

Municipal Solid Waste Disposal Options for the Town of Whitefield

February 2023

Summary

With uncertainty surrounding the future capacity of the Hatch Hill landfill (“Hatch Hill”), the Town of Whitefield (“Whitefield”) is concerned that Hatch Hill may cease accepting Municipal Solid Waste (“MSW”)¹ from its member communities like Whitefield. Whitefield’s Select Board established a Solid Waste Committee to explore this potential problem, develop this report, and provide recommendations to the Select Board. The Committee recommends that the Select Board immediately enter into a long term contract as soon as possible with Augusta for disposal of Whitefield’s municipal solid waste. This would provide certainty for both the Town and City of Augusta. The Committee makes further recommendations as detailed in the recommendations section below.

Whitefield’s Solid Waste Committee was formed in the summer of 2022 and charged with the following:

- (1) Research viable alternatives to the Town’s municipal solid waste program
- (2) Provide a cost analysis of each option; and
- (3) Make recommendations to the Select Board

The Committee generally met monthly and was regularly attended by Seth Bolduc, Carole Cifrino, Richard Heath, Dennis Merrill, and David Wright.

Problem Statement

One of Maine’s Home Rule provisions is that each Municipality must provide for the disposal of its Municipal Solid Waste (“MSW”)². Whitefield closed its Municipal Dump on South Howe Road near the Sheepscot River in 1982³. Since at least 1986, Whitefield has disposed of its MSW under annual contracts with the City of Augusta’s (“Augusta”) Hatch Hill Landfill (“Hatch Hill”). However, at current fill rates, Hatch Hill has only about four (4) years of disposal capacity left.

¹ The State defines Municipal solid waste as “...solid waste emanating from household and normal commercial sources..” Solid Waste, in turn, is defined by the State as “...useless, unwanted or discarded solid material with insufficient liquid content to be free flowing, including but not limited to rubbish, garbage, refuse-derived fuel, scrap materials, junk, refuse, inert fill material, and landscape refuse, but does not include hazardous waste, biomedical waste, septic tank sludge, or agricultural wastes. The fact that a solid waste, or constituent of the waste, may have value, be beneficially used, have other use, or be sold or exchanged, does not exclude it from this definition.” 06-096 C.M.R. Chapter 400 Solid Waste Management Rules: General Provisions.

² As per 38 M.R.S. §1305(1), “Each municipality shall provide solid waste disposal services for domestic and commercial solid waste generated within the municipality...”

³ Maine DEP Remediation Database, accessed January 8, 2023.

(https://www.maine.gov/dep/gis/datamaps/brwm_remediation_sites/rs_alldata.htm).

The City of Augusta has been exploring options for disposal of its solid waste⁴. Among other options:

1. **Augusta is considering ending waste disposal at Hatch Hill from some or all of the nine (9) contracting communities to extend the life of the landfill for Augusta residents.** However, partnership and tipping fees from contracting communities are an important component of keeping Augusta resident's MSW disposal costs low; ending these contracts will double disposal fees for Augusta residents.⁵ Augusta's consultant, Woodard & Curran, recommends decreasing by half the volume accepted from outside communities like Whitefield, and potentially significantly increasing fees for remaining communities.
2. **Augusta is pursuing expanding the Hatch Hill landfill vertically for an additional 12-15 years or more of disposal capacity, assuming waste from outside communities is cut in half.** The exact number of additional years depends on the volume of waste from contracting communities allowed into the landfill. Augusta has begun the process of developing an application to the Maine Department of Environmental Protection ("DEP") for a vertical expansion. The critical path is completion of a geotechnical report that will assess whether placing additional weight on top of the existing landfill will cause a failure of the underlying landfill's containment system, thus rendering this option unfeasible.
3. **Rather than expanding, Augusta may soon close its landfill and dispose of waste elsewhere.** As a backup to Landfill expansion, Augusta is considering other MSW recycling and disposal options.⁶ Closure would need to occur in 4 years, but existing Landfill capacity could be extended for Augusta by barring waste from some or all of its partner communities immediately. Closing Hatch Hill will double Augusta's disposal costs and reduce Augusta's control over price hikes. The pending geotechnical report may indicate that closure is necessary.

