



# Wastewater Treatment and Biosolids Management Master Plan



# City of Guelph Wastewater Treatment and Biosolids Management Master Plan

**Virtual Open House #1**





# Wastewater Treatment and Biosolids Management Master Plan



## Welcome to Virtual Community Open House #1

### Please sign in.

The City is updating its Wastewater Treatment and Biosolids Management Master Plan, a long-term plan that will ensure Guelph's wastewater is managed in a way that is sustainable, protects our waterways and environment, and has the capacity to handle the City's growing population.

The Master Plan will look at how the City is currently managing and treating wastewater at the Guelph Wastewater Treatment Plant and guide how we will continue to meet the demands of our growing community now until 2051.

This is the first of two open houses that you will have the chance to have your say and help shape the Master Plan.





# Wastewater Treatment and Biosolids Management Master Plan

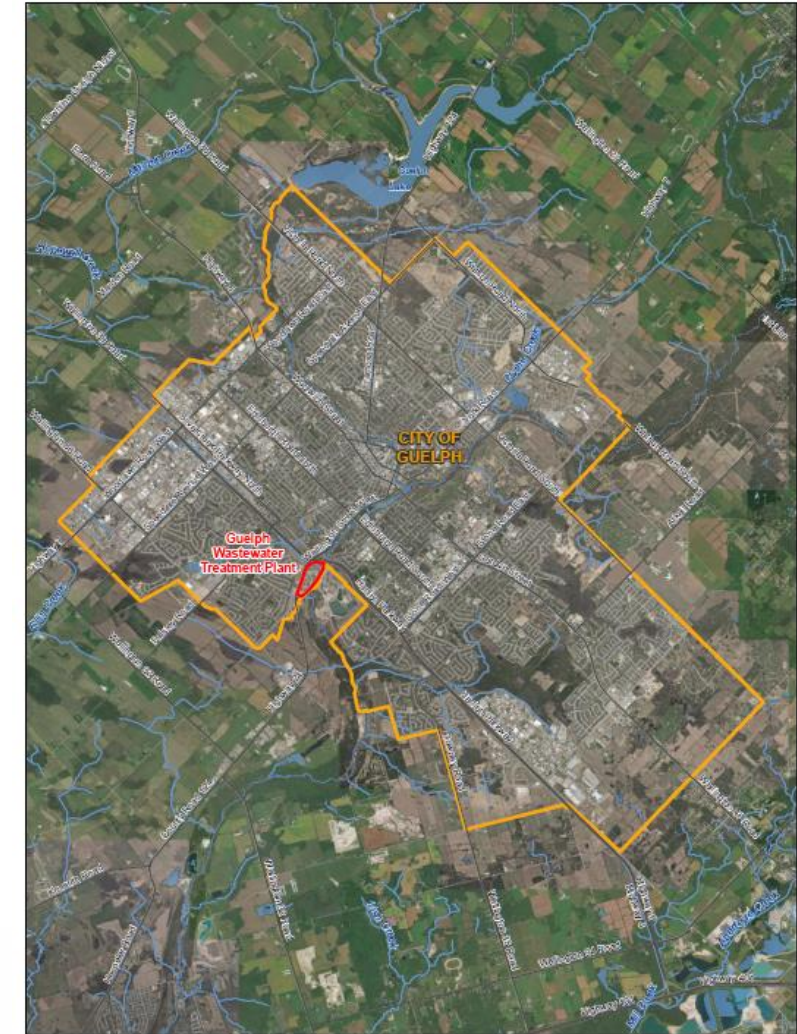


## Master Plan Purpose Statement

The Wastewater Treatment and Biosolids Master Plan will review and revise the City's 2009 Wastewater Treatment and 2006 Biosolids Management Master Plans to reflect updates in development and growth, expansion and re-rating, local initiatives and studies, climate change initiatives and official plan amendments and legislation and guidelines.

