The Corporation of the Township of Seguin

Agenda for a Special Meeting of Council

to be held on January 15th, 2026

in the Township of Seguin Council Chambers and Electronic Participation

---

01. Land Acknowledgement. **9:00 a.m.**

02. Call to Order and Approval of Agenda. ®

03. Disclosure of pecuniary interest and the general nature thereof.

04. Business:

a) Discussion – Waste Management Strategy.

05. Confirming By-law No. 2026-005. ®

06. Adjournment. ®

LET'SCONNECTSEGUIN

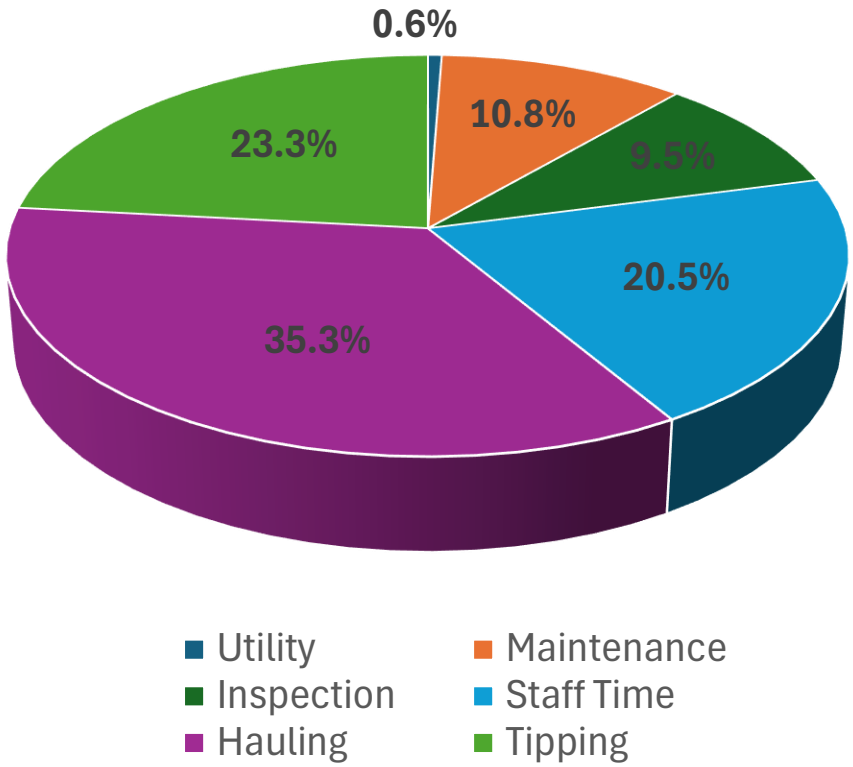
2025/26 Waste Management Review

Special Council Session

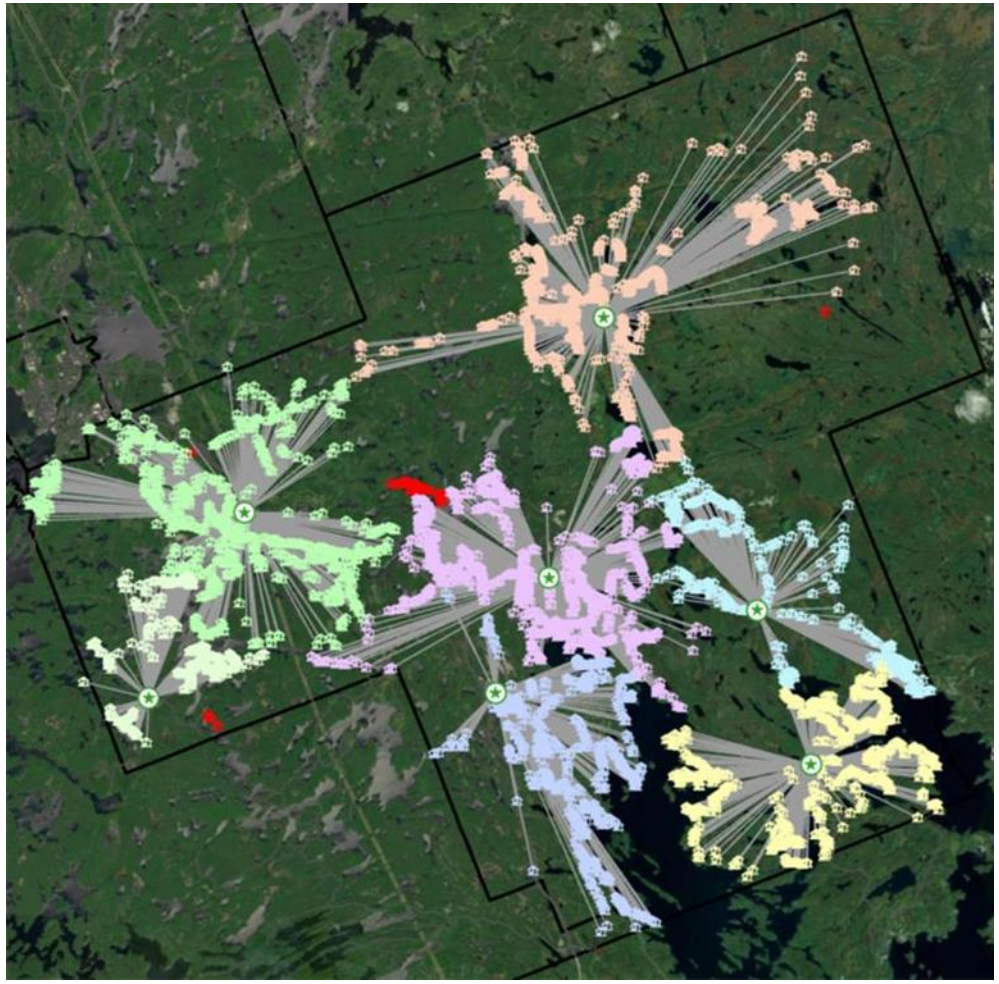
January 15, 2026

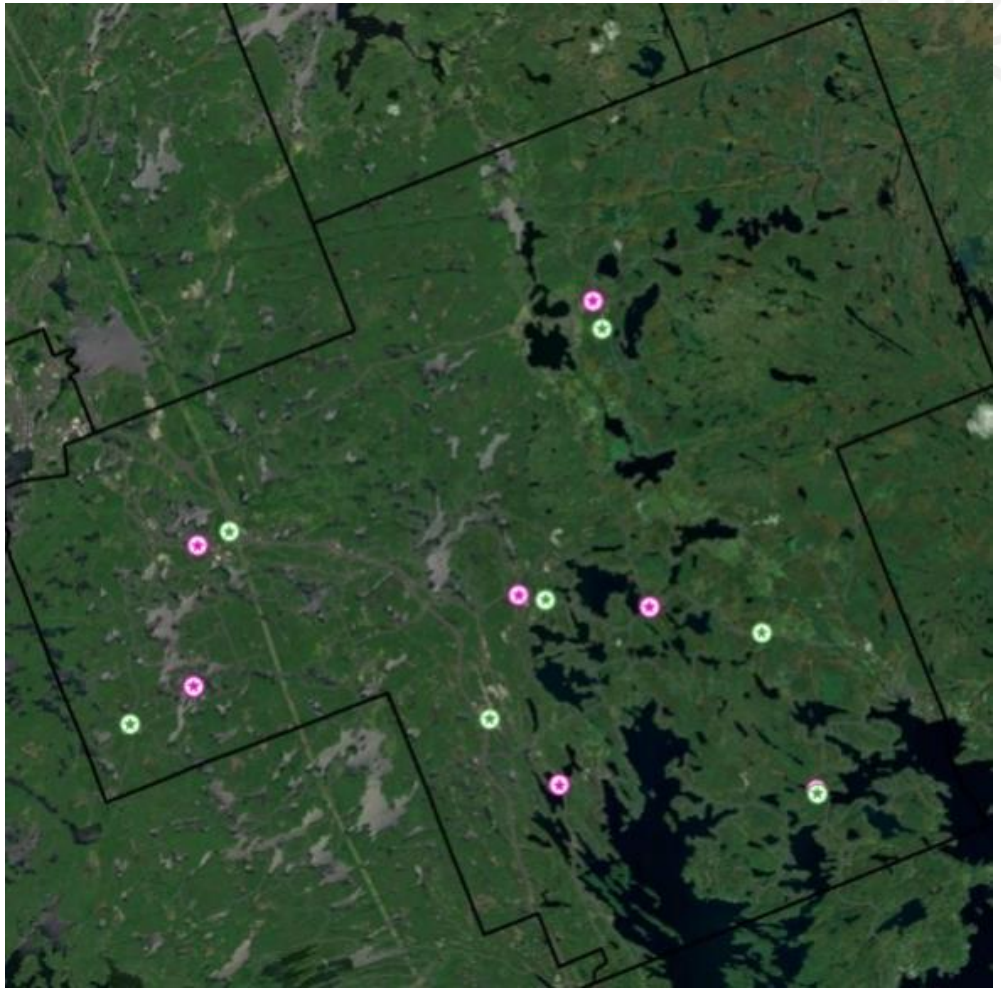
Current Waste System

- **7 decentralized stations**
  - Transtors collection
  - 40-yard bin collection
- **1 Landfill**
  - Not for household waste
  - Primarily bulky type waste
- **Unstaffed**
  - Regularly inspected
- **Waste hauled to McDougall Landfill**
- **24/7 system encourages abuse**
- **System costs nearing $1.5M (2024)**



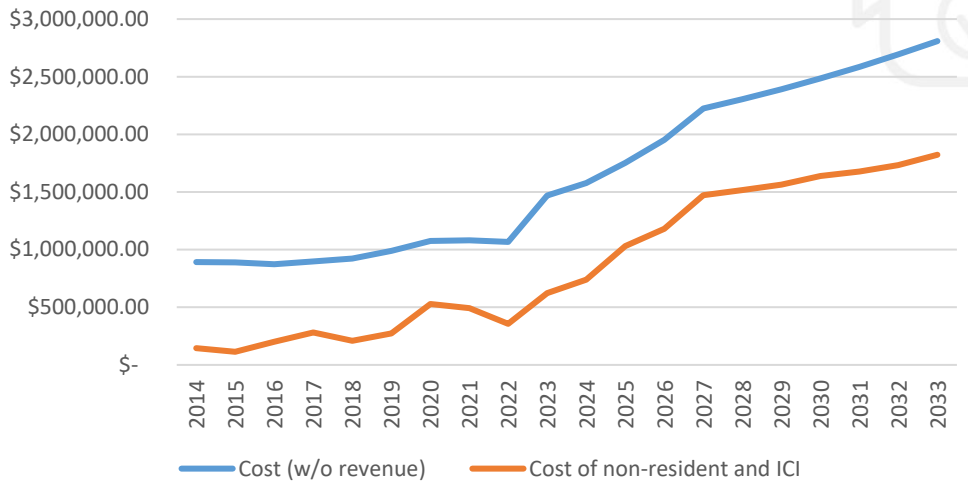
Current Waste System – Geospatial Study

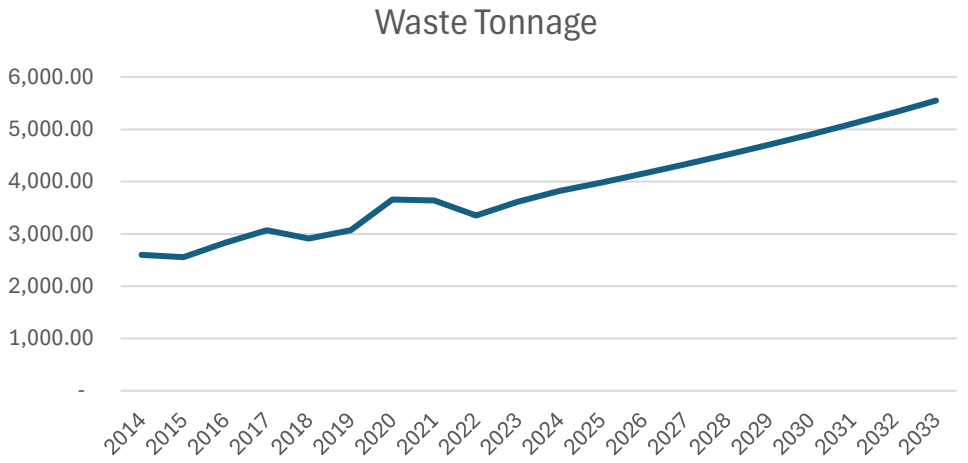




Challenges – Increasing Costs

- **Cost increases from**
  - Increased waste volumes
  - Rising tipping costs
  - Hauling fees
  - Inflationary causes
- **Future costs estimated by:**
  - Known waste tonnages
  - Projected waste tonnages
  - Average annual growth rate (AAGR)
    - Waste tonnage - 4.2% (2015-2024)
    - Used to project (2025-2033)
  - Estimated cost increases
    - Anticipated tipping costs
    - CPI (transportation & energy)
    - Cost of living adjustments





Non-Resident & ICI Waste - Calculations

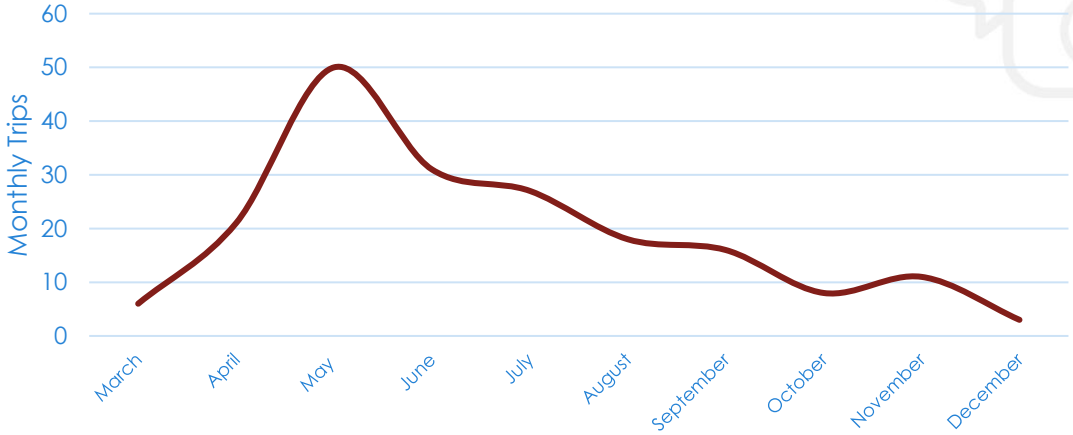
Total Waste	- (	Permanent	+	Seasonal	) =	NRICI
Known Waste (tonnes)		Known population Est. waste (288.85kg/pp/year)	X X	Known population Est. waste (288.85kg/pp/year) Presence (Apr to Oct) (72%) • Full-Time 40% • Part-Time 60% • 3 Weeks/Year • Weekends (Fri-Sun)	X X X	Est. unaccounted for waste Inclusive of • Non-Seguin res. Waste • ICI • Industrial • Commercial • Institutional

Example (2024)

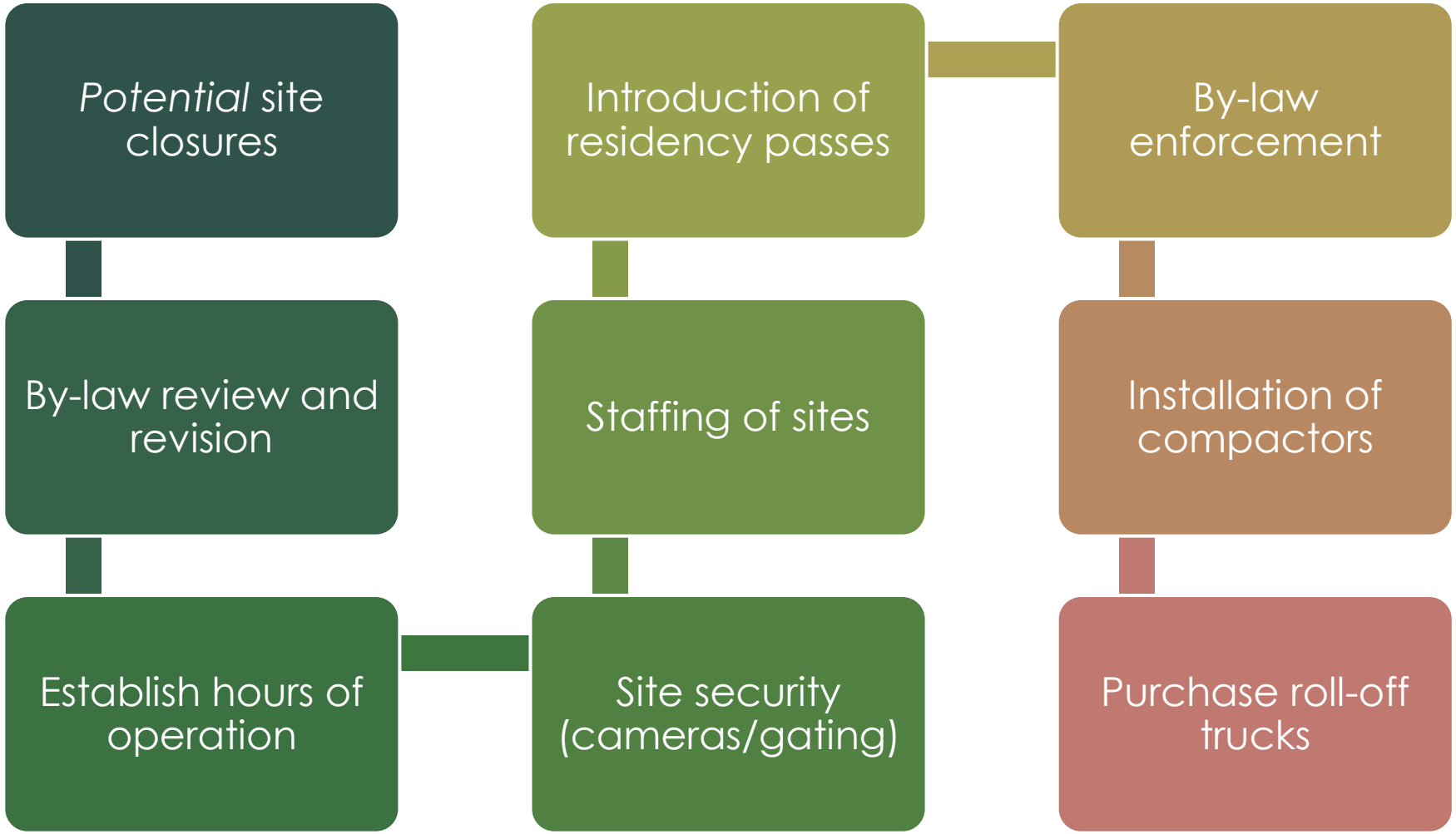
3824.47 Tonnes	- (	1556.32 Tonnes 5388 People 288.85kg/pp/year	+	1001.09 Tonnes 8299 People 288.85kg/pp/year 72% Presence (Apr to Oct)	) =	**1267.06 Tonnes OR 33.13%**

Illegal Waste

- **Large items**
  - Furniture, boats, mattresses
- **Contractor waste**
- **Impact to operations:**
  - Diversion of municipal resources
  - Road maintenance



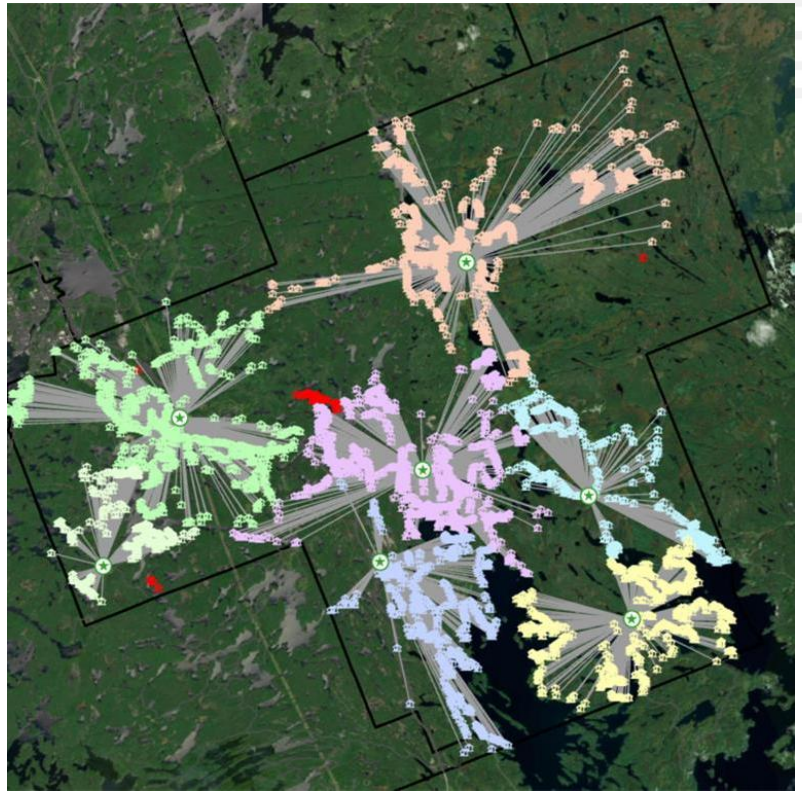
Potential Implementation Path



* Actual order of implementation dependent upon Scenario chosen.

Scenario 0 – Impact

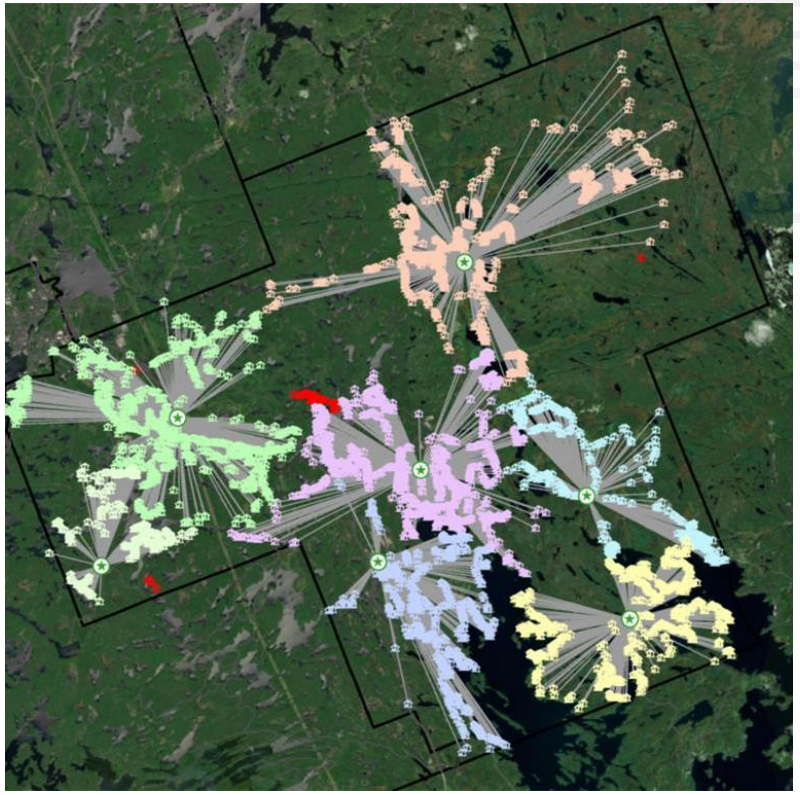
- **Business as usual**
  - No system alterations or upgrades
  - No changes
- **Non-resident/ICI dumping will continue & increase**
- **Increasing costs likely**
  - Tipping
  - Hauling
- **No changes in resident drive habits or distances**
- **$0 in capital investment**



Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1162	5.7
Brooks Road Waste Transfer Station	878	5.88
Christie Waste Transfer Site	898	6.28
Turtle Lake Transfer Station	399	5.25
Stanley House Waste Transfer Station	627	4.99
Airport Road Waste Transfer Station	600	5.96
Bon Echo Waste Transfer Station	401	4.04

Scenario 1 – Impact

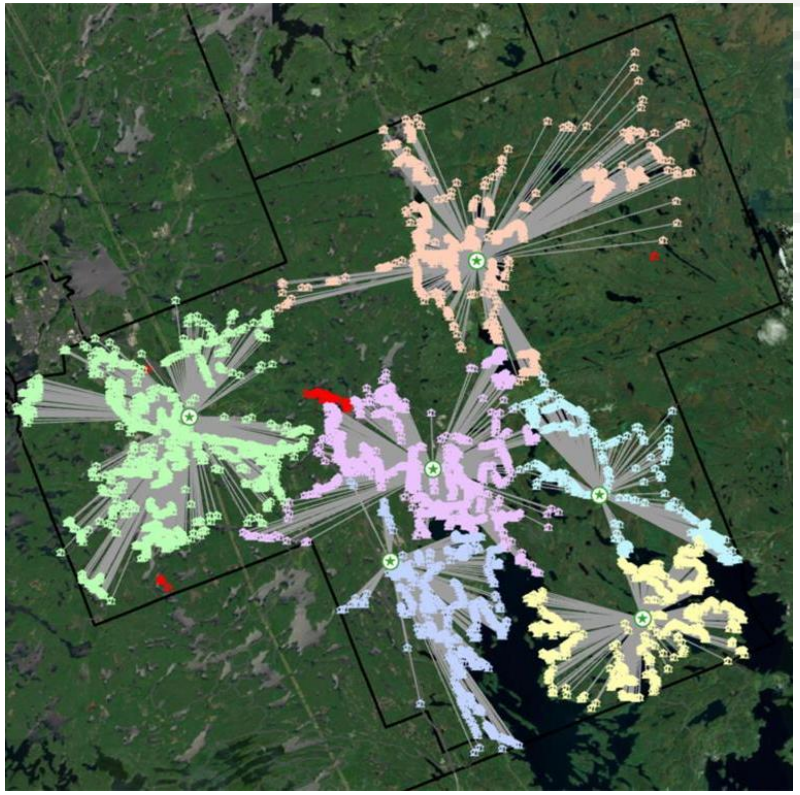
- **No Closures**
- **7 waste stations will be:**
  - Fully staffed with hours of operation
  - Compactors and roll-off trucks
  - Fences, gates and security upgrades
- **Non-resident/ICI dumping addressed and reduced**
- **Significant tipping cost reduction due to non-resident/ICI being addressed**
- **No changes in resident drive habits or distances**
- **$5.271 million in capital investment**



Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1162	5.7
Brooks Road Waste Transfer Station	878	5.88
Christie Waste Transfer Site	898	6.28
Turtle Lake Transfer Station	399	5.25
Stanley House Waste Transfer Station	627	4.99
Airport Road Waste Transfer Station	600	5.96
Bon Echo Waste Transfer Station	401	4.04

Scenario 2 - Impact

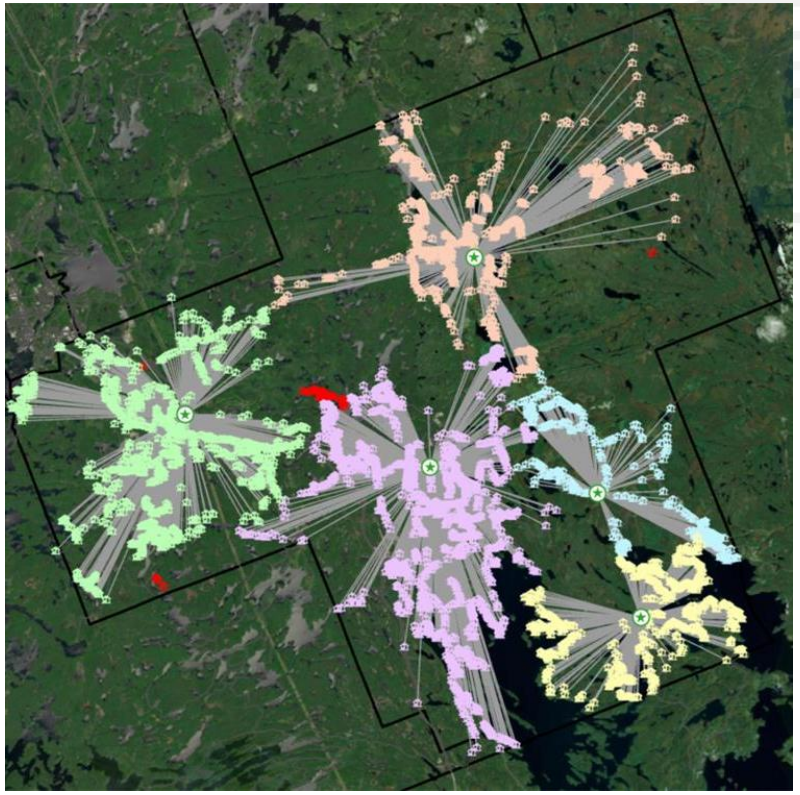
- **Closure of Bon Echo waste station**
- **Remaining 6 waste stations will be:**
  - Fully staffed with hours of operation
  - Compactors and roll-off trucks
  - Fences, gates and security upgrades
- **Non-resident/ICI dumping addressed and reduced**
- **Significant cost reductions in tipping and hauling**
  - Increased staffing costs
- **Increased average drive time for Brooks Rd station users:**
  - Bon Echo users will likely go to Brooks Rd
  - Average increase of 2.04km per resident
  - Increased daily usage of Brooks Rd station
- **$4.725 million in capital investment**



Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1162	5.70
Brooks Road Waste Transfer Station	1279	7.74
Christie Waste Transfer Site	898	6.28
Turtle Lake Transfer Station	399	5.25
Stanley House Waste Transfer Station	627	4.99
Airport Road Waste Transfer Station	600	5.96

Scenario 3 - Impact

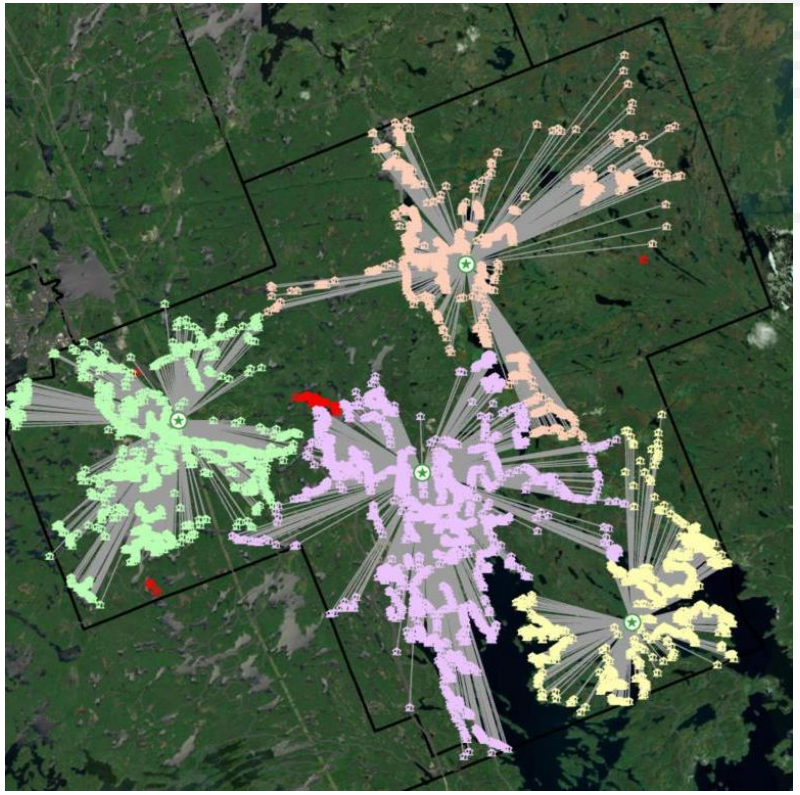
- **Closure of Bon Echo & Airport Rd stations**
- **Remaining 5 waste stations will be:**
  - Fully staffed with hours of operation
  - Compactors and roll-off trucks
  - Fences, gates and security upgrades
- **Non-resident/ICI dumping addressed and reduced**
- **Significant cost reductions in tipping & hauling**
  - Increased staffing costs (less than previous scenarios though)
- **Bon Echo users will go to Brooks Rd**
  - Average increase of 2.04km per Bon Echo resident
- **Airport Rd users will go to Humphrey**
  - Average increase of 1.76km per resident
- **$4.067 million in capital investment**



Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1762	7.46
Brooks Road Waste Transfer Station	1279	7.74
Christie Waste Transfer Site	898	6.28
Turtle Lake Transfer Station	399	5.25
Stanley House Waste Transfer Station	627	4.99

Scenario 4 - Impact

- **Closure of Bon Echo, Airport Rd & Turtle stations**
- **Remaining 4 waste stations will be:**
  - Fully staffed with hours of operation
  - Compactors and roll-off trucks
  - Fences, gates and security upgrades
- **Non-residential/ICI dumping addressed/ reduced**
- **Significant cost reductions in tipping, hauling & Inspection**
  - Increased staffing costs (less than previous scenarios)
- **Bon Echo users will go to Brooks Rd**
  - Average increase of 2.04km per Bon Echo resident
- **Airport Rd users will go to Humphrey**
  - Average increase of 1.76km per Airport resident
- **Turtle Lake Rd users will go to Humphrey, Christie or Stanley House**
  - Average distance increased between 0.4km – 1km for residents
- **$3.370 million in capital investment**



Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1895	7.62
Brooks Road Waste Transfer Station	1279	7.74
Christie Waste Transfer Site	972	6.63
Stanley House Waste Transfer Station	819	5.68

Debt Financing 101

- **What is a debenture**
  - Long term borrowing
    - Capital is provided upfront
  - Mainly for assets with multi year benefits
  - Principal & interest repaid over time
    - Costs aligned with products life

- **When should we debenture**
  - To advance priority projects
    - Cash reserves are limited or allocated elsewhere
    - Projects with multi-year benefits & intergenerational equity desired
    - External (grant) funding requiring matching that exceed municipal cashflow

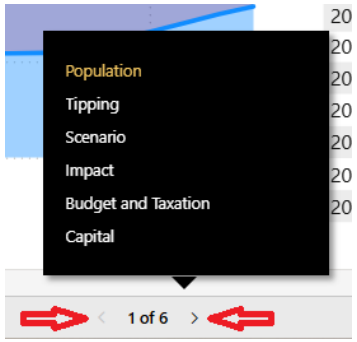
Debt Financing Cont…

- **Tax impact**
  - Debenture may increase taxes depending on debt size and any operational savings
    - Annual debt repayments, both principal and interest, included in budgeted expenditures
- **Example: $1 million debt, 5% interest, 20-year amortization**
  - Annual repayments: $78,855
  - Immediate Tax rate increase: 0.48% (based on 2026)

- **Ontario Rules and Constraints**
  - Annual repayment limit must fit within ARL ($5,410,635 for Seguin 2025)
  - Loan term generally cannot exceed the asset's life
  - Council must approve project and debt issuance by bylaw
  - Borrowed funds restricted to capital expenses

Interactive Analytics Dashboard

- Staff have created an interactive dashboard to enable Council to interact with the data from the Waste Management Review.
- Click the link below to launch the webpage (this is best viewed on a computer)



- To navigate the dashboard pages (6):
  - Use the arrows located at the bottom of the page OR
  - Click on the "# of # for the index
- Pages 'Scenarios' and 'Capital' have buttons providing details for each Scenario

Waste Management Review Analytics Dashboard

Thank you!

