

of the scrubber system, which is a legal requirement for worker safety and control of odors from the treatment facility.

Primary Treatment Sludge and Scum Pumps – The regional treatment plant’s primary sludge and scum pumps convey sludge and scum removed in primary clarification to the anaerobic digestion process. The pumps are air-operated diaphragm type and have been in service for 27 years. Replacement with rotary lobe-type pumps will provide for continued reliability and are more energy efficient.

Return Activated Sludge Pumps – The regional treatment plant’s return activated sludge pumps are essential equipment to the secondary treatment process. The pumps have been in service for 27 years and have reached the end of their useful life. These pumps convey settled sludge from the secondary clarifiers to the aeration basins and the solids handling complex, a key function for removal of suspended solids and biochemical oxygen demand. Two of the four pumps are currently being replaced in FY10-11 and this replacement project will complete the full set.

Oil & Grease Extraction System – The oil and grease extraction system is laboratory equipment that removes oil and grease from wastewater samples for measurement analysis.

Computer replacement includes scheduled replacement of personal and laptop computers, monitors, and a network file server.

Fleet replacement consists of replacement of a farm tractor, boom mower, and two turf mowers. This equipment is utilized in grounds maintenance.

- **Major Rehabilitation Program - Budget**

The FY 11-12 Capital Programs budget includes \$507,400 for Major Rehabilitation projects which are identified on the table below.

Major Rehab Projects	
Project Description	FY 11-12 Proposed Budget
Air Drying Bed Resurfacing (2 beds)	236,600
Jenbacher Cogeneration Upper engine Rebuild	120,000
Willakenzie Pump Station discharge Piping	85,000
Exterior Door Replacements - Beneficial Reuse Site	9,000
Block Masonry Wall Coating - Beneficial Reuse Site	6,800
Operations/Maintenance Building Improvements	50,000
Total Budget	\$507,400

Air Drying Bed Resurfacing – The biosolids drying process takes place on 13 asphalt drying beds over a 25 acre area. Many of the beds will require resurfacing to extend their useful life. Beginning in FY11-12 two beds will be resurfaced each year until all beds in need of resurfacing can be completed.

Jenbacher Cogeneration Upper Engine Rebuild – The regional treatment plant’s cogeneration system provides power equivalent to approximately 55% of the plant’s power needs. Continuous power generation engine will require a regular scheduled 20,000 hour engine rebuild in FY11-12.

Willakenzie Pump Station Discharge Piping – This project will consist of rehabilitation or replacement of 4 pump discharge pipe elbows. The existing pipe elbows are the original piping and are severely worn and could lead to failure.

Exterior Doors Replacement – The original metal exterior doors of the Operations Building at the Beneficial Reuse Site (prior Seasonal Industrial Waste Site) have corroded to the point which calls for their replacement.

Block Masonry Wall Coating – The exterior block wall of the Operations Building at the Beneficial Reuse Site (prior Seasonal Industrial Waste Site) will be coated to address signs of moisture leakage through the wall.

Operations/Maintenance Building Improvements – This expenditure will go towards miscellaneous repairs and renovation to maintain and improve the functionality of the Operations and/or Maintenance Building for staff. Business functions and staff size have changed substantially for office and technical staff since original construction of the Operations and Maintenance buildings. Rehabilitation and functionality improvements help to delay the need for additional floor space.

- **Major Capital Outlay - Budget**

The FY 11-12 Capital Programs budget includes \$275,000 for one Major Capital Outlay item identified on the table below.

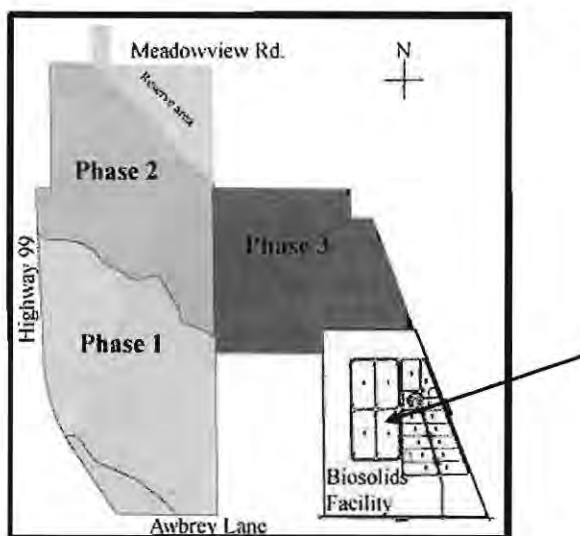
Major Capital Outlay	
Description	FY11-12 Proposed Budget
Aeration Blower Design and Engineering	275,000
Total	\$275,000

Aeration Blower Design and Engineering – This expenditure will go towards the design consulting phase for replacement of a secondary treatment aeration basin blower. The existing blowers are the original fixed speed 1,000 horsepower blowers and are far less energy efficient than current available technology. The equipment and construction related cost, not included in FY11-12, to be requested in FY12-13 will be an additional \$1,225,000.

Summary of FY 11-12 Asset Management Capital Budget

<u>Category of Capital Expense</u>	FY 11-12 Proposed Budget
Equipment Replacement	720,355
Major Rehabilitation	507,400
Major Capital Outlay	275,000
TOTAL	\$1,502,755

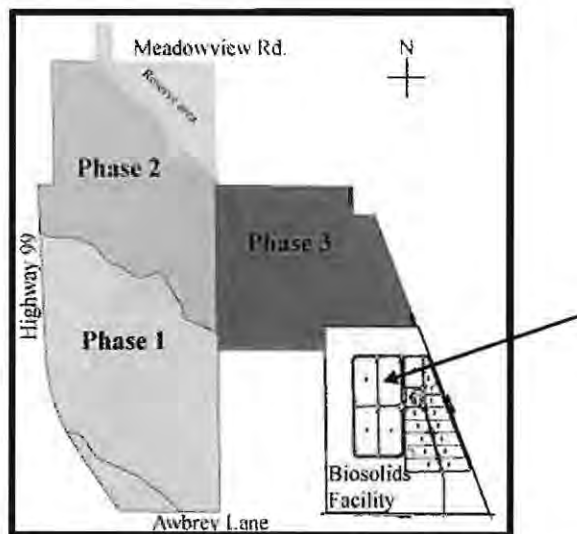
LINE BIOSOLIDS LAGOONS – PHASE 3



- Description:** Reline existing lagoons, Phase 3 at the Biosolids Management Facility (BMF).
- Status:** Design phase. Construction is anticipated to start in the summer of 2011.
- Justification:** Existing clay lagoon liners are reaching the end of the material's useful life. A new synthetic liner will be installed in the lagoons. In Phases 1 and 2, the liner material of choice was high density polyethylene. In the Phase 1 project implementation, the contractor installed the main components for a new dredge lateral movement system for all four lagoons, for improved operational safety and efficiency.
- Project Driver:** The MWMC proactively desires to improve the safety of BMF staff, improve operational reliability of the facultative lagoons, and ensure DEQ compliance related to groundwater protection.
- Project Trigger:** Implement the phased work based on the 2005 work plan schedule provided from the MWMC to the DEQ. Continue to monitor the effectiveness of the first and second phase of the lagoon lining projects. The MWMC anticipates rehabilitating all four existing lagoons and monitor the new liner improvements.
- Project Type:** 100% Rehabilitation
- Estimated Project Cost:** \$3,200,000
- Expected Cash Flow:** FY 09-10 = \$192; FY 10-11 = \$1,200,808; FY 11-12 = \$1,999,000

<u>Expenditure/Category:</u>	<u>Prior Years</u>	<u>2010-11 Est. Act.</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	\$192	\$1,200,808	\$1,999,000	0		0	0	\$3,200,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$192	\$1,200,808	\$1,999,000	\$0	\$0	\$0	\$0	\$3,200,000

LINE BIOSOLIDS LAGOONS – PHASE 4



Description: Reline existing lagoons, Phase 4 at the Biosolids Management Facility (BMF).