## Study Area

The Guelph WWTP collects and treats wastewater from within the urban boundaries of Guelph, as displayed in the figure. The Guelph WWTP also treats wastewater from the Village of Rockwood through a Memorandum of Understanding with the City of Guelph.



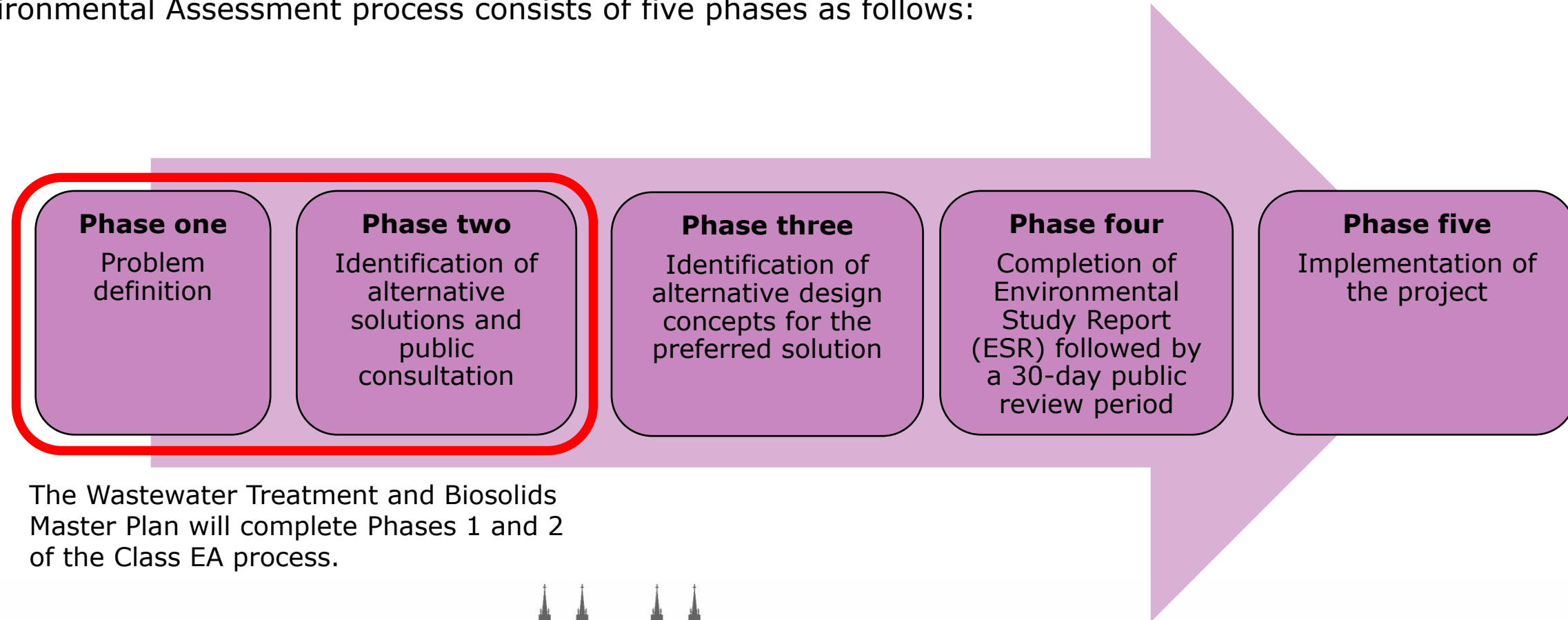


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## Class Environmental Assessment Process

The Class Environmental Assessment process consists of five phases as follows:



The Wastewater Treatment and Biosolids Master Plan will complete Phases 1 and 2 of the Class EA process.





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## Public Consultation Plan

The City of Guelph wants to provide an opportunity to offer suggestions, comments and ideas for the Master Planning Process. The City is interested in feedback from the Community Liaison Group, City of Guelph staff, Guelph community members and neighbours, Indigenous communities and Provincial Agencies.

