

Maintaining a Safe and Sustainable Supply to 2038

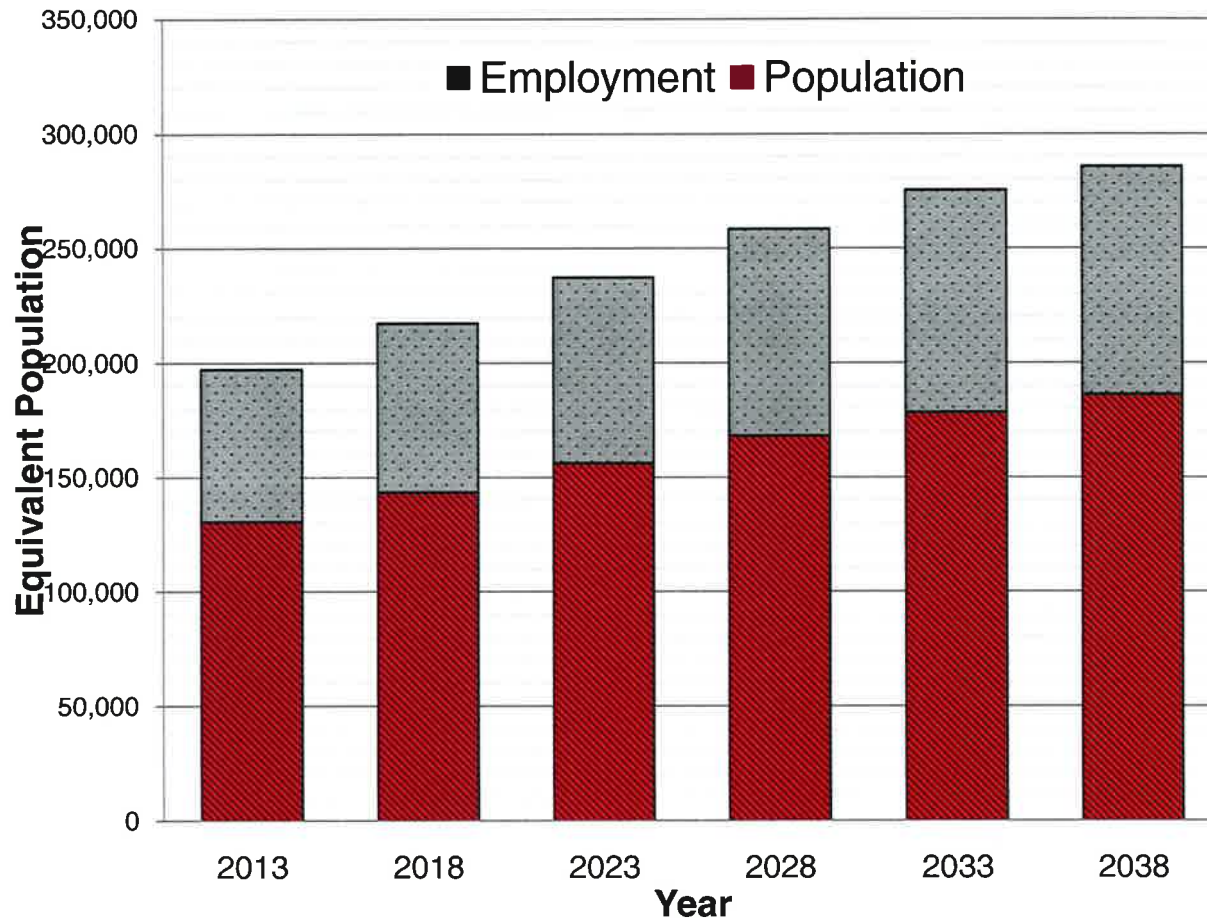
WORK UNDERWAY



Population and Water Supply Demand Forecasts

Develop population projections – residential and ICI

Population Projection (2013-2038):