Whitefield's Current MSW Disposal System and Costs

Disposal: Currently Whitefield pays a \$23,000 per year partnership fee to Augusta that allows all the MSW generated in Whitefield, including Construction and Demolition Debris ("CDD") and bulky wastes to be disposed of at Hatch Hill for a tipping fee. Hatch Hill also accepts Whitefield's

⁴ City of Augusta Informational Meeting Agenda & Information packet - Further Discussion on the Future of Hatch Hill Landfill by the City Manager, Thursday, March 24 2022.

(<https://www.augustamaine.gov/3-24-22%20Council%20Packet.pdf>)

⁵ Woodard and Curran, Hatch Hill Landfill Vertical Increase Assessment, developed for the Augusta Public Works Department, May 26, 2021

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- Woodard & Curran, Hatch Hill Landfill Solid Waste Alternatives Analysis Letter Report, dated December 2, 2021
- Memo to Susan Robertson, Augusta City Manager from Lesley Jones P.E., Publics Works Director dated December 6, 2021.
- Woodard & Curran, Augusta Solid Waste Recycling and Disposal Options Pros & Cons Powerpoint and associated handout: Augusta Solid Waste: Tipping Fee to Volume Analysis Dated January 27, 2022.

unsorted recyclable materials, leaves/brush, wood, metal, tires, appliances and universal wastes for recycling at a reduced tipping fee.

The majority of Whitefield's 895 households contract with a private waste hauler to collect and dispose of their solid waste. Haulers typically collect MSW once a week and determine which licensed solid waste facility it unloads at. Additionally, for \$15 every 2 years, about 200 Whitefield households choose to obtain a permit to take their own solid waste to Hatch Hill, paying an average tipping fee of \$85/ton. The Committee estimates that currently the Town of Whitefield and its residents expend roughly \$270,000 per year to dispose of some 1600 tons of MSW, with the Town budget paying about 9% of this total.

Recycling and Reuse: In addition to disposal and recycling at Hatch Hill, the town runs a popular swap shop and collection center for sorted recyclables including mixed paper, cardboard, #2 plastics, aluminum, glass, and electronics. The recycling area is open to residents for four (4) hours once per week. Typically 60-100 people use the facility each week. Over the past 2 years, an average of 100 tons/year of recyclables were collected from Whitefield. The recyclables are hauled to Lincoln County's Recycling Center in Wiscasset, where they are consolidated before shipment to processing facilities. The avoided disposal costs cover the approximately \$15,000 per year the Town expends to operate the recycle center and contract services with Lincoln County Recycling.

Alternatives Analysis

Methods: The solid waste committee reviewed available information and conducted interviews to assess potential alternatives to the current waste handling system. The Committee focused on disposal options for the MSW generated in the Town of Whitefield. It also considered disposal of other solid wastes like tires, universal wastes, bulky wastes, and construction & demolition debris generated by residents that are not routinely picked up by waste haulers. Rough estimates of costs were developed based on available information as discussed in detail in Appendices A and B.

Factors determining disposal costs. The primary factors determining Whitefield's MSW disposal costs are:

- **MSW Weight.** The amount of MSW Whitefield disposes of each year (in tons/year);
- **Fees.** The tipping fees charged by the disposal facility (in \$/ton) and partnership fees that guarantee access to the disposal facility (\$/year);
- **Transportation.** The transportation costs (in \$/year) for the haulers to travel to Whitefield, run the collection route, drive to the disposal facility, and return to home base. The total cost per mile drives this expense. Distance to disposal facilities is the key variable between options.

Uncertainty: The Committee thought this report would be most useful if it could obtain cost comparisons of the various options. However, it was not possible to get precise figures. Based on information obtained during interviews, internet research, and review of Augusta's Alternatives Assessment, the Committee was able to generate some rough estimates. There are still

unknowns and uncertainties with these calculations. The results should be viewed as ballpark, and used for comparison purposes only. Actual costs are best obtained through issuing Requests for Proposals and developing a contract.

MSW Management Options

The Committee explored the following MSW Management Options⁷.