The Community Liaison Group involves local stakeholders who will meet three (3) times during the Master Plan process.

We will have two (2) virtual open houses during the Master Plan process. The next one is tentatively scheduled for Spring 2021 and will present the preferred alternatives of this Master Plan.

Virtual open houses meet the Class Environmental Assessment consultation requirements provided that they meet your needs as a stakeholder.

The City's "Have Your Say" website shares specific information about the Master Plan as well as invites comments, questions and advice from the community. The Have Your Say website can be accessed at: <https://www.haveyoursay.guelph.ca/>

Following the completion of the Master Plan Report, it will be posted to the project website for a 30-day public review.





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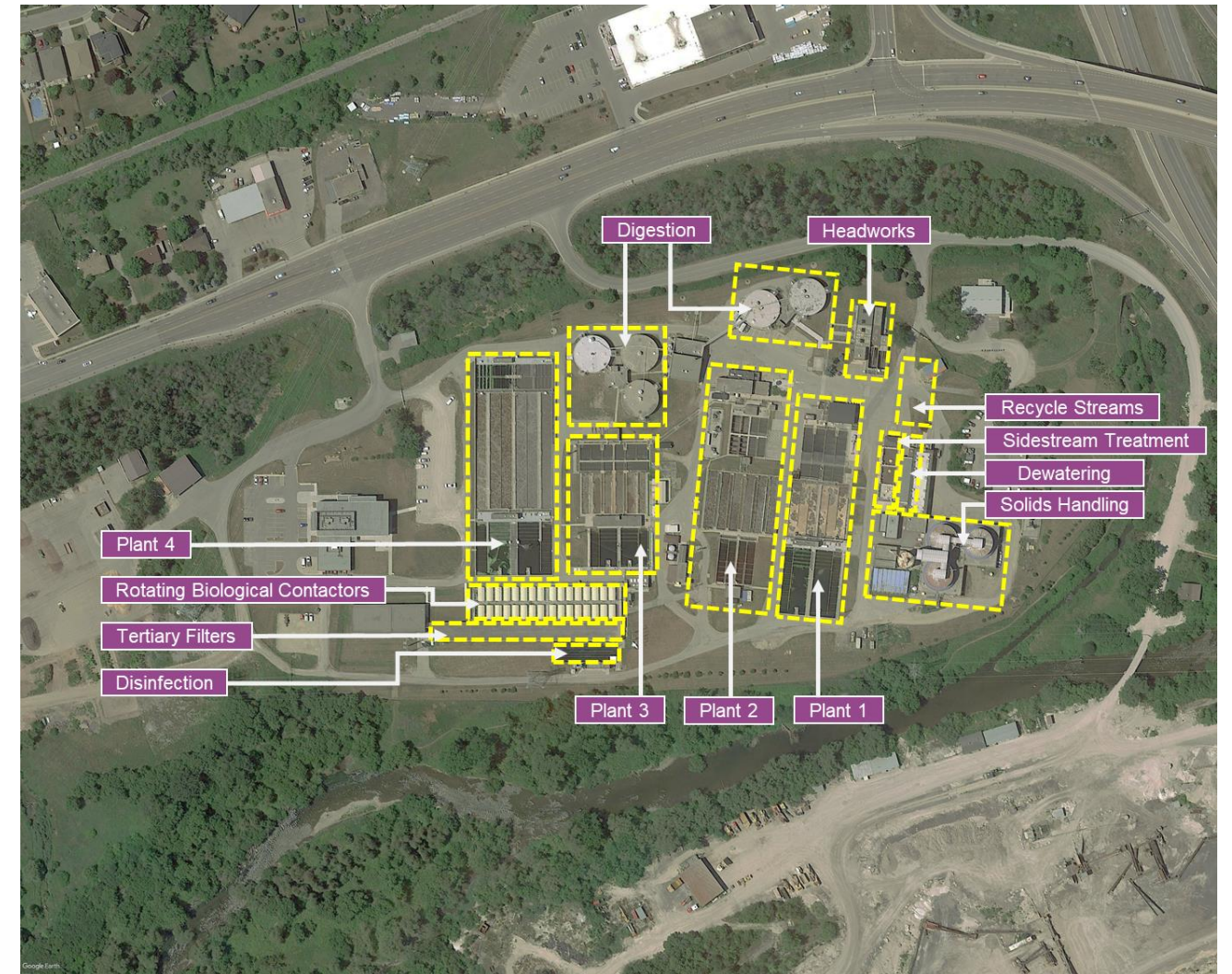


