

Region of Waterloo
Engineering and Environmental Services
Water and Wastewater Infrastructure Management

To: Regional Council
Meeting Date: April 8, 2026
Report Title: Wilmot Centre Aquifer Assessment

1. Recommendation

For Information.

2. Purpose / Issue:

The Wilmot Centre Wells (K50, K51 and K52 installed in aquifer AFB2) have sufficient capacity to meet the forecasted growth needs of Baden and New Hamburg through to 2051, while still supporting the transfer of approximately 30 L/s of additional capacity to the Mannheim Service Area, where there is a current water capacity constraint. To do this the 1980 Policy needs to be rescinded. The rationale and recommendation to Council is provided in staff report EES-WIM-26-003, dated February 10, 2026 (Appendix A).

At the request of Council, this report provides additional information about the Wilmot Centre Well Field within the context of staff's recommendation to allow the transfer of surplus water to the Mannheim Service Area, while continuing to protect long-term water supply for growth in Wilmot Township.

3. Strategic Plan:

In response to Council's request for immediate actions to reduce the Mannheim Service Area Supply Capacity constraint, the optimization of local water supply resources supports the Region's Strategic Plan – Homes for All, by ensuring an adequate drinking water supply for future residents and businesses.

4. Report Highlights:

- The 1980 Policy applies to the combined pumping from Erb St, Mannheim West, and Wilmot Centre Wells. Despite increasing pumping from Wilmot Centre beginning in 2019, the Region has not violated the total allowable flows that can be taken from Wilmot Township under the 1980 Policy.
- The Wilmot Centre Wells have sufficient capacity to meet the forecasted growth

needs of Baden and New Hamburg through to 2051, while still supporting the transfer of approximately 30 L/s of additional capacity to the Mannheim Service Area, where there is a current water capacity constraint. This requires permanently rescinding the 1980 Policy on Water Taking - Wilmot Township to sustainably optimize the overall operation of the Erb St, Mannheim West, and Wilmot Centre Well Fields. The reallocation of 30 L/s will still mean that Wilmot can grow faster than the rest of the Region between now and 2051, with population increasing by approximately 11,500 or about 73% over the current population of 15,755 (2025).

- The 2011 Baden-New Hamburg Master Plan recommended staged increases to pumping at Wilmot Centre to provide long-term testing and to confirm sustainability of proposed water takings to support growth in the Baden-New Hamburg service area out to 2041. At the time the pump testing was initiated, a constraint in the Mannheim Service Area had not yet been identified and the intent of the testing was for the benefit of long-term planning for Baden and New Hamburg.
- Long-term operational testing is not unique to Wilmot Centre. When any new supply well comes online it takes several years to understand long-term environmental responses to pumping. This is, in effect, a long-term operational test which happens with every new supply well that comes online.
- MECP technical staff concurred with the conclusion in Burnside's 2023 Wilmot Centre Biennial Report, noting ***“stabilized water levels in monitoring wells indicate that the current pumping rates have not resulted in any adverse impacts to water levels in the AFB1/AFB2 aquifer.”***
- Any amount of pumping lowers groundwater levels in an aquifer. Lowering of groundwater levels does not mean that water taking is unsustainable. There is an acceptable amount of groundwater lowering that can occur in an aquifer while still maintaining sustainability of the aquifer systems and the natural environment.
- Given the 53-years of pumping at the Wilmot Centre Well Field and consistent range of water levels, long-term monitoring data supports the conclusion of a long-term sustainable pumping rate for the well field of at least 158 L/s, which is higher than what is currently being pumped from the Wilmot Centre Well Field.
- Natural variability in precipitation patterns can affect groundwater levels by approximately 1.0 to 1.5 m in AFB2, the municipal supply aquifer for the Wilmot Centre Well Field.
- Historical aquifer tests support that surface water features within the Wilmot Centre Well Field are not being impacted by pumping.