Seguin Township

The Natural Place to Be

LET'SCONNECTSEGUIN

Seguin Township

2025 Waste Management Review

Seguin Township

The Natural Place to Be

Authored by:

Preston Nielsen, Env. and Climate Programs Coordinator
Forrest Pengra, Director of Strategic Initiatives
Tom MacLeod, Director of Public Works

Abstract

A comprehensive assessment of Seguin Township's Waste Management System and solutions to address changing times.

Contents

Glossary

Term	Definition
Non-resident	Refers to individuals/groups who do not reside within the designated area of Seguin Township (permanent or full seasonally) but may utilize local waste management facilities.
ICI	Industrial, commercial, and institutional waste. This type of waste originates from non-residential sources such as businesses and institutions and are not currently accepted at Seguin Township.
Avoided costs	The reduction of future costs that would otherwise be incurred without implementing certain strategic actions. These are not direct savings but rather the costs that are prevented due to changes in operations.
Operating costs	Expenses related to the daily running of waste management facilities (bin transportation, site clean-up, staffing, etc).
Compaction	Devices used to compress waste, reducing volume and transportation costs by allowing more waste to be transported per trip.
Roll-off truck	Versatile multipurpose trucks that can be used for transporting waste by loading containers that can be rolled on and off the back.
Simple payback	The time it takes for savings from an investment, like new equipment, to cover its initial cost.
Township Managed	A waste system that is operated and managed entirely by the Township without any contractors or 3rd party groups.
Tipping fees	Charges per tonne set by McDougal for disposing of waste at their landfill sites
Capital costs	Large, one-time expenses for purchasing equipment or infrastructure, such as roll-off trucks or compactors.

Executive Summary

Seguin Township has embarked on a comprehensive journey to fundamentally reform its waste management system, addressing the multifaceted challenges posed by its current decentralized framework. Situated in a region characterized by vast geographical expanses and a diverse mixture of permanent and seasonal residences, the Township faces unique pressures in managing its waste effectively. This comprehensive report outlines the current challenges and proposes strategic improvements to the waste management system in Seguin Township, aiming for increased efficiency, cost reduction, and environmental sustainability. Given the unique challenges arising from the Township's large geographical coverage and the influx of non-resident and ICI waste, significant transformations in waste management operations are deemed necessary.

Introduction

Efficient and effective management of waste is crucial for any municipality, including Seguin Township. Currently, waste management in Seguin employs a decentralized approach, with seven strategically located transfer stations near settlement areas and other established sites handling household garbage and recyclables. A landfill, located just south of the village of Orrville, is utilized for residential household waste/recyclables and waste items not accepted at the other six transfer stations, such as furniture, metals, wood, and construction waste.

Table 1 – Summary of the cost per property and residents served by each transfer station

	Brooks	Christie	Humphrey	Stanley	Bon Echo	Turtle	Airport
Residents served	980	933	945	584	348	500	577
Driving Time to Alt. Site	10 min	20 min	10 min	22 min	12 mins	7 mins	6 mins
Dist. to Alt. Site	12.7km	20km	12.7km	22km	10.5km	8.9km	6.8km
Cost per Prop/yr	$73.24	$62.94	$75.95	$89.38	$468.73	$352.34	$305.32

Residents and businesses in Seguin can dispose of refuse at these sites at their convenience. Here, waste is collected and stored using two systems, Haul-All Transtors and 40-yard bins. Once full, waste is transported to the McDougall landfill. The number of bins at each site depends on the average volume of waste received, which varies depending on type and seasonal fluctuations.

Five of the Township's current transfer stations employ the Transtor system for household waste collection. These systems resemble front-loading dumpsters but can store significant waste volumes. Although not highly compacted, some compaction occur due to the semi-vertical orientation and tapered bottom design. Except for the facility at Christie and Turtle Lake, all transfer stations use 40-yard bins to supplement waste collection during high volume periods or when Transtors are out of service. Waste in these bins has a very low compaction rate, necessitating regular disposal.

Currently, staff presence is only maintained at the landfill, with no regular staffing at the transfer stations. Despite this, the Township conducts regular visual assessments. These daily inspections involve checking bin fill levels, site cleanup, illegal item removal, maintenance tasks, and general property upkeep.

The unstaffed, decentralized system offers user convenience but also poses challenges. The Township grapples with issues like illegal dumping, high transportation costs, and inspection and maintenance expenses, which significantly contribute to operational and capital costs for residents. These challenges are interrelated, as increased illegal dumping impacts Township costs. As costs rise, identifying efficiency measures in waste management becomes imperative. With the Township's population expected to rise, these challenges will likely intensify, further stressing the current system, as seen in figure 1. Seguin Township carefully considers residents and taxpayers during annual budgeting, striving to minimize increases. Addressing inefficiencies and illegal dumping is key to reducing costs.

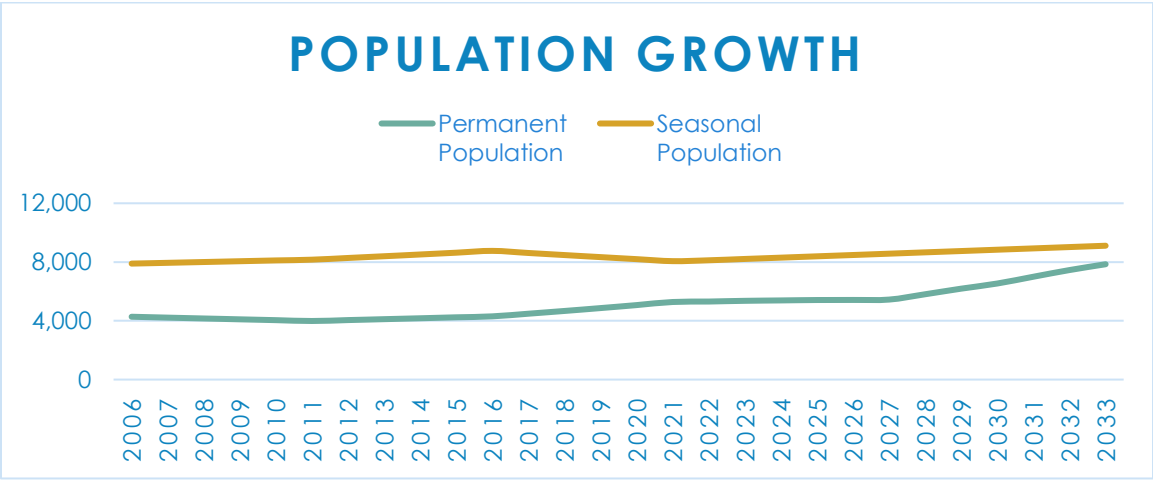


Figure 1. Population changes over time for permanent and seasonal residents (Hemson report – 2024).

This report will review Seguin Township's previous waste management initiatives, analyze current policies and practices, and explore key factors affecting current inefficiencies in waste management. It will also identify elements critical for shaping future waste management systems. The report will also examine public engagement efforts done by the Township to address known and perceived problems and will lay out some potential scenarios for how Seguin should manage waste in the future. The objective of this report is to outline the current challenges facing the Township, assess the impact on the organization, explore opportunities to address these issues, and quantify efficiency measures for the Township's waste management system.

Background Directives

Opportunities for cost reduction have been considered through several initiatives the Township has undertaken. While somewhat limited in scope, these have been discussed in the Township's 2023 Waste Strategy, as well as the 2023 Climate Action Plan(s). Each study examines unique aspects of the waste management system including business operations, waste volumes, diversion rates, transportation as well as direct and indirect greenhouse gas emissions. All reports must be considered in totality and collectively to understand the scope of the challenges associated with Seguin's waste.

Specific opportunities for a streamlined system are recommended in the 2024 Waste Management Review. However, the study is only capable of considering so many input variables. To build upon the identified scenarios, staff have modeled the system in totality to consider a wider range of opportunities. Furthermore, through this study, consideration was given to the unique community profile of Seguin Township in relation to seasonality, property type, and average household size. Information for the studies came from a variety of sources including the 2021 Federal Census, internal waste volume reports, provincial Resource Productivity and Recovery Authority data call reports, Federal waste averages, the Association of Municipalities of Ontario (AMO) reports and others.

Anecdotally, opportunities to streamline Seguin's waste management system have existed for decades. While obvious, a continuously open, decentralized, and largely unstaffed system would be ripe for efficiency recommendations, it wasn't until 2023 that a concerted effort was made to better understand all challenges to reshape waste processes and corresponding policies.

Policy Review

Waste management is in flux across Ontario. The gold standard in waste management is to reduce household waste to a minimum while maximizing diversion for recycling and organics. Provincial measures have been taken to encourage greater uptake through the implementation of producer responsible recycling obligations, but implementation remains a challenge for many, particularly in rural communities. Given this, diversion rates vary considerably for all communities, whether urban, semi-urban or rural. These values can be clearly demonstrated in the Resource Productivity and Recovery Authority reporting, on a municipality-by-municipality basis.

Regardless of uptake, a business case exists for both the management of recyclables and household waste in Ontario municipalities. Effectively, the greater the rates of diversion, the lower the costs of waste disposal and an extended landfill lifecycle. Additional measures include more efficient management of business processes, including facility inspections, transportation, tipping and general maintenance, thereby reducing operating expenses.

Another key policy linkage with current and potential future waste management in Seguin includes energy and climate planning. Seguin Township has taken a holistic approach in energy management, conservation, and climate change. Through significant efforts, in 2023 the Township adopted their Corporate and Community Climate Action Plans. The plans, part of the Federation of Canadian Municipalities – Partners for Climate Protection program, aim to significantly reduce energy consumption and corresponding emissions. These efforts fit into a variety of categories including buildings, fleet, waste, and leadership. The efforts considered through this Waste Management Review speak to all these categories in one manner or another.

Operational Background:

Current Staffing

Assumptions involving staff time allocation and contributions to waste management activities were utilized to calculate administrative overhead for the system. Staff costs include the total salary and benefits.

Seguin's management of 7 transfer stations and the landfill is complicated and requires significant resources, despite all stations being unstaffed. It is estimated that waste duties account for greater than the equivalent of 3.63 full-time employees (FTE). The table below summarizes the estimated efforts each position in Public Works contributes to the entire system.

Table 2. Shows the summary of staff time for waste systems operations

Position	Role	Emp.	Off Season	On Season	FTE Total
Dir. of Public Works	Department Administration	1	20%	25%	0.22
Supervisor	Daily waste system oversight	1	50%	50%	0.50
Admin. Assistant	Assist with business needs	1	20%	20%	0.20
Public Works Labourer	Daily waste work	1	100%	100%	1.00
Public Works Operator	Daily waste transportation	1	50%	100%	0.71
Landfill Attendant	Landfill oversight	1	100%	100%	1.00
					3.63

Transportation and Logistics

Transportation is a significant cost in Seguin's waste management system. The costs come from a variety of sources including general site upkeep, inspections, management of improperly disposed refuse, bylaw enforcement, and the transportation of waste to landfill. The following section discusses the current state of transportation in the Township's waste system.

Waste collected at sites using Transtors in Seguin is transferred into the Township's waste hauling transport truck, which can carry up to 26 tonnes per trip with optimal compaction. While the semi-vertical orientation and tapered bottom design of the Transtors allow for partial compaction, they are typically filled to an average capacity of about 4 tonnes, despite having a capacity for at least 9 tonnes. Waste is collected on a predetermined schedule, starting from Humphrey and progressing through Turtle Lake, Stanley House, Christie, and Brooks before ending at the McDougall landfill. The return trip concludes at the Humphrey public works garage, with the usual round trip covering around 115.0 km. In 2023, Transtor waste accounted for 151 trips, amounting to 2,518.28 tonnes of household waste being delivered to the McDougall landfill, with an average of 16.7 tonnes per trip. This operation spanned about 17,365 kilometers, consuming approximately 6,900 litres of diesel, and emitted approximately 40.63 tonnes of CO2 equivalent. The total cost for these services in 2023, when only considering hauling, was estimated at $355,939.27, roughly equating to $141.34 per tonne.

Conversely, waste collected at sites using 40-yard bins is handled by a contractor, transporting it from each station to the McDougall landfill. All stations, except Christie and Turtle Lake employ these bins to manage high volumes of waste or when Transtors

are unavailable. Due to their low compaction rate, these bins require frequent disposal. On average, each 40-yard bin carries about 1.3 tonnes of waste to the landfill. In 2023, this system amounted to 859 trips and 1,097.93 tonnes of household waste. As the waste is collected uncompacted in 40-yard roll-off bins, they are often transported prior to being completely full. It is estimated these 859 trips account for approximately 54,000km driven, consuming 19,000 litres of diesel, emitting approximately 52.79 tonnes of CO2 equivalent. In 2023, these contracted service costs, when only considering hauling, amounted to an estimated $163,266.41, roughly equating to $148.70 per tonne of household waste.

Inspection and Maintenance

Transfer stations and the landfill require significant upkeep and maintenance. All stations are inspected regularly. Inspections and maintenance include cleaning up spills and waste strewn about, inspection of bin/Transtor fill levels, equipment repairs, plowing, salting/sanding and more. This work is required to ensure a safe and productive facility for the public to dispose of refuse. In 2023, inspections and maintenance costs were approximately $298,226.46.

Large items are frequently left at transfer station locations, instead of being properly disposed of at the landfill. These items found through daily inspections are then taken to the Landfill for disposal. To manage this issue, approximately 2.0 FTE are required, at a value of $139,391.20.

System Level Expenses

Seguin Township's waste management program costs are quickly approaching $1,500,000 per year, before revenues are considered. These costs will continue to rise each year due to inflationary costs and the Township's growth patterns. As such, this management review should be used as a guide for the mitigation of increasing costs through a variety of proposed solutions. Costs incurred to manage the system (under the base case) include utilities, maintenance, inspection, staff time, hauling and tipping. These can best be summarized in the following table and graphic.

Table 3. shows the table breakdown of operations costs by type

Costs	% of Costs
Utility	0.6%
Maintenance	10.79%
Inspection	9.5%
Staff Time	20.45%
Hauling	35.33%
Tipping	23.33%
	100.0%

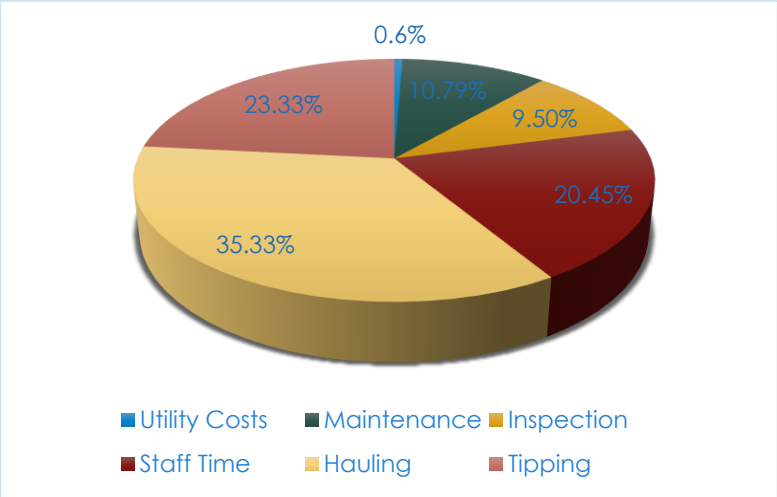


Figure 2. shows the cost breakdown of operations by percentage

Waste management expenses have been estimated based on several factors including well documented waste volumes from the two different streams (Transtors and 40-yard bins). The volumes were summarized on a per transfer station basis and include staff time, site maintenance, vehicle costs including maintenance, tipping, contractor costs and more. The data suggests that the waste management system costs approximately $406.37/tonne of household waste in 2023.

Using the 2024 Hemson Development Charges Background Study information, staff have estimated and projected costs for waste management now, and into the future.

Table 4. costing breakdown for waste management in Seguin

Year	System Cost ($/tonne)	Actual Cost (w/o Revenue)	Notes
2014	$ 343.90	$ 893,111.40	**Actual**
2015	$ 348.08	$ 889,688.97	
2016	$ 308.52	$ 873,408.12	
2017	$ 292.04	$ 896,268.47	
2018	$ 316.89	$ 921,829.72	
2019	$ 322.20	$ 990,148.36	
2020	$ 293.91	$ 1,075,132.34	
2021	$ 296.82	$ 1,079,844.72	
2022	$ 318.01	$ 1,066,438.27	
2023	$ 406.37	$ 1,469,500.42	
2024	$ 412.38	$ 1,577,151.29	
2025	$ 439.54	$ 1,752,085.95	**Projected**
2026	$ 470.16	$ 1,953,339.00	

2027	$ 513.91	$ 2,225,392.12	
2028	$ 510.81	$ 2,305,466.57	
2020	$ 508.42	$ 2,391,666.60	
2030	$ 506.73	$ 2,484,517.98	
2031	$ 505.76	$ 2,584,593.46	
2032	$ 505.51	$ 2,692,516.98	
2033	$ 505.99	$ 2,808,968.35	

Industrial, Commercial, Institutional (ICI) Waste

Currently, Seguin Township does not accept industrial, commercial, or institutional waste at its transfer stations or landfill site. The responsibility for the handling and disposal of this waste is left to the individual organization. Despite ICI not being accepted at the Township, some waste does enter the management stream due to existing system operations, presenting opportunities for unregulated disposal.

Ongoing Challenges

There are several key considerations that drive how waste is currently managed within Seguin Township. These key considerations include non-resident and ICI waste disposal, illegal dumping within Seguin and tipping costs.

Non-resident and ICI Waste Disposal

Historically, Seguin Township has operated its transfer stations in an open manner, being open 24/7/365, unstaffed. The only exception is the operation of the Christie Transfer Station, which is located at the landfill site, though the station is still not actively managed. The convenient nature of the sites being open always has led to non-resident and ICI waste disposal.

The model developed to address non-resident and ICI waste disposal in Seguin Township's transfer stations reveals significant insights into waste management challenges faced by the community. By leveraging property classification data from the Municipal Property Assessment Corporation (MPAC) parcel fabric, properties were grouped into distinct categories: residential (both year-round and seasonal) and ICI. Although the MPAC data provides a foundation, it is acknowledged that perfect accuracy in property type classification is challenging due to some inherent data limitations. Further, assumptions regarding seasonal residency were established, defining the summer period as spanning April 1st to October 31st. Seasonal residents were categorized into those residing part-time—defined as staying Fridays through Sundays and an additional three full weeks during the summer, totaling 113 days (60%)—and

those residing full-time for 212 continuous days (40%). In totality, when combined, these amount to seasonal occupancy of 72% through the duration of the summer period.

To enhance the model's precision, household and population data was utilized from the 2024 Hemson Development Charges Background Study, indicating an average of 2.47 occupants per non-seasonal household and 3.00 occupants per seasonal household in 2023 in Seguin Township. Waste coefficients derived from the 2023 Resource Productivity and Recovery Authority (RPRA) Data Call, were applied. This data was used to identify similar municipalities in the north to estimate on a per-person basis an expected amount of waste generation; the coefficient used in the model equated to 288.85 kilograms per person. By comparing actual waste collected at transfer stations against these calculated benchmarks, the model indicated a significant discrepancy, attributable to non-resident and ICI waste disposal.

Comprehensively, this model estimates that in 2023 approximately 29.8% of the current waste managed at Seguin sites can be attributed to non-resident and ICI disposal activities. This insight underscores both the scale of the issue and the necessity for targeted interventions to mitigate non-resident and ICI contributions to waste volumes. The financial implications of this 29.8% contribution are significant for the Township, and are expected to increase considerably by 2033, as identified in figure 3 and table 5. This additional waste imposes extra operational costs and strains the existing waste management infrastructure, furthering the need for action. Addressing these non-resident and ICI contributions is vital to maintaining sustainability and financial prudence in Seguin Township's waste management operations.

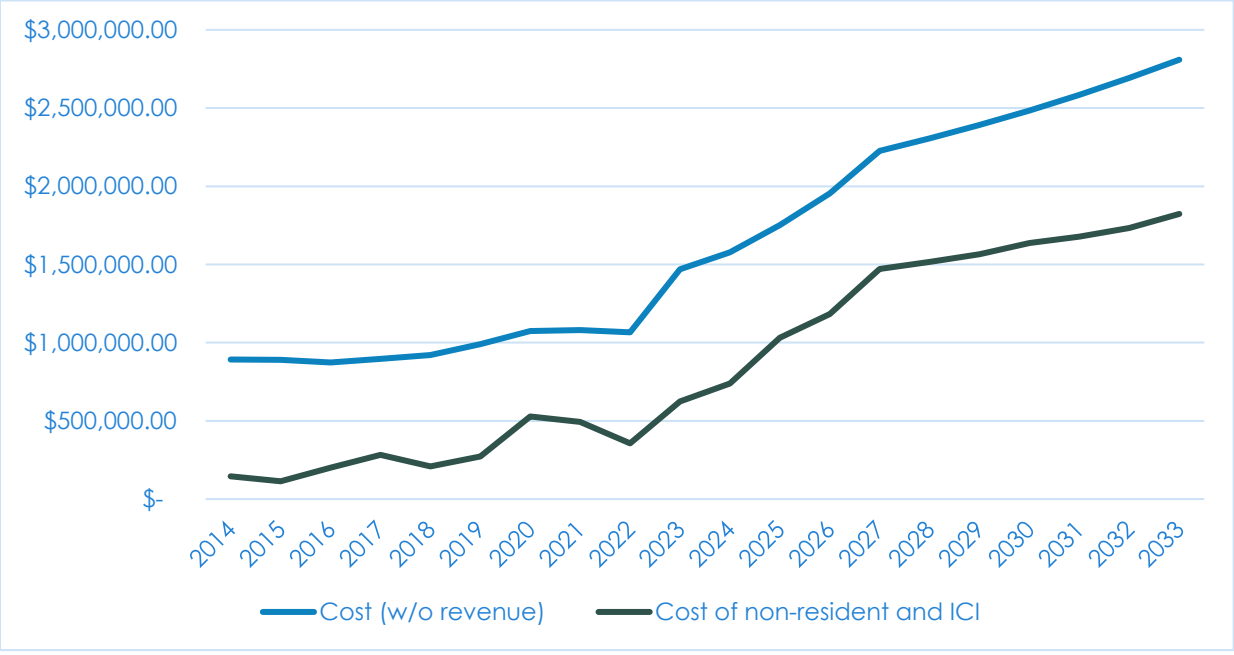


Figure 3.shows the to date/anticipated cost of non-resident and ICI dumping as compared to the cost of operating the current waste management system in Seguin.

Table 5. breakdown of the costs of non-resident and ICI waste as modeled.

Year	Expected Costs	Cost Actual and Projected (w/o Revenue)	Cost of non-resident and ICI waste
2018	$751,513.16	$ 921,829.72	$170,316.56
2019	$776,765.65	$ 990,148.36	$213,382.71
2020	$720,925.33	$ 1,075,132.34	$354,207.01
2021	$741,318.83	$ 1,079,844.72	$338,525.89
2022	$799,404.12	$ 1,066,438.27	$267,034.15
2023	$1,031,661.50	$ 1,469,500.42	$437,838.92
2024	$1,054,635.84	$ 1,577,151.29	$522,515.45
2025	$1,132,294.20	$ 1,752,085.95	$619,791.75
2026	$1,216,938.12	$ 1,953,339.00	$736,400.88
2027	$1,339,634.71	$ 2,225,392.12	$885,757.41
2028	$1,390,505.98	$ 2,305,466.57	$914,960.60
2029	$1,445,608.39	$ 2,391,666.60	$946,058.20
2030	$1,497,552.92	$ 2,484,517.98	$986,965.06
2031	$1,567,525.99	$ 2,584,593.46	$1,017,067.46
2032	$1,638,382.00	$ 2,692,516.98	$1,054,134.98
2033	$1,703,433.00	$ 2,808,968.35	$1,105,535.35

Illegal Waste Disposal

Seguin Township continues to grapple with significant instances of illegal dumping, defined as the inappropriate disposal of large or unacceptable items—such as furniture, refrigerators, construction waste, and brush—at transfer stations instead of the designated landfill site. In 2023, Seguin staff undertook 191 trips from transfer stations to the landfill to manage these illegal dumping activities, as detailed in figure 4. Management of illegal waste disposal diverts Township employee resources away from other municipal priorities.

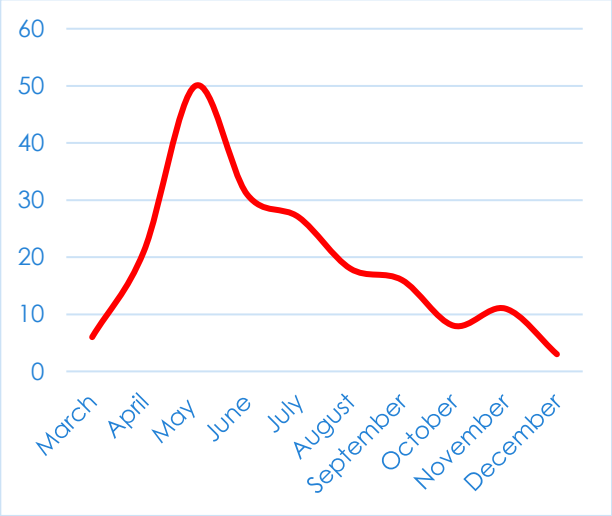


Figure 4 - Monthly estimate of loads taken to the landfill from transfer stations.

While statistical data illustrates the presence and operational impact of illegal dumping, more significant indicators include reports and photographs provided by staff and community members following long weekends or substantial dumping incidents.

The photographs below highlight not only the aesthetic and cleanliness issues resulting from illegal dumping but also underscore the substantial efforts and financial implications required for cleanup.

Tipping Costs

Seguin Township is currently disposing of all waste at the McDougall Landfill under a contract established in March 2015 with McDougall Township, governed by Environmental Compliance Approval (ECA). This agreement, documented by Bylaw 2015-034, is set to expire on December 31, 2026, with negotiations anticipated to commence earlier that year. A key challenge lies in forecasting the terms of the forthcoming agreement. As of now, McDougall residents incur a charge of $143.40/tonne, while non-residents pay $297.00/tonne. For context, the Town of Parry Sound and the Township of the Archipelago also pay the standard commercial rate of $143.40/tonne, whereas Seguin benefits from a lower rate of $90.37/tonne under the current agreement (2023). Looking forward, significant increases in tipping costs present a potential threat to Seguin's operating budget. The Township must strategically prepare for potential increases in tipping costs, independent of negotiation tactics. Historical data From McDougall shows that the rate stood at $137.00/tonne in 2024 but rose to $143.40/tonne in 2025—a 4.67% increase. If this trend continues, rates could reach $157.11/tonne in 2026, just as Seguin enters renewal negotiations for 2027. This anticipated rise in tipping expenses necessitates an additional estimated

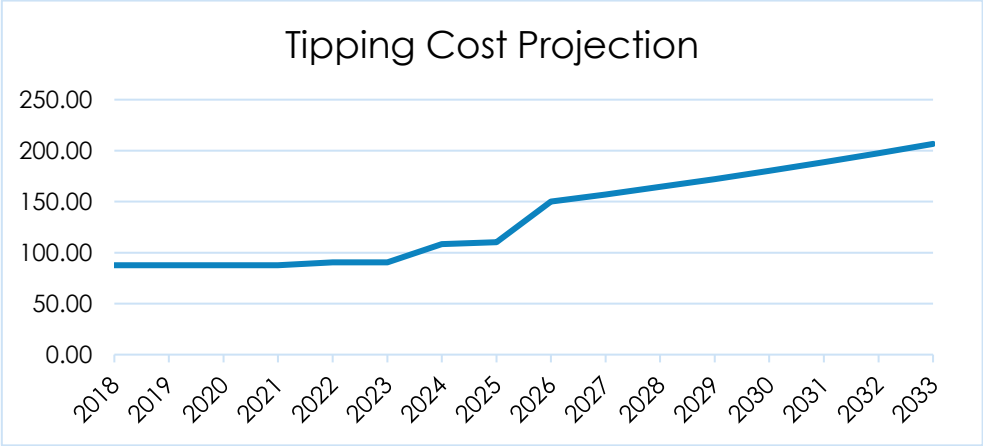


Figure 5. shows the breakdown of system tipping costs over time

$353,538.73 per year in the operating budget in 2027, when compared to 2023 operating costs.

Planning for these potential increases is crucial, as maintaining the status quo could lead to overall system costs escalating to $513.91/tonne or more by 2027, contingent on population trends and the adoption of mitigation strategies aimed at waste reduction. Such projections underscore the substantive fiscal pressures facing the Township, necessitating proactive engagement in negotiating sustainable waste management agreements.

2025 Waste Survey

To complement and build upon the 2023 Waste Strategy, Seguin Township initiated a comprehensive analysis of existing waste management practices, challenges, and opportunities. Initial data collected from residents and technical evaluations highlighted the need for deeper insights. Consequently, at the outset of the 2025 Waste Management Review (WMR), it was determined that a second round of public consultations was essential to thoroughly assess resident concerns, behaviors, and preferences. With council approval, a survey was distributed from April 17 to June 1, 2025, including ten critical questions influenced by early Waste Management Review findings and the Dillon 2024 report. To ensure broad participation, the survey was hosted on Seguin's Let's Connect webpage and widely circulated through various channels, including the Township's newsletter, social media platforms, emails to community groups including lake associations, poster distributions at community areas and waste stations, as well as public events and the Township's website. Additionally, staff conducted in-person site visits at transfer stations to further promote participation.

Appendix A contains survey questions and responses. Due to the option of multiple answers for several questions, the response percentages do not necessarily total 100%. Operating under a confidence level of 98% and a margin of error of 3.2%, with a dwelling population of 4,909 homes per the Hemson report, and an assumed population proportion of 9.8%, a sample size of 428 respondents was determined necessary for statistical significance. This criterion was successfully met across all ten survey questions.

