Region of Waterloo

2025

Water and Wastewater Monitoring Report

The Water and Wastewater Monitoring Report is produced annually by the Region of Waterloo. It documents actual water use and wastewater flows, water production and wastewater treatment capacities, development planning and remaining capacity.

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1.0 Introduction

1.1 Overview

The Region of Waterloo Engineering & Environmental Services Department produces the Water and Wastewater Monitoring Report annually with input from the Region's Planning, Development and Legislative Services Department. The purpose of this report is to:

1. Document actual water use and wastewater flows;

2. Provide a basis for water use and wastewater flow forecasts required in preparing the capital budgets and user rates;

3. Document water production and wastewater treatment capacities;

4. Update Regional Council with respect to remaining uncommitted capacities of water supply and wastewater treatment infrastructure;

5. Provide a basis for engineering staff to provide comment on the water and wastewater aspects of development applications.

The 2025 Water and Wastewater Monitoring Report (2025 WWWMR) will be one of a number of inputs used in assessing the needs for Regional Water and Wastewater Infrastructure, in preparing the annual Capital Budget and Capital Forecast, responses to development applications, and implementation of the capacity allocation program.

Water use and wastewater flows are forecast to the year 2036. Table 1 provides a summary of remaining capacities by service area. A summary of small water supply systems is provided in Table 2. A glossary is included in Appendix A. Wastewater and water data is tabulated in Appendices B and C respectively. Table 3 and Appendix D summarize the status of plans (commitments) for each water and wastewater service area. Sample calculations can be found in Appendix E.

1.2 Changes from the 2024 Water and Wastewater Monitoring Report

The changes from the 2024 WWWMR are as follows:

- Population and development data, including building permits issued, have been updated to December 31, 2024.

- Water consumption patterns and wastewater flows are a function of yearly weather fluctuations. In 2024, the annual precipitation was 763mm, well below the average of

870mm. 2024 was the warmest year in over 100 years in the history of weather records in the Region, which matches the global trend as 2024 was also the warmest year on record globally. Despite the lower-than-average precipitation, seasonal impacts at the wastewater treatment plants resulted in average flows, even at those plants that are susceptible to inflow from rain events. For water, the average day water consumption in the Integrated Urban System (IUS) was the highest observed in 15 years. The other smaller system shows consumption generally withing the 5-year average flows. The measured maximum day flow for the IUS was also the highest in the 15 years, but again the smaller systems saw average measured maximum day flows.

- The tables in Appendix D have been updated to reflect year-end 2024 commitments.

2.0 Methodology

2.1 Ministry of Environment Conservation and Parks (MECP) Guidelines

The current methodology for calculating uncommitted reserve capacity is outlined in the Ministry of Environment Conservation and Parks (MECP) publication “Calculating and Reporting Uncommitted Reserve Capacity at Sewage and Water Treatment Plants, March 1995”. The formula for calculating the Uncommitted Reserve Hydraulic Capacity is defined below:

$$Cu = Cr - \left(\frac{L \; x \; F \; x \; P}{H} \right)$$

Where:

Cu = uncommitted hydraulic reserve capacity (m^3/d)

Cr = hydraulic reserve capacity (m^3/d) from MECP Certificate of Approval

L = number of unconnected approved lots (units), i.e. “Commitments” that have servicing agreements

P = existing connected population (people)

H = number of households or residential connections (units)

F = average day flows per capita ($m^3/d/c$) - **Sewage** Treatment Plants

or

F = maximum daily flow per capita (m^3/d/c) - **Water** Treatment Plants

It is important to understand that no servicing capacity commitment is held for lands that have zoning in place that would allow development to proceed without additional

planning approvals. Except for site plan approvals, all Planning Act approvals, including plans of subdivision, zoning amendments, and consents require acknowledgement by the Region of Waterloo Water and Wastewater Services Division that water and wastewater servicing capacity is available before final approvals are given.

The available capacity expressed in this report as 'Commitments' is the capacity available to service all future Planning Approvals (subdivisions, condominiums, consents, zoning amendments, part lot control and minor variances) and/or building permits issued for all development outside of residential plans of subdivision. For the purposes of this report, committed capacity is also calculated to include plans of subdivision which have been draft approved.

Appendix E includes two charts that document the calculations used to generate all of the tabulated water and wastewater results in Appendices B and C, respectively.

2.2 Servicing Commitments

Section 51 (24) (i) of the Planning Act obliges the Region to ensure the "adequacy of utilities and municipal services." In addition, ROP Policy 5.D.1 states that the "servicing requirements for planned development and projected growth will be monitored to ensure that the total system capacities are not exceeded, and to provide sufficient lead time for the planning, design, approval, financing and construction of new facilities."

Except for site plan approvals, most Planning Act approvals, including plans of subdivision, zoning amendments, and consents require acknowledgement by the Region of Waterloo Water and Wastewater Services Division that water and wastewater servicing capacity is available. Draft approvals are granted based upon the availability of uncommitted capacity in existing water and wastewater systems.

Servicing commitments are made through separate servicing agreements between the Region and the developer, which are executed prior to the registration of a plan of subdivision. The servicing agreement expires within six to 18 months of being signed, at which time the developer would be required to seek a new commitment for servicing if registration of the plan of subdivision has not occurred.

In 1996, Regional Council by Report PC-96-061/ E-96-138 revised the conditions of draft approval for plans of subdivision to include a new condition requiring an

Agreement for Servicing and allowing future unbuilt service capacity to be considered, if three criteria are met:

1. The capacity expansion project must be imminent for construction and thereby included within the first five years of the 10 Year Capital Forecast;

2. There must be a sound technical basis for the anticipated new capacity associated with the project, as a result of completion of the Environmental Assessment, a suitable master plan or other Regional engineering evaluation; and

3. Approval of new draft plans of subdivision will be guided by Area Municipal Staging of Development programs and will not exceed 50 % of the estimated capacity of major planned service capacity projects or 75 % of minor planned projects.

It is important to note that the actual service capacity of a water or wastewater facility to be delivered from a future project cannot be guaranteed until a Certificate of Approval is issued by the MECP.

Since 1996, the registration of a plan of subdivision has been the point at which the capacity of water and wastewater systems is committed in accordance with MECP policies. However, a significant portion of all residential development is occurring outside of plans of subdivision. For example, in 2024 over 50% of residential building permits issued were outside of plans of subdivision. This includes development on lands within the built up areas and within the designated greenfield areas. This trend is expected to continue. Currently, there is no mechanism to provide for a servicing commitment for lands that have zoning in place that would allow development to proceed without additional planning approvals.

The “Remaining Capacity” expressed in this report is the present capacity available in the water system and/or wastewater treatment plant to service all future Planning Approvals (subdivisions, condominiums, consents, zoning amendments, part lot control and minor variances) as well as/or building permits issued for all development outside of residential plans of subdivision.

For the purposes of this report, a “commitment” is presented in terms of number of people and includes the estimated population within: plans of subdivision which have draft approval, and registered plans with units that have no building permit issued or a building permit has been issued but is not yet occupied.

2.3 Population Data

Population estimates for each service area were updated in April 2025. The Regional population estimate reflects year-end 2024, although a mid-summer population estimate is also used in some calculations for alignment with peak water usage period. The base for these estimates is the 2021 Census of Canada, but additionally includes students and the under coverage (an estimate of those who were missed in the Census enumeration).

Building Permit activity as reported by the Area Municipalities was used to update this base to year-end 2024, and then the population for each service area was forecast consistent with the Water and Wastewater Master Plans. Vacancy rates (extrapolated from CMHC data), demolitions, university/college student enrolment, and assumptions about the average number of persons per dwelling unit (PPU) also influence the numbers.

The population estimates in this document are intended to be used only in the context of water and wastewater servicing requirements in the Region as they only reflect occupant data within the mapped bounds of each water and wastewater service area. It is important to note that service area boundaries do not necessarily match municipal settlement area boundaries.

Forecast populations are based on the Province of Ontario's Places to Grow: Growth Plan for the Greater Golden Horseshoe (2006) as incorporated into the Region of Waterloo Regional Official Plan (ROP). The forecasts are consistent with the 2031 population targets as implemented in the Region's moderate forecast outlined in the Region's Wastewater Treatment Master Plan Update. Updates to the master plans that underpin the monitoring work are underway and expected to be reflected in future monitoring reports.

2.4 Development Data

Development data for each service area, shown in Appendix D, was updated in April 2025 with subdivision plan status current to year-end 2024. Where a range of number of units is proposed in a draft approved plan, the maximum is reported. For registered plans, units are included based on building permit data received from Area Municipalities to indicate whether they are "unbuilt" (no building permit issued).

For all building permit activity, "population in building permit issued but not yet occupied" represents dwelling units assumed to be unoccupied by year-end 2024. Typically, a six-month lag is assumed between the time a residential building permit for a single or semi-detached unit is issued and when that unit is occupied. For townhouses and

apartment buildings, however, the lag time can be much longer and estimated occupancy dates are delayed accordingly.

Commitments were converted from the number of units to an estimate of population within those units based on a “persons per unit” (PPU) factor which varies with the housing type of the unit. The PPU factors are as published in the Region of Waterloo Land Budget (as revised, June 2012). Multiple units are calculated using 50% townhouses and 50% apartments, while unspecified units are calculated with 75% single and 25% townhouse.

These PPUs are summarized in the table below.

Structure Type	**Persons Per Unit (PPU)**
Single and Semi Detached	3.25
Townhouse	2.44
Apartment	1.77
Multiple Unit Types	2.11
Unspecified Unit Types	3.05

As initiated in the 2013 WWWMR, the building permit commitments for the wastewater service areas continue to be reported separately based on whether they are within the Places to Grow “Built Up Area” (BUA) or the “Designated Greenfield Area” (DGA).

Pending plans do not have a commitment to water and/or wastewater servicing and are not included in any of the development data presented in this report.

A summary of commitments for each service area are provided in Appendix D.

2.5 Water Flows

Actual water use data, where available, was analyzed and interpreted in order to forecast future per capita water use. In order to help temper the impact of anomalous years, a five year average of maximum day water use per person is used to calculate the maximum day per capita flow. The five year average of maximum day water use per person is then multiplied by the population to get the maximum day projected flow for the current year, and is also multiplied by the population forecasts to get the future projected flows.

Maximum day demands are used for demand forecasts in most of the systems with the exception of the Integrated Urban System (IUS) where Maximum Week Demand is used. Further details about the use of maximum week are given below.

Where sufficient actual water data is not available or where there is significant data variation during the year as in the case of some of the 12 small communal systems, MECP and Region's design guidelines were used to generate estimated current and future water use. If future trends change from those projected in the population forecasts, or if person per unit values change, or if the ratio of residential to non-residential development varies, or if additional water demand management programs are implemented and effective, water use will vary from the projections of this report. These projections will be re-evaluated in the yearly WWWMRs. Water use statistics and forecasts for each service area are included in Appendix C.

2.5.1 Maximum Week Demand

The maximum week approach was introduced in the 1994 WWWMR report. The Integrated Urban System (IUS) has made it possible to do extended time simulations of the hydraulic model. The simulations verified that through the use of water stored in reservoirs to balance daily peaks the supply system functioned adequately on a maximum week demand basis. This is only possible in the Tri-Cities due to the IUS model and the relatively large amount of water stored in reservoirs.

The maximum week demand is approximately 10% lower than the usual maximum day demand. The Region of Waterloo is believed to be the only municipality in Ontario that has MECP approval to use the maximum week demand approach. This report continues to use the Maximum Week Demand for the IUS. The maximum week demand approach is not used in any of the Region's other water systems due to limitations of the water storage facilities.

2.5.2 Water Use Efficiency Measures

The MECP Guidelines do not allow anticipated water use reductions to be used in calculating future demands, but require future water use projections to be based on historical water use trends. The 2025 WWWMR uses the historic maximum day demand to predict future maximum day demands using the population forecast, with the exception of the Integrated Urban System (IUS) where Maximum Week Demand is used.

2.5.3 Water Supply Capacity

An update to the Water Supply Master Plan (WSMP) was completed in 2015 which addressed a declining trend in water demands experienced in recent years, and

addressed new constraints on groundwater usage arising from the provincial Clean Water Act and the outcome of recent studies triggered by this new legislation.

The 2015 WSMP addressed the needs for water supply arising from future development, and supported extending the life of the existing systems and operating them in the most efficient manner, reducing the operational costs and the potential impacts on the environment. Findings and recommendations from the master plan have been incorporated into the 2025 WWWMR. For the IUS, the 2015 WSMP changed the way that the capacity of the system is described. The Sustainable Average System Capacity describes the rate of water that can be constantly taken year-round from the various sources without negatively impacting the long-term supply. The Maximum System Capacity describes the rate of water that can be taken under short-term or peaking conditions, usually limited to number of days per year.

The Water Supply Strategy Update was initiated in 2022 and will outline the long-term water supply strategy for the Region. Recommendations from the updated strategy will be incorporated into future publications of the annual WWWMR.

2.6 Wastewater Flows

Annual Average Day Wastewater Flow is normally used to determine requirements for wastewater treatment facilities. Wastewater statistics and forecasts by service area are included in Appendix B.

Historically, the available capacity at each wastewater treatment plant was determined by using the adjusted per capita flows multiplied by the projected population. Adjusted per capita flows are determined for each plant according to the methodology of the MECP described above and are then statistically adjusted to the 85 % confidence level (identified as “85 % flow” or “Adjusted Flow”). The Adjusted Flow is an adjusted average flow, which corresponds to a flow with an 85 % probability of not being exceeded. This methodology accounts for seasonal variations in flow, generally caused by rainfall and snow thawing, and protects against over-committing flows at the treatment plants. Adjusted flows continue to be used to evaluate the impact of seasonal variations at the WWTPs, especially in systems showing elevated seasonal impacts.

Consistent with the 2024 WWWMR, the unadjusted five-year average was used for development planning and approvals. Both the average flow and the adjusted average flow are shown on the charts in Appendix B, but remaining capacity at each plant has been determined by using the unadjusted average flow, as outlined in the MECP guidelines.

Intrinsic to the per capita flow is a number of contributing factors above and beyond the simple residential usage. These additional factors include; inflow and infiltration (I&I), Industrial Commercial and Institutional (ICI) flows, and flows from developments that are not currently explicitly tracked (site plans). It is assumed that the ratio of residential population to employment (equivalent population) remains consistent in each service area from year to year.

In addition, if additional water conservation and I&I corrective programs are implemented and effective, wastewater flow projections will vary from the projections of this report. These projections will be evaluated in the annual WWWMRs.

2.7 Wastewater Treatment Capacity

Wastewater treatment plant capacities are generally based on the MECP Certificates of Approval (C of A). These are usually identical to the rated hydraulic capacity. In recent years, the characteristics of the influent loading at some of the wastewater treatment plants have been higher than the design parameters for the plant. The higher loading influent is typically associated with industrial processes, many of which are subject to surcharge agreements. While the treatment plant's hydraulic capacity may show that there is available capacity for growth, the nature of the influent may result in reduced treatment effectiveness. The approval of growth, specifically industrial related, will be reviewed on a case-by-case basis in order to ensure that the influent characteristics are aligned with the design parameters for each plant.

3.0 Service Area Assessments

3.1 Water Systems

3.1.1 Integrated Urban System (IUS)

Item	**Amount** (m^3/d)
IUS Sustainable Average System Capacity	193,000
IUS Maximum System Capacity	250,000
Max Week Projected Demand	182,537
Commitments	25,454
Remaining Capacity	42,009

The water supply systems servicing the communities of Cambridge (including Brown's Subdivision in the Township of North Dumfries), Kitchener, Waterloo (including the village of St. Agatha in Wilmot Township), Elmira, St. Jacobs, Conestoga and West Montrose are treated as a single system as there are permanent interconnections of the

water systems servicing these communities. The inter-connections improve the capability of distributing water between the communities.

Measured average day flow for 2024 was 152,167 m^3/d, an increase of approximately 5% from 2023. Maximum week water use in 2024 for the IUS is reported as 183,216 m^3/d, which is an increase of 3% from maximum week use in 2023. The peaking factor between average day and maximum week in 2024 was 1.20. Maximum week water use is largely dependent on weather conditions. Dry conditions can cause much higher than average maximum week water consumption and wetter than usual conditions can cause a significant drop in water use during the peak usage period (i.e. late spring/early summer) and result in much lower than average maximum week consumption. In 2024, the lower-than-average annual precipitation resulted in a higher-than-average peak factor and maximum week demand.

Using the five-year average maximum week per capita demand of 0.3235 m^3/c/d there is capacity to service approximately 130,000 additional people in the IUS as of December 31, 2024.

The current commitment in draft approved plans, as well as registered plans with unbuilt units, or units with a building permit issued but not yet assumed to be occupied is 78,700 people. A summary of these commitments can be found in Appendix D.

The Water Supply Strategy Update was initiated in 2022 and will outline the long-term water supply strategy for the Region. Recommendations from the updated master plan will be incorporated into future publications of the annual WWWMR.

3.1.2 Baden - New Hamburg Water System

Item	**Amount** (m^3/d)
Baden New Hamburg System Capacity	12,614
Max Day Projected Demand	5,525
Commitments	1,252
Remaining Capacity	5,836

The present water supply capacity for Baden - New Hamburg is 12,614 m^3/d as shown in the most recent Master Plan (2011). This capacity includes 3,542 m^3/d from NH3 in New Hamburg, and 9,072 m^3/d that can be transferred to Baden and New Hamburg from wells K50, K51, and K52, which also supply the IUS. Maximum Day water demand in 2024 was measured at 5,691 m^3/d which is up 1% from 2023. The five-year average

max day projected demand is 5,525 m^3/d.

Using the five-year average max day per capita demand of 0.3598 m^3/c/d, there is capacity to service approximately 16,000 additional people in Baden-New Hamburg water system as of December 31, 2024.

3.1.3 Ayr Water System

Item	**Amount** (m^3/d)
Ayr System Capacity	5,530
Max Day Projected Demand	2,785
Commitments	1,050
Remaining Capacity	1,695

The firm capacity rating of the Ayr Water System is 5,530 m^3/d. The 2024 Maximum Day water use in Ayr was recorded at 3,091 m^3/d, which is a 18% decrease from 2023. The five-year average max day projected demand is 2,785 m^3/d.

A review of the higher than average per capita rates was conducted for the Ayr system. It was concluded that the higher per capita rates are related to water loss due to service leaks due to poor construction material and backfilling techniques. Since 2015, the Region has been making significant investments to reduce water loss in Ayr including, but not limited to, individual meter replacements, various leak detection technologies, and installation of District Metered Areas. It is anticipated that with continued efforts in service leak detection, district metering, and proactive water service replacements, that this rate will continue to decline until it stabilizes near the industry standard rate of approximately 15%. When planning for growth, it was determined that it is reasonable to use a 20% reduced per capita rate for commitments in the Ayr water system, and continue to monitor and assess the per capita rate to be used in future monitoring reports.

Using the 20% reduced five-year average max day per capita demand of 0.3909 m^3/c/d, there is capacity to service approximately 4,300 additional people in the Ayr Water System as of December 31, 2024. The present firm capacity could service a population of approximately 14,000 people.

3.1.4 Wellesley Water System

Item	**Amount** (m^3/d)
Wellesley System Capacity	3,000
Max Day Projected Demand	1,048
Commitments	3
Remaining Capacity	1,950

The water supply system has a firm capacity of 3,000 m^3/d. The 2024 Maximum Day demand in Wellesley was measured as 859 m^3/d, which is a 18% decrease from 2023. The five-year average max day projected demand is 1,048 m^3/d.

Using the five-year average per max day capita demand of 0.2860 $m^3/c/d$, there is capacity to service approximately 6,800 additional people in the Wellesley Water System as of December 31, 2024. The present system capacity could service a population of approximately 10,500 people.

3.1.5 St. Clements Water System

Item	**Amount** (m^3/d)
St. Clements System Capacity	1,770
Max Day Projected Demand	473
Commitments	8
Remaining Capacity	1,289

The water treatment plant has a firm capacity of 1,770 m^3/d. The 2024 Maximum Day Demand in St. Clements was measured as 409 m^3/d, which is a decrease of 15% from 2023. The five-year average max day projected demand is 473 m^3/d.

Using the five-year average per max per capita demand of 0.4014 $m^3/c/d$, there is capacity to service approximately 3,200 additional people in the St. Clements Water System as of December 31, 2024. The present system capacity could service a population of approximately 4,400 people.

In late 2024, the neighbouring community of Heidelberg was connected to the St Clements system, and the Heidelberg small water system was decommissioned. The St Clements system will now service both communities, and the combined St Clements-Heidelberg system flows and populations will be reported together in future monitoring reports.

