

TECHNICAL MEMO

1. POPULATION PROJECTIONS and EXISTING USERS

The objectives and intent of this section are to develop a projection of the future population in the Municipality of Grey Highlands, and the population that will or may need servicing. This includes reviewing population projections from various sources including Official Plans, comparing the projections in reports prepared by others, and estimating quantity and timeframe of planned development based on development applications in the various communities. In addition, this section will review the number of existing users in the water and wastewater systems operated by the Municipality.

2. POPULATION GROWTH REVIEW

3. Historical Framework: Slow Growth

The 2017 MSP referenced the County of Grey Growth Management Strategy Report, 2008 which projected growth rates for communities in Grey County to 2031. Annual growth in the Municipality of Grey Highlands was projected to be about 1.26% over 25 years, from 9,800 in 2006 to 13,400 in 2031. The 2017 MSP used an annual growth rate of 1% for population projections, although a rate of 0.5% was used to estimate Markdale growth for water storage requirement calculations.

The projections were revised in 2021 in an update to the County of Grey Growth Management Strategy Memorandum and update to the County of Grey Official Plan, which included population projections for the lower-tier municipalities. These updates were based on the 2021 census, which showed that the population in Grey Highlands was approximately 10,590. The population in 2021 was significantly lower than the 2008 projections estimated for 2021. The 2008 and 2021 projections, including the actual reported populations based on Census data, are presented in **Table 7-1**.

TABLE 7-1: Population and Household Projections and Census Counts

YEAR	Grey Highlands										
	2006	2011	2016	2021	2022	2026	2031	2032	2036	2041	2046
Projected Population (2008, MGH OP 2017)	9,800	10,700	11,500	12,400		12,900	13,400				
Projected Population (GCOP 2021)				10,590		10,910	11,180		11,450	11,700	11,920
Census Population	9,480	9,520	9,805	10,424							
Annual Population Change (% , Actual and 2021 Projection)		0.1%	0.6%	1.2%		0.6%	0.5%		0.5%	0.4%	0.4%
Difference (Projected vs Actual)	320	1,180	1,695	1,976							
MGH DC Charges Report Population Projection					10,485			11,002			
Households											
Household Projection (MGH OP 2017)	3,700	4,200	4,600	5,000		5,300					
Household Projection (GCOP 2021)				4,190		4,360	4,500		4,630	4,750	4,810
Households (Census)	3,687	3,750	3,904	4,091							
MGH DC Charges Report Households Projection					4,148			4,524			
Difference (Projected vs Actual)	13	450	696	909							

Note: Households refers to private dwellings occupied by usual residents.

The actual population growth in Grey Highlands between 2006 and 2021 was lower than predicted, as shown by the census data from 2006 to 2021. Population growth between 2006 and 2011 was very low at 0.1% per year, between 2011 and 2016 closer to predicted averages around 0.6% per year, and between 2016 and 2021 higher than average around 1.2% per year. Population growth is expected to continue over the planning horizon for this Plan (i.e., between present and the year 2054), as supported by the updated forecasts for residential growth prepared for Grey County by Hemson Consulting Ltd. In their Update to the County of Grey Growth Management Strategy (GMS) Memorandum prepared in July of 2021. Updated growth predictions are also included in the Grey County Official Plan update completed in 2023, which predicts higher growth rates until 2026 at around 1.3% annually across the county, although slowing to around 0.7% annual growth by 2046.

4. Official Population and Development Forecasts

Section 2.1 of the Grey County Official Plan includes growth projections for all the member municipalities. The growth projections for the Municipality of Grey Highlands is provided in **Table 7-2**.

	Year	Population	Total Households	Employment	Seasonal Recreation Units
Forecast	2021	10,590	4,190	4,320	1,240
	2026	10,910	4,360	4,470	1,190
	2031	11,180	4,500	4,600	1,150
	2036	11,450	4,630	4,730	1,130
	2041	11,700	4,750	4,880	1,170
	2046	11,920	4,810	5,030	1,200
Incremental Growth	2021 to 2031	590	310	280	-90
	2021 to 2041	1,110	560	560	-70
	2021 to 2046	1,330	620	710	-40

The minimum targets for intensification set in the GCOP for Grey Highlands are 10% for the Primary Settlement Area and 5% for Secondary Settlement Areas. In addition, the Grey Highlands Official Plan indicates that development is to be primarily directed to Markdale, as the only Primary Settlement Area, and Flesherton, the largest Secondary Settlement Area, within Grey Highlands.