## Guelph Wastewater Treatment Plant

The Guelph Wastewater Treatment Plant has a current rated capacity to treat 64 million litres per day. This is equal to 26 Olympic-sized swimming pools per day.

Wastewater arriving at the Guelph Wastewater Treatment Plant undergoes multiple stages of treatment: preliminary, primary, secondary, tertiary, disinfection and dechlorination. The final treated effluent (high quality treated wastewater) is discharged into the Speed River.

Solids that are removed from the wastewater treatment processes undergo thickening, digestion, dewatering and are further stabilized through the Lystek process. The final product is a Canadian Food Inspection Agency approved fertilizer that is beneficially reused via land application.

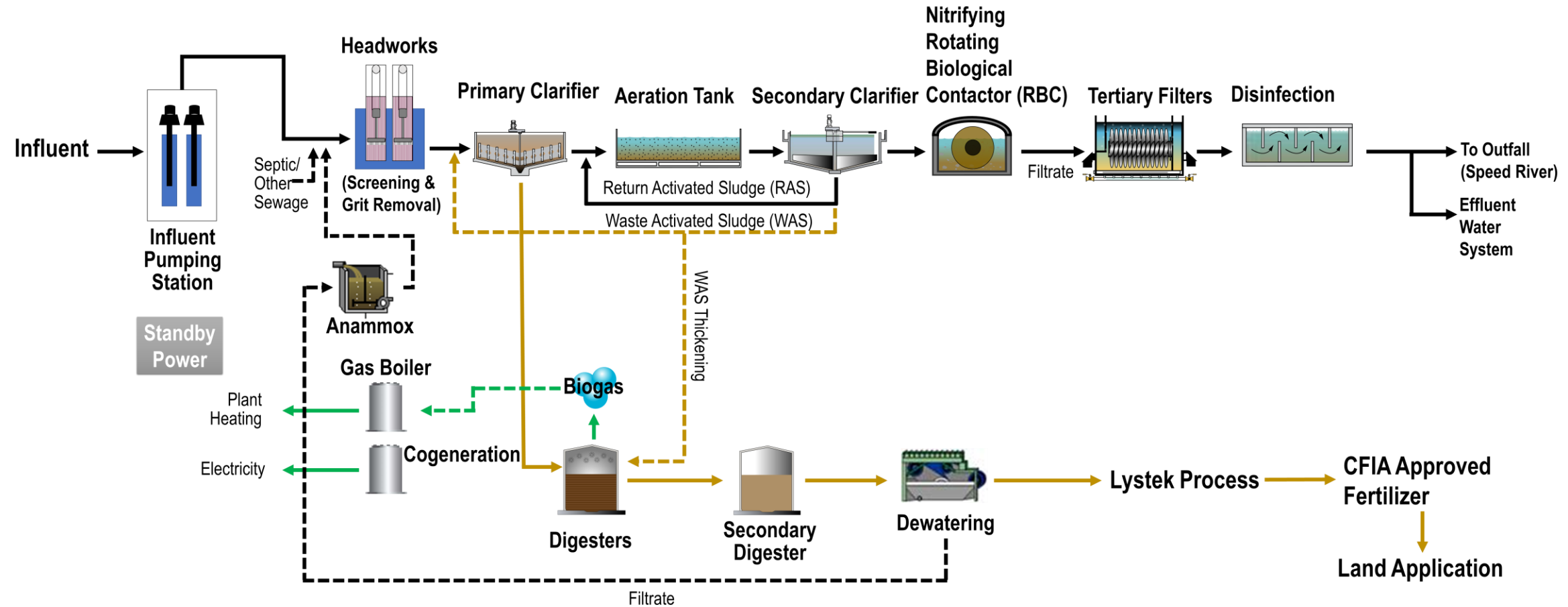




# Wastewater Treatment and Biosolids Management Master Plan



## Guelph Wastewater Treatment Plant Process Flow Diagram





# Wastewater Treatment and Biosolids Management Master Plan



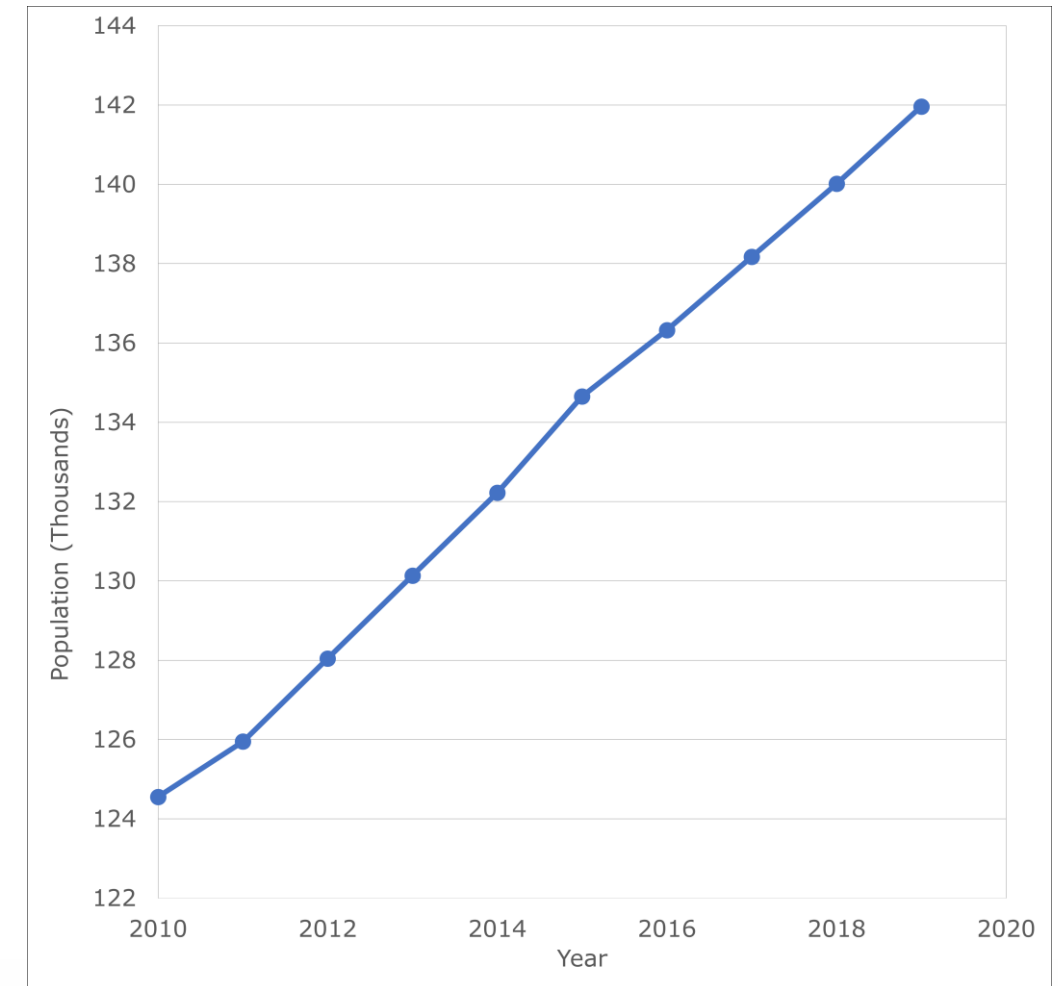
## Existing Conditions

Flows to the Guelph Wastewater Treatment Plant fluctuate from year to year. Over the past five years, the Guelph Wastewater Treatment Plant has treated an average of 55 million litres per day. This represents 85 percent of the Guelph Wastewater Treatment Plant's current rated capacity.