3.2 Wastewater

3.2.1 Kitchener Wastewater Treatment Plant (KWWTP)

Item	**Amount** (m^3/d)
KWWTP Rated Capacity	122,700
Average Projected Flow	72,041
Commitments	13,768
Remaining Capacity	36,892

The KWWTP has a rated capacity of 122,700 m^3/d. Average flow in 2024 was recorded at 74,284 m^3/d which is an increase of 1% from 2023. The five-year Average Projected Flow is 72,041 m^3/d.

Using the five-year average flow per capita flow of 0.2476 m^3/c/d, there is capacity to service approximately 149,000 additional people in the Kitchener Wastewater Service Area as of December 31, 2024. The present system capacity could service a population of approximately 496,000 people.

3.2.2 Waterloo Wastewater Treatment Plant (WWWTP)

Item	**Amount** (m^3/d)
WWWTP Rated Capacity	57,500
Average Projected Flow	43,341
Commitments	1,810
Remaining Capacity	12,349

The WWWTP Certificate of Approval (CofA) has a maximum hydraulic capacity of 72,730 m^3/d. However, the installed treatment capacity of the plant is 57,500 m^3/d. Flow during 2024 at the WWWTP was recorded at 45,618 m^3/d, which is an increase of 7% from 2023. The five-year Average Projected Flow is 43,341 m^3/d.

Using the five-year average per capita flow of 0.2698 m^3/c/d, there is capacity to service approximately 46,000 additional people in the Waterloo Wastewater Service Area as of December 31, 2024. The expected rated capacity of 57,500 m^3/d could service a population of approximately 213,000 people.

The projected flows plus committed flows at the Waterloo WWTP is approximately 75% of the rated capacity of the plant. Background work has been initiated through the Wastewater Master Plan to confirm the timing of a future expansion. Timing of the plant capacity expansion will be planned to accommodate projected flows.

Flows at this plant have also shown unusual variation over the last few years. The City of Waterloo has undertaken a study to identify areas of excessive I & I. The City is progressing with investigations in the high priority areas.

3.2.3 Galt Wastewater Treatment Plant (GWWTP)

Item	**Amount** (m^3/d)
GWWTP Rated Capacity	56,800
Average Projected Flow	28,260
Commitments	2,090
Remaining Capacity	26,450

The rated capacity of the GWWTP is 56,800 m^3/d. Flow at the GWWTP was recorded at 27,210 m^3/d in 2024 which is up 3% from 2023. The five-year Average Projected Flow is 28,260 m^3/d.

Using the five-year average per capita flow of 0.2855 m^3/c/d, there is capacity to service approximately 93,000 additional people in the Galt Wastewater Service Area as of December 31, 2024. The present rated capacity could service a population of approximately 200,000 people.

Flow from Industrial Road Service Area (IRSA) which is high in organic loading had previously been directed to the Preston Wastewater Treatment Plant. Diversion of the IRSA flow from Preston to Galt has been completed and all of the flow from the IRSA has been redirected to Galt. Observations at the Galt WWTP have been undertaken to assess the impact this diversion has at the operations at the plant. It has been confirmed that the plant can accommodate the flows and loading from the IRSA and no reduction in rated capacity will be necessary at Galt.

3.2.4 Preston Wastewater Treatment Plant (PWWTP)

Item	**Amount** (m^3/d)
PWWTP Rated Capacity	16,820
Average Projected Flow	9,558
Commitments*	1,126
Remaining Capacity	6,136

*Includes 279 m^3/d for Boxwood

The Preston WWTP has a rated capacity of 16,820 m^3/d. Beginning in the summer of 2009, the effluent from the Industrial Road Service Area (IRSA) has been gradually diverted from Preston WWTP to Galt WWTP, as recommended in the 2007 Wastewater Master Plan. At year-end 2011, the diversion was completed and all of the effluent from the IRSA is being diverted to Galt.

Flow in 2024 at the PWWTP was recorded at 10,514 m^3/d which is up 8% from 2023 flows. The five-year Average Projected Flow is 9,558 m^3/d.

In the 2011 WWWMR, wastewater capacity was reserved for the Boxwood Industrial Subdivision in the Preston Wastewater Service Area in the amount of 1,860 m^3/d. Occupancy of the Boxwood Subdivision has been steadily increasing since 2014 and approximately 85% of the developable area has been occupied for at least a year at the end of 2024. Therefore, the reserve capacity has been reduced to 15% of the original amount, and a reserve of 279 m^3/d will remain to accommodate the remaining lot development. In future years, the reserved capacity will be further reduced proportionally based on the development activity.

Using the five-year average per capita flow of 0.3820 $m^3/c/d$, there is capacity to service approximately 16,000 additional people in the Preston Wastewater Service Area as of December 31, 2024. The present rated capacity could service a population of approximately 44,000 people.

3.2.5 Hespeler Wastewater Treatment Plant (HWWTP)

Item	**Amount** (m^3/d)
HWWTP Rated Capacity	9,320
Average Projected Flow	5,924
Commitments	521
Remaining Capacity	2,875

The HWWTP has a rated capacity of 9,320 m^3/d. Flow at the HWWTP was recorded at 5,835 m^3/d in 2024, which is an increase of less than 1% from 2023. The 5-year Average Projected Flow is 5,924 m^3/d.

Using the five-year average per capita flow of 0.2217 m^3/c/d, there is capacity to service approximately 13,000 additional people in the Hespeler Wastewater Service Area as of December 31, 2024. The present rated capacity of 9,320 m^3/d could service a population of approximately 42,000 people.

3.2.6 Elmira Wastewater Treatment Plant (EWWTP)

Item	**Amount** (m^3/d)
EWWTP Rated Capacity	7,800
Average Projected Flow	3,961
Commitments	1,488
Remaining Capacity	2,352

The EWWTP has a rated capacity of 7,800 m^3/d of which 186 m^3/d of capacity is allocated to Crompton (formerly Uniroyal). However, as the flow reports received from OCWA include the Crompton flows, the effective capacity of the plant is reported as 7,800 m^3/d.

Flows in 2024 at the EWWTP were recorded at 4,247 m^3/d which is down approximately 3% from 2023. The five-year Average Projected Flow is 3,961 m^3/d.

Using the five-year average per capita flow of 0.3385 m^3/c/d, there is capacity to service approximately 7,000 additional people in the Elmira Wastewater Service Area as of December 31, 2024. The present rated capacity of 7,800 m^3/d could service a

population of approximately 23,000 people.

Inflow and Infiltration are one of the causes of the unusual flow variations and high wastewater per-capita flows at this plant. Despite an I&I reduction program undertaken between 1998 and 2008, total wastewater flows are still seasonally impacted by rainfall and snow thawing. The high flow variation at the plant indicates that I&I continue to be a problem in several areas in Elmira.

The Region completed the Elmira and St. Jacobs Wastewater Treatment Master Plan in 2012. The master plan indicated that expansion of this plant will be not required until 2031, and that the Township of Woolwich should continue to address the elevated impacts of I&I at the plant.

3.2.7 St. Jacobs Wastewater Treatment Plant (SJWWTP)

Item	**Amount** (m^3/d)
SJWWTP Rated Capacity	1,450
Average Projected Flow	900
Commitments	93
Remaining Capacity	457

The hydraulic capacity of the SJWWTP is 1,450 m^3/d. Flows in 2024 were recorded at 829 m^3/d which is down approximately 8% from 2023. The five-year Average Projected Flow is 900 m^3/d.

Similar to Elmira, total wastewater flows in St. Jacobs are still seasonally impacted by rainfall and snow thawing. The high flow variation at the plant indicates that I&I continue to be a problem in several areas in St. Jacobs. Background work has been initiated through the current Wastewater Treatment Master Plan to confirm the timing of a future expansion and/or alternative options.

Using the five-year average per capita flow of 0.4119 $m^3/c/d$, there is capacity to service approximately 1,100 additional people in the St. Jacobs Wastewater Service Area as of December 31, 2024. The present rated capacity of 1,450 m^3/d could service a population of approximately 3,500 people.

3.2.8 Baden/New Hamburg WWTP (BNHWWTP)

Item	**Amount** (m^3/d)
BNHWWTP Rated Capacity	6,900
Average Projected Flow	3,765
Commitments	868
Remaining Capacity	2,267

The BNHWWTP has been recently upgraded and the rated operating capacity has been increased from 5,200 m^3/d to 6,900 m^3/d. The plant receives flows from Baden and New Hamburg. Flow in 2024 was recorded at 3,771 m^3/d which is a decrease of 1% from 2023. The 5-year Average Projected Flow is 3,765 m^3/d. I & I are the expected causes of varied flows from year to year.

Using the 5-year average per capita flow of 0.2491 m^3/c/d, there is capacity to service approximately 9,100 additional people in the Baden/New Hamburg Wastewater Service Area as of December 31, 2024. The present rated capacity of 6,900 m^3/d could service a population of approximately 28,000 people.

3.2.9 Ayr Wastewater Treatment Plant (AWWTP)

Item	**Amount** (m^3/d)
AWWTP Rated Capacity	3,000
Average Projected Flow	1,640
Commitments	619
Remaining Capacity	741

The AWWTP has a rated capacity of 3,000 m^3/d. Flow at the AWWTP in 2024 was recorded at 1,554 m^3/d which is an increase of about 8% from 2023. The 5-year Average Projected Flow is 1,640 m^3/d.

A significant groundwater leak into the sanitary collection system was observed in 2021. Repairs were completed in the summer of 2024. It is estimated that the leak contributed approximately 430 m3/d, or 25% of the recorded flow. It is expected that the recorded flow at the plant will be reduced in future years based on the successful repair.

Using the 5-year average per capita flow of 0.2306 m^3/c/d, there is capacity to service approximately 3,200 additional people in the Ayr Wastewater Service Area as of December 31, 2024. The present rated capacity of 3,000 m^3/d could service a population of approximately 13,000 people.

3.2.10 Wellesley Wastewater Treatment (WEWWTP)

Item	**Amount** (m^3/d)
WEWWTP Rated Capacity	1,100
Average Projected Flow	923
Commitments	3
Remaining Capacity	175

The WEWWTP has a rated capacity of 1,100 m^3/d. Flow in 2024 at the WEWWTP was measured at 1,054 m^3/d which is up 5% from the previous year. The 5-year Average Projected Flow is 923 m^3/d.

The wide fluctuation in flow from year-to-year is a result of a high level of extraneous flows to the plant. Based on previous I&I assessments of the Wellesley system, the remaining I&I contributions are likely from the private side of the properties.

Using the 5-year average per capita flow of 0.2541 m^3/c/d, there is capacity to service approximately 690 additional people in the Wellesley Wastewater Service Area as of December 31, 2024. The present rated capacity of 1,100 m^3/d could service a population of approximately 4,300 people.

3.3 Small Systems

3.3.1 Water

The 11 small water supply systems owned and operated by the Region are presented in Appendix C. These systems include Branchton Meadows and Roseville in North Dumfries; Linwood and Heidelberg (reported as one system including that portion of Heidelberg in Woolwich) in Wellesley; New Dundee and Foxboro Green in Wilmot; and Maryhill and Maryhill Village Heights in Woolwich. Water supply capacity was adequate to meet the actual maximum demands in all communities supplied by a Regional system in 2024.

In 2018 the community of West Montrose was connected to the Conestogo Plains

system. In 2019, the combined Conestogo Plains and West Montrose system was connected to the IUS. In late 2021, the Conestogo Golf Course system was also connected to the IUS. In the 2025 WWWMR, these water systems are included in the reporting for the IUS.

Most of these small systems were designed to only service specific subdivisions in the respective settlement areas and have no additional capacity to service units beyond those subdivisions. Given the complexity of calculating available capacity for the small systems, available system capacity will be evaluated on an individual basis prior to commenting on development applications. Table 2 summarizes the data on small water systems.

3.3.2 Wastewater

Three small wastewater treatment systems are currently operated by the Region of Waterloo. Heidelberg WWTP services the Alt-Heidelberg subdivision, Conestoga Golf Course WWTP which services Phase 2 of the Conestoga Golf Course subdivision, and the Foxboro WWTP servicing the Foxboro Green subdivision. These systems were designed and constructed to service a limited number of units within the specific subdivisions and are generally not capable of servicing any units beyond that pre-determined number.

There is one other system in Floradale that currently operates privately with which the Region has an agreement or option to eventually operate. Should the Region assume ownership and operate this system, it will be reported on in the WWWMR.

4.0 Summary of Service Area Assessments

Tables 1 and 2 below summarize the water and wastewater service area assessments included in Appendices B and C. Table 3 summarizes the committed water and wastewater flows and populations.

TABLE 1: REMAINING WATER AND WASTEWATER CAPACITY AS OF DECEMBER 31, 2024

		A	B	C	D = A - (B+C)	E	F = D / E * 1000
		2024 MAX CAPACITY ($1000 m^3/d$)	**MAX DAY / WEEK PROJECTED FLOW ($1000 m^3/d$)**	**COMMITTED FLOW ($1000 m^3/d$)**	**REMAINING CAPACITY ($1000 m^3/d$)**	**MAX DAY / WEEK FLOWS PER CAPITA ($m^3/d/c$)**	**REMAINING CAPACITY (PEOPLE)**
WATER	**INTEGRATED URBAN WATER SYSTEM**	250.00	182.54	25.45	42.01	0.3235	129,855
	BADEN-NEW HAMBURG	12.61	5.53	1.25	5.84	0.3598	16,222
	AYR WATER SYSTEM (H)	5.53	2.79	1.05	1.69	0.3909	4,335
	WELLESLEY	3.00	1.05	0.00	1.95	0.2860	6,816
	ST. CLEMENTS	1.77	0.47	0.01	1.29	0.4014	3,211

		A	B	C	D = A - (B+C)	E	F = D / E * 1000
		2024 CAPACITY ($1000 m^3/d$)	**AVERAGE PROJECTED FLOW ($1000 m^3/d$)**	**COMMITTED FLOW ($1000 m^3/d$)**	**REMAINING CAPACITY ($1000 m^3/d$)**	**AVERAGE FLOWS PER CAPITA ($m^3/d/c$)**	**REMAINING CAPACITY (PEOPLE)**
WASTEWATER	**KITCHENER WWTP**	122.70	72.04	13.77	36.89	0.2476	148,992
	WATERLOO WWTP	57.50	43.34	1.81	12.35	0.2698	45,770
	GALT WWTP	56.80	28.26	2.09	26.45	0.2855	92,652
	PRESTON WWTP	16.82	9.56	1.13	6.14	0.3820	16,063
	HESPELER WWTP	9.32	5.92	0.52	2.87	0.2217	12,969
	ELMIRA WWTP	7.80	3.96	1.49	2.35	0.3385	6,947
	BADEN-NEW HAMBURG WWTP	6.90	3.76	0.87	2.27	0.2491	9,100
	AYR WWTP	3.00	1.64	0.62	0.74	0.2306	3,212
	ST. JACOBS WWTP	1.45	0.90	0.09	0.46	0.4119	1,110
	WELLESLEY WWTP	1.10	0.92	0.00	0.17	0.2541	688

TABLE 2: SMALL RURAL WATER SYSTEM SUMMARY AS OF DECEMBER 31, 2024

		A	B	C	D = A - B	E	F
		2024 CAPACITY (m^3/d)	**MAX DAY PROJECTED FLOW (m^3/d)**	**COMMITTED FLOW (m^3/d)**	**REMAINING CAPACITY (m^3/d)**	**MAX DAY FLOWS PER CAPITA ($m^3/d/c$)**	**REMAINING CAPACITY (PEOPLE)**
WOOLWICH	**CONESTOGO GOLF COURSE (G)**	-	-	-	-	-	-
	CONESTOGO PLAINS (G)	-	-	-	-	-	-
	MARY HILL	157	97	N/A	60	0.6200	Case by Case
	MARY HILL VILLAGE HEIGHTS	820	218	N/A	602	0.8976	Case by Case
	WEST MONTROSE (G)	-	-	-	-	-	-
WEL	**HEIDELBERG**	829	271	N/A	558	0.2743	Case by Case
	LINWOOD	605	349	N/A	256	0.4503	Case by Case
WIL	**FOXBORO**	527	144	N/A	383	0.3414	Case by Case
	NEW DUNDEE	983	470	N/A	513	0.4415	Case by Case
ND	**ROSEVILLE**	358	157	N/A	201	0.5716	Case by Case
	BRANCHTON	130	98	N/A	32	0.7840	Case by Case

(A) See Water Distribution Master Plan and Wastewater Treatment Master Plan for capacity details of each system

(B) See section 2.5 and 2.6 and appendix B & C for details of how average flow is calculated for individual systems

(C) See Table 3 for details about how committed flow is calculated from committed population in the DGA and BUA

(D) Both Water systems and Wastewater systems average/max day/week flow equals the average of the previous 5 years per capita flow

(E) See Section 2.5 and 2.6 for an explanation of average/max flows per capita

(F) Remaining Capacity divided by Average/Max Flow Per Capita multiplied by 1000. New service requests in the small rural systems will be evaluated on a case by case basis.

(G) Conestogo Golf Course, Conestogo Plains, and West Montrose are fully connected to the IUS and are no longer tracked in the small rural systems.

(H) More information on apparent low remaining capacity in the Ayr Water System capacity can be found on Section 3.1.3 of the 2024 Water and Wastewater Monitoring Report.

TABLE 3: COMMITMENTS AS OF DECEMBER 31, 2024

		A			B	C = A x B		
		COMMITMENTS (PEOPLE)			MAX DAY / WEEK FLOWS PER CAPITA (m^3/d/c)	COMMITMENTS (m3/d)		
		DGA	BUA	TOTAL		DGA	BUA	TOTAL
WATER	INTEGRATED URBAN WATER SYSTEM	60,926	17,754	78,680	0.3235	19,710	5,743	25,454
	BADEN-NEW HAMBURG	3,391	90	3,481	0.3598	1,220	32	1,252
	AYR WATER SYSTEM	2,686	0	2,686	0.3909	1,050	0	1,050
	WELLESLEY	3	7	10	0.2860	1	2	3
	ST. CLEMENTS	19	0	19	0.4014	8	0	8

		A			B	C = A x B		
		COMMITMENTS (PEOPLE)			AVERAGE FLOWS PER CAPITA (m^3/d/c)	COMMITMENTS (m3/d)		
		DGA	BUA	TOTAL		DGA	BUA	TOTAL
WASTEWATER	KITCHENER WWTP	43,365	12,237	55,602	0.2476	10,737	3,030	13,768
	WATERLOO WWTP	2,886	3,823	6,709	0.2698	779	1,031	1,810
	GALT WWTP	6,924	397	7,321	0.2855	1,977	113	2,090
	PRESTON WWTP*	1,897	321	2,218	0.3820	1,004	123	1,126
	HESPELER WWTP	1,817	532	2,349	0.2217	403	118	521
	ELMIRA WWTP	4,367	28	4,395	0.3385	1,478	9	1,488
	BADEN-NEW HAMBURG WWTP	3,391	93	3,484	0.2491	845	23	868
	AYR WWTP	2,686	0	2,686	0.2306	619	0	619
	ST. JACOBS WWTP	196	29	225	0.4119	81	12	93
	WELLESLEY WWTP	3	7	10	0.2541	1	2	3

(A) See Appendix D for a detailed breakdown of committed population from known development

(B) Average of the previous five years. See Section 2.5 and 2.6 for an explanation of the Average/Max Flow Per Capita Per Day in Column 'B'

(C) Column 'A' multiplied by column 'B'

* Preston WWTP commitments include 279 m3/day for the Boxwood Industrial Subdivision

Appendix A

Glossary

Item	Information
Average Day	The volume of water used in a service area in the year divided by the number of days in the year.
Built-Up Area (BUA)	The limits of the developed portions of the Urban Area and Township Urban Areas designations as defined by the Province in accordance with the provisions of the Growth Plan for the Greater Golden Horseshoe. Referred to as the “Built Boundary” in the Regional Official Plan.
Commitments	The population or flow expected from known development applications and building permit activity. Expressed as Population – the calculated population increase from known development applications which the Region has a legal commitment to servicing including: Dwelling units for which building permits have been issued but are not yet believed to be occupied, and not included in population estimates; Unbuilt dwelling units in Registered Plans Units in Draft Approved Plans, except plans having a special clause in the draft agreement that specifically stipulates that draft approval does not constitute a legal commitment to either water or wastewater servicing. Expressed as Flow – the calculated population from known development plans multiplied by the Per Capita Flow.
Designated Greenfield Area (DGA)	The limits of the undeveloped portions of the Urban Area and Township Urban Areas designations as defined by the Province i in accordance with the provisions of the Growth Plan for the Greater Golden Horseshoe.