Justification: Existing clay lagoon liners are reaching the end of the material's useful life. A new synthetic liner will be installed in the lagoons. In Phase 1 and 2, the liner material of choice was high density polyethylene. In the Phase 1 project implementation, the contractor installed the main components for a new dredge lateral movement system for all four lagoons, for improved operational safety and efficiency.

Project Driver: MWMC proactively desires to improve the safety of BMF staff, improve operational reliability of the facultative lagoons, and ensure DEQ compliance related to groundwater protection.

Project Trigger: Implement the phased work based on the 2005 work plan schedule provided from MWMC to DEQ. Continue to monitor the effectiveness of the first and second phase of the lagoon lining projects. MWMC anticipates rehabilitating all four existing lagoons and monitor the new liner improvements.

Project Type: 100% Rehabilitation

Estimated Project Cost: \$3,300,000

Expected Cash Flow: FY 11-12 = \$100,000; FY 12-13 = \$1,540,000; FY 13-14 \$1,660,000

Expenditure/Category:	2009-10		2010-11	2011-12	2012-13	2013-14	2014-15	Total
	Prior Years	Est. Act.						
Design/Construction	0	0	0	100,000	\$3,200,000	0	0	\$3,300,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$0	\$0	\$0	\$100,000	\$3,200,000	\$0	\$0	\$3,300,000

 REPAIR AND/OR PARTIAL REPLACEMENT OF BIOSOLIDS FORCE MAIN

Description: Investigate, repair, and/or replace sections of the biosolids force main (piping system) where struvite deposits reduce the pipe diameter and cannot be removed by an acid washing method. The piping system connects the Water Pollution Control Facility (WPCF) to the Biosolids Management Facility (BMF). A project estimate is \$1.5 million that may require additional funding due to a lack of any existing helpful investigation technology.

Status: As of December 22, 2010, staff is researching information about the existing MWMC biosolids force main (piping system) and confirming the project scope details related to consultant and construction services.

Justification: Project will rehabilitate portions of the existing MWMC biosolids conveyance system.

Project Driver: Maintain system functionality of the biosolids conveyance system.

Project Trigger: Functionality and capacity issues within the existing pipeline.

Project Type: 100% Rehabilitation

Estimated Project Cost: \$1,500,000

Expected Cash Flow: FY 10-11 = \$70,000; FY 11-12 = \$1,430,000

<u>Expenditure/Category:</u>	<u>Prior</u>	<u>2010-11</u>		<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
	<u>Years</u>	<u>Est.</u>	<u>Act.</u>						
Design/Construction	0	\$70,000	\$1,430,000	\$0	\$0	\$0	0	\$1,500,000	
Other	0	0	0	0	0	0	0	0	
Total Cost	\$0	\$70,000	\$1,430,000	\$0	\$0	\$0	\$0	\$1,500,000	

WET WEATHER FLOW MANAGEMENT PLAN (year 2010 and beyond)

Description: Evaluate collection system flow monitoring data collected since the original WWFMP (Wet Weather Flow Management Plan) which was finalized in 2000. Update and run collection system model and confirm (revise) the 2004 MWMC Facility Plan recommendations. Continue evaluating the wastewater private lateral systems, and investigate ways to encourage or require private lateral repairs. This project is a combination of two MWMC Facility Plan projects – one for the update of the 2001 WWFMP report, and one for further support and development of a private lateral program.

Status: The collection system model update portion of the work has been completed. An ongoing planning effort is underway to assess opportunities to reduce I&I and provide reduction targets to cost-effectively ensure compliance with Federal and State regulations.

Project Driver: Continue to monitor the wastewater collection system and refine work programs to reduce infiltration and inflow (I/I) that is caused by wet weather storm events. Wastewater private lateral infiltration remains an important issue to monitor and address.

Project Trigger: Scheduled update (WWFMP work programs) and address regulation requirements.

Improvement SDC Eligibility: 11%

Estimated Project Cost: \$532,000

Expected Cash Flow: FY 05-06 = \$6,028; FY 06-07 = \$86,895; FY 07-08 = \$42,589; FY 08-09 = \$9,562
 FY 09-10 = \$14,724; FY 10-11 = \$93,802; FY 11-12 = 193,000; FY 12-13 = \$85,400

Expenditure/Category:	Prior	2010-11		2011-12	2012-13	2013-14	2014-15	2015-16	Total
	Years	Est.	Act.						
Design/Construction	0	0	0	0	0	0	0	0	0
Other	\$159,798	\$93,802	\$278,400	0	0	0	0	0	\$532,000
Total Cost	\$159,798	\$93,802	\$278,400	\$0	\$0	\$0	\$0	\$0	\$532,000

FACILITY PLAN ENGINEERING SERVICES

- Description:** Engineering services for analysis, project definition, cost estimating, and general consultation regarding the 20-Year Facilities Plan.
- Status:** This year, work included continued assistance with overall coordination of utility needs for the various projects in the capital program at the plant, assistance with plant wide corrosion control and cathodic protection of piping systems, and a load study and modeling of WPCF electrical systems.
- Justification:** Projects were developed to varying levels of specificity in the 20-Year Facilities Plan and there is an on-going need to have a consistent technical and engineering resource to help in further refining projects and generally assisting with implementation of the plan. Another need addressed by this resource is assurance that the new improvements maintain the overall integrity of the plant in terms of treatment processes and hydraulics.
- Project Driver:** Ongoing goal to efficiently follow and update the 20-Year Facilities Plan.
- Project Trigger:** On-going need.
- Estimated Project Cost:** \$617,585 (Note: Staff anticipates continuation of the need for facility plan engineering services in 2015-2016 and beyond. Therefore, \$81,446 was added for FY 15-16, which assumes 5% inflation annually)
- Expected Cash Flow:** FY 06-07 = \$50,000; FY 07-08 = \$50,044; FY 08-09 = \$25,467; FY 09-10 = \$31,829; FY 10-11 = \$90,000; FY 11-12 = \$67,005; FY 12-13 = \$70,355; FY 13-14 = \$73,873; FY 14-15 = \$77,567; FY 15-16 = \$81,445

Expenditure/Category:	Prior	Est. Act.	2011-12	2012-13	2013-14	2014-15	2015-16	Total
	Years	2010-11						
Design/Construction	0	0	0	0	0	0	0	0
Other	\$157,340	\$90,000	\$67,005	\$70,355	\$73,873	\$77,567	\$81,445	\$617,585
Total Cost	\$157,340	\$90,000	\$67,005	\$70,335	\$73,873	\$77,567	\$81,445	\$617,585

2010 PARTIAL FACILITY PLAN UPDATE

Description: This is an update to the Facilities Plan that revisits and checks the assumptions, projections, and project costs included in the 2004 Facilities Plan considering current regulatory landscape and technological state of the art, and makes needed adjustments and recommendations.

Status: Staff is in the process of preparing to request proposals for consulting services needed for this project.

Justification: Regulatory requirements and system data are not static and the plan may require course correction to meet new needs.