4.1.1.1 Other Growth and Development Forecasts

The Grey County Growth Management Strategy was updated in 2021, which was used to support the updated growth projections in the Grey County Official Plan and shows the same growth projections. It noted that the Municipality of Grey Highlands is projected to accommodate 5% of the share of Grey County's housing growth between 2021 and 2046. This is equivalent to approximately 620 new housing units.

Updates to the Growth and Development forecasts based on the 2021 Census numbers were used in the Grey Highlands Development Charges (DC) Background Study (2022). The DC Study numbers are included in **Table 7-1** above. The DC Study notes that approximately 376 new units are expected to be constructed between 2022 and 2032 in Grey Highlands. Approximately 85% of the new housing units are expected to be accommodated in settlement areas.

4.1.1.2 Markdale Population

The population in Markdale was recorded at 1,206 in the 2021 census. This is a slight decrease from the 2016 census which found a population of 1,216 persons resided in Markdale. In addition, the number of dwellings occupied by usual residents was found to be 564.

4.1.1.3 Flesherton Population

The population in Flesherton was recorded at 590 in the 2021 census. This is a slight increase from the 2016 census which found a population of 584 persons resided in Flesherton. In addition, the number of dwellings occupied by usual residents was found to be 246.

5. 2017 MSP Populations for Other Communities

The 2017 MSP included predictions for population growth for Markdale, Flesherton, and the other communities in the study area. The Kimberley – Amik – Talisman (K-A-T) population was estimated at around 500 people in 2015. Other community population estimations were given for 20 year and 50 year projections, which were used to back-calculate the 2015 estimated population. These estimates are provided in **Table 7.3** below. The population is based on an Equivalent Residential Unit, which denotes a typical residence for water and wastewater usage purposes and is further described in **Section 7.2.1** below.

Note that the Population Equivalent in Markdale is significantly higher than the actual population due to the inclusion of commercial, industrial, and institutional use of water and wastewater services.

Table 7-3: Population Estimates and Projections in the 2017 MSP for Water and Wastewater Demand

Community	Existing (2015)		20 year projection to 2035		50 year projection to 2065	
	ERUs	Population Equivalent	ERUs	Population Equivalent	ERUs	Population Equivalent
Markdale and West Grey	1457	3206	2407	5295	2942	6471
K-A-T	227	500	332	730	447	983
Beaver Valley	342	765	445	979	600	1300
Flesherton	536	1180	603	1327	703	1547
HWY 10 Flesherton to Markdale	59	129	77	169	104	229
Eugenia & Eugenia Lake	785	1725	1022	2248	1378	3032
Rural Area near Eugenia	69	137	82	180	101	245

1. Note - Existing ERUs includes commercial and industrial use

6. WEST GREY POPULATION NEAR MARKDALE

Markdale is located at the western edge of Grey Highlands and established residential areas extend into The Municipality of West Grey. Considering only properties along Grey Road 12, there are approximately 30 residential properties in close proximity to Markdale. All properties appear to be single detached residences. As discussed in Section 8 below, the population can be estimated at 2.53 people per unit for a total of 76 people.

An additional 30 residences are located near the intersection of Grey Road 12 and West Back Line, in the community of Barrhead. These properties appear to be large estate-sized properties, with larger distances between residences. The additional distance may make providing services to this area impractical, and the residents may be uninterested in servicing.

