

Region of Waterloo
Engineering and Environmental Services
Water and Wastewater Services

To: Regional Council
Meeting Date: March 20, 2024
Report Title: Proposed Bill 162 (Get it Done Act) and Drinking Water Supply Implications for Waterloo Region

1. Recommendation

For information.

2. Purpose / Issue:

This report will provide an overview of Bill 162 and the implications of this Bill on the Region's drinking water supply. Groundwater from the Waterloo Moraine is the primary source of drinking water for the Region and is critical for building housing and job creation initiatives. Development on the Waterloo Moraine will limit our ability to build more housing and economic opportunities in the future. There is also potential through the approval of lands to incent leapfrogged development that will make building housing infrastructure more expensive for residents.

3. Strategic Plan:

This report supports Homes for All and Climate Aligned Growth by protecting the Regions water supply for the Region's future growth.

4. Report Highlights:

- The Waterloo Moraine is the primary source for groundwater recharge in Waterloo Region. The moraine is protected in the Region Official Plan (ROP), Policy 7.B.23, with Regional Recharge Area designation which restricts development on the moraine. Protection of the moraine is essential for the quantity of water supply and the quality of the water.
- Ontario uses a multi-barrier approach to protecting drinking water safety which includes source protection. This is intended to keep the raw water as clean as possible to lower the risk that contaminants will get through or overwhelm the treatment system.
- At least 75% of Waterloo Region's drinking water is primarily drawn from groundwater through water supply wells. Groundwater wells in the Kitchener and

Waterloo area are almost exclusively drawn from aquifers of the Waterloo Moraine.

- On February 20, 2024, in response to consultation undertaken by the Province in late 2023, the Province introduced Bill 162 (Get it Done Act, 2024). Bill 162 proposes modifications to the Regional Official Plan (ROP). Based on a preliminary review of the mapping associated with Bill 162, the modifications include adding an expansion to the Urban Area beyond the Countryside Line and onto the Regional Recharge Area in Southwest Kitchener.
- If development happens in the Regional Recharge area, there will be less water available to shallow and deep municipal supply aquifers of the Waterloo Moraine. This threatens the sustainability of drinking water supply to current and future residents in the cities of Cambridge, Kitchener and Waterloo, and the Townships of North Dumfries, Wellesley, Wilmot, and Woolwich.
- Reduced recharge will restrict the Region's ability to maintain and enhance capacity of the Region's water supplies. This could lead to a reduced amount of water supply to support future homes. Development could also degrade water quality at urban well fields due to road salt application, which could result in the loss of available urban water supplies, further restricting growth.
- Reduced and lost water supplies resulting from land use decisions will significantly impact the building of new homes as the quantity of water available to service new development may impact the ability of the area municipalities to meet housing targets in the Region as water supply capacity may be considerably reduced. In addition, it could accelerate the need for a pipeline connection to Lake Erie.

5. Background:

On February 20, 2024, the Province released Bill 162 (Get it Done Act, 2024). Bill 162 proposes to amend various statutes, including the Official Plan Adjustments Act, 2023 and is posted on the Environmental Registry of Ontario for comment until March 21, 2024. Bill 162 changes the legislatively approved official plans of some of the province's fastest-growing municipalities to address local needs while continuing to support the Province's goal of building at least 1.5 million new homes by 2031.

For the Region of Waterloo, Bill 162 proposes modifications to the Regional Official Plan which would expand the Urban and Township Urban Areas. Based on a preliminary review of the mapping released with Bill 162, the modifications would generally implement the Area Municipal Mayors requests submitted through the Province's consultant on Bill 150 (Planning Statue Law Amendment Act, 2023) and include adding land to Urban/Township Urban Areas to the full extent of the Countryside Line in

Woolwich, Cambridge and Kitchener, an employment conversion in Cambridge, expansions to the Township Urban Area boundaries in Wilmot and Wellesley and an expansion to the Urban Area beyond the Countryside Line and onto the Regional Recharge Area in Southwest Kitchener. See Figure 2.