Item	Information
Development Application	An application for approval under the Planning Act. In the context of this report a development applications include Plans of Subdivisions, Plans of Condominium, Official Plan Amendments, Consent Applications and Zone Change Applications that create additional dwelling units. Development applications do not include site plan applications.
Firm Well Capacity	The maximum amount of water that can be safely provided from the wells serving an individual water system determined from the lesser of the two scenarios listed below: 1) 0.85 x the capacity of all available wells producing a useable water supply; 2) capacity of all available wells producing a useable water supply less the capacity of the largest well. A useable water supply must as a minimum meet the MECP Standards for Drinking Water.
Inflow and Infiltration (I&I)	Water (that would not require treatment if it did not enter the sewer system) entering the sanitary sewer system (including sewer service connections) through such means as: 1) defective pipes, pipe joints, connections, manhole walls (infiltration); 2) cellar and foundation drains, swamp drains, cooling water discharges, etc. (Steady inflow); 3) from roof drains, catch basins, sump pumps, manholes in ponded areas, combined sewers, etc. (Direct or Delayed Unsteady inflow).
Maximum Day	The highest daily consumption of water in a service area during the year during the 24 hour period.
Maximum Week	The highest total consumption of water in a service area during any seven consecutive days in a year divided by seven.
MECP	Ministry of Environment Conservation and Parks. Formerly Ministry of Environment and Climate Change (MOECC), and formerly Ministry of the Environment (MOE).
Persons Per Unit (PPU)	The average number of persons per dwelling unit as projected by the Region of Waterloo's Land Budget.
Projected Flow	Serviced population multiplied by per capita flow.
Remaining Capacity	Water or Wastewater Plant capacity minus Projected Flow and Commitments. Expressed as Flow or People.

Reserved Capacity	A flow that has been set aside for known development to which the Region of Waterloo has a legal obligation to provide servicing. Also see “Commitments”.
Serviced Area	The area where municipal water and/or wastewater services are provided. However, water and wastewater service areas are not necessarily the same.

Appendix B

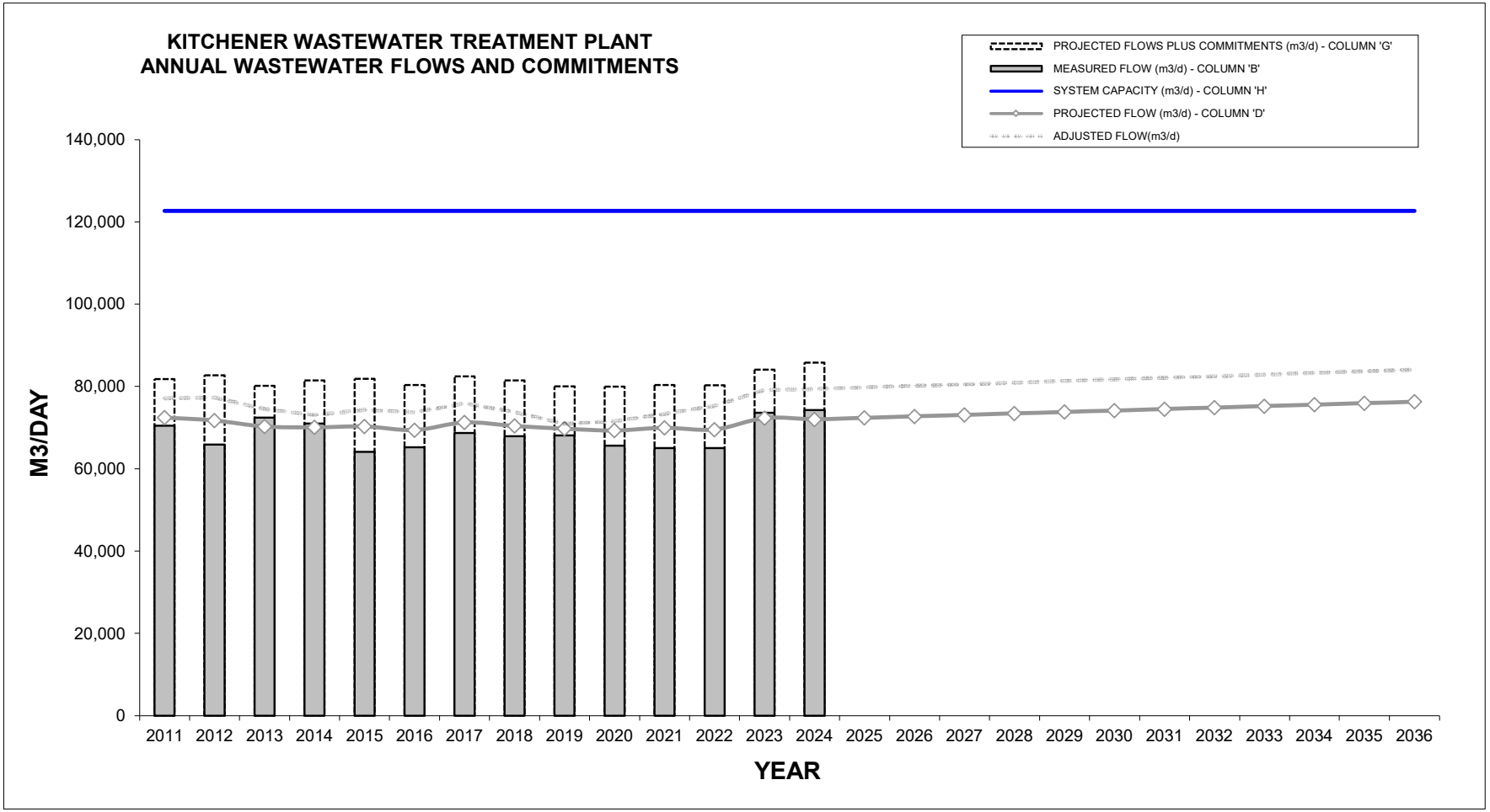
Wastewater Charts and Data

KITCHENER WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	227,761	70,443	0.3181	72,449	7,858	1,501	81,808	122,700	40,892	128,553
2012	231,488	65,858	0.3099	71,739	8,631	2,332	82,703	122,700	39,997	129,064
2013	230,922	72,433	0.3044	70,290	7,956	1,908	80,154	122,700	42,546	139,775
2014	234,466	70,988	0.2989	70,092	9,449	1,913	81,454	122,700	41,246	137,973
2015	237,417	64,136	0.2961	70,292	10,157	1,405	81,855	122,700	40,845	137,957
2016	240,669	65,247	0.2884	69,417	9,655	1,247	80,320	122,700	42,380	146,931
2017	248,481	68,684	0.2868	71,269	9,682	1,527	82,478	122,700	40,222	140,236
2018	253,621	67,902	0.2776	70,413	10,336	732	81,482	122,700	41,218	148,464
2019	258,675	68,080	0.2697	69,769	8,253	1,995	80,016	122,700	42,684	158,255
2020	260,556	65,604	0.2660	69,320	7,591	3,037	79,948	122,700	42,752	160,695
2021	268,944	65,039	0.2602	69,977	7,879	2,485	80,340	122,700	42,360	162,803
2022	275,970	65,017	0.2520	69,552	8,804	1,950	80,306	122,700	42,394	168,214
2023	290,262	73,585	0.2492	72,328	8,507	3,298	84,133	122,700	38,567	154,776
2024	290,946	74,284	0.2476	72,041	10,737	3,030	85,808	122,700	36,892	148,992
2025	292,383		0.2476	72,396				122,700		
2026	293,819		0.2476	72,752				122,700		
2027	295,256		0.2476	73,108				122,700		
2028	296,693		0.2476	73,464				122,700		
2029	298,129		0.2476	73,819				122,700		
2030	299,566		0.2476	74,175				122,700		
2031	301,003		0.2476	74,531				122,700		
2032	302,440		0.2476	74,887				122,700		
2033	303,876		0.2476	75,242				122,700		
2034	305,313		0.2476	75,598				122,700		
2035	306,749		0.2476	75,954				122,700		
2036	308,186		0.2476	76,309				122,700		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

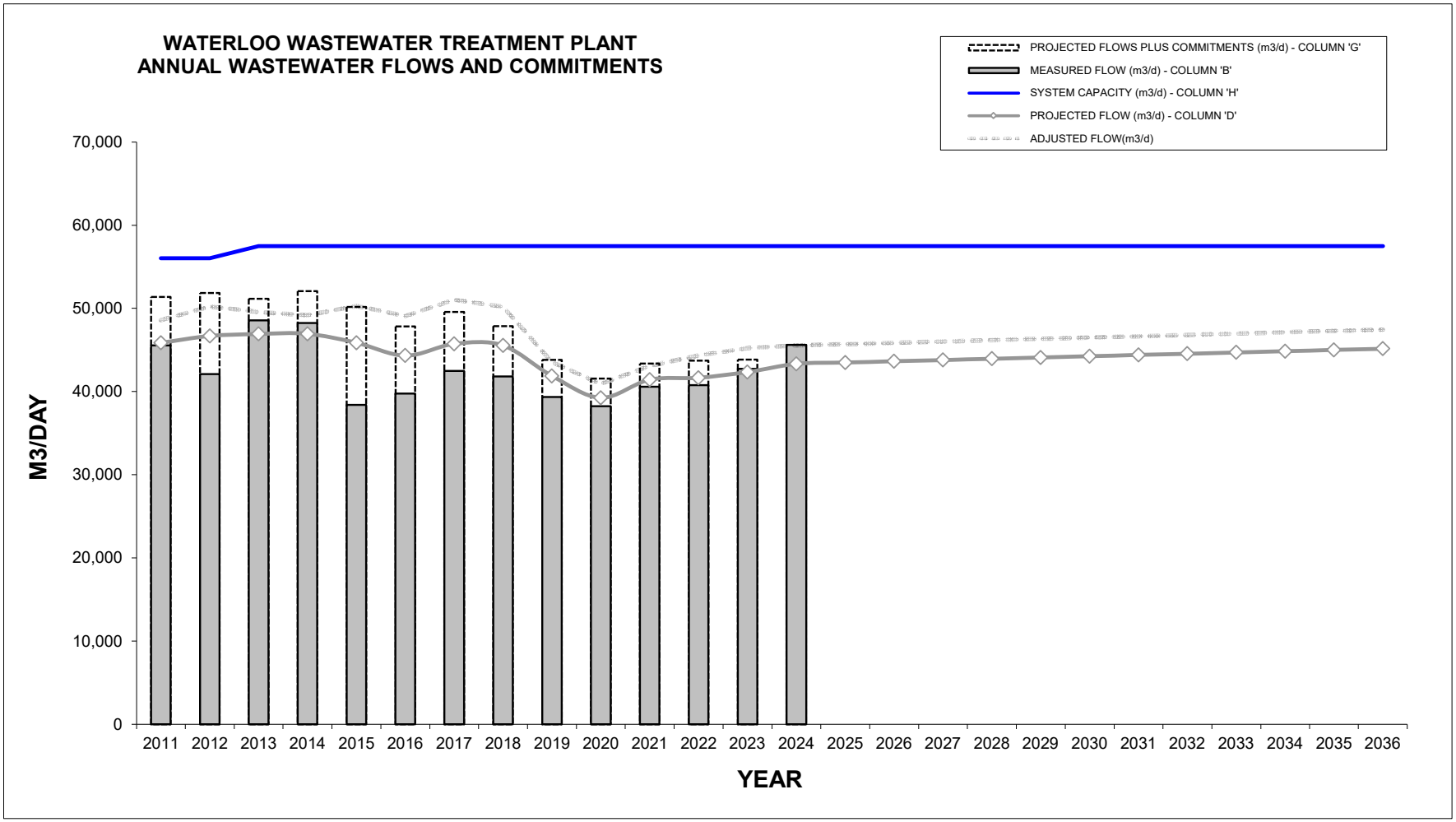

KITCHENER WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

WATERLOO WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	127,688	45,540	0.3592	45,867	3,853	1,657	51,377	56,050	4,673	13,009
2012	131,776	42,104	0.3543	46,693	3,089	2,055	51,838	56,050	4,212	11,888
2013	134,851	48,570	0.3480	46,931	2,815	1,415	51,162	57,500	6,338	18,212
2014	136,179	48,242	0.3448	46,952	2,858	2,250	52,060	57,500	5,440	15,779
2015	137,322	38,391	0.3340	45,870	2,560	1,765	50,195	57,500	7,305	21,869
2016	138,464	39,750	0.3201	44,325	1,920	1,599	47,844	57,500	9,656	30,165
2017	145,381	42,473	0.3146	45,743	1,992	1,844	49,580	57,500	7,920	25,171
2018	153,271	41,805	0.2972	45,546	1,918	411	47,876	57,500	9,624	32,387
2019	150,283	39,331	0.2787	41,877	1,047	896	43,820	57,500	13,680	49,094
2020	141,902	38,242	0.2766	39,256	998	1,304	41,558	57,500	15,942	57,628
2021	151,945	40,584	0.2726	41,427	701	1,248	43,376	57,500	14,124	51,803
2022	156,394	40,760	0.2663	41,654	644	1,437	43,735	57,500	13,765	51,683
2023	159,585	42,740	0.2654	42,346	860	638	43,844	57,500	13,656	51,463
2024	160,640	45,618	0.2698	43,341	779	1,031	45,151	57,500	12,349	45,770
2025	161,202		0.2698	43,493				57,500		
2026	161,764		0.2698	43,644				57,500		
2027	162,326		0.2698	43,796				57,500		
2028	162,888		0.2698	43,948				57,500		
2029	163,450		0.2698	44,099				57,500		
2030	164,012		0.2698	44,251				57,500		
2031	164,574		0.2698	44,403				57,500		
2032	165,136		0.2698	44,554				57,500		
2033	165,698		0.2698	44,706				57,500		
2034	166,260		0.2698	44,857				57,500		
2035	166,822		0.2698	45,009				57,500		
2036	167,384		0.2698	45,161				57,500		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

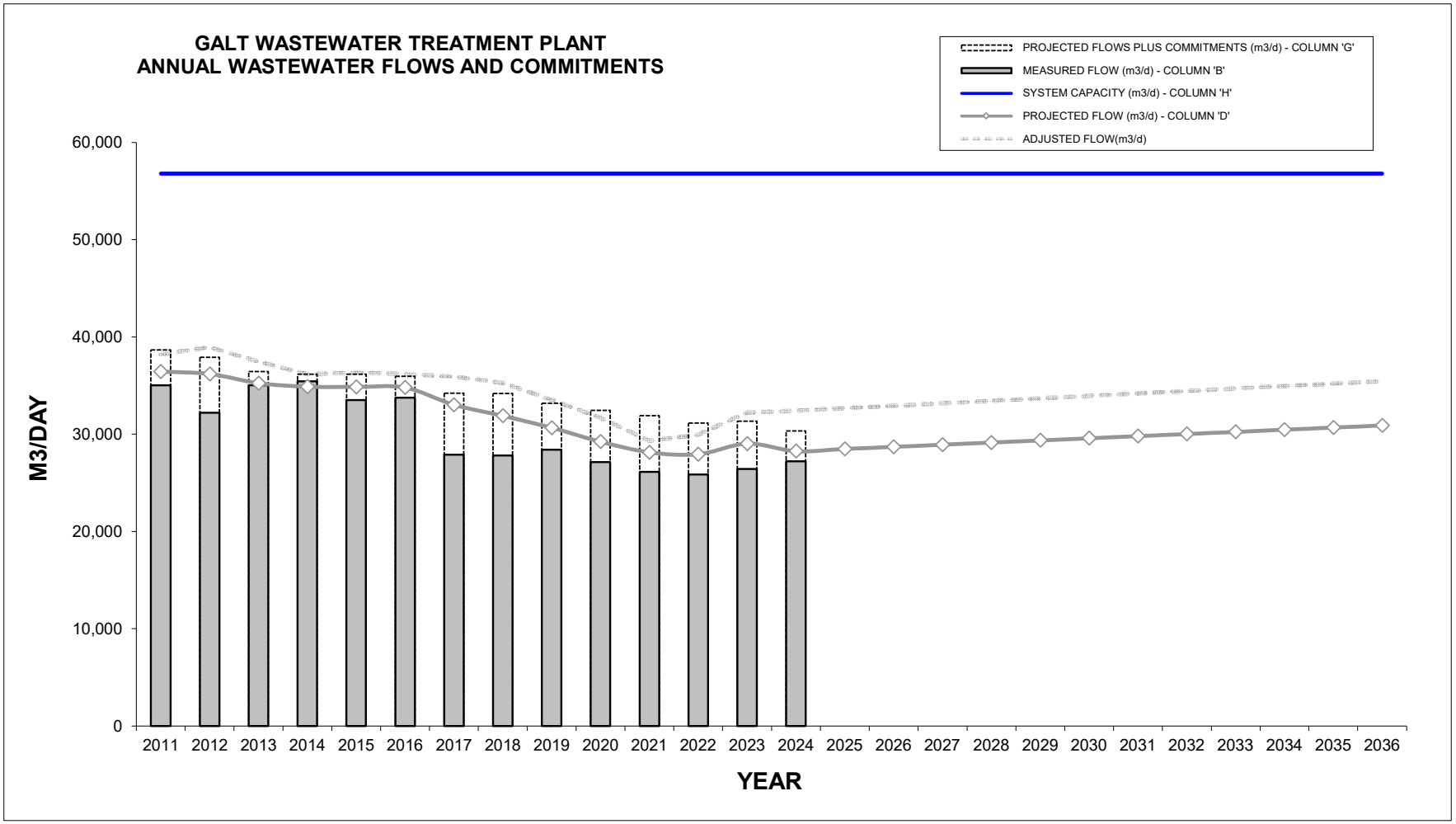

WATERLOO WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

GALT WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	82,970	35,032	0.4391	36,432	1,445	777	38,654	56,800	18,146	41,327
2012	84,412	32,200	0.4288	36,197	1,138	560	37,894	56,800	18,906	44,088
2013	84,151	35,020	0.4189	35,249	808	385	36,442	56,800	20,358	48,601
2014	85,088	35,423	0.4100	34,886	793	490	36,169	56,800	20,631	50,318
2015	86,070	33,516	0.4051	34,868	1,123	173	36,164	56,800	20,636	50,938
2016	87,479	33,739	0.3978	34,799	985	165	35,950	56,800	20,850	52,414
2017	85,369	27,888	0.3868	33,025	957	229	34,210	56,800	22,590	58,395
2018	86,716	27,807	0.3678	31,890	2,007	288	34,185	56,800	22,615	61,495
2019	87,814	28,396	0.3492	30,661	2,161	368	33,191	56,800	23,609	67,618
2020	87,748	27,124	0.3331	29,229	2,310	908	32,448	56,800	24,352	73,108
2021	89,493	26,117	0.3143	28,131	2,642	1,142	31,915	56,800	24,885	79,168
2022	91,459	25,865	0.3056	27,946	2,416	779	31,141	56,800	25,659	83,975
2023	98,361	26,436	0.2952	29,034	2,103	213	31,350	56,800	25,450	86,220
2024	98,993	27,210	0.2855	28,260	1,977	113	30,350	56,800	26,450	92,652
2025	99,765		0.2855	28,480				56,800		
2026	100,536		0.2855	28,701				56,800		
2027	101,308		0.2855	28,921				56,800		
2028	102,079		0.2855	29,141				56,800		
2029	102,851		0.2855	29,361				56,800		
2030	103,622		0.2855	29,582				56,800		
2031	104,394		0.2855	29,802				56,800		
2032	105,165		0.2855	30,022				56,800		
2033	105,937		0.2855	30,242				56,800		
2034	106,708		0.2855	30,463				56,800		
2035	107,480		0.2855	30,683				56,800		
2036	108,251		0.2855	30,903				56,800		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