Project Driver: Ongoing goal to keep planning up to date.

Project Trigger: Scheduled update.

Improvement SDC Eligibility: 21%

Estimated Project Cost: \$221,000

Expected Cash Flow: FY 10-11 = \$150,865; FY 11-12 = \$70,135

<u>Expenditure/Category:</u>	<u>Prior</u>	<u>Est. Act.</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
	<u>Years</u>	<u>2010-11</u>						
Design/Construction	0	0	0	0	0	0	0	\$0
Other	0	\$150,865	\$70,135	0	\$0	0	0	\$221,000
Total Cost	\$0	\$150,865	\$70,135	\$0	\$0	\$0	\$0	\$221,000

2015 COMPREHENSIVE FACILITIES PLAN

Description: This is a placeholder project that will need Commission approval to implement. Existing MWMC force main infrastructure needs to be evaluated for condition assessment and may need to be upgraded. There may be limited technologies available to evaluate the existing MWMC force mains (pressure pipes).

Status: Planning Stage - Need to establish a budget, scope of work, review feasible technology options, investigate the existing infrastructure (condition assessment), implement corrective work as needed, etc.

Justification:

Project Driver:

Project Trigger:

Project Type:

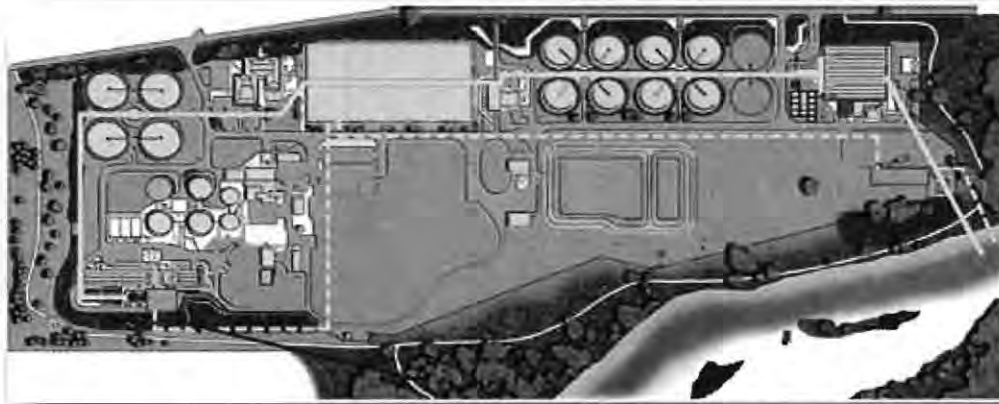
**Improvement
SDC Eligibility:**

Estimated Project Cost: \$ (To Be Determined)

Expected Cash Flow: FY 13-14 = \$660,000; FY 14-15 = \$689,000

<u>Expenditure/Category:</u>	<u>Prior Years</u>	<u>Est. Act. 2010-11</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$1,349,000	\$0	\$0	\$1,349,000
Total Cost	\$0	\$0	\$0	\$0	\$1,349,000	\$0	\$0	\$1,349,000

INFLUENT PUMPING IMPROVEMENTS AND HEADWORKS EXPANSION



Description: This project provides influent pumping improvements and headworks expansion required to accommodate the 2025 peak wet weather flow of 277 mgd. Major components include: upgrades to the Willakenzie Pump Station, expansion of the headworks facilities with new screening and grit removal equipment, a new Influent Pump Station at the Water Pollution Control Facility (WPCF), improvements to the regional force main system at two off-site locations, and landscaping. Due to the time critical nature of this project, it was delivered using a Construction Manager/General Contractor (CM/GC) project delivery process that the Commission approved.

Status: Construction completed. The remaining budgeted money will help fund the WPCF landscape project related to the MWMC Conditional Use Permit (CUP) requirements.

Justification: Improved influent pumping and headworks hydraulic capacity are required to increase total plant influent hydraulic capacity to 277 mgd (the forecasted 2025 peak flow) and to meet redundancy requirements for pumping and screening.

Project Driver: Ability to provide treatment to peak flows and systematic elimination of sanitary sewer overflows by the year 2010.

Project Trigger: Collection system computer model estimates the current wet weather peak flow to plant to be 264 mgd. Overall existing peak flow capacity is 175 mgd so there is already a capacity deficit. The 2009 upgrades increased the headworks hydraulic capacity to 277 mgd.

Project Type: 100% Capacity

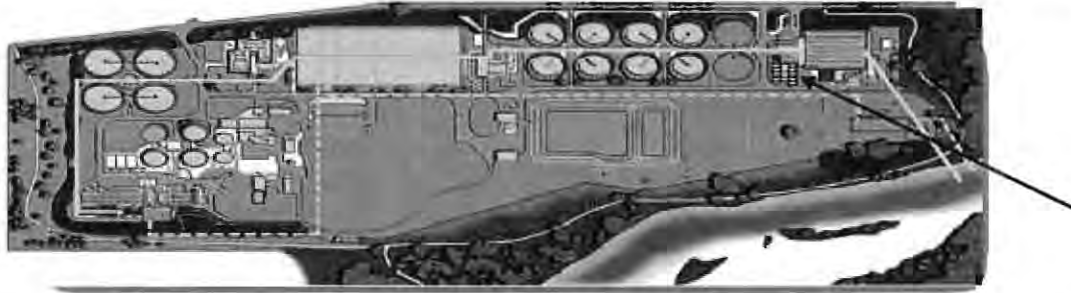
Improvement SDC Eligibility: 38%

Estimated Project Cost: \$28,054,000 (part of the project money will support the treatment plant landscape upgrades).

Expected Cash Flow: FY 05-06 = \$16,348; FY 06-07 = \$376,293; FY 07-08 = \$2,132,064; FY 08-09 = \$9,644,009; FY 09-10 = 14,950,783; FY 10-11 = \$842,000; FY 11-12 = \$92,503

<u>Expenditure/Category:</u>	<u>Prior Years</u>	<u>2010-11 Est. Act.</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	\$27,119,496	\$842,000	\$92,504	\$0	\$0	\$0	\$0	\$28,054,000
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$27,119,496	\$842,000	\$92,504	\$0	\$0	\$0	\$0	\$28,054,000

SODIUM HYPOCHLORITE CONVERSION



Description: Convert the existing chlorine gas system to sodium hypochlorite for the base and wet weather flows. Retain the existing chlorine contact basins for the disinfection process. Install new system with capability for high rate disinfection of primary effluent diversion using dosages of sodium hypochlorite into a new contact basin structure. The new contact basin has been split off of this project and is now part of a different MWMC project (Peak Flow Management Improvements), so the budget for that portion of the project has also been moved. Staff included upgrades of the existing recreational vehicle (RV) wastewater dump station to accommodate boat wastewater dumping in the construction bid documents for the sodium hypochlorite conversion project. The boat wastewater dump modification was designed and grant funded by the Oregon State Marine Board that the MWMC approved for implementation at the September 21, 2006 public meeting. The recommended project budget below includes \$80,000 allocated to the project for the boat wastewater dump that was reimbursed by the State agency after construction was completed. Some of the project funding will support the treatment plant landscape upgrades.

Status: The upgraded disinfection system has been continuously used since March of 2010. As of December 22, 2010, Emery and Sons Construction and a vendor are following up on improving the sodium hypochlorite injection/mixing system related to the specified performance requirements. Completion of this system is anticipated in early 2011.