The Waterloo Moraine

The Waterloo Moraine is located in almost the entirety of the Region of Waterloo (Figure 1) and is protected by the Regional Recharge Area designation in the ROP, as well as, the *Clean Water Act*. The moraine acts as a natural recharge for groundwater, which the Region uses for drinking water. The moraine is a natural filter with sandy soils, which support a quick recharge of aquifers. Since the moraine is not completely developed it also provides good quality water to wells in other areas of the moraine which have seen increasing salt levels due to winter maintenance. Salt in wells is a public health concern and must be monitored carefully for the safety of residents. Protection of the Waterloo Moraine satisfies the first step in the multi-barrier protection of drinking water safety. Please see Figure 3 for an illustration of how the moraine works.

Drinking Water Implications

The supply wells for the Region of Waterloo are fed by large water supply aquifers that form part of the Waterloo Moraine. Groundwater wells in the Kitchener and Waterloo area are almost exclusively drawn from these aquifers. The greatest risk to the groundwater supply is the introduction of hard surfaces as part of development and salinization of water supply aquifers by increasing rates of winter maintenance salt use. The Province's proposed modifications to the ROP would result in an expansion of the Urban Area of approximately 64 hectares onto the Regional Recharge Area. Should these lands be developed for urban purposes this will reduce the amount of water which infiltrates into the ground. This will cause uncertainty that there is adequate water available to be drawn for the Region's drinking water, and will introduce more road salt into the moraine through winter maintenance activities.

Waterloo Moraine Protection through the Regional Official Plan (ROP)

The ROP provides enhanced protection for the Waterloo Moraine that goes above and beyond the protection offered by the *Clean Water Act* through the Regional Recharge Area policies and mapping. This protection is critical to sustain this unique, local drinking water supply source.

The Regional Recharge Area is an area where considerable deposits of sand and gravel allow for the infiltration of significant quantities of rainfall and snowmelt deep into

the ground. The Regional Recharge Area serves important functions:

- Replenishes large quantities of water to aquifers that feed municipal drinking water supplies,
- Groundwater discharge that sustains a wide range of aquatic habitats and ecosystems within the Greenlands Network, and
- Contributes a high percentage of baseflow to the Grand River, its tributary rivers and cold-water streams, which helps maintain the health of the Grand River and provide assimilative capacity for the Region's wastewater treatment plants.

Preserving the form and function of the Regional Recharge Area protects sensitive ecological features and watercourses, and ensures a sustainable drinking water supply to residents in the cities of Cambridge, Kitchener and Waterloo, and the Townships of North Dumfries, Wellesley, Wilmot, and Woolwich.

Potential Implications of Land Development on the Core of the Waterloo Moraine

In areas of greenfield development groundwater recharge will be reduced by 50 to 80% on newly developed lands, depending on the type of development proposed (i.e. residential vs. commercial/industrial).

An indirect consequence of the reduction in recharge is that groundwater levels are predicted to decline at the Mannheim Well Field, an important source of water to the Integrated Urban System (IUS). Future Urban Area expansions could reduce the Mannheim Well Field capacity by upwards of 10% of the available supply. If new development is allowed on the Regional Recharge Area, on the lands proposed through Bill 162, it will greatly reduce the water available to service growth. This loss of water equates to 500 to 1,800 fewer new homes that cannot be built, compared to equivalent land development in areas outside of the Regional Recharge Area. The Region could achieve higher community growth targets if equivalent land development occurs in areas outside of the Regional Recharge Area.

If a precedent is set, and development is permitted to proliferate across the entirety of the Regional Recharge Area within Kitchener's municipal boundaries, modelling shows that water losses would mean upwards of 10,000 fewer homes compared to equivalent land development in areas outside of the Regional Recharge Area.

Development of lands designated Regional Recharge Area will also cause potential reductions in baseflow (a portion of the river and/or stream flow which is not storm or snow run off) to sensitive ecological features in Waterloo Region. Groundwater baseflow is also important for assimilative capacity (the amount of treated wastewater which can enter a river/stream) at the Region's wastewater treatment facilities. A

number of the Region's communities situated on receiving waters have assimilative capacity constraints. It is anticipated that in order to provide servicing for the additional growth areas in some of these communities, more advanced treatment, beyond what is currently used anywhere in Canada, would be required, at a per capita cost far exceeding that of existing infrastructure.