1. **Town contracts with an MSW Disposal Facility.** Similar to the current MSW management system we have with Hatch Hill Landfill, this option is to contract with a Solid Waste Disposal facility to accept the waste generated in Whitefield. There are 12 licensed MSW disposal facilities in the State of Maine. Of these, only the five (5) listed in Table 1 might be able and willing to accept additional MSW from Whitefield.⁸ Details on the calculations used to develop this table can be found in Appendix B .
2. **Transfer Station Options.** The further the disposal facility is from Whitefield, the higher the transportation costs. For long distances, hauling compacted MSW in tractor trailer trucks is more cost effective than hauling semi-compacted MSW in smaller trucks. Therefore, many municipalities take their MSW to transfer stations, where the waste is compacted and stored until sufficient MSW is available to completely fill a tractor trailer truck. The solid waste Committee dismissed constructing a new transfer station facility within Whitefield due to cost concerns. Instead, the Committee reached out to neighboring communities with existing transfer stations and to two nearby private transfer stations to compare their operating costs.

Windsor Transfer Station: The Town of Windsor operates a transfer station for the exclusive use of residents of Windsor (no commercial haulers). They employ 3 people at approximately 20 hours/week. The transfer station contracts with Lincoln County Recycling and Waste Management (Norridgewock).

The cost to Windsor to operate this transfer station is approximately \$140k annually. Windsor raises half this amount through taxes and offsets the remainder through tipping fees, which are currently set at \$0.10/pound or \$200/ton.

Following discussions with the Windsor Town Manager, in order to include more towns like Whitefield, the transfer station would have to hire more people, which would require benefits and salary increases. Windsor doesn't want costs to increase to its taxpayers due to more towns using the facility, therefore incoming towns would have to bear the

⁷ One option considered and quickly dismissed by the Committee is to require all households to contract with private solid waste haulers, and have the haulers contract for disposal of the MSW that they collect. This does not appear to meet the Municipalities obligation to provide for MSW disposal. Also, at least one private hauler has expressed concern that they may not be able to dispose of waste generated in Whitefield without the Town holding a contract guaranteeing that a facility will accept their waste. This could lead haulers to cease collecting MSW in Whitefield.

⁸ Maine DEP, Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2020 and 2021, dated January 5, 2023.

cost increases. Notwithstanding, Windsor is open to exploring options to include Whitefield pending discussions about how to handle additional staffing and hours of operation. These discussions have not yet occurred. Given that the Towns are roughly the same size, for cost estimating purposes the Committee assumed that Whitefield joining Windsor would increase the transfer station's costs by 50%, and we would pay half of the cost. Whitefield's partnership fee would be about \$105k annually.

Table 1. Available MSW Disposal Facilities

Facility Name*	Capacity at Current Disposal Rates**	Distance from North Whitefield	Estimated Tipping Fee*** (\$/ton)	Annual Partnership Fee***	Estimated Total Disposal Cost† (\$/year)	Cost/ Ton MSW
Hatch Hill Landfill, Augusta	4 years left	11.2	\$78	\$23,000	\$270,000	\$170
Bath Landfill	27 years left	30.5	\$130	\$0	\$330,000	\$210
WM - Crossroads Landfill, Norridgewock	17 years left	48.5	\$78	\$0	\$320,000	\$200
Penobscot Energy Recovery Co, Orrington	Incinerator, 100K tons/yr excess capacity	69.2	\$78	\$0	† †	† †
AWS (landfills in Presque Isle & Caribou)	37 years left	231	\$275 household/ yr	\$0	† †	† †
*Acceptance of Whitefield's MSW is subject to facility approval						
**From DEP, "Maine Solid Waste Generation and Disposal Capacity Report for Calendar Years 2020 & 2021", January 2023.						
***These are estimated fees. They are subject to change with market conditions, and are typically negotiated in a contract						
† These are rough estimates for comparison purposes, and include cost estimates of annual tipping, partnership and transportation costs. See Appendix A and B for sources and methods.						
† † Not calculated due to distance from Whitefield,						

Wiscasset Transfer Station: The Town of Wiscasset operates a transfer station for the use of residents of Wiscasset, Westport Island, and Alna. The transfer station is open 5 days per week and includes comprehensive recycling. The fee for un-recycled household waste is \$.10/pound or \$200/ton. The transfer station also accepts (for fee) brush, lumber, shingles, tires, and bulky waste. The cost to operate the transfer station is approximately \$690k annually, split between the participating communities on a per-capita basis. Based on current census population data, partnership fees to Whitefield would be approximately \$200k/year.