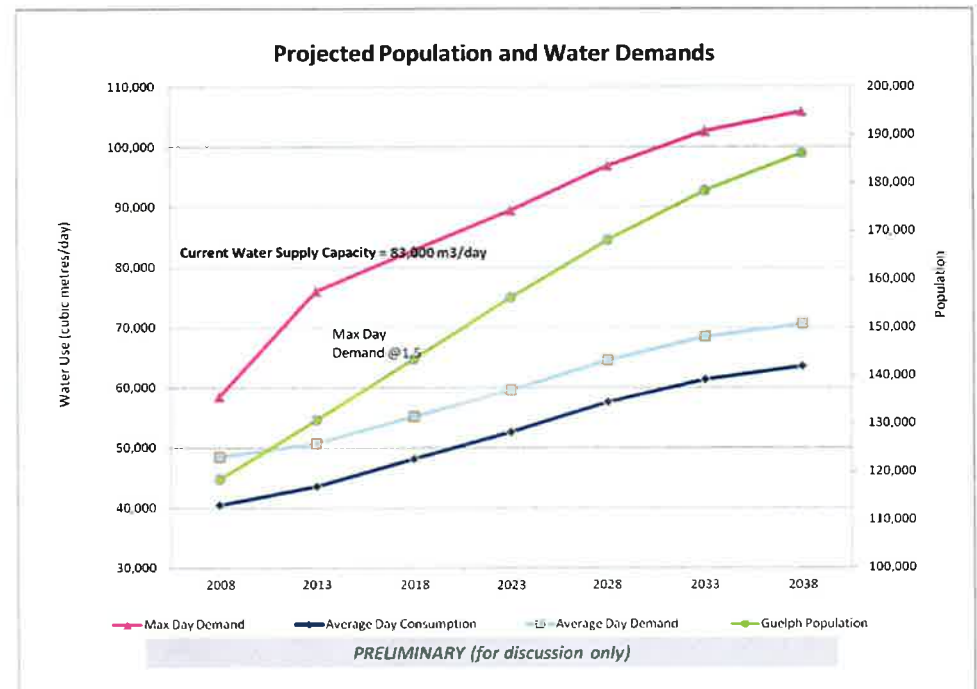
Source:

- 2013 to 2031
Source :
Watson &
Associates
(2013)
- 2032 to 2038
Source:
Proposed
Amendment 2
to the Growth
Plan for the
Greater
Golden
Horseshoe,
2006, 2012

Population and Water Supply Demand Forecasts

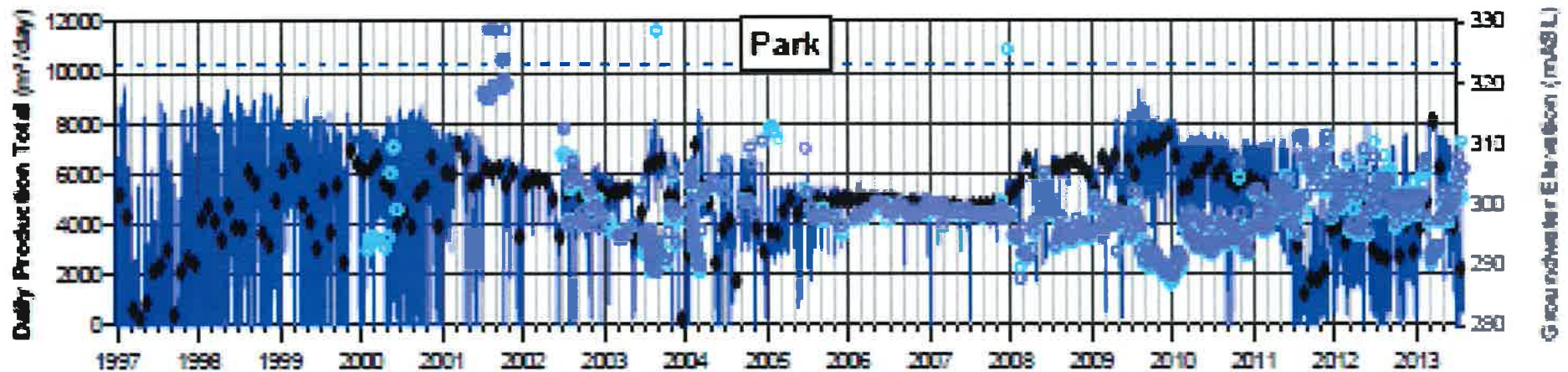
Develop water demand projections – Proposed Methodology

- Review water consumption (billings) and production (pumping) data since 2006
 - By sector: Residential + Employment + Non-Revenue Water
- Quantify reduction attributed to City's conservation initiatives since 2006
- Develop a new conservative baseline for each sector
- Develop projected demand
- Determine design Maximum Day Factor
- Comparison to existing capacity



Existing Water Supply Capacity Assessment

- Existing Well Capacity Assessment
 - Review historical operational data for assessment of well performance
 - Waterworks Operations Workshop to identify constraints
 - Determine maximum capacity for each supply source



- Review Range of System Capacity
 - Predictive / modeling assessment to review scenarios: loss of supply well, drought and short term high demand.
- Comparison of Capacity Assessment with Demand Forecast

Developing Water Supply Alternatives

Scope of Work

Demand Management / Conservation Programs	<ul style="list-style-type: none">• Maintain commitment to these initiatives• Determine range of realistic goals, and cost to implement,• Develop means of measurement to evaluate
Groundwater Sources In & Outside of City	<ul style="list-style-type: none">• Restore lost capacity through optimization of existing well supplies (i.e. infrastructure improvements)• Restore existing wells with treatment• Identify new potential water supply areas
Surface Water Sources Local	<ul style="list-style-type: none">• Establish feasibility / risks of surface water alternatives including ASR• Assessment areas include:<ul style="list-style-type: none">• Eramosa River• Guelph Lake
Do Nothing	<ul style="list-style-type: none">• Undertake no improvements or changes• Significant impact on the growth potential for the City would be expected with this alternative

Note: A regional water system – like a Great Lakes pipeline – will **NOT** be considered during this Update.

