

**CITY OF COOS BAY CITY COUNCIL**  
**Agenda Staff Report**

MEETING DATE	AGENDA ITEM NUMBER
May 5, 2015	

**TO:** Mayor Shoji and City Council

**FROM:** Jim Hossley, Public Works Director *JH*

**Through:** Rodger Craddock, City Manager *RC*

**ISSUE:** CH2M Hill (aka OMI) Annual Report

**BACKGROUND:**

John Waynetska, Project Manager II, with CH2M Hill OMI will present council with a brief annual report on activities related to the operations and maintenance of the city's wastewater treatment and collection systems.

**ADVANTAGES:**

Inform Council of the contractor's services for the city.

**DISADVANTAGES:**

N/A

**BUDGET:**

N/A

**RELATED CITY GOAL:**

Ensure that the City can protect and enhance the useful life of streets, utilities, and facilities

**RECOMMENDATION:**

N/A

**ATTACHMENTS:**

Annual Report

**CH2M HILL**

**CITY OF COOS BAY**

**ANNUAL REPORT**



# *CH2M HILL/OMI - City of Coos Bay*

*2015 Annual Report*

*Wastewater Operations*



*Prepared by CH2M*

*John Waynetska, Project Manager*

# Contents

<b>Section 1</b>		
	• <b>Introduction</b>	page 3
<b>Section 2</b>		
	• <b>Management Systems</b>	page 4
<b>Section 3</b>		
	• <b>Staffing</b>	page 5
<b>Section 4</b>		
	• <b>Safety Management</b>	page 8
<b>Section 5</b>		
	• <b>Wastewater Treatment Operations</b>	page 9
<b>Section 6</b>		
	• <b>Collection System</b>	page 13
<b>Section 7</b>		
	• <b>Biosolids</b>	page 15
<b>Section 8</b>		
	• <b>Community Involvement</b>	page 16
<b>Section 9</b>		
	• <b>Summary</b>	page 18

## ***Introduction***

CH2M is pleased to present the 2015 annual report to our client and partner, the City of Coos Bay (the City). The completion of our work in 2015 marks the nineteenth year of quality service we've provided to the citizens of Coos Bay. This report highlights some of the accomplishments during the past year.



# Management Systems

CH2M’s delivery of services revolves around management systems that ensure our team is meeting the requirements defined in the Services Agreement. The following table outlines our management systems.

CH2M Management Systems

Management Program	Description
Capital Improvement Planning	Recommendation and implementation (as requested/ funded) of system improvements
Chemical Management	Establishment of chemical usage and management plan
Communication Management Systems	Documentation provided according to client’s format and schedule
Community Involvement	Activities to demonstrate good corporate citizenship in our community
Compliance and Regulatory Interface	Regulatory compliance planning, coordinating with agencies, and tracking of compliance
Computerized Maintenance Management System (CMMS)	Software system used to track costs as well preventive and corrective maintenance activities
Computerized Operations Data Systems	Software system used to track process control data for water and wastewater treatment processes
Emergency Preparedness and Response	Coordination with local agencies and preparedness for emergencies
Associate Training and Development	Program for training and development of O&M personnel
Energy Management	Establishment of energy conservation plan
Facility Appearance Plan	Standards applied to facility, grounds, and personal appearance
Everyday Excellence	Associate training to ensure highest-quality, customer-focused services
Procurement Procedures	Negotiation of best value for goods and services, procured locally or through alternate suppliers
Project Evaluation	Corporate review of facilities and systems to ensure conformance with highest industry and CH2M standard practices
Quality as a Business Strategy	Management and leadership system to guide and focus service delivery
Quality Assurance/Quality Control	Assurance of data quality and reliability for water treatment processes
Safety and Security	Site and facility security and adherence to associate safety standards
Standard Operating Procedures	Documented standard approaches for treatment process operation and onsite activities
Warranty Protection	Tracking and support for new equipment warranties

## Staffing

CH2M provides many hours of training for job, safety, and quality control aspects of operations and management. CH2M also supports associates' efforts to obtain and hold State of Oregon certifications for wastewater treatment operations as required by State law. This includes paying for training, travel, and other related costs. This helps ensure improved associate retention and improves recruitment efforts in what has become a highly competitive job market.

