

9a. Has a leak detection program been conducted within the past five (5) years and water main problem areas been identified?

___ Y ___ N

Street	Size (inch)	Length of Repair		Street	Size (inch)	Length of Repair	

9b. Are these capital projects listed in an engineering report or other document? If so, please list the document Number - from pages 4 through 6.

Document No. _____ Document No. _____
Document No. _____ Document No. _____

10a. Please review repair records and leak survey report. for project needs and identify water mains that need replacement versus just repairs.

Street	Size (inch)	Length (feet)	New Size (inch)	Street	Size (inch)	Length (feet)	New Size (inch)

10b. Are these capital projects listed in an engineering report or other document? If so, please list the document Number - from pages 4 through 6.

Document No. _____ Document No. _____
Document No. _____ Document No. _____

11a. Please outline water mains that suffer from multiple breaks. Please provide the type - lengths - sizes - age and note documentation type such as 'water department records'.

Street	Water Main Size and Length	Documentation Type

12. Are there cathode protection needs for the water mains?

___ Y ___ N

Streets	Type of Work - Size and Length	Documentation

13. Are there any water mains that have separation issue (sewage/railroads etc.) that should be reinstalled or newly constructed?

___ Y ___ N

Street	Size and - Length Needs	Documentation

14. Are there any water quality issues due to water mains conditions?

___ Y ___ N

Street	Problem	Replacement or Rehabilitation Project Needed

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

15. Are there any water mains with leaded (ledtite) gaskets that should be replaced?
___ Y ___ N

List projects with pertinent information.

Street	Problem	Replacement or Rehabilitation Project Needed
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

OMB No.: 2040-0274
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Project Table

Using the completed simple inventory, capital improvement plans, or other existing planning documents and resources, please identify and document projects on the table below.

Source, Treatment, Storage, and Pumping Project numbers should start at **1000.**

Transmission and Distribution Project numbers should start at **2000.**

Backflow Prevention Devices/Assemblies, Hydrants, Service Lines, Valves, Water Meter, and Other Project numbers should start at **3000.**

Project Number	***Project Name***	***Type of Need (List 1)***	***Reason for Need (List 2)***	***New, Replace, ReHab, Expand/ upgrade***	***Current or Future***	***Regulation (List 3) (if applicable)***	***Design Capacity (MG, MGD, kW)***	***Diameter of Pipe or Size of Assembly/ Hydrant/ Valve/ Meter (Diameter in Inches)***	***Length of Pipe (Feet)***	***Number Needed (If Applicable)***	***Cost Estimate (if available)***	***Date of Cost Estimate (Month/ Year)***	***Documen-tation (List 4)***

V. OTHER

Backflow Prevention Devices/Assemblies, Hydrants, Service Lines, Valves, Water Meter, and Other Inventory

Projects for backflow prevention devices and assemblies, hydrants used to flush water mains, service line replacement, and other items such as valves and meters are recorded in this section to accommodate entries of multiple identical items on one line in the project table.

Record only projects that are not a part of another project (e.g., water main replacement projects will already include valves, hydrants and other appurtenances).

To ensure all potential projects are considered, it may be helpful to complete some or all of this inventory table. However, completion of this table is not required.

Inventory	Needing Replacement	Needing Renovation	New Infrastructure Needs
Total Number of Existing Valves (gate, butterfly, PRVs, altitude, etc.):	Number of Valves:	Number of Valves:	Number of Valves:
Total Number of Existing Water Meters:	Number of Water Meters:	Number of Water Meters:	Number of Water Meters:
Total Number of Existing Hydrants for Flushing Water Mains:	Number of Hydrants for Flushing Water Mains:	Number of Hydrants for Flushing Water Mains:	Number of Hydrants for Flushing Water Mains:
Total Number of Lead Service Lines:	Number of Lead Service Lines:	Number of Lead Service Lines:	Number of Lead Service Lines:
Total Number of Backflow Prevention Devices/Assemblies:	Number of Backflow Prevention Devices/Assemblies:	Number of Backflow Prevention Devices/Assemblies:	Number of Backflow Prevention Devices/Assemblies:
Total Number of Other Items (security components, well houses, computer hardware, etc.):	Number of Other Items:	Number of Other Items:	Number of Other Items:

VI. **<u>Other -</u>** This section outlines needs for:

A. Backflow prevention devices assemblies
B. Hydrants
C. Water service lines
D. Valves
E. Water meters
F. Cross Connections
G. Instrumentation
H. Miscellaneous Needs
I. Laboratory
J. Security
K. Emergency Planning
L. Permit Study and Planning Needs

This section is used to determine the needs of the pws for the various replacement programs for mechanical devices as noted. Valves and hydrants should be replaced in accordance with reported needs beyond the useful life of the appurtenance.