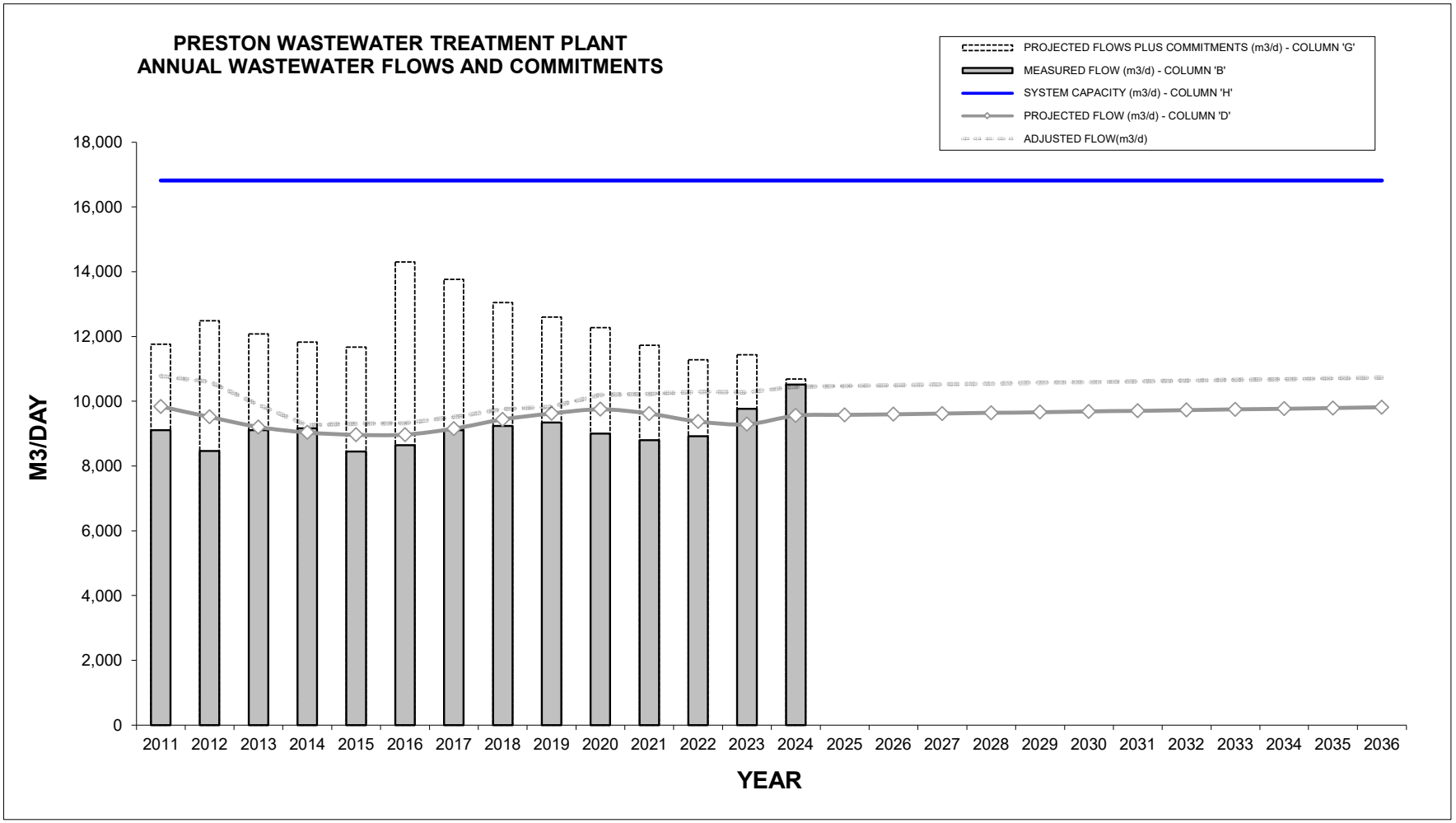

GALT WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
60,000
50,000
40,000
30,000
20,000
10,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

PRESTON WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	20,409	9,109	0.5220	9,838	1,895	30	11,763	16,820	5,057	9,686
2012	20,174	8,463	0.4988	9,518	2,865	102	12,485	16,820	4,335	8,691
2013	20,415	9,107	0.4643	9,207	2,764	104	12,075	16,820	4,745	10,219
2014	20,656	9,168	0.4376	9,039	2,712	76	11,827	16,820	4,993	11,410
2015	20,722	8,450	0.4327	8,967	2,680	21	11,668	16,820	5,152	11,906
2016	21,079	8,646	0.4255	8,969	5,281	51	14,301	16,820	2,519	5,921
2017	21,469	9,109	0.4264	9,155	4,545	60	13,760	16,820	3,060	7,176
2018	22,517	9,239	0.4193	9,441	3,610	0	13,051	16,820	3,769	8,990
2019	23,466	9,342	0.4101	9,624	2,863	116	12,603	16,820	4,217	10,283
2020	24,209	9,005	0.4030	9,755	2,472	50	12,278	16,820	4,542	11,273
2021	24,491	8,802	0.3928	9,620	2,072	32	11,725	16,820	5,095	12,970
2022	24,651	8,917	0.3803	9,375	1,875	28	11,278	16,820	5,542	14,573
2023	24,609	9,763	0.3776	9,292	2,069	73	11,434	16,820	5,386	14,264
2024	25,020	10,514	0.3820	9,558	1,004	123	10,684	16,820	6,136	16,063
2025	25,076		0.3820	9,579				16,820		
2026	25,132		0.3820	9,601				16,820		
2027	25,188		0.3820	9,622				16,820		
2028	25,244		0.3820	9,643				16,820		
2029	25,300		0.3820	9,665				16,820		
2030	25,356		0.3820	9,686				16,820		
2031	25,412		0.3820	9,708				16,820		
2032	25,468		0.3820	9,729				16,820		
2033	25,524		0.3820	9,750				16,820		
2034	25,580		0.3820	9,772				16,820		
2035	25,636		0.3820	9,793				16,820		
2036	25,692		0.3820	9,814				16,820		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

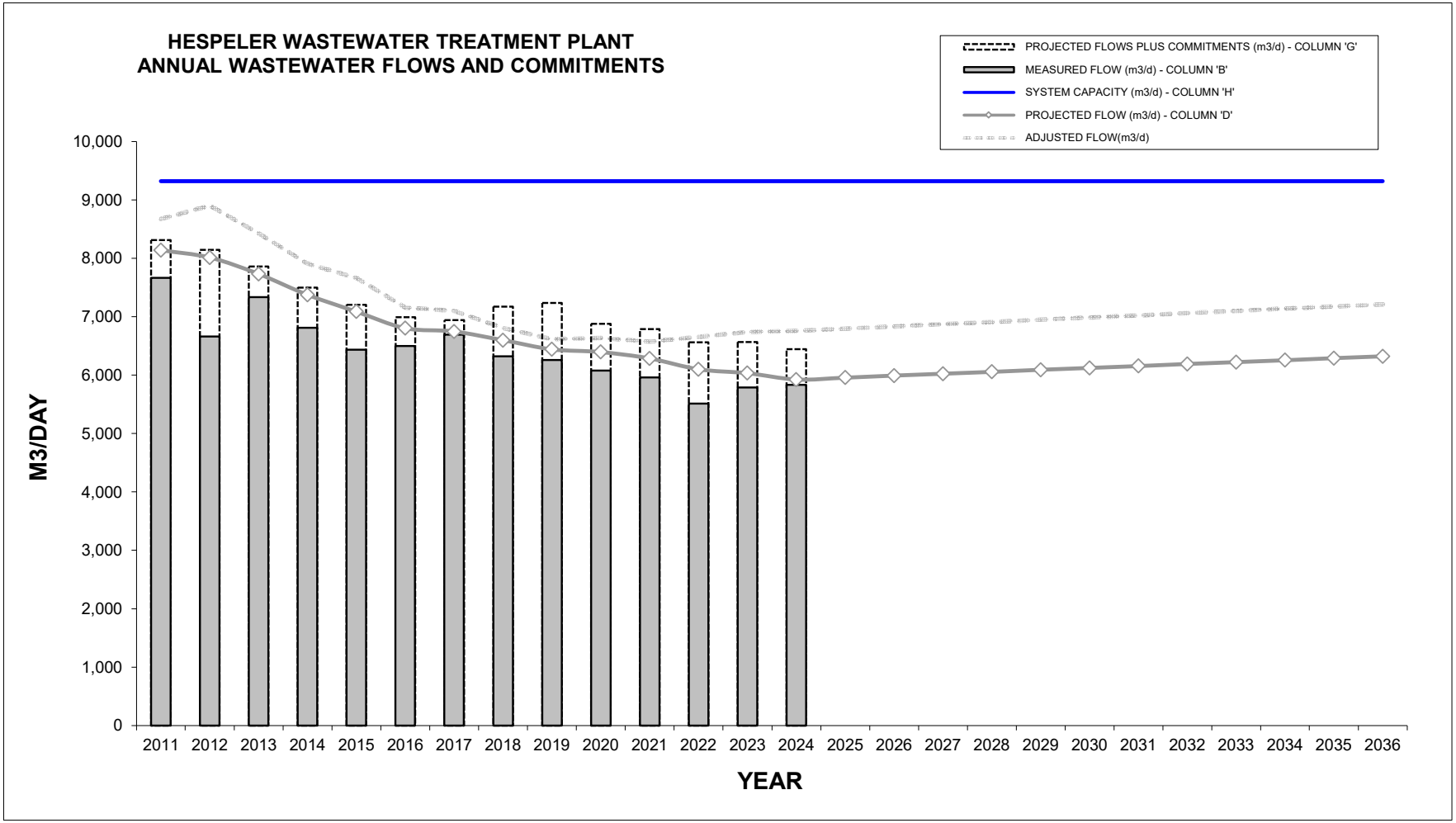

PRESTON WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

HESPELER WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	24,646	7,666	0.3303	8,140	43	127	8,310	9,320	1,010	3,059
2012	25,239	6,660	0.3175	8,013	12	118	8,142	9,320	1,178	3,711
2013	25,595	7,337	0.3021	7,732	11	114	7,858	9,320	1,462	4,840
2014	25,737	6,808	0.2866	7,375	1	121	7,498	9,320	1,822	6,359
2015	25,759	6,435	0.2752	7,088	20	98	7,206	9,320	2,114	7,681
2016	25,845	6,500	0.2633	6,804	20	167	6,991	9,320	2,329	8,846
2017	25,699	6,692	0.2626	6,748	20	173	6,941	9,320	2,379	9,061
2018	25,991	6,320	0.2539	6,599	2	572	7,172	9,320	2,148	8,460
2019	25,821	6,259	0.2495	6,441	467	329	7,237	9,320	2,083	8,351
2020	25,970	6,077	0.2463	6,396	475	7	6,878	9,320	2,442	9,914
2021	25,984	5,962	0.2419	6,285	467	39	6,791	9,320	2,529	10,457
2022	26,327	5,514	0.2317	6,100	422	42	6,564	9,320	2,756	11,897
2023	26,640	5,786	0.2265	6,034	413	123	6,569	9,320	2,751	12,145
2024	26,725	5,835	0.2217	5,924	403	118	6,445	9,320	2,875	12,969
2025	26,875		0.2217	5,958				9,320		
2026	27,025		0.2217	5,991				9,320		
2027	27,175		0.2217	6,024				9,320		
2028	27,325		0.2217	6,057				9,320		
2029	27,474		0.2217	6,090				9,320		
2030	27,624		0.2217	6,124				9,320		
2031	27,774		0.2217	6,157				9,320		
2032	27,924		0.2217	6,190				9,320		
2033	28,074		0.2217	6,223				9,320		
2034	28,223		0.2217	6,256				9,320		
2035	28,373		0.2217	6,290				9,320		
2036	28,523		0.2217	6,323				9,320		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

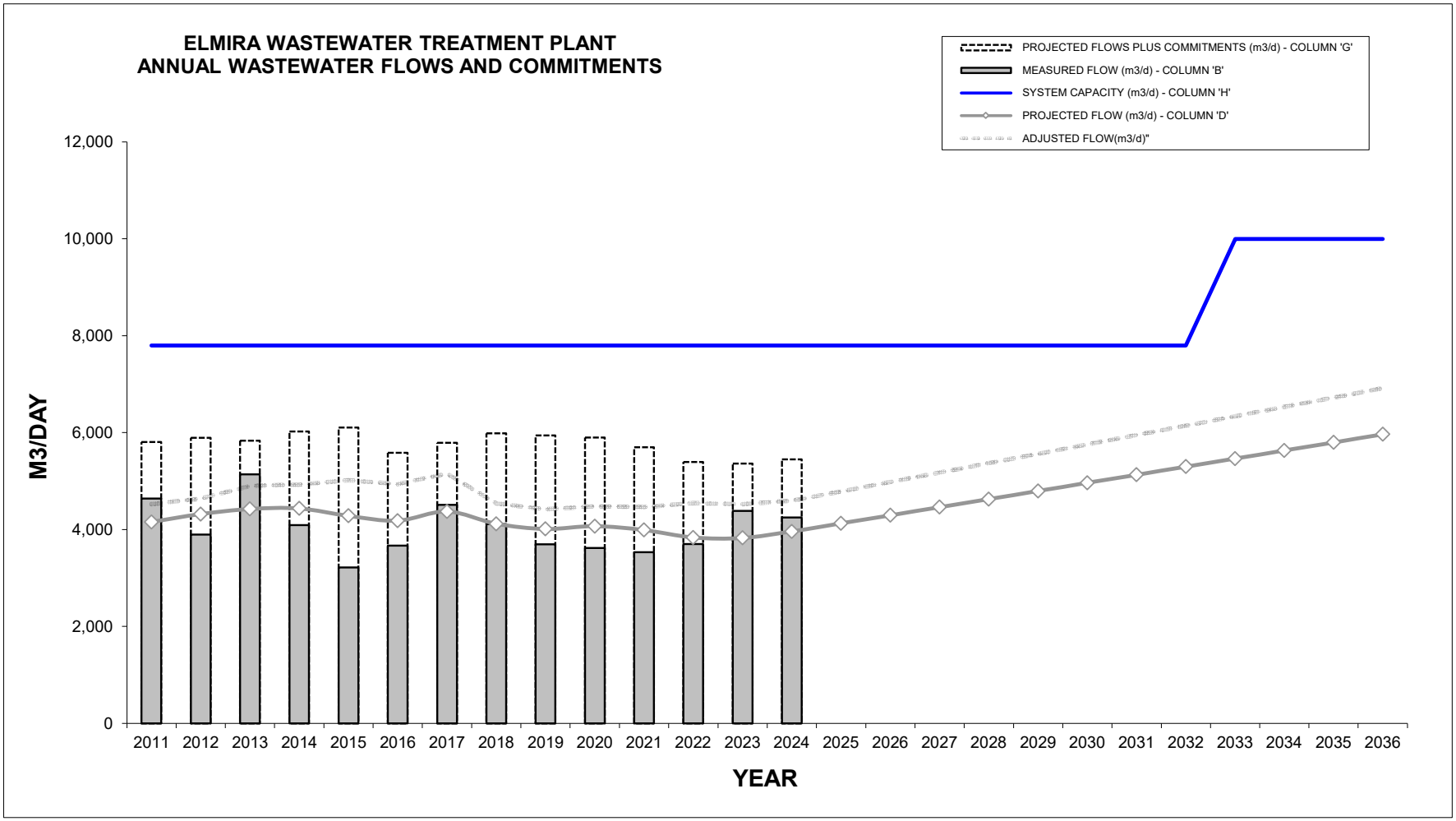

HESPELER WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

ELMIRA WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	9,586	4,642	0.4336	4,157	1,592	58	5,807	7,800	1,993	4,596
2012	9,869	3,896	0.4376	4,318	1,562	13	5,893	7,800	1,907	4,358
2013	9,824	5,140	0.4503	4,424	1,400	10	5,834	7,800	1,966	4,366
2014	9,896	4,090	0.4483	4,436	1,583	4	6,023	7,800	1,777	3,965
2015	10,025	3,215	0.4272	4,283	1,822	1	6,106	7,800	1,694	3,965
2016	10,439	3,669	0.4007	4,183	1,378	24	5,585	7,800	2,215	5,529
2017	10,788	4,508	0.4053	4,372	1,393	25	5,790	7,800	2,010	4,959
2018	10,962	4,112	0.3757	4,118	1,691	176	5,986	7,800	1,814	4,829
2019	11,171	3,697	0.3592	4,013	1,925	3	5,941	7,800	1,859	5,174
2020	11,338	3,619	0.3589	4,069	1,822	8	5,899	7,800	1,901	5,298
2021	11,379	3,532	0.3507	3,991	1,704	6	5,701	7,800	2,099	5,986
2022	11,585	3,700	0.3310	3,835	1,559	3	5,396	7,800	2,404	7,263
2023	11,523	4,384	0.3321	3,827	1,532	2	5,360	7,800	2,440	7,348
2024	11,702	4,247	0.3385	3,961	1,478	9	5,448	7,800	2,352	6,947
2025	12,196		0.3385	4,128				7,800		
2026	12,689		0.3385	4,295				7,800		
2027	13,182		0.3385	4,462				7,800		
2028	13,676		0.3385	4,629				7,800		
2029	14,169		0.3385	4,796				7,800		
2030	14,663		0.3385	4,963				7,800		
2031	15,156		0.3385	5,130				7,800		
2032	15,649		0.3385	5,297				7,800		
2033	16,143		0.3385	5,464				10,000		
2034	16,636		0.3385	5,631				10,000		
2035	17,130		0.3385	5,798				10,000		
2036	17,623		0.3385	5,965				10,000		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

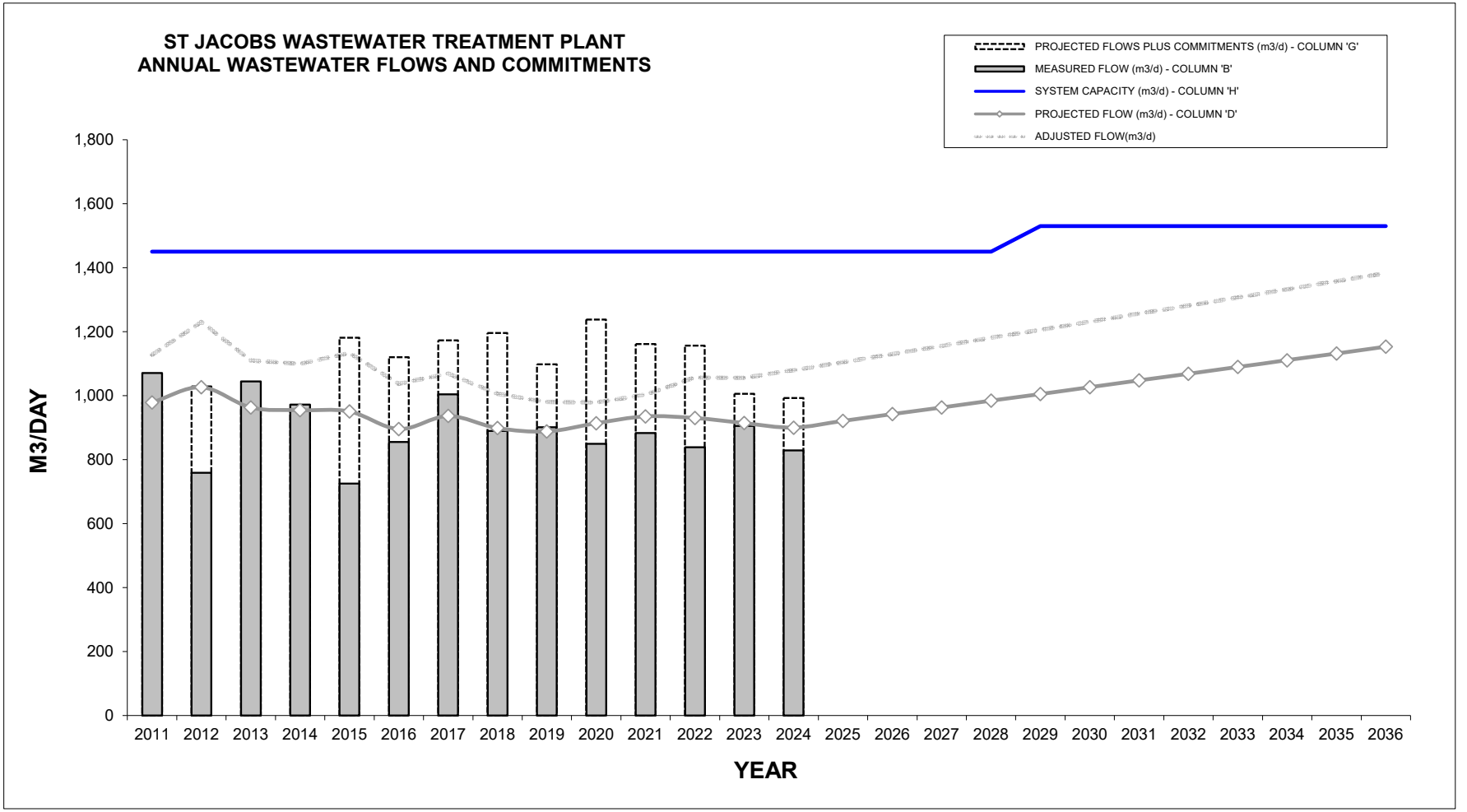

ELMIRA WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)"
M3/DAY
12,000
10,000
8,000
6,000
4,000
2,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