Cross training continues to be a top priority. In addition to onsite training, all staff also participated in numerous other training, both onsite and offsite. This training ensures that operations continue uninterrupted during vacations and/or illnesses.

CH2M continues rewarding individual and team accomplishments through the Rewards and Recognition Program.

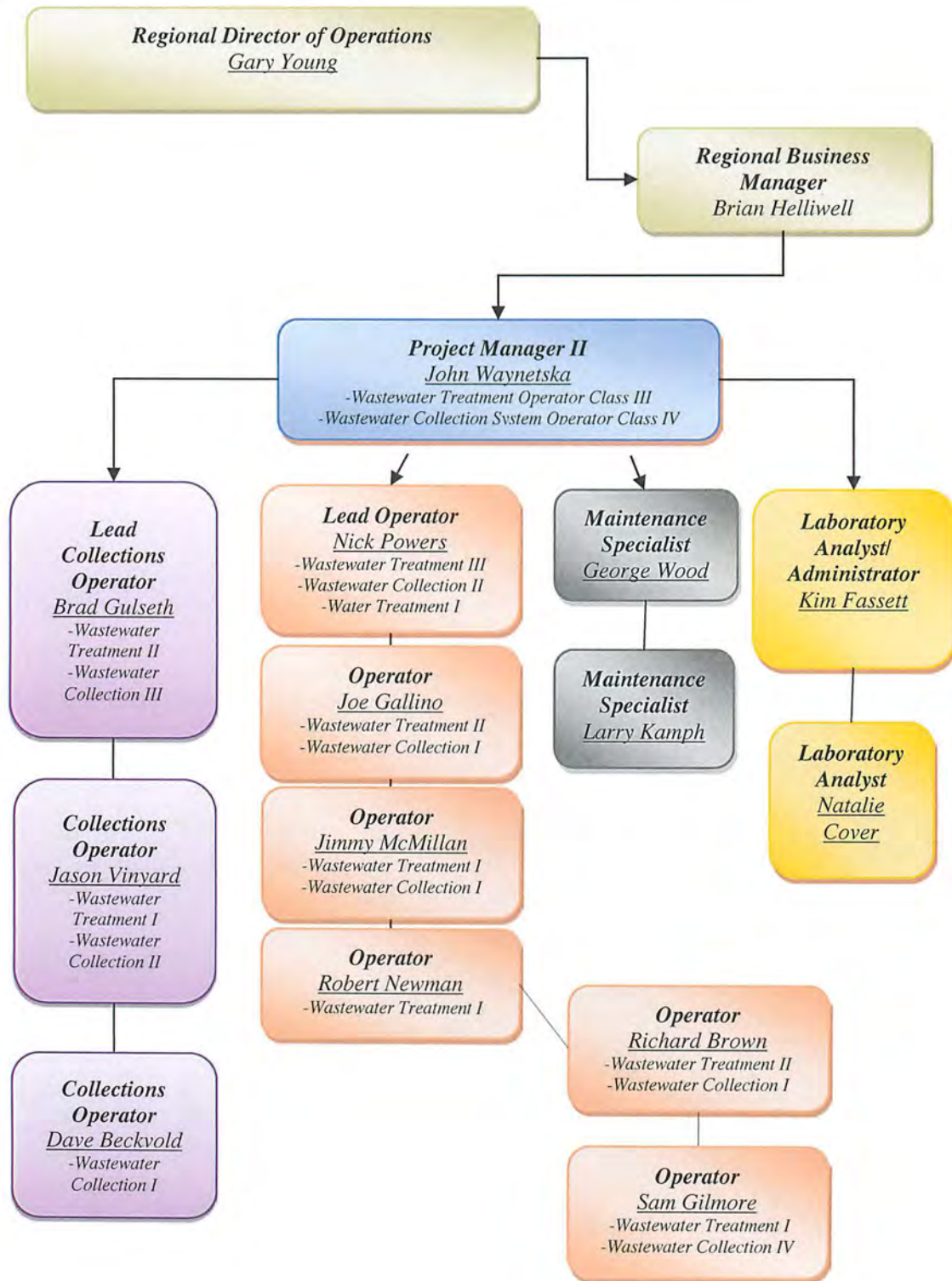
The Coos Bay Team is picture below (**Exhibit 3-1**) and our current organizational chart is detailed in (**Exhibit 3-2**).