7. EXISTING WATER AND WASTEWATER SYSTEM USERS

The number of existing users is based on billing records and includes residential and business connections. Municipal By-Law No. 2022-116 includes billing details including meter equivalency and the relation of meter sizes to dwelling unit ratios used in Flesherton. The number of users estimated in Markdale and Kimberley-Amik-Talisman is calculated as the sum of all users of different meter sizes, providing a good estimate of the total number of residential and business properties that are connected to the systems. The number of users in Flesherton is estimated including partial unit allocations applied to businesses and multi-residential properties, providing an approximate estimate of the number of users connected to wastewater services.

Table 7-4: System Users

Number of Units	Markdale		Kimberley - Amik - Talisman		Flesherton
	Water	Wastewater	Water	Wastewater	Wastewater
2021	614	592	169	153	289.5
2022	681	664	173	153	292.1
2023	722	699	175	154	293.1

Notes:

Wastewater Equivalency to Dwelling Units for Flesherton is described in By-law No. 2022-116

As shown in Table 7-2 above, there is significant growth in the number of serviced units in Markdale in the past three years, and slow growth in K-A-T and Flesherton. The total growth in Markdale is 108 units increase in two years, for an average of 54 units per year. The lower development rate was 41 units in a year, and the higher development rate was 67 units in a year.

8. Definition of an Equivalent Residential Unit (ERU)

The analysis of available reserve capacity requires the quantification of servicing requirements for existing development commitments and future growth. The analysis uses a standardized Equivalent Residential Unit (ERU) to estimate future water demands and wastewater flows. An ERU is defined as the unit flow design value for a single detached residential unit. Design values for other types of residential development are proportioned to single detached units based on expected per person occupancies (PPU).

In essence, this means the following:

- Wastewater: A volume of wastewater which incurs the same costs from operations and maintenance as the average volume of domestic waste discharged from an average residential dwelling unit in the treatment works service area; or
- Water: A volume of water utilized by an average single family residential dwelling unit.

With respect to employment lands, the MECP Design Guidelines for Drinking-Water Systems notes in Section 8.4.2 that when determining fire flow allowance for commercial or industrial areas, the industrial and commercial land use areas should be considered to have an equivalent population density to the surrounding residential lands.

The Municipality's current density requirement for new developments in Markdale is 20 Equivalent Residential Units (ERU's) per net hectare, therefore, in this report, planned and future employment lands and future residential lands in Markdale will be considered to also have 20 ERU's per hectare.

The density of developments in secondary and tertiary settlement areas without full servicing are expected to be pursuant to the MOECC D Series Guidelines – Reasonable Use which typically results in a much lower density.

An ERU is assumed to have the same demand as the average service unit or billing customer. For calculation purposes, the values presented in **Table 7-3** will be applied to the reserve capacity analyses completed to support this Master Servicing Plan.

The provincial average occupation for single detached units is approximately 2.53 people per unit. In the 2017 MSP, a population of 2.2 persons/unit was used. The census data available indicate that, in 2006, there were an average of 1.84 persons per household in Grey Highlands. The 2022 Development Charges Background Study identified, in Appendix A Table 3, occupation rates of 2.53 for single detached units, 1.25 for row houses, and 1.42 for apartments, including all historical data and ignoring data anomalies of 0 people per unit (PPU). The DC Charges Study analyzed more recent developments between 2006 and 2016 and used a PPU of 2.57 for single detached, 2.00 for rowhouse/ other multiple units, and 1.40 for apartments. In this MSP Update Study the provincial average of 2.53 PPU will be used for Single detached, and for consistency with the DC Charges Study, 2.00 PPU for Semi-attached, Rowhouses and other multiple units, and 1.40 for Apartments, as identified in **Table 7-5** below.

TABLE 7-5: Equivalent Residential Unit Designation

Land Use	Population per Unit	ERUs
Residential (Housing Type)		
Single detached	2.53 PPU	1.0
Semi-attached, Rowhouses, other Multiple	2.00 PPU	0.79
Apartments	1.40 PPU	0.55
Commercial and Industrial (Planned and Future) and Future Residential		
Employment Lands (ERU's per Hectare)		20

9. FUTURE DEVELOPMENT: COMMITMENTS AND PROPOSED DEVELOPMENTS

In addition to the official planning projections of housing and population growth in Grey Highlands, developments that have begun or are in the planning application process are reviewed below as an indication of the potential scale of near-term development.