- The Schindlestedde South Wetland Complex (herein referred to as the Shingletown Wetland) appears to be located beyond the zone of influence of the Wilmot Centre Well Field with no responses to pumping evident in the water level data from Harden (2026).
- The Wilmot Centre Well Field pumps water from the AFB2 aquifer, which is the same aquifer as the Mannheim Well Fields. Water taking from AFB2 at the Wilmot Centre Well Field is sustainable, and has not caused the same impacts to aquifer levels as seen in Mannheim. Impacts from over-pumping at the Mannheim well fields are localized and isolated, and are not being observed in Wilmot Centre due to their geographical and hydrogeological separation.
- The 1980 Policy is not aligned with the Water Supply Strategy Update approach to reviewing new water supply opportunities throughout Waterloo Region, including from areas that are not within the geographical boundary of the IUS (refer to Council Report EES-WAS-24-008). If the Region is bound to individual well field limits set out by the 1980 Policy, the Region will need to increase its water takings in the already strained Mannheim well field areas just to meet existing water demands in the Mannheim Service Area. This will exacerbate the existing aquifer declines in this area, cause aquifer water levels to breach MECP-required trigger levels and increase the risk of private well interferences in the eastern portion of Wilmot Township (i.e. Mannheim and surrounding area).
- If the 1980 Policy is not rescinded, this will contradict the approach that has been established for the Water Supply Strategy Update, as presented in staff report EES-WAS-24-008.
- There are no alternative solutions to immediately provide 30 L/s of water to the Mannheim Service Area to support growth. If the Region can't permanently transfer an additional 30 L/s of water to the Mannheim Service Area, it will delay growth in Kitchener, Waterloo, parts of Cambridge, and in the Township of Woolwich.
- Alternative options to supply 30 L/s of new water to the Mannheim Service Area will require detailed hydrogeological technical investigations to find a new supply source, require the construction of a brand-new water treatment facility, and take a minimum of 10 years to complete.

5. Background:

The Wilmot Centre Well Field has supplied municipal water for more than 50 years and is one of the most extensively studied and monitored well fields in the Region of Waterloo. The following provides a brief overview of the key studies and milestones.

1980 Policy on Water Taking – Wilmot Township

Municipal and private water takings are governed and approved by the Province of Ontario through the Ontario Water Resources Act and Ontario Regulation 387/04 – Water Taking and Transfer. Municipal and private water wells are governed under (R.R.O. 1990, Regulation 903 – Wells).

The 1980 Policy on Water Taking - Wilmot Township is a Council resolution related to water takings from drinking water supply wells in Wilmot Township to supply the Tri-cities, which forms the majority of the Integrated Urban System (IUS). This Policy was adopted prior to the existence of the Ontario Water Resources Act, which was preceded by the less stringent Ontario Water Resources Commission Act, or the Water Taking and Transfer Regulation. The modern governing legislative framework provides enhanced Provincial protection and regulation of sustainable water taking in the Province of Ontario. Under this legislative framework the Province is the approval authority over prescribed water takings.

The transfer of water between the Wilmot Centre Well Field to the IUS is permitted under the Region's Municipal Drinking Water License and Municipal Drinking Water Works Permit, which are issued by the Province under the Safe Drinking Water Act. There are no flow restrictions associated with these Provincial approvals.

Water is supplied from three separate well fields to the IUS: Wilmot Centre, Mannheim West and Erb Street. The limits are based on an annual volume determined using 1978 volumes from these well fields, as outlined in Table 1. The 1980 Policy allows the Region to take up to 434.6 L/s cumulatively from the Township of Wilmot per year to send to the IUS. Since 2019, the Region has taken less water and been consistently below this total by 60 to 70 L/s on average.

Table 1: Comparison of Flows from Wilmot Centre to Mannheim Service Area (2020 to 2025)

Year	Total Flow Sent to Mannheim Service Area from Wilmot Township (L/s)				
	Erb Street	Mannheim West	Wilmot Centre	Total Actual Takings	Total <u>Unused</u> Flows from Wilmot Township
1980	128.0	219.3	87.3	434.6	-
2019	106.9	120.7	83.3	310.9	125.7
2020	117.1	136.9	110.6	364.6	72.0
2021	113.2	146.5	112.6	372.3	64.3
2022	110.0	136.5	113.4	359.9	76.7
2023	106.8	149.7	112.6	369.1	67.5

2024	140.3	116.1	100.7	357.1	79.5
2025	131.4	115.2	112.8	359.4	77.2

The Region has not exceeded the total allowable flows from Wilmot Township since pumping increased at Wilmot Centre in 2019. This reflects operational adjustments made based on improved understanding of the Region’s aquifer systems through collection of long-term datasets. Under the 1980 Policy, the Region could take an additional 60 to 70 L/s of water from Wilmot Township than what is currently being pumped.