*Exhibit 3-1*  
*CH2M/Coos Bay Project Team*

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Exhibit 3-2  
CH2M's Organizational Chart





Associates are supported by CH2M's Technical Services Group as well as Regional Operations and Maintenance Specialists. This support includes:

- **Consulting Services.** *Process troubleshooting, facility startup, performance testing, and system improvement recommendations.*
- **ITS Solutions and Services.** *Computer hardware, software, and network solutions and upgrades.*
- **Asset Services.** *Condition assessments using proprietary software; determining facility asset operating longevity, life-cycle cost, and risk; and estimating repair and replacement costs and capital replacement costs.*
- **Optimization Services.** *Optimization that lowers variable costs, benchmarking against database of more than 100 facilities, and providing a Web-enabled portal for data access and analysis.*



**CH2MHILL®**

# Safety Management Program

Safety is a fundamental approach to how we conduct business. We are recognized leaders in the field of safety, and we apply this experience and knowledge for the benefit of the City, our associates, our subcontractors, and the community. We always intend to provide our associates with a safe and healthful work environment and to comply fully with all applicable federal, state, and local regulations regarding safe practices.

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The safety of our associates, the communities we serve, and our environment are the three single most important considerations in the day-to-day delivery of our services.

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A proactive approach to identifying and addressing potential hazards is critical to the success of our Safety Management Program (**Exhibit 4-1**). All associates are trained to look for and to report unsafe conditions and acts. The Project Safety Team completes a monthly inspection and documents any unsafe conditions or acts, and CH2M specialists perform a quarterly walk-through of all facilities. Any hazards we identify as a result of these efforts, either formal or informal, are mitigated immediately. We use our CMMS program to issue and track work orders for hazards requiring repairs; in the interim, these areas are blocked using temporary means such as cones. We make associates aware of hazards in our weekly tailgate sessions.

The Coos Bay Team has completed fifteen years without lost time safety incident.

**Exhibit 4-1**  
Key Elements of CH2M's Safety Program

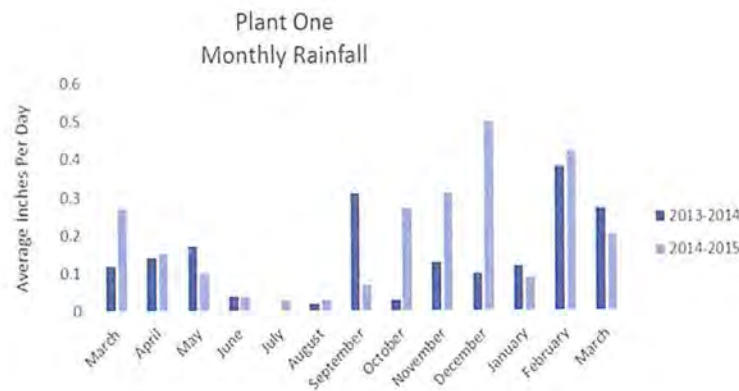
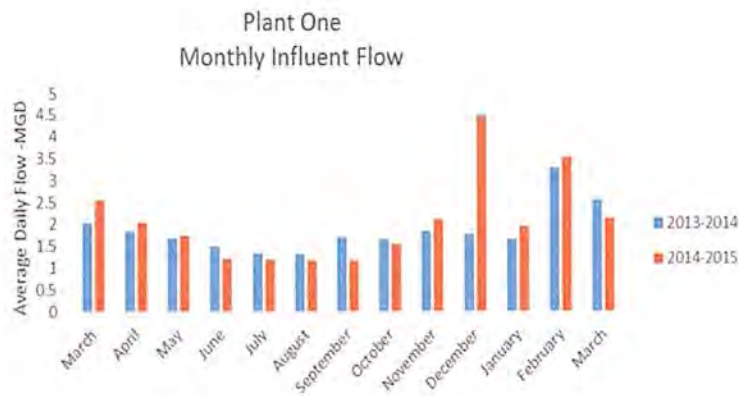
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# Wastewater Treatment Operations