The following graphs illustrate the survey results, providing a visual representation of the collected data. Each graph corresponds to one of the critical questions posed during the consultation period, capturing the diverse perspectives and preferences of Seguin Township residents. These visualizations not only highlight key trends and insights but also serve as a foundational resource for guiding future waste management strategies in the Township.

Q1 | **I am a:**

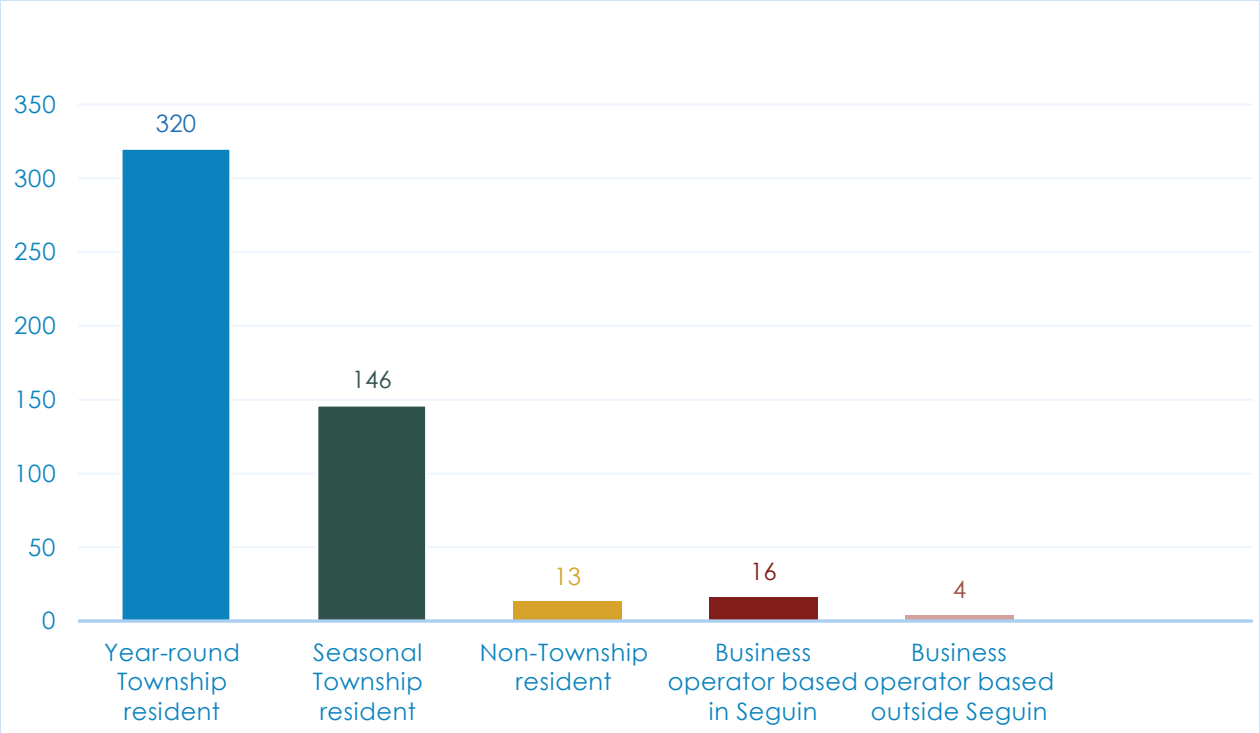


Figure 6. shows the residency makeup of the survey participants

Question 1 of the survey aimed to determine the residency status of participants within the Township. Of the 484 respondents, 66% indicated they were year-round residents, while 30% identified as seasonal residents. Additionally, 3% each were non-residents and Seguin business operators, and 1% were affiliated with non-Seguin businesses. The data reveals that the majority of feedback comes from ratepayers who are directly affected by the central challenges addressed in earlier sections of the report.

Q2 In your experience, what issues are most problematic at Seguin waste transfer stations? Please choose your top three concerns

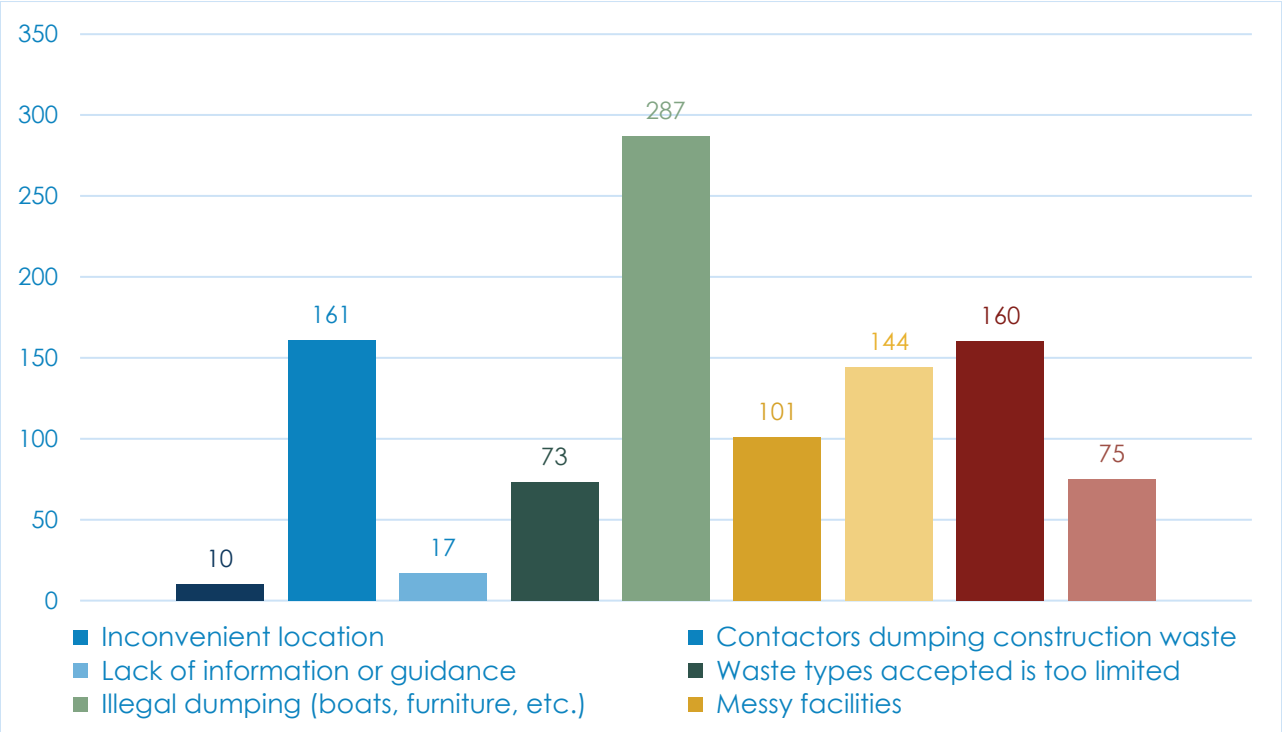


Figure 7. The 3 most common issues at Seguin transfer stations identified by public users

In Question 2, participants were asked to identify the main issues encountered at waste sites, with the option to select up to three. Among the 478 participants, 60% (287 respondents) highlighted illegal dumping, including items such as boats and furniture, as their top concern. This was followed by contractor dumping and overflowing bins, both noted by 34% (161 and 160 respondents, respectively). Non-resident usage was mentioned by 30% (144 respondents). Additional issues included messy facilities, cited by 21.5%, no issues reported by 16%, and restrictive waste type acceptance by 15%. These findings were found to align closely with previously identified challenges from staff such as illegal dumping and non-resident usage. Additionally, problems like contractor dumping, facility tidiness, and bin congestion are correlated with broader financial challenges detailed earlier in the report.

Q3 Considering the issues you've noted, what solutions would you like the Township to consider to address them? Please choose your top three solutions.

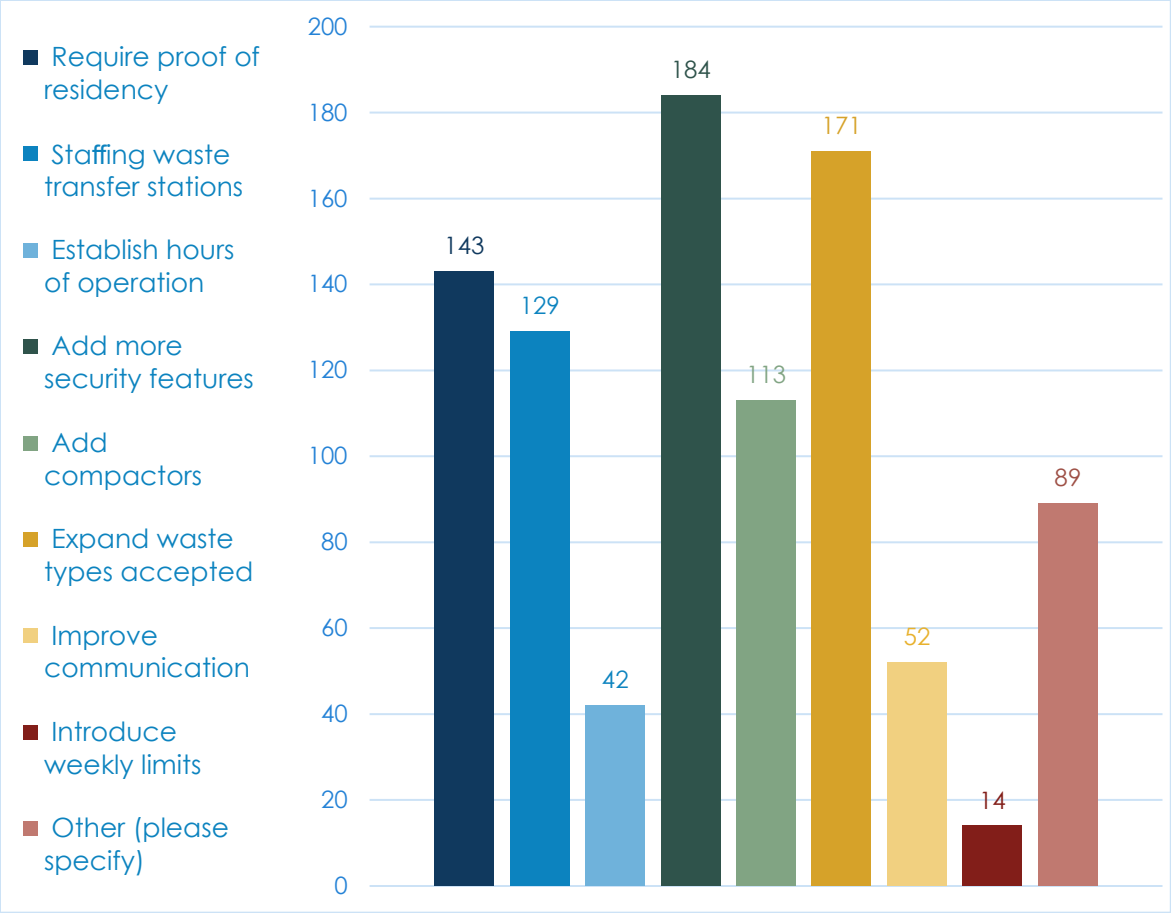


Figure 8. addresses solutions (up to 3) residents would like to see the Township implement to address perceived issues.

Question 3 asks participants to consider solutions to the previous challenges identified. From the 443 responses received, 41.5% advocated for improved security features, while 38.6% proposed an increase in the types of waste accepted. A requirement for proof of residency was suggested by 32%, and 29% called for staffing of transfer stations. There was also a call for compactors, proposed by 26% of respondents. Furthermore, 20% chose "other," suggesting solutions like curbside garbage collection, increased opportunities for large item disposal, reinforced by-law enforcement, and more frequent staff visits. More of the solutions in the graph were selected but in much smaller quantities. Although not all solutions directly align with previously discussed issues, many suggestions such as security enhancements, expanding waste acceptance, and enforcing fixed operation times are evaluated in the scenario analysis and subsequent sections of this report.

Q4 What services would enhance the quality of service at Seguin Township transfer stations? Please choose the three that appeal to you most.

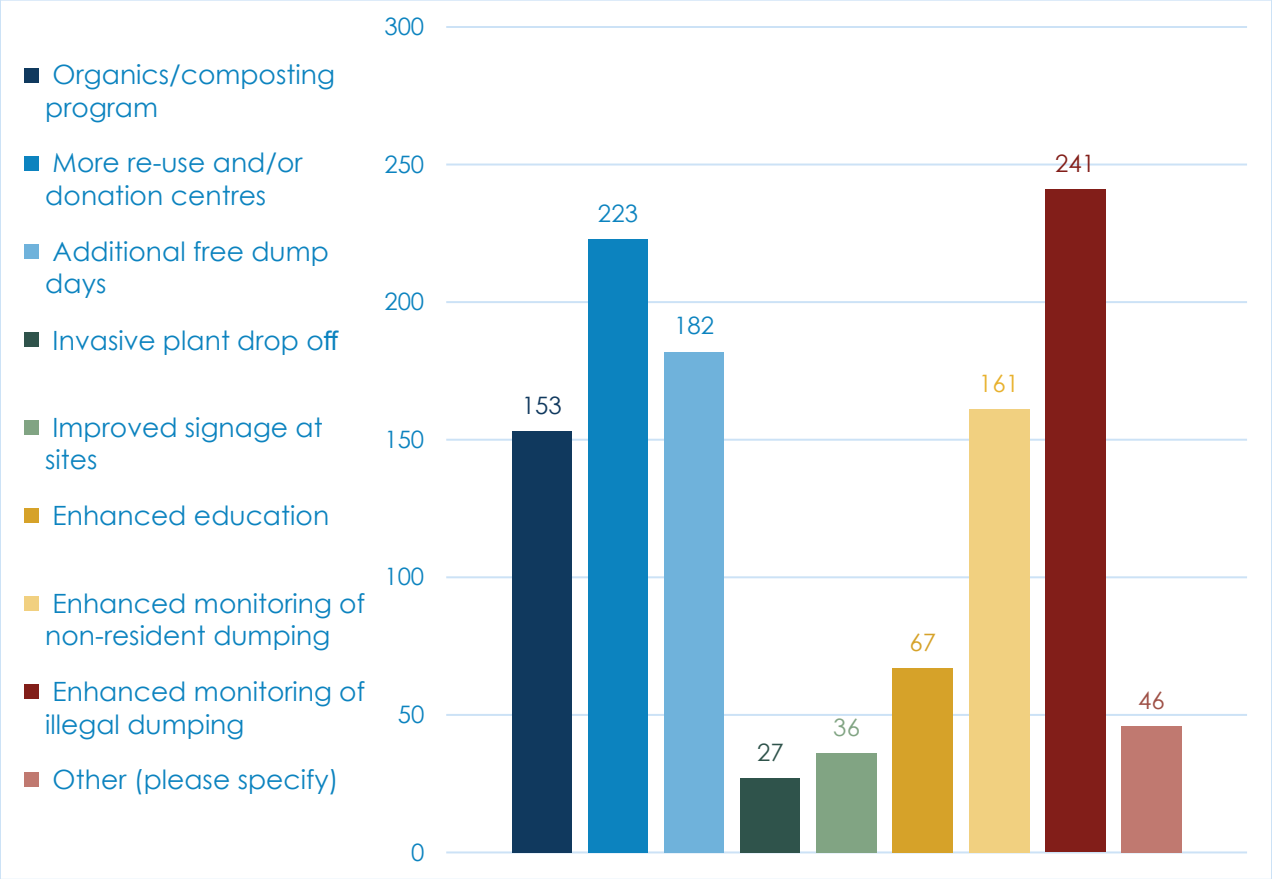


Figure 9. Shows additional services respondents would like to see implemented at the transfer stations.

Question 4 was to determine which services could improve the user experience at transfer stations. Of the 465 respondents, enhanced monitoring and prevention of illegal dumping & increased presence of re-use/donation centres were the most selected (52% and 48%). There were 3 other heavily selected services that were identified. Additional free dump days (39%), enhanced monitoring and prevention of non-resident waste (35%) and an organic/composting program (33%). 10% of participants selected "other", which included staffing of sites, enforcement & fines by by-law, and more specific alternate waste types accepted (liquor bottles & electronics). Enhanced monitoring and prevention of illegal dumping and non-resident usage both once again registered as top 4 issues, demonstrating a key desire within the Township to address them in future waste management efforts. Some of the other programs such as re-use and donation centres, organics/composting programs and more specific offerings such as liquor bottles and invasive plant bins show there are many progressive efforts that the Township can thrive towards to increase the level of service at the existing transfer stations.

Q5 | In your opinion, how significant is the issue of non-Seguin Township resident use of waste transfer stations?

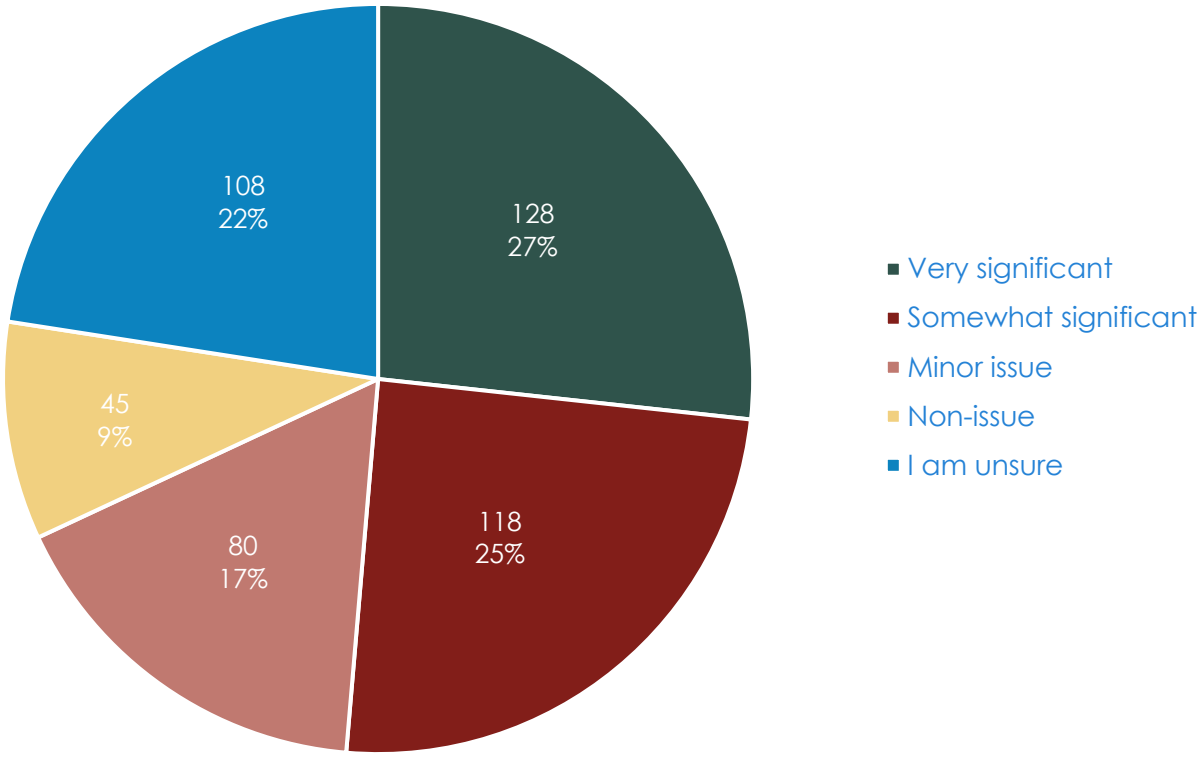


Figure 10. Resident perception of non-Seguin residents use of Seguin transfer stations.

The objective of question 5 was to gain a deeper understanding of the extent to which the public believes non-resident usage of Seguin transfer stations occurs. Of the 479 responses, 27% believe it is a very significant issue, while 25% believe it's a somewhat significant issue. Around 17% identified non-resident usage as a minor concern while only 9% believe it to be a non-issue. The remaining 23% were unsure of how to rate non-resident usage likely due to either not being able to know who is or who is not a resident or due to when they access the site. Overall, based on the results of the survey to an extent, around 69% of all respondents identified some level of issue with current perceived non-resident dumping. This finding strongly corelates to the challenges identified by Township staff.

Q6 | **Non-Seguin Township residents use Seguin Township waste transfer stations. Share your estimate of how significantly this impacts Township finances**

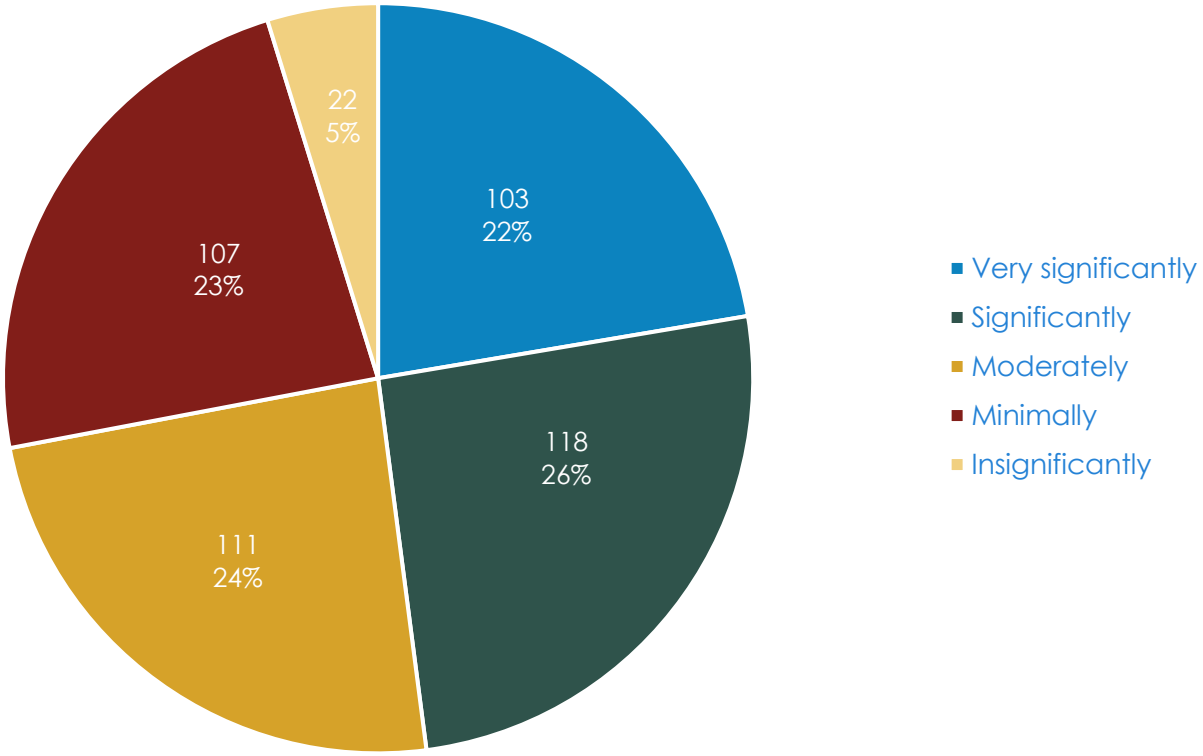


Figure 11. shows the breakdown to which recipients believe non-Seguin residents using Seguin transfer stations impacts Township finances.

Question 6, much like Question 5, seeks to delve deeper into the public perception regarding non-resident dumping at Seguin transfer stations. However, this query specifically focuses on the financial ramifications of such practices. Of the 459 responses collected, 22% identified non-resident dumping as very significant to Township finances, while 25% viewed it as significant. A further 24% considered it a moderate issue, 23% as minimal, and 5% perceived it as insignificant. These results indicate that most respondents recognize non-resident usage of transfer stations as not just an operational issue (as highlighted in figure 5) but also as a considerable financial challenge for the Township. These findings align with insights from Question 5, underscoring the public's concerns and reinforcing the necessity for the Township to address the financial implications of non-resident use.

Q7 | If Seguin Township introduced set hours of operation at waste transfer stations, how do you think that would impact your waste disposal routine?

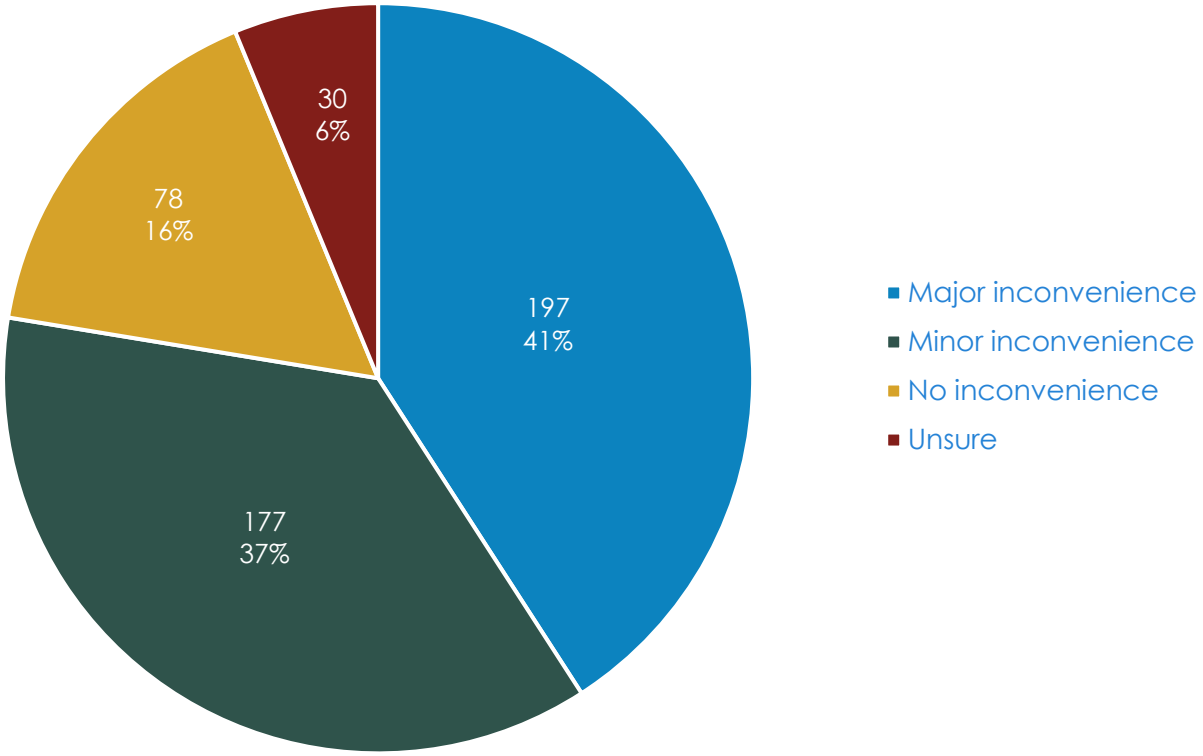


Figure 12. shows a summary of public opinion regarding transfer station hours of operation.

Question 7 shifts the focus from identifying issues or desired services to assessing a potential solution: the implementation of fixed hours of operation at transfer stations. This question seeks to understand public perception regarding this proposal. Among the 482 respondents, 41% believed that fixed hours would pose a major inconvenience to their waste disposal routine, whereas 37% considered it a minor inconvenience. Meanwhile, 16% viewed it as posing no inconvenience. The results indicate a closely divided opinion in the Township regarding the implementation of operational hours, highlighting differing perspectives on how it might affect waste disposal habits.

The responses suggest that uncertainty potentially influenced these opinions, notably due to the lack of specific details about what the operational hours would entail and their consistency throughout each weekday. Further analysis of this concept and its potential impacts can be found in the scenario sections of this report, offering more detailed insights into how it could function and address existing challenges.

Q8 On average, when do you typically access Seguin Township transfer stations?

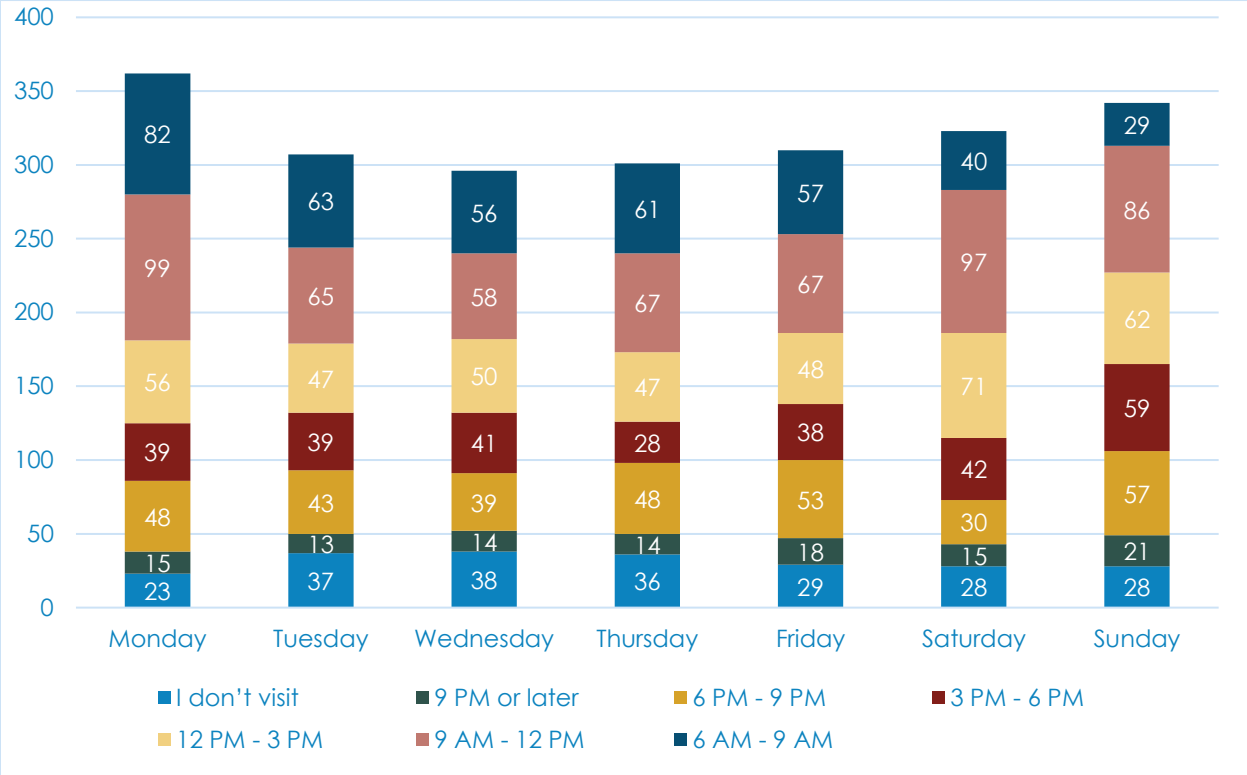


Figure 12. a summary of days and times respondents visit Seguin's transfer stations.

Question 8 was created to answer the large unknown regarding when Seguin's waste sites are used. As can be seen in figure 8, Monday's, Saturday's and Sundays are the busiest of the week. These results could be due to several factors such as time availability to make a garbage run and seasonal residents and visitors. For every day the most frequently visited times are 6am-9am, 9am-12pm or 12pm-3pm. This shows that Township transfer stations are most visited within typical daytime/worktime hours.

There are several key factors that have the potential to have influenced this question. Firstly, every participant was able to select only 1 time slot per day. A second factor that could have affected this is due to the current nature of the system (24hr access) some participants may not have been able to select just one day so instead pick different time slots each day. This phenomenon was observed by staff when conducting surveys in person.

Q9 How effective are each of the following tools in helping you understand waste facility operations and schedules?

