Capital Improvement Plan
Fiscal Year 2013-2014 through 2017-2018
Project Description

I. Requesting Department: Water Operations

II. Project Title: Eighth Street Water Tower Improvements

III. Project Description:

Install a PAX mixer in the center of the Eighth Street elevated water storage tank.

IV. Project Justification: (What need is being met, how does this project address the need?)

This project is recommended to decrease the potential for formation of Trihalomethanes (THM's) in the Eighth Street water tower to meet the Stage 2 Disinfection By-products (DBP) Rule.

V. What Board Goals Does This Project Meet?

- ☐ Supportive Infrastructure
- ☐ Clean/Green Environment
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.

VI. Project Location: (Attach a map if applicable)

2208 S. Lark Avenue (behind Public Works)

VII. Department Priority: (Choose One) Does the requested project:

a. Correct an unsatisfactory level of service?	Yes ☐	No ☒
b. Maintain a current level of service?	Yes ☐	No ☒
c. Increase a level of service?	Yes ☒	No ☐
d. Represent a "vision"?	Yes ☒	No ☐

VIII. Departmental Rank: (Prioritize your request in relation to other departmental project request)

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IX. Project Alternatives:

None noted

X. Project Dependency:

This tank is scheduled to be re-painted in FY 2014-2015. Installing this mixer at the same time will save money compared to doing the two items separately.

XI. Negative Impacts:

Stratification of the water in the 500,000-gallon Eighth Street elevated storage tank may lead to higher THM formation, and an exceeding of new water standards.

XII. Other Considerations:

Funds can be saved if the mixer is installed at the same time the tank is repainted.

XIII. Additional Funding Sources:

Are there grants or additional funds which might be used in conjunction with the CIP to fund this project:

Yes ☐ No ☒ If YES, describe: Click here to enter text.

XIV. ESTIMATED COSTS

	Description of Capital/One Time Costs		**Cost (Round to Nearest $)**
a. Capital/ One Time Costs	Estimated cost for engineering and installation of a PAX mixer.	$	64,000
	Click here to enter text.		
	Click here to enter text.		
	TOTAL Capital (One Time Costs)	$	64,000
b. Continuing Annual Operating Costs	**Description of Continuing Annual Operating Costs**		
	Annual electricity costs (@ $0.08/kWh).	$	200
	Click here to enter text.		
	Click here to enter text.		
	Click here to enter text.		
	TOTAL Continuing Annual Operating Costs	$	200

XV. Fiscal Year Requested:

FY 2014-2015

Priority Recommendation: (By CIP Committee)

Capital Improvement Plan
Fiscal Year 2013-2014 through 2017-2018
Project Description

I. Requesting Department: Water Operations

II. Project Title: Eighth Street Ground Storage Tank Improvements

III. Project Description:

Install a PAX mixing device in the center of the Eighth Street Ground Storage Tank.

IV. Project Justification: (What need is being met, how does this project address the need?)

This project is recommended to decrease the THM formation potential in the Eighth Street ground storage tank to continue to improvement water quality following the implementation of the Stage 2 DBP Rule.

V. What Board Goals Does This Project Meet?

- ☐ Supportive Infrastructure
- ☐ Clean/Green Environment
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.

VI. Project Location: (Attach a map if applicable)

2110 Pond Avenue, adjacent to the Eighth Street Water Plant.

VII. Department Priority: (Choose One) Does the requested project:

a. Correct an unsatisfactory level of service?	Yes ☐	No ☒
b. Maintain a current level of service?	Yes ☐	No ☒
c. Increase a level of service?	Yes ☒	No ☐
d. Represent a "vision"?	Yes ☒	No ☐

VIII. Departmental Rank: (Prioritize your request in relation to other departmental project request)

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IX. Project Alternatives:

None noted

X. Project Dependency:

N/A

XI. Negative Impacts:

Stratification of water in the 500,000-gallon Eighth Street ground storage tank and possible enhanced THM formation.

XII. Other Considerations:

N/A

XIII. Additional Funding Sources:

Are there grants or additional funds which might be used in conjunction with the CIP to fund this project:

Yes ☐ No ☒ If YES, describe: Click here to enter text.

