

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 waste water treatment plants

**Strategies:**

- 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

In FY 2014, 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, Cedar Lake, will also continue to be monitored during FY 2014 for water quality.

**PROGRAM HIGHLIGHTS:**

The Central Laboratory program during FY 2013 involved performing testing for nutrient levels (Total Nitrogen and Total Phosphorus) and Zinc for the Wastewater Treatment Plants. 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.

The Laboratory maintains 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 2013, due to the closure of a regional laboratory in Centralia, Illinois, 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.

In FY 2014, 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.

Also in FY 2014, the Central Laboratory Division will continue to closely monitor water quality and solids and waste stream characteristics for all treatment stages, effluents, and discharge streams for both Wastewater Treatment Plants.

During FY 2014, the Central Laboratory Division will 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 2012</b>	<b>Authorized Budget FY 2013</b>	<b>Estimated Actual FY 2013</b>	<b>Budget FY 2014</b>
Drinking Water Tests Performed	A-1/A-2	15,760	15,500	16,124	16,000
Wastewater Tests Performed	B-1	31,600	27,900	35,334	33,500
Industrial Waste Tests Performed	B-2	1,100	800	1,137	1,130
Water Quality Tests Performed (following main break repairs)	A-1/A-2	864	1,656	1,700	1,700
Routine Distribution Water Samples Collected	A-1	668	668	848	700
Water Quality Tests Performed (routine distribution monitoring)	A-1/A-2	6,000	6,000	6,000	6,000
Tests Performed for Local Utilities, Government Agencies and Individuals	C-1	10,827	11,000	14,214	14,500
Revenue from Tests Performed for Local Utilities, Government Agencies and Individuals	C-1	\$156,325	\$162,000	\$183,850	\$184,000
Water Quality Complaints Analyzed	A-1	9	5	5	5

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

<b>POSITION TITLE</b>	<b>ACTUAL FY 2012</b>	<b>AUTHORIZED BUDGET FY 2013</b>	<b>ESTIMATED ACTUAL FY 2013</b>	<b>BUDGET FY 2014</b>	<b>\$ AMOUNT BUDGET FY 2014</b>
Central Laboratory Superintendent	1.00	1.00	1.00	1.00	\$58,568
Operator	3.04	3.00	3.00	3.00	\$133,891
Part-time Operator	0.10	0.48	0.60	0.60	\$25,044
<b>TOTAL</b>	4.14	4.48	4.60	4.60	\$217,503

Fund: WATERWORKS and SEWERAGE

Division: CENTRAL LABORATORY

Department: PUBLIC WORKS

Division No.: 47009

EXPENDITURE CLASSIFICATION	AUTHORIZED		ESTIMATED	
	ACTUAL FY2012	BUDGET FY2013	ACTUAL FY2013	BUDGET FY2014
<b>PERSONAL SERVICES</b>				
100 Employee Salary and Wages	189,340	202,524	205,724	217,503
110 Employee Overtime	12,714	13,762	7,796	7,704
112 Employee Premium Payments	0	0	7,962	7,683
130 Employee Health Ins. Benefits	44,036	49,612	39,551	35,556
131 Employee Retirement Benefits	37,637	42,280	42,602	46,832
140 Employee Work. Comp. Benefits	16,592	17,633	16,317	15,193
150 Special Contractual Benefits	1,226	1,800	1,500	1,650
<b>TOTAL PERSONAL SERVICES</b>	<b>301,545</b>	<b>327,611</b>	<b>321,452</b>	<b>332,121</b>
<b>DIRECT OPERATING CHARGES &amp; SERVICES</b>				
220 Communications-Telephone	692	800	221	228
222 Communications-Postage	550	875	744	725
240 Travel, Conferences, Training	1,485	1,858	1,516	2,500
250 Repairs & Maint.-Equip.	16,165	15,400	15,400	15,400
252 Repairs & Maint.-Other Improv.	12	0	0	0
271 Other Outside Services	2,141	2,300	2,300	2,300
272 Office Supplies	234	500	500	500
273 Operating Supplies & Materials	28,273	30,795	30,800	31,000
275 Motor Fuels and Lubricants	1,778	1,985	1,567	1,851
280 Subscriptions and Memberships	285	290	290	300
299 Operating Equipment	11,037	12,230	12,230	3,200
<b>TOTAL DIR. OPER. CHRGS. &amp; SRVCS.</b>	<b>62,652</b>	<b>67,033</b>	<b>65,568</b>	<b>58,004</b>
<b>SERVICES AND CHARGES TRANSFERRED IN</b>				
310 Veh. & Equip.-Labor & Overhead	793	1,218	1,500	1,555
311 Vehicle & Equipment-Parts	923	1,500	1,000	1,500
<b>TOTAL SRVCS. &amp; CHRGS. TRANS IN</b>	<b>1,716</b>	<b>2,718</b>	<b>2,500</b>	<b>3,055</b>
<b>CAPTIAL OUTLAY</b>				
504 Licensed Vehicles	0	0	0	20,460
<b>TOTAL CAPITAL OUTLAY</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20,460</b>
<b>TOTAL EXPENDITURES</b>	<b>365,913</b>	<b>397,362</b>	<b>389,520</b>	<b>413,640</b>