

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 Wastewater 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. Economically operate 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

PROGRAM HIGHLIGHTS:

During FY 2015, the Central Laboratory program of testing the nutrient levels (Total Nitrogen and Total Phosphorus), ORP (Oxidation Reduction Potential), and Zinc for the Wastewater Treatment Plants was continued. Evaluating ORP, 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 2015, 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 revenue for drinking water and wastewater tests steadily increases each year.

Continuing in FY 2016, 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 2016, the Central Laboratory Division will complete the work to obtain the National Environmental Laboratory Accreditation Conference (NELAC) Certification for EPA certification of selected analytes in drinking water. The initial certification will include Total Organic Carbon, Lead, Copper, Fluoride, Nitrate, Nitrite, Sulfate, Chloride, and Phosphorus.

In FY 2016, 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 2016, 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.

Also in FY 2016, the Central Laboratory Division will continue the outside client services testing program providing local utilities, contractors, 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 2016 for water quality.

PERFORMANCE MEASUREMENT:

Performance Measurements	Division Goal/ Objective	Actual FY 2014	Authorized Budget FY 2015	Estimated Actual FY 2015	Budget FY 2016
Routine Distribution Water Samples Collected	A-1	764	700	760	750
Water Quality Complaints Analyzed	A-1	9	5	5	5
Drinking Water Tests Performed	A-1, A-2	18,712	16,000	16,000	16,000
Water Quality Tests Performed (following main break repairs)	A-1, A-2	1,314	1,200	1,234	1,200
Water Quality Tests Performed (routine distribution monitoring)	A-1, A-2	6,876	6,000	6,000	6,000
Wastewater Tests Performed	B-1	31,656	32,000	32,000	32,000
Industrial Waste Tests Performed	B-2	1,260	1,200	1,260	1,250
Tests Performed for Local Utilities, Government Agencies and Individuals	C-1	11,890	13,000	12,807	13,000
Revenue from Tests Performed for Local Utilities, Government Agencies and Individuals	C-1	\$171,377	\$190,000	\$173,084	\$175,000

NUMBER OF FULL-TIME EQUIVALENT EMPLOYEES:

POSITION TITLE	ACTUAL FY 2014	AUTHORIZED BUDGET FY 2015	ESTIMATED ACTUAL FY 2015	BUDGET FY 2016	\$ AMOUNT BUDGET FY 2016
Central Laboratory Superintendent	1.00	1.00	1.00	1.00	\$59,738
Operator	3.00	3.00	3.00	3.00	\$148,644
Part-time Operator	0.68	0.60	0.60	0.60	\$28,475
TOTAL	4.68	4.60	4.60	4.60	\$236,857

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EXPENDITURE CLASSIFICATION	AUTHORIZED		ESTIMATED	
	ACTUAL FY2014	BUDGET FY2015	ACTUAL FY2015	BUDGET FY2016
PERSONAL SERVICES				
100 Employee Salary and Wages	216,835	228,307	228,307	236,857
110 Employee Overtime	7,712	7,026	11,548	12,646
112 Employee Premium Payments	4,894	4,801	82	765
130 Employee Health Ins. Benefits	36,271	35,852	38,939	37,656
131 Employee Retirement Benefits	48,246	50,734	50,270	49,514
140 Employee Work. Comp. Benefits	16,715	16,799	15,819	14,648
141 Employee Unemp. Comp. Benefits	4,157	0	0	0
150 Special Contractual Benefits	3,377	2,550	2,975	2,975
TOTAL PERSONAL SERVICES	338,207	346,069	347,940	355,061
DIRECT OPERATING CHARGES & SERVICES				
220 Communications-Telephone	433	423	402	396
222 Communications-Postage	712	811	890	850
240 Travel, Conferences, Training	115	2,425	2,445	2,500
250 Repairs & Maint.-Equip.	18,306	17,646	17,195	17,110
252 Repairs & Maint.-Other Improv.	18	77	77	0
260 Rental Charges	0	480	480	480
271 Other Outside Services	4,116	5,802	4,453	3,630
272 Office Supplies	957	750	620	600
273 Operating Supplies & Materials	33,629	33,148	35,000	36,000
275 Motor Fuels and Lubricants	1,456	1,294	1,294	1,277
280 Subscriptions and Memberships	103	307	307	310
282 Licenses and Taxes	107	0	0	0
299 Operating Equipment	14,444	0	0	0
TOTAL DIR. OPER. CHRGS. & SRVCS.	74,396	63,163	63,163	63,153
SERVICES AND CHARGES TRANSFERRED IN				
310 Veh. & Equip.-Labor & Overhead	2,160	1,166	583	592
311 Vehicle & Equipment-Parts	1,701	1,500	650	600
315 Building & Structure Maint.	0	0	0	1,065
332 Information Systems	0	825	825	725
TOTAL SRVCS. & CHRGS. TRANS IN	3,861	3,491	2,058	2,982
CAPITAL OUTLAY				
503 Machinery and Equipment	0	0	135,000	0
504 Licensed Vehicles	20,263	0	0	0
TOTAL CAPITAL OUTLAY	20,263	0	135,000	0
TOTAL EXPENDITURES	436,727	412,723	548,161	421,196