DRAFT ENVIRONMENTAL IMPACT STATEMENT

SMI Valley Infill Project

Seneca Falls, NY

JULY 29, 2024

190469

SEQR LEAD AGENCY

New York State Department of Environmental Conservation: Division of Environmental Permits, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Lead Agency Contact:
Name:_____
Phone Number:_____
_____

Date of acceptance by Lead Agency:_____

Date by which comments must be submitted:_____

PROJECT SPONSOR

Seneca Meadows, Inc.
1786 Salcman Road
Waterloo, New York, 13165

PREPARED BY

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GHD

REPORT CERTIFICATION

The material and data in this report were prepared under the supervision and direction of the undersigned.

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July 29, 2024

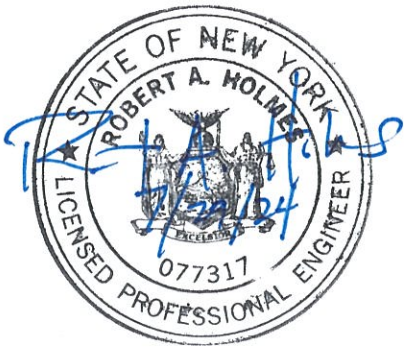

TABLE OF CONTENTS

APPENDIX SECTIONS

TABLES

FIGURES

APPENDICES

1.0 EXECUTIVE SUMMARY

1.1 PROJECT IDENTIFICATION

Seneca Meadows, Inc. (SMI) has prepared this Draft Environmental Impact Statement (DEIS) and permit applications to the NYSDEC for modifications to its 6 NYCRR Part 360 ("Part 360") and 40 CFR Part 70 ("Title V") permits to secure authorization to build and operate approximately 47 acres of additional landfill area (referred to as the "SMI Valley Infill", or "the Project") within its existing solid waste landfill facility (the Facility) located in the M-2 Zoning District of the Town of Seneca Falls, Seneca County, New York. The Project applicant is Seneca Meadows, Inc. (SMI), with offices at 1786 Salcman Road, Waterloo, New York 13165.

The goal of the Project is to add landfill capacity to the Facility in the Town of Seneca Falls in a timely fashion in order to provide critically needed solid waste disposal services locally and for the State.

For this DEIS, a number of important project terms have been developed. These are presented using capitalized title case throughout the DEIS and have specific defined meaning. Definitions of these important project terms are presented below:

Project – the series of physical activities leading to and including the construction and operation of the SMI Valley Infill. The major activities include:

- Preparation of subgrade areas and landfill infrastructure, including potential temporary removal of limited portions of the Tantalo Landfill geosynthetic cap to allow for limited waste relocation.
- Relocation of operational buildings and areas including the maintenance shop areas, some fuel tanks, the wheel wash station, and the residential drop-off center.
- The construction and operation of the SMI Valley Infill waste disposal project.

Seneca Meadows Landfill or Facility – the SMI Landfill, the Southeast Landfill, the 2007 Landfill Development, and all of the other facilities that support SMI's permitted solid waste management facility operations.

Engineering Design Report (or Part 360 Application) – Documentation showing the design and operational features of the proposed SMI Valley Infill and showing how the Project meets the applicable regulatory requirements.

Facility or Facility Site – the boundaries of the Seneca Meadows Landfill as defined in the Part 360 Solid Waste Management Facility permit, encompassing a total of 898 acres.

Part 360 – 6NYCRR Part 360 – The regulations governing the operation solid waste management facilities under Article 27 of the New York State Environmental Conservation Law.

Project Area – the area in which Project activities will occur.

SMI Landfill – the approximately 112-acre permitted landfill area located on the Facility Site within the M-2 zone north of Black Brook. It includes the approximately 57- acre A/B overfill area permitted in April 1999.

Southeast Landfill – the approximately 67-acre permitted landfill area located at the Facility within the M-2 zone that was permitted in April 1999.

2007 Landfill Development – the approximately 181-acre development, that was authorized by the New York State Department of Environmental Conservation (NYSDEC) issuance of Part 360 and Title V permits in October 2007 and the Town of Seneca Falls' issuance of a special use permit and a zoning permit. This development includes landfill areas referred to as the Western Expansion (WEX), The Northeast Expansion (NEX) and the SELF Bumpout (SBO)

SMI Valley Infill (the Project) – an approximately 47-acre area of new liner and adjacent overfilling operation which is proposed to SMI's existing permitted limit of liner area upon which solid waste disposal will occur on SMI Property within the M-2 zone of the Town of Seneca Falls.

SMI Property – all parcels owned by SMI within the Towns of Seneca Falls and Waterloo (approximately 2,400 acres), exclusive of the Dove Property.

Tantalo Waste Disposal Area – an approximately 26-acre area located within the SMI Property, that is listed by the NYSDEC as a Class 4 Inactive Hazardous Waste Disposal Site. The Tantalo Waste Disposal Site was remediated as two Operable Units (OU): OU-1 which constituted closure of the former waste disposal site and OU-2 which addresses groundwater remediation. The Tantalo Waste Disposal Area is currently in the routine monitoring and maintenance phase of remediation.

1.2 DESCRIPTION OF PROJECT AREA

The Seneca Meadows Landfill is a privately owned and operated non-hazardous solid waste disposal facility located on a portion of the SMI Property within the Town of Seneca Falls and with certain support facilities located in the adjacent Town of Waterloo. Regional and site location maps can be seen in Figures 1-1 and 1-2, respectively.

The Project Area, defined as the area in which Project activities will occur, will include:

- the SMI Valley Infill and the immediately adjoining areas around the perimeter of the landfill footprint where construction will occur but on which no waste placement will take place.
- the area in which new stormwater conveyance structures and retention basins will be located.
- the areas to which portions of existing SMI facilities will be relocated, including but not limited to:
    - The Residential Drop-off Center / Citizen Drop-off Area (CDA).
    - Two storage and maintenance buildings.
    - The fueling island.
    - A concentrate/leachate evaporator.
    - Truck wheel wash area.

Future landfill operations will be conducted solely within the M-2 Zone, the only zone in the Town of Seneca Falls in which solid waste management facility operations are allowable, subject to a Special Use Permit. No waste landfilling operations will be conducted on the SMI Property in the Town of Waterloo.

Figure 1-3 shows key features of the existing SMI operations. Much of this existing infrastructure will continue to be used in connection with the SMI Valley Infill area. The Engineering Drawings which are made part of the Engineering Design Report show the Project during various stages of development on Sheets 12 through 19, including the Project's intended construction and filling sequence, and final grades. Sheet 11 shows the Project infrastructure plan.

An additional description of the Project Area is provided in Section 2.0 of this DEIS.

1.3 PURPOSE AND NEED FOR THE PROJECT

The Project purpose is to add landfill capacity to the Seneca Meadows Landfill in the Town of Seneca Falls in a timely fashion in order to provide critically needed solid waste disposal services locally and for the State.

The proposed SMI Valley Infill will meet the ongoing public need for long-term environmentally-sound disposal capacity in New York State, as described further in Section 2.6 below. In addition, the Project offers a number of local, regional and statewide benefits, including:

- Ensuring capacity for the disposal of local and regional wastes from other parts of New York State.

- Satisfying the goals and objectives of the New York State solid waste management plan.
- Employment/contribution to the local and regional economy.
- Significant contribution to local tax base.

The Project need is based on the need for continued disposal capacity currently being provided by the Seneca Meadows Landfill. SMI currently provides the most landfill disposal capacity in New York State, with a permitted waste capacity of 6,000 tons per day (tpd). Based upon its current rate of waste acceptance, the Seneca Meadows Landfill has remaining useful life through 2025. The existing Part 360 permit for the Seneca Meadows Landfill expires in December 2025, by which time the SMI Valley Infill project will need to be constructed in order to ensure that continued disposal capacity is available. There are currently no plans to modify the rate of waste acceptance.

The Seneca Meadows Landfill provides waste disposal services for communities and businesses across New York State, the facility's primary service area. During the period from 2020 through 2023, 86.1 percent of the waste and materials accepted at the Facility (including beneficial use determination (BUD) materials) were generated in New York State. Three of New York City's five counties (Bronx, Kings and Queens) contributed a combined 28.2 percent of the deliveries to the Seneca Meadows Landfill during this period. Several other downstate counties contributed significant percentages as well, including Nassau (3.1%), Rockland (5.3%), and Westchester (5.2%). Ulster County contributed 7.2 percent and Schenectady County contributed 4.1 percent of total waste and material deliveries during that time. The Facility provides a significant percentage of the disposal capacity required by these jurisdictions, none of which have Municipal Solid Waste (MSW) landfills within their boundaries. Some of this waste disposal capacity is provided by SMI pursuant to contractual agreements with various public agencies, including but not limited to the Town of North Hempstead, Sullivan County, Montgomery County, Greene County, and the Ulster County Resource Recovery Agency.

Locally, the importance of the disposal capacity provided at the Seneca Meadows Landfill is just as pronounced. Most of the counties in the Finger Lakes region do not have their own landfill disposal capacity and rely on the Seneca Meadows Landfill for a significant percentage of their needed disposal capacity. As noted in Section 2.6, the Facility accepted an average of approximately 160,700 tons of solid waste and BUD material per year from the 8 local counties listed in Section 2.6.1.3 during the course of 2020 to 2023.

During this same period, the Facility accepted an average of about 19,590 tons of solid waste and BUD material per year from Seneca County an average of nearly 6,937 tons of solid waste and BUD material per year from sources in Wayne County and an average of nearly 102,886 tons of solid waste and BUD material per year from Onondaga County.

Waste disposal at the Seneca Meadows Landfill clearly provides for a significant portion of the local disposal need. The development of the proposed SMI Valley Infill will allow SMI to continue to provide the disposal capacity that is needed in the Finger Lakes Region and in other communities throughout New York State. The most recent NYSDEC solid waste management plan (titled "Building the Circular Economy Through Sustainable Materials Management", adopted December 2023) indicates that a variety of solid waste management facility types, including landfills are critical to the proper management of waste generated in the State. The solid waste management plan also indicates that there is as little as 16 years of landfill capacity in the state. Considering that the capacity was based on 2018 landfill data the available capacity is now on the order of 10 years. With the length of time it takes to permit a landfill expansion, this application is critical. With SMI accepting roughly 21% of the waste disposed of by New York State municipalities, closure of the landfill by the year 2025 means that significant quantities of waste will need to be redirected. If the SMI Valley Infill is not implemented, the solid waste disposed in the Seneca Meadows Landfill would have to be diverted to one of the other in-state solid waste landfills or an out-of-state landfill, once the maximum capacity at SMI is reached. As discussed in greater detail below, this diversion would generate more Greenhouse Gas (GHG) emissions than those generated by continued disposal at the Facility. Thus, the continued operation of the Seneca Meadows Landfill is warranted under the Climate Leadership and Community Protection Act "CLCPA"), because its continued operation, particularly with

the implementation of certain reduction opportunities (i.e., mitigation) for fugitive emissions, will be more advantageous from an environmental and sustainability standpoint than transporting and disposing solid waste at distant in-state or out-of-state locations.

