

DRAFT 6/30/14

CITY OF BEACON SEWER CAPITAL PLAN 2015-2024										
	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>
WWTP UPGRADES										
Site drainage improvements at settling tanks (do w/chlorination project)	\$ 77,500									
Gas chlorination project	\$ 413,000									
Replace final settling tank cross collector, shaft & misc.	\$ 718,000									
Replace valves in telescopic pit	\$ 60,000									
Replace Bobcat <i>(from early 1980's handed down from Highway)</i>	\$ 47,000									
Belt press mechanical improvements		\$ 106,000								
Install new screens & building at bar screen chamber		\$ 759,000								
Central Air for Administration Building		\$ 40,000								
Lakeside unit overhaul			\$ 165,000							
Primary settling tank - major overhaul			\$ 494,000							
Replace aeration tank diffuser				\$ 660,000						
Replace mixing tank					\$ 77,500					
Grit system replacement					\$ 845,000					
Belt press complete replacement						\$ 810,000				
Replace perimeter fence and gate						\$ 85,000				

Project Name: **WWTP – Site Drainage Improvements**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2015
Project End Date:	

Project Description

Site drainage improvements at settling tanks (to be done with chlorination project)

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$ 77,500
Construction Inspect. / Other	\$
Total	\$ 77,500

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding **2015** **2016** **2017** **2018** **2019+** **Total**

Sewer Fund	\$77,500	\$	\$	\$	\$	\$77,500
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Project Needs/Issues

During heavy rain, storm water (surface water run-off) enters into final settling tanks. Needed to re-grade the area and install new catch basins to divert storm water away from the tanks.

Operating Cost Considerations

Project Name: **WWTP – Chlorination System**

Project Type:	Equipment Upgrade
Department:	WWTP
Project Priority:	
Project Start Date:	2015
Project End Date:	

Project Description

Install new gas chlorination system

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$413,000
Construction Inspect. / Other	\$
Total	\$

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
General Revenues	\$413,000	\$	\$	\$	\$	\$413,000

Project Needs/Issues

System is dangerous and any leak could cause evacuation of the area and operator safety is at risk; almost all facilities are removing this type of gas systems for safety reasons and to avoid leakage/evacuations.

Operating Cost Considerations

Project Name:	WWTP – Replace Final Settling Tank Cross Collector
Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2015
Project End Date:	

Project Description

Replace final settling tank cross collector, shaft, misc.

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$718,000
Construction Inspect. / Other	\$
Total	\$718,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$718,000	\$	\$	\$	\$	\$718,000

Project Needs/Issues

Existing cross collectors have worn out and require replacement.

Operating Cost Considerations

Project Name: **WWTP – Replace Valves in Telescopic Pit**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2015
Project End Date:	

Project Description

Current valves are original to the 1972 construction and some are un-operational. Valves are used for return activated sludge and secondary dewatering.

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$60,000
Construction Inspect. / Other	\$
Total	\$60,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$60,000	\$	\$	\$	\$	\$60,000

Project Needs/Issues

Operating Cost Considerations

Project Name: **WWTP – Purchase New Bobcat**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2015
Project End Date:	2015

Project Description

Current Bobcat leaks hydraulic oil regularly and is always in need of repair. The Bobcat was handed down from the Highway Department and dates from the early 1980's

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Equipment	\$47,000
Construction Inspect. / Other	\$
Total	\$47,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$47,000	\$	\$	\$	\$	\$47,000

Project Needs/Issues

Operating Cost Considerations

Project Name: **WWTP – Belt Press Overhaul**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2016
Project End Date:	

Project Description

Belt press overhaul

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$106,000
Construction Inspect. / Other	\$
Total	\$106,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$106,000	\$	\$	\$	\$	\$106,000

Project Needs/Issues

Estimated service life of belt press is 20 years. By the year 2020, the existing unit will reach its service life. Also, new more efficient units (removes more water and uses less chemicals) are now being manufactured.

Operating Cost Considerations

Project Name:	WWTP – Install New Screens and Building
Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2016
Project End Date:	

Project Description

Install new screens and building at bar screen chamber

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$759,000
Construction Inspect. / Other	\$
Total	\$759,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$	\$759,000	\$	\$	\$	\$759,000

Project Needs/Issues

Remove two existing grinder units and construct new screening removal facility to remove rags and screenings larger than 3/8" size from the waste stream. This will prevent frequent plugging of pumps and piping. Grinder units are being replaced with screening removal facilities at most existing plants.

Operating Cost Considerations

Project Name: **WWTP – Central Air Conditioning for Admin. Building**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2016
Project End Date:	

Project Description

There are only two AC units in the building now, one in the lab and one in the office. During the summer months it gets extremely hot in the building. To try and cool down, staff uses fans, open windows and doors. This only helps marginally and allows insects into the plant creating a non-hygienic area.