Troiano’s Gardiner Transfer Station: Troiano, a South Portland waste management company, is constructing a commercial transfer station in Gardiner’s Industrial Park. Triano anticipates obtaining its construction permit in the spring of 2023. Troiano indicated that private parties could not dispose of wastes at this transfer station, and that commercial haulers would be charged \$125/ton. Since this fee is well below the Windsor and Wiscasset tipping fee and would not include a partnership fee, the Committee developed cost estimates for this facility. Before contracting with this facility the Select Board would need to confirm that the facility will accept the variety of wastes that Hatch Hill does, not just MSW.

Casella’s West Bath Transfer Station: Casella Waste Services (“Casella”) runs a commercial transfer station in West Bath. Regional Rubbish, a commercial hauler currently servicing some Whitefield households, disposes of waste collected in Whitefield at this facility rather than Hatch Hill. According to Casella’s website, its transfer station also services private households and accepts the variety of wastes that Hatch Hill does. The tipping fee at this facility is estimated to be \$113/ton for the cost estimates in this report, but is negotiated by the hauler and transfer station.

Cost Analysis: The tipping fee at a transfer station covers construction, operation and closure of both the transfer station and disposal facility, as well as transportation from the transfer station to the disposal facility. Table 2 shows the four closest transfer stations potentially available to Whitefield, along with the rough estimates of potential costs. Actual costs would need to be negotiated.

Facility Name*	Distance from North Whitefield	Estimated Tipping Fee** (\$/ton)	Partnership Fees (\$/year)**	Estimated Total Disposal Cost † (\$/year)	Cost/Ton MSW
Windsor Transfer Station	6.7	\$200	\$105,000	\$530,000	\$330
Wiscasset Transfer Station	15.7	\$200	\$200,000	\$640,000	\$410
Troiano Transfer Station in Gardiner	16.3	\$125	\$0.00	\$330,000	\$200
Casella Transfer Station in West Bath	30.5	\$113	\$0.00	\$340,000	\$210
*Acceptance of Whitefield’s MSW is subject to facility approval					
**These are estimated fees. They are subject to change with market conditions, and are typically negotiated in a contract					
† These are rough estimates for comparison purposes, and include cost estimates of annual tipping, partnership and transportation costs. See Appendix A and B for sources and methods.					

3. **Waste Reduction Options.** Since the volume of MSW disposed helps drive the cost of disposal, the Committee did a cursory analysis of waste reduction alternatives. Basically, recycling and composting are the two options within Whitefield’s control to reduce the volume of MSW that must be disposed of.

Recycling and EPR. Some 100 tons/year of materials from MSW are recycled in Whitefield's popular recycling center currently, plus additional items in the swap shop. Within the past five years, the types of items accepted for recycling have been significantly reduced. Maine's new Extended Producer Responsibility ("EPR") for Packaging law will provide financial incentives for manufacturers to develop packaging that is readily recyclable, which should improve recycling rates in Whitefield. Beginning in 2027, the EPR law will also provide reimbursement to municipalities for their costs of recycling packaging (see 38 MRS §2146.10).

Composting. DEP thinks that compostable food wastes comprise a significant portion of MSW disposed of in Maine. DEP also provides grants to develop composting infrastructure under 38 MRS § 2201-B. Expansion of backyard and/or regional composting on a voluntary basis could significantly cut the tonnage of Whitefield's MSW that needs disposal. If enhanced recycling and composting cut MSW volumes in half, then MSW would need to be collected half as often, potentially cutting Whitefield's transportation and disposal costs in half.

Reporting Ordinance for Municipal Reimbursement. Whitefield currently receives a firm accounting of the amounts of recyclables managed by Lincoln County Recycling, but has no data on the amount of MSW disposed of from Whitefield. This information will be needed to obtain municipal reimbursements under the new EPR for packaging law, so the Committee drafted an ordinance for haulers to report tons of MSW disposed of annually. By learning the annual tons of MSW disposed, the Town will be better able to develop cost estimates for MSW disposal alternatives. The draft ordinance is included in Appendix C.