The Project need is demonstrated by the public need for long-term environmentally-sound solid waste disposal capacity. In addition, SMI. is committed to maintaining its record of environmental compliance and to assuring that ongoing landfill operations continue to have a positive economic benefit on local and regional economies.

1.4 SUMMARY OF THE PROJECT

As noted above, the Project is defined as a series of physical activities leading to and including the construction and operation of the SMI Valley Infill. The major activities include:

- Preparation of subgrade areas and utilities, including potential temporary removal of limited portions of the Tantalo Landfill geosynthetic cap.
- The further development of existing stormwater basins.
- Relocation of operational buildings and areas including the maintenance shop areas, some fuel tanks, the wheel wash station, and the residential drop-off center.
- The construction of double composite landfill liner systems and the operation of the SMI Valley Infill.

The Project plan can be seen in Figure 1-4 with details shown throughout the Engineering Drawings submitted as part of the Part 360 application (Engineering Design Report). The Facility is constructed and operated by SMI in accordance with a number of permits issued by the NYSDEC to meet local, regional, and statewide solid waste disposal capacity needs. It is also constructed and operated in accordance with a number of local permits, a Host Community Agreement with the Town of Seneca Falls and a Community Benefit Agreement with the Town of Waterloo. The Seneca Meadows Landfill is currently permitted to accept up to 6,000 tons of waste daily.

The proposed SMI Valley Infill, which would occur in the existing M-2 zoning district, will be designed, constructed, and operated in a manner similar to the currently permitted Facility operations. The Project will involve the construction of a new landfill liner in the valley between the Southeast Landfill and Stages 3 and 4 of the SMI Landfill and will primarily occupy the existing slopes of these two existing landfill areas as well as the area currently occupied by the Tantalo Waste Disposal Area.

The proposed SMI Valley Infill will also involve a height increase over certain portions of the existing Seneca Meadows Landfill. The SMI Valley Infill will provide approximately 47 million cubic yards of additional landfill capacity. The SMI Valley Infill will accept non-hazardous solid waste (as that term is defined in 6 NYCRR Section 360.2) from residential, commercial, institutional, and industrial sources. At the currently permitted average waste acceptance rate of 6,000 tons per day, the SMI Valley Infill will meet future local and regional waste disposal needs for a period of at least 15 years.

A double-composite liner system, designed in accordance with the requirements of 6 NYCRR Part 360, will be constructed beneath parts of the SMI Valley Infill which do not already have such a liner system. The vertical component of the SMI Valley Infill will not exceed a peak elevation of approximately 843.5 feet above MSL. This represents an increase in the maximum permitted height, as described further below in Section 3.6.8. The SMI Valley Infill will include new and expanded leachate collection, active landfill gas collection, and stormwater management facilities which will also be integrated with upgraded systems to serve the Facility.

Additional details and information on the Project are summarized in Section 2.

1.5 SUMMARY OF ALTERNATIVES

During the planning and conceptual design efforts completed to date for the Project, a variety of alternatives were considered in the context of their ability to meet the overall objectives of SMI as well as the requirements 6 NYCRR Part 360 and other applicable regulations.

The alternative actions to the development of the Project are presented in Section 8 of this DEIS. The alternatives include:

- No Action Alternative
- Alternative Landfill Sites.
- Alternative Design Concepts and Layouts for the SMI Valley Infill.

None of the alternatives examined present any environmental, social, or economic advantage over the Project or are better able to meet the project purpose.

It should be noted that SMI manages waste generated in the region—waste, which is generated regardless of the Project's existence. The SMI Valley Infill will provide the avenue to manage this waste with the least amount of GHG emissions and the least amount of impact within New York State. If the Valley Infill Project does not exist, even more GHGs would be generated to manage the same waste because additional GHG emissions would be generated to transport the waste farther away and manage it at other facilities (if those facilities existed and had capacity). The SMI Valley Infill Project will provide a means of managing the waste generated in the community and surrounding region that not only meets or exceeds all regulations, but also is the least impactful waste management option.

1.6 IDENTIFICATION OF POTENTIAL IMPACTS OF THE PROJECT

A discussion of potential impacts of the Project and the proposed mitigation measures to minimize or avoid those environmental impacts is presented in Sections 4 and 5 of the DEIS, respectively. The significant environmental impacts that potentially would occur as a result of the development of the proposed SMI Valley Infill and the proposed mitigation measures are summarized in this section.

The Project will result in the alteration of approximately 221 acres within the Facility, including a change-in-use for approximately 26 acres of the former Tantalo Waste Disposal Area. The intended construction areas have already been developed as landfill area, access roads, and other uses in connection with the ongoing Facility operations, including for the Tantalo area. The principal environmental control constructed for closure of the Tantalo Waste Disposal Area (OU-1) is a geocomposite cap, which will need to be partially removed (less than one acre) and replaced during the course of preparation for the SMI Valley Infill Project. It is expected that portions of the cap need to be removed in the southeast areas of Tantalo to accommodate subgrade slopes and in the northern area of the Facility Site to accommodate the placement of Tantalo waste that was not placed under the geocomposite cap at the time of closure (it was placed under an asphalt cap). The proposed SMI Valley Infill double composite liner system will provide an even greater degree of control of infiltration than the current capping system, and therefore, would mitigate potential impacts from filling over the Tantalo Waste Disposal Area. Groundwater monitoring (OU-2) is performed down gradient of the Tantalo Waste Disposal Area, and the SMI Valley Infill will not affect monitoring in these down-gradient locations. In addition, if further electron donor injections are necessary based on monitoring data to enhance monitored natural attenuation within the Tantalo Waste Disposal Area plume, the SMI Valley Infill will not interfere with these injections as ongoing monitoring and maintenance activities have confirmed that such injections are best applied down gradient, outside of the footprint of the Tantalo Waste Disposal Area. Overall, no significant changes or impacts are expected to the land use at the Facility Site, or its operation as a solid waste management facility.

Fugitive dust generation may potentially occur in the Project Area during the construction of the Project and during the operation of the SMI Valley Infill. This impact will be constantly monitored, and mitigation measures will

be implemented to minimize potential impacts. Dust control will be provided by a combination of measures described in Section 2.4.3.12.5 of this DEIS, including quick establishment of vegetative cover, paved entrance road, enforced access road speed limits, road watering, periodic cleaning of paved areas by a street sweeper, and the operation of a wheel wash system for outbound trucks.

No significant adverse impacts to surface water and groundwater resources from the Project are expected to occur. A combination of design features (including a double composite liner system), operational practices and an on-going environmental monitoring program will ensure that no significant adverse impacts will occur as a result of the operation of the SMI Valley Infill. For example, batch discharges from the stormwater detention ponds occurs only after water quality sampling has determined that the discharge is in accordance with surface water quality standards.

The proposed SMI Valley Infill will not result in increased traffic on local roadways because no increase in the currently approved waste acceptance rate is proposed and the large majority of daily and intermediate cover materials have historically been delivered to the Facility from off-site sources not including the adjacent Meadow View Mine. The duration of existing traffic attributable to landfill construction and operation will be lengthened by at least 15 years.

The operational and long-term visual impacts of the proposed SMI Valley Infill will include an increase in the maximum vertical height of the landfill by the time of completion and closure of the Facility. While there will be small increases in the areas from which the Seneca Meadows Landfill can be observed and the degree of visual impact from existing receptors, overall, these visual impacts will be minor and will not affect any historical or visually sensitive receptors. The majority of impacts will occur in the form of the landfill being marginally more noticeable from areas in which it can already be observed. Further analysis of visual impacts can be found in Section 4.5.8. In order to minimize potential visual impacts for as long as possible, the proposed SMI Valley Infill will include a number of mitigation measures as detailed in Sections 4.5.8 and 5.1.

No significant air quality impacts from the proposed SMI Valley Infill are expected to occur. During the year when peak emissions are expected to occur from the SMI Valley Infill, concentrations of compounds modeled specific to landfill gas are not projected to exceed individual health-based guidance values or applicable standards or guidelines established by the United States Environmental Protection Agency (USEPA) and NYSDEC. Nor are significant adverse odor impacts expected to occur. While odors may occasionally be detected, reasonable measures will be employed to minimize off-site impacts, as detailed in Sections 2.4.3.12.7 and 5.3.

The Project is not expected to have any significant adverse impact on the local economy. Instead, it will result in an overall positive economic impact for both the local communities and the local economies. These impacts are associated with continued employment and job creation, fiscal impacts to the Town of Seneca Falls and Town of Waterloo, and other impacts to the area economy which are described in more detail in Section 4.5.1 of this DEIS.

No adverse impacts on local property values are expected to occur as a result of the SMI Valley Infill based on a review of current and historical trends. SMI implemented a “Value Protection Plan” to compensate residential property owners within 3/4 mile of the Facility for monetary loss they incur at the time of the property sale as a result of the operation of the Facility operation. The construction and operation of the SMI Valley Infill is not expected to result in an increase in noise at the nearest receptors from truck traffic and landfill equipment. Nevertheless, potential noise impacts will continue to be mitigated to the maximum practical extent by landfill design features and operational methods and will continue to not exceed the operational limits set forth in the NYSDEC’s Part 360 solid waste management facility regulations. Annual noise monitoring in compliance with Part 360 requirements will continue.

1.7 IDENTIFICATION OF MAJOR BENEFITS OF THE PROJECT

The major benefits of the Project summarized below are presented in Section 2 of the DEIS.

- The Project will provide tong-term and environmentally sound solid waste disposal, ensuring capacity for the disposal of local and regional wastes consistent with the goals and objectives of the New York State solid waste management plan.
- The Project will continue to employ a significant local labor force at the landfill. It will also employ additional individuals who transport the waste, who will provide and transport construction materials (liner, piping materials and soils), and who may be associated with the ancillary landfill operation activities (i.e., operation of leachate treatment facilities).
- The Project will create economic benefit to local vendors and suppliers who will be utilized throughout the duration of the Project.
- The Project, through the utilization of landfill gas-to-energy technology, will provide a beneficial use of landfill gas by creating saleable energy. As presented in Section 2 of this DEIS, resulting lower energy costs will create the potential for additional future development in the area as a result of having a readily available, cost-competitive energy source. In addition, the Project also already has functional infrastructure in place for the production of pipeline quality, high BTU gas. Both of these technologies create beneficial use for landfill gases generated by the Project and will help offset costs of the Project, as well as creating benefit for the local economy with some job opportunities and potential lessened energy costs.
- By developing the SMI Valley Infill at the Facility, SMI is taking advantage of the infrastructure and systems that are in place and functioning. This is a positive aspect of the Project and can be viewed as a benefit and cost savings to the community, as opposed to the development of new infrastructure and systems at another location, potentially causing both additional environmental impacts and economic burdens.
- By placing the SMI Valley Infill above the Tantalo Waste Disposal Area, 26 acres of land which had been previously used for waste disposal will be put to productive use and would otherwise remain as vacant land subject to ongoing monitoring and maintenance without the community benefits as described above.
- Fees paid to the Town of Seneca Falls and the Town of Waterloo are being used by the Towns to help keep down local property tax rates. Any agreement that replaces or succeeds the agreements that currently exists will extend the ability of both Towns to promote economic growth by providing additional services or maintaining low tax rates.
- The Closure Plan for the SMI Valley Infill will provide for the establishment and maintenance of vegetative cover on the final cover system at the Facility. This vegetative cover will include a variety of herbaceous and woody species that will be maintained in a condition that will approximate an upland old field habitat. This habitat can support ground nesting birds and other fauna and will enhance the overall diversity of the ecosystem. The amount of cover created for bird habitat will increase by 47 acres. The implementation of this aspect of the Project, in conjunction with the Wetlands Preserve and Community Education Center developed by SMI, will enhance the potential for eco-tourism and will result in positive economic and environmental impacts for the Town of Seneca Falls and the surrounding area.