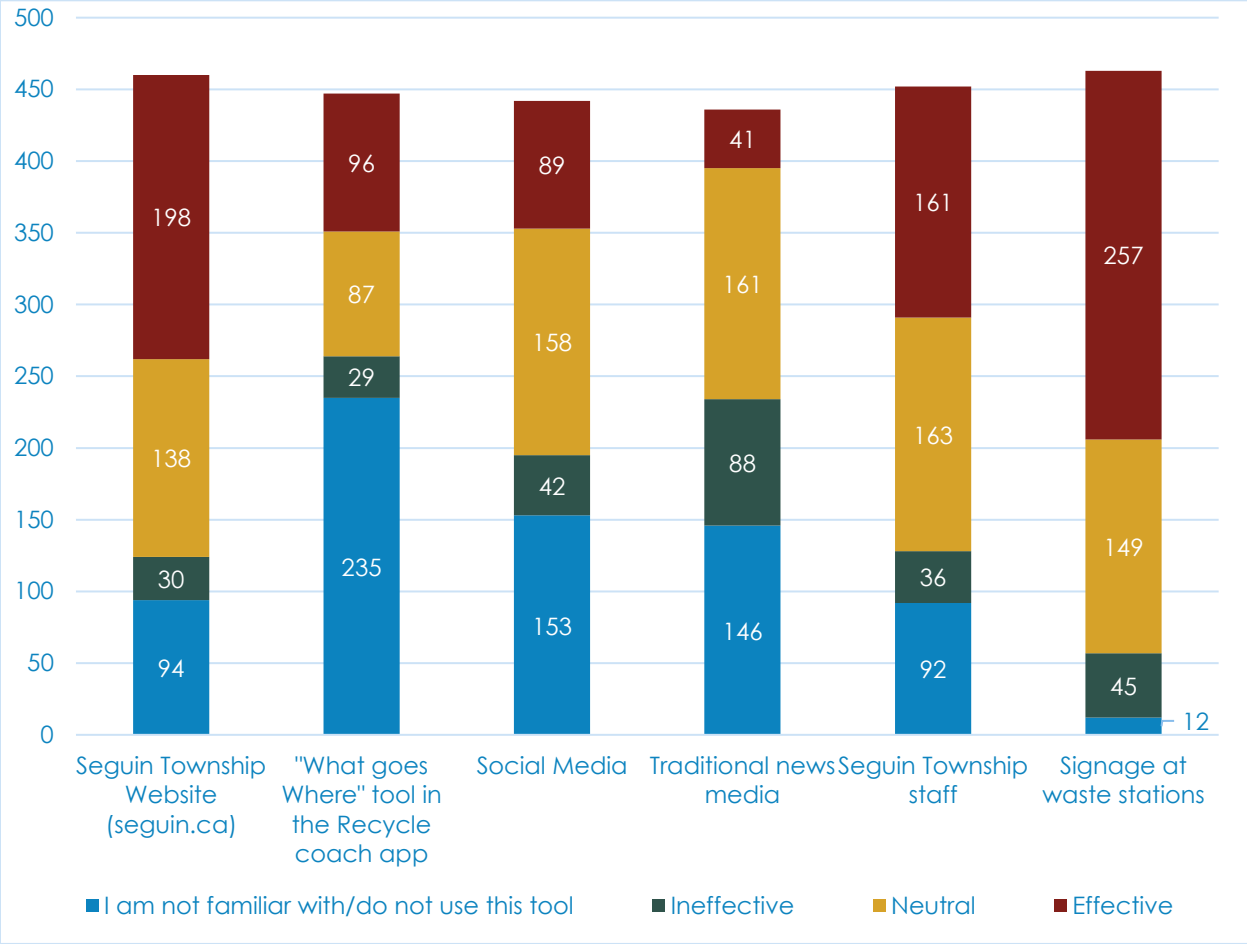


Figure 13. The effectiveness of communication tools used in Seguin in understanding waste operation and schedules.

The analysis of the six main tools utilized by Seguin Township for waste management communication reveals varying levels of effectiveness as perceived by survey participants. Through analysis of this question, it can be observed that some tools such as site signage, the Township website and staff are more effective at communicating waste operations when compared to tools such as the "What Goes Where" app and traditional news media. Addressing the areas of least effectiveness could both improve overall communication effectiveness and accessibility of those seeking to better understand waste operations and schedules within Seguin Township.

Q10 When your usual/preferred waste transfer station is closed (for repair, fire, etc.), rate your reaction to using an alternate station.

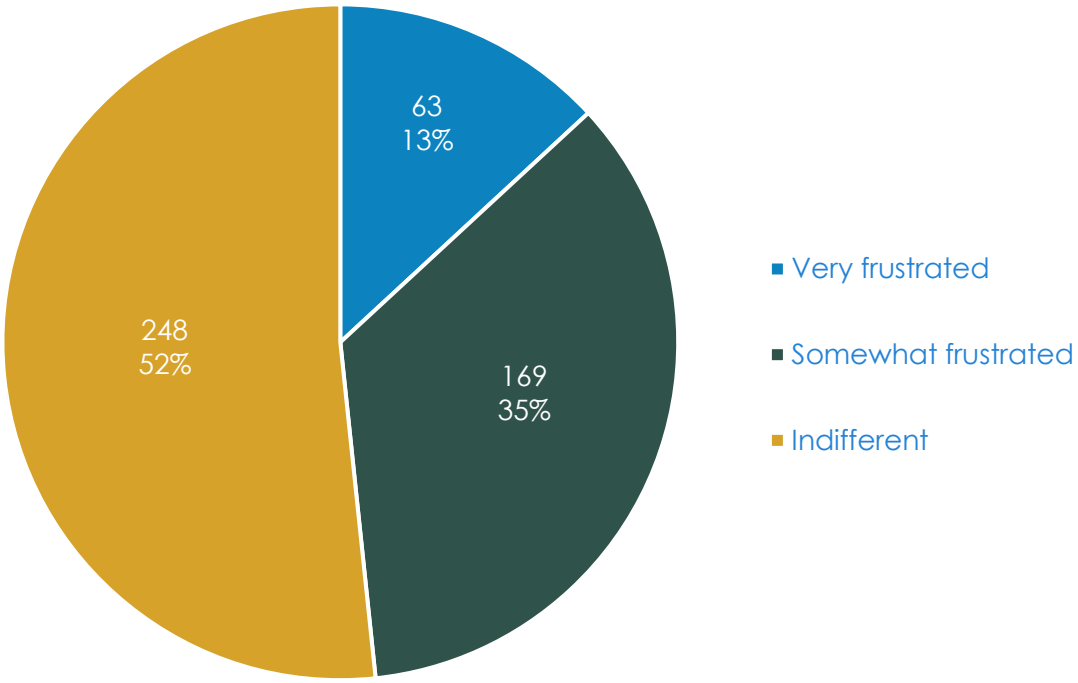


Figure 14. The public's perception when their preferred waste station is closed.

In question 10, the goal was to understand the perception and reaction of transfer station users when their usual station is closed for a prolonged period. Of the 480 responses, 52% were indifferent to using another station in the Township. 35% were somewhat frustrated and 13% very frustrated. This result shows a 50-50 reaction to using a different site overall. This question may have been influenced by 1 key factor, which site they use as a primary. For example, if taken at a site like Humphrey with 2 other stations 5 minutes away, recipients may have been more likely to be indifferent when compared to sites like Stanley House which is more remote relative to other stations.

Overall, this question not only allows us to understand public usage, but to also incorporate it into potential scenarios for waste management solutions explored in the following section.

Public Information Session

Township staff were committed to sustaining continual public engagement and participation following the conclusion of the waste management survey. To achieve this, staff organized a public information session, offering both in-person and virtual attendance options. The session aimed to present the first draft of the Waste Management Review to the public, highlighting key system issues and suggesting potential solutions for the future.

Equally important to this session was not only keeping the public informed but also gathering their feedback on the review. This included gathering their thoughts on the recommendations and provided an opportunity to discuss and address overall public opinions and concerns. Ultimately, Township staff have incorporated public feedback, as much as possible, into this Waste Management Review which will be presented to Council.

The Public Information Session was held on August 14th, 2025, from 4:30pm-6:00pm. Approximately fifty people attended the session in person, with an additional 29 participants joining virtually.

The primary concern noted by participants revolved around site closures and how it would affect daily usage, travel times and illegal dumping. In response, staff have included additional scenarios in which the number of stations to be closed varies, giving Council the ability to include public concern in the decision-making process. Another main concern was regarding report timelines and the rapid pace of the review. Initially the final waste management review report was scheduled to return to Council in September 2025, however regarding these concerns, and to provide ample time to consolidate public feedback and additional scenario considerations, the final delivery was shifted to Q4, 2025. Questions revolving around additional services to address problems were posed frequently, and included implementing composting and organics programs, establishing re-use centers and enlarging the landfill. Finally, several participants also noted a concern regarding the upfront costs of each scenario and the implications for municipal taxes.

Significant concerns about insufficient site enforcement by bylaw officers were also raised. The current wording of the bylaws makes effective enforcement challenging; however, this report provides recommendations for improving these bylaws to facilitate better enforcement.

Information Session Cost-Reduction Opportunities and Scenarios

As can be demonstrated throughout earlier sections of this report, much work and a variety of solutions are required to address the challenges identified. At a macro level, improvements to the waste processing system through the reduction of waste quantities, increased diversion rates, and changes in business process are necessary. Evaluation of this generalized criteria suggests efficiencies should result in reduced operational costs, increased potential revenues, reduction in community-based emissions, and greater human resource efficiencies. As this report is the first of its type for Seguin Township, implementation of the described opportunities will take time and capital investment.

Hours of Operation

Currently, all transfer stations are open and free to use 24/7/365. While this offers convenience, it introduces challenges in maintenance and increases opportunities for non-resident, ICI, and illegal waste disposal. According to the public survey, these were identified as the foremost issue (60% of respondents) and the fourth most prevalent concern (30% of respondents) respectively.

It is advisable to establish formal hours of operation for all transfer stations. Neighboring municipalities in West Parry Sound and the District of Muskoka operate their transfer stations 2 to 7 days per week, with varying hours, and none operate 24/7/365 as Seguin currently does.

To enhance efficiency, a staggered schedule should be considered. At any given time, no more than half of the transfer stations should be closed. Proposed hours of operation will be determined by using public feedback received through the Waste Survey and through an internal review.

Resident Impact of Hours of Operation

Unrestricted access, although convenient, allows exploitation due to lax residency requirements, an issue noted by 51.3% of survey respondents as significant or very significant. Additionally, 71.9% perceive non-resident disposal to impose a moderate to very significant financial burden on the Township as can be demonstrated in figure 11 and Table 5.

Structured operating hours are crucial to curb non-resident and ICI usage. The impact on residents is expected to be minor, as reported by 52.9% of survey participants in question 7. Seguin Township should endeavor to implement realistic and reasonable hours that align with community feedback and complement neighboring municipalities' schedules. With closures on a rotational basis, residents would be able to access alternative stations for waste disposal, a solution met with indifference by 52% of respondents in survey question 10. That said, approximately 35.2% of respondents expressed some frustration with this arrangement, but not to a significant extent. Interestingly, during Seguin Townships public information session, no aversion to the establishment of hours of operation were voiced. While definitive recommended schedules remain to be designed, it would be recommended that at no time would all stations be closed, except after-hours.

Site Closures

The ongoing management and maintenance of 7 transfer stations is exceedingly expensive for both capital and operating budgets and has significant staffing challenges. The permanent closure of several transfer stations would allow the Township to better manage the system in entirety. While waste quantities would not decrease, operational efficiencies would be expected. Recommendations for permanent closures include the Bon Echo, Airport and Turtle Lake transfer stations. Transfer station closures will depend on the future waste system scenario selected and could range from zero to three. Depending on the scenario chosen, waste from the Airport and Turtle Lake if closed, could be collected and managed at the Humphrey transfer station, as it is centrally located from both. Waste from Bon Echo, if closed, would be collected at Brooks Road transfer station, where it's believed many residents already drop off their

waste. Depending on which scenario is chosen, closures could leave four – seven transfer stations in operation. Scenario depending, any remaining stations could then be staffed on a rotating basis. Given the seasonal nature of the Township, increased hours of operation may be necessary throughout the summer months. The increase in staffing requirements could be addressed through the employment of summer students.

Permanent closures of these three locations would result in increased volumes at Humphrey transfer station and to a lesser extent Brooks Road. Humphrey waste volumes would increase by 210%, while Brooks Road only 9%. Based on these estimates, Humphrey transfer station would require an overhaul, including a site redesign, and new infrastructure. Brooks Road on the other hand would only require a negligible increase in pickup frequency.

Resident Impact of Closures

Closures, whether permanent or seasonal, will impact all Seguin residents, but was only identified by 48.3% of survey respondents in question 10 as an inconvenience. The public information session also provided similar sentiments with a mixed response to the recommendation of site closures. Concerning the closures of Bon Echo, Airport and Turtle Lake transfer stations, all have alternatives within a reasonable proximity. In any scenario, neither is a significant travel distance nor should be considered unreasonably inconvenient. That said, any changes in how, when or where waste is collected will require significant external communications. These communications should at minimum explain the change and the reason/justification for it.

Additional Closure Considerations

Closures are not recommended lightly. Accessible and available waste disposal is important for a plethora of reasons including - sanitary and safe disposal of waste, reduced risk of nuisance animals, and most importantly avoiding waste being left in ditches, forests, and waterbodies, as was noted during the public information session. That said, the number and location of sites should be carefully considered when evaluating the entirety of Seguin's waste management system. The evaluation should assess seasonality of waste collection, cost of management, opportunities for closure and the necessary staffing of sites.

When considering the entirety of Seguin's system, the three previously listed stations stand out among all for review, Bon Echo, Airport and Turtle Lake. In respect of Bon Echo station, it has the lowest waste volumes by a significant margin. Despite this, it still has the same inspection requirements as all others, thereby having a significantly higher cost per tonne for management. When modeled against other transfer stations, the rate of waste collected is significantly less than expected, suggesting some residents dispose of their waste at the Brooks Road transfer station or elsewhere. Modeling suggests that the waste collected at Bon Echo was more than 50% under what would

be expected, even with seasonality considered. The volumes of waste disposed suggest the closure of the site may be warranted.

In respect of the Airport and Turtle Lake transfer stations, there are several justifications for closure. First, a significant amount of non-resident, ICI and illegal waste was identified through the modeling exercise (Airport – 48%, Turtle Lake – 46%), likely coming from Muskoka Lakes residents on their way to Highway 400. Second, it's believed a large amount of commercial waste is being collected from the Parry Sound Area Municipal Airport and Business Park; these businesses should be coordinating their own waste management plan, as Seguin does not collect commercial waste. Third, the proximity of the Airport and Turtle Lake transfer stations to the Humphrey transfer station (~7.0-8.0 kilometers) suggests it may be reasonable to close the stations.

Additional considerations should be examined when looking at site closures. While closures would alter service for many residents, there are ways to improve services in other areas. With fewer stations in operation, innovative programs and bins could be added to the remaining sites, which was noted during the public information session as a primary desire. These could include an increase presence of re-use/donation centres as desired by 52% of those surveyed. Other potential programs identified by the public include an organics program (33%) and additional types of waste accepted at transfer stations (38.6%). Diversification of services offered is not possible under a larger service delivery model with seven transfer stations.

Residency Passes

Residency passes can provide a level of control in accepting waste when paired with another measure (staffing of sites, bylaw enforcement, etc.). Passes are an effective way to verify valid residency for the disposal of waste, as agreed by 32% of respondents in the waste survey. Neighbouring municipalities have implemented similar systems, each with their own flare; some examples include the use of cards, fobs, window hangers, and window stickers.

To reduce non-resident and ICI waste, some form of a residency pass will be required. Staff recommend a system that leverages existing functionality and information in the West Parry Sound Geography Network, as well as additional customizations to create a flexible pass system. The pass would note a civic address and last name. It might utilize a QR code used only for compliance by waste site staff or bylaw enforcement. While time is required to design the process in entirety, it will result in a simple, self-service system to minimize management and administrative efforts. Rollout of any system will take time and effort and would require a grace period for implementation and uptake.

Staffing of Sites

Staffing of sites has several advantages, such as reduced intake of non-resident and ICI waste, increase waste diversion revenue, provide risk reduction through initiative-taking maintenance/management, and improved customer service. The following section will delve into each individually.

While obvious, a staffed transfer station will result in reduced non-resident and ICI waste disposal when combined with an identification system such as cameras or a waste permit/tag. These two items were identified as the 1st and 3rd most common solutions noted by respondents in survey question 3. That said, it's neither practical nor affordable to staff all sites on a permanent basis. To counter this, there are several options, but all depend on closures, and rotating site staffing. Depending on which future system scenario is chosen, the Township may have as few as four stations remaining in operation. Conditional on which scenario is chosen, between two – six staff could rotate through each of the sites open daily. During the information session no aversion to site staffing was voiced.

An additional benefit of staffed sites is enforcement of waste diversion as was identified by Seguin staff and 29% of those who participated in the waste survey. Increased levels of recycling will result in decreased landfilling volumes. The advantage of this is two-fold, the first is an avoided costs from the new, recycling producer responsibility mandate. The second is the avoidance of transportation and tipping costs of household waste that could otherwise be recycled. In this situation, there is a significant value beyond the environmental benefits of recycling as a means for cost avoidance. Further, staffing could reduce levels of contamination in the recycling stream.

To effectively enforce non-resident and ICI and large item waste disposal, the transfer station staff person may require the ability to enforce and ticket through the waste bylaw.

Compaction

Seguin Township's waste management costs are largely determined by tonnage received, processed, and transported. These three variables have additional levels of control. The first, tonnage received can be adjusted through the non-resident and ICI disposal and waste diversion strategies. The second, processing and transportation are related, whereby the greater volumes of waste received, equates to greater costs to manage and transport, particularly in an uncompacted system.

On average, waste can be compacted to a ratio of between 3:1 and 6:1, meaning bins when compacted can hold 3-6 times as much waste as uncompacted. When waste is compacted, it reduces transportation frequency by the same factors. An additional consideration is that uncompacted waste also contributes to overflowing bins, which was identified as the third most common problem for Seguin facilities. Furthermore, 26% of survey respondents expressed a desire to add compactors at Seguin transfer stations, indicating some community support for this measure. During the information session no aversion to compaction was voiced.

Transtor waste introduces challenges in computing the value proposition of compaction as while the waste is collected in an uncompacted state, when it is transferred to the truck, it is then compacted. As this does not occur until processing, Transtors require more frequent site visitation and emptying. Given that, in either case,

the frequency of site visitation and/or processing and hauling of the collected uncompacted waste is significant.

If waste compaction is considered by the Township, haulage savings could be significant. Presently, 40-yard bins are contracted out due to the frequency of change over (851 trips in 2023) and the corresponding requirement of staffing time, as well as the lack of a roll off truck. A compaction system could use contractors, staff, or a combination therein to manage the transportation of waste. Based on the compaction rates above, and the actual volume received, several opportunities present themselves, including the elimination of the semi-truck and trailer, in favor of roll-off truck alternatives.

Transtor waste accounts for 70% of the waste received, the remaining 30% comes from the uncompacted 40-yard bins. In a scenario where all waste is compacted through a common system, the frequency of trips goes from 1,002 (2023), to between 539-809 per year, depending on the actual compaction rate. While it may seem that these trips should be much fewer, the reader must consider that Transtor waste is compacted and consolidated with waste from other stations on the tractor trailer, prior to disposal.

Worth noting, tipping costs would remain the same, unless compaction is combined with other controls listed previously, such as decreased non-resident and ICI waste collection and/or greater rates of waste diversion. While tipping costs presently remain below $100/tonne (2023), they are expected to increase when the contract is renegotiated in 2026. As an alternative, staff are simultaneously investigating waste to energy as a means for avoiding landfilling in entirety. The previously discussed actions do not negatively impact this body of work; in fact, the establishment of hours of operation, staffing of sites and compaction complement this work by reducing volumes and transportation costs.

Roll-Off Trucks

Currently, the lack of a Township owned roll-off truck and bins, necessitates the contracting out of 40-yard bin transportation, leading to 851 trips in 2023 and corresponding staffing demands and contractor dependency. By considering the acquisition and integration of roll-off trucks, the Township could replace the existing semi-truck and trailer setup. This transition would allow for fewer required trips due to the flexibility and additional uses of roll-off trucks, enabling staff to manage the majority of waste transportation internally. Contractors would then only be needed during periods of high waste volumes, vehicle maintenance, or staffing shortages. Although roll-off trucks would reduce per-trip capacity to 6-8 tonnes, this system would support streamlining operations and potential cost reductions.

Integrating roll-off trucks within the broader waste management framework aligns with ongoing efforts to improve efficiency and to optimize resource use across the Township. Roll-off trucks provide significant versatility in handling diverse types of refuse, enabling adaptation to different waste management scenarios. They are not only limited to waste transport but can also be utilized for other loads and materials, offering a

multipurpose solution for the Township's operational needs. The purchasing of two roll-off trucks could cost the Township at least $900,000 upfront with an estimated annual cost of between $10,000 and $30,000 per year, per truck. Cost savings from the incorporation of a roll-off truck into municipal waste operations could be upwards of $100,000 per year over contractor managed transportation.

Additional value-adds exist for the purchase of roll-off trucks that are beyond the scope of this report, including the purchase of other accessories such as water tanks, sanders, dump beds, etc…

Bylaw Enforcement

The enforcement of waste system bylaws is a crucial element for effective operation and management of waste volumes within the Township. Currently, the waste bylaw imposes fines up to $5,000 for any violation. However, the bylaw poses challenges in enforcement as the charges are not explicitly defined, often necessitating a court appearance for resolution.

To enhance enforcement, the Township should consider implementing an administrative monetary penalty (AMPs) system to establish clearly defined fines, allowing a streamlined ticketing process for specific charges. This would include violations such as non-resident and ICI waste disposal, improper waste disposal (e.g., after-hours dumping, large items, hazardous items), etc.

Should the Township staff transfer stations, it may be essential for waste management staff to have the authority to issue tickets/citations. While not explicitly covered in the public survey, concerns regarding bylaw enforcement, fines, and authority presence were notable feedback points in the "other" sections of survey questions 3 and 4. Moreover, these concerns were echoed by the majority of participants during the information session. This suggests that the public views bylaw enforcement as a top priority for the future of waste management in Seguin.

Waste to Energy

While subsequent studies will be completed specific to waste to energy, staff are currently investigating alternative options for waste disposal. Working with a third-party provider, Seguin is considering the reallocation of its waste from landfill to an energy production facility. The system would operate in a waste as a service (WaaS) model, whereby Seguin would enjoy a fixed rate contract for waste disposal on a per tonne basis. Further information will be provided at a future date.

Evaluation of Options

Throughout the body of this report, the reader will observe numerous opportunities to improve Seguin's waste management program. To understand the impact of these opportunities, staff have reviewed historic business processes and their associated costs. They have also considered high-level costing estimates for improving the system through various means. These include site closures, hours of operation, staffing of sites, compaction and the purchase of roll off trucks.

The following scenario summaries assume that all variables listed above, except for site closures, remain constant. Besides the base case, Scenarios 1-4 incorporate all these variables, with the only difference being the number of stations considered for closure. Costing for each scenario includes both known and modelled prices, and takes into consideration inflation, which was gathered from Statistics Canada's Consumer Price Index publications. For each scenario, the Township will examine the costs in 2023, 2027 and 2033 to highlight operating and avoided costs. All avoided costs are compared to their baseline year (2027 scenario 4 is compared to 2027 base case).

Notice - For this evaluation, curbside garbage collection was not considered, as exploration of potential costs requires a request for information (RFI) or a request for proposal (RFP), per discussions with industry representatives.

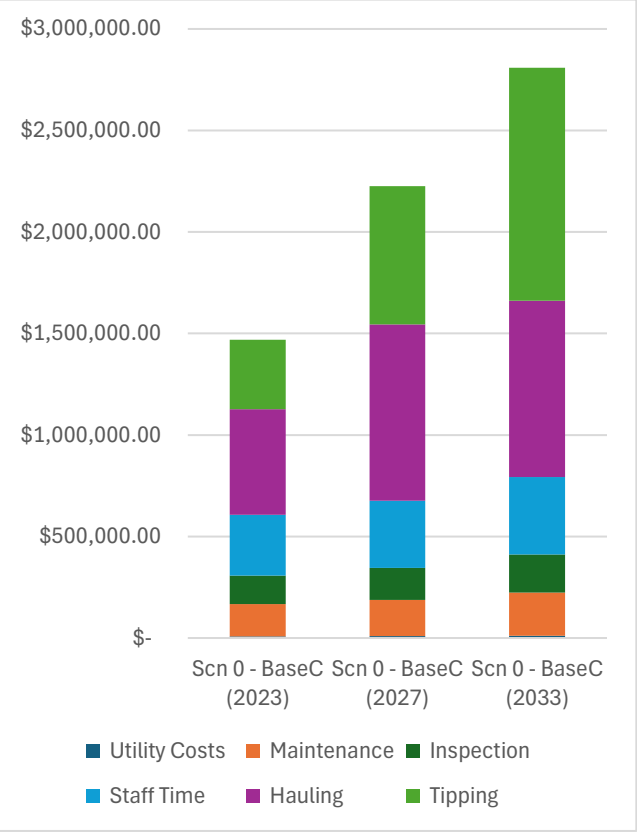
Table 6. Shows the operating costs and costs avoided by scenario

Scenario	Cost (w/o Revenue)	Avoided Costs
Scn 0 – BaseC (2023)	$ 1,469,500.42	$ 0
Scn 0 – BaseC (2027)	$ 2,225,392.12	$ 0
Scn 0 – BaseC (2033)	$ 2,808,968.35	$ 0
Scn 1 – No Cls (2023)	$ 1,469,500.42	
Scn 1 – No Cls (2027)	$ 1,723,807.21	-$ 501,584.91
Scn 1– No Cls (2033)	$ 2,282,894.76	-$ 526,073.59
Scn 2 – Cls (BE) (2023)	$ 1,469,500.42	
Scn 2 – Cls (BE) (2027)	$ 1,612,030.76	-$ 613,361.36
Scn 2 – Cls (BE) (2033)	$ 2,151,655.64	-$ 657,312.71
Scn 3 – Cls (BE, A) (2023)	$ 1,469,500.42	
Scn 3 – Cls (BE, A) (2027)	$ 1,498,478.67	-$ 726,913.45
Scn 3 – Cls (BE, A) (2033)	$ 2,018,611.24	-$ 790,357.10
Scn 4 – Cls (BE, A, TL) (2023)	$ 1,469,500.42	
Scn 4 – Cls (BE, A, TL) (2027)	$ 1,386,870.63	-$ 838,521.49
Scn 4 – Cls (BE, A, TL) (2033)	$ 1,889,780.44	-$ 919,187.91

Scenario 0 - Base Case/Business as Usual

In examining the base case scenario, it's crucial for readers to understand that the costs mentioned throughout the report aren't fixed. In fact, remaining with the Townships' current system without changes will become less viable over time. Costs across the board are expected to rise, with all avoided costs detailed in Table 6.

Under Scenario 0, it is assumed that no changes will occur, maintaining the status quo with the Townships' current 24/7 system. In 2023, the operational costs surpassed $1.46 million. By 2027, these costs are projected to climb to approximately $2.225 million (table 6). This increase is largely due to anticipated rises in tipping fees, expected in 2027, along with higher hauling costs and inflation impacting all other variables. Looking further ahead to 2033, it is anticipated that annual operating costs may soar to $2.8 million. Again, a significant portion of this increase is expected to result from tipping fees. Beginning in 2027, Seguin Township may no longer be protected by a long-term contract with McDougall Township, as has been the case in recent years. In addition to the anticipated increase in tipping costs, historically, the McDougall landfill has raised its fees by approximately 5% annually. Accordingly, it is estimated that by 2033, the Township could be paying around $206.62 per ton of garbage, drastically increasing operating costs. Furthermore, due to standard inflationary pressures, increases will also be seen in all other areas of waste system operations. Scenario 0, the base case, represents a future of high operating costs, absent of any improvements to the system, as included in Scenarios 1-4.



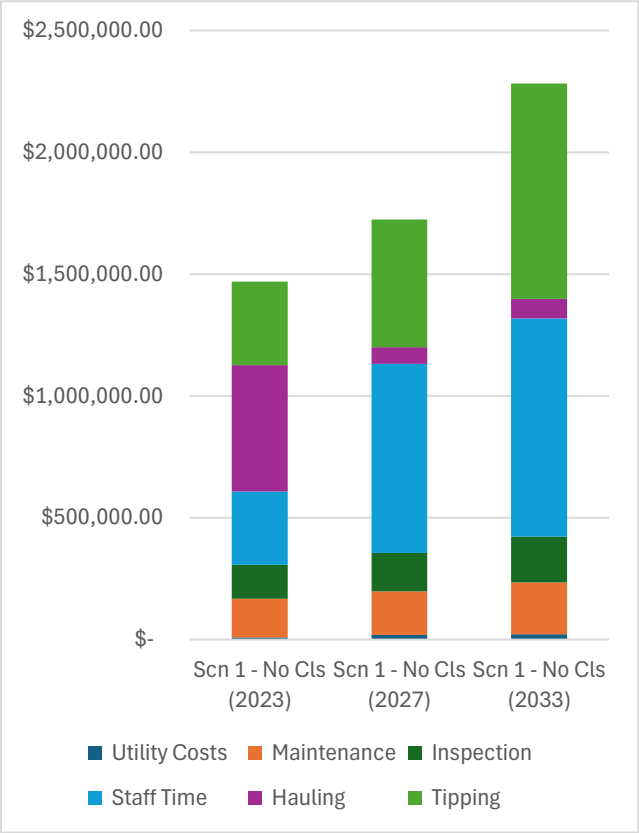
Scenario 1

All avoided costs discussed in this section are detailed in table 6. This scenario considers that no currently operating transfer stations are closed but include other significant changes to the overall system. These changes include the staffing of sites, hours of operation and moving all transfer stations to a fully compacted and Seguin managed system, including the purchase of roll-off trucks. As 2023 has arrived and passed without any action there are no avoided costs in 2023.

In 2027, operating costs improve when compared to the 2027 baseline projections. As was demonstrated in Scenario 0, tipping fees and standard inflation are driving costs up regardless of action taken; however, these can be greatly mitigated through Scenario 1. When compared to the 2027 base case (Scenario 0), a fully Township managed system in 2027 could result in $501,584.91 in avoided costs. Most of these avoided costs come from hauling and tipping, which is a result of tackling non-resident/ICI waste and compacting waste. Increases in staffing costs are seen as more staff are required to fully manage each site.

In 2033, operating costs further improve when compared to the baseline year. A fully Seguin managed waste system in 2033, when compared to the 2033 baseline (Scenario 0), posits that avoided annual costs could be as high as $526,073.59. Similar to previous year's, most decreases are related to hauling and tipping, with increases in staffing costs.

In summary, Scenario 1 introduces some cost avoidance opportunities for hauling and tipping costs, but still presents high operating costs going forward ($2.282 million as of 2033).



Scenario 2

All avoided costs discussed in this section are detailed in table 6. This scenario considers that the Township closes the Bon Echo waste transfer station, as well as making other significant changes to the overall system. These changes include the staffing of sites, hours of operation and moving all transfer stations to a fully compacted and Seguin managed system, including the purchase of roll-off trucks. As 2023 has arrived and passed without any action there are no avoided costs in 2023.

In 2027, operating costs improve under Scenario 2. When compared to the 2027 base case (Scenario 0), a fully Township managed system in 2027 could result in $613,361.36 in avoided costs. Most of these avoided costs come from hauling and tipping, which is a result of tackling non-resident/ICI waste and compacting waste. Increases in staffing costs are seen; however, these costs are less than seen under scenario 1.

In 2033, operating costs further improve when compared to the baseline year. A fully Seguin managed waste system in 2033, when compared to the 2033 baseline (Scenario 0), suggests that avoided annual costs could be as high as $657,312. Much like the previous year's, most decreases are related to hauling and tipping, with smaller decreases in inspection and maintenance costs, and an increase in staffing costs.

In summary, Scenario 2 further introduces cost avoidance opportunities for hauling, tipping, inspection and maintenance costs, but still presents high operating costs going forward (2.151 million as of 2033).

Scenario 3

All avoided costs discussed in this section are detailed in table 6. This scenario considers that the Township closes the Bon Echo and Airport waste transfer stations, as well as making other significant changes to the overall system. These changes include the staffing of sites, hours of operation and moving all transfer stations to a fully compacted and Seguin managed system, including the purchase of roll-off trucks. As 2023 has arrived and passed without any action there are no avoided costs in 2023.

In 2027, operating costs improve under Scenario 3. When compared to the 2027 base case (Scenario 0), a fully Township managed system in 2027 could result in $726,913.45 in avoided costs. Most of these avoided costs come from hauling and tipping with smaller decreases in inspection and maintenance. These decreases are a result of tackling non-resident/ICI waste, compacting waste, and having less waste sites to inspect and provide maintenance for. Increases in staffing costs are seen when compared to the 2027 baseline; however, these costs are less than seen under both previous scenarios.

In 2033, operating costs further improve when compared to the baseline year. A fully Seguin managed waste system in 2033, when compared to the 2033 baseline (Scenario 0), suggests that avoided costs could be as high as $790,357.10. As in previous years, most decreases are related to hauling and tipping, with smaller decreases in inspection and maintenance costs, and an increase in staffing costs.