As the population in Guelph increases, so will wastewater volumes requiring treatment. To predict future wastewater flows, it is important to determine the current wastewater generation rate. Ten years' of data were analyzed to determine per capita flow rate.

From 2010 to 2019, the average per capita flow rate was 390 litres per capita per day.

City of Guelph Population from 2010 to 2019







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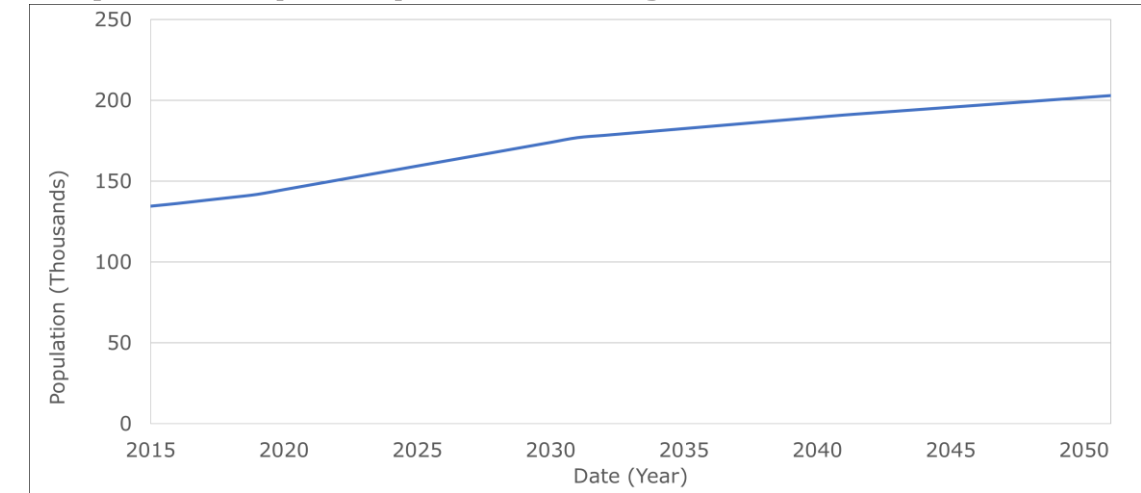
## Future Conditions

Ontario's Growth Plan projects Guelph to have a population of 203,000 by the year 2051. Based on the per capita flow rate of 390 litres per capita per day, it is expected that the Guelph Wastewater Treatment Plant will receive an average flow rate of 79.2 million litres per day.

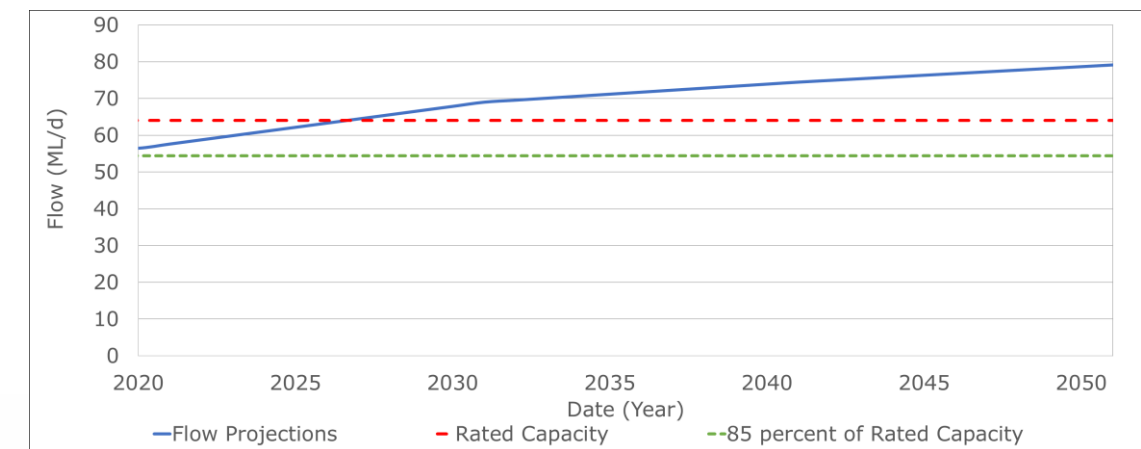
Based on the projected flow rate, the following processes will not have sufficient treatment capacity:

- Grit removal
- Secondary treatment
- Tertiary treatment
- Waste activated sludge thickening
- Digestion
- Cogeneration
- Biosolids management

### City of Guelph Population Projections to 2051



### Guelph WWTP Average Daily Flow Projections to 2051





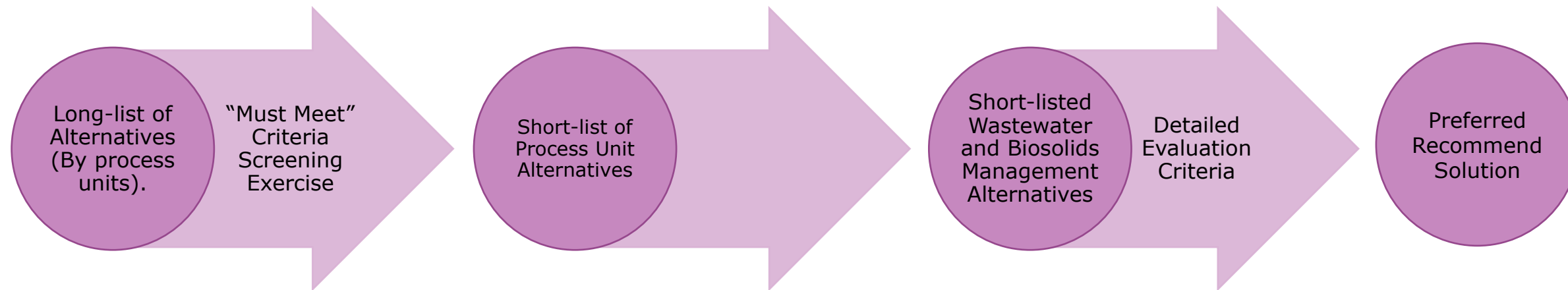
# Wastewater Treatment and Biosolids Management Master Plan



## Alternative Solutions and Evaluation Framework

The Municipal Engineers Association defines alternative solutions as feasible ways of solving an identified problem (deficiency) or addressing an opportunity, from which a preferred solution is selected (Municipal Class Environmental Assessment, 2015).

A long-list of alternative solutions will be developed for each deficiency and opportunity. To select the preferred solutions, the long-list of alternative solutions will be evaluated against a set of “must meet” criteria that are aligned with the City’s goals and values. Alternatives that meet all criteria will be shortlisted for a further, detailed evaluation.





# Wastewater Treatment and Biosolids Management Master Plan



## Alternative Solutions and Evaluation Framework Criteria

### “Must-meet” criteria

These criteria represent broad project objectives. Technologies and strategies that do not meet all identified “must-meet” criteria are removed from further consideration.