ST JACOBS WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	1,735	1,071	0.5640	978	0	2	980	1,450	470	833
2012	1,884	759	0.5447	1,026	0	3	1,029	1,450	421	773
2013	1,857	1,045	0.5186	963	0	2	965	1,450	485	936
2014	1,858	972	0.5137	955	0	3	958	1,450	492	959
2015	1,912	725	0.4970	950	231	0	1,181	1,450	269	541
2016	1,939	855	0.4617	895	225	0	1,120	1,450	330	714
2017	1,930	1,004	0.4852	936	236	0	1,173	1,450	277	571
2018	1,933	890	0.4648	898	297	0	1,196	1,450	254	547
2019	1,966	901	0.4518	888	210	0	1,098	1,450	352	779
2020	1,979	849	0.4618	914	324	0	1,238	1,450	212	460
2021	2,030	883	0.4606	935	226	0	1,161	1,450	289	627
2022	2,138	839	0.4351	930	203	23	1,156	1,450	294	675
2023	2,137	905	0.4277	914	89	3	1,006	1,450	444	1,038
2024	2,185	829	0.4119	900	81	12	993	1,450	457	1,110
2025	2,236		0.4119	921				1,450		
2026	2,287		0.4119	942				1,450		
2027	2,338		0.4119	963				1,450		
2028	2,389		0.4119	984				1,450		
2029	2,441		0.4119	1,005				1,530		
2030	2,492		0.4119	1,026				1,530		
2031	2,543		0.4119	1,048				1,530		
2032	2,594		0.4119	1,069				1,530		
2033	2,645		0.4119	1,090				1,530		
2034	2,697		0.4119	1,111				1,530		
2035	2,748		0.4119	1,132				1,530		
2036	2,799		0.4119	1,153				1,530		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

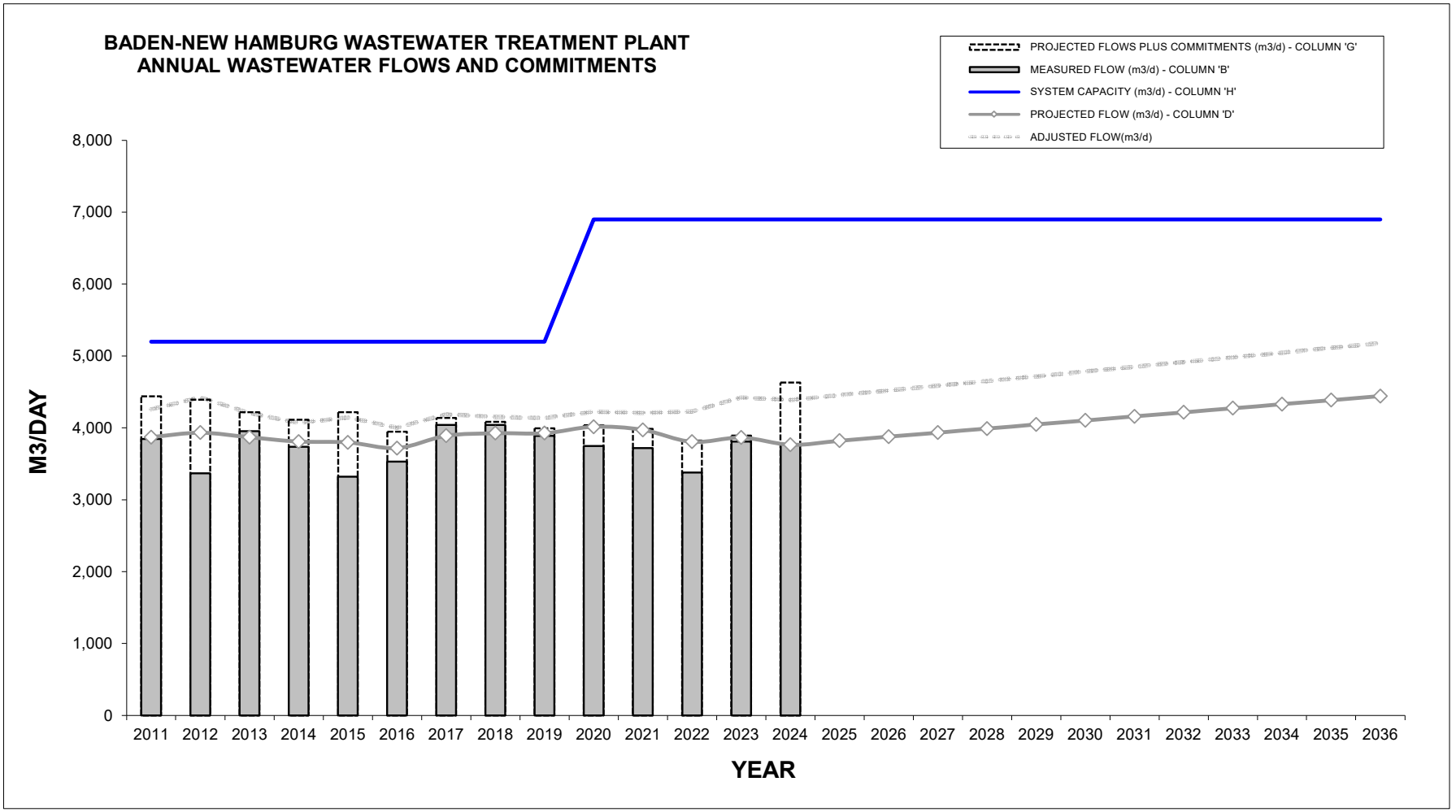

ST JACOBS WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

BADEN-NEW HAMBURG WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	11,773	3,844	0.3288	3,871	567	2	4,440	5,200	760	2,312
2012	12,268	3,367	0.3206	3,933	420	39	4,393	5,200	807	2,518
2013	12,575	3,953	0.3078	3,871	344	2	4,216	5,200	984	3,195
2014	12,787	3,736	0.2979	3,809	271	33	4,114	5,200	1,086	3,646
2015	12,978	3,320	0.2926	3,798	271	150	4,218	5,200	982	3,355
2016	13,252	3,532	0.2807	3,719	226	1	3,946	5,200	1,254	4,469
2017	13,657	4,039	0.2849	3,891	238	11	4,140	5,200	1,060	3,720
2018	14,043	4,039	0.2796	3,926	135	23	4,084	5,200	1,116	3,990
2019	14,239	3,889	0.2758	3,927	41	25	3,993	5,200	1,207	4,376
2020	14,543	3,747	0.2761	4,016	12	11	4,039	6,900	2,861	10,361
2021	14,491	3,718	0.2741	3,973	3	10	3,986	6,900	2,914	10,631
2022	14,564	3,377	0.2614	3,807	1	16	3,824	6,900	3,076	11,769
2023	15,228	3,807	0.2539	3,866	0	28	3,894	6,900	3,006	11,842
2024	15,111	3,771	0.2491	3,765	845	23	4,633	6,900	2,267	9,100
2025	15,338		0.2491	3,821				6,900		
2026	15,564		0.2491	3,878				6,900		
2027	15,791		0.2491	3,934				6,900		
2028	16,018		0.2491	3,991				6,900		
2029	16,244		0.2491	4,047				6,900		
2030	16,471		0.2491	4,104				6,900		
2031	16,698		0.2491	4,160				6,900		
2032	16,925		0.2491	4,217				6,900		
2033	17,152		0.2491	4,273				6,900		
2034	17,378		0.2491	4,330				6,900		
2035	17,605		0.2491	4,386				6,900		
2036	17,832		0.2491	4,443				6,900		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

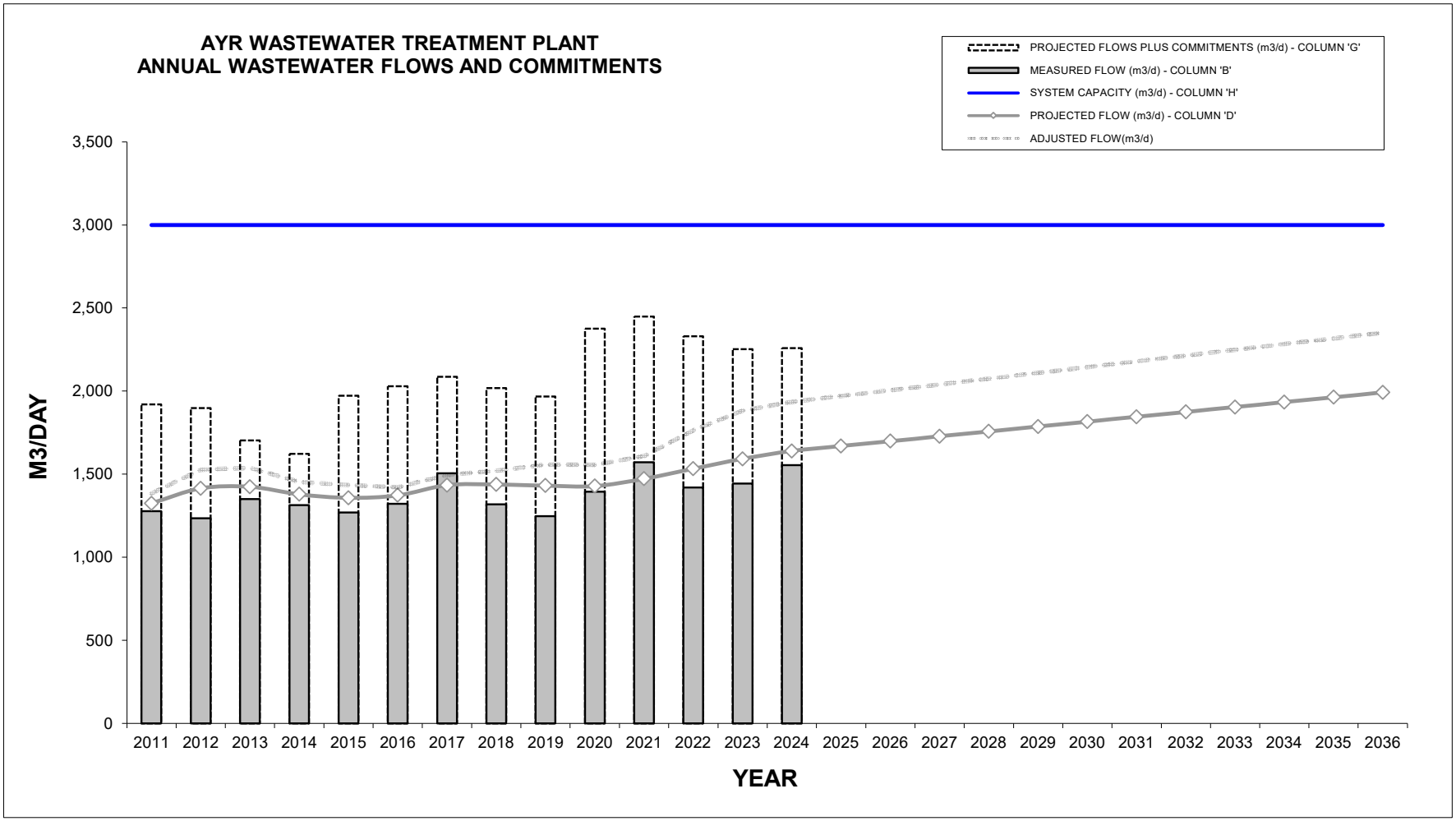

BADEN-NEW HAMBURG WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

AYR WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	4,255	1,277	0.3112	1,324	442	154	1,920	3,000	1,080	3,470
2012	4,658	1,235	0.3037	1,415	329	154	1,897	3,000	1,103	3,632
2013	4,822	1,350	0.2954	1,424	277	1	1,703	3,000	1,297	4,392
2014	4,879	1,313	0.2827	1,379	240	4	1,622	3,000	1,378	4,874
2015	4,952	1,269	0.2742	1,358	615	0	1,972	3,000	1,028	3,749
2016	5,175	1,322	0.2652	1,372	636	21	2,030	3,000	970	3,659
2017	5,339	1,505	0.2685	1,434	631	23	2,087	3,000	913	3,400
2018	5,524	1,319	0.2603	1,438	553	28	2,018	3,000	982	3,771
2019	5,724	1,247	0.2500	1,431	512	25	1,968	3,000	1,032	4,129
2020	5,784	1,394	0.2470	1,428	935	12	2,376	3,000	624	2,528
2021	5,912	1,571	0.2490	1,472	972	5	2,449	3,000	551	2,214
2022	6,482	1,419	0.2365	1,533	790	7	2,330	3,000	670	2,833
2023	6,909	1,443	0.2305	1,592	657	3	2,253	3,000	747	3,240
2024	7,111	1,554	0.2306	1,640	619	0	2,259	3,000	741	3,212
2025	7,239		0.2306	1,669				3,000		
2026	7,366		0.2306	1,699				3,000		
2027	7,493		0.2306	1,728				3,000		
2028	7,621		0.2306	1,757				3,000		
2029	7,748		0.2306	1,787				3,000		
2030	7,876		0.2306	1,816				3,000		
2031	8,003		0.2306	1,846				3,000		
2032	8,130		0.2306	1,875				3,000		
2033	8,258		0.2306	1,904				3,000		
2034	8,385		0.2306	1,934				3,000		
2035	8,513		0.2306	1,963				3,000		
2036	8,640		0.2306	1,992				3,000		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)

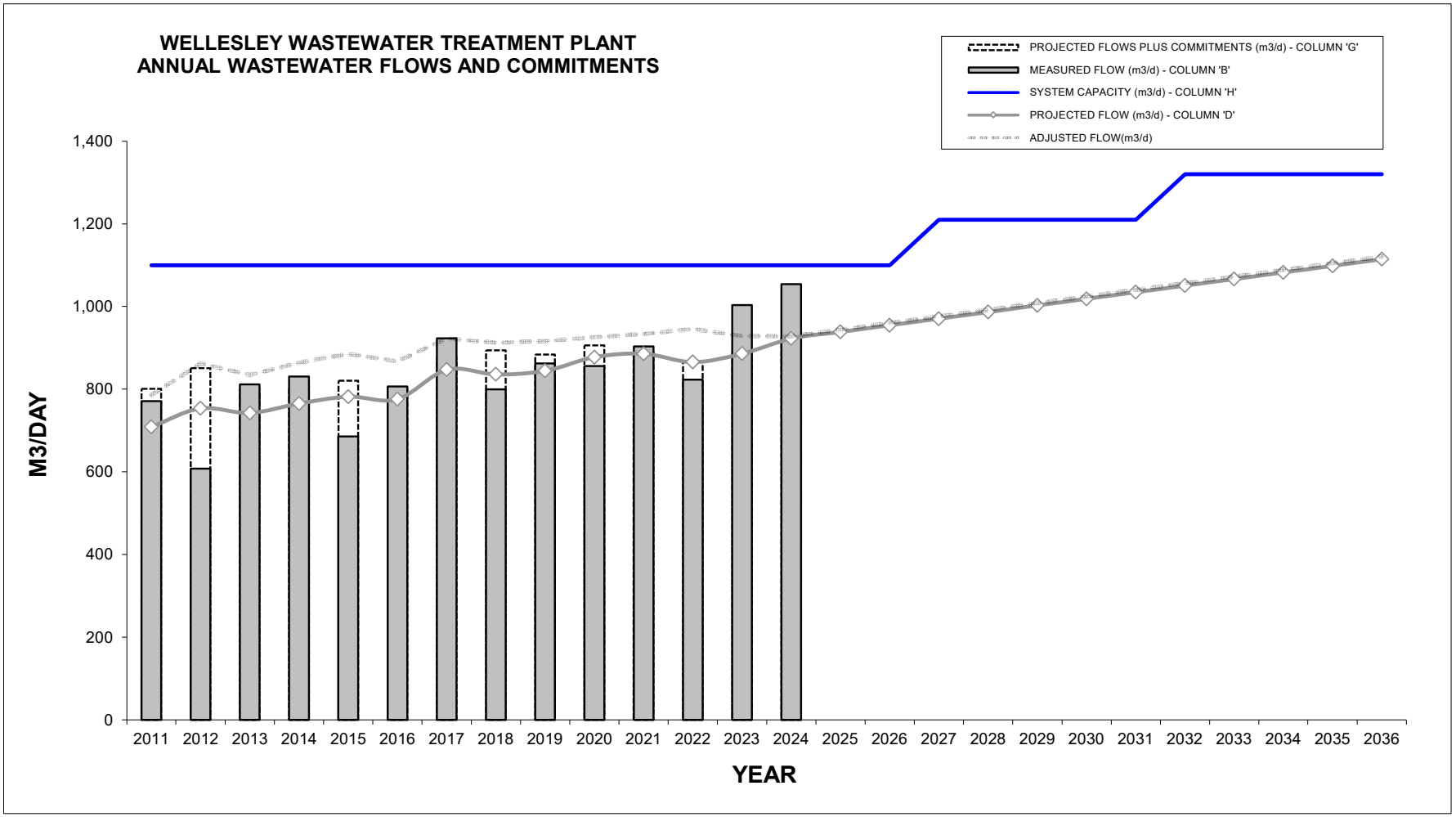

AYR WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

WELLESLEY WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	2,921	771	0.2427	709	89	3	801	1,100	299	1,232
2012	3,191	608	0.2362	754	74	23	851	1,100	249	1,054
2013	3,211	812	0.2312	742	57	2	801	1,100	299	1,293
2014	3,270	831	0.2341	765	40	2	807	1,100	293	1,254
2015	3,353	686	0.2332	782	36	3	821	1,100	279	1,198
2016	3,408	806	0.2277	776	21	2	799	1,100	301	1,322
2017	3,495	923	0.2424	847	26	3	877	1,100	223	921
2018	3,523	800	0.2373	836	56	2	894	1,100	206	869
2019	3,604	862	0.2343	844	38	2	884	1,100	216	922
2020	3,652	856	0.2403	877	27	2	906	1,100	194	806
2021	3,655	903	0.2424	886	1	2	890	1,100	210	868
2022	3,700	823	0.2340	866	1	2	868	1,100	232	991
2023	3,633	1,004	0.2439	886	1	2	888	1,100	212	868
2024	3,631	1,054	0.2541	923	1	2	925	1,100	175	688
2025	3,694		0.2541	939				1,100		
2026	3,757		0.2541	955				1,100		
2027	3,820		0.2541	971				1,210		
2028	3,883		0.2541	987				1,210		
2029	3,946		0.2541	1,003				1,210		
2030	4,009		0.2541	1,019				1,210		
2031	4,072		0.2541	1,035				1,210		
2032	4,135		0.2541	1,051				1,320		
2033	4,198		0.2541	1,067				1,320		
2034	4,260		0.2541	1,083				1,320		
2035	4,323		0.2541	1,099				1,320		
2036	4,386		0.2541	1,114				1,320		

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)


WELLESLEY WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
M3/DAY
1,400
1,200
1,000
800
600
400
200
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