If the Waterloo Moraine is developed, the need for an approximately \$2 billion pipe line from Lake Erie would be required to support growth. This pipe will take at least 20 years to build which makes the protection of the Waterloo Moraine even more important to support building homes.

Infrastructure Planning Implications

The modifications proposed to the ROP through Bill 162 are beyond the boundary expansions to accommodate growth considered by Regional Council in August 2022.

The population and employment forecasts contained in the ROP will need to be updated to reflect any new growth areas added through Bill 162. In addition, the lands proposed to be added to the Urban Area and Township Urban Area will need to be considered in Master Planning processes through which the availability, financial impact and timing of servicing will be determined.

Some of the new Urban and Township Urban Areas identified under Bill 162 may have significant challenges with respect to wastewater servicing and technical studies will need to be completed. Development on the lands will require more study to understand the costs of servicing required. If lands are developed far from existing infrastructure, this would result in higher costs and oversizing of infrastructure. It is anticipated that costs would be orders of magnitude higher to expand the treatment plants. The cost to operate these facilities and the GHG impact from this operation would also be anticipated to significantly increase.

Bill 162 allows for leap-frogging development which can negatively impact affordability. Leap-frogging occurs where a developer may be ready to build further out from existing infrastructure than a developer who is closer to existing infrastructure. Since needed infrastructure is determined based on the population, there is a possibility of higher construction costs as infrastructure is oversized to ensure there is enough capacity to service development where the infrastructure is built. Oversizing of infrastructure leads to 10% to 30% higher construction costs and higher operations costs. Construction costs will be increasingly debt financed for growth related project and these costs are borne by the ratepayers in the Region.

6. Communication and Engagement with Area Municipalities and the Public

Area Municipalities:

The Regional Recharge Area and associated policies were included in the 2009 ROP, which previously went through extensive consultation and received Council endorsement. The development of ROPA 6, which includes the continued protection of the Region's drinking water supply through the Regional Recharge Area designation located in the core of the Waterloo Moraine, included extensive consultation with area municipalities and was fully endorsed by Council on August 18, 2022.

It will continue to be important to work collaboratively with the Area Municipalities to consider the staging of development within the expansion areas to ensure that growth and infrastructure are occurring in an efficient manner, and maximize medium and long-term growth.

Public:

The public was extensively consulted during the development of ROPA 6. The public also can provide comments on Bill 162 through the ERO on the Provincial website.

7. Financial Implications:

The changes proposed under Bill 162 will require a large scale review of growth related infrastructure in terms of scope, need, timing, and cost, particularly for Water Supply, Wastewater Treatment and Roads infrastructure. A number of the Region's master and business plans will need to be updated to reflect required servicing for the new Urban and Township Urban Areas contemplated under Bill 162. Most of these plan updates are scheduled to occur in the 2024/2025 timeframe with updates to be reflected in 2026/2027 capital programs and future Development Charge (DC) Background Studies. Detailed financial impacts of each of these plans on the Region's ten year capital program will be provided when these plans are presented for Council approval.

8. Conclusion / Next Steps:

The protection of the Waterloo Moraine, through the ROP Regional Recharge Area designation, is critical to ensuring homes will be built in the Region of Waterloo. Expansions of the Urban Area onto areas designated Regional Recharge Area will impact the Region's water supply and water quality which is critical to supporting growth and the construction of new homes in Waterloo Region.

It is also expected that the approaches that will be required to service the new Urban and Township Urban Areas approved through Bill 162 will result in an increase in climate impacts and our carbon footprint.

The Region of Waterloo will prepare a response to the ERO for Bill 162, due on March 21.