In summary, Scenario 3 further introduces some cost avoidance opportunities for hauling, tipping, inspection and maintenance costs, but still presents high operating costs going forward ($2.018 million as of 2033).

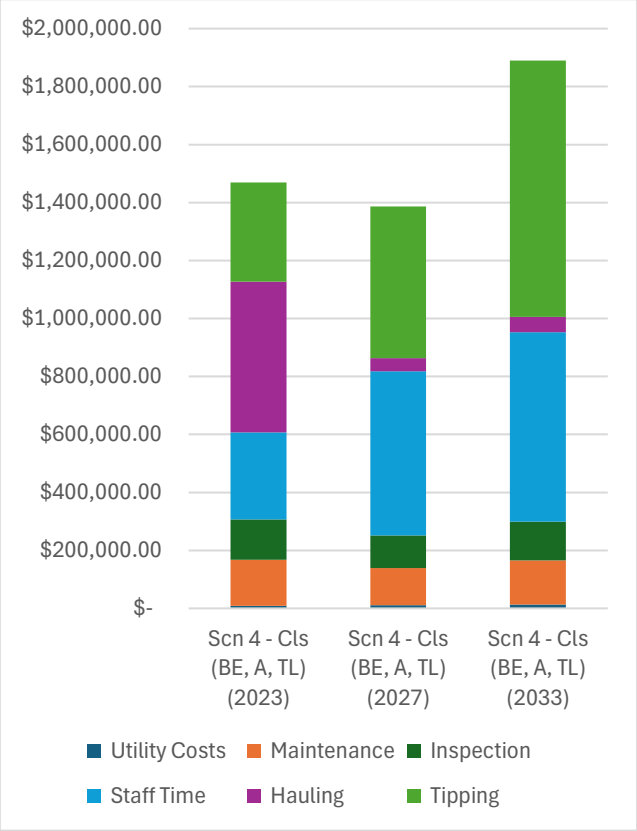
Scenario 4

All avoided costs discussed in this section are detailed in table 6. This scenario considers that the Township closes Bon Echo, Airport and Turtle Lake waste transfer stations, as well as making other significant changes to the overall system. These changes include the staffing of sites, hours of operation and moving all transfer stations to a fully compacted and Seguin managed system, including the purchase of roll-off trucks. As 2023 has arrived and passed without any action there are no avoided costs in 2023.

In 2027, operating costs improve under scenario 4 When compared to the 2027 base case (Scenario 0) a fully Seguin managed system in 2027 could result in $838,521.49 million in avoided costs. These avoided costs come from hauling, tipping, inspection and maintenance. Similar to Scenario 3, these decreases are a result of tackling non-resident/ICI waste, compacting waste, and having less waste sites to inspect and provide maintenance for. Increases in staffing costs are seen when compared to the 2027 baseline; however, these costs are less than seen under all previous scenarios.

In 2033, operating costs further improve when compared to the baseline year. A fully Seguin managed waste system in 2033, when compared to the 2033 baseline (Scenario 0), finds that avoided costs could be as high as $919,187.91. As in the previous Scenarios, most decreases are related to hauling and tipping, with smaller decreases in inspection and maintenance costs, and an increase in staffing costs.

In summary, Scenario 4 introduces further cost avoidance opportunities for hauling, tipping, inspection and maintenance costs, but still presents high operating costs going forward ($1.889 million as of 2033).



Summary of Options:

As can be demonstrated in Scenarios 0-4, there are many pathways and options for system improvements going forward. That said, the most significant variable under consideration is the number of site closures. While all options have their merits and advantages, the higher the scenario number and waste transfer stations that are closed, the greater the total avoided costs in the Townships operating budgets from 2027 to 2033, as can be observed in figure 15.

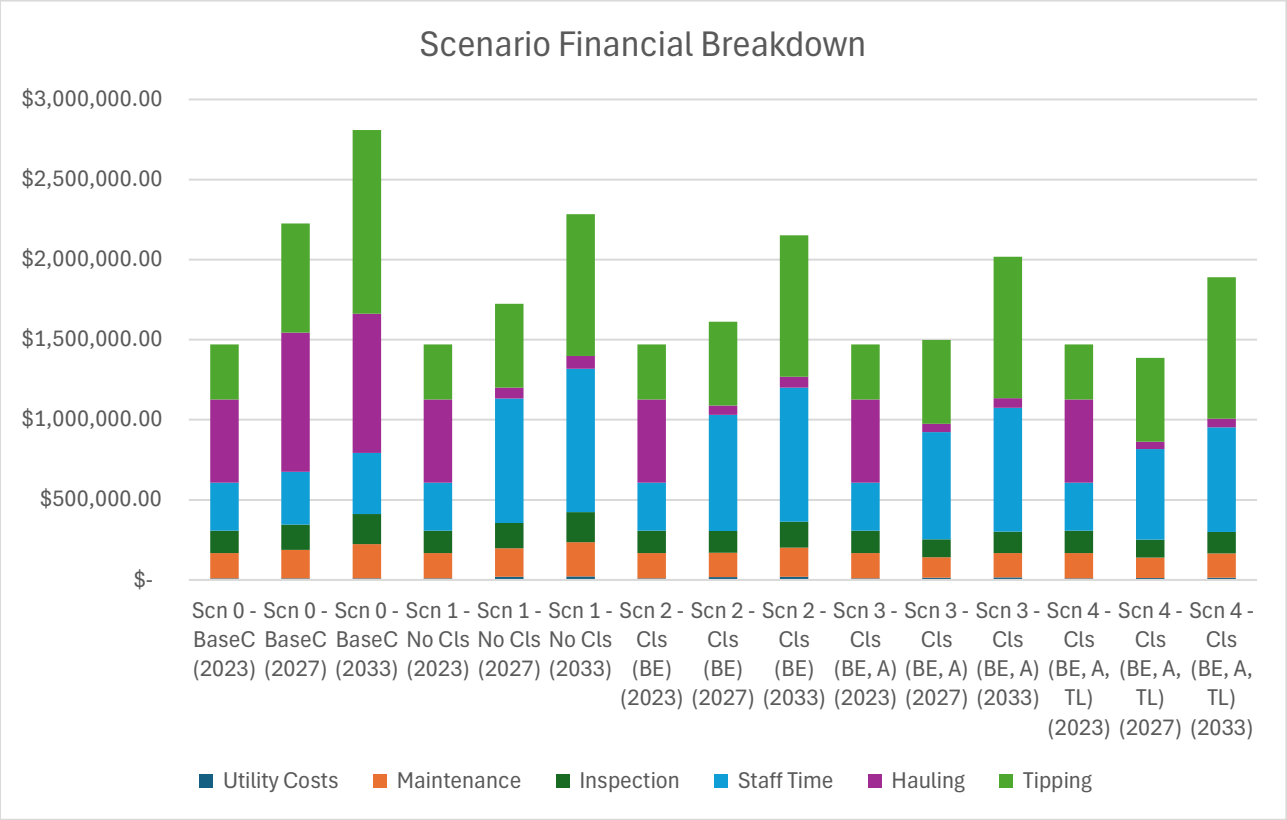


Figure 15. shows total system operating costs by year (2023, 2027, 2033) by cost centre by Scenario.

Capital costs

Gating

To reduce non-resident, illegal, and ICI waste disposal, the installation of gates and fencing would be required. These will aid in the implementation of hours of operation. The cost of gating and fencing each site is highly variable. It is recommended that entry points are gated as well as the lands fronting the entry point fenced. For the purpose of this report, the following budgetary estimates for fencing and gating are presented below.

Table 7. capital costs for gating and fencing

Site	Est. Costs
Humphrey Transfer Station	$34,462.59
Stanley House Transfer Station	$90,949.62
Christie Landfill and Transfer Station	$38,657.72
Brooks Transfer Station	$ 30,463.78
Turtle Lake Transfer Station	$88,221.03
Airport Transfer Station	$56,550.95
Bon Echo Transfer Station	$56,550.95
Total	$395,856.64

Engineering and Design

Making significant changes to the Township's waste program will require the assistance of engineers. While the equipment costs will be discussed further below, there are real costs to modify the existing sites for optimal management of waste disposal and resident movements. Engineering and design will consider those and more including site security. Engineering and site design is expected to cost approximately $20,000 per site totaling $140,000 for all locations. These estimates may vary depending on the extent to which redesign is required.

Site Preparation

Much like the variability in engineering and design costs, site preparation is much the same. A conservative estimate for site preparation for remaining stations is $125,000 per site, for a total of $875,000 for all 7 sites. Site preparation may include but is not limited to grade work, paving, concrete pads for compaction bins, railings, electrical, etc…

To adequately staff transfer stations, structural investments will be required. These works include lavatory facilities, hand and eye washing stations, a workspace, a secure space for retreat from hostile situations and inclement weather. These facilities would be optimally designed for their function and may be a mobile solution, even if temporary. It

is estimated each site would cost approximately $150,000. These facilities would be required at all transfer stations, for a total of $900,000.

Equipment

Compacting equipment accounts for a large percentage of the project costs. It is estimated that each compactor will cost approximately $91,054.00, depending on the style, size and features. Compacting equipment is highly variable and can be customized to suit almost any configuration. Each transfer station can be designed independently of others, but all would use complementary equipment. That said, it will be critical that bins be interchangeable between sites to optimize waste transfer and tipping. Staff are presently recommending two compactors at Humphrey, Brooks, Airport and Turtle Lake transfer stations and single compactors at the remaining three stations. This is based on waste volumes and the expected frequency of pickups. With that in mind, the cost to implement compactors at every site could be approximately $637,378.00, depending upon which scenario is chosen.

Additional empty compactor bins would be required. These are estimated to cost $15,751 per bin. Purchasing 4 would enable the rotation of these bins and in the event one bin requires maintenance, several replacements would be available. These costs total approximately $63,004.00.

To effectively enforce the waste bylaw and to ensure site and human safety, a robust surveillance system should be installed. The estimated cost per site is $5,000-10,000 including cameras and networking to support the system. These systems will also require connectivity to support external communications for systems and monitoring.

Transportation

All scenarios, excluding Scenario 0, recommend the Township manages the entire waste management system. This requires the purchase of at least one roll-off truck. Roll-off trucks are a highly flexible vehicle whereby bins can be loaded and unloaded using a hydraulic track system. Trucks like these are often used for activities far beyond waste transportation and can be outfitted with water tanks, dump beds and much more. Should the Township proceed with any of the scenarios outlined previously, there may be a business case for purchasing more than one roll-off truck. A basic roll-off truck costs on average around $450,000. Accessories are extra.

Utilities

In Scenarios 1-4, the Township would need to install compactors at each site in the system. This will require additional electrical infrastructure to support the hydraulic compactors. The cost to do the design and installation is included in the site work and is estimated at $10,000-$15,000.

Debt Financing

To undertake a capital project of this scale, it's highly likely that external funding will be required by way of debt financing. Debt financing, particularly through debentures, is a strategic long-term borrowing tool used by municipalities to fund capital assets with extended benefits. This approach involves repaying principal and interest over an asset's useful life, thus aligning costs over time. It is often employed when cash reserves are insufficient or reserved for other critical purposes, and in situations where project benefits warrant intergenerational equity. While debt can influence tax rates, its impact is confined to annual repayments included in budgeted expenditures. The estimated cost of repayment of principal and interest in any of the previously outlined waste scenarios can be viewed in Table 8 below.

Total Estimated Costs

Table 8. total estimated capital costs for all system upgrades

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Gating	$395,856.64	$339,305.69	$282,754.74	$194,533.71
Engineering and Design	$140,000.00	$120,000.00	$100,000.00	$80,000.00
Site Preparation and Office	$1,775,000.00	$1,500,000.00	$1,225,000.00	$950,000.00
Equipment	$1,064,598.00	$973,544.00	$791,436.00	$609,328.00
Transportation	$900,000.00	$900,000.00	$900,000.00	$900,000.00
Debenture Repayment	$995,693.76	$892,706.91	$768,412.66	$636,742.19
Total	**$5,271,248.40**	**$ 4,725,556.60**	**$ 4,067,603.40**	**$3,370,603.90**

Return on Investment/Cost Avoidance/Simple Payback

Estimating simple payback is difficult and considers many variables, including but not limited to actual compaction rates, diesel fuel costs, contractor costs, tonnage received, and tipping costs. All of these factors have significant variability.

The following is a brief summary of the variability that impacts return or simple payback:

Diesel fuel costs are a commodity, whereby the Township has little sway to negotiate price. The Township participates in bulk fuel purchasing with a minor discount; the primary value of bulk fuel purchasing results in time savings and the avoidance of additional driving to refueling stations. That said, the commodity is known to change upwards of 5-6% per month from a yearly average, making projecting operating costs specific to fuel consumption challenging.

While waste generated by a population is relatively predictable, Seguin's population is growing, as demonstrated in figure 1. Per the 2021 census, Seguin's population increased by 22.7% between 2016 and 2021. A continued increase in population results in an increase in waste and the services required therein. All that said, the Hemson Development Charges Background Study suggests a slower rate of growth than was demonstrated by the 2021 census study period. Regardless, it is of critical importance that the system be right sized for the present time, but also flexible for the future.

As discussed in the preceding sections, Seguin Township faces potential challenges with upcoming negotiations on landfill agreements, which expire December 31, 2026. With the current advantageous rate of $90.37/tonne (2023) likely to increase, potentially reaching approximately $157.11/tonne at the time of a new agreement.

Rising tipping costs will directly impact the Township's operating budget and influence the simple payback periods for the implementation of potential scenarios for the future of waste management. Accurately projecting these cost changes is essential for effectively evaluating and managing the financial viability of scenario implementation to ensure sustainable operations within Seguin.

Should this be the case, it will be of critical importance to have an efficient system that only collects waste from Seguin residents, while diverting as much as possible to recycling programs.

Based on the modeling performed and considering the challenges therein, when assessing the operational savings and capital expenditures, it is assumed a simple payback for a fully Seguin managed compaction system could vary heavily based on which scenario is chosen and in what year is being considered.

Table 9. Simple Payback for Scenarios 1-4

Scenario	Capital Costs	Est. Avg Savings (2027-2033)	Simple Payback
Scenario 1 - Compaction - No Closures	$ 5,271,248.40	$ 510,806.68	10.32
Scenario 2 - Compaction Closures (BE)	$ 4,725,556.60	$ 632,094.77	7.48
Scenario 3 - Compaction Closures (BE, A)	$ 4,067,603.40	$ 755,175.77	5.39
Scenario 4 - Compaction Closures (BE, A, TL)	$ 3,370,603.90	$ 875,222.99	3.93

Implementation Strategy

The changes proposed throughout this paper are significant in both scope and breadth. The scenarios can be implemented in order over time in a phased approach. The implementation and completion of any of the proposed changes are flexible and may change over time due to budgetary restrictions, public opinion, and other unforeseen challenges that may occur. In the section below and in Appendix B, a high-level plan will be outlined.

Phase I – Investigate New Waste Bylaw / Hours of Operation

Phase II – Initial Site and Waste System Upgrades

Phase III – Site Work

Phase IV – Site Work Continued

Phase V – Seguin Managed System

The steps and their associated scope described above vary significantly based on the chosen scenario and timing. The options include closures, compactors, site upgrades, and acquiring a roll-off truck, each of which is scenario dependent. A more detailed implementation strategy, complete with an estimated timeline and scope, will be established following Council's chosen direction.

Monitoring and Evaluation

Monitoring and evaluation of the proposed changes throughout implementation of each phase will be critical to understand successful actions. To the same extent, the Township cannot be confident that any changes are successful without information, data and public input. Monitoring all actions will include assessment of total waste quantities, costs for management, rates of diversion, transportation efficiencies, greenhouse gas reductions and others. Specific indicators will be used to measure the progress to ensure the successful implementation of actions listed previously in this Waste Management Review.

Key performance indicators to monitor success post-implementation:

- Total waste quantities
    - Decreases in total waste volumes, beyond simple annual fluctuations, will be suggestive that the actions implemented have resulted in less non-resident, illegal, and ICI waste disposal and/or greater rates of waste diversion.
- System management costs

    - Decreases in system management cost can be exemplified in multiple areas including but not limited to tipping costs ($/tonne), contracting costs (# of trips), transportation costs (maintenance, # of litres of diesel, etc.…), and staff time. Reductions in any one input will be suggestive of reduced volumes of waste and the associated costs.
- Diversion rates
    - Greater rates of waste diversion (recycling) have a direct impact on the total quantities of waste that go to landfill. When recyclable products are included in the waste stream, the Township pays to landfill products that could otherwise be diverted, as per the producer responsibility mandate. As diversion rates are a known quantity, monitoring increases (or decreases) are a useful metric in determining the success of the programs and the associated revenues.
- Transportation efficiencies
    - Transportation efficiencies can be evaluated based on total quantities of diesel fuel consumed. Fuel data, including costs and quantities provide valuable insight into the amount a vehicle is used and can be used to estimate distances traveled. Likewise, it can be used to quantify emissions of the waste management business processes.
- Greenhouse gas reductions
    - Greenhouse gas (GHG) emissions can be tracked for most aspects of the waste management system including waste volumes (primarily organics), transportation, utility usage and others. By measuring the inputs into the systems, trends in GHG's can be monitored and measured.

Mechanisms for Assessing Feedback

Community feedback and public perception is an important component in determining the success (or failure) of the proposed changes. Feedback can be provided in several ways including web-based or in-person surveys, quantification and tracking of illegal waste, and others. As stated previously, community feedback is an important part of the Township's feedback mechanism, as the intent is not to create new problems trying to solve old.

Continuous Improvement Planning

At the time the current waste management system was designed, the costs to administer it were not unreasonable. As time has passed, transportation, tipping, and infrastructure costs have increased significantly. In 2025, Seguin Township has no choice but to consider efficiency in the system, particularly as some of the costs are forecasted to increase far more significantly in the coming years. While some costs are fixed, many are variable including transportation costs of waste (uncompacted vs. compacted).

To ensure the Township does not end up in such a situation, this report should be reviewed and/or reauthored every 8 to 10 years or as needed.

Supplemental Information or Considerations

Alternative Revenue Generation

Seguin Township may wish to explore opportunities to generate additional revenue by addressing the 29.8% waste contribution from non-resident and ICI sources through alternative methods as outlined in Scenarios 1-4. Implementing a fee structure for such disposals, such as pay-as-you-throw systems, could mitigate the risk of roadside and gate-side dumping while offering financial benefits. Enhanced monitoring and enforcement at transfer stations and gates may ensure compliance with potential fee structures, thereby reducing unauthorized dumping and generating revenue from non-resident and ICI users. To enact these measures effectively, staff presence at the transfer stations would be necessary to oversee operations and ensure adherence to the new regulations. This approach could offset waste disposal costs and possibly lead to a revenue surplus. Although these opportunities present potential financial and community advantages, they remain outside of the scope of this report and warrant further exploration.

Efficiency Actions

The scenarios summarized throughout this paper all present avoided costs, fiscal and environmental benefits for the Township. While impossible to quantify and qualify avoided costs exactly, it's estimated a fully adapted and Township managed system (scenario 4), will result in between $875,000 - $925,000/year when projected out to 2033.

These efficiencies will only become more exaggerated as the cost of services and equipment continue to trend upward. With the costs of tipping expected to increase by over 60+% in the coming years, the Township must consider all opportunities to increase efficiency in the waste management system.

Behavioural Considerations

Implementation of hours of operation and closures could result in an increase in illegal dumping throughout the Township. A new waste management program should consider costs to contend with disposal in ditches, forests, and waterbodies. While this does presently occur infrequently in the Township, it is minimal, as disposal sites are so widely available. To avoid these behaviours, the system should not be so inconvenient as to encourage these outcomes. The Township must not 'fix' one problem, only to create another larger environmental problem.

Connectivity and Security

As fibre internet becomes available throughout Seguin Township, connectivity will be available at all remaining transfer stations. The internet will serve numerous purposes including reporting of compactor equipment health, information technology, communication from and to the main office, and for site security. Each site will be secured with surveillance and/or other access control equipment. These technologies will contribute to safety and security. Further, camera equipment will aide in waste bylaw enforcement and for evidence collection.

Conclusion

In conclusion, Seguin Township faces both significant issues and promising opportunities regarding its waste management system. Addressing these issues will not only rectify inefficiencies but also result in substantial operational savings. Throughout this report, four scenarios have been presented for the Township to consider, with each offering progressive improvements in efficiency. While all scenarios present distinct benefits and challenges to the Township and its residents, it is the author's recommendation that each be carefully evaluated by Mayor and Council. This evaluation is imperative given the anticipated increase in operational costs that Seguin Township is likely to encounter in the forthcoming years.

Should Mayor and Council concur, it is crucial to advance the recommended actions in this report with urgency, to circumvent exacerbating future financial burdens. An inefficient waste management system inherently leads to elevated expenses. Thus, transitioning to a more effective system not only aligns with financial prudence but also supports sustainable environmental stewardship for Seguin Township. By embracing these recommendations, the Township can strategically navigate rising costs while enhancing service delivery, ultimately optimizing resources for both current and future community needs.

Appendix A – Survey Results

2025 Waste Management Survey

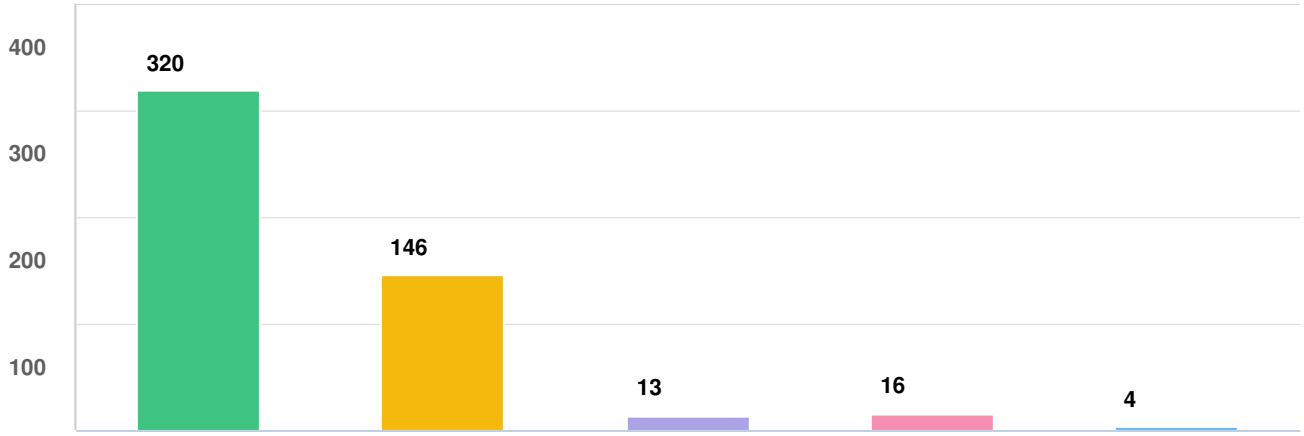
SURVEY RESPONSE REPORT
31 August 2021 - 02 June 2025

PROJECT NAME:
Seguin Township Waste Management Public Consultation

GRANICUS

SURVEY QUESTIONS

Q1 I am a:

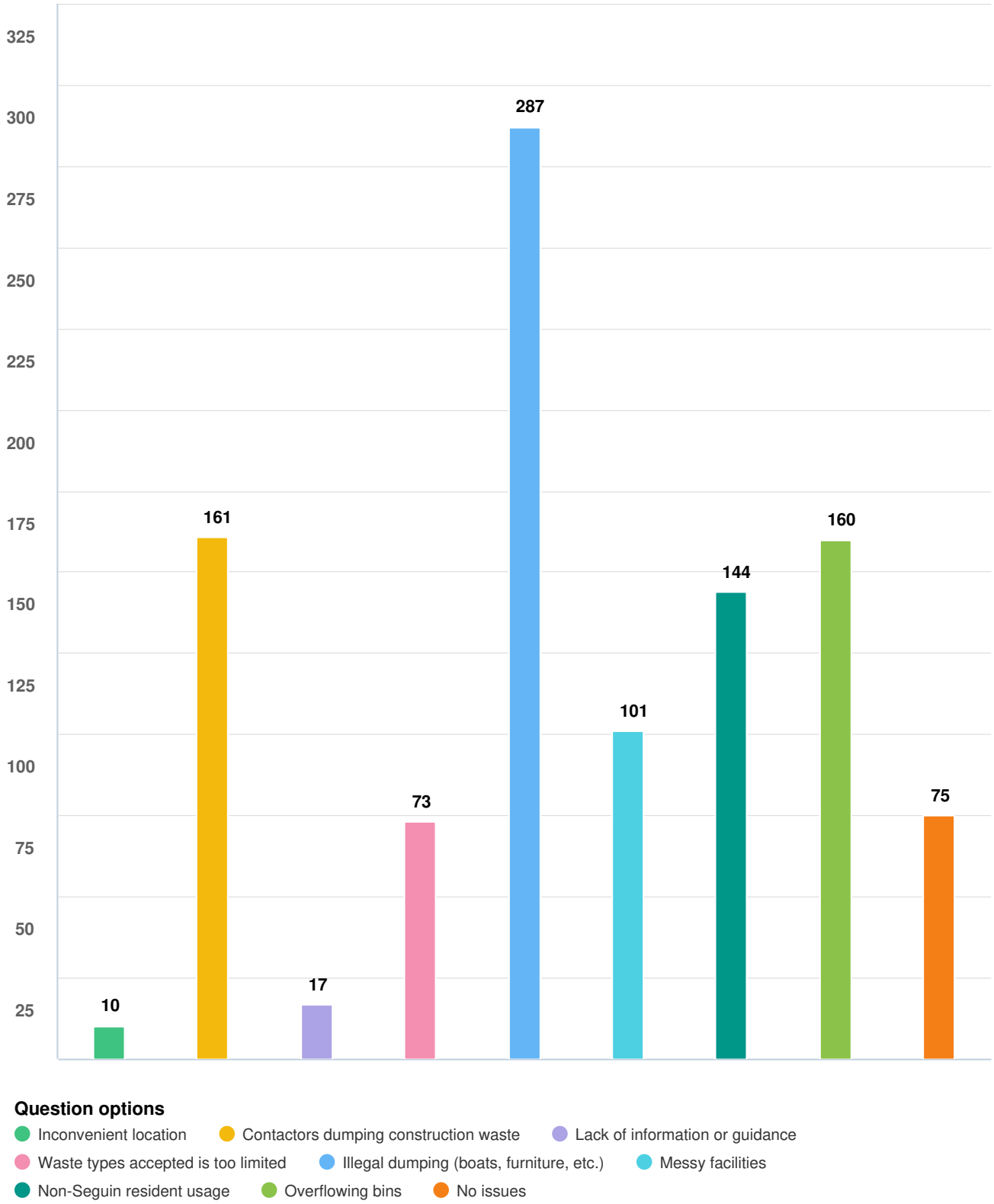


Question options

- Year-round Seguin Township resident
- Seasonal Seguin Township resident
- Non-Seguin Township resident
- Business operator based in Seguin Township
- Business operator based outside of Seguin Township

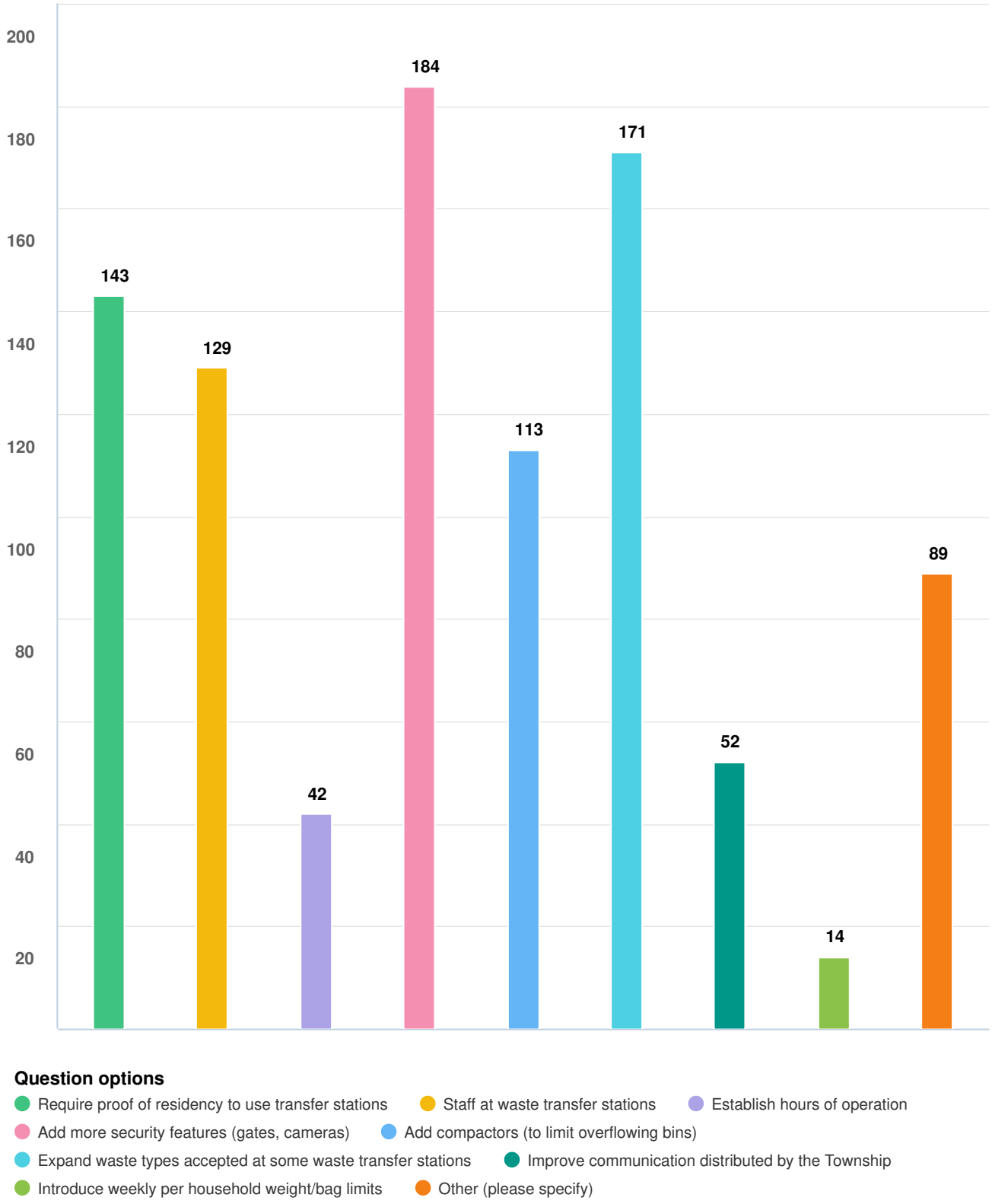
Optional question (484 response(s), 0 skipped)
Question type: Checkbox Question

Q2 In your experience, what issues are most problematic at Seguin waste transfer stations? Please choose your top three concer...