CH2M operates and maintains both of the City's wastewater treatment plants (WWTP). The City's WWTP plant's one and two process flow patterns consist of preliminary treatment, aeration basins, secondary clarification, sodium hypochlorite disinfection and sodium bisulfite de-chlorination. Solids handling consists of converting raw and waste activated sludge into anaerobic sludge digestion and then transferring the contents of the digesters to a facultative sludge lagoon. Final disposal is through land application.

## Plant One / Flow vs. Rainfall

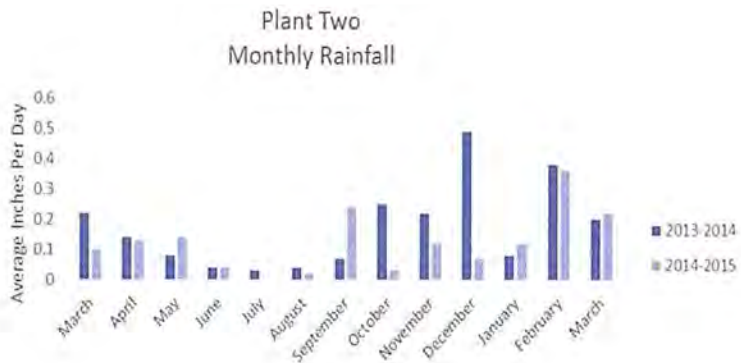
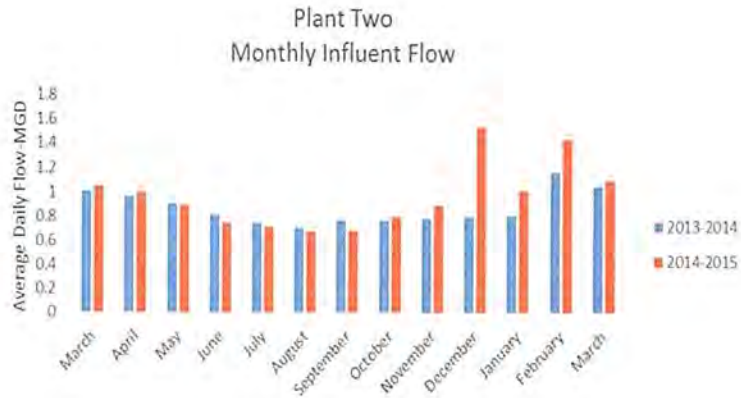


During the nineteenth year of operation, CH2M staff at Plant One continued to look at ways to improve process control and save money. Below is a partial list of improvements and savings, which has occurred in Plant One.