#### **Performance**

- Ability to reliably meet regulated performance objectives and criteria for wastewater effluent and biosolids

#### **Proven technology**

- Full-scale experience in North America and history of application in municipal wastewater

#### **Reliance/reliability**

- Vendor or market dependency of technology, consumables and ability to manage final products





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## Alternative Solutions and Evaluation Framework Criteria Continued

### Detailed evaluation criteria categories and examples

#### Technical environment

- Meets effluent objectives
- Constructability

#### Natural environment

- Water quality
- Natural heritage system

#### Social and cultural environment

- Archaeology
- Cultural heritage resources

#### Economic environment

- Capital cost
- Operation and maintenance costs

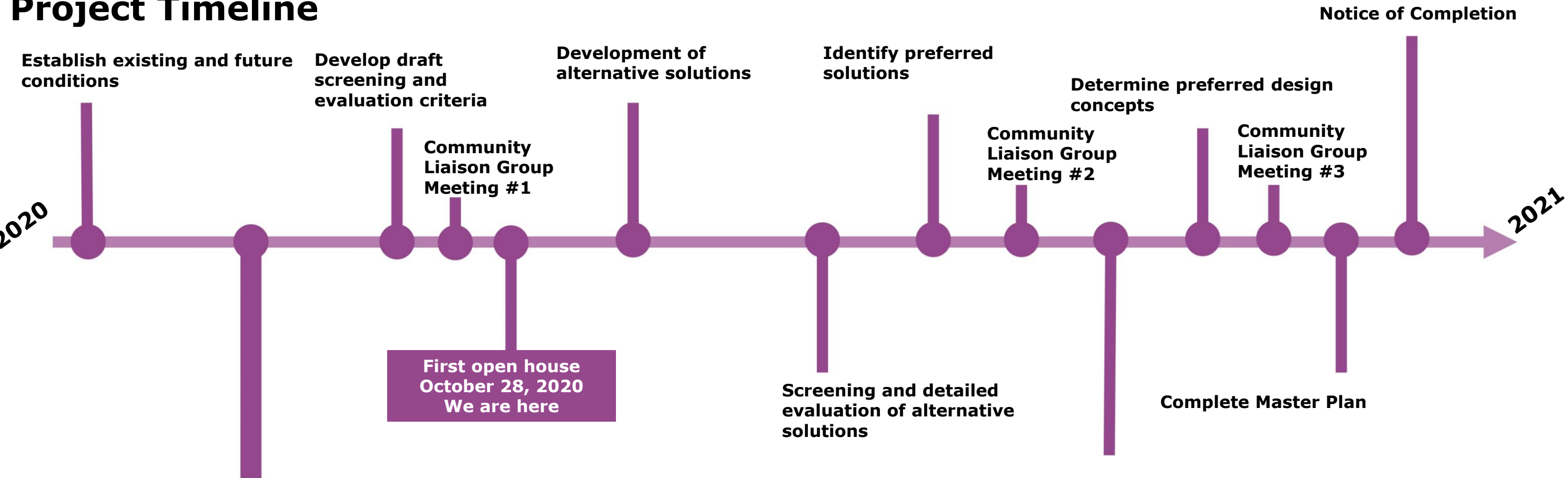




# Wastewater Treatment and Biosolids Management Master Plan



## Project Timeline



**Notice of Commencement**  
July 22, 2020





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## Next Steps

Thank you for your interest in the City's Wastewater Treatment and Biosolids Management Master Plan.

**Your feedback is an important part of the Master Plan process.**

- Register, join the conversation and share your thoughts on the Have Your Say website at [www.haveyoursay.guelph.ca](http://www.haveyoursay.guelph.ca)
- Project information will continue to be updated on the Project website at [www.guelph.ca/wastewater](http://www.guelph.ca/wastewater)
- Join the project mailing list to receive project updates. Please provide your contact information (name and email) to the contacts below.
- Follow the conversation on Twitter at [www.twitter.com/cityofguelph](http://www.twitter.com/cityofguelph) and Facebook at [www.facebook.com/cityofguelph](http://www.facebook.com/cityofguelph)





# Wastewater Treatment and Biosolids Management Master Plan



## Project Contacts

**Please contact the project team with any additional comments or questions that you may have:**

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