Water Supply Alternatives

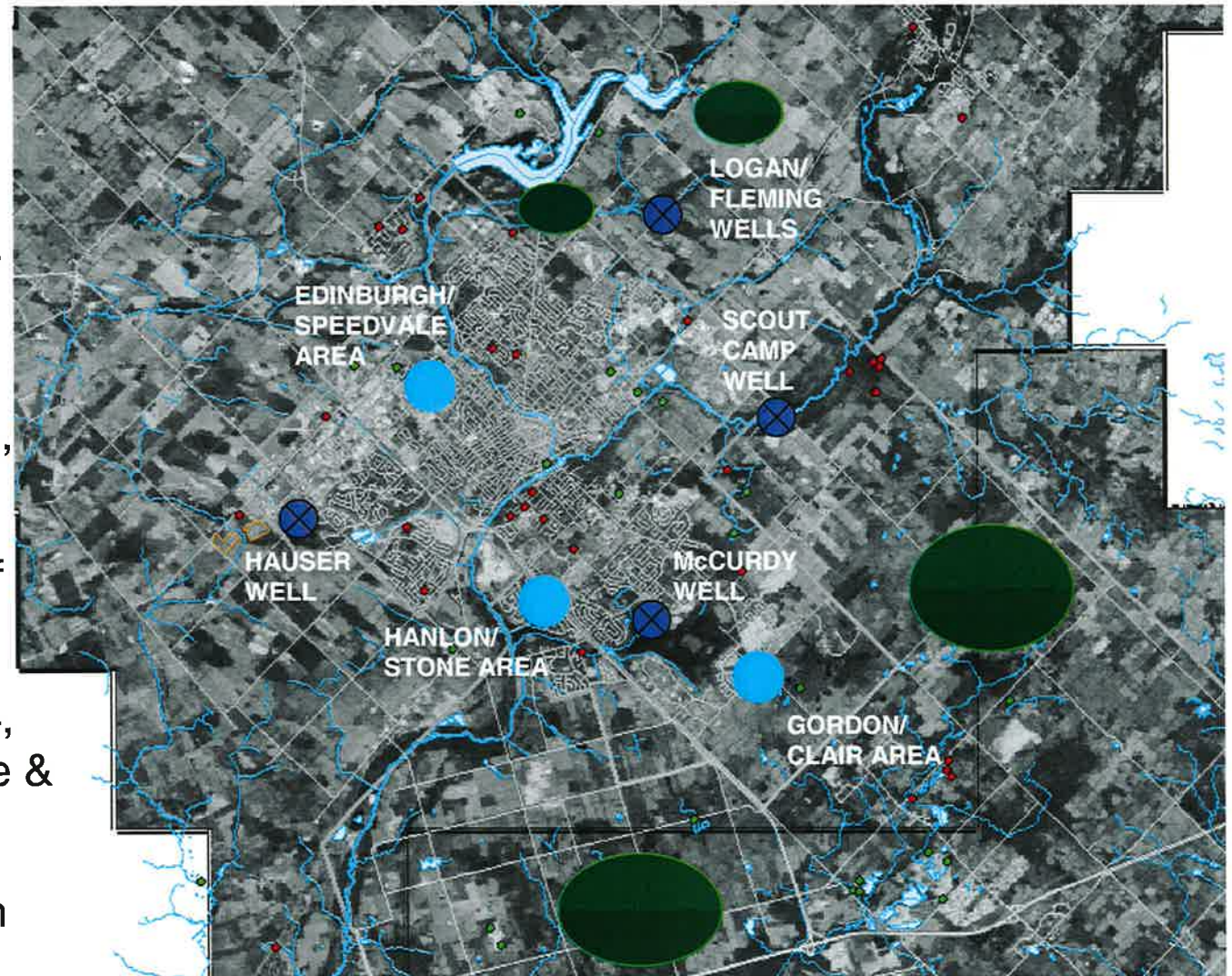
New Groundwater Supplies (2007)

Inside City:

- Hanlon/Stone
- Gordon/Clair
- Edinburgh/Speedvale

Outside City:

- County Roads 34&31, SE of Arkell
- County Road 35, S of City, N of Hwy 401
- County Roads 29&44, between Guelph Lake & Rockwood
- Eramosa and Watson Roads