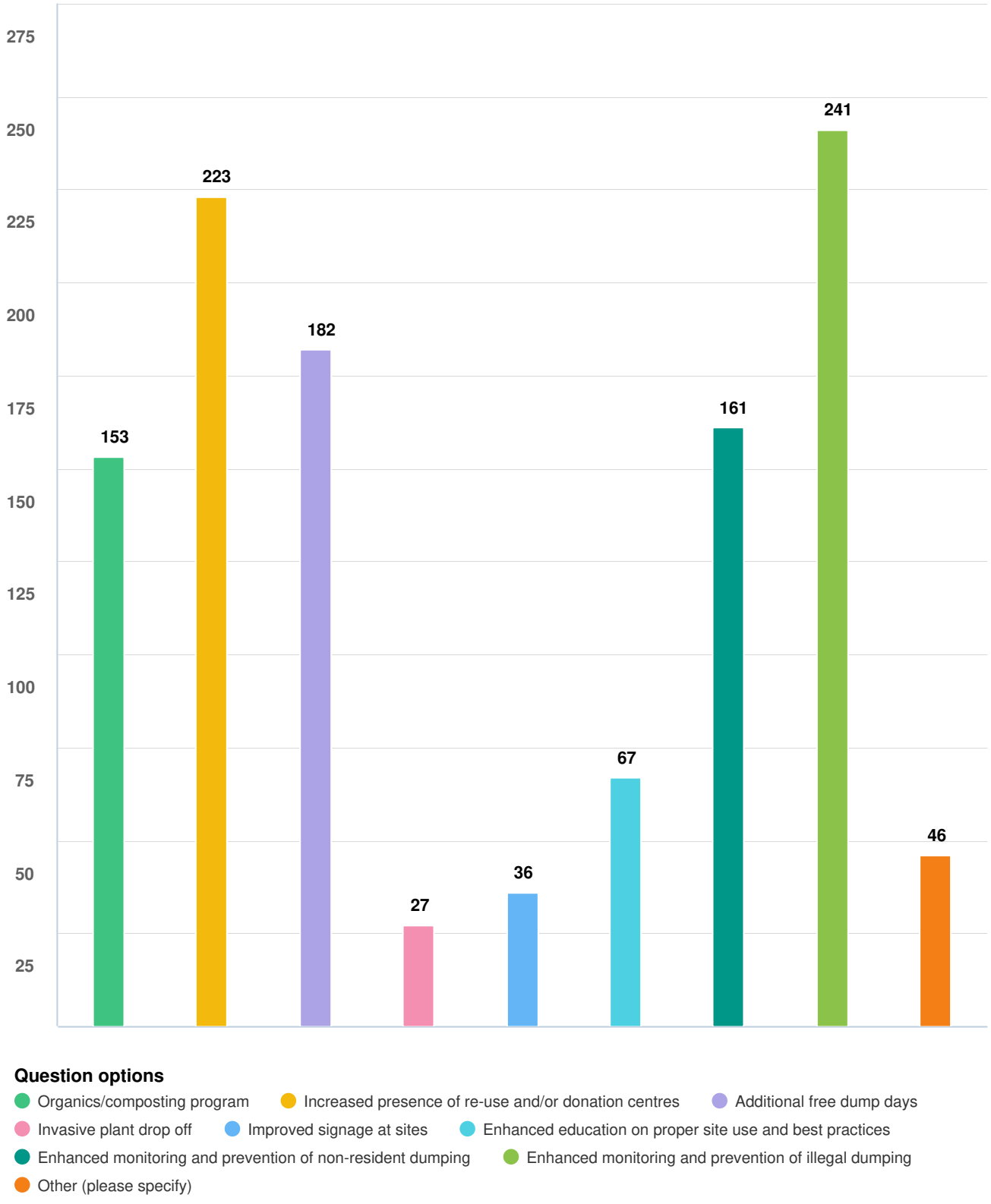
Optional question (478 response(s), 6 skipped)
Question type: Checkbox Question

Q3 Considering the issues you've noted, what solutions would you like the Township to consider to address them? Please choose ...



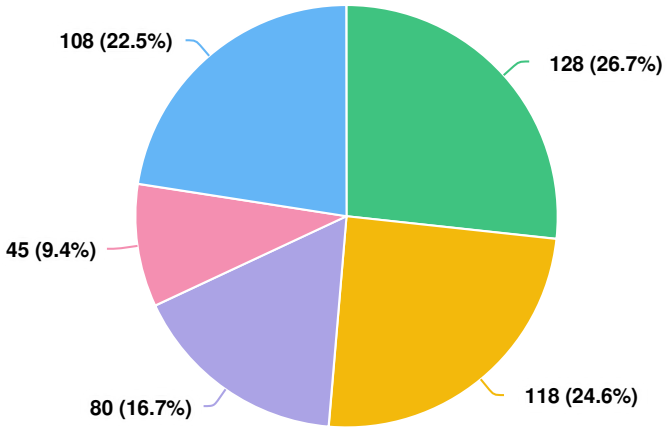
Optional question (443 response(s), 41 skipped)
Question type: Checkbox Question

Q4 What services would enhance the quality of service at Seguin Township transfer stations? Please choose the three that appea...



Optional question (465 response(s), 19 skipped)
Question type: Checkbox Question

Q5 In your opinion, how significant is the issue of non-Seguin Township resident use of waste transfer stations?

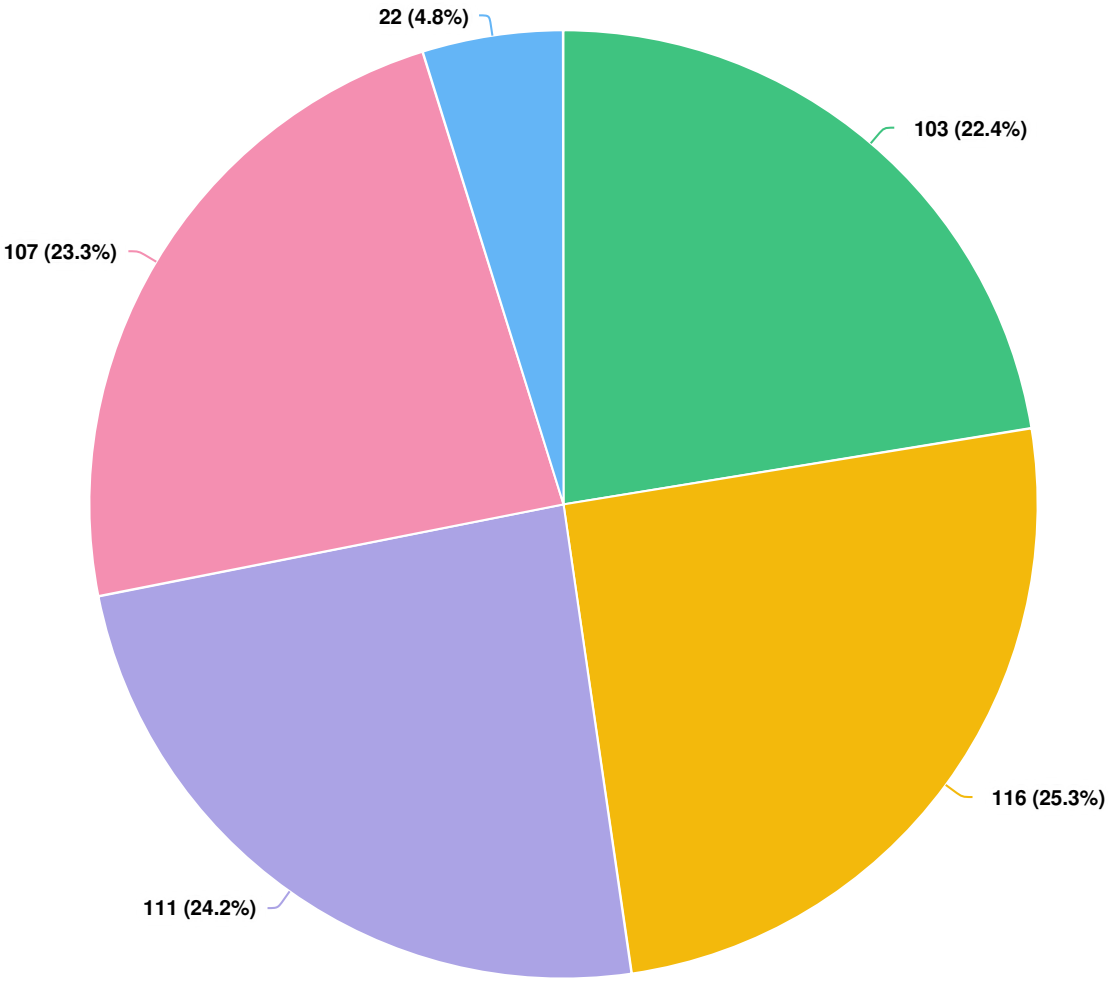


Question options

Very significant | Somewhat significant | Minor issue | Non-issue | I am unsure.

Optional question (479 response(s), 5 skipped)
Question type: Radio Button Question

Q6 **Non-Seguin Township residents use Seguin Township waste transfer stations. Share your estimate of how significantly this impacts Township finances.**

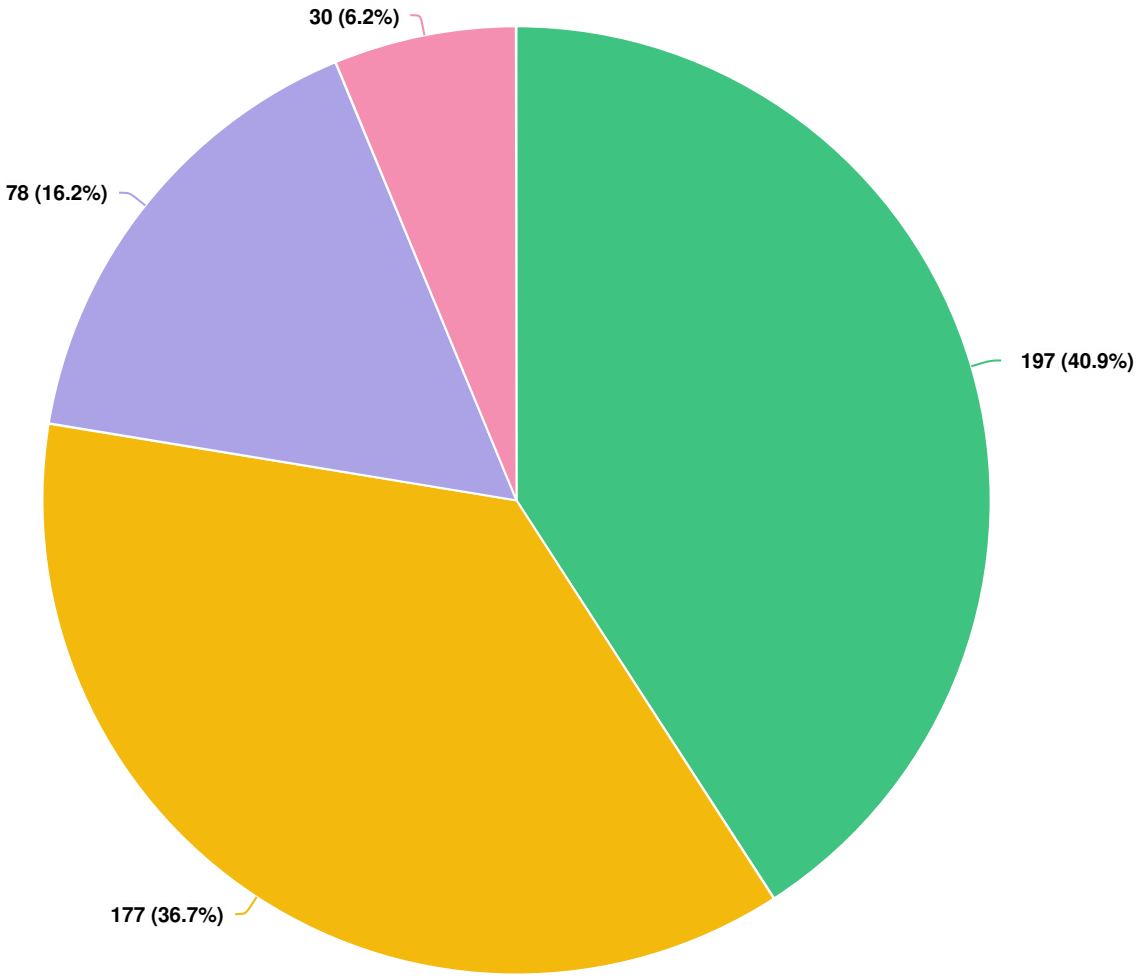


Question options

Very significantly Significantly Moderately Minimally Insignifcantly

Optional question (459 response(s), 25 skipped)
Question type: Radio Button Question

Q7 If Seguin Township introduced set hours of operation at waste transfer stations, how do you think that would impact your waste disposal routine?

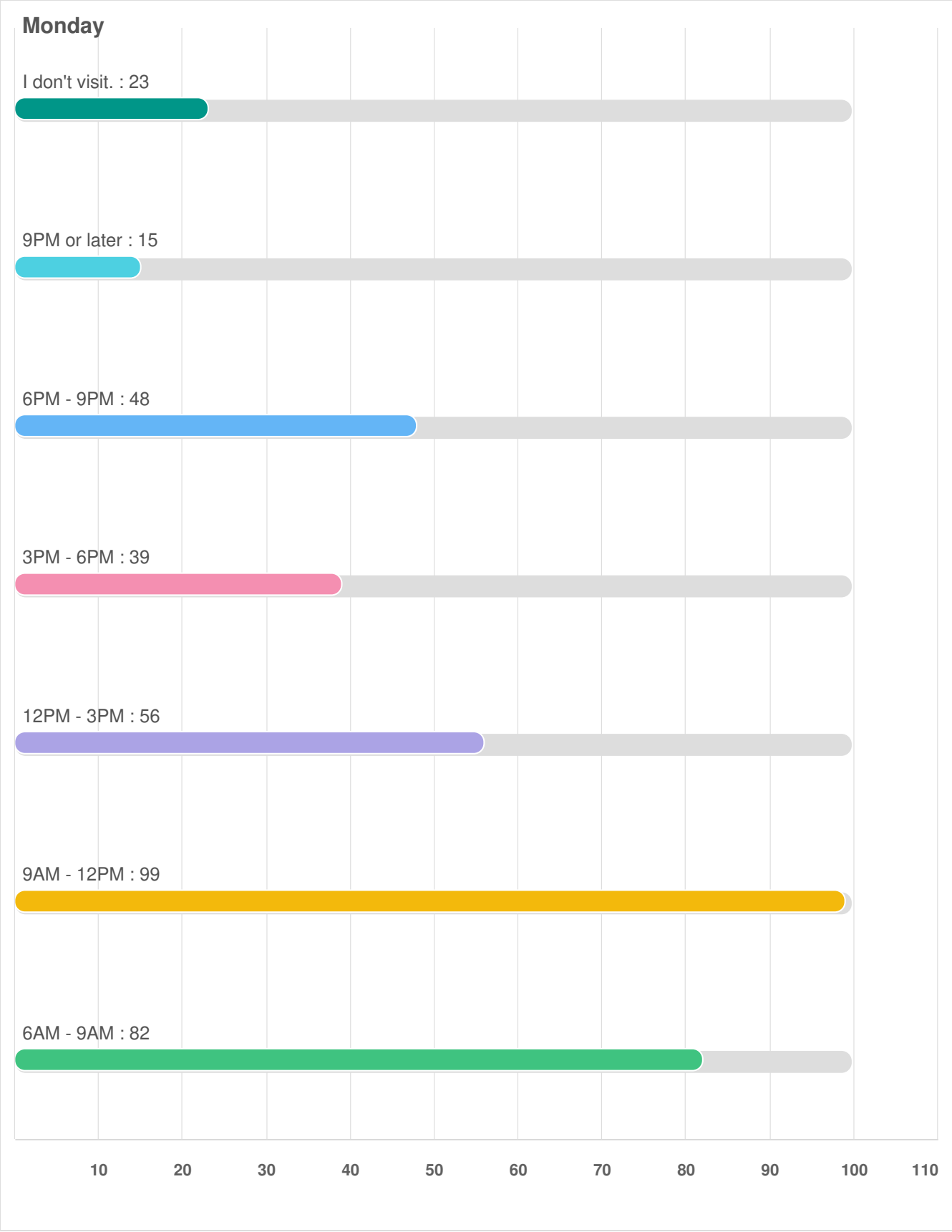


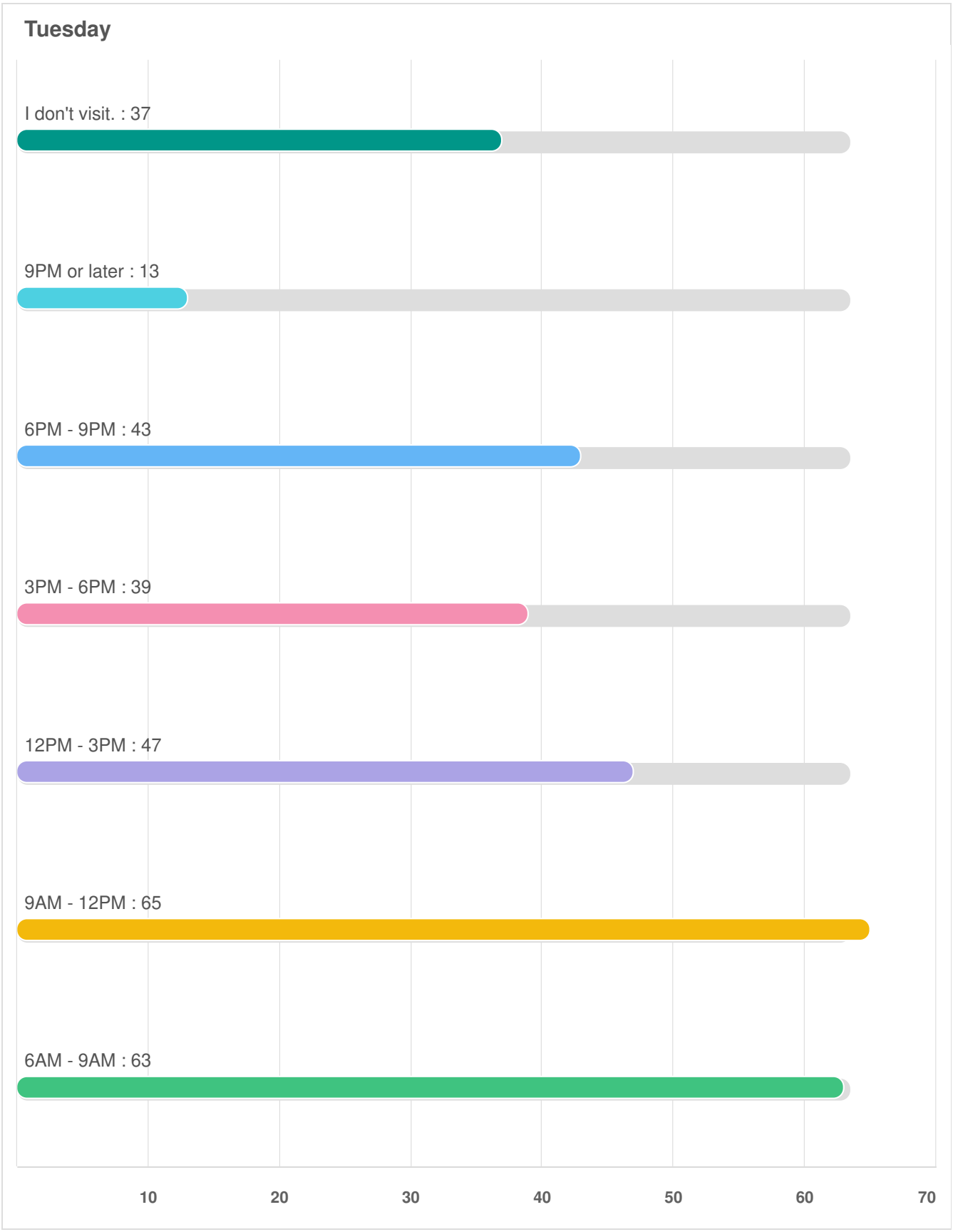
Optional question (482 response(s), 2 skipped)
Question type: Radio Button Question

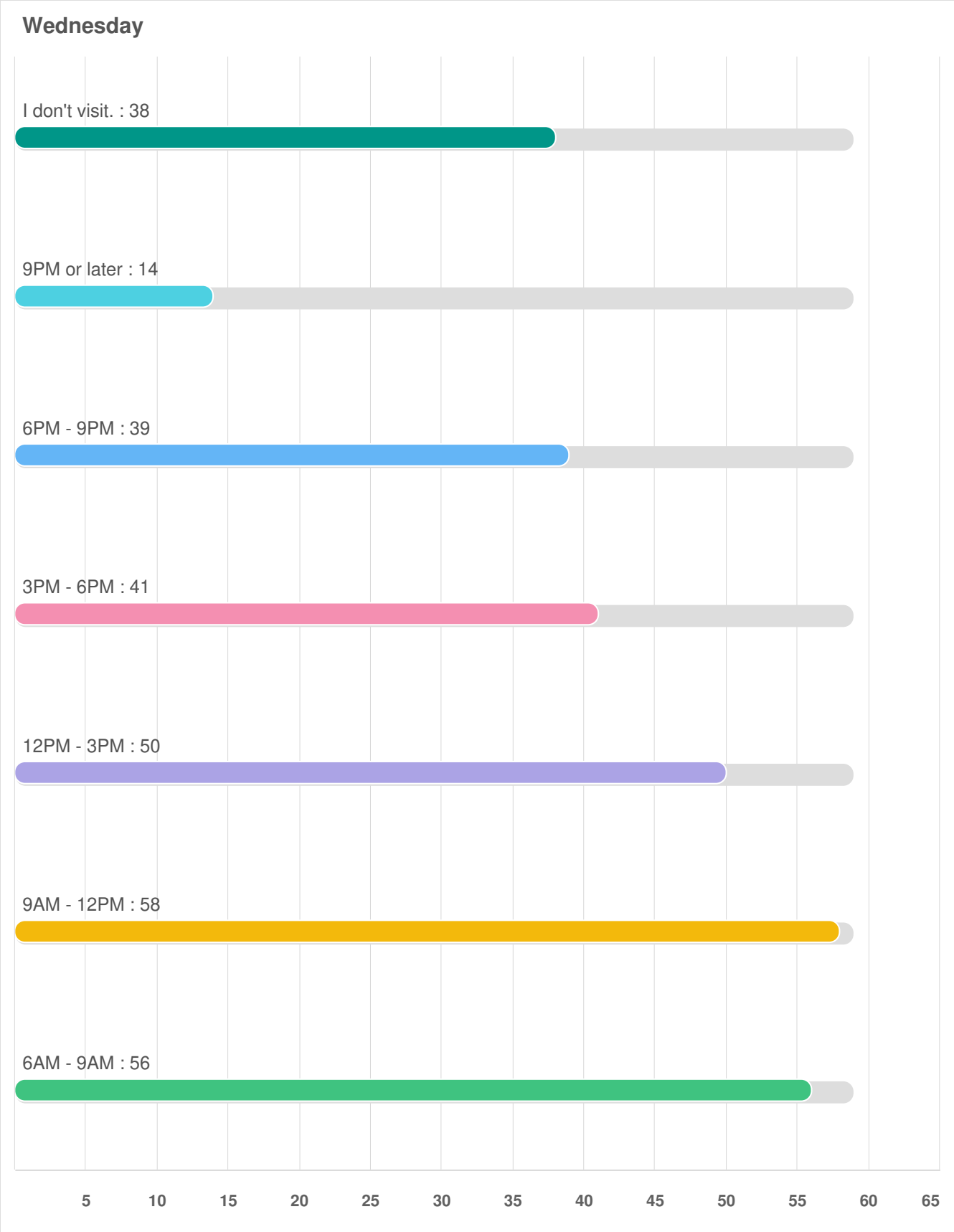
Q8 On average, when do you typically access Seguin Township transfer stations?

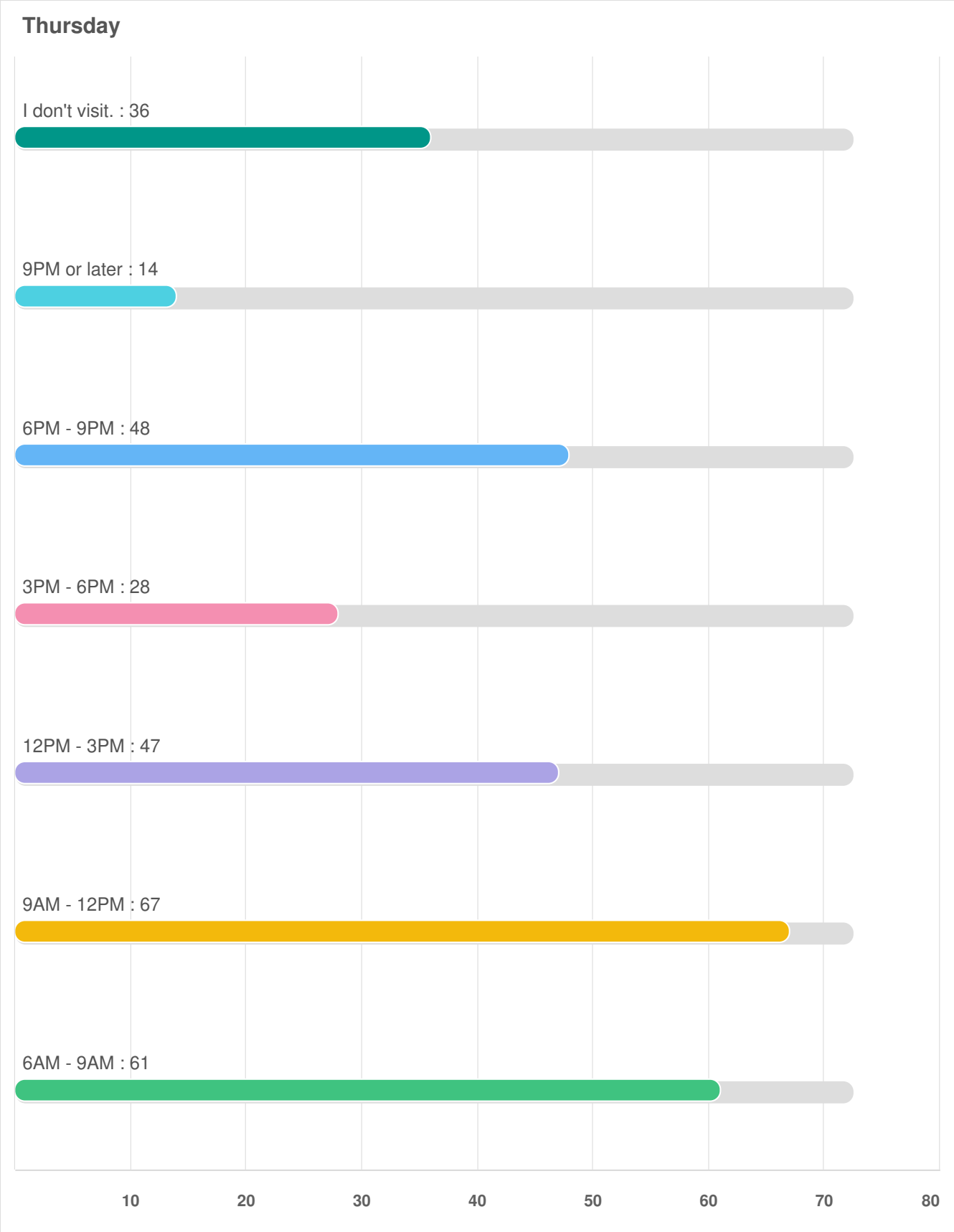
Optional question (442 response(s), 42 skipped)
Question type: Likert Question

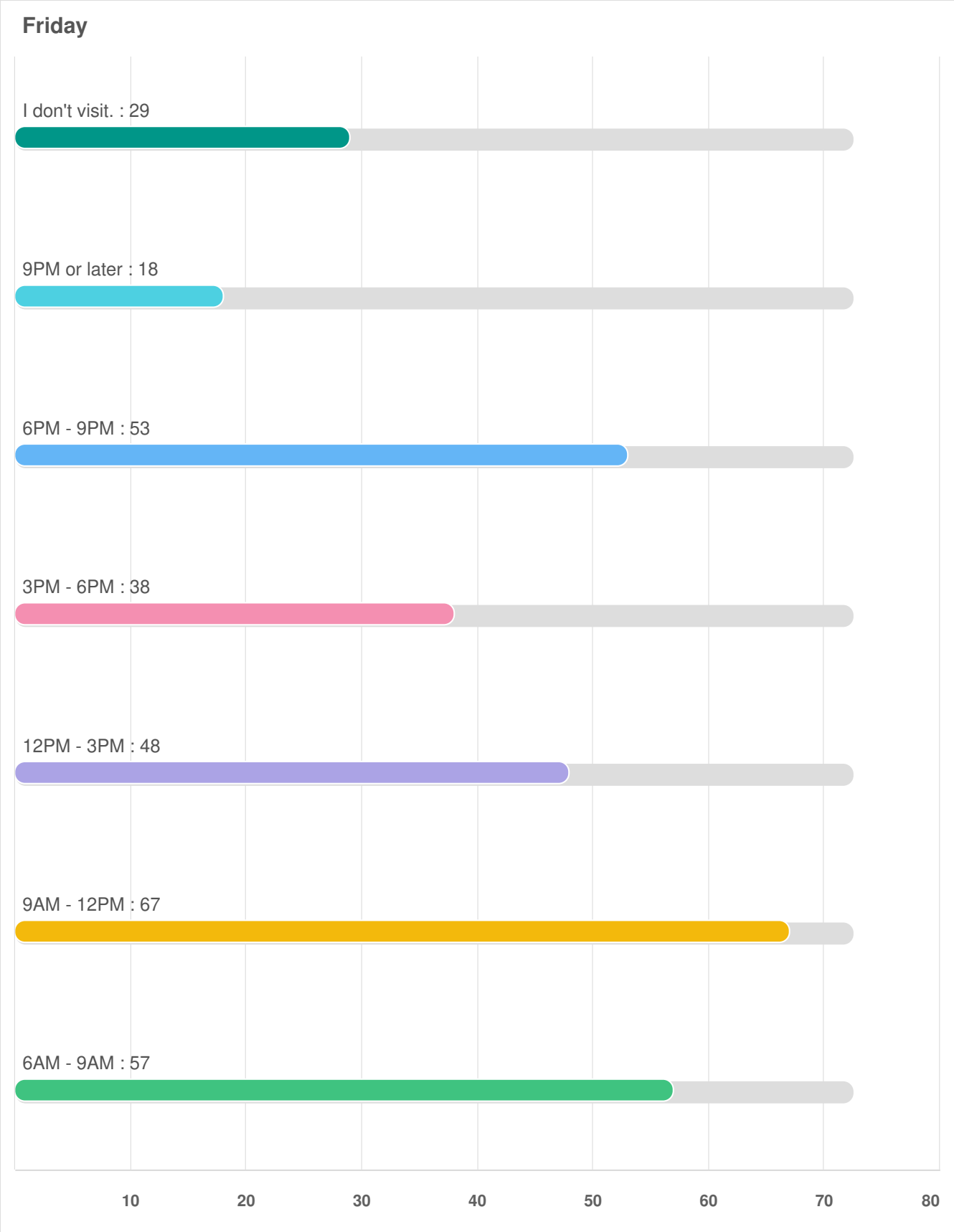
Q8 On average, when do you typically access Seguin Township transfer stations?