Since 1980 there have been significant advances in groundwater science, technology, and monitoring that protects the current and future water supply needs of Wilmot Township. The 1980 Policy creates challenges in managing municipal water takings by adding significant operating complexity and expense. The 1980 Policy prevents the Region from taking a flexible/adaptive approach to water supply. An adaptive management approach allows staff to make operational adjustments to changing aquifer conditions based on climate variability. Adaptive management also provides flexibility for staff to shift supply to accommodate critical infrastructure renewal work.

If the 1980 Policy remains in place with individual well field limitations, the Region will be forced to increase pumping from the Mannheim West Well Field, which is already strained from over-pumping for a prolonged period. This will likely exacerbate water level issues in the Mannheim area, and cause water levels to drop below Ministry of Environment, Conservation and Parks (MECP)-imposed trigger levels. This could be to the detriment of other residents in Wilmot Township, by creating a greater risk of impacting private well owners in Mannheim and surrounding rural and agricultural areas.

The maximum daily taking on the Wilmot Centre Well Field Permit to Take Water (PTTW) is 158 L/s. The Region is currently pumping approximately 130 to 135 L/s from the well field, which is 23 to 28 L/s below the PTTW maximum allowable daily taking.

2011 Baden-New Hamburg Master Plan Update (E-11-056)

In 2011, AECOM completed the Baden-New Hamburg Master Plan Update (herein referred to as the Master Plan). The Master Plan identified water infrastructure recommendations based on the planning horizon up to 2041:

- Increase water taking from the Shingletown Wells (K50 and K51) to meet the existing Permit to Take Water (PTTW) through proposed stepped production increase between 2011 and 2041, as per the Long-Term Wilmot Centre Monitoring Program (LTWCMP).

- Install an additional well immediately within the Wilmot Centre Well Field (new Well K52) and connect it to the existing system to provide water supply capacity redundancy.
- Operate the Shingletown Wells at a constant rate, with the New Hamburg Well NH3 (located on the west side of Walker Road, approximately 250 m north of Highway 7 & 8) being used to meet peak demands.

The Baden-New Hamburg Master Plan Update (AECOM, 2011) recommendation for increased water taking from the Shingletown Wells is dependant on the results of the Long-Term Wilmot Centre Monitoring Program (LTWCMP). The purpose of this testing and monitoring program is to confirm that the Wilmot Centre Well Field can sustainably supply enough water to support growth out to 2041 for the Baden-New Hamburg service area. With the LTWCMP, the Region will be able to confirm the sustainable water taking from the Wilmot wellfield. The Notice of Completion of the Master Plan was provided to Council in staff report E-11-056 and received Council endorsement on June 21, 2011 (Appendix B).

The Master Plan recommended staged increases to pumping at Wilmot Centre to provide long-term testing and confirm sustainability of proposed water takings to support growth in the Baden-New Hamburg service area out to 2041. Prior to implementing a long-term testing program, the Region initiated a Short-Term Operational Testing Program to provide insight into long-term aquifer conditions with increased pumping.

2018 Short-Term Operational Testing Program (Stantec, 2020)

Although short-term testing and groundwater flow modelling are important tools to predict future aquifer conditions, long-term pumping tests and monitoring provides real-world responses to pumping in the natural environment. Long-term testing (i.e. years) allows technical experts to determine aquifer sustainability and trends related to both pumping and natural variations in climate conditions (including periods of drought).

Following the recommendations of the Baden-New Hamburg Master Plan, the Region completed a short-term Operational Testing Program (Stantec, 2020) at pumping rates up to 158 L/s. This testing was completed to provide preliminary evidence that enough water supply is available from the Wilmot Centre Well Field to meet the growth targets of Baden-New Hamburg out to 2041; this testing was not initiated for the purposes of benefitting the IUS.

