

The GRCA continues to progress the watershed-wide wastewater optimization program by engaging the community of practice, provide training opportunities through Comprehensive Performance Evaluations (CPEs) and working with partners to improve wastewater treatment plant performance. This bulletin provides a description of past and upcoming optimization activities, successes and challenges within the WWOP, and data on enhanced reporting metrics.

Information Sharing

The Wastewater Managers group assembled at meetings held on April 29, 2015 and March 1, 2016. These meetings provided the group with an overview of the



WWOP, plant performance reporting, and an opportunity to share information and experiences.

Additionally, Optimization Leadership Team

meetings were held on May 20, 2015 and November 19th, 2015, hosted by the GRCA and the City of Guelph, respectively. Participants were given an opportunity to provide report-outs on their optimization activities. At the

November meeting, optimization expert Bob Hegg participated via Skype, and the group learned of Bob's extensive optimization experience and heard his suggestions for the group.



The WWOP has the support of an advisory group consisting of U.S. EPA staff and contractors who are experts in developing and delivering area-wide optimization programs. Several teleconferences were held with the Advisory Group in 2015 and 2016 to share information, experiences and strategies on implementing area-wide optimization programs like the WWOP.

GRCA staff involved in the WWOP participated in the U.S. National Area-wide Optimization Program meeting in Cincinnati in July 2015 to gain a better understanding of the status and issues of area-wide optimization programs for drinking water systems in the U.S.



Comprehensive Performance Evaluations

CPEs were conducted at two lagoon systems in the watershed. These evaluations helped to further establish a protocol for evaluating lagoon systems, as well as provide a valuable training opportunity for team members and deliver valuable information on factors impacting the plant performance or capacity back to the plant owner and operators.



Additionally, technical support has been initiated at the Arthur WWTP as a follow-up step to the CPE. It is being trialed for a year with the following objectives:

- demonstrate provision of technical support under the WWOP
- provide experience and training to GRCA staff in CPE follow up activities
- provide independent 3rd party advice and support to municipality
- enhance municipal understanding of plant capacity and performance to proactively plan for future needs

Performance Based Training

GRCA staff are participating as facilitators in the Ministry of the Environment and Climate Change pilot test for Performance Based Training (PBT). The PBT is a training series with a small group of WWTPs focussing on priority-setting and problem solving skills for staff. Each plant is working with a facilitator to complete homework assignments between training sessions. To date, three training modules have been completed, with more to be scheduled for spring 2016.

Outreach

An article describing the WWOP was published in the fall 2016 issue of the Water Environment of Ontario Association (WEAO) quarterly magazine, *Influents*.

A paper, highlighting key activities of the WWOP, was accepted for the 2016 WEAO annual conference in Niagara Falls in April 2016.

Upcoming Activities

Planning and direction of future WWOP activities will continue via quarterly Strategic Planning Meetings. A core team participating in these meetings consists of members from the GRCA, MOECC, CPO Inc., and Haldimand County. Four meetings were conducted in 2015 and four more are scheduled for 2016. The core team is using the nominal group process to identify a prioritized list of short-term and long-term action items that will help guide development of the WWOP.

Another feature of the WWOP is a Recognition Program/Award, which is being developed to encourage participation in the WWOP and will acknowledge plants that participate in the WWOP, apply CCP concepts, and achieve voluntary performance targets. The recognition program will be delivered by March, 2017.

Enhanced Performance Reporting

Three years of plant data have been collected from 28 WWTPs in the watershed. The most recent report, "Watershed Overview of Wastewater Treatment Plant Performance", includes loading and performance data from 2012 to 2014. The report also includes enhancements from previous versions including available sludge accountability results for 2014. Sludge accountability is a useful tool for plant operators and managers to validate reported plant data. Data for per capita wastewater flows from 2012 to 2014 for plants across the watershed is shown in Figure 1 (page 3). Additionally, WWTP loadings and flow-weighted concentrations for total phosphorous (TP) and total ammonia nitrogen (TAN) are presented in Table 1 (page 3).