Justification: Liquid sodium hypochlorite and sodium bisulfite system will replace the existing chlorine and sulfur dioxide gas systems and increase the disinfection capacity from 175 mgd to 277 mgd. The high rate disinfection of the primary effluent is a key component of the primary/secondary split treatment process, which is needed for meeting the peak flow capacity needs of the wastewater treatment plant.

Project Driver: Operator and community safety issues and meeting flow capacity requirements for peak flows.

Project Trigger: Phasing with other related MWMC projects and the need to meet peak flow treatment requirements.

Project Type: 50% Capacity; 50% Performance

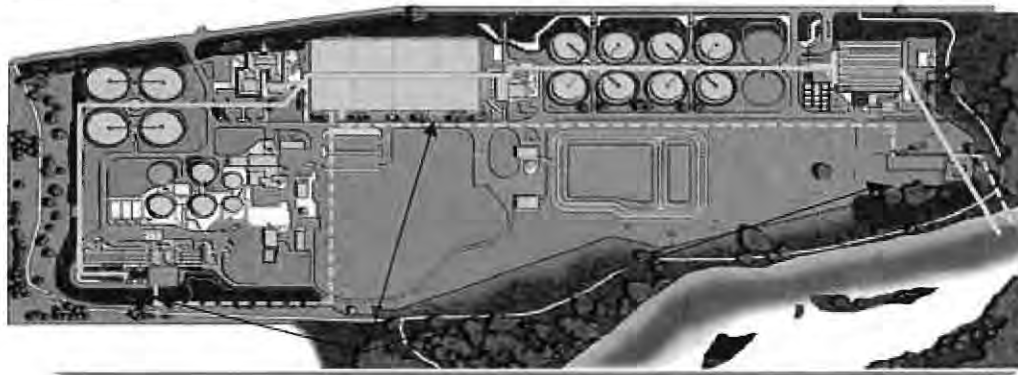
Improvement SDC Eligibility: 25%

Estimated Project Cost: \$7.8 million (part of the project money will support the treatment plant landscape upgrades)

Expected Cash Flow: FY 06-07 = \$1,353; FY 07-08 = \$594,520; FY 08-09 = \$3,319,347; FY 09-10 = \$(102,501); FY 10-11 = \$1,010,281; FY 11-12 = \$250,000; FY 12-13 = \$50,000; FY 13-14 = \$2,677,000 (construction, landscape, administration, consultant services)

Expenditure/Category:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Total
		Est. Act.						
Design/Construction	\$3,812,719	\$1,010,281	\$2,977,000	0	0	0	0	\$7,800,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$3,812,719	\$1,010,281	\$2,977,000	\$0	\$0	\$0	\$0	\$7,800,000

PEAK FLOW MANAGEMENT IMPROVEMENTS



Description: The Peak Flow Management project combines several project elements described in the 2004 Facilities Plan into one project. These are 1) the Parallel Primary/Secondary Treatment project, 2) the Bankside Outfall project, 3) the Outfall Mixing Zone Study, and 4) the design and construction of the high rate disinfection basins, which was pulled out of the Sodium Hypochlorite Conversion project and added to the Peak Flow Management project. These project elements combine to provide the hydraulic infrastructure necessary to convey the peak flow through the plant, split the flow into the parallel primary and secondary treatment trains, provide additional disinfection capacity, and discharge the treated flow in accordance with the 2004 MWMC Facilities Plan.

Status: Construction completed. The remaining budgeted money will help fund the Water Pollution Control Facility (WPCF) landscape project related to the MWMC Conditional Use Permit (CUP) requirements.

Justification: This project expands the peak wet weather treatment capacity to 277 mgd through flow management techniques.

Project Driver: DEQ and Oregon Administrative Rules (OAR) related to winter peak wet weather flow (5-year, 24-hour rain event).

Project Trigger: Elimination of sanitary sewer overflows by January 1, 2010 related to OAR.

Project Type: 100% Capacity

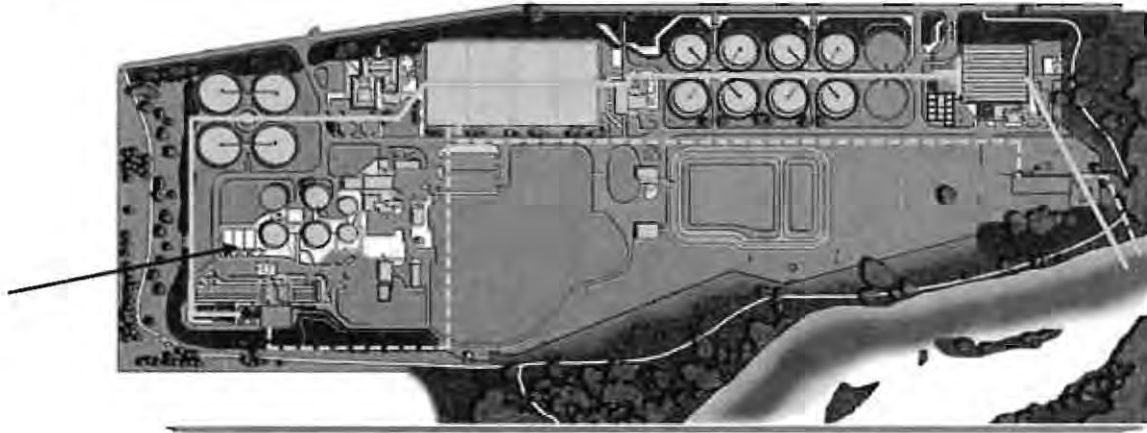
Improvement SDC Eligibility: 30.2%

Estimated Project Cost: \$19,054,000 (part of the project money will support the treatment plant landscape upgrades).

Expected Cash Flow: FY 06-07 = \$28,913; FY 07-08 = \$1,499,833; FY 08-09 = \$9,525,527; FY 09-10 = \$5,934,957; FY 10-11 = \$788,770; FY 11-12 = \$570,000; FY 12-13 = \$706,000

Expenditure/Category:	Prior Years	2010-11		2011-12	2012-13	2013-14	2014-15	2015-16	Total
		Est.	Act.						
Design/Construction	\$16,989,230	\$788,770	\$1,276,000	\$0	\$0	\$0	\$0	\$0	\$19,054,000
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$16,989,230	\$788,770	\$1,276,000	\$0	\$0	\$0	\$0	\$0	\$19,054,000

ODOROUS AIR TREATMENT – PHASE 2



Description: Provide odorous air conveyance duct work and tank covers associated with the new Primary Sludge Thickener.

Status: Odorous Air Treatment Phase 2 upgrades are being implemented through the Primary Sludge Thickening and Odorous Air Phase 1 projects. The Odorous Air Phase 1 work was completed in FY 10-11. The Primary Sludge Thickening project is in the design phase as of December of 2010.

Justification: Compliance with Conditional Use Permit requirements and "good neighbor" policy to reduce odor impacts on the surrounding community.

Project Driver: Maintain MWMC's status as environmental stewards. Address neighborhood odor complaints and community concerns regarding odors.

Project Trigger: New construction of certain facilities requires odor control upgrades. Odorous Air Treatment Phase 2 work is being coordinated with the design and construction of the new Gravity Sludge Thickener (primary sludge thickener technology).