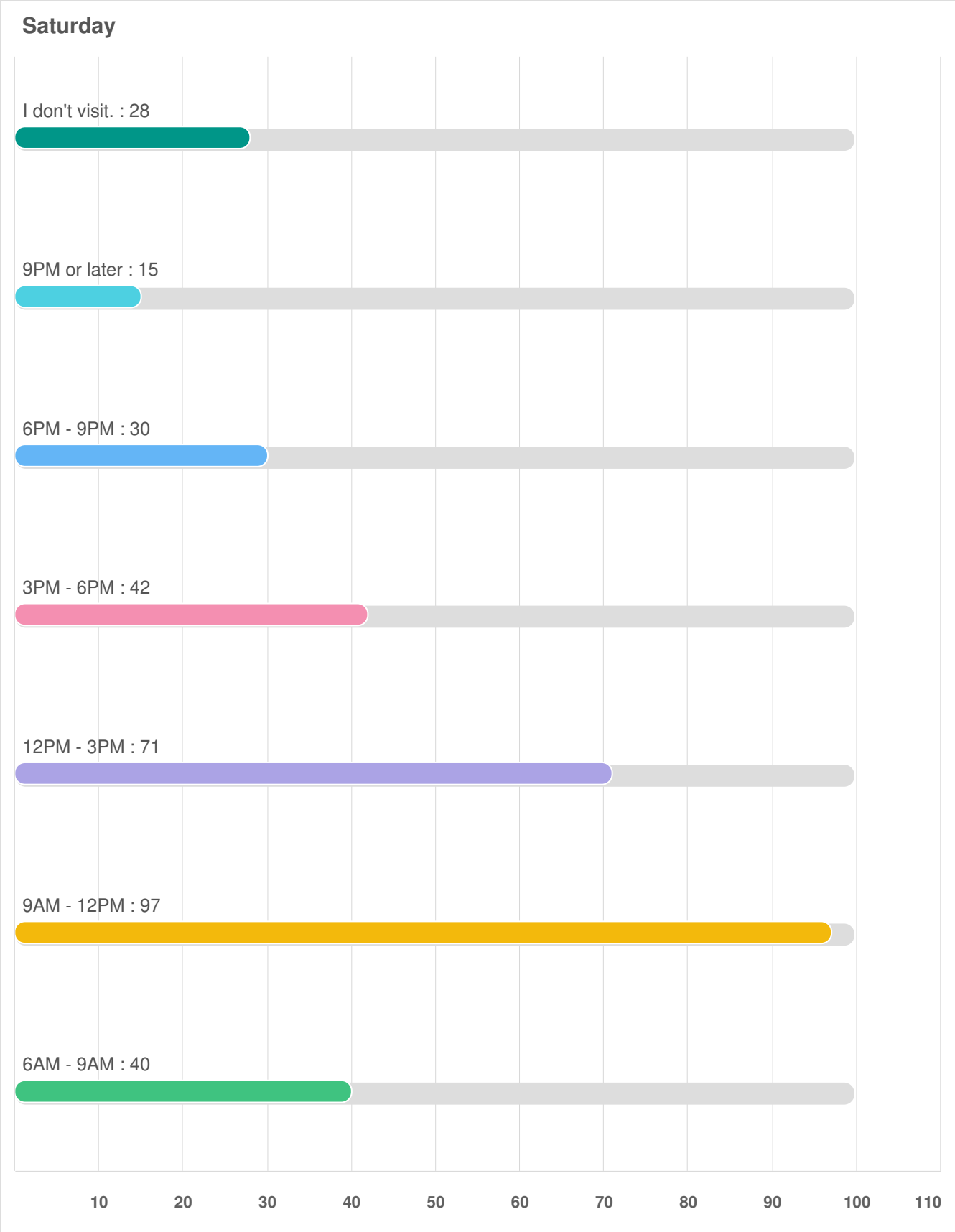


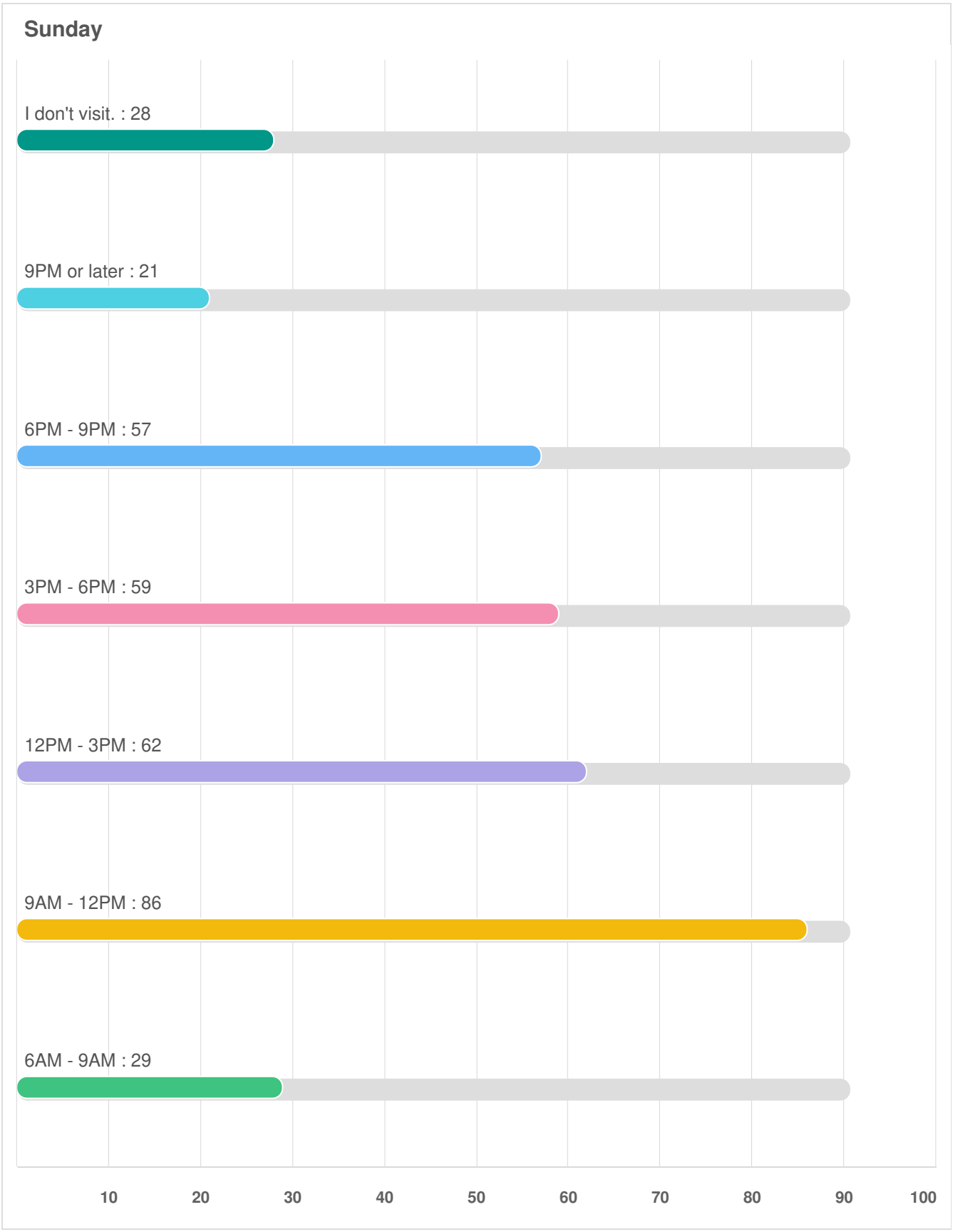

Tuesday
I don't visit. : 37
9PM or later : 13
6PM - 9PM : 43
3PM - 6PM : 39
12PM - 3PM : 47
9AM - 12PM : 65
6AM - 9AM : 63
10
20
30
40
50
60
70


Wednesday
I don't visit. : 38
9PM or later : 14
6PM - 9PM : 39
3PM - 6PM : 41
12PM - 3PM : 50
9AM - 12PM : 58
6AM - 9AM : 56
5
10
15
20
25
30
35
40
45
50
55
60
65

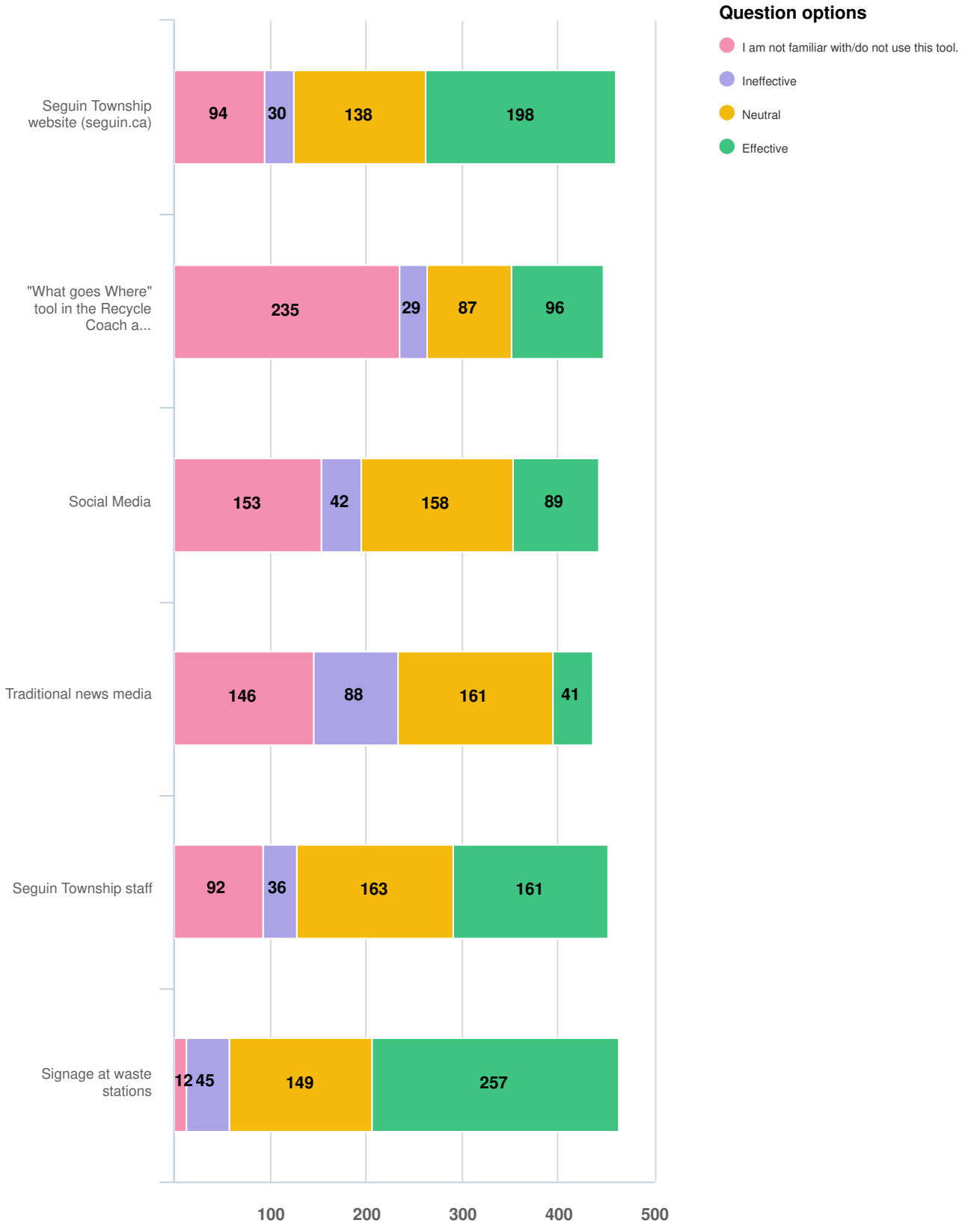

Thursday
I don't visit. : 36
9PM or later : 14
6PM - 9PM : 48
3PM - 6PM : 28
12PM - 3PM : 47
9AM - 12PM : 67
6AM - 9AM : 61
10
20
30
40
50
60
70
80


Friday
I don't visit. : 29
9PM or later : 18
6PM - 9PM : 53
3PM - 6PM : 38
12PM - 3PM : 48
9AM - 12PM : 67
6AM - 9AM : 57
10
20
30
40
50
60
70
80


Saturday
I don't visit. : 28
9PM or later : 15
6PM - 9PM : 30
3PM - 6PM : 42
12PM - 3PM : 71
9AM - 12PM : 97
6AM - 9AM : 40
10
20
30
40
50
60
70
80
90
100
110


Sunday
I don't visit. : 28
9PM or later : 21
6PM - 9PM : 57
3PM - 6PM : 59
12PM - 3PM : 62
9AM - 12PM : 86
6AM - 9AM : 29
10
20
30
40
50
60
70
80
90
100

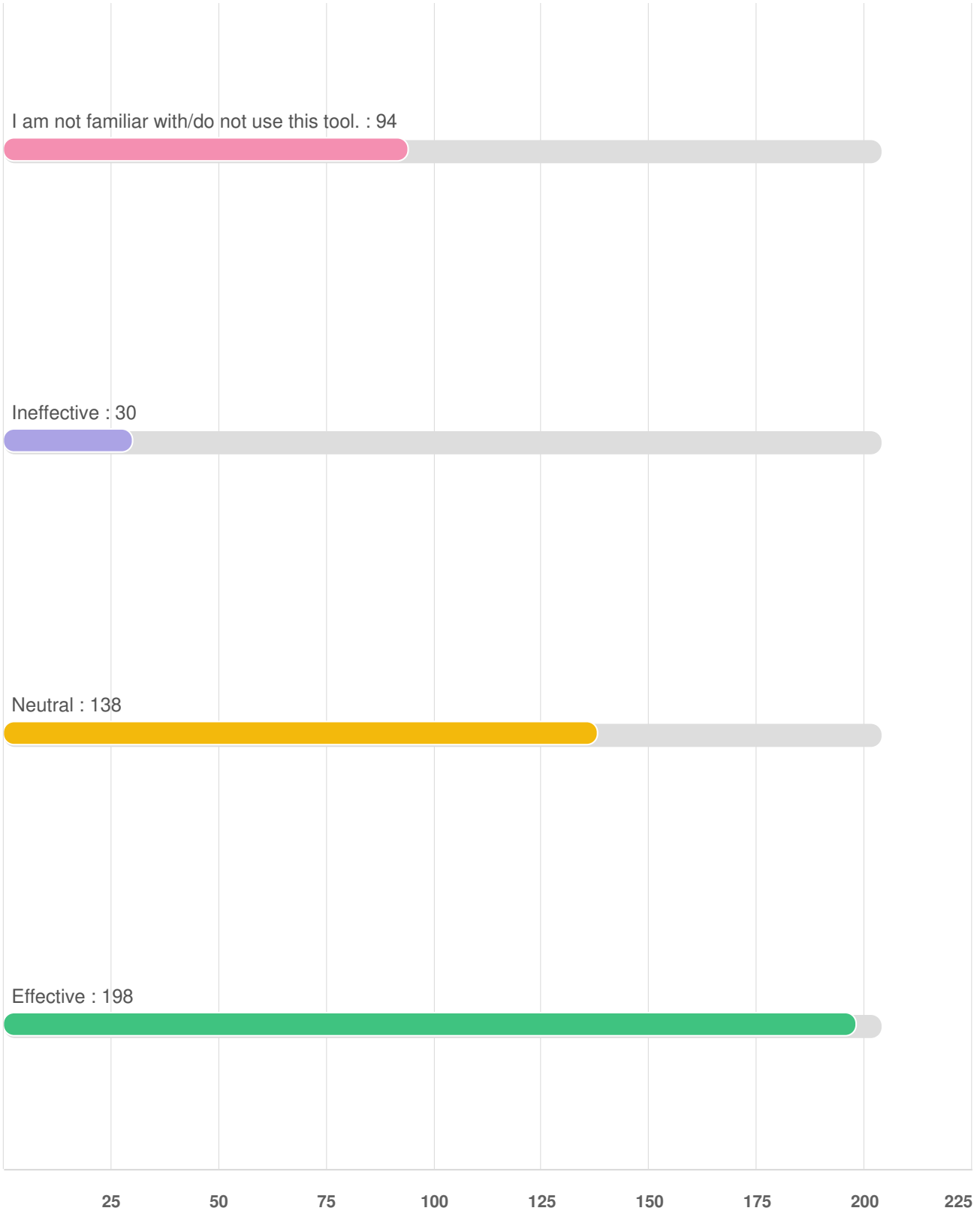
Q9 How effective are each of the following tools in helping you understand waste facility operations and schedules?



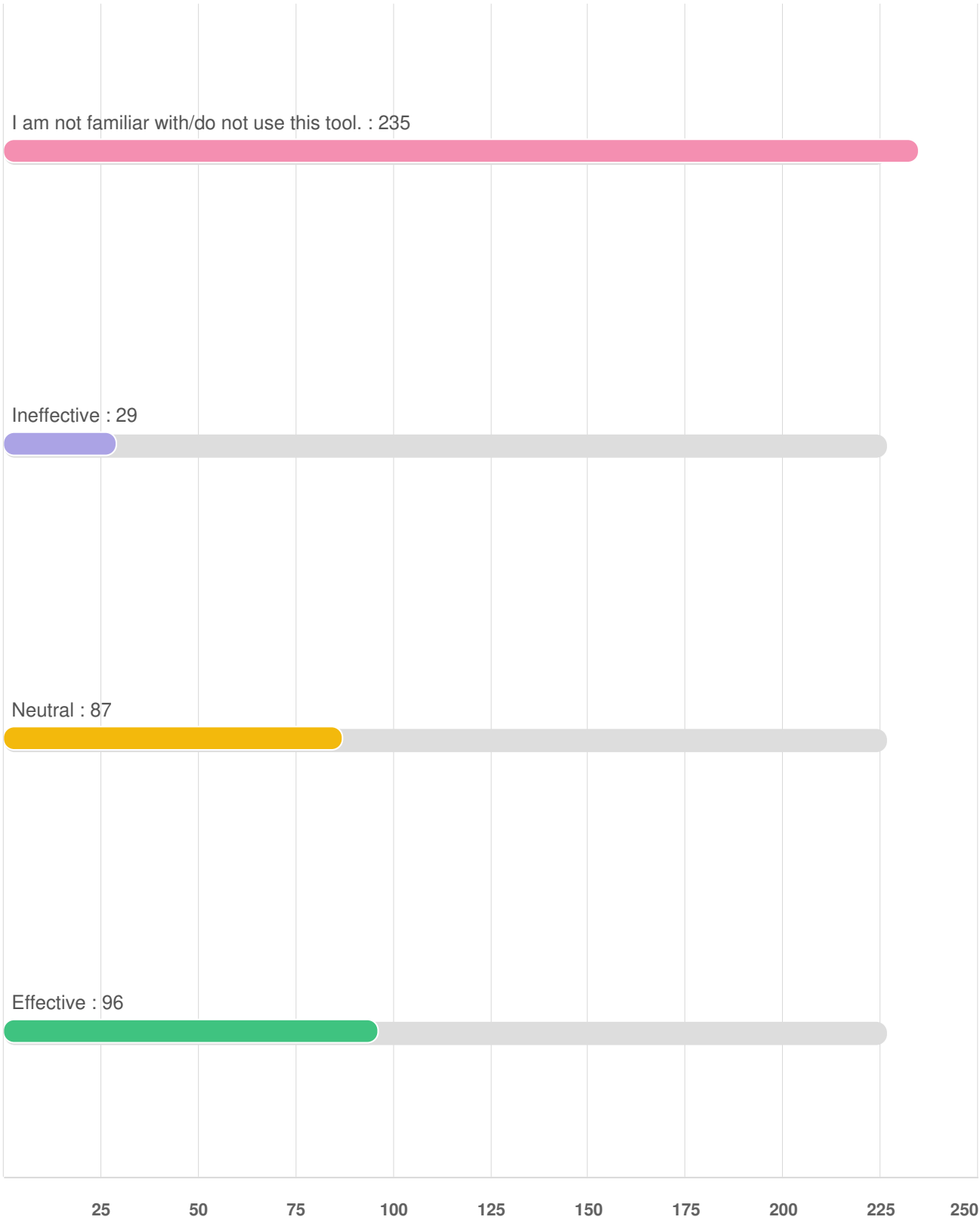
Optional question (470 response(s), 14 skipped)
Question type: Likert Question

Q9 How effective are each of the following tools in helping you understand waste facility operations and schedules?

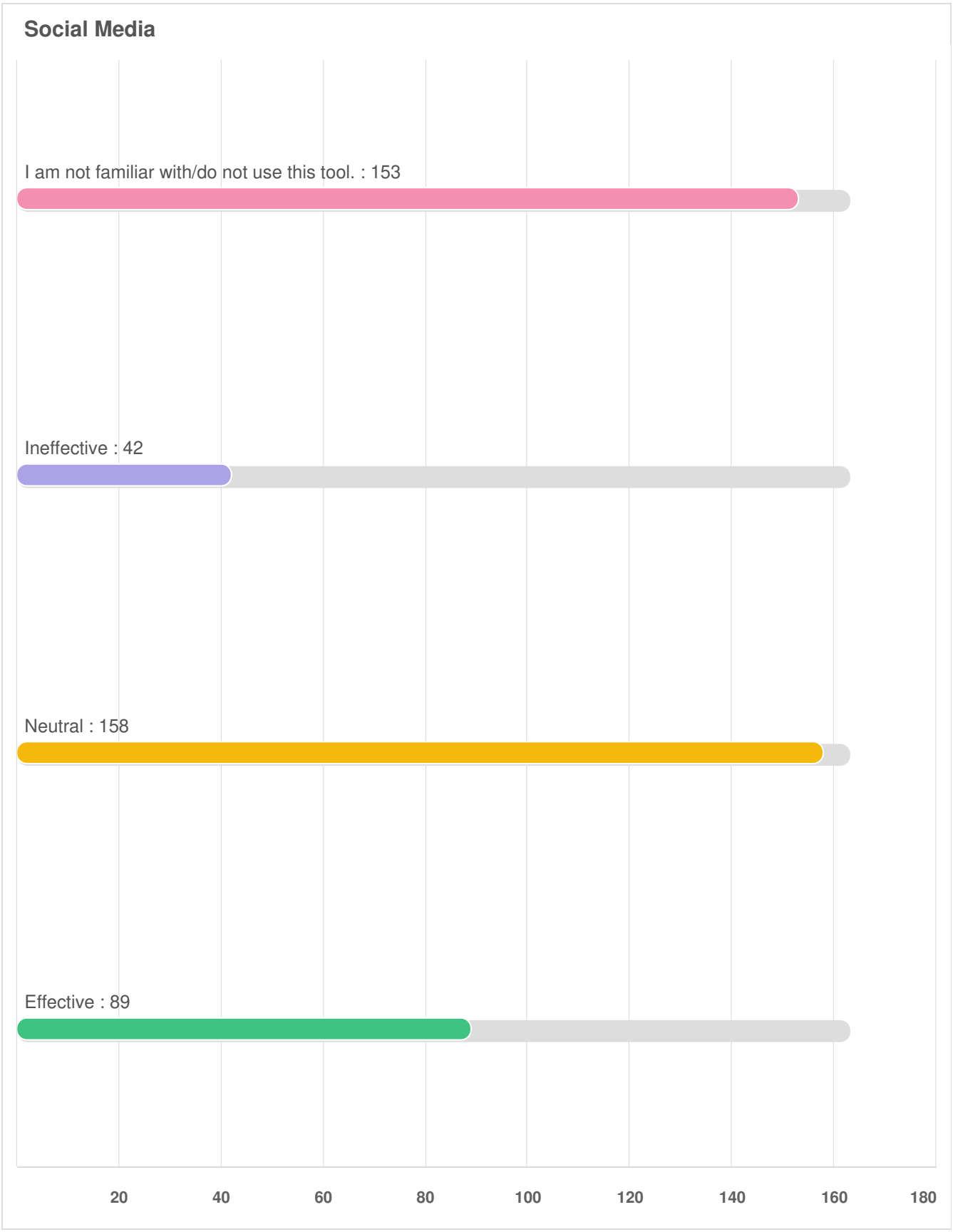
Seguin Township website (seguin.ca)

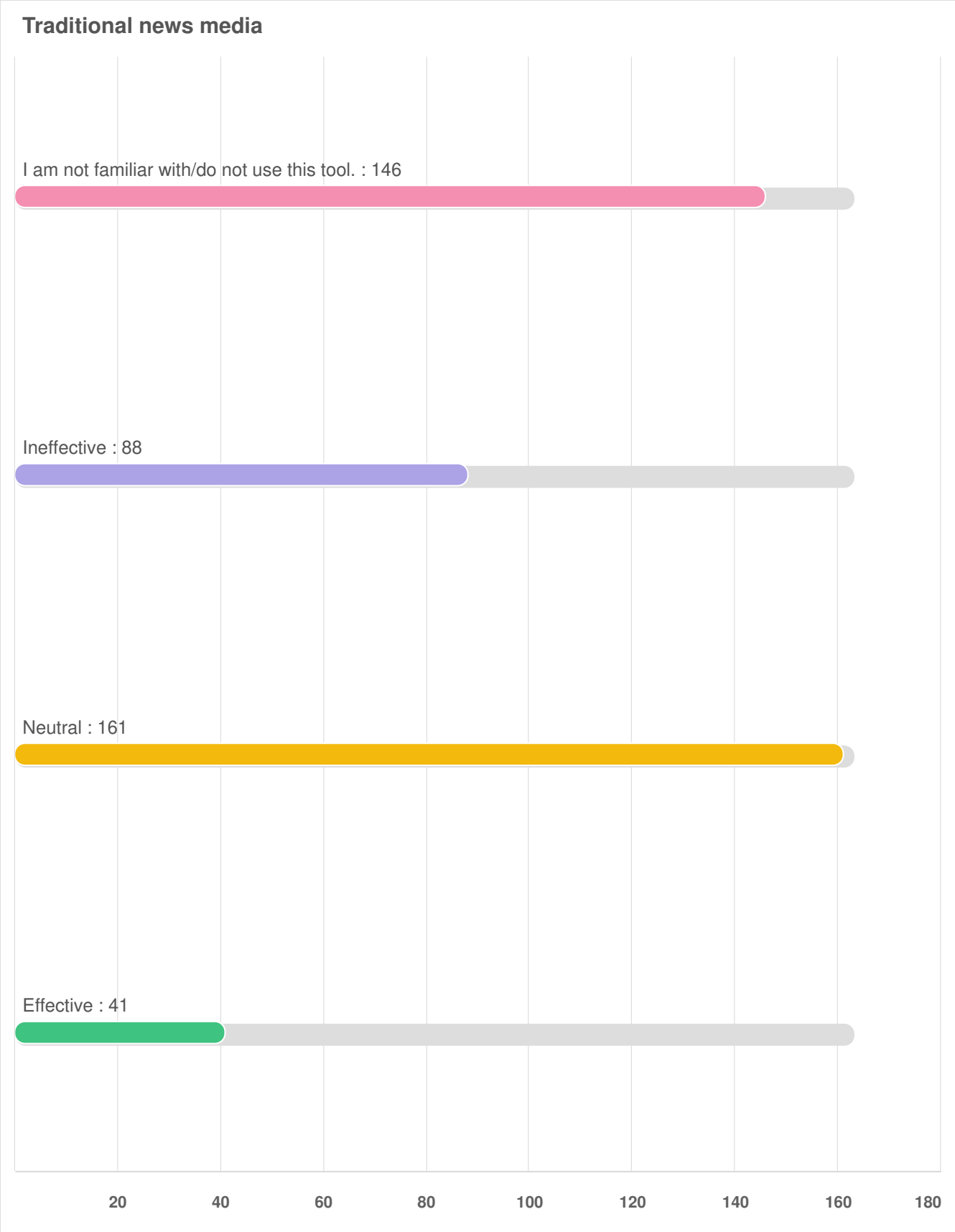


"What goes Where" tool in the Recycle Coach app

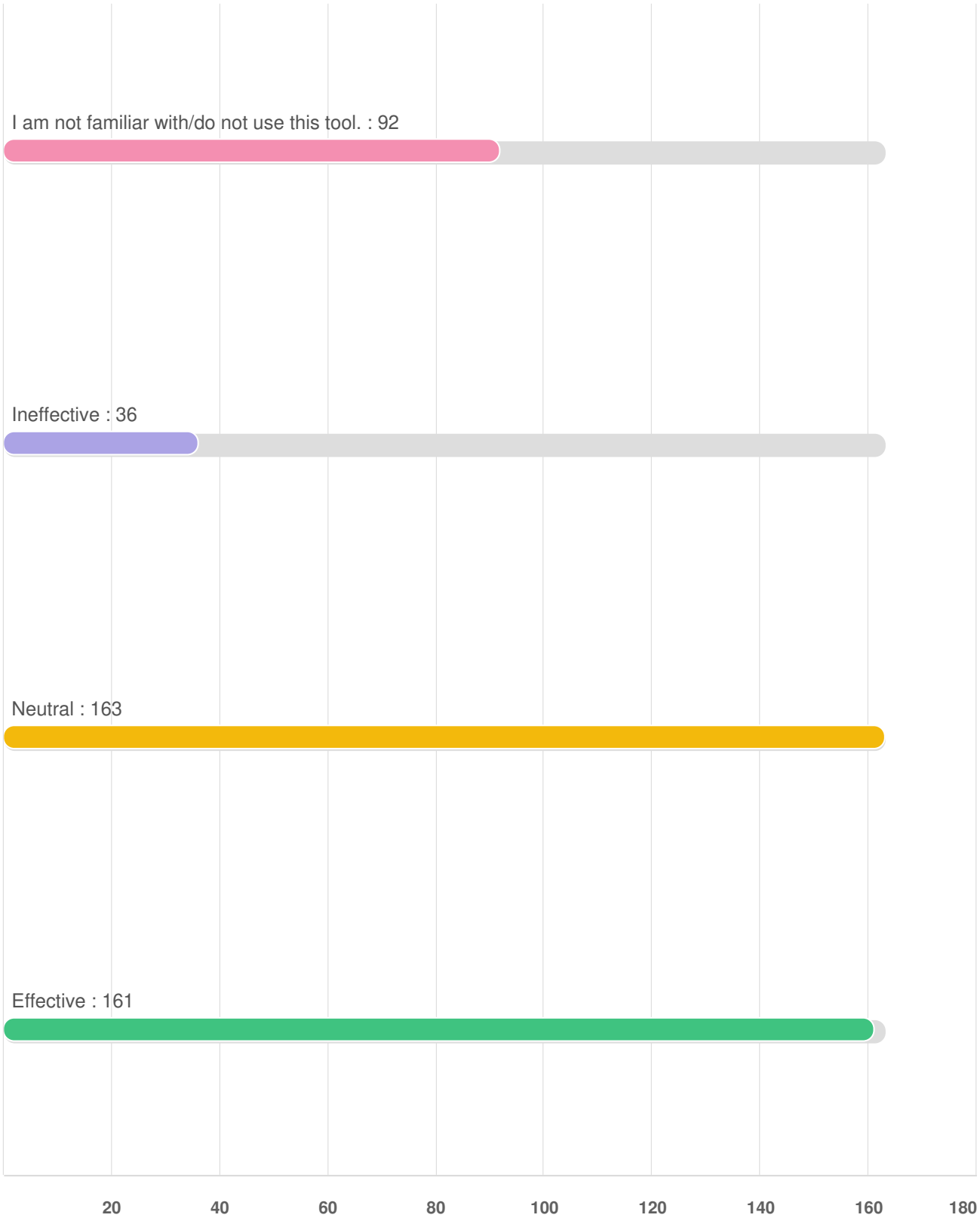


Social Media

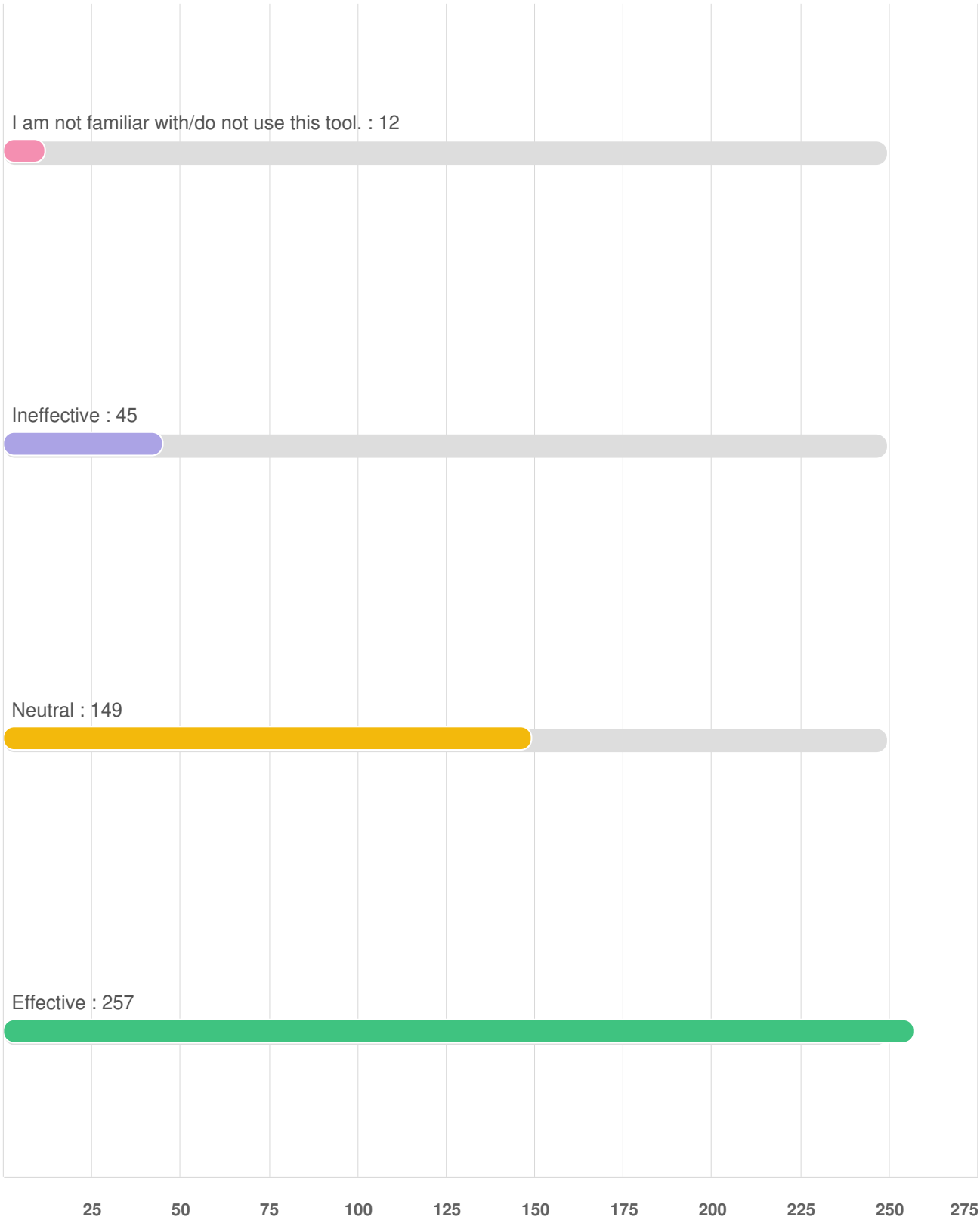



Traditional news media
I am not familiar with/do not use this tool. : 146
Ineffective : 88
Neutral : 161
Effective : 41
20
40
60
80
100
120
140
160
180