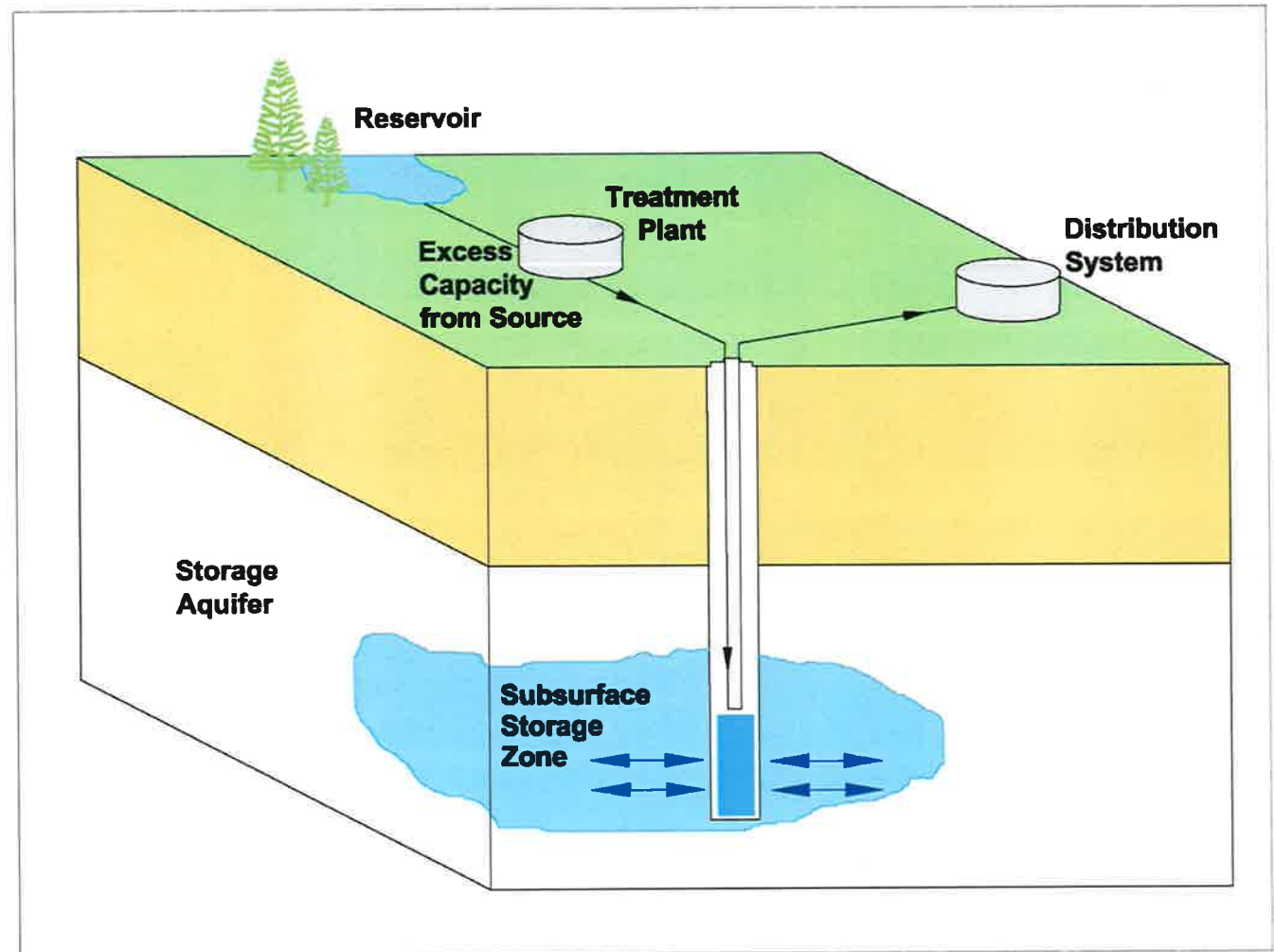


Water Supply Alternatives

Aquifer Storage and Recovery (ASR) - re-injection of potable water back into an aquifer for later recovery and use

GRCA – to update assessment of quantity of surface water available through the year in Guelph Lake and Eramosa River

- Base level water taking
- Additional volumes and duration



We'd Like Your Input...



Developing Water Supply Solutions

- Do you have concerns regarding any of the alternatives presented? Should any of these not be considered through the Water Supply Master Plan update?
- Are there other water supply alternatives that should be considered by the project team?
- Do you have a preferred approach for expanding our water supply capacity? If so, what and why?

Water Conservation

- Should there be bylaw changes to restrict or prohibit new groundwater use in the City; to protect water supply sources?

Developing Groundwater Sources

- Recognizing that new water supply sources will have an environmental impact of some extent, what level of potential environmental impact related to municipal water supply is acceptable?
- Should water supply sources inside the City be prioritized over those outside City boundaries?
- Would you support obtaining water from sources that required treatment to remove contaminants (i.e., natural or man-made)?