Financial Incentives. Currently most households in Whitefield contract with a hauler to collect their trash on a weekly basis. There is no economic incentive to recycle, since the weekly rate is constant, whether one or 10 bags are collected. Replacing Whitefield's pay-per-pickup system to a pay-per-bag system would provide an economic incentive to recycle and compost, but may face resistance from haulers and some customers.

4. **Optimization of Whitefield's MSW Collection System.** There may be an opportunity to cut overall costs in Whitefield's existing MSW handling system. Multiple haulers travel the same routes to service different customers. By the town contracting through a competitive bid process for curbside pick-up, this inefficiency could be eliminated. However, the municipal budget would increase substantially. Beginning in 2027, some of Whitefield's recycling costs may be recoverable under the new EPR law. The Committee realizes that these changes present a cultural shift for the Town.

Recommendations to the Select Board

The Committee has the following recommendations for the Select Board.

1. **Obtain Immediate Contract with Hatch Hill:** Immediately obtain from the City of Augusta as long-term a contract as possible for disposal of Whitefield's municipal solid waste at the Hatch Hill landfill. The Town should pay particular attention to termination clauses, tipping fees and partnership fees. A multi-year contract would provide certainty for both the Town and the City of Augusta.
2. **Hauler Reporting Ordinance:** Support a local ordinance that will enable the Town to accurately determine from waste haulers how much solid waste is generated in Whitefield and where it is disposed. This information will be used to:
 - a. **Improve data for cost estimates:** Generate more precise alternative cost estimates when exploring disposal options;
 - b. **Lower contract costs:** Provide accurate volumes in future disposal Requests For Proposals ("RFPs"), which will lead to less uncertainty by contractors and therefore lower bids on any disposal contracts; and
 - c. **Enable municipal reimbursements:** Enable applying for municipal reimbursements beginning in 2027 (for calendar year 2026 recycling and disposal costs for packaging) under the new Extended Producer Responsibility ("EPR") for Packaging law (38 MRS §2146.10).
3. **Long-term Disposal Solution:** Select and implement a long term solution for disposal of Municipal Solid Waste.
 - a. **Determine Augusta's plans:** The Select Board should choose a selectperson to be the point of contact for frequent communication with the Augusta City Manager on its plans, costs and schedule for continuing or terminating its contract for Whitefield's MSW. Augusta's close location and type of disposal facility (landfill) should be the most economical for Whitefield. A long-term agreement, rather than annual renewal, would provide greater certainty to both parties.
 - b. **Long-term contract for disposal.** Failing a long-term commitment with Augusta, the Select Board should issue an RFP to the Bath Landfill, as well as Casella, Troiano, Windsor and Wiscasset for "disposal" of Whitefield's MSW. If the bids are exceedingly high, the Select Board should consider a contract for direct hauling to Waste Management's Crossroads facility in Norridgewock.
 - c. **Contract for curbside pick-up:** The Select Board should consider having the town issuing an RFP for residential collection & disposal of Whitefield's MSW for a set overall fee. Savings could be achieved by a single hauler traveling a given collection route, rather than multiple haulers traveling the same route. However, this would increase the administrative burden on Town Government and be a cultural shift for Whitefield.

4. **Convene a Solid Waste and Recycling Committee:** The charge of this new committee would be to:
- a. **Prepare for municipal reimbursements under EPR law.** Whitefield should be able to recover some of the cost of running the recycling center, as well as reduce the county budget by the amount the county recovers on its recycling system. However, to recover costs we will have to report to the EPR Stewardship Organization. We need to weigh in with the DEP on what will be required to be reported, so it does not become burdensome, and so that we are prepared to file the reports.
 - b. **Explore the feasibility of improving composting and obtaining DEP grants for doing so.** DEP provides grants that might be available to increase composting in town. The new committee should explore these grant opportunities and proceed accordingly.
 - c. **Assist the Town with collecting MSW data and filing bi-annual MSW reports with the DEP.** The new committee should also collect MSW disposal and recycling data. This data should be used to support EPR reimbursements, and fulfill the Town's obligation to file accurate bi-annual reports with DEP regarding the Town's MSW management.
 - d. **Assist the Town with public education to promote recycling and composting.** This will reduce the volume of MSW needing disposal.