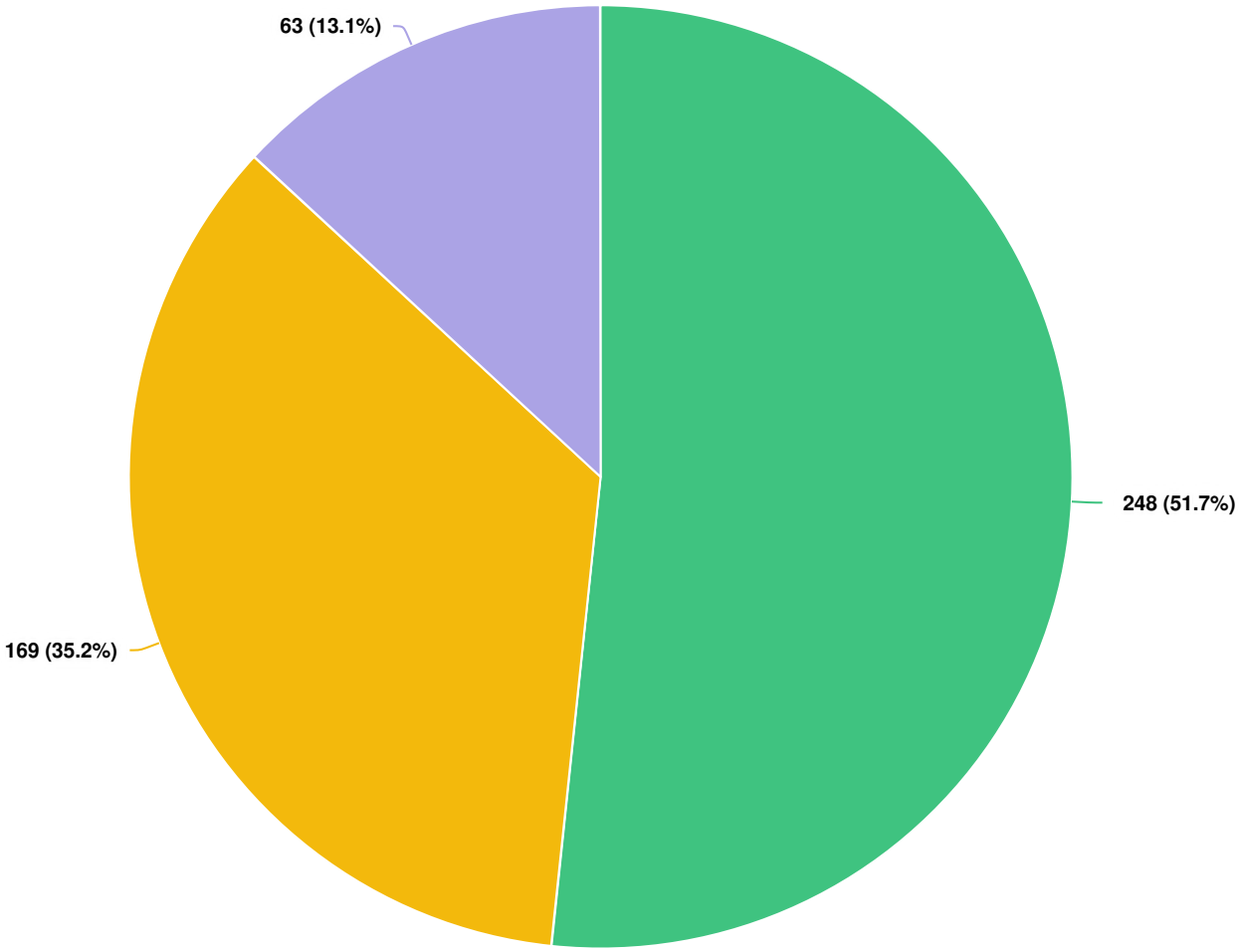
Seguin Township staff



Signage at waste stations



Q10 **When your usual/preferred waste transfer station is closed (for repair, fire, etc.), rate your reaction to using an alternate station.**



Optional question (480 response(s), 4 skipped)
Question type: Radio Button Question

Appendix B – Geospatial Assessment

Seguin Township

2025 Waste Management Review

Geospatial Assessment

Seguin Township

The Natural Place to Be

Authored by:

Forrest Pengra, Director of Strategic Initiatives
Preston Nielsen, Env. and Climate Programs Coordinator
Tom MacLeod, Director of Public Works

Abstract

A comprehensive geospatial assessment of Seguin Township's Waste Transfer Locations.

Contents

Introduction

Throughout much of 2025, Seguin Township staff completed a comprehensive assessment of Seguin Township's waste management system from an operational and infrastructure perspective. These assessments considered all system variable including waste quantities, population statistics, growth projections, anticipated increases in cost, non-resident and ICI contributions, among others. The assessment proposed four scenarios to improve the efficiency and effectiveness of the waste management system. Following the conclusion of the study, staff further assessed the appropriateness of existing sites, proposed closures, and various changes therein. The following report is a statistical/geographical assessment of Seguin's waste locations, and how under each scenario usage dynamics change.

Geostatistical Assessment

The following sections explore the Township's waste locations for adequacy under the scenarios described in the Waste Management Review (WMR) including a business-as-usual base case. For more details on the specifics of the scenarios referenced, the reader is recommended to review the related sections of the report.

Throughout October and November of 2025, Seguin Township staff undertook the following geostatistical assessments to consider the scenarios identified in the WMR as well as a theoretical fully optimized view of the system. This technical assessment of the area utilized geographic information systems and Township data to quantify and qualify usage patterns and the impact of changes on Seguin residents.

The geographical assessments consider only residential locations and travel requirements for waste management services. They do not consider other decision-making factors like seasonality, time of day, disposal as an intermediate activity, nearest vs. most convenient, unexpected closures and others. Integration of activities such as these introduces an unmanageable number of variables and assumptions.

That said, it's a reasonable assumption that disposal practices follow certain trends such as seasonal residents disposing of waste while leaving the Township, disposal of waste while 'heading to town' for provisions, fuel or work, and others.

Technical Specifications

Software: ArcGIS Pro 3.5.4

Toolbox: Network Analyst

Toolsets:

Create Network Dataset

Location Allocation Analysis

Maximum Attendance model, 20km cutoff, 4-7 facilities, straight line

Service Area Analysis

Away from facilities, cut off 15km, stand. precision, split rings, 500 trim dist.

Data:

Road Network – CINENA 20251027 extraction

Parcels – Assessed Roll Parcels 20251027 extraction

Residence Parcel Locations – generated by centroid from parcel based on MPAC code (ex. 201, 301, 313, etc…)

Steps Taken:

1. Gathering of data
2. Cleaning of data
3. Preparation of data
    a. Development of Network
    b. Creation of residence locations (demand points)
    c. Loading of transfer station locations (facility points)
4. Processing of data
    a. Scenario 0 & 1
    b. Scenario 2
    c. Scenario 3
    d. Scenario 4
    e. Optimal 7 locations
    f. Optimal 6 locations
    g. Optimal 5 locations
    h. Optimal 4 locations
5. Analysis of outputs
6. Mapping
7. Report authorship

Scenario 0 & 1

Scenarios 0 and 1 were assessed identically as the number of proposed waste transfer sites remains business as usual, with seven sites as described in the Waste Management Review.

The graphic and table below provide information to clarify possible residential movements as it relates to waste disposal under these specific scenarios.

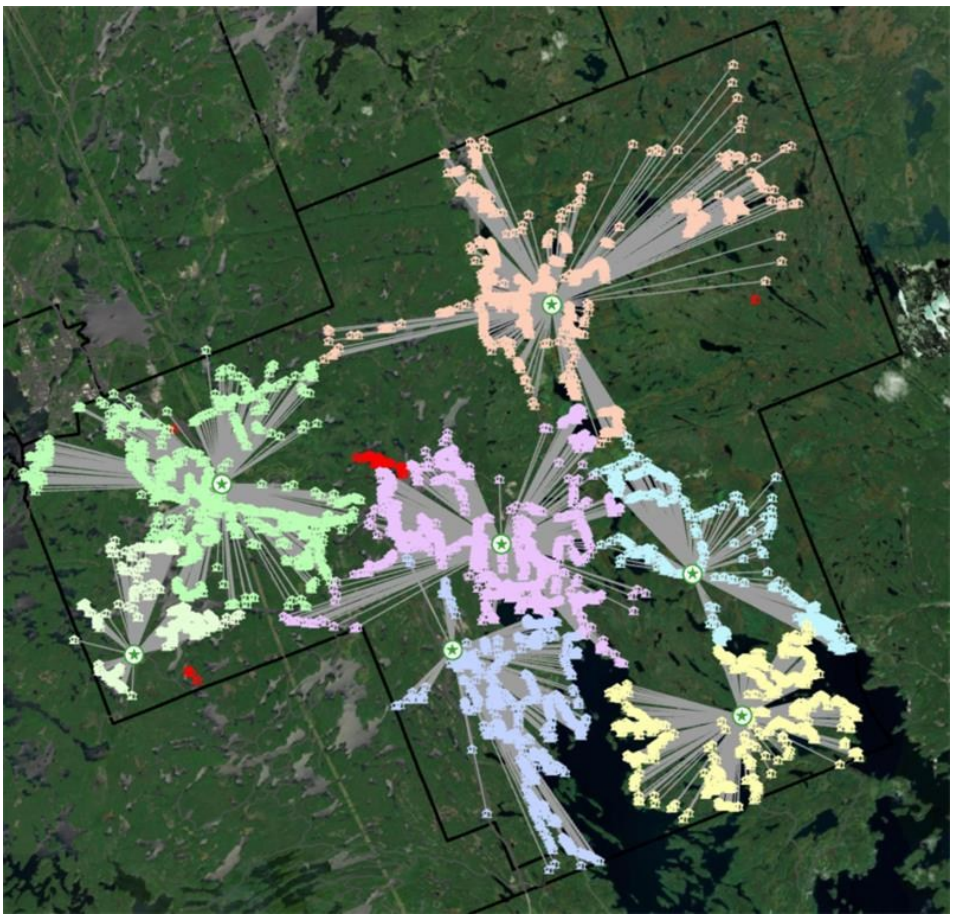


Table 1 - Average Travel Distance - Base Case & Scenario 1

Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1162	5.70
Brooks Road Waste Transfer Station	878	5.88
Christie Waste Transfer Site	898	6.28
Turtle Lake Transfer Station	399	5.25
Stanley House Waste Transfer Station	627	4.99
Airport Road Waste Transfer Station	600	5.96
Bon Echo Waste Transfer Station	401	4.04

Scenario 2

Per the Waste Management Review, this Scenario considered the closure of Bon Echo Transfer Station. The following graphic and table demonstrates the geospatial impact on residential travel outcomes by the closure.

The graphic and table below provide information to clarify possible residential movements as it relates to waste disposal under this scenario.

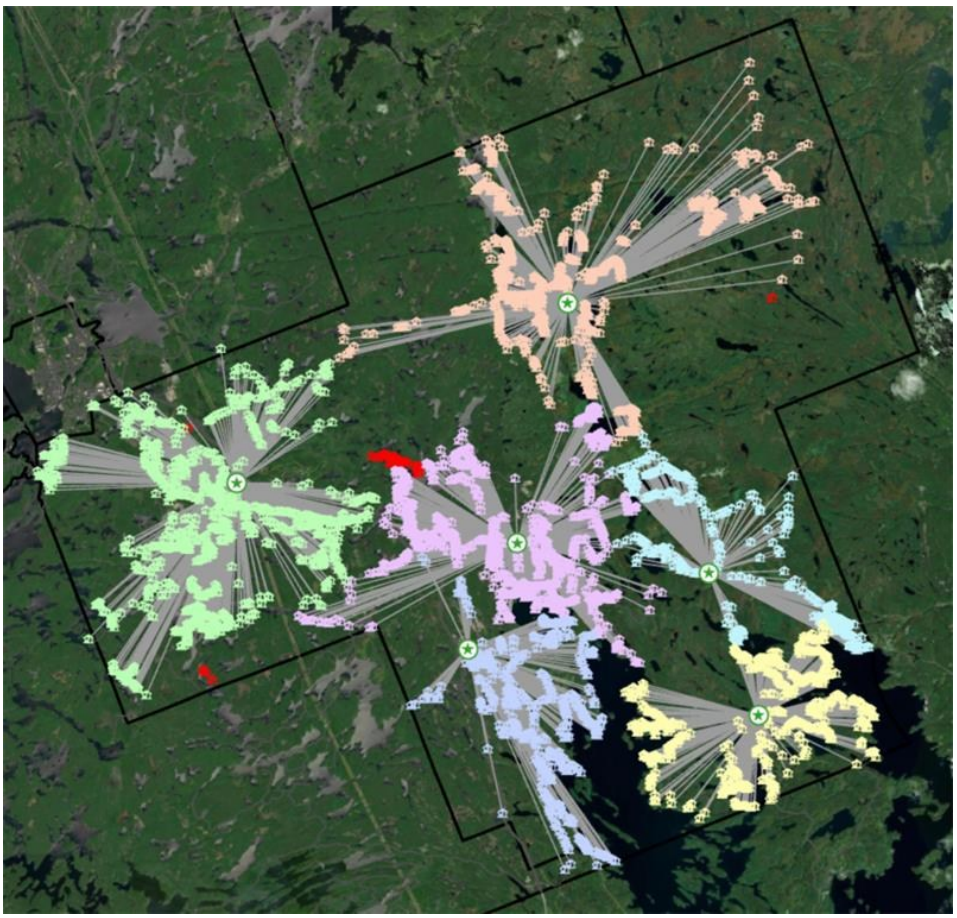


Table 2 - Average Travel Distance - Scenario 2

Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1162	5.70
Brooks Road Waste Transfer Station	1279	7.74
Christie Waste Transfer Site	898	6.28
Turtle Lake Transfer Station	399	5.25
Stanley House Waste Transfer Station	627	4.99
Airport Road Waste Transfer Station	600	5.96

Scenario 3

Per the Waste Management Review, this Scenario considered the closure of Bon Echo and Airport Transfer Stations. The following graphic and table demonstrates the geospatial impact on residential travel outcomes by the closures.

The graphic and table below provide information to clarify possible residential movements as it relates to waste disposal under this scenario.

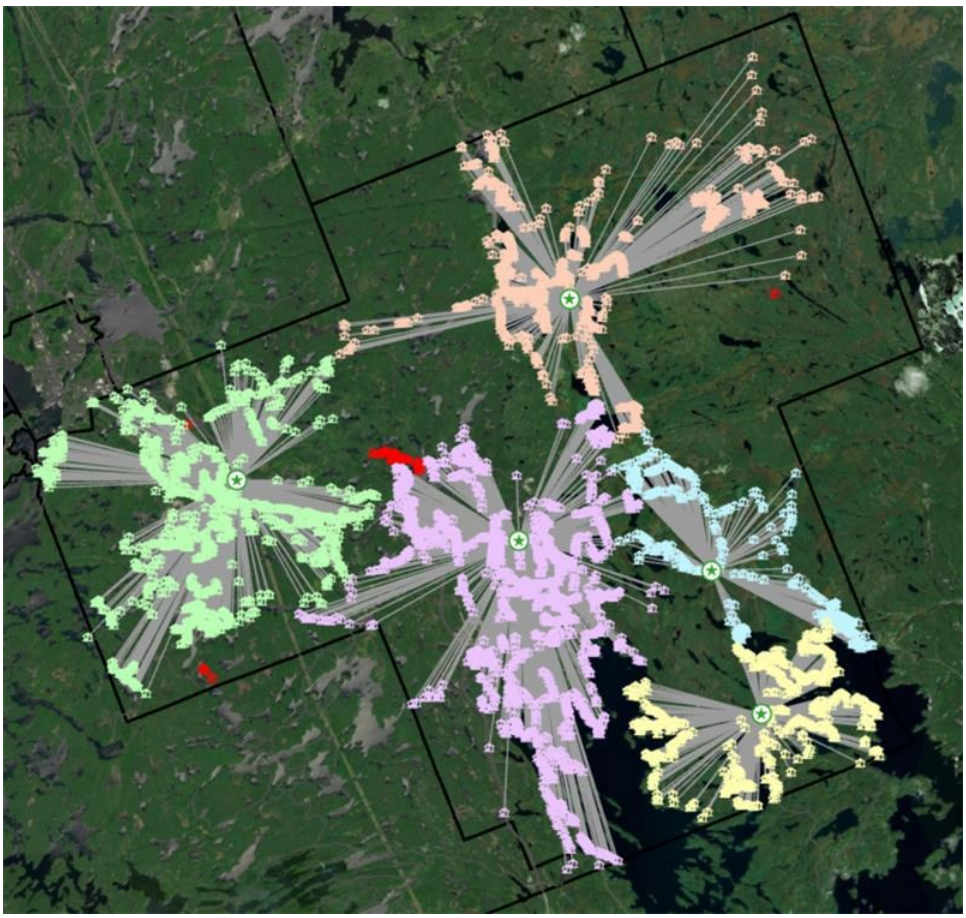


Table 3 - Average Travel Distance - Scenario 3

Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1762	7.46
Brooks Road Waste Transfer Station	1279	7.74
Christie Waste Transfer Site	898	6.28
Turtle Lake Transfer Station	399	5.25
Stanley House Waste Transfer Station	627	4.99

Scenario 4

Per the Waste Management Review, this Scenario considered the closure of Bon Echo, Airport and Turtle Lake Transfer Stations. The following graphic and table demonstrates the geospatial impact on residential travel outcomes by the closures.

The graphic and table below provide information to clarify possible residential movements as it relates to waste disposal under this scenario.

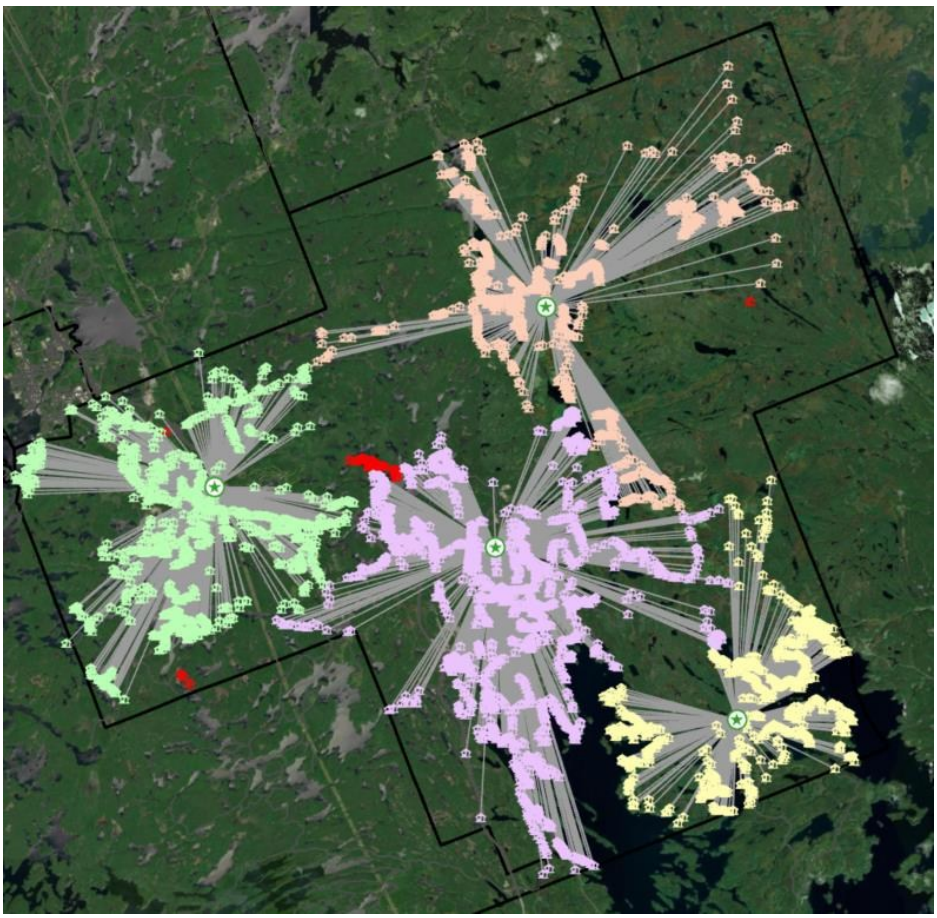


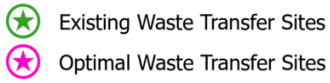
Table 4 - Average Travel Distance - Scenario 4

Name	Resident Count	Avg Distance Traveled
Humphrey Waste Transfer Station	1895	7.62
Brooks Road Waste Transfer Station	1279	7.74
Christie Waste Transfer Site	972	6.63
Stanley House Waste Transfer Station	819	5.68

Optimal Locations

Staff undertook a comprehensive assessment of the adequacy of existing transfer station locations under a variety of conditions. Assessment began with the creation of a randomized cluster within the Township, consisting of 50,000 points. These points were then compared to the location of resident points throughout the Township to determine the optimal siting of transfer stations. Conditions included the assessment of the same quantities of stations assessed through Scenarios 0 through 4 (7 stations vs. 4 stations). The assessment considered residential location and travel distance as the main consideration as a measure of input and impedance through the network.

When assessing the graphics below, please consider the following legend:

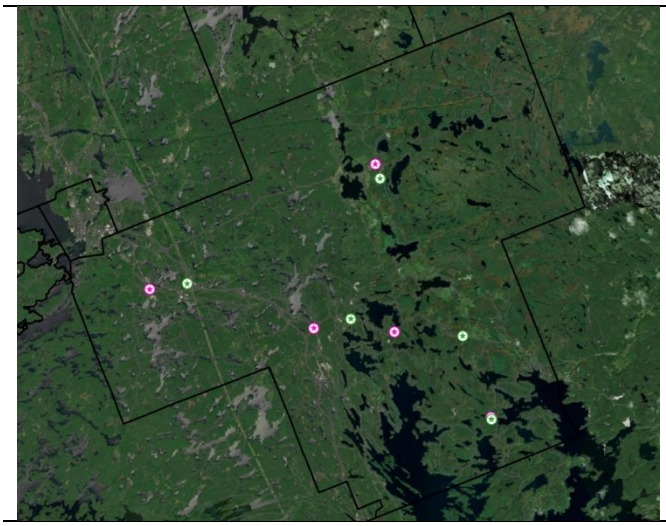


Scenario 1 vs. Optimal 7 Sites
The graphic at left compares the geographic location of the 7 existing transfer stations with a theoretical optimal location of an equal number of stations.

The locations correlate strongly with some shifting observed for Airport, Turtle and Bon Echo transfer stations.

Scenario 2 vs. Optimal 6 Sites
The graphic at left compares the geographic location of the 6 remaining transfer stations with a theoretical optimal location of an equal number of stations.

Some correlation exists, though to a lesser extent than the previous (Scenario 1 and Optimal 7). Based on inputs, it is suggested leaving a station at Bon Echo, closure of Humphrey, Turtle Lake and Airport, with the creation of new stations in between. These actions are unfeasible.



Scenario 3 vs. Optimal 5 Sites
The graphic at left compares the geographic location of the 5 remaining transfer stations with a theoretical optimal location of an equal number of stations.

Good correlation exists. Based on inputs, it is suggested the existing site locations for the 5 sites to be fairly well situated. The modelling recommends the shifting of the Humprey and Turtle Lake transfer stations west, but not by a significant margin (approx. 2.5-4.5km). As such, the existing sites should be considered appropriate.

Scenario 4 vs. Optimal 4 Sites
The graphic at left compares the geographic location of the 4 remaining transfer stations with a theoretical optimal location of an equal number of stations.

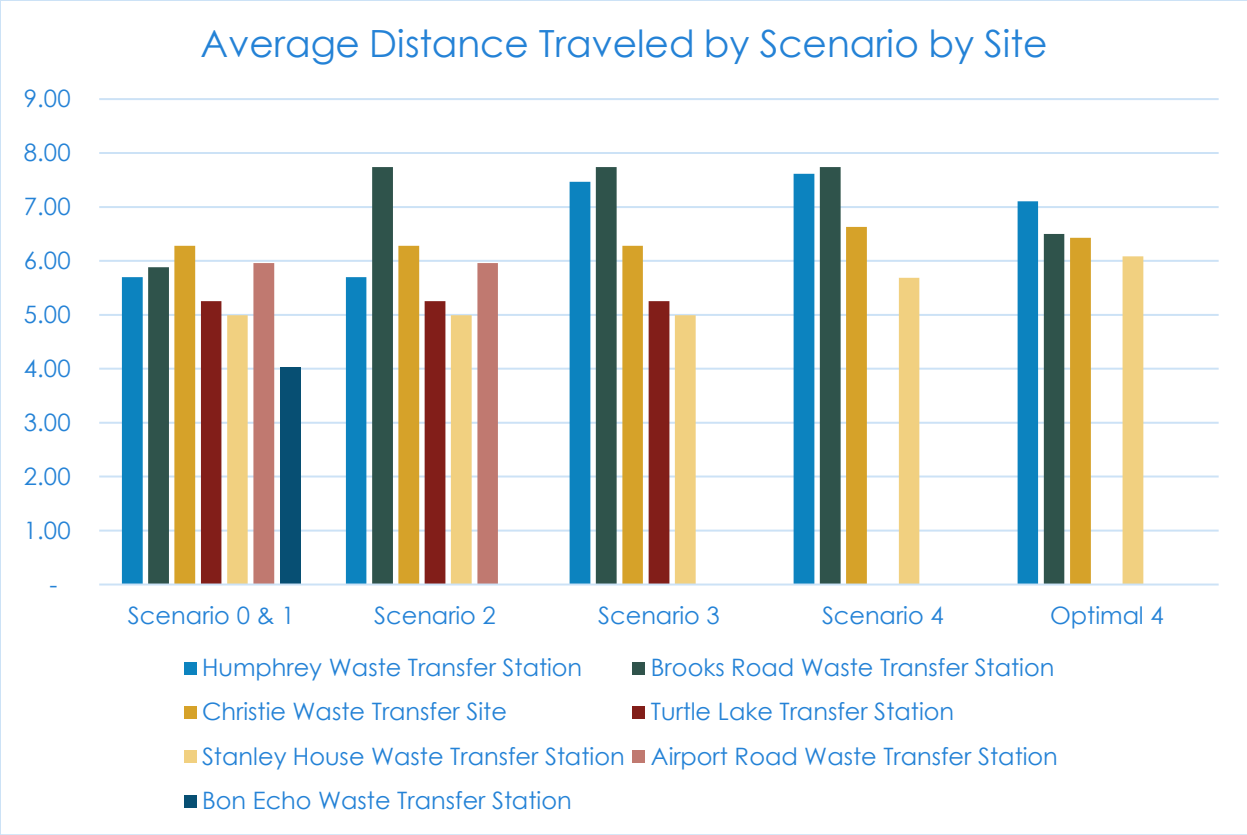
Excellent correlation exists. Based on inputs, it is suggested the existing site locations for the 4 sites to be very well situated.

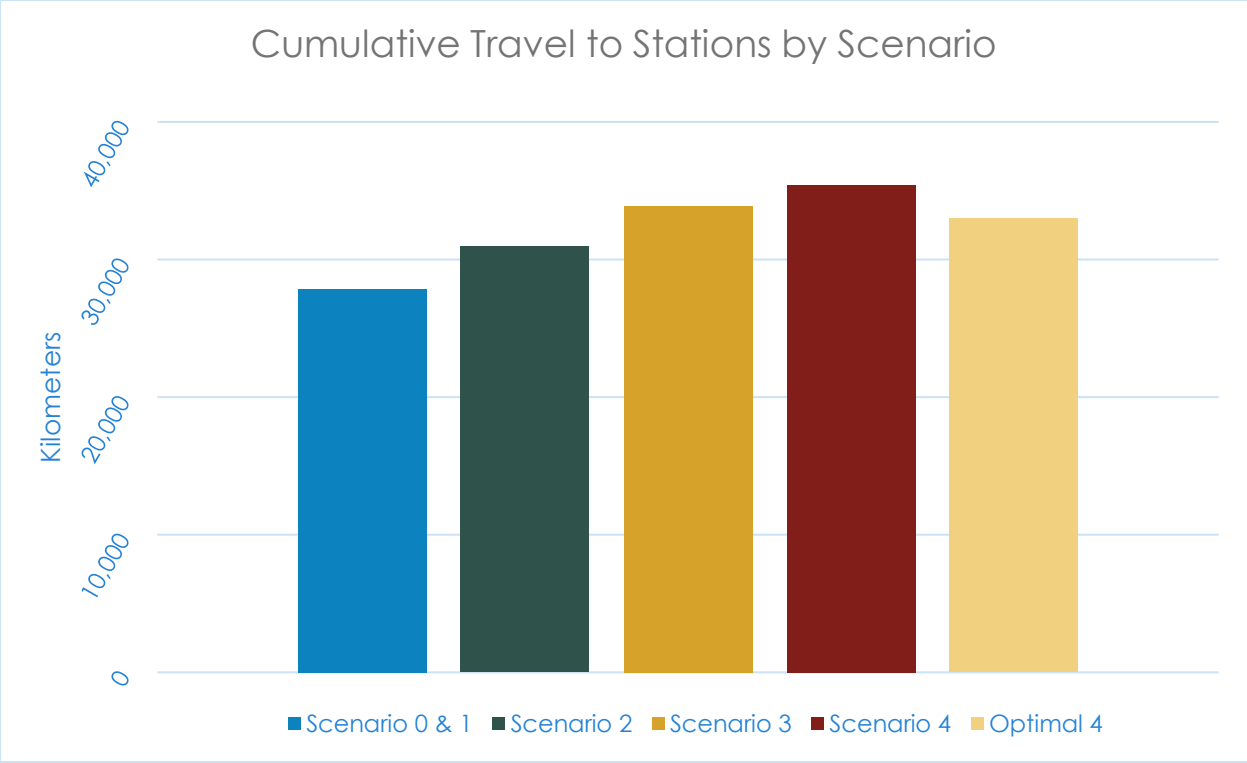
Summary of Options

The following section is a summary of residential transportation impact under all assessed scenarios.

Table 5 - Summary of Average Travel Distance (km) by Scenario

Site	Scenario 0 & 1	Scenario 2	Scenario 3	Scenario 4	Optimal 4
Humphrey Waste Transfer Station	5.70	5.70	7.46	7.62	7.10
Brooks Road Waste Transfer Station	5.88	7.74	7.74	7.74	6.50
Christie Waste Transfer Site	6.28	6.28	6.28	6.63	6.43
Turtle Lake Transfer Station	5.25	5.25	5.25		
Stanley House Waste Transfer Station	4.99	4.99	4.99	5.68	6.08
Airport Road Waste Transfer Station	5.96	5.96			
Bon Echo Waste Transfer Station	4.04				


Average Distance Traveled by Scenario by Site
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
-
Scenario 0 & 1
Scenario 2
Scenario 3
Scenario 4
Optimal 4
Humphrey Waste Transfer Station
Brooks Road Waste Transfer Station
Christie Waste Transfer Site
Turtle Lake Transfer Station
Stanley House Waste Transfer Station
Airport Road Waste Transfer Station
Bon Echo Waste Transfer Station



Conclusion

In conclusion, the geographical/geostatistical assessment suggests several things. Firstly, the analysis finds that relocating the Townships' waste sites is unnecessary, as existing locations correlate closely with optimal, confirming they are satisfactorily located. Second, when assessing site use, all scenarios continue to provide convenient service locations, within a reasonable average travel distance as demonstrated in Table 5.

Seguin Township

The Natural Place to Be

Seguin Township
5 Humphrey Drive | Seguin, ON P2A 2W8
T. 705-732-4300 | F. 705-732-6347 | seguin.ca

Seguin Township

The Natural Place to Be

Seguin Township
5 Humphrey Drive | Seguin, ON P2A 2W8
T. 705-732-4300 | F. 705-732-6347 | seguin.ca