The data in Table 1 shows that flow-weighted average concentrations of TP have decreased over time. The flow-weighted-average concentration of TAN in the summer has also decreased.

Annual watershed WWTP performance reporting data is now being collected for the 2015 year.

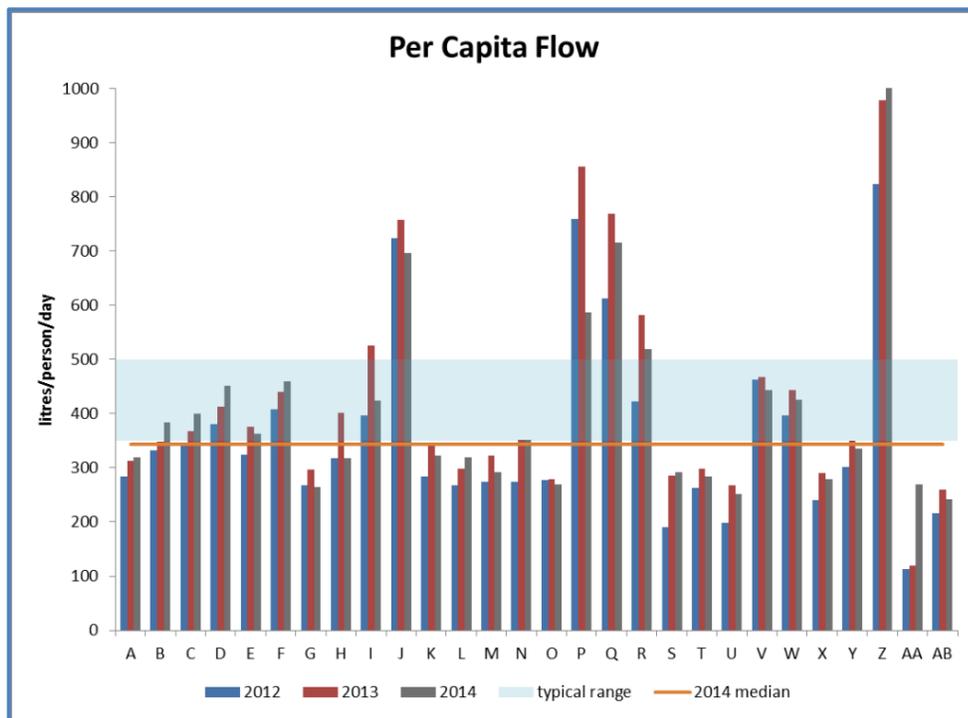


Figure 1
Example of enhanced performance reporting metrics: Per Capita Wastewater Flows to WWTPs across the Grand River Watershed for 2012 to 2014.

	2012		2013		2014	
	Loading (kg)	Concentration (mg/L)*	Loading (kg)	Concentration (mg/L)*	Loading (kg)	Concentration (mg/L)*
TAN summer	426,656	4.4	361,342	3.4	342,815	3.1
TAN winter	512,237	5.3	410,084	3.8	512,258	4.6
Total TAN	938,892	4.8	771,425	3.6	855,073	3.9
TP	36,229	0.37	37,856	0.35	36,816	0.33

*flow-weighted concentrations

Table 1
TP and TAN loadings and flow-weighted concentrations from WWTPs across the Grand River Watershed for 2012 to 2014.

Successes and Challenges

WWOP participants have successfully submitted plant data for three years. This information has been used to prepare annual watershed performance reporting, and feed into the draft recognition program. Collecting sludge accountability data has been challenging as many plants do not routinely do these calculations. Support and training may be needed to enable plants to report on sludge accountability. Technical support has been initiated under the WWOP with a “learn as we go” approach. The optimization program strives to promote voluntary best practices and engage wastewater professionals in the watershed. Work is ongoing to seek active participation from all plants in the watershed (i.e. obtaining enhanced performance reporting from all plants).

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