10. Estimated Development Commitments

The status of the Municipality's development commitments was reviewed to update the projected population growth estimates to account for recent approvals and construction, and to provide a better understanding of the potential growth associated with future development pressures on the existing municipal systems in Markdale, Flesherton, and Kimberley – Amik – Talisman. The Municipality maintains development estimates to allow for quarterly review of all the systems' reserve capacities, which were used as the basis for this development estimate. A summary of the development application and construction status, including estimated commitments, is provided in **Table 7-6**. Current development projections are snapshots in time, and final constructed numbers could vary.

The Status identified in Column 2 captures the stage of the development in the planning and construction process, and can be described as:

- Completed: The construction is complete and the flows from this development is captured in the water and wastewater flow in the annual monitoring reports
- Committed: The planning application is approved and therefore the water and wastewater capacity is considered committed. In most cases construction is underway but not complete, and flows are partially but not fully captured in the water and wastewater monitoring reports
- Conditional: A draft planning application has been received but not finalized or approved
- Potential: Development has been discussed with the Municipality but a formal planning application or other formal information has not been received

Table 7-6: Development Application Status and Estimated Commitments

	STATUS	ESTIMATED COMMITMENTS			TOTAL PER COMMUNITY AND STATUS	
		Units	ERUs	Persons	ERUs	Population
MARKDALE - Residential						
StoneBrook Developments Phase 1 and 2	Completed Construction	133	116	293	116	293
StoneBrook Phase 3	Committed	54	43	108	198	500
Devonleigh Homes Centre Point South - Phase 1	Committed, Partially Constructed	172	155	392		
Devonleigh Homes Centre Point South - Phase 2 to 5	Conditional	207	196	496	632	1599
Loon Call Golf Course Lands	Conditional	469	436	1103		
Stonebrook Developments (233 Main St W)	Potential	180	99	250	260	657
Delbrook	Potential	208	161	407		
MARKDALE - Non-Residential (Business)						
Markdale Hospital	Committed	15	15	38	15	38
Chapman's Expansion	Potential	?	?	?	25	63
Grey Gables	Potential	25	25	63		
FLESHERTON - Residential						
Highlands Drive Infill	Committed	17	17	43	25	63
Colton Townhomes	Committed	10	8	20		
FLESHERTON - Non-Residential (Business)						
Georgian Bay Cremation Services - AH	Committed	12	12	30	12	30
Barnyard Builders	Potential	10	10	25	10	25
KIMBERLEY - AMIK - TALISMAN - Residential						
Former Talisman	Committed	60	60	152	60	152
Beaver Valley Development Group	Potential	370	370	936	370	936
TOTAL		1,364	1,192	3,013	1,723	4,356

The population recorded for non-residential (business) developments is an estimate of equivalent population, i.e., the water or wastewater demand or loading that would occur from an equivalent population. Non-residential (business) population numbers do not imply a resident increase in the community. The total population increase related to the proposed developments is the sum of the residential developments which are not yet constructed, which is approximately 3,850 people.

Within Flesherton, the Highlands Drive Infill development is completed, however, the residences are not connected to the sanitary system although they have capacity allocated and committed to them. The Georgian Bay Cremation Services development is understood to not be proceeding.

In the Kimberley – Amik – Talisman system, a preliminary planning application for the re-development of some of the Talisman lands has been received by Grey County which includes 370 residential units. This is in addition to 60 units which have been reserved based on paid capital connection fees in Talisman.

10.1.1.1 Estimated Residential Development Rates in Markdale

An estimate of the rate of development in Markdale can be completed in conjunction with **Table 7-4**. The rate of development can be used to estimate short-term growth based on the planned developments. It should be noted that the number of Units in **Table 7-4** is equivalent to the number of connections to services, and so should be compared to the number of Units in column 3 of **Table 7-6**. The StoneBrook Developments Phase 1 and 2 is understood to have been constructed between late 2018 and early 2023. Development of 133 units over approximately 4.5 years suggests a development rate of approximately 30 units per year for StoneBrook Developments. Assuming construction of StoneBrook Phase 3 begins in 2024 and continues at approximately 30 units per year, Phase 3 would be expected to be completed by the end of 2025.