9. Attachments:

Attachment A: Figures 1, 2 and 3

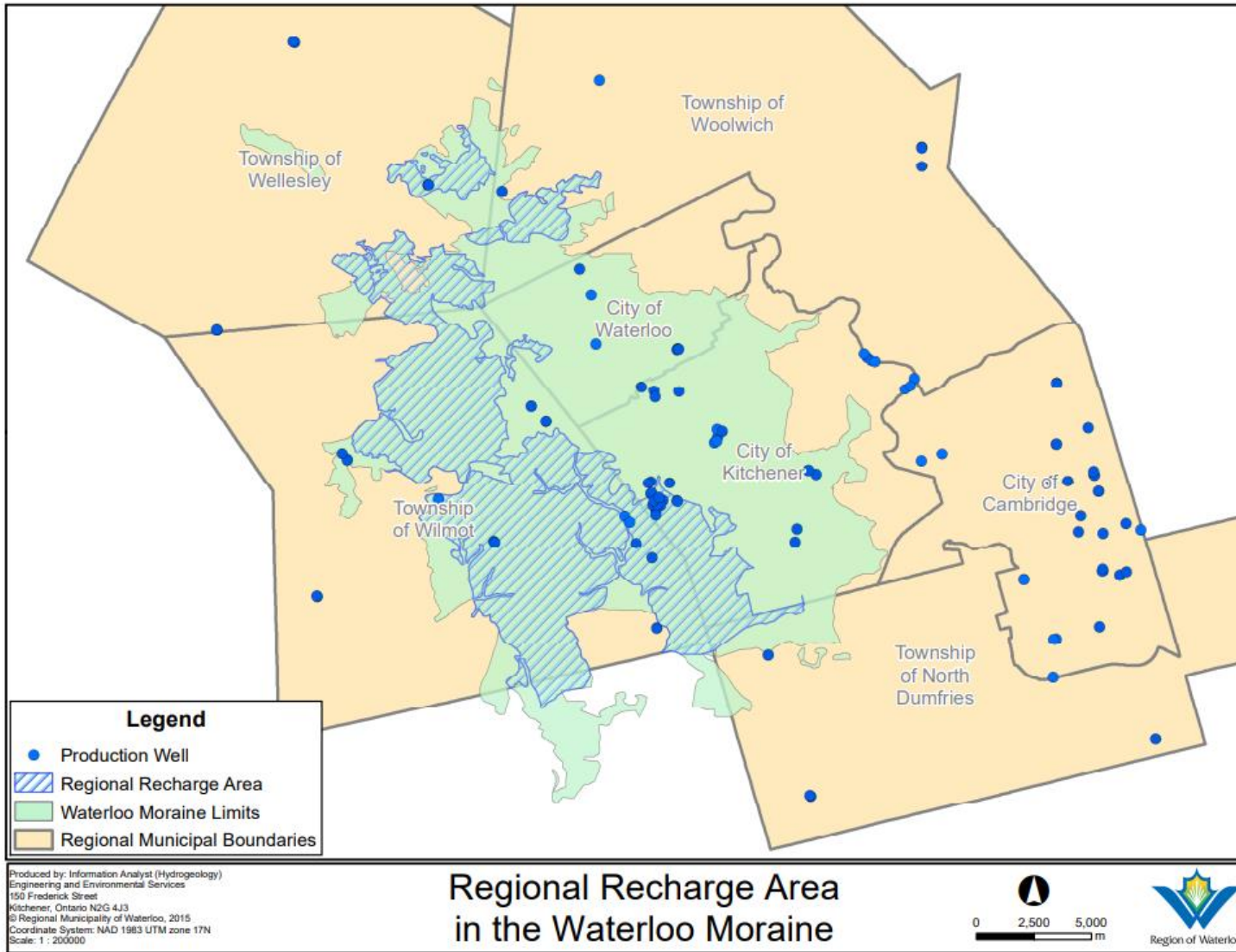
Prepared By: Geoff Moroz, Manager, Hydrogeology and Water Programs

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Approved By: Jennifer Rose, Commissioner, Engineering and Environmental Services