Project Type: 100% Performance

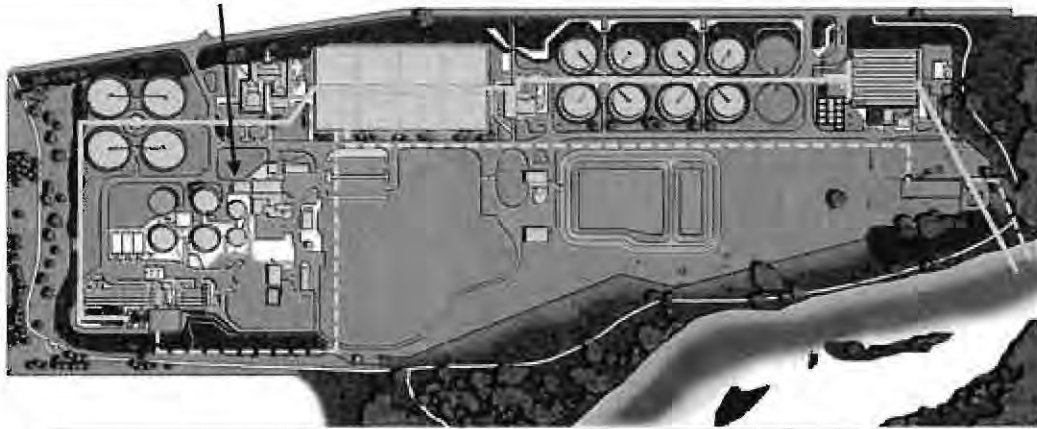
Improvement SDC Eligibility: 26%

Estimated Project Cost: \$1,704,000

Expected Cash Flow: FY 10-11 = \$209,000; FY 11-12 = \$1,495,000

<u>Expenditure/Category:</u>	<u>Prior Years</u>	<u>2010-11 Est. Act.</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	0	\$209,000	\$1,495,000	0	0	0	0	\$1,704,000
Other	0	0	0	0	0	0	0	0
Total Cost	0	\$209,000	\$1,495,000	0	0	0	0	\$1,704,000

PRIMARY SLUDGE THICKENING



Description: Install gravity thickener system (covered for odor control), upgrade thin primary sludge pumping and piping systems, install supernatant overflow pumping and piping, and thickened sludge piping/pumping to digesters. See Odorous Air Treatment – Phase 2 for treatment of odors.

Status: As of December 2010, the project is in the design development phase. The construction bidding phase is anticipated to start in spring of 2011.

Justification: Thicken sludge before the digester system and help keep the sludge blanket lower in primary clarifiers to avoid washout of the sludge blanket during peak flow events.

Project Driver: Meet class B biosolids requirements during peak two-week solids loading event with all three existing digesters in service.

Project Trigger: Availability of sludge thickening capacity is needed prior to next scheduled digester cleaning (i.e., before 2013).

Project Type: 100% Capacity

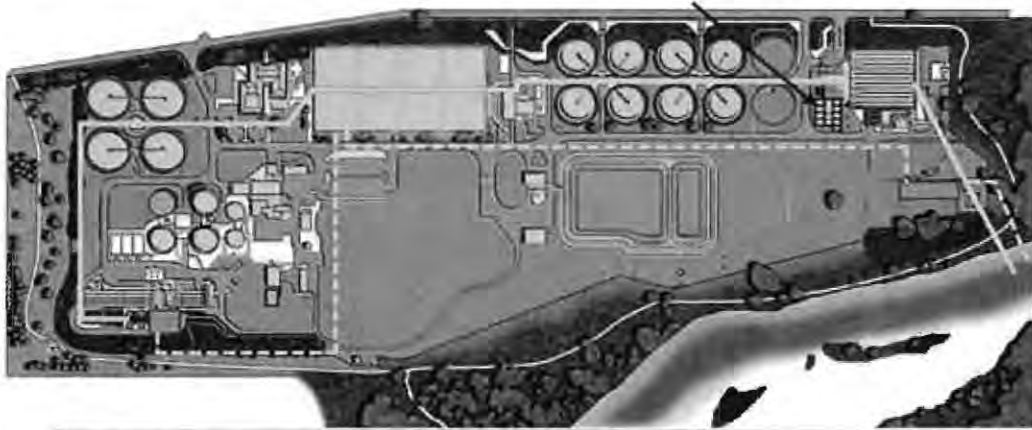
Improvement SDC Eligibility: 65%

Estimated Project Cost: \$4,498,000 (Note: Part of the project money will support the treatment plant landscape upgrades. Also, MVMC received a state revolving fund (SRF) loan for the primary sludge thickening project)

Expected Cash Flow: FY 07-08 = \$9,730; FY 08-09 = \$40,606; FY 09-10 = \$501,876; FY 10-11 = \$1,893,788; FY 11-12 = \$2,027,000; FY 12-13 = \$25,000 (administration, construction, landscape, consultant services, etc.)

Expenditure/Category:	Prior	2010-11		2011-12	2012-13	2013-14	2014-15	2015-16	Total
	Years	Est.	Act.						
Design/Construction	\$552,212	\$1,893,788	\$2,052,000	0	0	0	0	0	\$4,498,000
Other	0	0	0	0	0	0	0	0	0
Total Cost	\$552,212	\$1,893,788	\$2,052,000	\$0	\$0	\$0	\$0	\$0	\$4,498,000

TERTIARY FILTRATION - PHASE 1



Description: The phased work program will install infrastructure/support facilities for 30 mgd of filters for tertiary filtration of secondary treated effluent. The first phase/project will only install filter system technology sufficient for 10 mgd of treatment. Future projects will install the remaining filter technology. Some of the project funding will support the treatment plant landscape upgrades.

Status: The Tertiary Filtration (Phase 1) project is in the construction phase and Pacific Excavation, Inc. is the MWMC general contractor.

Justification: Up to 10 mgd of filtration is required in the first phase to meet dry season mass limits, with the need for filtration increasing up to 30 mgd by the end of the planning period (2025). The 2004 MWMC Facilities Plan proposes phasing filters on an as-needed basis. Filtration provides high quality secondary effluent and potential level 4 reuse water. Also, filtration is needed to assist with meeting wet season mass load requirements during peak flow events.

Project Driver: Performance reliability to meet the dry weather NPDES total suspended solids limits of less than 10 mg/L, reuse development, and compliance with effluent limits during peak flow conditions.

Project Trigger: NPDES permit compliance for TSS: Dry weather maximum month flow in excess of 49 mgd. Also, initially to provide higher quality effluent so that reuse can be developed.

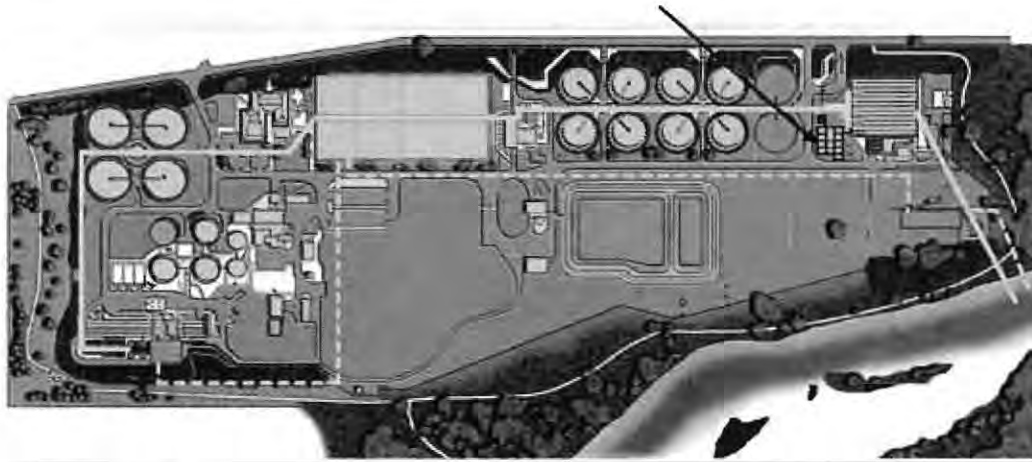
Improvement SDC Eligibility: 42%

Estimated Project Cost: Reduced to \$11,500,000 (Note: Part of the project money will support the treatment plant landscape upgrades. Also, MWMC received a DEQ state revolving fund (SRF) loan for the tertiary filtration project).