To execute this short-term test, excess supply (above and beyond the demands of Baden-New Hamburg) was diverted to the IUS. This was the best way to manage excess water and was communicated to the Wilmot Centre Public Liaison Committee in a presentation in 2017. Alternatively, the Region could have attempted to discharge this

water to a ditch along Bleams Road; however, there would have been a high degree of risk that pumping discharges could have caused erosion to the ditch, downstream stormwater infrastructure, and could have caused erosional damage to the natural environment (i.e. Hunsberger Creek, Baden Creek). Without discharging this water to the IUS, the Region would not have been able to complete this short-term test without the risk of causing damage to stormwater features and/or the natural environment. This could have also presented flooding risks during precipitation events.

Letters were mailed to residents in May 2018 advising of the upcoming Short-Term Operational Testing Program. The letter included contact information if any well interferences were observed during this testing program. The Region did not receive any complaints of well interference from nearby private well owners. Results from the 2018 Operational Testing Program indicated that the permitted rate for the Wilmot Centre Well Field is sustainable without impacting groundwater discharge to Silver Springs Creek or Hunsburger Creek and its tributaries. Results of the 2018 Operational Testing Program were provided to the Township's hydrogeological peer reviewer.

Based on the results of the 2018 Short-Term Operational Testing Program, it was concluded that a staged increase in pumping was no longer required.

2019 Long-Term Operational Testing Program

In 2019 a Long-Term Operational Testing Program was initiated to evaluate long-term responses in the natural environment over the course of several years at increased pumping rates. The 2018 Short-Term Operational Testing Program report advised that a staged increase in pumping was no longer necessary, and the Region could proceed to pumping right up to the PTTW maximum of 158 L/s. Despite this recommendation, staff chose to follow the precautionary principle by implementing a staged approach to a Long-Term Operational Testing Program. The first stage of pumping was selected at a rate of approximately 135 L/s, rather than the full 158 L/s allowed by the PTTW.

This long-term testing provides a robust dataset that will allow ongoing assessment of sustainability over the long-term, and allows for the capture and analysis of longer-term trends related to climatic factors and changes in groundwater recharge. This operational testing is not unique to Wilmot Centre. When any new supply well comes online it takes several years to understand long-term environmental responses to pumping, which is in effect a long-term operational test. Technical understanding of sustainable supply capacity informs adaptive operational changes within the entirety of the system, considering cumulative pumping impacts.

Along with assessing sustainable water supply capacity to meet future growth demands in Baden-New Hamburg, the Long-Term Operational Testing Program and transfer of water to the IUS has provided the co-benefit of giving Region staff surplus water supply

capacity to complete important asset renewal work, such as the Strange Street – William Street upgrades, Parkway reservoir upgrades, and emergency renewal work at the Greenbrook water treatment facility. Without these additional flows from Wilmot Centre, it would have been challenging, if not impossible to complete this critical asset renewal work and maintain a fit state of repair; the Safe Drinking Water Act states that every owner of a municipal drinking water system or a regulated non-municipal drinking water system shall ensure that, at all times in which it is in service, the drinking water system is maintained in a fit state of repair (Section 11(1)2.ii).

By operationalizing surplus water from the Wilmot Centre Well Field from the long-term operational testing program, the following benefits are being realized for the Township of Wilmot and Region as a whole:

- Allows pumping rates to be consistent at 135 L/s as part of the long-term pumping test, rather than fluctuating with demands from Baden-New Hamburg, which provides more robust data to confirm the sustainability of water takings.
- Provides practical and responsible use of rate-payer funds and natural resources by using this water for the benefit of the community, rather than sending excess water to waste and risking environmental damage.
- Provides the Region with long-term datasets to evaluate aquifer conditions and trends over time.
- Prevents damage to stormwater management infrastructure and downstream surface water features (i.e. creeks).
- Provides flexibility to Water Operations & Maintenance staff to allow other water supply facilities to be taken offline for critical asset renewal work to maintain a fit state of repair as required by the Safe Drinking Water Act.

Long-term testing at the Wilmot Centre Well Field would not be possible without sending excess water, above and beyond the Baden-New Hamburg water demands, to the IUS.