1.8 PERMITS AND APPROVALS

For this Project, SMI will seek permits from the NYSDEC, the Town of Seneca Falls, and the Town of Waterloo. SMI will submit to NYSDEC:

- A Part 360 solid waste management facility permit application.
- An application for a modification to SMI's Title V facility permit.
- A Preliminary Stormwater Pollution Prevention Plan (Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity – GP-0-23-001).
- A Change-in-use request for the Tantalo and A/B Landfill Sites [6NYCRR Part 375-1.11(d)].

SMI will submit to the Town of Seneca Falls:

- A permit application in accordance with the requirements of Town Code Section 185.
- An application to the Zoning Board of Appeals for special use permit pursuant to Town Code Sections, 300-105, 300-21(D)(5), and 300-46.

The Project may also require permits and approval from the Town of Waterloo in connection with the relocation of buildings or other structures onto other areas of the Facility that are located in Waterloo:

- Site plan approval (for building or road relocations) pursuant to Town Code Sections 79-5(B), 79-5(C) and 79-7.
- Building and use permit pursuant to Town Code Sections 135-5(A).
- Special use permit for the relocation of the resident drop of facility pursuant to Schedule 1 and Town Code Sections 135-5(D).

In addition, the landfill will be required to renew their current discharge permit with the Town of Seneca Falls wastewater treatment plant (WWTP) prior to its expiration on January 1, 2026.

1.9 CONCLUSIONS

The Project purpose is to add landfill life to the Seneca Meadows Landfill in the Town of Seneca Falls in a timely fashion in order to provide critically needed solid waste disposal services locally and for the State. Development of the proposed SMI Valley Infill will provide for this critically needed solid waste disposal capacity in an environmentally sound and cost-effective manner.

Placement of the SMI Valley Infill above the Tantalo Waste Disposal Area will enhance the current engineering control (low-permeability cap) by adding impervious layers that will further reduce infiltration into the underlying Tantalo waste materials. This will, in turn, further reduce existing leachate head and leachate generation. In addition, use of the Tantalo Waste Disposal Area for critically needed solid waste disposal capacity will beneficially reuse land that would otherwise be restricted and remain vacant. Use of the Tantalo Waste Disposal Area will also not interfere with ongoing down-gradient groundwater monitoring or with future injection of material to enhance monitored natural attenuation, if needed. As such, significant potential environmental impact from overfilling of the Tantalo Waste Disposal Area is not expected.

The unavoidable impacts associated with the Project are generally minor and are necessary in order for this Project to continue to supply uninterrupted, environmentally-sound and cost-effective waste disposal capacity to the residents and businesses of the State and others in the SMI service area.

The design, construction and operation of the proposed SMI Valley Infill will be in accordance with applicable standards and regulatory requirements, in particular the requirements of 6 NYCRR Part 360 pertaining to this type of waste disposal facility as well as Title V air regulations, and local requirements of the Town of Seneca Falls and the Town of Waterloo and will mitigate significant adverse impacts to the maximum extent practical.

Finally, the Project will have a significant positive impact on the local economy and the local community. This coupled with the much-needed waste disposal capacity that will be provided by the Project, will result in a significant public benefit to local residents and the State as a whole.

2.0 DESCRIPTION OF THE PROJECT

2.1 INTRODUCTION AND BACKGROUND

The Seneca Meadows Landfill is operated under New York State Solid Waste Land Disposal Facility (Part 360) Permit No. 8-4532-00023/00041 (SWMF 50S08). Under the current permit, the Facility will reach a peak elevation of 774 feet above mean sea level (MSL), which is approximately 352 feet above the surrounding grade elevation. The currently permitted design capacity at the Facility is 6,000 tons per day. At this rate, the Facility is projected to have sufficient capacity to operate until approximately the year 2025. The current Part 360 Permit expires on December 31, 2025, and will require a renewal for the SMI Valley Infill Project prior to expiration.

The Project involves the development of the SMI Valley Infill in a timely fashion so that SMI can continue to provide critically needed solid waste disposal capacity locally and for New York State.

2.1.1 Statutory Authority

Application for modification to the facilities Solid Waste Management Permit was made on July 13, 2020. Subsequently an Environmental Assessment Form (EAF) was submitted to the NYSDEC and a positive declaration issued in response. A scoping document describing the content and format of a Draft Environmental Impact Statement (DEIS) was issued by the Department on April 10, 2024. This DEIS has been prepared in accordance with the requirements of the State Environmental Quality Review Act, also known as "SEQR" (Article 8 of the New York State Environmental Conservation Law) and the SEQR regulations administered by the NYSDEC, as promulgated in 6 NYCRR Part 617 and follows the referenced scoping document. The permit application, EAF submittal, and scoping document submittals can be seen in Appendix A.

2.1.2 Lead Agency Designation, Public Information Meeting, and DEIS Scoping

SEQR provides procedures for the selection of a Lead Agency from those State or local agencies with jurisdiction over an action. Upon its designation, the Lead Agency is responsible for the environmental review of the action, including the possible issuing of public notices, preparing/accepting draft and/or final Environmental Impact Statements, and, if deemed necessary, the coordination and conduct of public hearings on a DEIS or FEIS.

This DEIS has been prepared to conform to the requirements of SEQR and the scoping document established for the Project. The NYSDEC will be the Lead Agency for the review process of the SEQR scoping document, and this DEIS will be updated as appropriate through the SEQR process. Subsequent details on review contacts and timeline will be included in the DEIS at that time.

2.1.3 Project Description and Background

The Project is defined as a series of physical activities leading to and including the construction and operation of the SMI Valley Infill. The major activities include:

- Preparation of subgrade areas and utilities, including potential temporary removal of a limited portion of the Tantalo Landfill geosynthetic cap.
- Relocation of operational buildings and areas including the maintenance shop areas, some fuel tanks, the wheel wash station, and the residential drop-off center.
- The further development of existing stormwater basins.
- The phased construction and operation of the SMI Valley Infill waste disposal project.

The Facility is constructed and operated in accordance with a number of permits issued by the NYSDEC to meet local, regional and statewide solid waste disposal capacity needs. It is also constructed and operated in

accordance with a number of local permits and a Host Community Agreement with the Town of Seneca Falls and a Community Benefits Agreement with the Town of Waterloo. The Seneca Meadows Landfill is currently permitted to accept approximately 6,000 tons of waste daily and based on its maximum rate of waste acceptance, is expected to be filled to capacity in the year 2025.

The proposed SMI Valley Infill would occur in the existing M-2 zoning district and will be designed, constructed and operated in a manner similar to SMI's currently permitted Facility operations. The Project will involve the construction and operation of a new landfill area in the valley formed by the slopes of the existing Southeast Landfill and Stages 3 and 4 of the SMI Landfill, and the area currently occupied by the Tantalo Waste Disposal Area which was closed per an NYSDEC approved remedial plan.

The operation of the proposed SMI Valley Infill will also involve a height increase of the landfill over certain portions of the SMI Landfill and the Southeast Landfill. The SMI Valley Infill will provide approximately 47 million cubic yards of additional landfill capacity and will accept non-hazardous solid waste (as that term is defined in New York State Solid Waste Management Facility Regulations — 6 NYCRR Section 360.2) from residential, commercial, institutional, and industrial sources. At a waste acceptance rate of 6,000 tons per day, the SMI Valley Infill will meet future regional waste disposal needs for a period of at least 15 years.

A double-composite liner system, designed in accordance with the requirements of 6 NYCRR Part 360, will be constructed beneath parts of the SMI Valley Infill which will receive solid waste and do not already have such a liner system. The vertical component of the SMI Valley Infill will reach a peak elevation of approximately 843.5 feet above MSL. The SMI Valley Infill will include new and expanded leachate collection, active landfill gas collection, and stormwater management facilities which will also be integrated with upgraded systems to serve the Facility.

The Facility hours of operations are as follows:

- Landfill:
  - Landfill Operations – 5:00 a.m. to 8:00 p.m., Monday through Sunday
  - Scale House Operations – 6:00 a.m. to 6:00 p.m., Monday through Sunday
  - The Landfill Facility is prohibited from operating on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Facility may operate the remaining 359 days per year.
  - Placement of daily cover shall be limited to the following: Monday through Sunday 6:00 a.m. to 8:00 p.m.
- Tire Processing Facility (TPF):
  - Normal TPF Operations - 6:00 a.m. to 4:00 p.m., Monday through Friday and Saturday 6:00 a.m. to 11:30 a.m.
  - The TPF is closed on Sundays, New Year's Day, Memorial Day, Independence Day, Labor Day, and Christmas Day.
  - Upon receipt of approval from the NYSDEC, the Facility may expand operations to accommodate peak construction and production period demands. This approval would permit the Facility to operate 6:00 a.m. to 10:00 p.m., Monday through Saturday.

2.2 PROJECT LOCATION

The Seneca Meadows Landfill is privately owned and operated as a non-hazardous solid waste disposal facility located on a portion of the approximately 2,400 acres of land owned by SMI (collectively referred to as the SMI Property) adjacent to NYS Route 414 and Salcman Road in the Towns of Seneca Falls and Waterloo, New York (the Engineering Drawings referenced in Section 1.2). Site access is from NYS Route 414, with the entrance to the Facility Site on the west side of Route 414. Internal roadways have been developed on-site to provide access to various parts of the facility. As explained in more detail in Section 2.3, the Facility Site has been utilized for

waste disposal for over 50 years. The proposed SMI Valley Infill is located on the Facility Site within the M-2 zoning district in the Town of Seneca Falls. Parts of the SMI operation, including operational areas of the SMI Valley Infill, which are located within the Town of Waterloo are within an Industrial (I) zoning designation. The Project Area also includes the Tantalo landfill which is an inactive landfill and Class 4 Inactive Hazardous Waste Disposal Site. Compliance with 6 NYCRR Part 360 Section 16(h) for facilities at or near sites undergoing a remedial program has been evaluated and is discussed throughout this document as well as the Engineering Design Report.

