

Fund:  
**WATERWORKS and SEWERAGE**

Department:  
**PUBLIC WORKS**

Division:  
**CENTRAL LABORATORY**

Division No.: **47009**

**MISSION:**

The mission of the Central Laboratory is to perform water and wastewater tests for the City's water and sewer systems in support of the City's efforts to produce high quality drinking water and wastewater effluent and to monitor industrial waste streams to ensure compliance with the Environmental Protection Agency (EPA) pretreatment regulations and City Code.

**SERVICES:**

The Central Laboratory performs the water and wastewater tests required by the federal and state EPA. The Central Laboratory also conducts testing to maintain optimal treatment at all department facilities with consideration given to plant efficiency and cost of operation. In addition to reporting data to the Manager of Water Operations and the Superintendents of the two Wastewater Treatment Plants, the Central Laboratory staff assists with monthly EPA and system evaluation reports.

**SIGNIFICANT GOALS AND OBJECTIVES:**

**GOAL:**

A. Provide the necessary monitoring to meet current water quality standards and prepare for upcoming regulatory changes with consideration for optimum quality at the least cost

**Objective:**

1. Perform tests to monitor and ensure the effectiveness of treatment processes at the Water Treatment Plant

**Strategies:**

- a. Provide monitoring for the coagulation processes to comply with regulations for turbidity limits and total organic carbon removal
- b. Maintain disinfection by-product compliance by conducting Trihalomethane (THM) tests on the Water Treatment Plant air-stripper and in the water distribution system to guide treatment adjustments

- c. Provide monitoring to manage the use of chemicals for treatment to manage drinking water taste and odor

**Objective:**

2. Update standard operating laboratory procedures (SOP) to maintain certification for drinking water microbiology analyses

**Strategies:**

- a. Update quality control procedures and the Quality Manual to conform to the latest state requirements and regulations

**GOAL:**

B. Provide monitoring support to operate high-quality wastewater treatment systems that meet community needs in compliance with the applicable laws and regulations

**Objective:**

1. Perform tests to monitor and ensure the effectiveness of the treatment processes at the waste water treatment plants

**Strategies:**

- a. Provide routine and ongoing monitoring of influent wastewater, various stages of the treatment process and effluent water at the wastewater treatment plants
- b. Provide monitoring to evaluate baseline nutrient and metal levels in the wastewater treatment processes in effluent and discharge streams

**Objective:**

2. Support better industrial waste management

**Strategies:**

- a. Closely monitor industrial and Southern Illinois University waste streams for changes in waste characteristics
- b. Consult with local industries to help control process waste discharges

**GOAL:**

C. Operate economically a high-quality central laboratory for the Carbondale Water and Sewerage System

**Objective:**

1. Secure funds from non-City resources to assist in financing Central Laboratory operations

**Strategies:**

- a. Provide lab testing services for a competitive fee to local utilities, government agencies and individuals
- b. Automate test methods and processes wherever possible to maximize productivity and accuracy

Also in FY 2015, the Central Laboratory Division will continue the outside client services testing program providing local utilities, individuals and government agencies with laboratory services at competitive fees.

The City's reservoir and Cedar Lake will also continue to be monitored during FY 2015 for water quality.

**PROGRAM HIGHLIGHTS:**

During FY 2014, the Central Laboratory program of testing the nutrient levels (Total Nitrogen and Total Phosphorus) and Zinc for the Wastewater Treatment Plants was done. Evaluating nutrient and zinc removal upstream and downstream and through the wastewater treatment processes will be an important task in the program to prepare for future regulatory changes.

In FY 2014, several new utility clients in surrounding communities selected the Central Laboratory as their coliform testing lab. Providing consistent service excellence to our clients has become known throughout the region. Outside client volume for drinking water and wastewater tests steadily increases each year.

Continuing in FY 2015, the Central Laboratory will maintain Illinois Department of Public Health (IDPH) certification to perform total and fecal coliform, E-coli enumeration and Heterotrophic plate counts as required to perform tests for the City of Carbondale and other utilities for the EPA Safe Drinking Water Act, the EPA Ground Water rules and the EPA LT2 rule.

In FY 2015, the Central Laboratory Division will apply to the National Environmental Laboratory Accreditation Conference (NELAC) Certification Program for EPA certification of selected analytes in drinking water. The initial certification will include Total Organic Carbon, Lead, Copper, Fluoride, Nitrate, Nitrite, Sulfate, Chloride, Zinc, and Alkalinity.

In FY 2015, the Central Laboratory Division will continue to closely monitor water quality, solids and waste stream characteristics for all treatment stages, effluents and discharge streams for both Wastewater Treatment Plants.

In FY 2015, the Central Laboratory Division will continue to closely monitor drinking water quality throughout the treatment and distribution system, storage tanks, and following main break repairs as well as complaint testing.