The Devonleigh Homes Centerpoint South Phase 1 is understood to have begun construction in 2020 and construction is continuing. Based on Table 7-3, a construction rate of 54 units per year occurred between 2021 and 2023, including Stonebrook Phase 1 and 2 which is estimated at 30 units per year, above. This suggests a Devonleigh Homes construction rate around 25 units per year. Center Point South Phase 1 may have approximately 75 units completed, with approximately 97 remaining, and would be expected to be completed by 2027.

Table 7-7, below, estimates when the developments planned in Markdale, identified in **Table 7-6**, above, could reasonably be expected to be completed, based on development rates seen in **Table 7-4**, above. The planned developments could be expected to provide 18 to 30 years' worth of residential growth at the development rates seen between 2021 and 2023.

Table 7-7: Markdale Development and Population Timeline Projections

	Remaining in Committed Developments	Committed plus Conditional Developments	Committed, Conditional, and Potential Developments
Number of Units	151	827	1215
Population Increase from Current	331	1930	2587
Year of Completion of Developments			
At Higher Dev. Rate of 67 units per year	2026	2036	2042
At Average Dev. Rate of 54 units per year	2027	2039	2047
At Lower Dev. Rate of 41 units per year	2028	2044	2054

Notes:

Number of units per development status, and population increases, based on Table 7-6: Development Application Status and Estimated Commitments

Development rates based on Table 7-4: System Users recorded from 2021 to 2023

11. Draft Capacity Allocation Policy

The Municipality of Grey Highlands prepared a draft Water and Wastewater Allocation Policy in May of 2023. The intent is understood to be to provide clarity to staff, council, and developers when proceeding through the development application process, as well as to assist staff with monitoring capacity needs. The Policy assumes that each dwelling unit corresponds to one unit of water capacity and one unit of wastewater capacity, and a single unit requires 1.125 cubic meters of water per day.

The Capacity Allocation, once granted, is intended to be reserved until a building permit is issued. The Capacity Allocation could also expire. The expiry timeframe is proposed to be 4 years from the date of the Allocation for blocks of 100 units or less, and 6 years from the date of Capacity Allocation for blocks of more than 100 units, unless a complete building permit application has been submitted by that time. Developments that receive a Capacity Allocation are therefore on a timeline to proceed to building permits within 4 to 6 years after the issuance of a Capacity Allocation.

12. POPULATION FORECASTS

Using the 2021 population recorded in the census as the starting point, and applying the annual growth rates used in the Grey County Official Plan for the Grey Highlands population estimates to 2046, the population forecast for Grey Highlands is shown in **Table 7-8** below. The population estimate is extended to 2056 with the assumption that a growth rate of 0.4% per year would continue for an additional 10 years.

Table 7-8: Forecast Population Based on Official Plan

Year	Forecasts							
	2021	2026	2031	2036	2041	2046	2051	2056
Growth Rate (% per year)	-	0.6%	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%
Population	10,485	10,796	11,059	11,323	11,567	11,782	12,001	12,224

This estimates a population increase of approximately 1,300 over the 25 year period considered in the Grey County Official Plan. The intent of this MSP is to plan for growth for 30 years into the future, i.e., to 2054. Forecasts are less reliable further in the future as the conditions encouraging growth may change. The extension of the population forecast to 2056 was completed assuming the growth rate stayed constant at 0.4%. The population increase by 2056 is estimated at around 1,750 people.

It is noted that this population forecast is significantly lower than the population the proposed developments could support. All of the currently proposed developments in Grey Highlands could support a population of around 3,850 and could be completed between 2042 and 2054.

As a reasonable estimate of the maximum population growth, a population growth of 3,500 (double that of the estimate based on the OP growth rate) is suggested. This higher growth rate would be used in consideration of the sizing and timing of servicing needs to provide the municipality with the tools needed to monitor and plan for growth.