### Plant One Improvement Efforts

Item	Realized Savings
Installed new sludge removal system to the primary clarifier	All the flights and chain in the primary clarifier were replaced. The old parts were over 20 years old. This will greatly reduce the chance of a major failure and increases the life of the clarifier.
Rebuilt primary clarifier	A long, six inch in diameter, steel airline was replaced with PVC pipe due the corrosion from being buried underground. Considerable savings occurred from doing the work internally, which will ultimately prolong the life of the airline.
Constructed rain garden	The Facility Appearance Team built a rain garden as part of a sustainability goal. The rain garden works as a place for rain runoff to soak into the ground and not drain into the bay. It also improved the appearance outside of Plant One’s fence line.
Completed irrigation system	Associates completed the underground sprinkler installation from the previous year. Benefits include greater appearance to the grounds with an advantage of time savings.
Re-plumbed water pumps	Staff re-plumbed effluent treated water pumps to allow any combination of pumps to supply the in-plant water needs. This will provide redundant equipment in case of primary equipment failure.
Data collection	Operators continue to enter plant data from 1990 through the present date into our computer database program. This allows for easy access of all data for projecting loading trends for the last 18 years.

## Plant Two / Flow vs. Rainfall



The CH2M staff understands the need to replace Plant Two in order to meet the more stringent limits in the new permit that is going through the comment phase before issuances. Our staff has been assisting city staff with recommendations during the design phase. As the city and construction engineers work through the design, we have been an integral part of this entire process.

There were times when the influent flow could not be pumped into the wastewater treatment plant fast enough, due to heavy winter flows. We installed a large portable pump where the sanitary sewer influent flow enters the plant. This helped us achieve zero overflows in the immediate sewer system during flows beyond plant design.

Due to the pending design and anticipated completion of the new treatment plant, staff has been keeping costs down, to save money, instead of investing in new equipment that is going to be removed and disposed of. Maintenance staff have been very diligent in making sure the existing equipment will operate accordingly.

The current treatment process has been doing well. Staff continues to maintain the equipment as it will be used for another couple of years before the new plant comes on line. As always, through team work, staff works the fine edge of maximizing the most out of chemical usage while making sure we achieve proper disinfection to keep the plant in compliance with current permit requirements.

### Plant 2 Improvement Efforts

Item	Realized Savings
<b>Install temporary pump</b>	In the winter a large portable pump is installed to prevent an overflow of sanitary sewer at the main gate area.
<b>Repaired leaks in the roof</b>	While the flat roof has been in need of a full replacement for several years, staff continue to stop leaks. Repairs include additions to gutter piping and spot repairs to damaged areas of current Operation/Laboratory building. These efforts have potential cost savings to the City of over \$20,000 in roof replacement.
<b>Take down of all major equipment</b>	All major structures and equipment are taken out of service in the summer to inspect and make any repairs needed. All structural steel problems are removed and repaired in house.

## Collection System

In year eighteen the new Pump Station No. 4 has been through its first full winter in operation. The design and operational capabilities are excellent; the station will serve the City of Coos Bay well into the future. Currently, CH2M associates have been assisting the City with operational and technical input during the design phase for Pump Station No. 1. In the fall of 2015, construction will begin at Pump Station No. 1. The station has not had any major upgrades since 1990 and lacks pumping capabilities to handle the current flows. Dyer Partnership is the contract design firm for the project.

Since CH2M has been serving the city, nine of the worst pump stations have been completely rebuilt with one pump station getting a minor upgrade. Four new pump stations have been added to our scope of work with no increase of cost being added to our contract.

In year eighteen CH2M started the process of re-cleaning the entire collection system for the fourth time since 1996. A plan was designed to systematically clean a pump station drainage area (starting at the furthest line) and completing the grid by cleaning the pump station. Re-cleaning the system with this approach will ensure a thorough cleaning plus allows staff to document the amount of debris removed. Reviewing previous cleaning records compared to current material removed will indicate areas of possible line failure. By cross training operational staff to assist the collection crew, we are able to televise more lines after cleaning. The current focus is to provide video of all problem lines, surface overlay lines, and areas developing sinkholes. By televising newly installed lines, we can document their status plus any problems encountered at the time, which can be corrected by the contractor before a final payment.