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Equipment	\$40,000
Construction Inspect. / Other	\$
Total	\$40,000

Project Priority Considerations:

<input type="checkbox"/>	Deteriorated Facility
<input type="checkbox"/>	Public Safety/Legal Mandate
<input checked="" type="checkbox"/>	Systematic Replacement/Operational Efficiency
<input type="checkbox"/>	Resource Conservation/Environmental Quality
<input type="checkbox"/>	New/Expanded Facility or Program
<input type="checkbox"/>	Consistency with Formal Plans or Policy
<input type="checkbox"/>	Funding Availability

Sources of Funding	2016	2017	2018	2019	2020+	Total
Sewer Fund	\$40,000	\$	\$	\$	\$	\$40,000

Project Needs/Issues

Operating Cost Considerations

Project Name:	WWTP – Lakeside Unit Overhaul
Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2017
Project End Date:	

Project Description

Lakeside unit overhaul

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$165,000
Construction Inspect. / Other	\$
Total	\$165,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$	\$	\$165,000	\$	\$	\$165,000

Project Needs/Issues

Replacement of worn out parts and bearings
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Operating Cost Considerations

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Project Name:	WWTP – Primary Settling Tank
Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2017
Project End Date:	

Project Description

Primary settling tank – major overhaul

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$494,000
Construction Inspect. / Other	\$
Total	\$494,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$	\$	\$494,000	\$	\$	\$494,000

Project Needs/Issues

60 year old tanks, collector mechanism, sprockets, and shaft replacement is proposed for continual service and to avoid emergency replacement.

Operating Cost Considerations

Project Name: **WWTP – Replace Aeration Tank Diffuser**

Project Type: Capital Improvement

Department: Waste Water Treatment Plant

Project Priority:

Project Start Date: 2018

Project End Date:

Project Description

Replace aeration tank diffuser

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$660,000
Construction Inspect. / Other	\$
Total	\$660,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2016	2017	2018	2019	2020+	Total
Sewer Fund	\$	\$	\$660,000	\$	\$	\$660,000

Project Needs/Issues

More energy efficient diffusers are now available which will lower blower operation time thus lowering electrical costs. Replacement cost payback will be approximately 10 years. The existing diffusers are a 40 year old technology.

Operating Cost Considerations

Project Name: **WWTP – Replace Mixing Tank**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2019
Project End Date:	

Project Description

Replace mixing tank

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$77,500
Construction Inspect. / Other	\$
Total	\$77,500

Project Priority Considerations:

<input type="checkbox"/>	Deteriorated Facility
<input type="checkbox"/>	Public Safety/Legal Mandate
<input checked="" type="checkbox"/>	Systematic Replacement/Operational Efficiency
<input type="checkbox"/>	Resource Conservation/Environmental Quality
<input type="checkbox"/>	New/Expanded Facility or Program
<input type="checkbox"/>	Consistency with Formal Plans or Policy
<input type="checkbox"/>	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$	\$	\$	\$7	\$77,500	\$77,500

Project Needs/Issues

Review of existing collector mechanism, sprockets, and shafts, etc. and replace as needed to avoid emergency repairs (existing mechanism is 40 years old).

Operating Cost Considerations

Project Name: **WWTP – Grit System Replacement**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2019
Project End Date:	

Project Description

Grit system replacement

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$845,000
Construction Inspect. / Other	\$
Total	\$845,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2019+	Total
Sewer Fund	\$	\$	\$	\$	\$845,000	\$845,000

Project Needs/Issues

The system is 60 years old and replacement parts are not available.

Operating Cost Considerations

Project Name: **WWTP – Belt Press Complete Replacement**

Project Type: Capital Improvement
 Department: Waste Water Treatment Plant
 Project Priority:
 Project Start Date: 2020
 Project End Date:

Project Description

Belt press overhaul

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$810,000
Construction Inspect. / Other	\$
Total	\$810,000

Project Priority Considerations:

<input type="checkbox"/>	Deteriorated Facility
<input type="checkbox"/>	Public Safety/Legal Mandate
<input checked="" type="checkbox"/>	Systematic Replacement/Operational Efficiency
<input type="checkbox"/>	Resource Conservation/Environmental Quality
<input type="checkbox"/>	New/Expanded Facility or Program
<input type="checkbox"/>	Consistency with Formal Plans or Policy
<input type="checkbox"/>	Funding Availability

Sources of Funding	2017	2018	2019	2020	2021+	Total
Sewer Fund	\$	\$	\$	\$810,000	\$	\$810,000

Project Needs/Issues

Estimated service life of belt press is 20 years. By the year 2020, the existing unit will reach its service life. Also, new more efficient units (removes more water and uses less chemicals) are now being manufactured.

Operating Cost Considerations

Project Name: **WWTP – Replace Perimeter Fence & Gate**

Project Type:	Capital Improvement
Department:	Waste Water Treatment Plant
Project Priority:	
Project Start Date:	2020
Project End Date:	2020

Project Description

Replace perimeter fence and gate

Estimated Project Costs:

Legal/Survey/Due Diligence	\$
Site Acquisition	\$
Engineering/Design	\$
Construction	\$85,000
Construction Inspect. / Other	\$
Total	\$85,000

Project Priority Considerations:

	Deteriorated Facility
	Public Safety/Legal Mandate
x	Systematic Replacement/Operational Efficiency
	Resource Conservation/Environmental Quality
	New/Expanded Facility or Program
	Consistency with Formal Plans or Policy
	Funding Availability

Sources of Funding	2015	2016	2017	2018	2020	Total
Sewer Fund	\$	\$	\$	\$	\$85,000	\$85,000

Project Needs/Issues

The fence and gates are 40 years old, the fence has rusted at several locations. For plant security reasons, fence replacement is recommended.

Operating Cost Considerations