A. Backflow Prevention Device Assemblies

Please outline backflow prevention device assembly needs for the next twenty (20) year time period.

No. of Existing Systems	Size (inch)	Year of Needed Replacement
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. Hydrants

1. Are there hydrant age issues due to - age - testing - replacement needs - spacing issues.

Hydrants and Appurtenances Replacement Program

Street/Location	**No of Replacements**	**Replacement Year**
_____	_____	_____
_____	_____	_____
_____	_____	_____

______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________
______________	____________________	____________________________.

C. Service line replacement program due to corrosion and/or lead?

Please list the number and type of service line replacements planned over the 20 year time period.

Summary		**Cost per Unit**	**Total Cost**
Total Main to Curb	__________	___________	_________
Total Curb to meter	__________	___________	__________

Streets/Total Number per St.	**Replacement Year**	**Type and Reason for Replacement**	**Documentation**
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________
____________	___________	___________________	______________________

2. Review the Lead Service Lines and Goosenecks - number and replacement program. Are there lead service connections that need to be replaced?

___ Y ___ N

Streets	**Number of Goosenecks Needing Replacement (number and size in inches)**	**Documentation**

3. Any galvanized service lines that have replacement needs?

___ Y ___ N

Streets	**Number of Galvy or Other Needing Replacement (number and size in inches)**	**Documentation**

4. Are there any corrosion control issues in the water service lines that need to be corrected?

Project Summary Nos.	Project Name	Documentation

D Valves and Appurtenances - Replacement Program -

1. List the size and valves and planned replacement year.

Street/Location Raw and Finished	**Replacement Year**	**Size and Cost**

2. Based upon the valve exercising program outline any identified valve replacement needs.

Summary of Projects

Valve Street	Size	Documentation

3. For treatment facilities and others, please outline any pressure relief valves that may be needed to be replaced, rehabilitated or newly installed.

Valve Bldg. Location	R/Rh/N	Size and Cost and any Documentation

E. Water Metering Systems

1. <u>Sources of Supply - Master metering systems for sources of supply</u>. Program and needs to replace or upgrade instrumentation?

Site Need

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

2. Are there any meter pits upgrades required, such as - electricity for pits - and instrumentation - ladders - .meter type change - heat - dehumidifiers;

_____
_____
_____

3a. Distribution System Meter replacement program - This section should outlined the planned meter change outs for the distribution system

Meters should replaced according to DEP Water Management Act Program Guidance Manual standards

3b. Residential Meters

> 1.0 inch every 10 years _____
< 1.0 inch every 15 years. _____

Existing Sizes/Types	Number of Meters	Costs for Install/Meter Change Out
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3c. Please outline large meter replacement needs.

Large Meters

Existing Sizes/Types	Number of Meters	Costs for Install/Meter Change Out
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

F. Cross Connections and Backflow Programs Needs

1. Please outline any capital project needs outlined under MassDEP Annual Statistical Reports (ASR) or other pertinent documents for backflow devices

Existing system	Number of installations/permits.
_____	_____
_____	_____
_____	_____
_____	_____

2. Is there a need to permit and install meter irrigation system for determining volume and sewer deductions and if so, how many?

Existing system Size	Number of installations/permits.
_____	_____
_____	_____

3 Is there a need of separation between drinking water and irrigation unit meters?

Existing system Size	Number of installations/permits
_____	_____
_____	_____
_____	_____
_____	_____

4. Is there a need for sprinkler systems cross connections improvements?

Existing system Size	Number of installations/permits
_____	_____
_____	_____
_____	_____
_____	_____

8. Existing Backflow Device Units Replacement

Type	**Age of Units**	**Replace > 10 years (25%)**	**Replace > 15 years (50%)**	**$ Value**
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

G. Instrumentation

Overall evaluation of systems that exist or are needed in pump stations - storage tanks - water treatment facilities - booster pumping stations - or other systems - such as: pump control systems - telemetry systems. For this equipment, costs should be provided.