On a regional basis, the Project site is approximately midway between the cities of Syracuse to the east and Rochester to the west, and in close proximity to the NYS Thruway (Interstate Route 90), the principal highway connecting the two. The Project site is approximately 3.5 miles south of the intersection of NYS Route 414 with the NYS Thruway, and approximately 1 mile north of the intersection of NYS Route 414 with NYS Routes 5 and 20 just east of the Village of Waterloo.

2.3 SITE HISTORY

This section presents a summary describing the history of solid waste disposal at the Facility.

2.3.1 Waste Disposal History

The first documented waste disposal on the SMI Property began in 1958 with the purchase of the property by Dorothy and Dominick Tantalo, and written agreements between Mr. Tantalo and a partner to accept municipal wastes from the Village of Waterloo and the Town and Village of Seneca Falls. The waste disposal commenced near the Salcman Road frontage and proceeded north toward Black Brook.

Prior to mid-1974, waste disposal activities were limited to the Tantalo Waste Disposal Area. The fill progressed north and as best as can be determined, moved to the north of Black Brook in approximately June 1974.

Commencing circa 1967-1968, the New York State Department of Health (NYSDOH) and, later, the NYSDEC began regulation and enforcement actions to modernize operations at the Facility and institute waste filling procedures which would protect ground and surface waters. These actions culminated in the negotiation and issuance of a NYSDEC permit for landfill operation in July 1981. This permit included specific measures to protect ground and surface waters and prohibited the disposal of hazardous wastes or industrial wastes not compatible with municipal wastes.

A Part 360 permit allowing the development of the Southeast Landfill and the A/B Overfill was initially issued in April 1999 and modified in May 2001, and April 2002. Presently, solid waste disposal operations on the SMI Property are conducted in accordance with a Part 360 permit for the 181-acre 2007 Landfill Development that was initially issued in August 2007 and modified in October 2007. In connection with the 2007 Landfill Development, the NYSDEC had previously issued an Article 24 Freshwater Wetlands permit on October 5, 2006, and federal Clean Water Act Section 401 Certification on October 27, 2006. Most recently, the Part 360 Permit was renewed in 2017 and incorporated changes such as the TPF. These Part 360 permits and modifications are discussed in Section 2.3.2, below.

Other portions of the Facility have previously been utilized for scrap metal salvage, soil mining, and the treatment of food processing waste. There is also the TPF at the Facility, as well as a residential drop-off center for residential disposal of permitted wastes. A discussion of the past activities is also presented in the following sections.

2.3.2 Permit History

SMI assumed control of the landfill in 1983 and has operated the Facility since that time under a series of NYSDEC permit renewals and modifications, as detailed below.

Wastes deposited at the Facility since the issuance of the 1981 permit have consisted solely of municipal wastes, construction and demolition debris, and compatible, non-hazardous industrial wastes. The Seneca Meadows Landfill has also been progressively upgraded through the installation of liners, stormwater management facilities, and leachate and gas collection systems as the landfill progressed. In addition, on-site sampling of ground and surface waters continue to be implemented and conducted to monitor conditions.

A brief review of the permit history for the Facility follows. Emphasis is placed on permits issued by the NYSDEC pursuant to 6 NYCRR Part 360.

July 1981

The first NYSDEC permit for landfill operations on the Facility Site was issued on July 13, 1981, with expiration July 13, 1984. It authorized continuation of construction and operation of a landfill in accordance with the requirements under Part 360, but not within the area now defined as the Tantalo Waste Disposal Area. The permit included special conditions to implement a specified program of surface and groundwater monitoring, the posting of financial performance guarantees, the provision of surface water and flood control improvements, the installation of groundwater monitoring wells, the development of closure and post-closure plans and escrow agreement, the specification of operating hours, specification of liner requirements for new zones, and the installation of a leachate collection system.

The review process for this permit included preparation of an environmental impact statement, conducting a public hearing, and a hearing and decision by an Administrative Law Judge. These procedures led to the special conditions imposed. Plans and specifications prepared for the landfill in compliance with this permit indicate a final height of 540 feet above MSL which is approximately 60 feet above the surrounding grade elevation of approximately 480 feet.

August 1985

An application for renewal of the Part 360 permit was submitted in 1984 and resulted in the issuance of a permit dated August 7, 1985, with expiration of August 7, 1990, to SMI, the owner of the Facility Site at that time. This permit was for the continuation of the construction and operation of a landfill in accordance with Part 360 with final elevations as contained in plans approved in 1982 as part of the former permit.

January 1987

A revision to the 1985 Part 360 permit was issued to SMI on January 20, 1987, with expiration August 7, 1990, allowing an increase in the annual waste disposal from 450,000 tons to 660,000 tons. The permit stated that this would result in no increase in the areal extent of the landfill. A Negative Declaration was issued for this permit modification. Special conditions included upgrades and technical changes to surface water management and liner specifications, and an increase in the funding for the on-site environmental monitor to a full-time position.

July 1989

A permit modification was issued on July 17, 1989, with expiration of December 31, 1991. This resulted from an application made by SMI in 1987 to alter the final approved grades at the landfill to allow a height increase to 580 feet, an increase of approximately 40 feet over the then-approved plan. The review included the preparation of a supplemental environmental impact statement, conducting a public hearing, and a hearing and decision by an Administrative Law Judge. The NYSDEC Region 8 office concurred in the issuance of the permit, noting that new conditions will result in the improvement of landfill operations over those in the previously existing permit. Special conditions included specification of cap and liner for wastes placed over existing waste disposal areas and specification of drainage and leachate collection system extension to these areas.

March 1993

A permit was issued to SMI on March 31, 1993, with expiration on March 31, 2000. This permit was for a modification and renewal of the previous permit to allow an increase in the final elevation of the landfill to a

maximum 707 feet, an increase of 127 feet over the previously approved final grade. It was stated that this would increase the Facility capacity by approximately 2.4 million tons which translated to an increase in expected life by approximately 4 years at the maximum disposal rate of 660,000 tons per year in force at the time of permit application and issuance.

October 1993

A permit modification was issued in October 1993 with expiration of March 31, 2000, to revise final grades in the northeast quadrant of the landfill without any increase in final landfill height.

June 1995

A modification was issued on June 27, 1995, with expiration on March 31, 2000, which increased the annual waste disposal limit by 10 percent to 726,000 tons per year. It is noted that the daily limit of 3,500 tons per day in the then-existing permit was not altered.

April 1999

A permit was issued to SMI on April 13, 1999, with expiration of April 13, 2009. This resulted from an application made by SMI in June 1995 to expand the Existing Landfill via the 3-acre, 56 vertical foot A/B Landfill. The vertical development of the Existing Landfill resulted in a height increase of approximately 56 feet to a peak elevation of approximately 763 feet above MSL. At that time, SMI also applied for permission to construct and operate the Southeast Landfill which would encompass approximately 67 acres and reach a peak elevation of approximately 704 feet above MSL. A daily intake limit of 4,700 tons per day was sought.

On November 9, 1998, a legislative hearing was held before Administrative Law Judge (ALJ) Kevin J. Casutto at the Veterans of Foreign War Memorial Hall, Waterloo, New York. An issues conference was commenced immediately following the legislative hearing, at the same location. The issues conference was continued and concluded on January 20, 1999, at the same location. The issues conference record was closed on February 4, 1999. At the legislative hearing, seventeen members of the public offered comments on the permit application. Several written comments also were received.

A few of the speakers during the legislative hearing supported the Project. Several other speakers expressed concern about possible adverse environmental impacts of the Project, including 1) difficulties in monitoring landfill liner leaks that may occur, since the proposed development would be on top of the existing unlined landfill and will be adjacent to the Tantalo inactive hazardous waste site; 2) impacts of the Project on the nearby Montezuma National Wildlife Refuge; 3) odor and noise control; 4) traffic-related concerns; 5) visual/aesthetic concerns; and 6) assurance of closure funds. These matters were addressed at great length during the issues conference.

Petitions for full party status were received from Leland C. Henry (a Town of Waterloo Councilman) and from the Town of Waterloo. The Town of Waterloo and Mr. Henry were represented as consolidated interveners. Because NYSDEC Staff had no objection to the application, the burden of persuasion was on the interveners to show that substantive and significant issues existed.

On February 12, 1999, the ALJ ruled that the interveners had failed to raise any adjudicable issues and directed that the matter be remanded to NYSDEC Staff to complete the SEQR process required, including preparation of a Statement of Findings, completion of the SEQRA notice and filing requirements for completion of a Final Environmental Impact Statement. NYSDEC Staff was further directed to issue permits to SMI with conditions as set forth in the then draft permits, which it did on April 13, 1999.

May 2001

A modification to the 1999 Part 360 permit was issued to SMI on May 10, 2001, allowing an increase in the daily waste disposal from 4,700 tons per day to 6,000 tons per day.

February 2002

A second modification to the 1999 Part 360 permit was issued on February 18, 2002, to permit a revision to the primary liner system and a reduction in the soil sampling and testing requirements for the certification of the liner system.

August and October 2007

The NYSDEC issued Part 360 permits in August and October 2007 authorizing the construction and operation of an approximately 181-acre landfill development (the 2007 Landfill Development) on the Facility Site in the Town of Seneca Falls. The NYSDEC had issued an Article 24 Freshwater Wetlands permit on October 5, 2006, and federal Clean Water Act Section 401 Certification on October 27, 2006.

The 2007 Landfill Development allowed SMI to continue landfilling operations at the acceptance rate of 6,000 tons per day to provide critically needed solid waste disposal services locally and for New York State at a properly zoned site with the required support facilities, work force, and acceptable transportation access.

The 2007 Landfill Development involved a vertical and horizontal expansion of a portion of the Existing Landfill and the Southeast Landfill. The 2007 Landfill Development provided approximately 31.2 million tons of additional landfill capacity and included a double-composite liner system beneath part of the Landfill Expansion area that will receive solid waste which does not already have such a liner system. The vertical component of the 2007 Landfill Development will reach a peak elevation of approximately 774 feet above MSL and included new and expanded leachate collection, active landfill gas collection, and stormwater management facilities which are integrated with upgraded systems to serve the Facility.

With the approval of the Part 360 permit and other approvals for the 2007 Landfill Development, the Facility continues to be constructed and operated in accordance with applicable permit requirements and continues to meet local, regional and statewide solid waste disposal capacity needs.

Development of the 2007 Landfill Development required the taking of approximately 71 acres of wetland and the realignment and enhancement of a portion of the Black Brook. The main channel of the Black Brook, which formerly bisected the Facility, between the Existing Landfill to the north and the Southeast Landfill to the south, was redirected into a tributary that flows outside of the footprint of landfill activities. The realignment of Black Brook resulted in temporary wetland impacts related to construction, and these wetland areas were restored and/or enhanced following completion of construction activities.