Expected Cash Flow: FY 07-08 = \$236,186; FY 08-09 = \$554,241; FY 09-10 = \$647,844; FY 10-11 = \$4,544,729; FY 11-12 = \$2,750,000; FY 12-13 = \$60,000; FY 13-14 = \$2,707,000 (design, construction, landscape, administration, etc.)

Expenditure/Category:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Total
		Est. Act.						
Design/Construction	\$1,438,271	\$4,544,729	\$5,517,000	0	0	0	0	\$11,500,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$1,438,271	\$4,544,729	\$5,517,000	0	0	0	0	\$11,500,000

TERTIARY FILTRATION - PHASE 2



Description: The phased work program will install infrastructure/support facilities for 30 mgd of filters for tertiary filtration of secondary treated effluent. The Phase 2 is planned to install filter system technology sufficient for another 10 mgd of treatment that will increase the total filtration capacity to 20 mgd. The Phase 3 project will install the remaining filter technology identified in the 2004 MWMC Facilities Plan.

Status: Tertiary Filtration (Phase 2) project is anticipated to start design development in 2013.

Justification: The 2004 MWMC Facilities Plan proposes phasing filters on a phased work program. Filtration provides high quality secondary effluent to help meet permit requirements and potential level 4 reuse water.

Project Driver: Performance reliability to meet the dry weather NPDES total suspended solids limits of less than 10 mg/L, reuse development, and compliance with effluent limits during peak flow conditions.

Project Trigger: NPDES permit compliance for TSS (total suspended solids): Dry weather maximum month flow in excess of 49 mgd. Also, provide higher quality effluent so that reuse can be developed.

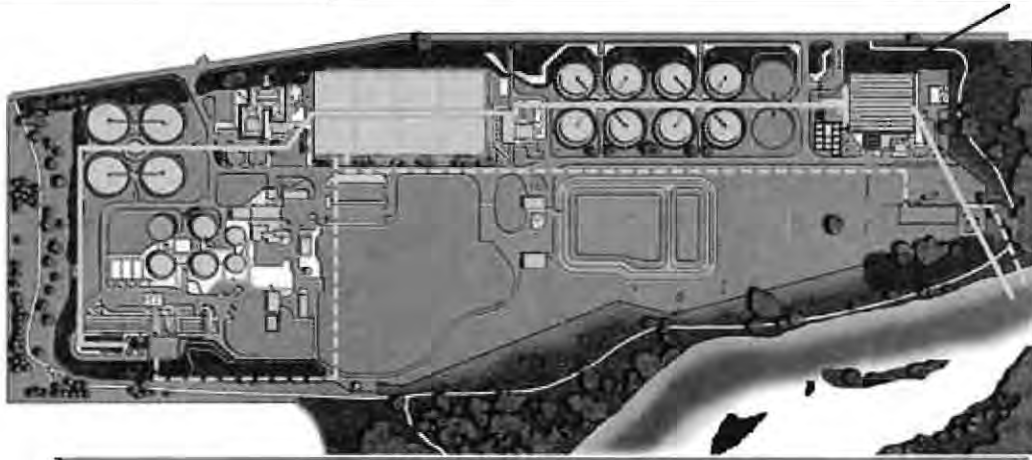
**Improvement
SDC Eligibility:** 42%

Estimated Project Cost: \$9,680,000

Expected Cash Flow: FY 13-14 = \$2,900,000; FY 14-15 = \$6,600,000; FY 15-16 = \$180,000

<u>Expenditure/Category:</u>	<u>Prior Years</u>	<u>2010-11 Est. Act.</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	\$0	\$0	\$0	0	\$9,680,000	0	0	\$9,680,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$0	\$0	\$0	0	\$9,680,000	0	0	\$9,680,000

EFFLUENT REUSE - PHASE 1



Description: This project is the first package of funding for effluent reuse to address thermal load issues and for multiple environmental benefits. This project combines two projects identified in the 2004 MWMC Facilities Plan; Level II Reuse at Seasonal Industrial Waste and Level 4 Effluent Reuse Demonstration Projects. Project components may include additional treatment, disinfection, pumping, pipeline, and distribution/irrigation systems. The projects will be better defined as the planning for reuse continues and as markets for reuse are identified.

Status: Ongoing planning phase. The MWMC reached a settlement agreement on October 28, 2009 with the Department of Environmental Quality (DEQ) related to Willamette River total maximum daily loads (TMDL) for temperature.

Justification: Implements reuse so that thermal load is removed from the Willamette River and for multiple environmental benefits.

Project Driver: Expansion of effluent reuse programs. Address NPDES permit thermal load compliance related to Willamette River total maximum daily loads (TMDL) temperature requirements.

Project Trigger: Potential exceedance of NPDES thermal load limit. Identification of water needs for potential clients.

Project Type: 100% Performance

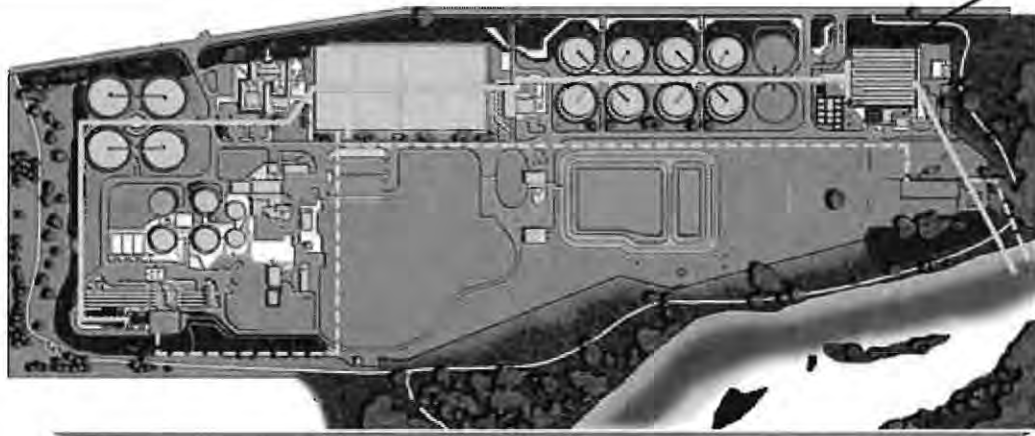
Improvement SDC Eligibility: 26%

Estimated Project Cost: \$ \$3,325,000

Expected Cash Flow: FY 06-07 = \$7,000; FY 07-08 = \$0; FY 08-09 = \$2,904; FY 09-10 = \$12,757; FY 10-11 = \$213,271; FY 11-12 = \$2,064,000; FY 12-13 = \$1,025,068

<u>Expenditure/Category:</u>	<u>Prior</u> <u>Years</u>	<u>Est. Act.</u> <u>2010-11</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	\$22,661	\$213,271	\$3,089,068	\$0	0	0	0	\$3,325,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$22,661	\$213,271	\$3,089,068	\$0	\$0	\$0	\$0	\$3,325,000

EFFLUENT REUSE - PHASE 2



Description: This project is identified as Level C Effluent Reuse at the Biocycle Farm in the 2004 MWMC Facilities Plan. It encompasses planning, design, and construction necessary for 1.5 mgd of Class B reuse water at the Biocycle Farm and installation of dedicated reuse irrigation pipeline and microspray system. The project may change to adapt to take advantage of emergent opportunities and new information as planning progresses.