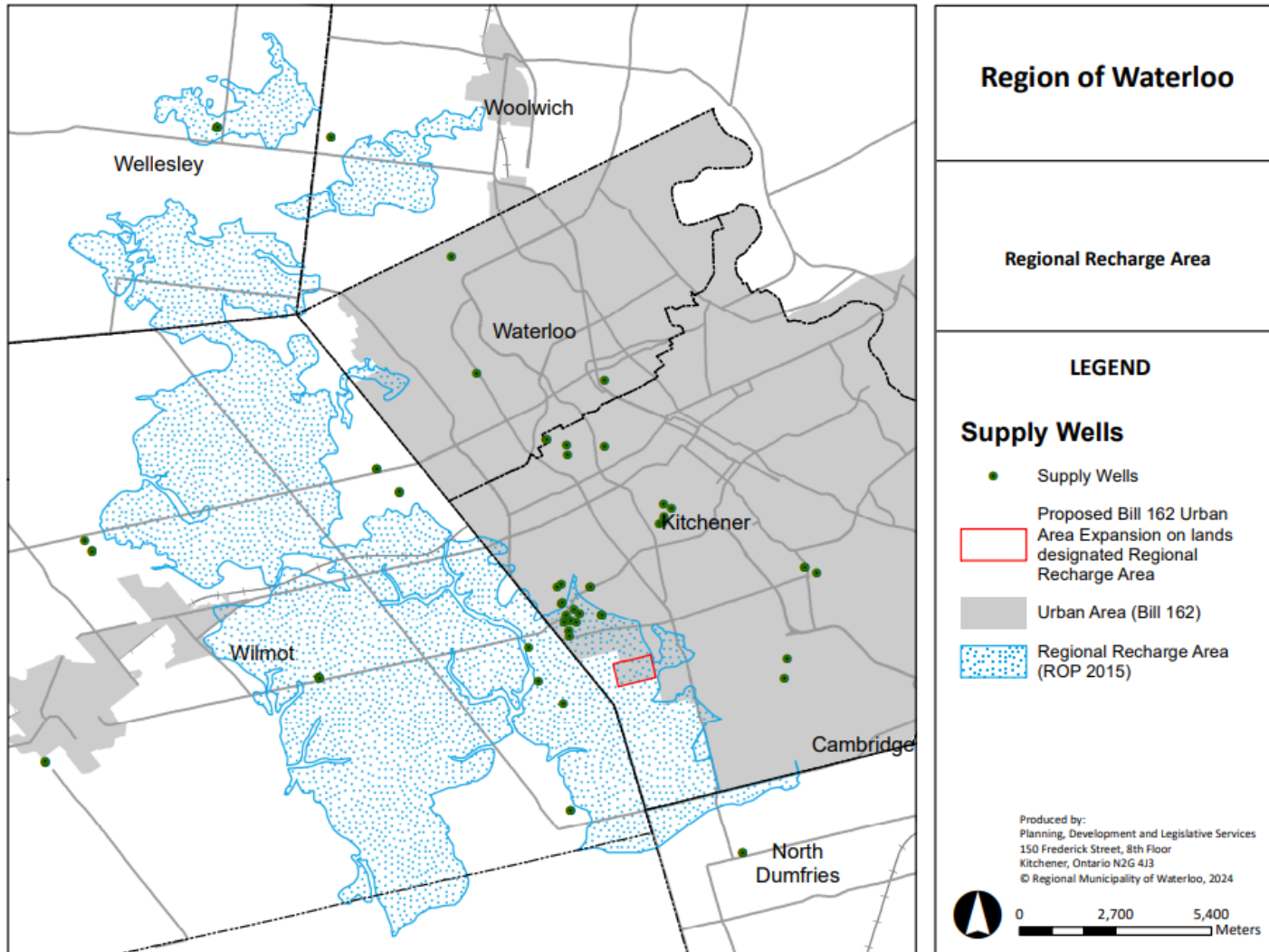
Rod Regier, Commissioner, Planning, Development and Legislative Services