In connection with the wetlands disturbance and stream realignment noted above, the NYSDEC issued an Article 24 Freshwater Wetlands permit on October 5, 2006, and Federal Clean Water Act – Section 401 Certification on October 27, 2006. As part of those approvals SMI mitigated impacts resulting from wetlands disturbance with a 585-acre mitigation project to the east of the Facility.

Other aspects of the 2007 Landfill Development project included:

- Construction of a new bridge on New York State Route 414 over a realigned portion of Black Brook.
- Relocation of the tire processing facility, maintenance shop and storage building, and the Salcman Road landfill entrance.
- Construction of additional sediment and stormwater retention basins.
- Relocation of third party owned utility lines.

October 2017

Most recently, a renewed and modified Part 360 Permit was issued that became effective on October 31, 2017. permit Number 8-4532-00023/00001-0 (Facility #50S08) expires on December 31, 2025. This most recent permit modification recognized landfill development area EX-2, which had recently been submitted for construction approval as planned in the 2006 Permit Application. The permit outlined the intent to continue construction of landfill areas as depicted in the 2006 Engineering Drawings set Drawings C-5 through C-10. Construction of these

areas is planned to provide enough air space to keep the landfill open until the SMI Valley Infill project is approved and the initial phase can be constructed.

The October 2017 permit renewal also incorporated the TPF (see Sheet 5 of the Engineering Drawings from this Part 360 application) into the Facility's permit. Other major aspects of the Facility's operations, such as waste acceptance rates, were not altered under the permit modification.

2.3.3 Tantalo Waste Disposal Area

The Tantalo Waste Disposal Area is an approximately 26-acre area located within the SMI Property and was originally listed by the NYSDEC as a Class 2 Inactive Hazardous Waste Disposal Site (No. 850004). As noted above, it received various municipal and industrial waste streams from 1958 until 1972. Upon completion of the remedial measures described below, in May 2009 the site was reclassified to Class 4 on the New York State Registry of Inactive Hazardous Waste Sites because the site no longer poses a significant threat to public health or the environment. The site is currently in the operations, maintenance and monitoring phase of this remediation.

This area is bordered by the Southeast Landfill to the east and the 2007 Landfill Development to the west and north. Remedial Investigations (RIs) and a Feasibility Study (FS) of the site were prepared and submitted to the NYSDEC on behalf of SMI. Existing site conditions, including the nature and extent of contamination, public health risks, and ecological impacts, were evaluated through a comprehensive, two-phased RI (Preliminary RI and Supplemental RI) performed under NYSDEC review in accordance with the National Contingency Plan. Data from over 200 monitoring wells, piezometers or soil borings were evaluated in connection with the RI work. The studies also considered data gathered from geophysical investigations, test pit excavations within and around the perimeter of the waste disposal area, hydraulic conductivity and aquifer testing, water level measurements, a survey of nearby residential water wells, and laboratory analysis of groundwater, air, soil, waste and leachate samples. A public health risk assessment and ecological risk assessment were also conducted. The risk assessments concluded that the nature and the extent of contamination attributable to the site does not currently present an unacceptable risk to human health or the environment.

The final RI/FS report was submitted in 1997 and a Record of Decision (ROD) was signed in March 1998. The ROD called for the capping and containment of the Tantalo Waste Disposal Area. This formal closure and geocomposite capping of the Tantalo Waste Disposal Area is referred to as operable unit one (OU-1). The bedrock groundwater was dealt with as a second operable unit, referred to as OU-2. The RI/FS report for OU-2 was submitted in 1999 and a ROD for OU-2 was issued in March 2001. OU-2 addresses the bedrock groundwater beneath the Tantalo Waste Disposal Area and surrounding areas to the west, south and east. The ROD-selected remedy includes enhanced natural bioremediation by injection of electron donor materials into the bedrock aquifer to enhance the degradation of TCE and its byproducts through reductive dechlorination. In addition, the ROD for OU-2 called for enhanced environmental monitoring to confirm the effectiveness of the remediation.

The ROD for OU-1 was modified in 2003 to allow for clarification in the definition of Comparable Structural Fill (CSF). The Remedial Design for OU-1 was approved by the NYSDEC and a consent order was signed in August 2003 for implementation of the remedy. The Remedial Construction for OU-1 began in the fall 2003, and the NYSDEC deemed the construction of the OU-1 remedy complete as of August 9, 2007.

A consent order was signed in December 2004 by SMI and the NYSDEC for the design and implementation of the approved OU-2 remedy. From March 2006 through November 2007, SMI implemented the remedy for OU-2, which involved initial injections of both fast-acting and long-acting electron donor materials. Following these initial injections, the implementation of the remedy was documented in a June 2008 Remedy Completion Report which was approved by the NYSDEC in August 2008. The OU-2 remedy also entered the operations, maintenance, and monitoring phase at this time. Since completion of the initial electron donor injections, based on groundwater monitoring data, two supplemental electron donor injections were performed to further enhance natural attenuation. The last injection event was completed in 2014. Ongoing monitoring of both OU-1 and OU-2 indicates that both remedies have been successful and are meeting the remedial action objectives. Periodic Review

Reports are submitted annually to the NYSDEC, which provide the certifications that the remedies are performing as intended and meeting the remedial action objectives.

Although a change-in-use request for the Tantalo Waste Disposal Area is part of the SMI Valley Infill project, the overall objectives of the remedial efforts will remain the same and the SMI Valley Infill project is expected to provide additional control of leachate infiltration in the Tantalo Waste Disposal Area. The change-in-use will not significantly alter the current functions of the Tantalo Waste Disposal Area, as the type of engineering controls utilized for the remedy will not change. As it is a Class 4 Site, the Tantalo Waste Disposal Area will continue to be monitored and is not considered to pose a threat to public health as a result of the Project.

No significant adverse impacts to surface water and groundwater resources from the Project are expected to occur from the Tantalo Waste Disposal Area. A combination of design features (including a double composite liner system), operational practices and an on-going environmental monitoring program will ensure that no significant adverse impacts will occur as a result of the operation of the SMI Valley Infill. In accordance with 6NYCRR Part 360-16(h), an evaluation has been completed to assess impacts that the proposed SMI Valley Infill project may have on potential, ongoing, or completed inactive hazardous waste disposal site remedial programs associated with the Tantalo Waste Disposal Area. This evaluation is included as part of the Engineering Design Report for the SMI Valley Infill. Based on the assessment presented in this report, the proposed SMI Valley Infill will neither interfere with potential, ongoing, or completed remedial programs at the Tantalo Waste Disposal Area, interfere with the ability to monitor those remedial programs, nor expose the environment or public health to a significantly increased threat of harm.

2.3.4 A/B Landfill Area

The southerly portion of the SMI Landfill includes a 55-acre area that reportedly received hazardous waste for disposal. This occurred prior to New York State regulations which defined certain waste as hazardous and prohibited such disposal. Information in this section is derived principally from the 1998 DEIS (Wehran – New York, Inc., 1998) and from the Registry of Inactive Hazardous Waste Disposal Sites in New York State (NYSDEC, 2003).

This area on the north side of Black Brook was originally designated as a Class 3 inactive waste site (Site No. 850009). It is noted that Class 3 sites are described as those which do not present a significant threat to the public health or the environment and for which remedial action may be deferred.

The NYSDEC issued a Fact Sheet and a Record of Decision (ROD) on March 27, 1996, which determined that there was presumptive containment of the site with continued operation of the landfill gas recovery system, continued operation of the groundwater collection system, and continued monitoring that together provided suitable closure for this landfill area. The site has since been reclassified to Class 4 status meaning that the Facility is properly closed, and poses no significant threat to the environment or public health, but requires continued monitoring.

This inactive hazardous waste disposal area is overlain by parts of the A/B Landfill area which was developed pursuant to the 1999 Part 360 permit. The A/B Landfill area will also require a change-in-use request to allow for further overfilling of the area during the course of the SMI Valley Infill project. However, the actual usage of the Facility Site (overfilling of wastes) will remain the same as current.

No significant adverse impacts to surface water and groundwater resources from the Project are expected to occur from the A/B Landfill area. A combination of design features (including a double composite liner system), operational practices and an on-going environmental monitoring program will ensure that no significant adverse impacts will occur as a result of the operation of the SMI Valley Infill. In accordance with 6NYCRR Part 360-16(h), an evaluation has been completed to assess impacts that the proposed SMI Valley Infill project may have on potential, ongoing, or completed inactive hazardous waste disposal site remedial programs associated with the A/B Landfill area. This evaluation is included as part of the Engineering Design Report for the SMI Valley Infill.

Based on the assessment presented in this report, the proposed SMI Valley Infill will neither interfere with potential, ongoing, or completed remedial programs at the AB Landfill Area, interfere with the ability to monitor those remedial programs, nor expose the environment or public health to a significantly increased threat of harm.

2.3.5 Borden, Inc., Wastewater Lagoons

In the area east of the northerly third of the Tantalo Waste Disposal Area, three surface lagoons were constructed, reportedly in 1970, for the purposes of treating food processing waste. This parcel was formerly owned by the Greenwood Cannery/Borden, Inc., and this waste treatment operation continued until approximately 1979. In the early 1980s, the northernmost lagoon was filled in and the southern lagoons were used as agricultural ponds to irrigate adjacent farmlands. SMI petitioned the State to regrade and drain the ponds in 1989. General Testing Corporation of Rochester, New York obtained three individual and one composite sample from each pond for analysis of hazardous substance list (HSL) organics, acid extractables/base neutrals, pesticides, PCBs and select metals. The results of the analysis indicated only the presence of trace concentrations of metals. Based on this data, the State permitted the draining and regrading of the ponds, which was accomplished between August 1990 and February 1991.

These previously abandoned lagoons lie within the approved footprint of the Southeast Landfill and were believed to have been approximately 5 feet deep. As the design and construction of the Southeast Landfill resulted in the excavation of soils in this area, the presence of the former lagoons had no meaningful effect on the performance of the facility.

2.3.6 Klionsky Scrap Metal Salvage Yard

The parcel located to the west of the Tantalo Waste Disposal Area was formerly owned by the Klionsky Scrap Iron and Metal Company. This approximate 50-acre area is located within the footprint of the 2007 Landfill Development area. The Klionsky firm sorted and salvaged metals and other commercially valuable items from material collected and disposed of valueless residues at the Tantalo Waste Disposal Area. The Klionsky Company operations were accessed through a driveway off Salcman Road located approximately 0.3 miles east of Burgess Road. In 1977, the Klionsky Company retained Erdman Anthony Associates to prepare an application for construction of a solid waste landfill at the site. Although this permit was subsequently issued, the landfill was never fully developed in this area of the site.