Status: Ongoing planning phase. The MWMC reached a settlement agreement on October 28, 2009 with the Department of Environmental Quality (DEQ) related to Willamette River total maximum daily loads (TMDL) for temperature.

Justification: Implements Level C reuse program to reduce the MWMC thermal load discharge into the Willamette River.

Project Driver: Expansion of effluent reuse programs. Address NPDES permit thermal load compliance related to Willamette River total maximum daily loads (TMDL) temperature requirements.

Project Trigger: Potential exceedance of NPDES thermal load limit. Identification of water needs for potential clients.

Project Type: 100% Performance

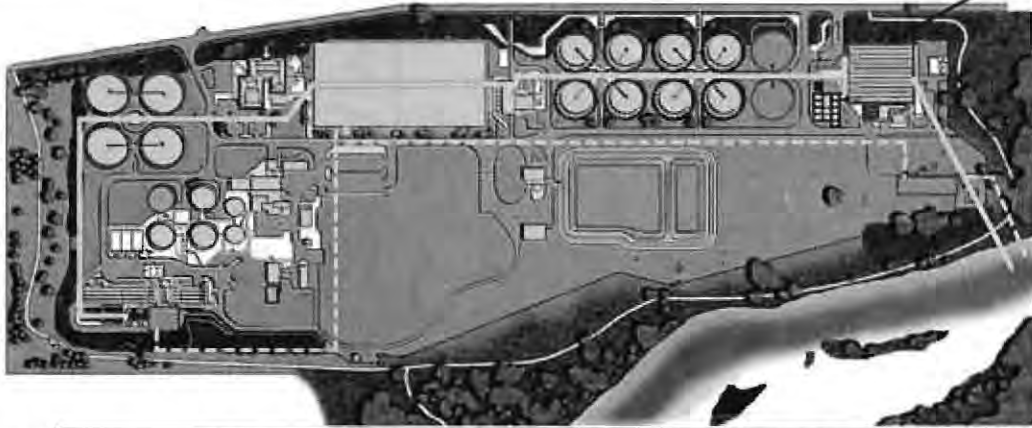
Improvement SDC Eligibility: 26%

Estimated Project Cost: \$5,152,000

Expected Cash Flow: FY 10-11 = \$155,830; FY 11-12 = \$1,826,000; FY 12-13 = \$3,170,170

Expenditure/Category:	Prior	Est. Act.	2011-12	2012-13	2013-14	2014-15	2015-16	Total
	Years	2010-11						
Design/Construction	0	\$155,830	\$4,996,170	\$0	0	0	0	\$5,152,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$0	\$155,830	\$4,996,170	\$0	\$0	\$0	\$0	\$5,152,000

EFFLUENT REUSE - PHASE 3



Description: This project is in the 2004 MWMC Facilities Plan known as Permanent Level A Reuse. It is to provide 2.5 mgd of permanent Level A reuse water to local greenspaces and community areas. Project components may include additional treatment, disinfection with UV system, pumping, pipeline, and distribution/irrigation systems. The project will be better defined as the planning for effluent reuse continues and as markets for reuse are identified.

Status: Planning phase.

Justification: Continue implementation of an effluent reuse program to reduce the MWMC thermal load discharge into the Willamette River and for other environmental benefits.

Project Driver: Expansion of effluent reuse programs. Address NPDES permit thermal load compliance related to Willamette River total maximum daily loads (TMDL) temperature requirements.

Project Trigger: Potential exceedance of NPDES thermal load limit. Identification of water needs for potential clients.

Project Type: 100% Performance

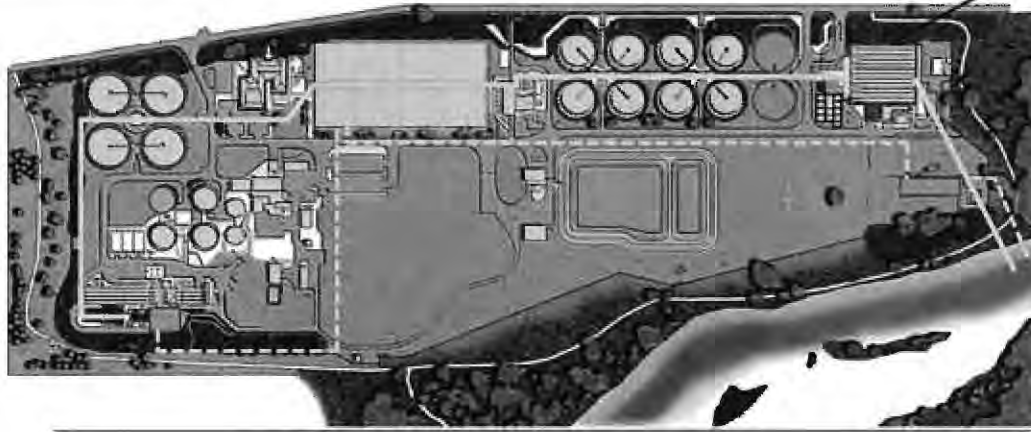
Improvement SDC Eligibility: 26%

Estimated Project Cost: \$6,542,000

Expected Cash Flow: FY 12-13 = \$500,000; FY 13-14 = \$3,942,000; FY 14-15 = \$2,100,000

<u>Expenditure/Category:</u>	<u>Prior Years</u>	<u>Est. Act. 2010-11</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	0	0	0	\$6,542,000	0	\$0	0	\$6,542,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$ 0	\$ 0	\$0	\$6,542,000	0	\$0	\$0	\$6,542,000

EFFLUENT REUSE - PHASE 4



Description: This project is in the 2004 MWMC Facilities Plan known as Permanent Level A Reuse. It is to provide 2.5 mgd of permanent Level A reuse water to local greenspaces and community areas. Project components may include additional treatment, additional disinfection, pumping, pipeline, and distribution/irrigation systems. The project will be better defined as the planning for effluent reuse continues and as markets for reuse are identified.

Status: Planning phase.

Justification: Continue implementation of an effluent reuse program to reduce the MWMC thermal load discharge into the Willamette River and for other environmental benefits.

Project Driver: Expansion of effluent reuse programs. Address NPDES permit thermal load compliance related to Willamette River total maximum daily loads (TMDL) temperature requirements.

Project Trigger: Potential exceedance of NPDES thermal load limit. Identification of water needs for potential clients.