Older systems should be replaced with new electrical sensing units (transmitters - totalizers - recorders - pressure sensors - recorders - etc.) not repaired if over 20 yrs.

1. Types of Instrumentation Units

Age	Instrumentation	Type	Replacement Time	Cost Constr. and Unit
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____
____	_____	_____	_____	_____

2. New SCADA and/or upgrade?
___ Y ___ N

Type and Cost Estimate
_____

2b. New Annunciator Panels
_____

2c. Tie into security systems needs
_____

3. Computer needs - data handling system?
_____

4. Control Boards or Other Types
_____

5. Telemeter system - upgrades to wireless
_____

6. Alarm Systems or internal Power systems
_____

H. List any Miscellaneous Needs

Please outline any miscellaneous needs for capital projects needed for the Water Department administrative and daily work crews.

1. Computer Billing - Master computer needs as capital investment.
_____
_____
_____
_____
_____

2. DATA storage. _____

3. New HQ - Main building replacement and or expansion _____

4. Garage(s) _____

5. New trucks to do capital improvements dumps, tools...(or just o&m)
_____
_____
_____
_____

I. Laboratory Needs

Please outline any needed capital projects for the laboratory.

1. List laboratory system replacement and new needs in house testing needs.
_____
_____
_____

_____

2. Chromatographs _____
3. AA Spectrometers _____
4. Other Laboratory Improvements Needs _____
5. Laboratory equipment - replacement - _____
6. Lab expansion or other needs. _____
7. Certification needs_____
8. New Expanded system needs _____
9. General Laboratory Needs

   _____
   _____
   _____
   _____

10. Expansion Needs _____
11. Housing Needs _____
12. Rehabilitation _____
13. Equipment _____
14. Miscellaneous _____
    _____
    _____
    _____
15. Water Quality Monitoring Tools
    Equipment/Analyzer_____
    Recorders for _____
    In Process Streams _____
    Finished Water
    Monitoring Streams _____

Summary of Projects

Project Name	Cost	Documentation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

J. **Security**

Please list any Projects contained in Massachusetts DEP Vunerability Assessments or other reports**.**

1. Various information that can be utilized to determine projects and costs associated with emergency planning.

Each facility should get evaluated for security needs, fencing, instrumentation tied into security issues at each site. Fencing is allowed around all sites, but not sources of supply. Security camera's should be considered and tied into fire and/or police stations. Please provide Costs.

2. Vunerability Assessment Reports. _____

3. Security needs analysis. _____

4. Equipment needs
   Spare Generators _____
   Spare portable chlorinators _____
   Back up equipment needs
   Required new generators at existing sources? _____
   Removable of outside fuel tanks. _____
   New gas lines to replace tanks" _____

5. Security tie ins to police or fire department. $$_____
   Station Location _____
   _____
   _____

6a. Lighting _____

6b. Locks _____ _____

7a. Security systems - new - replace? _____

7b. Cyber
   Firewall _____ _____
   SCADA _____ _____
   Closed Circuit Television _____ _____

8.. New communication systems ..tie in to security systems/police/fire etc.

_____
_____
_____
_____
_____
_____
_____

Summary of Projects

	Project Name	Documentation

K. Emergency Planning -

Please list any projects generated by emergency planning documents.

1. Emergency planning should outline emergency conditions at each facility. (check to see if this written planning component can include plan preparation along with capital items.

L. Permit Engineering Study Evaluation and Planning Needs

1. Please review permits - legal documents and other documents and list any capital projects generated.

	Project Name	Documentation

2. Federal or state Permit - Administrative Consent Orders and other conditional needs

List any projects that are required to meet various permitting or legal constraints.

	Project Name	Documentation

SUMMARY TABLE FOR OTHER PROJECTS

Project Number	*Project Name*	*Type of Need*		*New, Replace, ReHab, Expand/ upgrade*	*Diameter or Size of Assembly/ Hydrant/ Valve/ Meter (in Inches)*		*Number Needed (If Applicable)*	*Cost Estimate (if available)*	*Date of Cost Estimate (Month/ Year)*	*Documen-tation*