This area lies within the approved footprint of the 2007 Landfill Development and was the previous location of the Facility's TPF and yard debris areas.

2.4 PROJECT DESIGN

As noted in Section 2.1.3, the Project is defined as the series of phased physical activities leading to and including the SMI Valley Infill. These are:

- Preparation of subgrade areas and utilities, including potential temporary removal of a limited portion of the Tantalo Landfill geosynthetic cap
- Relocation of operational buildings and areas including the maintenance shop areas, some fuel tanks, the wheel wash station, and the residential drop-off center.
- The further development of existing stormwater basins,
- The construction of double composite landfill liner systems and the operation of the SMI Valley Infill.

A discussion of the design of each of these aspects of the Project is presented below.

2.4.1 Preparation of Subgrade and Related Activities

Prior to the construction of the SMI Valley Infill, the future lined areas of the SMI Valley Infill will need to be prepared with appropriate utilities and grading for the installation of the SMI Valley Infill baseliner. The area will also need to be prepared for the continued operation of environmental controls and site utilities for both the Seneca Meadows Landfill and Tantalo Waste Disposal Area even after the area is overfilled with wastes.

The base of the proposed development will be founded in the unconsolidated deposits occurring naturally at the Facility Site. There is a need for undercutting and removal of native subgrade soils based on the occurrence of a bedrock knob at the southern portion of the landfill that will require removal and replacement with structural fill to meet bedrock separation requirements.

The engineering properties of these soils have been characterized through the geotechnical sampling and testing program performed as part of the geotechnical investigation. The details of the field and laboratory geotechnical testing program are contained in the Hydrogeologic Investigation Report, submitted as a part of the Part 360 Permit Application.

Subgrade will be prepared in accordance with the Engineering Design Report and Part 360 requirements to minimize the potential for damage to the baseliner and ensure an even, durable installation.

2.4.1.1 Removal of the Tantalo Landfill Cap

As part of the subgrade preparation for the SMI Valley Infill, parts of the subgrade and/or secondary leachate collection system may be designed so that base grades are located within the existing Tantalo waste mass. Temporary removal of portions of the Tantalo Waste Disposal Area geosynthetic cap that is required as part of this work will be performed carefully and scheduled in such a manner so as to minimize leachate infiltration and potential damage to the liner. The approximate limits of the disturbance of the Tantalo cap can be seen in Figures 2-1. The southeast area of removal is required to establish subgrade, are limited in size, will be relatively shallow in depth and will not extend into the original waste mass. That is, the excavations will be limited to material that was placed as structural fill to establish grades that would shed water off the top of the cap. At the southwest area of Tantalo, the portions of the Tantalo waste mass which are currently under an enhanced asphalt cap will be moved to a more protective location that will be capped with geomembrane as part of the Project.

With respect to waste excavation, it is anticipated that the waste will be predominantly MSW; however, in the event that industrial waste is encountered, the following procedures will be followed.

Suspected industrial or potentially hazardous waste will be temporarily staged adjacent to the excavation area. This would include ash, slag or other waste that is not consistent with typical MSW or waste that exhibits a PID reading of 20 ppm or greater. The waste will be screened with the PID either in place (i.e., immediately prior to excavation) or during the excavation activities. The temporarily staged waste materials will then be tested using the Toxicity Characteristic Leaching Procedure (TCLP) in accordance with EPA guidelines for sampling and testing suspected hazardous waste. More specifically, representative sampling (40 CFR § 260.10) will be completed in accordance with the guidelines in the document titled, RCRA Waste Sampling Draft Technical Guidance – Planning Assessment and Implementation, August 2002. If the TCLP analysis of suspect waste meets or exceeds the RCRA toxicity characteristics of a hazardous waste, appropriate off-site waste disposal methods will be determined for that material. Although not anticipated, if drums are encountered, they will be set aside on containment pallets, tested, and appropriately disposed of off-site, as needed.

If the suspect waste does not meet or exceed the RCRA toxicity characteristics (i.e., it is not hazardous), it will be disposed of on-site in the active SMI Landfill. Similarly, typical MSW that does not exhibit elevated PID readings or does not visually appear to be of an industrial nature (i.e., ash, slag, or similar materials would be considered industrial waste) will also be disposed of within the active working face of the SMI Landfill.

As an alternative, and if approved by the Department, waste can be relocated to the north end of the Tantalo site as seen in Figure 2-2.

Specific health and safety procedures for the construction related to the Tantalo Waste Disposal Area will be provided in the work plan that will be submitted prior to that work based on actual construction conditions at that time.

Potential required repairs to the geosynthetic cap will follow the original specifications and construction quality assurance (CQA) protocol from the original construction plans for the cap.

2.4.1.2 Bedrock Removal

As mentioned above, a bedrock knob is present along the southernmost cell of the proposed development. Bedrock associated with this knob will require removal as part of the overall work to achieve practicable subgrade conditions for the liner installation.

Removal of the bedrock, which is described in more detail in Section 4.1.2, will entail the use of in-situ blasting followed by conventional excavation. The limits of bedrock removal are depicted on Sheet 7 of the Engineering Drawings. Following removal of the bedrock, structural fill consisting of clayey and silty soils will be placed in the excavation to achieve the required 10 feet of separation between the bottom of the liner system and top of bedrock.

2.4.2 Relocation of Operational Buildings

As part of the design for the SMI Valley Infill, certain operational buildings and areas will eventually become part of the landfill waste footprint. These include, but are not limited to, the maintenance shop, the fueling area, the wheel wash area, a leachate and concentrate evaporator, and the residential drop-off center / Citizens Dropoff Area (CDA).

In conjunction with the SMI Valley Infill project, SMI will continue to utilize the facilities listed above at their current locations until such time as the phased development of the SMI Valley Infill requires their relocation. The final locations of these facilities are depicted in the Engineering Drawings on Sheet 11. The Engineering Drawings are being submitted as a separate part of the Part 360 permit application.

2.4.3 Construction and Operation of the SMI Valley Infill Area

The proposed SMI Valley Infill will also involve height increase over certain portions of the Existing Landfill, as depicted on Sheet 19 of the Engineering Drawings. A double composite liner system, designed in accordance with the requirements of 6 NYCRR Part 360, will be constructed beneath parts of the SMI Valley Infill which do not already have such a liner system. A porewater drain may also be constructed in appropriate areas. The vertical component of the SMI Valley Infill will not exceed a peak elevation of approximately 843.5 feet above MSL. The SMI Valley Infill will include new and expanded leachate collection, active landfill gas collection, and stormwater management facilities which will be integrated with upgraded systems to serve the Facility.

This section of the DEIS presents a general discussion of the proposed facility design; additional details about the design and construction of the SMI Valley Infill are presented in the Part 360 permit application. Some of the SMI Valley Infill will occur as height increase over certain portions of the SMI Landfill, the Southeast Landfill and the 2007 Landfill Development, while the development over the Tantalo Waste Disposal Area will represent an addition to the SMI Landfill area. Additional construction for roads and support facilities to the landfill areas will also take place around the southern and southwestern end of the landfill area. The SMI Valley Infill Area represents a total of approximately 47 acres of new landfill liner including approximately 26 acres of the former Tantalo Waste Disposal Area. It also includes approximately 126 acres of overfill, or vertical expansion, acres of areas that have already been developed for landfill area.

The proposed SMI Valley Infill will be designed, constructed and operated in accordance with the requirements of 6 NYCRR Part 360, 6 NYCRR Part 201, and other applicable regulations.

2.4.3.1 Landfill Area Configuration

The following considerations contributed to the location and configuration of the proposed SMI Valley Infill:

- The SMI Valley Infill is situated on property owned by Seneca Meadows, Inc., and is entirely within the Town's M-2 district, which allows for refuse disposal and reclamation activities.
- The configuration of the SMI Valley Infill has been designed to maintain a minimum separation distance of 100 feet between the Facility Site boundary and the limit of proposed waste placement specified in the Part 360 regulations.
- The SMI Valley Infill project has been designed to minimize required changes to the Facility's stormwater management plan and system, including the avoidance of constructing new stormwater retention basins as much as possible. Existing stormwater basins will be expanded if needed to accommodate runoff volumes. The overall footprint of the landfill will not increase significantly, and some areas receiving new liner such as the Tantalo Waste Disposal Area are already incorporated in the stormwater runoff collection system. In addition, "expanded" areas of the baseliner are immediately adjacent to the existing landfill on the north, east, and west sides.

Sheet 19 of the Engineering Drawings illustrates the conceptual final grading for the SMI Valley Infill.

2.4.3.2 Design and Layout

The SMI Valley Infill will be developed in operational stages for the construction, operation, and closure activities, to allow for the phased development of the Project. This phasing plan depicted on Sheets 12 through 19 of the Engineering Drawings will provide the following advantages:

- Minimize exposure of the liner system.
- Reduce the potential for leachate generation.
- Mitigate impacts associated with windblown litter and odor.
- Maximize the rate at which outside slopes achieve final grade, in order to minimize leachate generation and visibility of site operations.
- Fill in a manner that complements the construction of future cells and permits relative ease of access to the working face.
- Maximum elevation of the landfill and visual impacts will be minimized for as long as possible for the purpose of sound level control and aesthetics.
- Sequential closure of completed areas.

2.4.3.3 Other Structures

Existing structures at the Seneca Meadows Landfill will be utilized to support the operations of the proposed SMI Valley Infill. The main access road, truck scales and scale house, landfill office, maintenance facility/maintenance shop, landfill gas collection, and parking areas will be available for use by the proposed SMI Valley Infill operations. While some of this infrastructure, such as the maintenance facility/maintenance shop, will be relocated in connection with the Project, these facilities can continue to be utilized in the early phases of the SMI Valley Infill, until such time as the phased construction requires their relocation. In addition, the landfill gas -to-energy facility and a renewable natural gas (RNG) facility owned and operated by Seneca Energy will be available to accept landfill gas to support the Project.

See Section 2.4.2 for further information on relocation of buildings.

2.4.3.4 On-Site Roadways and Vehicle Maneuvering Areas

The existing landfill entrance, located on Salcman Road, at its intersection with NYS Route 414, will continue to be utilized in connection with the SMI Valley Infill. Waste delivery vehicles will use this Facility entrance, proceed to the scale house and to untarping areas before proceeding to the landfill working area. Exiting vehicles will proceed to the wheel wash facility prior to their departure. Construction and operation of the SMI Valley Infill will continue to utilize existing internal roadways. These on-site roadways are depicted on the Facility Site Plan presented on Sheet 5 of the Engineering Drawings. As stated above, some areas of Site traffic, such as the wheel wash, will require eventual relocation. Facilities will be relocated and maintained in such a way so as to continue current site practices as conveniently as possible during construction and operation of the SMI Valley Infill. Future road layout and conditions are also depicted on Sheet 11 of the Engineering Drawings.