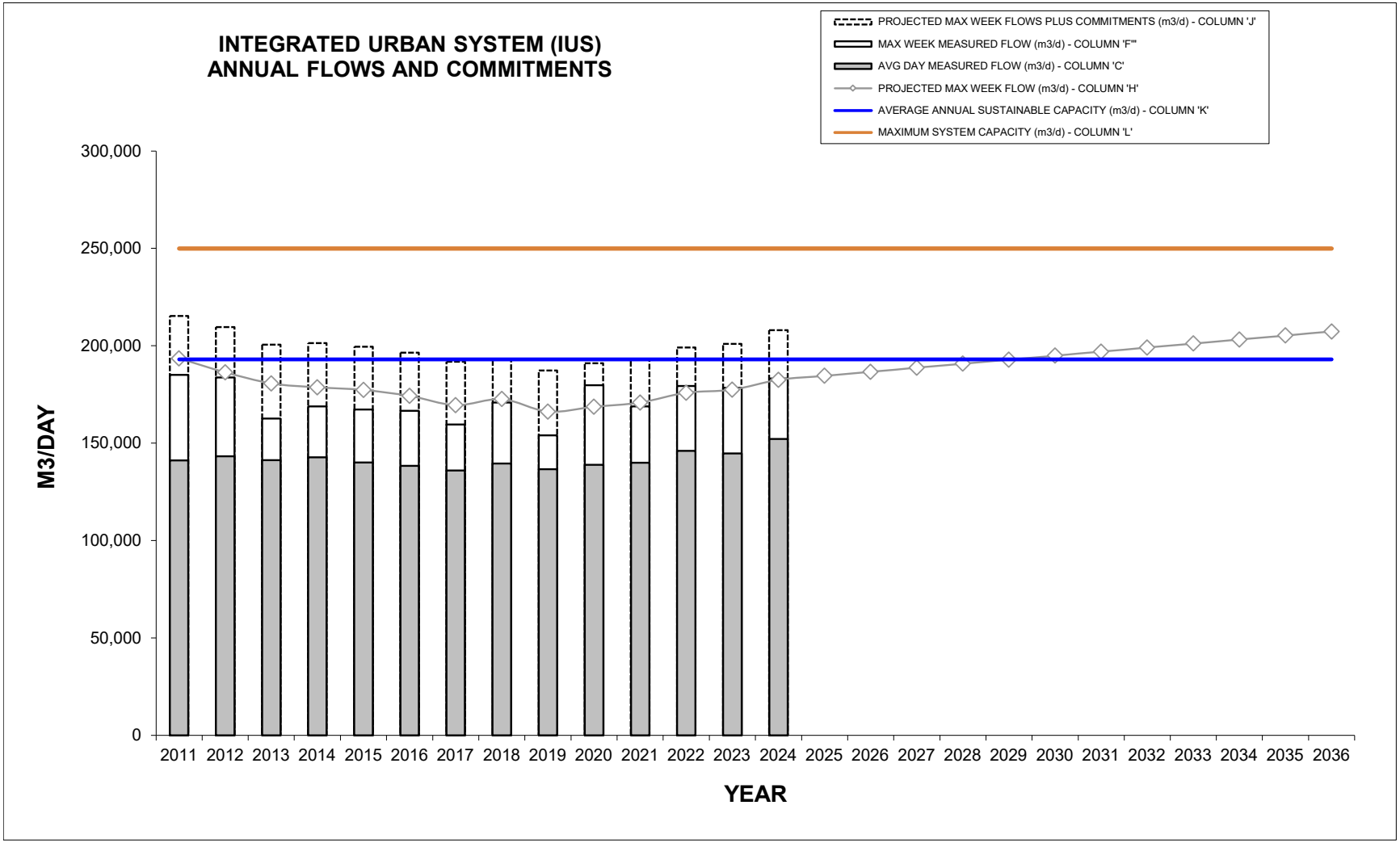
Appendix C

Water Charts and Data

INTEGRATED URBAN SYSTEM (IUS) ANNUAL FLOWS AND COMMITMENTS

	A	B	C	D*	E = B x D	F	G*	H = A x G	I	J = H + I	K	L	M = L - J	N = M / G
			AVERAGE DAY			MAXIMUM WEEK				PROJECTED MAX	SYSTEM CAPACITY (m^3/d)		REMAINING	REMAINING
YEAR	SUMMER POP.	WINTER POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	COMMITMENTS (m^3/d)	WEEK FLOWS PLUS COMMITMENTS (m^3/d)	SUSTAINABLE AVERAGE	MAXIMUM	CAPACITY (m^3/d)	CAPACITY (People)
2011	488,749	498,074	141,179	0.3059	152,358	185,081	0.3960	193,556	21,755	215,311	193,000	250,000	34,689	87,593
2012	489,073	508,841	143,347	0.2959	150,543	183,801	0.3812	186,415	23,204	209,619	193,000	250,000	40,381	105,943
2013	491,389	511,535	141,323	0.2880	147,314	162,610	0.3678	180,714	19,857	200,571	193,000	250,000	49,429	134,405
2014	495,663	517,487	142,802	0.2821	145,978	168,951	0.3606	178,735	22,643	201,378	193,000	250,000	48,622	134,836
2015	504,548	522,730	140,101	0.2771	144,839	167,338	0.3516	177,392	22,177	199,570	193,000	250,000	50,430	143,436
2016	511,030	529,416	138,360	0.2727	144,351	166,691	0.3411	174,306	22,163	196,469	193,000	250,000	53,531	156,941
2017	517,512	542,750	136,025	0.2664	144,611	159,602	0.3276	169,540	22,377	191,916	193,000	250,000	58,084	177,298
2018	529,729	559,025	139,550	0.2611	145,969	170,916	0.3260	172,666	20,306	192,971	193,000	250,000	57,029	174,961
2019	525,374	563,098	136,693	0.2545	143,293	154,104	0.3164	166,251	21,040	187,292	193,000	250,000	62,708	198,166
2020	530,911	556,174	138,988	0.2508	139,516	179,724	0.3178	168,732	22,318	191,050	193,000	250,000	58,950	185,484
2021	542,799	577,802	139,950	0.2470	142,730	168,942	0.3148	170,888	22,146	193,034	193,000	250,000	56,966	180,944
2022	553,363	592,232	146,092	0.2462	145,828	179,332	0.3180	175,948	23,193	199,141	193,000	250,000	50,859	159,952
2023	559,525	617,596	144,692	0.2432	150,178	178,486	0.3172	177,499	23,549	201,048	193,000	250,000	48,952	154,311
2024	564,240	621,911	152,167	0.2436	151,467	183,216	0.3235	182,537	25,454	207,991	193,000	250,000	42,009	129,855
2025	570,643	622,639		0.2436	151,644		0.3235	184,608			193,000	250,000		
2026	577,045	623,366		0.2436	151,821		0.3235	186,680			193,000	250,000		
2027	583,447	624,094		0.2436	151,998		0.3235	188,751			193,000	250,000		
2028	589,850	624,821		0.2436	152,175		0.3235	190,822			193,000	250,000		
2029	596,252	625,549		0.2436	152,352		0.3235	192,893			193,000	250,000		
2030	602,655	626,276		0.2436	152,530		0.3235	194,964			193,000	250,000		
2031	609,057	627,004		0.2436	152,707		0.3235	197,036			193,000	250,000		
2032	615,459	634,049		0.2436	154,423		0.3235	199,107			193,000	250,000		
2033	621,862	641,093		0.2436	156,138		0.3235	201,178			193,000	250,000		
2034	628,264	648,138		0.2436	157,854		0.3235	203,249			193,000	250,000		
2035	634,667	655,182		0.2436	159,570		0.3235	205,321			193,000	250,000		
2036	641,069	662,227		0.2436	161,285		0.3235	207,392			193,000	250,000		

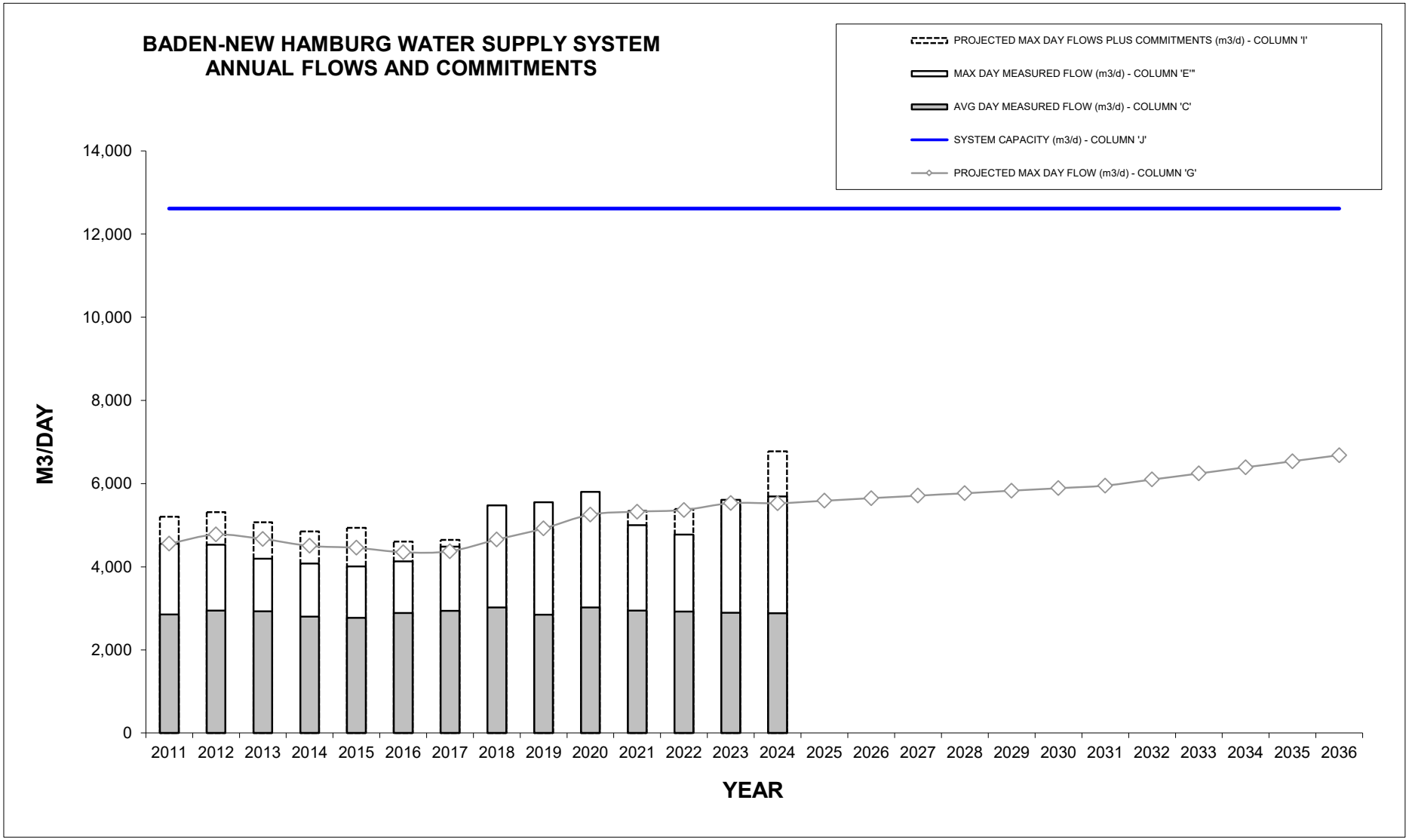
*Average of the previous five years. See Section 2.5 for an explanation of the Max Flow Per Capita Per Day in Column 'D' and 'G'


INTEGRATED URBAN SYSTEM (IUS)
ANNUAL FLOWS AND COMMITMENTS
PROJECTED MAX WEEK FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'J'
MAX WEEK MEASURED FLOW (m3/d) - COLUMN 'F'"
AVG DAY MEASURED FLOW (m3/d) - COLUMN 'C'
PROJECTED MAX WEEK FLOW (m3/d) - COLUMN 'H'
AVERAGE ANNUAL SUSTAINABLE CAPACITY (m3/d) - COLUMN 'K'
MAXIMUM SYSTEM CAPACITY (m3/d) - COLUMN 'L'
M3/DAY
300,000
250,000
200,000
150,000
100,000
50,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

BADEN-NEW HAMBURG WATER SUPPLY SYSTEM ANNUAL FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F*	G = A x F	H	I = G + H	J	K = J - I	L = K / F
		AVERAGE DAY			MAXIMUM DAY							
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	COMMITMENTS (m^3/d)	PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	12,073	2,856	0.2472	2,984	4,555	0.3772	4,554	653	5,207	12,614	7,407	19,639
2012	12,570	2,947	0.2447	3,075	4,530	0.3798	4,774	544	5,318	12,614	7,296	19,211
2013	12,878	2,928	0.2400	3,091	4,195	0.3623	4,666	407	5,073	12,614	7,541	20,816
2014	13,089	2,800	0.2304	3,016	4,077	0.3439	4,501	352	4,853	12,614	7,761	22,570
2015	13,287	2,774	0.2242	2,979	4,006	0.3353	4,455	481	4,936	12,614	7,678	22,900
2016	13,553	2,890	0.2195	2,976	4,130	0.3208	4,347	259	4,606	12,614	8,008	24,964
2017	13,974	2,943	0.2148	3,001	4,482	0.3128	4,372	273	4,645	12,614	7,969	25,473
2018	14,361	3,020	0.2114	3,035	5,480	0.3240	4,653	101	4,754	12,614	7,860	24,257
2019	14,554	2,848	0.2077	3,023	5,554	0.3380	4,920	81	5,001	12,614	7,613	22,521
2020	14,736	3,019	0.2069	3,049	5,804	0.3565	5,253	30	5,283	12,614	7,331	20,562
2021	14,622	2,946	0.2046	2,991	5,003	0.3640	5,322	18	5,340	12,614	7,274	19,983
2022	14,699	2,924	0.2023	2,973	4,775	0.3648	5,362	24	5,386	12,614	7,228	19,811
2023	15,273	2,892	0.1981	3,025	5,612	0.3620	5,529	40	5,569	12,614	7,045	19,463
2024	15,358	2,882	0.1965	3,017	5,691	0.3598	5,525	1,252	6,778	12,614	5,836	16,222
2025	15,527		0.1965	3,050		0.3598	5,586			12,614		
2026	15,695		0.1965	3,083		0.3598	5,647			12,614		
2027	15,863		0.1965	3,116		0.3598	5,707			12,614		
2028	16,032		0.1965	3,150		0.3598	5,768			12,614		
2029	16,200		0.1965	3,183		0.3598	5,828			12,614		
2030	16,369		0.1965	3,216		0.3598	5,889			12,614		
2031	16,537		0.1965	3,249		0.3598	5,950			12,614		
2032	16,944		0.1965	3,329		0.3598	6,096			12,614		
2033	17,351		0.1965	3,409		0.3598	6,243			12,614		
2034	17,759		0.1965	3,489		0.3598	6,389			12,614		
2035	18,166		0.1965	3,569		0.3598	6,536			12,614		
2036	18,573		0.1965	3,649		0.3598	6,682			12,614		

*Average of the previous five years. See Section 2.5 for an explanation of the Max Flow Per Capita Per Day in Column 'C' and 'F'

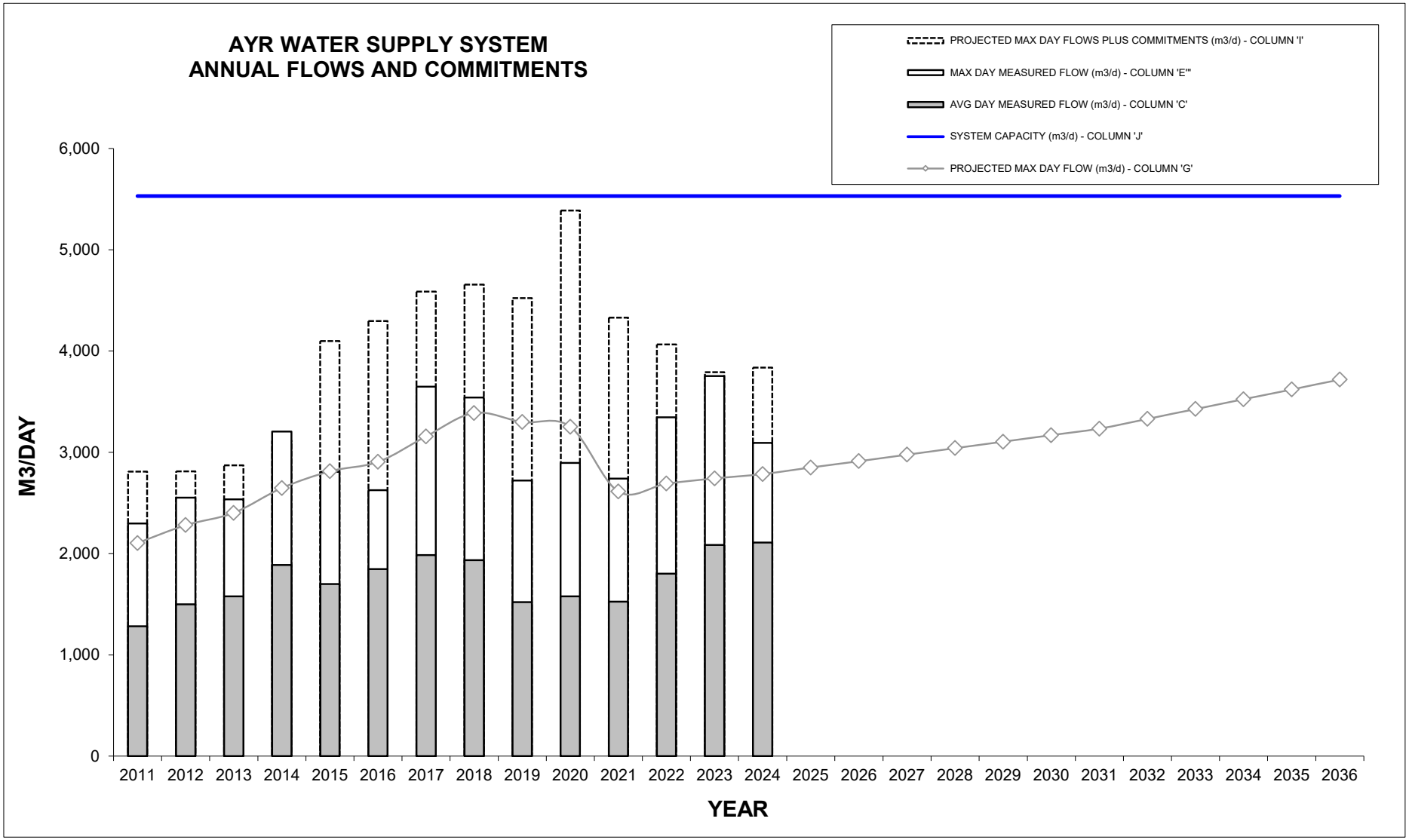

BADEN-NEW HAMBURG WATER SUPPLY SYSTEM
ANNUAL FLOWS AND COMMITMENTS
PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'I'
MAX DAY MEASURED FLOW (m3/d) - COLUMN 'E'"
AVG DAY MEASURED FLOW (m3/d) - COLUMN 'C'
SYSTEM CAPACITY (m3/d) - COLUMN 'J'
PROJECTED MAX DAY FLOW (m3/d) - COLUMN 'G'
M3/DAY
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

AYR WATER SUPPLY SYSTEM ANNUAL FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F*	G = A x F	H	I = G + H	J	K = J - I	L = K / F
		AVERAGE DAY			MAXIMUM DAY							
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	COMMITMENTS (m^3/d)	PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	4,266	1,282	0.2850	1,216	2,299	0.4932	2,104	704	2,808	5,530	2,722	5,518
2012	4,667	1,499	0.2880	1,344	2,554	0.4887	2,281	529	2,810	5,530	2,720	5,566
2013	4,831	1,578	0.3021	1,459	2,536	0.4972	2,402	469	2,871	5,530	2,659	5,348
2014	4,888	1,888	0.3240	1,584	3,204	0.5415	2,647	466	3,113	5,530	2,417	4,463
2015	4,967	1,699	0.3353	1,666	2,807	0.5663	2,813	1,285	4,098	5,530	1,432	2,528
2016	5,190	1,848	0.3464	1,798	2,627	0.5598	2,905	1,391	4,296	5,530	1,234	2,204
2017	5,391	1,985	0.3558	1,918	3,647	0.5856	3,157	1,430	4,587	5,530	943	1,611
2018	5,577	1,937	0.3600	2,008	3,540	0.6076	3,389	1,269	4,657	5,530	873	1,436
2019	5,781	1,522	0.3354	1,939	2,722	0.5707	3,299	1,225	4,524	5,530	1,006	1,763
2020	5,841	1,578	0.3210	1,875	2,895	0.5568	3,252	2,136	5,388	5,530	142	255
2021	5,966	1,526	0.3009	1,795	2,740	0.4379	2,613	1,717	4,330	5,530	1,200	2,741
2022	6,539	1,802	0.2824	1,847	3,344	0.4115	2,691	1,376	4,066	5,530	1,464	3,557
2023	6,909	2,087	0.2734	1,889	3,752	0.3968	2,742	1,049	3,791	5,530	1,739	4,382
2024	7,125	2,109	0.2799	1,994	3,091	0.3909	2,785	1,050	3,835	5,530	1,695	4,335
2025	7,289		0.2799	2,040		0.3909	2,849			5,530		
2026	7,452		0.2799	2,086		0.3909	2,913			5,530		
2027	7,616		0.2799	2,132		0.3909	2,977			5,530		
2028	7,780		0.2799	2,178		0.3909	3,041			5,530		
2029	7,943		0.2799	2,223		0.3909	3,105			5,530		
2030	8,107		0.2799	2,269		0.3909	3,169			5,530		
2031	8,271		0.2799	2,315		0.3909	3,233			5,530		
2032	8,519		0.2799	2,385		0.3909	3,330			5,530		
2033	8,767		0.2799	2,454		0.3909	3,427			5,530		
2034	9,015		0.2799	2,523		0.3909	3,524			5,530		
2035	9,263		0.2799	2,593		0.3909	3,621			5,530		
2036	9,511		0.2799	2,662		0.3909	3,718			5,530		