XIV. ESTIMATED COSTS

a. Capital/ One Time Costs	**Description of Capital/One Time Costs**		**Cost (Round to Nearest $)**
	Estimated cost for engineering and installation of a PAX mixer.	$	64,000
	Click here to enter text.		
	Click here to enter text.		
	TOTAL Capital (One Time Costs)	$	64,000
b. Continuing Annual Operating Costs	**Description of Continuing Annual Operating Costs**		
	Annual electricity cost (@ $0.08/kWh)	$	200
	Click here to enter text.		
	Click here to enter text.		
	Click here to enter text.		
	TOTAL Continuing Annual Operating Costs	$	200

XV. Fiscal Year Requested:

FY 2015-2016

Priority Recommendation: (By CIP Committee)

Capital Improvement Plan
Fiscal Year 2013-2014 through 2017-2018
Project Description

I. Requesting Department: Water Distribution

II. Project Title: Conversion to Radio Read Water Meters

III. Project Description:

Convert the current manual read water meters to radio (remote) read meters.

IV. Project Justification: (What need is being met, how does this project address the need?)

By converting the Town's water meters to a radio read system, meter reading will take much less time and will allow the Water Division to be more productive. Water meter reading could possibly be combined with other Public Works activities. For example, Sanitation drivers may be able to use these devices to read meters along their collection route.

In addition, American Water Works Association guidelines call for the replacement of all residential meters after they have registered 1 million gallons or after 10 years of use. Under this program, all meters would be replaced in four years with radio (remotely) readable meters.

V. What Board Goals Does This Project Meet?

- ☐ Fiscally Responsible
- ☐ Supportive Infrastructure
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.

VI. Project Location: (Attach a map if applicable)

Throughout Nags Head

VII. Department Priority: (Choose One) Does the requested project:

a. Correct an unsatisfactory level of service?	Yes ☐	No ☒
b. Maintain a current level of service?	Yes ☐	No ☒
c. Increase a level of service?	Yes ☒	No ☐
d. Represent a "vision"?	Yes ☒	No ☐

VIII. Departmental Rank: (Prioritize your request in relation to other departmental project request)

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IX. Project Alternatives:

None

X. Project Dependency:

N/A

XI. Negative Impacts:

None

XII. Other Considerations:

N/A

XIII. Additional Funding Sources:

Are there grants or additional funds which might be used in conjunction with the CIP to fund this project:

Yes ☐ No ☒ If YES, describe: Click here to enter text.

XIV. ESTIMATED COSTS

a. Capital/ One Time Costs	**Description of Capital/One Time Costs**		**Cost (Round to Nearest $)**
	Purchase of Mobile Data Collector, Mobile Laptop, arb-n-sight Software, interface with Edmunds (for billing) and system implementation (in Year 1).	$	13,917
	Purchase and installation (non force account labor) of the 1,046 meters in Cycle 2		257,515
	Purchase and installation of the 1,196 meters in Cycle 4 (Year 2)		325,353
	Purchase and installation of the 1,213 meters in Cycle 6 (Year 3)		275,536
	Purchase and installation of the 1,290 meters in Cycle 8 (Year 4)		306,340
	TOTAL Capital (One Time Costs)	$	1,178,661
b. Continuing Annual Operating Costs	**Description of Continuing Annual Operating Costs**		
	Annual maintenance on Mobile Data Collector	$	667
	Annual maintenance to update software		667
	Click here to enter text.		
	Click here to enter text.		
	TOTAL Continuing Annual Operating Costs	$	1,334

XV. Fiscal Year Requested:

Fiscal Years 2013-2014 through 2016-2017

Priority Recommendation: (By CIP Committee)

Capital Improvement Plan
Fiscal Year 2013-2014 through 2017-2018
Project Description

I. Requesting Department: Water Operations

II. Project Title: Conversion to Chloramines for Disinfection

III. Project Description:

Convert the Town's disinfection process from Free Chlorine to Chloramines for the reduction of THM formation potential. New distribution feed equipment would be installed at both the Eighth Street Water Plant and the Gull Street Pump Station.

IV. Project Justification: (What need is being met, how does this project address the need?)

This project is recommended to decrease the potential for THM formation in the town's distribution system. If necessary, this conversion would be done to meet the Stage 2 DBP Rule.

V. What Board Goals Does This Project Meet?

- ☐ Supportive Infrastructure
- ☐ Clean/Green Environment
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.