Appendix A: Calculation of Disposal Alternatives.

Factors determining disposal costs. The primary factors determining MSW disposal costs that were assessed by the Committee are:

1. The **Tons of MSW** that is generated for disposal, in tons per year (“tons/year”)
2. **Tipping Fees**, or the cost charged by the disposal facility in dollars per ton (\$/ton) Tipping fees cover the costs of building, maintaining, and closing the facility in accordance with Maine DEP rules.
3. **Partnership fees**, or Whitefield’s contractual costs with the disposal facility to cover expenses that are not recovered by tipping fees.
4. **Transportation costs** for the haulers for travel of garbage trucks:
 - a. to Whitefield,
 - b. along the collection route,
 - c. to the disposal facility, and
 - d. back to the home base.

These costs are based on dollars per mile (\$/mile), and should cover all hauler expenses. They are calculated by dividing the gross annual transportation cost of the hauling company by the total fleet miles driven that year.

Cost Estimates for MSW disposal at the Hatch Hill Landfill, Augusta. We did not have information on the total tons of MSW that was generated in Whitefield, where it was disposed of, and the cost of that disposal.

To estimate total tonnage of MSW generated in Whitefield, we multiplied the Maine per capita rate of MSW disposed of by the population of Whitefield.

We did have reports from Hatch Hill for the tonnage and cost of MSW disposed of by people that had obtained a 2-year permit for disposal at Hatch Hill, and that had listed a Whitefield address. Since most of Whitefield households contract with haulers outside of town, this value is a significant underestimation of Whitefield’s total disposal volumes and cost.

To estimate the tonnage and cost of MSW disposal in Whitefield we assessed the cost to two groups of households: Those households that hauled their own MSW to the Hatch Hill landfill (“DIY”) and those households that contracted a commercial hauler to pick-up and remove the MSW. From the Hatch Hill disposal reports we determined the number of households that haul themselves. This number was adjusted upwards slightly to account for permit holders that also haul for their neighbors or other family households. We then subtracted the DIY households from the total number of households in Whitefield, to obtain the number of households that contract haulers.

To determine cost for the DIY group, we added transportation costs to the tipping fees recorded by Hatch Hill for this group. Transportation costs were determined by an estimation of the

number of trips each household made to the landfill each year, multiplied by a standard cost/mile factor.

To determine costs for the households contracting haulers, we assumed a standard rate per household per week times the number of weeks trash was picked up times the number of households in this group. This accounts for both the transportation costs and the tipping fees.

Finally, for total costs using the Hatch Hill option, we added the costs for both groups together, and then added in the partnership fee.

Cost Estimates for Other Disposal Options. Here is how we determined the costs for the other disposal site options and transfer stations shown in Tables 1 and 2. For each option, we added together annual tipping fees, partnership fees and transportation costs of the option.

The per ton tipping fees were determined by reviewing the disposal facilities website, a Hatch Hill Report, and interviews with the facility. The per/ton tipping fee was multiplied by the total tons/year of MSW that is generated in Whitefield and then disposed of.

Partnership fees were determined by interviews with the facility.

Transportation costs were determined by multiplying a transportation cost/mile by the number of miles traveled. The number of miles traveled were determined by the miles of road between a standard hauler to Whitefield, along all the roads in Whitefield, to the disposal facility, back to Whitefield, and then back to the home base. The number of trucks needed to make the trip each week was determined by the weekly MSW generation in Whitefield divided by the total tons that a garbage truck can hold. This number was rounded up to the nearest full truck. We then multiplied this value by the cost/mile for a garbage truck. This number was then multiplied by the number of times per year that trash is picked up.

Costs per ton of MSW were developed by simply dividing the total estimated cost of a given option by the tons of MSW generated in Whitefield that need to be disposed of.

Finally, the total costs and estimated MSW generation for Whitefield were rounded to two significant digits to reflect the imprecision of the above estimation methods.

Appendix B: Whitefield MSW Cost Estimates Spreadsheet. See attached.

Appendix C: Draft Solid Waste Ordinance. See attached.