Project Type: 100% Performance

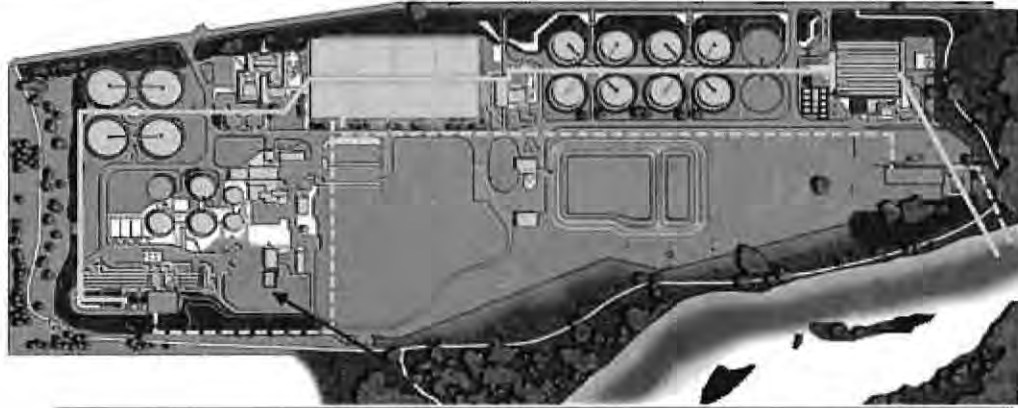
Improvement SDC Eligibility: 26%

Estimated Project Cost: \$18,835,000 (estimated based on CH2M Hill's 2006 project description and cost estimate, which assumes inflation at 5% annually)

Expected Cash Flow: FY 15-16 = \$4,140,000; FY 16-17 = \$11,868,000; FY 17-18 = \$2,827,000

Expenditure/Category:	Prior	Est. Act.	2011-12	2012-13	2013-14	2014-15	2015-16	Total
	Years	2010-11						
Design/Construction	0	0	0	0	0	0	18,835,000	\$18,835,000
Other	0	0	0	0	0	0	0	0
Total Cost	\$ 0	\$ 0	\$0	\$0	\$0	\$0	\$18,835,000	\$18,835,000

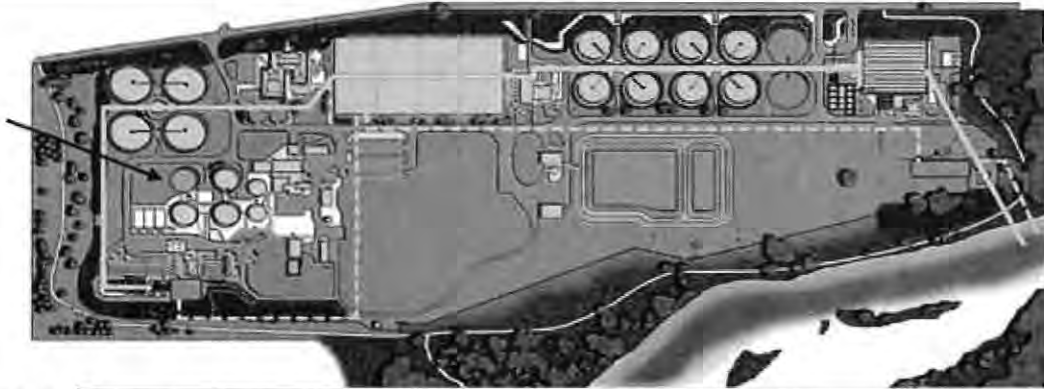
WASTE ACTIVATED SLUDGE THICKENING



- Description:** This project provides a third gravity belt thickener (GBT) and associated at-grade building improvements. The project also includes landscaping.
- Status:** Planning stage with the exception of landscaping (in keeping with the 2004 Facilities Plan landscaping budget allocations, funding from this project is being made available in FY 11-12 to accommodate staging of the plant-wide integrated landscape plan).
- Justification:** Provides additional capacity for Waste Activated Sludge (WAS) thickening and, along with addition of primary sludge thickening, will help to eliminate the need for additional digester capacity.
- Project Driver:** Additional capacity to provide WAS thickening with one unit offline at upper limit flow projections. Nitrification required by the NPDES permit and increasing wastewater flows and loads generates more WAS solids. Provide ability to conduct recuperative thickening so that the need for additional digestion volume can potentially be deferred.
- Project Trigger:** Exceeding solids and hydraulic loading rate design criteria. The latest evaluations of need for Waste Activated Sludge thickening indicates a need by about 2012 or later. After the secondary treatment modifications are completed and operational for a time, the timing of need for this project should be reevaluated.
- Estimated Project Cost:** \$3,901,000
- Improvement SDC Eligibility:** 100%
- Expected Cash Flow:** FY 06-07 = \$7, 000; FY 07-08 = \$0; FY 08-09 = \$0; FY 09-10 = \$0; FY 10-11 = \$107,400; FY 11-12 = \$17,724; FY 12-13 = \$202,965; FY 13-14 = \$1,100,500; FY 14-15 = \$2,465,411

<u>Expenditure/Category:</u>	<u>Prior Years</u>	<u>2010-11 Est. Act.</u>	<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
Design/Construction	\$7,000	\$107,400	\$192,600	\$3,601,600	\$0	\$0	\$0	\$3,901,000
Other	\$0	\$0	\$0	\$3,601,600	\$0	\$0	\$0	\$0
Total Cost	\$7,000	\$107,400	\$192,600	\$3,601,600	\$0	\$0	\$0	\$3,901,000

INCREASE DIGESTION CAPACITY



Description: Installation of a fourth conventional high rate digester for continued production and expanded production of Class B biosolids.

Status: Planning stage with the exception of landscaping (in keeping with the 2004 Facilities Plan landscaping budget allocations, funding from this project is being made available in FY 11-12 to accommodate staging of the plant-wide integrated landscape plan).

Justification: Continue to meet the requirements for Class B digestion with the ability to take one digester out of service for cleaning.

Project Driver: This project addresses the need for more anaerobic digestion capacity. In the 2004 MWMC Facilities Plan, an option was identified to also change the existing digestion method in order to produce Class A biosolids. This option was to be considered as a strategy to secure a wider range of beneficial end-use options in the case that that flexibility was needed for beneficial reuse. Since that time, MWMC has taken effective steps to expand the ability to handle Class B biosolids through the construction and expansion of the Biocycle Poplar Plantation, and through working with other end users. Also, studies have shown that the current solids handling system will actually produce a Class A product because of the extended storage time available for biosolids in the lagoons at the biosolids handling facility. The digestion capacity issue will be influenced by several operational factors including the effectiveness of new primary sludge thickening and expanded WAS thickening processes, as well as digester cleaning protocols and schedules. Observation over the next several years is required prior to making a decision on when the expanded digestion facilities will be needed. A restudy of the anaerobic digestion system function and capacity should be undertaken prior to moving forward with this digestion expansion project. This study can be conducted as part of the Facilities Plan Engineering Services contract with CH2M HILL.

Project Trigger: The trigger for design and construction of new digestion facilities will depend on the findings of the digestion system capacity and process alternatives study under the 2010 Facilities Plan Update.

Improvement SDC Eligibility: 54%

Estimated Project Cost: \$8,600,000

Expected Cash Flow: FY 10-11 = \$269,700; FY 11-12 = \$286,200; FY 12-13 = \$3,806,000; FY 13-14 = 4,238,100

<u>Expenditure/Category:</u>	<u>Prior</u> <u>Years</u>	<u>2010-11</u>		<u>2011-12</u>	<u>2012-13</u>	<u>2013-14</u>	<u>2014-15</u>	<u>2015-16</u>	<u>Total</u>
		<u>Est.</u>	<u>Act.</u>						
Design/Construction	\$0	\$269,700	\$300,000	\$8,030,300	\$0	\$0	\$0	\$8,600,000	
Other	\$0	\$0	\$0	\$8,030,300	\$0	\$0	\$0	\$0	
Total Cost	\$0	\$269,700	\$300,000	\$8,030,300	\$0	\$0	\$0	\$8,600,000	