Baden – New Hamburg Nitrate Assessment (Matrix Solutions, 2022)

The Region retained Matrix Solutions Inc. to update the understanding of the hydrogeologic system and to conduct nitrate modelling to predict the potential for nitrate impacts at the Region's Baden and Wilmot Centre municipal supply wells. The Ontario Drinking Water Quality Standards Maximum Acceptable Concentration for nitrate is 10 mg/L.

Nitrate concentration at the Wilmot Centre Well Field is predicted to remain below 6 mg/L in all simulated scenarios, even at the highest pumping rates up to the full permitted amount of 158 L/s.

The Region has encouraged the implementation of Best Management Practices with agricultural operations and landowners through the Rural Water Quality Program. This program was established and funded by the Region and is now implemented by the Grand River Conservation Authority. Since 2010, nitrate at K50 has decreased from approximately 6.6 mg/L to 2.2 mg/L, and nitrate at K51 has decreased from approximately 3.9 mg/L to 0.4 mg/L at K51. This highlights the Region's industry-leading technical expertise and management of distributed non-point sources of nitrate loading in a complex hydrogeological setting.

State of the Region's Water Supply (TES-WAS-21-22)

In August 2021 staff provided a report to notify Council of challenges facing our unique water supply system prior to commencement of the Water Supply Strategy Update (Appendix C).

The report highlighted the water demand trends up to that time period, and identified changes needed to provide a sustainable water supply to our growing community. After years of declining water demands due to the successful implementation of water efficiency measures, the report noted that overall community water consumption had begun to increase again as population continued to increase.

The report highlighted the criticality of protecting our existing water sources and searching for new water supplies in the future. The report also noted that alternate supplies, such as a pipeline from Lake Erie, may need to be considered. Long-term water supply opportunities are currently being evaluated through the Water Supply Strategy Update; however, local water supply options are needed to address the current supply capacity constraint in the Mannheim Service Area.

2023 Wilmot Centre Biennial Monitoring Report (RJ Burnside & Associates Limited)

The PTTW for the Wilmot Centre Well Field requires submission of a biennial report to the MECP, which documents supply well pumping volumes and water levels in specific monitoring wells. The most recent report summarizes data collected during the years 2022 and 2023. The 2025 Biennial Report is currently being prepared by the consultant Burnside. Based on the information contained in the 2023 report, Burnside offered the following conclusions:

- 2022 and 2023 pumping volumes were within the permitted range;
- There were no reported impacts on private wells in 2022 and 2023; and
- Stabilized water levels in monitoring wells indicate that current pumping rates have not resulted in any adverse impacts to water levels in the AFB1 / AFB2 aquifer.

This reporting confirmed that after more than four years of pumping at higher rates,

adverse impacts had not been observed in the aquifer. It is important to note that although the Wilmot Centre Well Field pumps water from the AFB2 aquifer, the same aquifer as the Mannheim well fields, the pumping from Wilmot Centre is sustainable and has not lowered aquifer water levels in the manner demonstrated in the Mannheim area. The well fields are separated due to their geographical and hydrogeological separation.

Pumping at Wilmot Centre is sustainable, whereas the cumulative pumping at the Mannheim Well Fields has been higher than the sustainable yield of the aquifer in that location.

Review of 2023 Wilmot Centre Biennial Report (MECP)

In 2026 the MECP provided a summary of their review of the Region's 2023 Biennial Report as required by our Permit to Take Water for the Wilmot Centre Well Field. The summary letter noted that the MECP technical staff concurred with the conclusion in the 2023 Biennial Report stating:

“stabilized water levels in monitoring wells indicate that the current pumping rates have not resulted in any adverse impacts [to] water levels in the AFB1/AFB2 aquifer.”

This technical review by MECP provides further technical confirmation that, as of the end of 2023, water taking at the Wilmot Centre Well Field was deemed not to have caused any impacts to water levels in AFB1/AFB2. The 2026 Biennial Report is currently being prepared by the Region's consultant, RJ Burnside, which will summarize monitoring results from 2024 and 2025.