Figure 1: Extent of the Waterloo Moraine and Regional Recharge Area



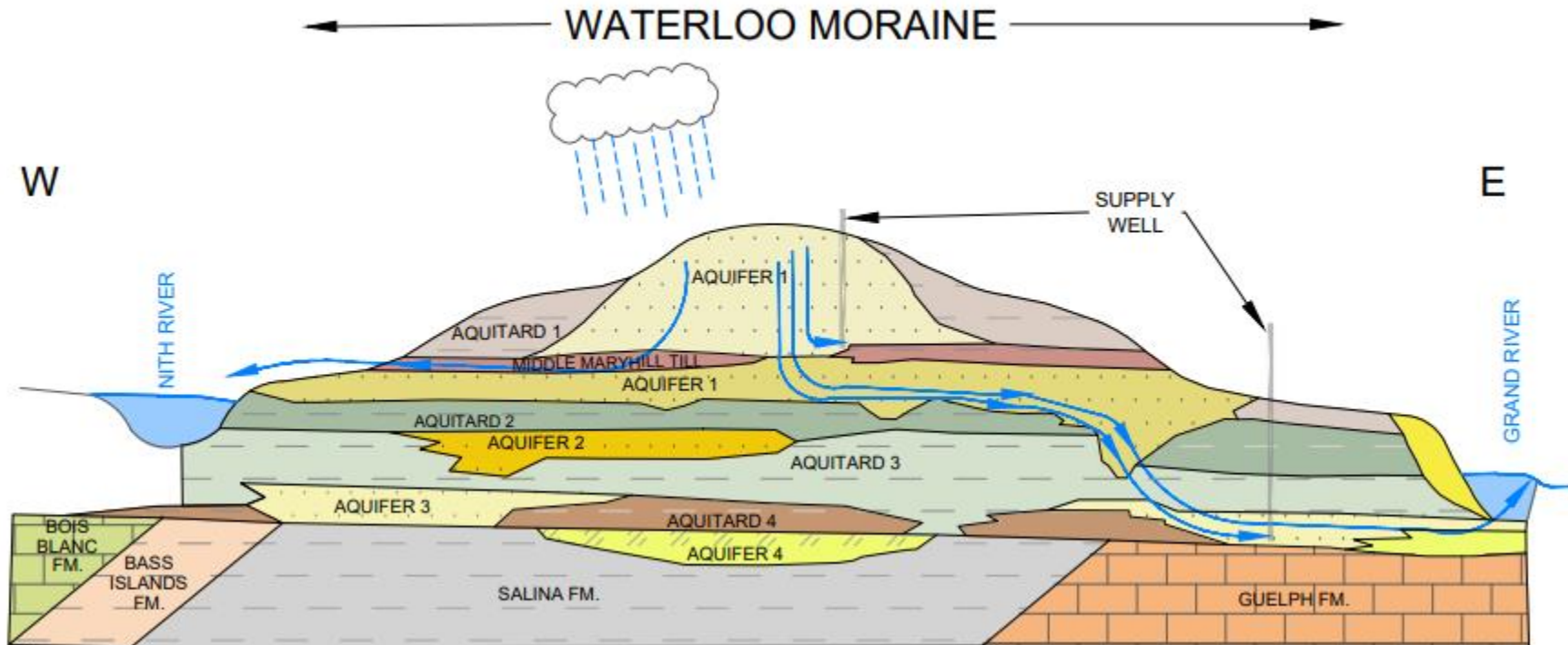
The image above shows blue dots where Production Wells are located within Regional boundaries. Wells are located throughout the Region, in every area municipality with a concentration along the City of Kitchener and Township of Wilmot border, and a heavier than average amount within the City of Cambridge boundary. The image also shows the Regional Recharge Area which is chiefly located in the Townships of Wilmot and Wellesley with some spilling into Kitchener west. Finally, the image shows the Waterloo Moraine Limits which extend east beyond the recharge area, covering a good portion of the cities of Waterloo and Kitchener.

Figure 2: Regional Recharge Area and Proposed Urban Area under Bill 162



The image above shows the urban area under Bill 162 and how it will impact the Region’s Recharge area. The largest impact is in the southwest part of Kitchener where the expanded urban area under Bill 162 is shown to overlap with the recharge area close to a cluster of supply wells that form the Mannheim Well Field. The image shows the lands designated Regional Recharge Area that are proposed to be included in the Bill 162 Urban Area.

Figure 3: Cross-Section of the Waterloo Moraine



The image above shows a cross section of the Waterloo Moraine bordered by the Nith and Grand Rivers. It shows how precipitation soaks into the ground, moves downward into shallow and deep aquifers, travels through the Waterloo Moraine, and is captured by municipal supply wells or by surface water features as groundwater baseflow. .