*Average of the previous five years. See Section 2.5 for an explanation of the Max Flow Per Capita Per Day in Column 'C' and 'F'

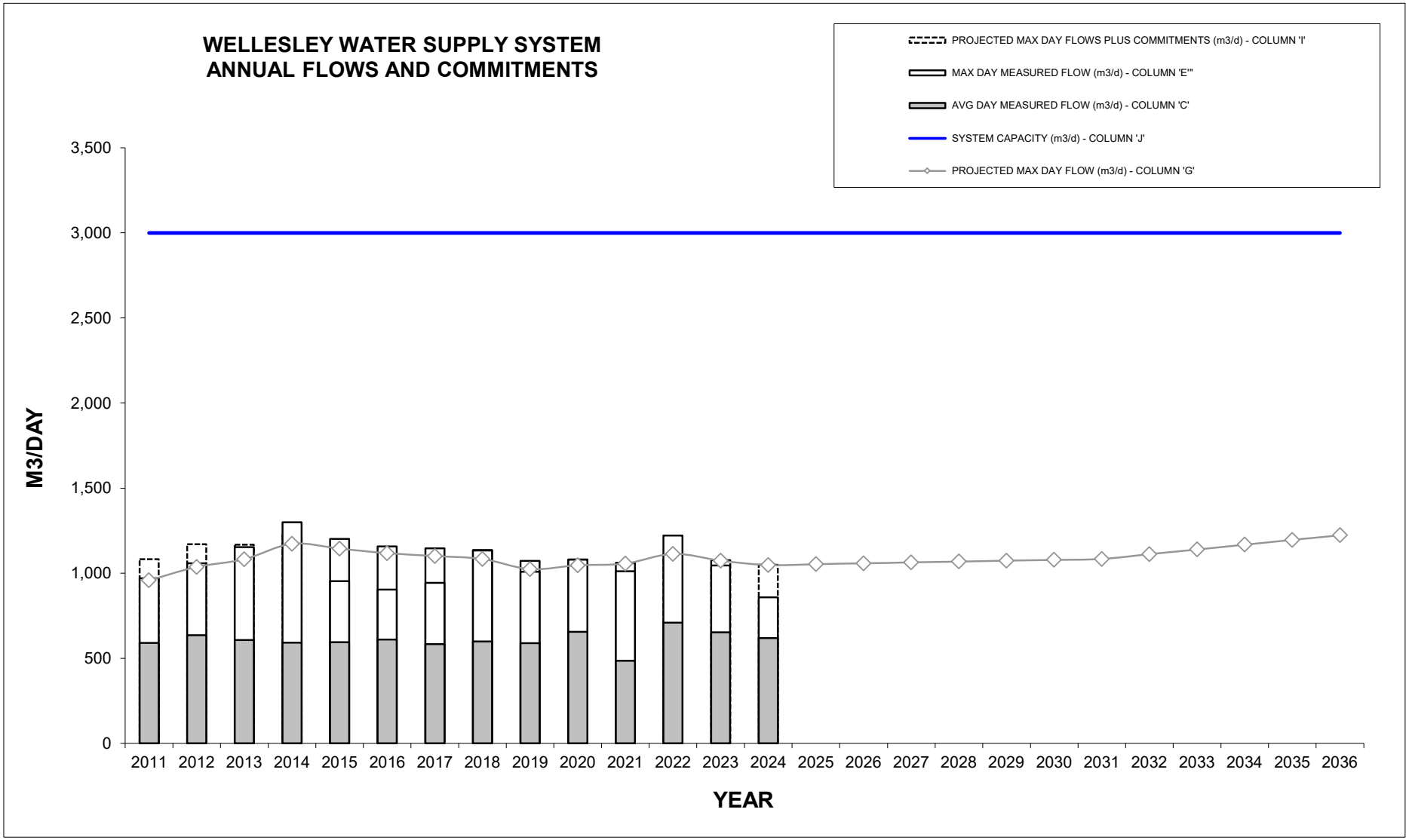
Ayr Maximum Day Per Capita rate is reduced by 20% for growth projects as outlined in the Ayr Water Supply System - Per Capita Rate Review Memo (docs#3862478)


AYR WATER SUPPLY SYSTEM
ANNUAL FLOWS AND COMMITMENTS
PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'I'
MAX DAY MEASURED FLOW (m3/d) - COLUMN 'E'"
AVG DAY MEASURED FLOW (m3/d) - COLUMN 'C'
SYSTEM CAPACITY (m3/d) - COLUMN 'J'
PROJECTED MAX DAY FLOW (m3/d) - COLUMN 'G'
M3/DAY
6,000
5,000
4,000
3,000
2,000
1,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

WELLESLEY WATER SUPPLY SYSTEM ANNUAL FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F*	G = A x F	H	I = G + H	J	K = J - I	L = K / F
		AVERAGE DAY			MAXIMUM DAY							
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	COMMITMENTS (m^3/d)	PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	2,901	590	0.2057	597	970	0.3301	957	125	1,083	3,000	1,917	5,808
2012	3,169	635	0.2049	649	1,058	0.3270	1,036	135	1,171	3,000	1,829	5,594
2013	3,195	607	0.2025	647	1,153	0.3386	1,082	86	1,167	3,000	1,833	5,412
2014	3,254	592	0.1997	650	1,300	0.3602	1,172	63	1,235	3,000	1,765	4,899
2015	3,337	594	0.1908	637	954	0.3429	1,144	57	1,201	3,000	1,799	5,247
2016	3,392	610	0.1860	631	904	0.3293	1,117	41	1,158	3,000	1,842	5,594
2017	3,472	583	0.1795	623	943	0.3169	1,100	45	1,146	3,000	1,854	5,852
2018	3,499	598	0.1757	615	1,134	0.3095	1,083	52	1,135	3,000	1,865	6,024
2019	3,580	589	0.1722	617	1,008	0.2859	1,024	48	1,072	3,000	1,928	6,743
2020	3,629	655	0.1727	627	1,079	0.2882	1,046	35	1,081	3,000	1,919	6,660
2021	3,633	485	0.1635	594	1,012	0.2906	1,056	5	1,061	3,000	1,939	6,673
2022	3,677	709	0.1684	619	1,221	0.3027	1,113	3	1,116	3,000	1,884	6,223
2023	3,633	652	0.1702	618	1,045	0.2954	1,073	3	1,076	3,000	1,924	6,512
2024	3,663	618	0.1710	626	859	0.2860	1,048	3	1,050	3,000	1,950	6,816
2025	3,681		0.1710	629		0.2860	1,053			3,000		
2026	3,698		0.1710	632		0.2860	1,058			3,000		
2027	3,716		0.1710	635		0.2860	1,063			3,000		
2028	3,734		0.1710	638		0.2860	1,068			3,000		
2029	3,751		0.1710	641		0.2860	1,073			3,000		
2030	3,769		0.1710	645		0.2860	1,078			3,000		
2031	3,787		0.1710	648		0.2860	1,083			3,000		
2032	3,885		0.1710	664		0.2860	1,111			3,000		
2033	3,983		0.1710	681		0.2860	1,139			3,000		
2034	4,080		0.1710	698		0.2860	1,167			3,000		
2035	4,178		0.1710	714		0.2860	1,195			3,000		
2036	4,276		0.1710	731		0.2860	1,223			3,000		

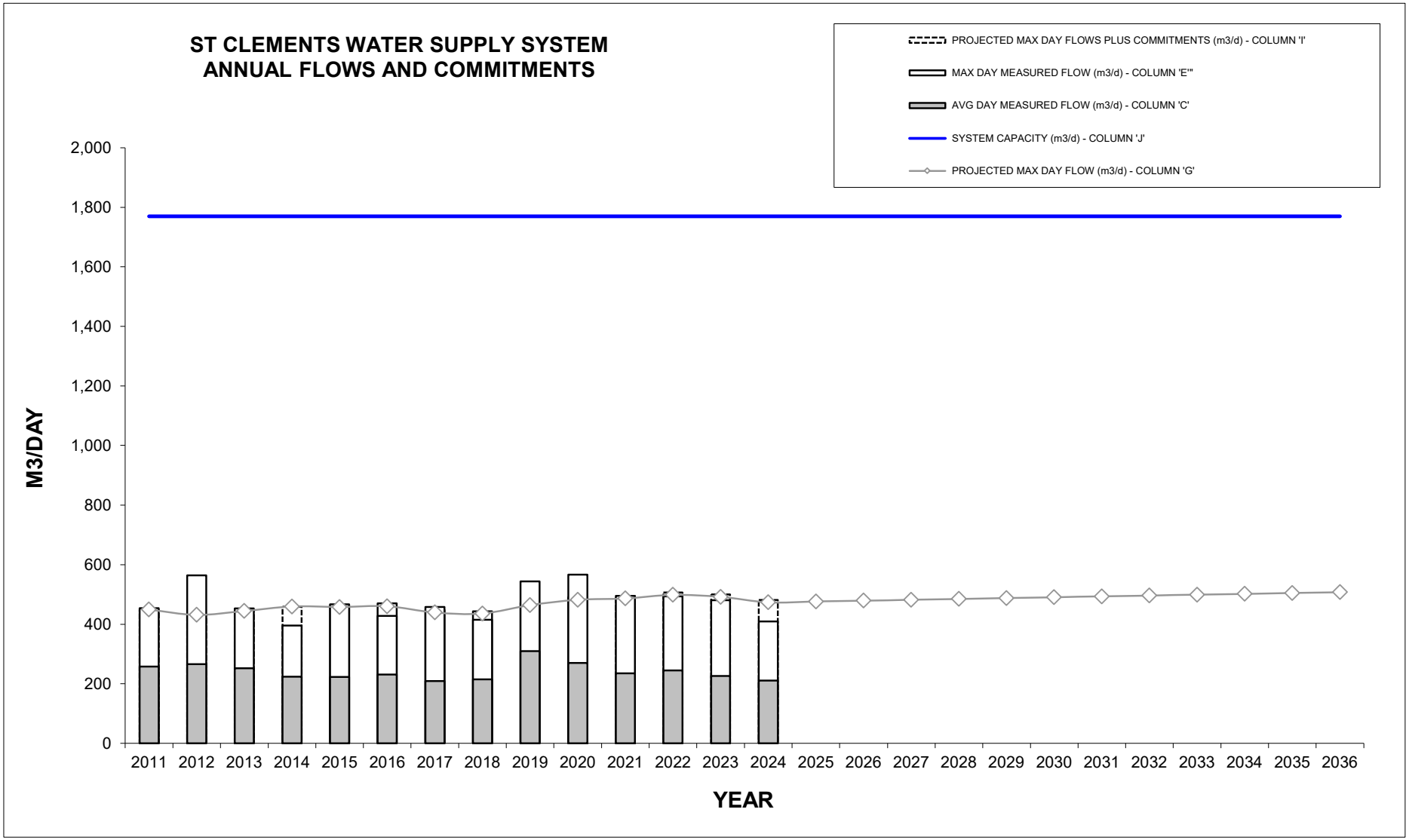
*Average of the previous five years. See Section 2.5 for an explanation of the Max Flow Per Capita Per Day in Column 'C' and 'F'


WELLESLEY WATER SUPPLY SYSTEM
ANNUAL FLOWS AND COMMITMENTS
PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'I'
MAX DAY MEASURED FLOW (m3/d) - COLUMN 'E'"
AVG DAY MEASURED FLOW (m3/d) - COLUMN 'C'
SYSTEM CAPACITY (m3/d) - COLUMN 'J'
PROJECTED MAX DAY FLOW (m3/d) - COLUMN 'G'
M3/DAY
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

ST CLEMENTS WATER SUPPLY SYSTEM ANNUAL FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F*	G = A x F	H	I = G + H	J	K = J - I	L = K / F
		AVERAGE DAY			MAXIMUM DAY							
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	COMMITMENTS (m^3/d)	PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	1,360	258	0.1843	251	454	0.3301	449	0	449	1,770	1,321	4,002
2012	1,259	266	0.1885	237	564	0.3424	431	0	431	1,770	1,339	3,910
2013	1,263	252	0.1943	245	453	0.3518	444	0	444	1,770	1,326	3,768
2014	1,267	224	0.1952	247	396	0.3625	459	0	459	1,770	1,311	3,616
2015	1,253	223	0.1909	239	467	0.3651	458	6	463	1,770	1,307	3,578
2016	1,255	231	0.1899	238	428	0.3666	460	10	470	1,770	1,300	3,547
2017	1,255	209	0.1809	227	458	0.3500	439	9	448	1,770	1,322	3,776
2018	1,267	215	0.1749	222	415	0.3438	436	8	443	1,770	1,327	3,859
2019	1,263	310	0.1887	238	544	0.3674	464	7	471	1,770	1,299	3,535
2020	1,258	270	0.1961	247	567	0.3830	482	9	491	1,770	1,279	3,341
2021	1,231	235	0.1974	243	495	0.3952	486	8	494	1,770	1,276	3,228
2022	1,240	245	0.2036	253	494	0.4019	498	8	506	1,770	1,264	3,144
2023	1,176	226	0.2081	245	481	0.4182	492	8	500	1,770	1,270	3,037
2024	1,179	211	0.1949	230	409	0.4014	473	8	481	1,770	1,289	3,211
2025	1,186		0.1949	231		0.4014	476			1,770		
2026	1,193		0.1949	232		0.4014	479			1,770		
2027	1,200		0.1949	234		0.4014	482			1,770		
2028	1,207		0.1949	235		0.4014	485			1,770		
2029	1,215		0.1949	237		0.4014	488			1,770		
2030	1,222		0.1949	238		0.4014	490			1,770		
2031	1,229		0.1949	239		0.4014	493			1,770		
2032	1,236		0.1949	241		0.4014	496			1,770		
2033	1,243		0.1949	242		0.4014	499			1,770		
2034	1,250		0.1949	244		0.4014	502			1,770		
2035	1,257		0.1949	245		0.4014	505			1,770		
2036	1,264		0.1949	246		0.4014	507			1,770		

*Average of the previous five years. See Section 2.5 for an explanation of the Max Flow Per Capita Per Day in Column 'C' and 'F'


ST CLEMENTS WATER SUPPLY SYSTEM
ANNUAL FLOWS AND COMMITMENTS
PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'I'
MAX DAY MEASURED FLOW (m3/d) - COLUMN 'E'"
AVG DAY MEASURED FLOW (m3/d) - COLUMN 'C'
SYSTEM CAPACITY (m3/d) - COLUMN 'J'
PROJECTED MAX DAY FLOW (m3/d) - COLUMN 'G'
M3/DAY
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

CONESTOGO GOLF COURSE WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
		Conestogo Golf Course System is now connected to the Integrated Urban System. Flows and population are included in the IUS.								

CONESTOGO PLAINS WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
		Conestogo Plains System is now connected to the Integrated Urban System. Flows and population are included in the IUS.								

MARY HILL WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	140	57	0.4216	59	99	0.6659	93	157	64	-
2021	137	54	0.4213	58	97	0.6575	90	157	67	-
2022	138	56	0.4116	57	91	0.6646	92	157	65	-
2023	156	46	0.3827	60	99	0.6667	104	157	53	-
2024	156	30	0.3389	53	61	0.6200	97	157	60	-

MARY HILL VILLAGE HEIGHTS WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	191	46	0.2235	43	153	0.9543	182	820	638	-
2021	208	61	0.2332	49	222	1.0034	209	820	611	-
2022	227	64	0.2449	56	246	1.0271	233	820	587	-
2023	238	57	0.2513	60	200	0.9466	225	820	595	-
2024	243	67	0.2663	65	169	0.8976	218	820	602	-

WEST MONTROSE WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)

West Montrose System is now connected to the Integrated Urban System. Flows and population are included in the IUS.

HEIDELBERG WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	1,005	142	0.1375	138	343	0.3155	317	829	512	-
2021	986	154	0.1401	138	300	0.3234	319	829	510	-
2022	985	129	0.1403	138	256	0.3141	309	829	520	-
2023	983	119	0.1376	135	275	0.2961	291	829	538	-
2024	987	113	0.1328	131	184	0.2743	271	829	558	-

LINWOOD WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	773	161	0.2417	187	263	0.3679	284	605	321	-
2021	760	208	0.2447	186	359	0.3851	293	605	312	-
2022	768	227	0.2408	185	335	0.3827	294	605	311	-
2023	770	259	0.2602	200	372	0.4101	316	605	289	-
2024	774	236	0.2838	220	402	0.4503	349	605	256	-

FOXBORO WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	403	91	0.2341	94	144	0.4301	173	527	354	-
2021	397	93	0.2359	94	115	0.4055	161	527	366	-
2022	403	84	0.2288	92	117	0.3758	151	527	376	-
2023	432	81	0.2190	95	216	0.3958	171	527	356	-
2024	423	75	0.2067	87	114	0.3414	144	527	383	-

NEW DUNDEE WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	1,056	220	0.1859	196	509	0.3648	385	983	598	-
2021	1,039	239	0.1927	200	477	0.3877	403	983	580	-
2022	1,052	254	0.2034	214	405	0.3957	416	983	567	-
2023	1,057	251	0.2158	228	618	0.4412	466	983	517	-
2024	1,065	184	0.2180	232	316	0.4415	470	983	513	-

ROSEVILLE WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	290	92	0.2622	76	185	0.5848	170	358	188	-
2021	288	67	0.2638	76	154	0.5414	156	358	202	-
2022	288	87	0.2745	79	168	0.5719	165	358	193	-
2023	275	85	0.2846	78	192	0.5957	164	358	194	-
2024	275	53	0.2708	74	111	0.5716	157	358	201	-

BRANCHTON WATER SUPPLY SYSTEM ANNUAL FLOWS

	A	B	C	D = A x C	E	F = E / A	G = A x F	H	I = H - G	J = I / F
		AVERAGE DAY			MAXIMUM DAY			SYSTEM	REMAINING	REMAINING
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	CAPACITY (m^3/d)	CAPACITY (m^3/d)	CAPACITY (People)
2020	121	31	0.2283	28	106	0.6764	82	130	48	-
2021	119	26	0.2156	26	64	0.6167	73	130	57	-
2022	120	29	0.2226	27	79	0.6310	76	130	54	-
2023	125	29	0.2277	28	118	0.7074	88	130	42	-
2024	125	54	0.2761	35	113	0.7840	98	130	32	-

Appendix D

Population and Development Data

TABLE D-1

YEAR-END POPULATION BY SERVICE AREA

(Year-end total, including temporary university and college students)

Wastewater Service Area	2017	2018	2019	2020	2021	2022	2023	2024	2026	2031	2036
Galt	85,369	86,716	87,814	87,748	89,493	91,459	98,361	98,993	100,536	104,394	108,251
Preston	21,469	22,517	23,466	24,209	24,491	24,651	24,609	25,020	25,132	25,412	25,692
Hespeler	25,699	25,991	25,821	25,970	25,984	26,327	26,640	26,725	27,025	27,774	28,523
Kitchener	248,481	253,621	258,675	260,556	268,944	275,970	290,262	290,946	293,819	301,003	308,186
Waterloo	145,381	153,271	150,283	141,902	151,945	156,394	159,585	160,640	161,764	164,574	167,384
Ayr	5,339	5,524	5,724	5,784	5,912	6,482	6,908	7,111	7,366	8,003	8,640
Baden/New Hamburg	13,657	14,043	14,239	14,543	14,491	14,564	15,228	15,111	15,564	16,698	17,832
Wellesley	3,495	3,523	3,604	3,652	3,655	3,700	3,633	3,631	3,757	4,072	4,386
St. Jacobs	1,930	1,933	1,966	1,979	2,104	2,138	2,137	2,185	2,287	2,543	2,799
Elmira	10,788	10,962	11,171	11,338	11,379	11,585	11,523	11,702	12,689	15,156	17,623

Water Service Area	2017	2018	2019	2020	2021	2022	2023	2024	2026	2031	2036
Integrated Urban System	542,750	559,025	563,098	556,174	577,802	592,232	617,596	621,911	623,366	627,004	662,227
Baden/New Hamburg	13,974	14,361	14,554	14,736	14,622	14,699	15,273	15,358	15,695	16,537	18,573
Ayr	5,391	5,577	5,781	5,841	5,966	6,539	6,909	7,125	7,452	8,271	9,511
Wellesley	3,472	3,499	3,580	3,629	3,633	3,677	3,637	3,663	3,698	3,787	4,276
St. Clements	1,267	1,267	1,263	1,258	1,231	1,240	1,176	1,179	1,193	1,229	1,264
Village Heights	143	169	179	191	208	227	238	243	231	201	172
Maryhill	141	141	141	140	137	138	156	156	155	151	148
Conestogo Plains *	361	361	360	358	0	0	0	0	0	0	0
New Dundee	1,049	1,056	1,057	1,056	1,039	1,052	1,057	1,065	1,093	1,162	1,231