VI. Project Location: (Attach a map if applicable)

2110 S. Pond Avenue, Nags Head and 104 E Gull Street, Nags Head

VII. Department Priority: (Choose One) Does the requested project:

a. Correct an unsatisfactory level of service?	Yes ☒	No ☐
b. Maintain a current level of service?	Yes ☐	No ☒
c. Increase a level of service?	Yes ☒	No ☐
d. Represent a "vision"?	Yes ☐	No ☒

VIII. Departmental Rank: (Prioritize your request in relation to other departmental project request)

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IX. Project Alternatives:

None noted

X. Project Dependency:

N/A

XI. Negative Impacts:

Increase in annual operating budget for additional gas chlorine, liquid ammonia, Cl-17 reagents and daily and monthly water analysis.

XII. Other Considerations:

None

XIII. Additional Funding Sources:

Are there grants or additional funds which might be used in conjunction with the CIP to fund this project:

Yes ☐ No ☒ If YES, describe: Click here to enter text.

XIV. ESTIMATED COSTS

a. Capital/ One Time Costs	**Description of Capital/One Time Costs**		**Cost (Round to Nearest $)**
	Engineering Design and Permitting	$	3,000
	2 Ammonia Feed Systems, at $4,282 each		$8,564
	3 CL-17 Monitors to measure free and total chlorine residual, at $3,162 each		$9,486
	2 Regal Smart Valves for residual control of Chlorine, at $4,778 each		$9,556
	TOTAL Capital (One Time Costs)	$	30,606
b. Continuing Annual Operating Costs	**Description of Continuing Annual Operating Costs**		
	3,000 gallons of Aqueous Ammonia per year, at $3.32 per gallon	$	9,960
	Purchase of additional 5,500 pounds of Chlorine per year at $0.85 per pound		$4,675
	Click here to enter text.		
	TOTAL Continuing Annual Operating Costs	$	14,635

XV. Fiscal Year Requested:

FY 2015-2016

Priority Recommendation: (By CIP Committee)

Capital Improvement Plan
Fiscal Year 2013-2014 through 2017-2018
Project Description

I. Requesting Department: Water Operations

II. Project Title: 1 Million Gallon Treatment Train at the NRO and Two New Wells

III. Project Description:

To pay for the construction of an additional 1-million gallon reverse osmosis (R/O) treatment train at the Dare County North R/O (NRO) Regional Water Plant and the development cost to install two new production wells.

IV. Project Justification: (What need is being met, how does this project address the need?)

This project was originally recommended in the November 2000 Master Water Plan Update. It will be required if Nags Head consumes 90% of its 3.5 million gallon per day allocation of water from Dare County for two consecutive days. To date, the maximum day for Nags Head has been 2.805 million gallons on July 4, 2008 (80% of our allocation).

V. What Board Goals Does This Project Meet?

- ☐ Supportive Infrastructure
- ☐ Livable Neighborhoods
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.
- ☐ Choose an item.

VI. Project Location: (Attach a map if applicable)

Dare County NRO Plant, 600 Mustian Street, Kill Devil Hills, NC.

VII. Department Priority: (Choose One) Does the requested project:

a. Correct an unsatisfactory level of service?	Yes ☐	No ☒
b. Maintain a current level of service?	Yes ☒	No ☐
c. Increase a level of service?	Yes ☐	No ☒
d. Represent a "vision"?	Yes ☐	No ☒

VIII. Departmental Rank: (Prioritize your request in relation to other departmental project request)

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IX. Project Alternatives:

None noted

X. Project Dependency:

This project will be dependent upon the location of viable production wells. Four inch test wells will be installed on proposed well sites to insure there is an adequate supply of raw (feed) water.

XI. Negative Impacts:

None

XII. Other Considerations:

N/A

XIII. Additional Funding Sources:
Are there grants or additional funds which might be used in conjunction with the CIP to fund this project:

Yes ☐ No ☒ If YES, describe: Click here to enter text.

XIV. ESTIMATED COSTS

a. Capital/ One Time Costs	**Description of Capital/One Time Costs**		**Cost (Round to Nearest $)**
	2 4-inch test wells and 2 production wells	$	880,000
	1 Million Gallon R/O train and associated equipment		$2,500,000
			Click here to enter text.
	TOTAL Capital (One Time Costs)	$	3,380,000
b. Continuing Annual Operating Costs	**Description of Continuing Annual Operating Costs**		
	Click here to enter text.	$	Click here to enter text.
	Click here to enter text.		
	Click here to enter text.		
	Click here to enter text.		
	TOTAL Continuing Annual Operating Costs	$	Click here to enter text.

XV. Fiscal Year Requested:

FY 2017-2018

Priority Recommendation: (By CIP Committee)