Growing with Care – Water Supply (EES-WAS-24-008)

In October 2024 staff provided an update report on the Water Supply Strategy Update for the IUS (Appendix D). It noted that the Region was the fastest growing municipality in Ontario and changes to planning legislation (Bill 162) brought more lands into the Region's developable areas.

The Water Supply Strategy Update is considering all potential options to ensure the best overall approach is identified to meet the overall community needs as Waterloo Region grows. The Region has been optimizing supply from groundwater for decades. As a result, the majority of our high-quality, low-cost groundwater sources have already been utilized. This means the approach for the Water Supply Strategy Update must evolve from past practices for local supply sources. It was noted that the Water Supply Strategy Update would be reviewing new additional water supply opportunities throughout Waterloo Region, including from areas that are not within the geographical boundary of the IUS.

The report stated that new local supply options outside of the IUS service area, in the surrounding Townships, would be an important consideration in the Water Supply Strategy Update. The approach to include new local supply sources throughout Waterloo Region, including those in surrounding Township areas and those requiring advanced treatment, will influence the development of alternatives.

Once alternatives are developed, an evaluation will be completed to identify the preferred strategy. This work is ongoing.

Wilmot Centre Well Field Pumping and Water Level Assessment (SLR, 2026)

The Region retained SLR Consulting (Canada) Ltd. (SLR) to complete an assessment of long-term pumping and water level responses in the Wilmot Centre Well Field area. Long-term datasets, including publicly available climate data, and pumping and water level data provided from the Region were compiled and evaluated to complete the assessment. The effects of increased pumping and reduced recharge on water levels in the source aquifer (AFB2) were evaluated in detail by reviewing water levels for monitoring wells installed near the supply wells and background wells upgradient and downgradient of the well field. The report summarizes the data analysis and interpretation completed to assess long-term trends (1960s to 2025) in groundwater levels related to pumping at the Wilmot Centre Well Field and variations in climatic conditions and groundwater recharge. The report is provided in Appendix E.

The total decline in the AFB2 aquifer due to natural precipitation patterns was estimated between 1 and 1.5 m. Based on this observed range, the total water level decline in the aquifer due to pumping was estimated to be between 2 and 2.5 m at the supply wells since the inception of the Wilmot Centre Well Field. These water level declines dissipate with increasing distance from supply wells, as demonstrated in Appendix B.

Water level triggers were assigned based on monitoring conducted from 1998 to present and have been adjusted over time. The report states that these trigger levels were arbitrarily selected and may not be representative of historical conditions near the well field. Although trigger levels have been crossed in recent years, a review of the long-term hydrographs indicated that the observed water levels over the last six years are consistent with historical observations. Crossing the trigger levels at Wilmot Centre does not mean that adverse impacts are anticipated at nearby private wells in the natural environment. This is a fundamental difference from trigger levels established under the Mannheim Well Field PTTW.

Historical aquifer tests support that surface water features within the Wilmot Centre Well Field are not being impacted by pumping. The Shingletown Wetland appears to be located beyond the zone of influence of the Wilmot Centre Well Field with no responses to pumping evident in the water level data from the Harden (2026) report. Water level

responses and surface water features, including the Shingletown Wetland, are interpreted to be affected more by longer term periods of below average precipitation and recharge than by changes in pumping from the well field.

Given the 53-years of pumping at the Wilmot Centre Well Field and relatively consistent range of water levels, long-term monitoring data supports the conclusion of a long-term sustainable pumping rate for the well field of at least 158 L/s, which is higher than what is currently being pumped from the Wilmot Centre Well Field.

Peer Review of SLR (2026) Report – Dr. David Rudolph

To provide an additional level of scrutiny, transparency and confidence to the technical information being prepared and presented, Dr. David Rudolph (Professor of Hydrogeology at the University of Waterloo) completed a peer review of the technical report submitted by SLR Consulting. The peer review summarized that the long-term combined data sets of groundwater levels, climatic parameters and pumping history provide clear evidence of:

- There is extensive temporal and spatial monitoring of the aquifer system both close to and relatively far from the well field. This supports the interpretation of the response of the aquifer system to pumping and climate variability, something that is not always available.
- The monitoring wells located away from the influence of pumping clearly indicate the influence of drier climatic conditions on groundwater levels within the deeper parts of the aquifer system.
- Extended pumping tests illustrate that many of the sensitive surface water features within the pumping area of influence of the Wilmot Centre Well Field are not impacted by pumping and are isolated hydraulically by a near surface aquitard.
- The long-term combined data sets of groundwater levels, climatic parameters and pumping history provide clear evidence of:
 - Lowering of shallow and deep groundwater levels in response to drier conditions during several dry periods over an extended time period, similar to 2020 to 2023.
 - Groundwater levels in AFB2 have been lower in the past than they are now, likely due to the impact of a long dry period.
 - The Wilmot Centre Well Field has been pumping for over 50 years and is demonstrated to be a reliable water supply source.
 - Groundwater levels within the main aquifer unit AFB2 have fluctuated on both short- and long-term time frames as a combined result of changes in extraction rate from the Wilmot Centre Well Field and changes in climatic conditions.

- Local and regional drawdown data suggest the Wilmot Centre Well Field can produce water sustainably at the current PTTW max level (158 L/s).
- There may be additional capacity, as suggested in earlier studies.

This peer review provides further confirmation that the technical information is supported by rigorous data sets, has been subject to exhaustive review, and confirms that water taking in Wilmot Centre is evidence based and sustainable.

Well Interference Complaints

The Region did not receive any well interference complaints for the duration of the Long-Term Operational Testing Program between 2019 and January 2026 despite increased pumping rates for this period. Several well interference complaints have been submitted to the Region in 2026. The Region implements the Policy and Procedures for Responding to Groundwater Interference Complaints, as approved by Council on May 5th, 2015. Each complaint is being addressed through the Policy, and are at varying stages in the process.

The Region's Policy and Procedures for Responding to Groundwater Interference Complaints is found on the Region's [website](#) or residents can call the Service First Call Centre.

Long-Term Adaptive Management of Water Resources

It is important to understand that pumping water out of aquifers will lower groundwater levels. Even individual private wells will lower groundwater levels locally. Lower groundwater levels do not mean that water taking is unsustainable. There is an acceptable amount of groundwater lowering that can occur in an aquifer while still maintaining sustainability of the aquifers and the natural environment. The sustainable capacity of each supply source in the Region is different.

Even with the removal of the 1980 Policy, the Region is bound by Provincial legislation; the *Ontario Water Resources Act*. This requires water taking in Ontario to be sustainable. In Wilmot Centre the Region deploys a rigorous, high-density, and complex environmental monitoring program to monitor and evaluate the sustainability of municipal water takings. The Region employs the precautionary principle for its water takings with the general approach outlined below:

- 1) Explore
 - a. Investigate new water supply opportunities
 - b. Baseline environmental monitoring
- 2) Plan and Test
 - a. Short-term testing and environmental monitoring
 - b. Aquifer sustainable yield analysis and interpolation

- c. Predictive groundwater flow modelling and cumulative impact analysis
- d. Identify and address monitoring data gaps
- e. Identify potential impacts, mitigate prior to operation
- 3) Operate
 - a. Begin operation
 - b. Long-term environmental monitoring and reporting
- 4) Policy and Procedures for Responding to Groundwater Interference Complaints
- 5) Protect
 - a. Policy development, technical review, enforcement
 - b. Conservation and efficiency
- 6) Review and Re-Assess
 - a. Regular review and re-assessment with long-term datasets
 - b. Address new data gaps
- 7) Respond
 - a. Policy and Procedures for Responding to Groundwater Interference Complaints
 - b. Environmental mitigation strategies
 - c. Adaptive management within the entire water system

The Region is a pioneer and leader in source water protection in Canada. The Region optimizes use of its local water supply sources, and has developed an industry-leading multi-barrier approach to protecting local sources of drinking water including, but not limited to:

- 1) Development of land use-based source water protection policies in all Area Municipal Official Plans under the *Planning Act*, including the creation of the Regional Recharge Area.
- 2) Collaborative working relationships with Area Municipal Planning staff to implement Official Plan source water protection policies, requiring detailed technical study requirements, and completing technical reviews.
- 3) Creating, updating and implementing the Grand River Source Protection Plan to manage threats under the *Clean Water Act*.
- 4) Regular updates to the Region's 3-D numerical groundwater flow models to predict aquifer conditions under different scenarios.
- 5) Implementing extensive monitoring programs across the Region, with over 700 monitoring wells across the Region.
- 6) A pioneer in water efficiency and conservation, with one of the most stringent outdoor water use conservation by-laws in North America, to ensure efficient use of our finite water resources.
- 7) Development of programs to protect water quality of our supply sources, including the Rural Water Quality Program and Smart About Salt Winter Management Program.