MID-YEAR POPULATION BY WATER SERVICE AREA

(Mid-Year total, including temporary spring term university and college students)

Water Service Area	2017	2018	2019	2020	2021	2022	2023	2024	2026	2031	2036
Integrated Urban System	519,307	529,729	525,374	530,911	542,799	553,363	559,525	564,240	577,045	609,057	641,069

YEAR-END POPULATION - SMALL WASTEWATER SYSTEMS

Wastewater Service Area	Total Population							
	2017	2018	2019	2020	2021	2022	2023	2024
Heidelberg	261	261	260	258	253	254	253	254
Foxboro	410	410	406	403	397	403	423	423
Conestoga Golf Course	247	256	256	254	246	247	265	267

YEAR-END POPULATION - SMALL WATER SYSTEMS

Water Service Area	Total Population							
	2017	2018	2019	2020	2021	2022	2023	2024
Heidelberg	1,013	1,013	1,010	1,005	986	985	983	987
Linwood	781	781	776	773	760	768	770	774
West Montrose *	206	206	205	204	0	0	0	0
Branchton Meadows	121	121	120	120	119	120	125	125
Conestoga Golf Course *	473	482	481	478	0	0	0	0
Roseville	290	290	290	289	288	288	275	275
Foxboro	410	410	406	403	397	403	423	423

TABLE D-2

2024 YEAR-END COMMITTED POPULATION BY SERVICE AREA WITHIN THE BUILT-UP AREA

Wastewater Service Area	Population in Unbuilt / Unoccupied Registered Plans	Population in Draft Approved Plans of Subdivision	TOTAL
Galt	397	0	397
Preston	321	0	321
Hespeler	3	529	532
Kitchener	6,035	6,203	12,237
Waterloo	2,518	1,305	3,823
Ayr	0	0	0
Baden/New Hamburg	93	0	93
Wellesley	7	0	7
St. Jacobs	0	29	29
Elmira	25	3	28

Water Service Area	Population in Unbuilt / Unoccupied Registered Plans	Population in Draft Approved Plans of Subdivision	TOTAL
Integrated Urban System	9,684	8,069	17,754
Baden/New Hamburg	90	0	90
Ayr	0	0	0
Wellesley	7	0	7
St. Clements **	0	0	0
Village Heights	0	0	0
Maryhill	0	0	0
Conestogo Plains	0	0	0
New Dundee	0	0	0

TABLE D-3

2024 YEAR-END COMMITTED POPULATION BY SERVICE AREA WITHIN THE DESIGNATED GREENFIELD AREA

Wastewater Service Area	Population in Unbuilt / Unoccupied Registered Plans	Population in Draft Approved Plans of Subdivision	TOTAL
Galt	4,628	2,296	6,924
Preston	533	1,364	1,897
Hespeler	0	1,817	1,817
Kitchener	11,433	31,932	43,365
Waterloo	2,364	523	2,886
Ayr	263	2,423	2,686
Baden/New Hamburg	0	3,391	3,391
Wellesley	3	0	3
St. Jacobs	196	0	196
Elmira	1,226	3,142	4,367

Water Service Area	Population in Unbuilt / Unoccupied Registered Plans	Population in Draft Approved Plans of Subdivision	TOTAL
Integrated Urban System	19,853	41,073	60,926
Baden/New Hamburg	0	3,391	3,391
Ayr	263	2,423	2,686
Wellesley	3	0	3
St. Clements **	19	0	19
Village Heights	16	0	16
Maryhill	0	0	0
Conestogo Plains	0	0	0
New Dundee	0	0	0

* The Conestoga Golf Course, Conestogo Plains and West Montrose Water Service Areas were incorporated into the Integrated Urban System in 2021. Committed population for these areas is included in the IUS as of 2021.

** The St. Clements Water Service Area is not within either the Built Up Area or the Designated Greenfield Area; however, for reporting purposes, committed population has been shown in the Designated Greenfield Area.

Appendix E

Sample Calculations

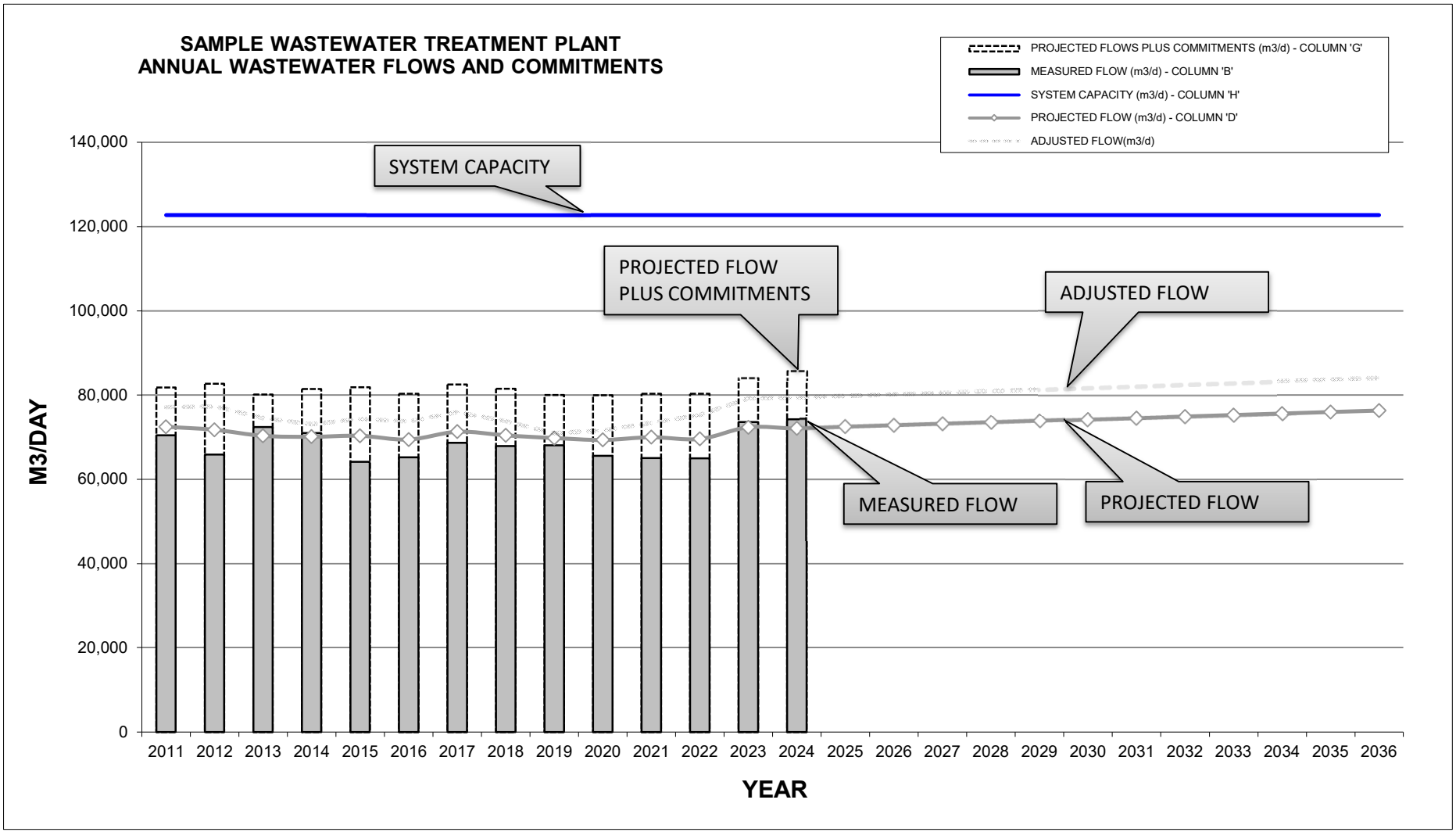
SAMPLE WASTEWATER TREATMENT PLANT ANNUAL WASTEWATER FLOWS AND COMMITMENTS

	A	B	C*	D = A x C	E	F	G = D + E + F	H	I = H - G	J = I / C
		AVERAGE DAY			COMMITMENTS (m3/d)		PROJECTED			
YEAR	POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	DGA	BUA	FLOW PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	A11	B11	C11	=A11 x C11	E11	F11	=D11 + E11 + F11	122,700	=H11 - G11	=I11 / C11
2012	A12	B12	C12	=A12 x C12	E12	F12	=D12 + E12 + F12	122,700	=H12 - G12	=I12 / C12
2013	A13		C13	=A13 x C13	E13	F13	=D13 + E13 + F13	122,700	=H13 - G13	=I13 / C13
2014	A14		C14	=A14 x C14	E14	F14	=D14 + E14 + F14	122,700	=H14 - G14	=I14 / C14
2015	A15		C15	=A15 x C15	E15	F15	=D15 + E15 + F15	122,700	=H15 - G15	=I15 / C15
2016	A16		C16	=A16 x C16	E16	F16	=D16 + E16 + F16	122,700	=H16 - G16	=I16 / C16
2017	A17	B17	C17	=A17 x C17	E17	F17	=D17 + E17 + F17	122,700	=H17 - G17	=I17 / C17
2018	A18	B18	C18	=A18 x C18	E18	F18	=D18 + E18 + F18	122,700	=H18 - G18	=I18 / C18
2019	A19	B19	C19	=A19 x C19	E19	F19	=D19 + E19 + F19	122,700	=H19 - G19	=I19 / C19
2020	A20	B20	C20	=A20 x C20	E20	F20	=D20 + E20 + F20	122,700	=H20 - G20	=I20 / C20
2021	A21	B21	C21	=A21 x C21	E21	F21	=D21 + E21 + F21	122,700	=H21 - G21	=I21 / C21
2022	A22	B22	C22	=A22 x C22	E22	F22	=D22 + E22 + F22	122,700	=H22 - G22	=I22 / C22
2023	A23	B23	C23	=A23 x C23	E23	F23	=D23 + E23 + F23	122,700	=H23 - G23	=I23 / C23
2024	A24	B24	C24	=A24 x C24	E24	F24	=D24 + E24 + F24	122,700	=H24 - G24	=I24 / C24
2025	A25		C25	=A25 x C25				122,700		
2026	A26		C26	=A26 x C26				122,700		
2027	A27		C27	=A27 x C27				122,700		
2028	A28		C28	=A28 x C28				122,700		
2029	A29		C29	=A29 x C29				122,700		
2030	A30		C30	=A30 x C30				122,700		
2031	A31		C31	=A31 x C31				122,700		
2032	A32		C32	=A32 x C32				122,700		
2033	A33		C33	=A33 x C33				122,700		
2034	A34		C34	=A34 x C34				122,700		
2035	A35		C35	=A35 x C35				122,700		
2036	A36		C36	=A36 x C36				122,700		

Refer To Section 2.6 For More Information

*Average of the previous five years. See Section 2.6 for further explanation of the Average Flow Per Capita Per Day in Column 'C'

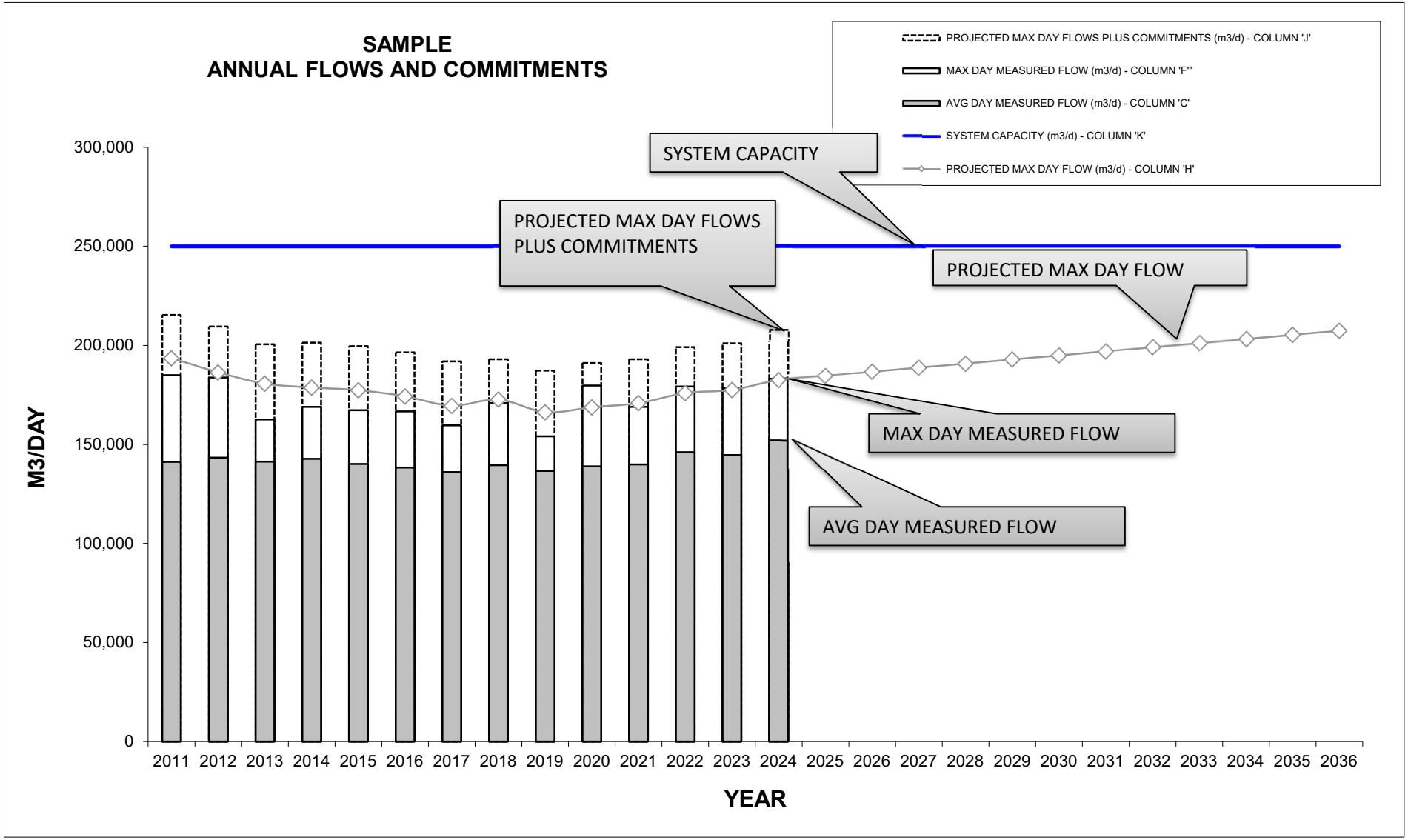
(F) Commitments in the Built-Up Area (BUA) before 2011 are grouped with commitments in the Designated Greenfield Area (DGA) in column (E)


SAMPLE WASTEWATER TREATMENT PLANT
ANNUAL WASTEWATER FLOWS AND COMMITMENTS
PROJECTED FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'G'
MEASURED FLOW (m3/d) - COLUMN 'B'
SYSTEM CAPACITY (m3/d) - COLUMN 'H'
PROJECTED FLOW (m3/d) - COLUMN 'D'
ADJUSTED FLOW(m3/d)
SYSTEM CAPACITY
PROJECTED FLOW PLUS COMMITMENTS
ADJUSTED FLOW
MEASURED FLOW
PROJECTED FLOW
M3/DAY
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR

SAMPLE ANNUAL FLOWS AND COMMITMENTS ANNUAL FLOWS AND COMMITMENTS

	A	B	C	D*	E = B x D	F	G*	H = A x G	I	J = H + I	K	L = K - J	M = L / G
			AVERAGE DAY			MAXIMUM DAY/WEEK							
YEAR	SUMMER POP.	WINTER POP.	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	MEASURED FLOW (m^3/d)	AVERAGE FLOW PER CAPITA PER DAY (m^3/c/d)	PROJECTED FLOW (m^3/d)	COMMITMENTS (m^3/d)	PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m^3/d)	SYSTEM CAPACITY (m^3/d)	REMAINING CAPACITY (m^3/d)	REMAINING CAPACITY (People)
2011	A11	B11	Refer to Section 2.5 For More Information	D11	=B11 x D11	F11	G11	=A11 x G11	I11	=H11 + I11	K11	=K11 - J11	=L11 / G11
2012	A12	B12		D12	=B12 x D12	F12	G12	=A12 x G12	I12	=H12 + I12	K12	=K12 - J12	=L12 / G12
2013	A13	B13		D13	=B13 x D13	F13	G13	=A13 x G13	I13	=H13 + I13	K13	=K13 - J13	=L13 / G13
2014	A14	B14		D14	=B14 x D14	F14	G14	=A14 x G14	I14	=H14 + I14	K14	=K14 - J14	=L14 / G14
2015	A15	B15	C15	D15	=B15 x D15	F15	G15	=A15 x G15	I15	=H15 + I15	K15	=K15 - J15	=L15 / G15
2016	A16	B16	C16	D16	=B16 x D16	F16	G16	=A16 x G16	I16	=H16 + I16	K16	=K16 - J16	=L16 / G16
2017	A17	B17	C17	D17	=B17 x D17	F17	G17	=A17 x G17	I17	=H17 + I17	K17	=K17 - J17	=L17 / G17
2018	A18	B18	C18	D18	=B18 x D18	F18	G18	=A18 x G18	I18	=H18 + I18	K18	=K18 - J18	=L18 / G18
2019	A19	B19	C19	D19	=B19 x D19	F19	G19	=A19 x G19	I19	=H19 + I19	K19	=K19 - J19	=L19 / G19
2020	A20	B20	C20	D20	=B20 x D20	F20	G20	=A20 x G20	I20	=H20 + I20	K20	=K20 - J20	=L20 / G20
2021	A21	B21	C21	D21	=B21 x D21	F21	G21	=A21 x G21	I21	=H21 + I21	K21	=K21 - J21	=L21 / G21
2022	A22	B22	C22	D22	=B22 x D22	F22	G22	=A22 x G22	I22	=H22 + I22	K22	=K22 - J22	=L22 / G22
2023	A23	B23	C23	D23	=B23 x D23	F23	G23	=A23 x G23	I23	=H23 + I23	K23	=K23 - J23	=L23 / G23
2024	A24	B24	C24	D24	=B24 x D24	F24	G24	=A24 x G24	I24	=H24 + I24	K24	=K24 - J24	=L24 / G24
2025	A25	B25		D25	=B25 x D25		G25	=A25 x G25			K25		
2026	A26	B26		D26	=B26 x D26		G26	=A26 x G26			K26		
2027	A27	B27		D27	=B27 x D27		G27	=A27 x G27			K27		
2028	A28	B28		D28	=B28 x D28		G28	=A28 x G28			K28		
2029	A29	B29		D29	=B29 x D29		G29	=A29 x G29			K29		
2030	A30	B30		D30	=B30 x D30		G30	=A30 x G30			K30		
2031	A31	B31		D31	=B31 x D31		G31	=A31 x G31			K31		
2032	A32	B32		D32	=B32 x D32		G32	=A32 x G32			K32		
2033	A33	B33		D33	=B33 x D33		G33	=A33 x G33			K33		
2034	A34	B34		D34	=B34 x D34		G34	=A34 x G34			K34		
2035	A35	B35		D35	=B35 x D35		G35	=A35 x G35			K35		
2036	A36	B36		D36	=B36 x D36		G36	=A36 x G36			K36		

*Average of the previous five years. See Section 2.5 for an explanation of the Max Flow Per Capita Per Day in Column 'D' and 'G'


SAMPLE
ANNUAL FLOWS AND COMMITMENTS
PROJECTED MAX DAY FLOWS PLUS COMMITMENTS (m3/d) - COLUMN 'J'
MAX DAY MEASURED FLOW (m3/d) - COLUMN 'F'"
AVG DAY MEASURED FLOW (m3/d) - COLUMN 'C'
SYSTEM CAPACITY (m3/d) - COLUMN 'K'
PROJECTED MAX DAY FLOW (m3/d) - COLUMN 'H'
SYSTEM CAPACITY
PROJECTED MAX DAY FLOWS PLUS COMMITMENTS
PROJECTED MAX DAY FLOW
MAX DAY MEASURED FLOW
AVG DAY MEASURED FLOW
M3/DAY
300,000
250,000
200,000
150,000
100,000
50,000
0
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036
YEAR