2.4.3.5 Liner and Leachate Management

The development of a proven system to efficiently manage the leachate generated during the life of a waste disposal facility includes: an estimate of the leachate generation rate; the design of the baseliner; the functioning of the overall leachate management system, including the collection and transfer system; the design of the final cover; and the mechanisms for the treatment and disposal of the collected leachate.

The SMI Valley Infill baseliner system includes provisions for management of leachate generated during operations and post-closure conditions of the SMI Valley Infill. In accordance with Part 360 requirements, the baseliner design will provide for both primary and secondary collection and removal of leachate. The proposed SMI Valley Infill baseliner will meet, at a minimum, the requirements of Section 363-6.7. The components of the liner systems on slopes of less than 10 percent, in ascending order, are as follows:

- Prepared subgrade.
- Porewater collection system, where subgrade is below the seasonal high groundwater table, consisting of the following:
    - Geocomposite drain (GCD) with associated pipe network.
- Two-foot-thick secondary soil liner.
- 60 mil textured secondary HDPE geomembrane.
- Secondary GCD collection layer with embedded pipe network.
- One-foot-thick secondary leachate collection soil layer (only placed on slopes less than 10%).
- Geosynthetic clay liner (GCL).
- 80 mil textured primary HDPE geomembrane.
- Geotextile cushion.
- 12-inch-thick natural aggregate (No.1 stone, minimum) leachate collection layer with embedded pipe network.
- 18-inch-thick tire chip layer.

Portions of the waste placement areas for the SMI Valley Infill will be in areas where waste has recently been placed in portions of the Southeast Landfill (SELF), the Western Expansion (WEX) and other portions of the landfill as seen in Figure 1-3 and 1-4. In these areas, the waste will be placed over recently constructed landfill cells with double composite liner systems that were designed and constructed in accordance with Part 360 regulations. Consistent with Part 363-6.1(e) of the regulations, this type of lateral expansion is allowed provided there is a double composite liner system in place. As demonstrated by the liner performance metrics (liner leakage rates), data (groundwater data presented in annual reports supporting conclusions that the existing double composite Part 360 liner systems are not contributing to groundwater impacts) and observations (regular video inspections leachate collection system) described in the Engineering Design Report, the existing double composite liner systems to be overfilled as part of the SMI Valley Infill currently functions and perform as originally designed and intended and will continue to function and perform as originally designed and intended throughout the SMI Valley Infill project.

In addition, the baseliner system will contain a porewater drainage system beneath the baseliner itself (south end) to ensure stability for the baseliner during seasonal high-water tables. More information on the porewater drain can be found in Section 2.4.3.6.

The leachate collection system is divided into four components: a leachate collection system, a leachate conveyance system, a leachate storage and transfer system, and a leachate treatment system. Each of these components has been designed in accordance with the applicable design and performance criteria set forth in 6 NYCRR Sections 363-6.10, 363-6.11, and 363-6.20.

The proposed leachate collection and conveyance system consists of four main components as described below:

- Installation of leachate collection sumps and pumps.
- Placement of sideriser stations which house and protect the flow meters, sampling ports and level controllers.
- The flow meters, sampling ports and valves which provide control and effective monitoring of the system.
- The leachate conveyance system which consists of the leachate pressure pipe systems, flow meters, sampling ports, manholes, cleanouts and monitoring risers.

This conveyance system will transfer leachate from the landfill cells to the existing leachate storage/transfer facility. The design of each of these components will be presented in the Engineering Drawings and Engineering Design Report.

The treatment and disposal of the leachate from the SMI Valley Infill will be consistent with that of the currently operating landfill. The existing biological and RO treatment systems will continue to operate in conjunction with an evaporator to reduce volumes. Leachate recirculation of the biologically treated raw leachate is also being pursued under the existing permit to help manage the volumes. Treated leachate that is not evaporated will continue to be trucked to appropriate treatment facilities. Finally, SMI is proactively working to implement a pilot process under the existing permit that will reduce PFAS within the leachate.

2.4.3.6 Porewater Drainage System

To maintain groundwater heads below the double composite liner system, a porewater drainage system will be installed on the prepared subgrade of the areas where the seasonal high groundwater table elevations are above the bottom of the liner system elevations. The extent of the porewater drainage system is shown on, Sheet 7 of the Engineering Drawings. The porewater drainage system will be dewatered until such time as the head above the liner system is equalized by the liner system and overlying waste, and will help provide a firm, stable foundation upon which the liner system will be constructed.

The proposed porewater drainage system for the SMI Valley Infill is consistent with the existing and permitted infrastructure. The proposed and existing porewater drainage systems consists of the following components:

- A geocomposite drain (GCD) or a stone mat as a blanket drain over the area in which porewater collection is necessary.
- Piping along the low points of the porewater drainage system to collect the groundwater and convey it to a sump.
- A sump and submersible pump from which collected porewater will be pumped to the Facility-wide stormwater system.

2.4.3.7 Landfill Gas Management

The active gas collection system for the proposed SMI Valley Infill will be similar to the system that has been installed in the other sections of the landfill. The system is designed to prevent the build-up of excess landfill gas pressure within the landfill and to control both subsurface gas migration and surface emissions to the atmosphere. The design consists of features to ensure compliance with the gas collection standards specified under the New

Source Performance Standards/Emission Guidelines (NSPS/EG) for new MSW landfill sites (40 CFR Part 60, Subpart WWW, Standards of Performance for New Municipal Solid Waste Landfills, 6 NYCRR Parts 208 and 363).

The A/B Landfill gas (LFG) collection system is comprised of gas extraction devices and lateral and header piping for transporting collected landfill gas from below the overfill liner system to the SMI Landfill's bypass header system. The landfill gas bypass header system conveys the collected landfill gas to the existing on-site treatment facilities for disposal. The existing gas extraction devices consist of horizontal gas collection trenches, additional vertical gas extraction wells, and modified existing vertical gas extraction wells below the A/B Landfill overfill liner system.

The landfill gas bypass header system is sized to handle the maximum expected landfill gas generation rates for both the SMI Landfill and A/B Landfill conditions. Condensate collection tanks are placed at low points along the landfill gas bypass header system. Collection trenches were used to collect landfill gas from the operational areas of the A/B Landfill and later became part of the final active gas collection system as final cover was placed. The gas collection system is also connected to leachate collection system components (i.e., pump stations, leachate pumping wells, and cleanout risers) of the SMI Landfill and the A/B Landfill so that landfill gas collected in the leachate system can be removed and transported to the existing on-site landfill gas control system.

The gas collection system for the Southeast Landfill and the 2007 Landfill Development consists of horizontal gas collection trenches, vertical gas collection wells, gas lateral and header piping, and condensate collection tanks placed at the low points along the gas header pipe system. These collection trenches collect landfill gas from the operational areas of the Southeast Landfill and 2007 Landfill Development areas and will become part of the final active collection system as final cover is placed. The gas lateral and header piping convey the collected landfill gas to the treatment facilities for disposal. The gas collection system also connects to the leachate collection system components of the Southeast Landfill and 2007 Landfill Development so that landfill gas that can be collected in the leachate system is removed and transported to the existing landfill gas control system.

The design of each of these components is presented in the updated Gas Collection & Conveyance System (GCCS) Plan, submitted as part of the Engineering Design Report for the SMI Valley Infill. The LFG system is described in more detail in Sections 3.3 and 4.3.

2.4.3.8 Landfill Gas Conveyance

Landfill gas will be conveyed from the collection system to a control system at the Resource Recovery Park (RRP) consisting of a combination of existing flares, energy recovery engines that combust landfill gas generated by landfill operations, and RNG facility that produces pipeline quality gas from landfill gas. The RRP is located across Route 414 from the landfill and can be seen in the Engineering Drawings. At the current time, landfill gas collected from both the SMI Landfill, the Southeast Landfill, and the 2007 Landfill Development is directed to the facilities in the RRP where SMI controls distribution to several systems to manage the gas. As available, gas is sent to the internal combustion engines at the LFGTE or the RNG facility owned, operated and permitted by Seneca Energy. SMI gas sent to the internal combustion engines at the LFGTE (owned by Seneca Energy) is used as fuel in the engines to generate electricity. Gas that is processed at the RNG facility is directed to natural gas pipelines located along State Route 414 for distribution into the natural gas system. The remaining gas is handled by SMI in the on-site management system that consists of three enclosed landfill gas flares owned by SMI (one 2,000 scfm and two 4,000 scfm), and various blowers, condensate management and other gas processing equipment. In addition to controls at the RRP, a 3000 scfm enclosed flare exists inside the proposed waste footprint of the SMI Valley Infill.

2.4.3.9 Stormwater Management System Design

The stormwater management system for the proposed SMI Valley Infill includes:

- Erosion and sediment control measures and practices.
- Stormwater collection and conveyance structures.
- Stormwater detention/sediment basins.

The erosion and sediment control measures and practices will serve to stabilize soil surfaces and prevent or reduce soil migration/losses due to the erosive forces of stormwater impact and runoff. Temporary measures and practices, consistent with New York State guidelines, will be employed during landfill operations and permanent measures and practices will be established in a phased approach as final cover is constructed. Permanent stabilization measures include the establishment of grass cover in open areas and linings along open channels. Open ground areas will be stabilized by hydro-seeding, initially with mulch and ultimately with grass. Open channels used for stormwater collection will be stabilized with grass, erosion control matting, riprap or gabions, depending on hydraulic design velocities. Jute mesh, or other appropriate measures, will be used to stabilize grass channels until grass cover is established.

Existing stormwater collection and conveyance structures include diversion swales, down chutes, stilling basins, channels, and culverts. Diversion swales are the first line collection structures and will be located at intervals on steep slopes to intercept surface water runoff and reduce the development of concentrated runoff, thereby reducing rill and gully erosion. The structures are designed to safely convey the predicted 100-year peak discharges from the landfill areas to the detention/sediment basins. Structure designs follow generally accepted stormwater design practices and New York State guidelines.

The proposed stormwater management system for the SMI Valley Infill project will utilize the same principles and types of infrastructure as the existing landfill areas. The proposed method of stormwater management utilizes primarily passive methods to treat stormwater runoff which helps ensure continued high-quality discharges from the Facility over the long term. Porewater collected from beneath the liner system of the SMI Valley Infill will be managed as a stormwater discharge. As stated in previous sections, the existing stormwater basin infrastructure will be expanded if necessary to meet the needs of the SMI Valley Infill project.

2.4.3.10 Construction Schedule and Sequencing

A detailed phasing plan consisting of distinct operational stages has been developed for the proposed SMI Valley Infill as part of the Engineering Design Report (See Figure 2-3 of this DEIS and Sheets 12 through 19 of the Engineering Drawings). Each of the stages involves incremental steps of site preparation, liner construction, landfill operations, and final cover application over different areas of the SMI Valley Infill.