6. Communication and Engagement with Area Municipalities and the Public

Area Municipalities:

As part of the Water Supply Strategy Update, a Planning and Technical Advisory Committee (PTAC) was formed. Representatives from all area municipalities are included on the PTAC, and two meetings have been held to date. Information shared with PTAC members regarding the Water Supply Strategy Update included the approach for new water supply opportunities. This approach included looking for new water supply opportunities throughout Waterloo Region, including areas that are not currently in the Integrated Urban System.

Public:

Council report EES-WAS-24-008 made available to the public on the Region’s website outlined the approach for new water supply in the Water Supply Strategy Update, which considers opportunities for new water supply throughout Waterloo Region, including areas that are not currently in the Integrated Urban System.

Council report EES-WIM-26-003 was made available to the public on the Region’s website as part of the Council agenda package for the Sustainable Infrastructure and Development Committee meeting held on February 10th, 2026.

Providing a safe, sustainable water supply to the community is the Region of Waterloo’s top priority. More information on the Water Supply Strategy Update is available on the Region’s webpage (<https://www.regionofwaterloo.ca/en/living-here/water-supply-strategy.aspx>) and through EngageWR (<https://www.engagewr.ca/watersupply>). The Region has also established a webpage dedicated to Water Capacity ([regionofwaterloo.ca/watercapacity](https://www.regionofwaterloo.ca/watercapacity)).

Financial Implications:

	Current Year	Future Year(s)
Budget Impact?	No new impact	Annualized into budget
Capital Plan Impact?	No new impact	No new impact

7. Conclusion / Next Steps:

The Wilmot Centre Well Field has sufficient capacity to meet the forecasted growth needs of Baden and New Hamburg through to 2051, while still supporting the transfer of approximately 30 L/s of additional capacity to the Mannheim Service Area, where there

is a current water capacity constraint. This requires permanently rescinding the 1980 Policy on Water Taking - Wilmot Township.

Current pumping at the Wilmot Centre Well Field of approximately 135 L/s has been demonstrated to be sustainable. Higher rates of pumping, up to the PTTW maximum of 158 L/s have also been demonstrated to be sustainable.

Recent water level responses and surface water features, including the Shingletown Wetland, are affected more by longer term periods of below average precipitation and recharge than by changes in pumping from the well field.

In the unlikely event that private well interferences are caused by municipal pumping, the Region implements the Policy and Procedures for Responding to Groundwater Interference Complaints, as approved by Council on May 5th, 2015. This ensures that private well owners who are impacted by municipal pumping have continued access to reliable sources of water.

The ongoing Water Supply Strategy update is developing a plan to meet future water supply needs for the Integrated Urban System through to 2051, which may include sources from Wilmot Township. The updated Strategy is expected to confirm alignment between updated growth forecasts and system capacity. The targeted completion for the Water Supply Strategy Update is 2027 (schedule to be confirmed based on ongoing Mannheim Service Area response) and lay out the path forward to meet the 2051 growth target needs across Waterloo Region.

8. Attachments:

- Appendix A: Sustainable Use of Water Resources for Municipal Supply (1980 Policy on Water Taking - Wilmot Township) (EES-WIM-26-003)
- Appendix B: Drawdown in Production Aquifer AFB2 (Stantec, 2020) Baden-New Hamburg Water and Wastewater Master Plan Update – Notice of Completion (E-11-056)
- Appendix C: State of the Region’s Water Supply Update (TES-WAS-21-22)
- Appendix D: Growing with Care – Water Supply (EES-WAS-24-008)
- Appendix E: Wilmot Centre Well Field Pumping and Water Level Assessment (SLR, 2026)
- Appendix F: Wilmot Centre Aquifer Presentation

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