CH2M's collection crew was very busy during the eighteenth year. This year we assisted the City with upgrading Pump Station No. 4. CH2M televised the newly installed lines to the pump station and found a problem, which the contractor had to dig up and fix. Without this proactive televising program, the City of Coos Bay may not have discovered the problem until many years later and after the contractor warranty had expired.

In 2015 the City purchased a new televising van and camera equipment. This TV van and camera replace televising equipment that was almost 20 years old. The van is replacing a 1990 bread van that was purchased used in 1995. With the new equipment and the technology that comes with it, our televised video feed is light years ahead of what the city used to use.

## Collection System Improvement Efforts

Item	Realized Savings
<b>Start re-cleaning lines</b>	CH2M cleaned the entire sanitary system in 4.5 yrs. Re-cleaning will document the frequency for cleaning plus identify areas requiring line repair. This reduces the City's liability and decreases OMI's overtime costs.
<b>Eastside maintenance</b>	CH2M associates painted the Eastside Maintenance building after first replacing several sheets of siding. This is to improve aesthetics and protect the structures.
<b>Cross training</b>	Operation staff have been cross training into collections to allow assistance by all associates when required.
<b>Load bank generators</b>	Staff negotiated a deal with a Eugene firm to load bank test all emergency generators. By negotiating a "package" deal, we saved considerable dollars.
<b>Pump station upgrades</b>	CH2M is assisting with the design of Pump Station No. 1. Staff also assisted with the startup of Pump Station No. 4. By reviewing final installation, we were able to confirm the contractor had installed all items properly.
<b>Road construction</b>	Maintain roads to remote manholes to allow for easier cleaning and access in case of an emergency.



# Biosolids

<p><b>Biosolids and silviculture</b></p>	<p>CH2M is continuing to work with Menasha Corporation this year. We currently have an agreement with them. This allows us to apply biosolids to forest lands. A contract was signed to allow us to apply biosolids to a new site close to Coos Bay. In year nineteen the land owner will review the results. If they are pleased it will open a considerable amount of pasture land for applying. Savings will occur by having available winter biosolids sites and a site close to Coos Bay.</p>
<p><b>Lagoon inventory program</b></p>	<p>Staff developed a program to track biosolids stored and removed from the lagoon. Comparison of spring and fall biosolids levels will indicate if the amount of biosolids stored is increasing or decreasing.</p>
<p><b>Upgraded site maps</b></p>	<p>Staff used a GPS to mark all the edges of the fields we apply to. The City then downloaded the coordinates into their map program so now we have maps that accurately indicate where we can apply and keep within the setbacks.</p>
<p><b>Acquired several new fields</b></p>	<p>Our project biosolids coordinator made contact with a new field owner and informed him of the benefits of using the biosolids as fertilizer. The ranch agreed to let us apply on 23.5 acres his land. This last fall the rancher was really impressed how much it helped and has agreed to allow us to continue to apply. He also told us he has a lot more acreage on which we can apply. We will now contact DEQ to see if we can get them to approve the site. These new sites are just a few miles from the lagoon we haul from. This is a very significant savings in fuel costs.</p>

## Community Involvement

Community involvement is an essential part of the way CH2M does business. Our associates take pride in giving back to the community where they live and work. The CH2M associates determine which projects they want to be involved in, and they seek input from the City to see if there are any special projects where the CH2M team can help the City. Specific examples of community involvement activities CH2M is proud to be a part of include:

### *Marshfield High School Tours at Wastewater Treatment Plant #1*



### *Coos Bay Backpack Project*



*Holiday Tree at Shores Acres*



*Fish Release at Blossom Gulch*



*Storm Drain Plaques*



*Arbor Day Tree Planting*



## Summary

CH2M is committed to the City of Coos Bay and its citizens by providing the best service at the lowest reasonable price. Our priority is to provide the City of Coos Bay with the assurance that the best interests of the City and community are being met. In performing above the expectations of our agreement, we intend to strengthen and grow our relationship with the City of Coos Bay so that all can benefit from a lasting partnership.