**PERFORMANCE MEASUREMENT:**

<b>Performance Measurements</b>	<b>Division Goal/ Objective</b>	<b>Actual FY 2013</b>	<b>Authorized Budget FY 2014</b>	<b>Estimated Actual FY 2014</b>	<b>Budget FY 2015</b>
Drinking Water Tests Performed	A-1/A-2	15,872	16,000	16,000	16,000
Wastewater Tests Performed	B-1	31,327	33,500	31,500	32,000
Industrial Waste Tests Performed	B-2	1,260	1,130	1,200	1,200
Water Quality Tests Performed (following main break repairs)	A-1/A-2	1,476	1,700	990	1,200
Routine Distribution Water Samples Collected	A-1	668	700	700	700
Water Quality Tests Performed (routine distribution monitoring)	A-1/A-2	6,012	6,000	6,000	6,000
Tests Performed for Local Utilities, Government Agencies and Individuals	C-1	12,841	14,500	12,886	13,000
Revenue from Tests Performed for Local Utilities, Government Agencies and Individuals	C-1	\$183,917	\$184,000	\$184,000	\$190,000
Water Quality Complaints Analyzed	A-1	7	5	5	5

**NUMBER OF FULL-TIME EQUIVALENT EMPLOYEES:**

<b>POSITION TITLE</b>	<b>ACTUAL FY 2013</b>	<b>AUTHORIZED BUDGET FY 2014</b>	<b>ESTIMATED ACTUAL FY 2014</b>	<b>BUDGET FY 2015</b>	<b>\$ AMOUNT BUDGET FY 2015</b>
Central Laboratory Superintendent	1.00	1.00	1.00	1.00	\$59,738
Operator	3.00	3.00	3.00	3.00	\$142,919
Part-time Operator	0.56	0.60	0.60	0.60	\$25,650
<b>TOTAL</b>	<b>4.56</b>	<b>4.60</b>	<b>4.60</b>	<b>4.60</b>	<b>\$228,307</b>

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EXPENDITURE CLASSIFICATION	AUTHORIZED		ESTIMATED	
	ACTUAL FY2013	BUDGET FY2014	ACTUAL FY2014	BUDGET FY2015
<b>PERSONAL SERVICES</b>				
100 Employee Salary and Wages	203,391	217,503	213,624	228,307
110 Employee Overtime	18,539	7,204	7,211	7,026
112 Employee Premium Payments	1,394	6,658	6,402	4,801
130 Employee Health Ins. Benefits	39,222	35,556	35,556	35,852
131 Employee Retirement Benefits	44,385	46,832	46,229	50,734
140 Employee Work. Comp. Benefits	16,317	15,193	15,390	16,799
141 Employee Unemp. Comp. Benefits	630	0	0	0
150 Special Contractual Benefits	1,748	1,650	3,377	2,550
<b>TOTAL PERSONAL SERVICES</b>	<b>325,626</b>	<b>330,596</b>	<b>327,789</b>	<b>346,069</b>
<b>DIRECT OPERATING CHARGES &amp; SERVICES</b>				
220 Communications-Telephone	297	228	353	348
222 Communications-Postage	810	615	612	711
240 Travel, Conferences, Training	1,536	120	95	2,500
250 Repairs & Maint.-Equip.	14,631	17,250	17,111	15,090
252 Repairs & Maint.-Other Improv.	0	0	0	0
260 Rental Charges	0	0	0	480
271 Other Outside Services	2,970	3,925	3,916	3,300
272 Office Supplies	660	950	620	500
273 Operating Supplies & Materials	33,233	33,200	33,000	38,360
275 Motor Fuels and Lubricants	1,766	1,431	1,430	1,584
280 Subscriptions and Memberships	477	300	103	290
299 Operating Equipment	12,146	1,510	11,394	0
<b>TOTAL DIR. OPER. CHRGS. &amp; SRVCS.</b>	<b>68,526</b>	<b>59,529</b>	<b>68,634</b>	<b>63,163</b>
<b>SERVICES AND CHARGES TRANSFERRED IN</b>				
310 Veh. & Equip.-Labor & Overhead	2,310	1,555	1,200	1,166
311 Vehicle & Equipment-Parts	1,497	1,500	1,000	1,500
335 Information Systems	0	0	0	825
<b>TOTAL SRVCS. &amp; CHRGS. TRANS IN</b>	<b>3,807</b>	<b>3,055</b>	<b>2,200</b>	<b>3,491</b>
<b>CAPTIAL OUTLAY</b>				
503 Machinery & Equipment	0	0	6,681	0
504 Licensed Vehicles	0	20,460	20,263	0
<b>TOTAL CAPITAL OUTLAY</b>	<b>0</b>	<b>20,460</b>	<b>26,944</b>	<b>0</b>
<b>TOTAL EXPENDITURES</b>	<b>397,959</b>	<b>413,640</b>	<b>425,567</b>	<b>412,723</b>