Generally, the development of the SMI Valley Infill footprint components will consist of earthwork/grading, baseliner construction, followed by waste placement to interim final grade (final grade for each stage). Prior to achieving interim grade in a stage, construction of the subsequent cell will be completed so that the landfill activities may progress from one stage to the next without interruption. The phased construction, waste fill progression, and closure activities to be performed in each stage as described in detail in the Engineering Design Report and Facility Manual included as part of the Engineering Design Report. A general discussion regarding the double composite baseliner system construction activities is provided below.

Typical new landfill areas will be constructed in the following sequence:

- Excavation/fill of the area to design subgrade and embankment elevation.
- Construction of porewater drainage layer (as appropriate).
- Placement and compaction of a low permeability soil liner.
- Installation of flexible membrane liner.
- Placement of geocomposite.
- Placement and compaction of a structural fill soil layer.
- Placement of geosynthetic clay liner.
- Installation of flexible membrane liner.

- Placement of geotextile.
- Placement of leachate collection blanket drain.

A more detailed description of the phases is as follows:

Pre-development

Prior to the start of landfill liner construction and waste placement several activities are necessary to ready the first area (Phase 1). Currently, the area designated as the first cell of landfill development, at the southwest corner of the Tantalo Site is occupied by several operational features including the access road, wheel wash and Citizens Drop-off Area. As part of the initial site preparations, these features will be reallocated as noted on the Engineering Drawings. Rock excavation will be completed at the south end of Phase 1 to accommodate the installation of the leachate collection features of the cell. Placement of fill within the bedrock removal area to provide a 10-foot separation between bedrock and base of constructed liner is anticipated this Phase.

In addition to the operational improvements, a limited portion of the existing Tantalo Waste Disposal Area would be intercepted by the grading required for the SMI Valley Infill subgrade. Where the excavation limits intersect, the existing cap will be removed, the underlying waste excavated and relocated as described below and then the cap would be reconstructed using the original cap design and construction requirements.

The predevelopment work is illustrated on Sheet 12 of the Engineering Drawings. Additionally, Figure 2-1 shows the approximate limits of enhanced asphalt cap and existing Tantalo geomembrane cap and barrier clay to be disturbed to allow for waste relocation. Figure 2-1 also shows the thickness of waste removal and estimated volume of waste to be relocated.

With respect to waste excavation, it is anticipated that the waste will be predominantly MSW; however, in the event that industrial waste is encountered, the following procedures will be followed.

Suspected industrial or potentially hazardous waste will be temporarily staged adjacent to the excavation area. This would include ash, slag or other waste that is not consistent with typical MSW or waste that exhibits a PID reading of 20 ppm or greater. The waste will be screened with the PID either in place (i.e., immediately prior to excavation) or during the excavation activities. The temporarily staged waste materials will then be tested using the Toxicity Characteristic Leaching Procedure (TCLP) in accordance with EPA guidelines for sampling and testing suspected hazardous waste. More specifically, representative sampling (40 CFR § 260.10) will be completed in accordance with the guidelines in the document titled, RCRA Waste Sampling Draft Technical Guidance – Planning Assessment and Implementation, August 2002. If the TCLP analysis of suspect waste meets or exceeds the RCRA toxicity characteristics of a hazardous waste, appropriate off-site waste disposal methods will be determined for that material. Although not anticipated, if drums are encountered, they will be set aside on containment pallets, tested, and appropriately disposed of off-site, as needed.

If the suspect waste does not meet or exceed the RCRA toxicity characteristics (i.e., it is not hazardous), it will be disposed of on-site in the active SMI Landfill. Similarly, typical MSW that does not exhibit elevated PID readings or does not visually appear to be of an industrial nature (i.e., ash, slag, or similar materials would be considered industrial waste) will also be disposed of within the active working face of the SMI Landfill. Prior to construction, a site-specific HASP will be developed and submitted to the NYSDEC for approval to address potential health and safety concerns of workers and the community.

Phase 1

During Phase 1, the initial landfill liner (Cell 1) will be completed and will receive waste. As part of the earthwork component, a porewater collection system will be installed below the double composite liner system. The porewater collection will convey groundwater to the stormwater management system. Leachate collection and conveyance systems, including a leachate forcemain, sideriser station, and leachate collection sump will be installed. The leachate forcemain will tie into the existing Southeast landfill forcemain.

The subgrade for Phase 2 will be prepared by placing additional fill in the northeast corner of the Tantalo Site.

The Phase 1 work is illustrated on Sheet 13 of the Engineering Drawings.

Phase 2

During Phase 2, the landfill liner will be completed and will receive waste. Construction of the dual composite liner system will include approximately 7.9 acres of liner located on the eastern half of this phase. Liner tie-ins will be completed along the western edge of the SELF and Stage 7 and 8 of the NEX.

The subgrade for Phase 3 will be prepared by placing additional fill at the north end of the Tantalo Site. During this Phase the manhole at the north end of the Tantalo leachate collection system will be abandoned. The T-15 forcemain outside the western limits of the Tantalo cap (west side of the Tantalo landfill) will also be abandoned.

During Phase 2, waste will be placed in the liner area and will be placed over the SMI Valley Infill Phase 1, SELF and NEX Stage 7/8 liner areas.

The Phase 2 work is illustrated on Sheet 14 of the Engineering Drawings.

Phase 3

During Phase 3, the landfill liner for will be completed and will receive waste. Construction of the dual composite liner system will include approximately 6.0 acres of liner located on the western half of this cell. Liner tie-ins will be completed along the eastern edge of Stage 3, 5 and 6 of the WEX and the western edge of Phase 2.

The subgrade for Phase 4 will be prepared by placing additional fill on the west side of the Tantalo Site. During this the Phase the existing Tantalo waste that was not relocated at the time of closure and has been covered by an asphalt layer will be excavated and relocated.

During Phase 3, waste will be placed in the liner area and will be placed over the SMI Valley Infill Phase 2, WEX Stage 5 and 6, NEX Stage 7/8, and SMI Landfill liner areas. The Phase 3 work is illustrated on Sheet 15 of the Engineering Drawings.

Phase 4

During Phase 4, the landfill liner for will be completed and will receive waste. Construction of the dual composite liner system will include approximately 6.3 acres of liner located on the western half of this cell. Liner tie-ins will be completed along the eastern edge of Stage 3 of the WEX and the western edge of Phases 1 and 2.

The subgrade for Phase 5 will be prepared by placing additional fill on the west side of the Tantalo Site.

During Phase 4, waste will be placed in the liner area and will be placed over the SMI Valley Infill Phases 2 and 3, WEX Stage 3, 5 and 6, NEX Stage 7/8, and SMI Landfill liner areas.

During this Phase the maintenance facility and the fuel island will be moved into the open area around Pond S-4. Preparation for removal of a bedrock knob (drilling and blasting) located within the Phase 6 footprint landfill footprint may begin this Phase. The Phase 4 work is illustrated on Sheet 16 of the Engineering Drawings.

Phase 5

During Phase 5, the landfill liner for will be completed and will receive waste. Construction of the dual composite liner system will include approximately 6.5 acres of liner located on the western half of this cell. Liner tie-ins will be completed along the eastern edge of Stages 3 and 4 of the WEX, and the western edge of Phase 1.

The subgrade for Phase 6 will be prepared by excavating soil and rock at the south end of the development. Removal of a bedrock knob (drilling and blasting) located within the Phase 6 footprint landfill footprint will be completed this Phase. Placement of fill within the bedrock removal area to provide a 10-foot separation between bedrock and base of constructed liner is anticipated this Phase.

During Phase 5, waste will be placed in the liner area and will be placed over the SMI Valley Infill Phases 2 and 3, WEX Stage 3, 5 and 6, NEX Stage 7/8, and SMI Landfill liner areas. The Phase 5 work is illustrated on Sheet 17 of the Engineering Drawings.

Phase 6

During Phase 6, the landfill liner for will be completed and will receive waste. Construction of the dual composite liner system will include approximately 6.0 acres of liner located on the western half of this cell. Liner tie-ins will be completed along the eastern edge of Stage 4 of the WEX, and the western edge of Phase 1.

During Phase 6, waste will be placed in the liner area and will also be placed over all of SMI Valley Infill Cells and WEX Stages 3 and 4. The Phase 6 work is illustrated on Sheet 18 of the Engineering Drawings.

Final Closure Activities

Following completion of Phase 6, the remaining portions of the landfill will be capped, as depicted in Sheet 19 of the Engineering Drawings. The final closure of the landfill has an estimated duration of two construction seasons and will involve construction of the remainder of the final cover system.

2.4.3.11 Materials Management

Development of the SMI Valley Infill will require the utilization of various types of soils to meet the requirements for baseliner system components, as well as daily, intermediate, and final cover soils throughout the life of the SMI Valley Infill. Soils required for daily and intermediate cover for the SMI Valley Infill will be available from on-site sources, the adjacent Meadow View Mine, and imported soils and authorized alternatives as required. Stockpiled cover soil material will be placed in an area which is well drained and easily accessible to ensure availability under working conditions. It is anticipated that final cover material, including soil suitable for vegetation, will come primarily from off-site sources. In addition, alternative cover materials will be utilized to supplement the supply of operational construction materials. The placement of cover material, which will occur at various stages of the SMI Valley Infill operations, is outlined as follows:

Daily Cover

Six inches of cover material will be spread and compacted over the refuse received daily. The objectives of the daily cover are to minimize litter, odor, vectors, and potential aesthetic impact.

Intermediate Cover

After a phase of operation is completed and no further waste placement will occur on that area within a period of 30 days, 12 inches of cover material will be applied and compacted in that area. Vegetative cover will be applied as appropriate to intermediate cover to minimize erosion, promote evapotranspiration, and reduce leachate generation.

Final Cover System

Once final landfill grades are achieved in an area, the final cover system will be sequentially constructed. The final cover systems have been specifically designed to ensure structural integrity and stability, promote drainage, impede infiltration of rain and stormwaters, and enhance evapotranspiration.

2.4.3.12 Operational Controls and Monitoring

The proposed SMI Valley Infill will be routinely monitored and inspected for the integrity of its containment systems and overall compliance with applicable permits and regulations. Screening and monitoring of incoming waste will be performed both as it enters the Facility Site and as it is managed at the SMI Valley Infill working face. Incoming waste delivery traffic will not increase, and the overall pattern of waste delivery is expected to be similar to existing conditions, with the majority of the waste delivery traffic accessing the Facility Site from NYS Route 414 and the north. In addition, monitoring of operations carried out at the SMI Valley Infill will be maintained

on a daily basis. The following environmental monitoring will also be performed as part of the operation, closure, and/or post-closure activities:

- Waste acceptance program.
- Routine incoming waste screening/monitoring.
- Routine landfill operations monitoring.
- Leachate monitoring.
- Surface water monitoring.
- Groundwater monitoring.
- Landfill gas monitoring.
- Odor and sound level monitoring.
- Litter monitoring.
- Road monitoring and inspection for litter, mud and other similar conditions.

A detailed description of the operational controls and environmental monitoring programs that will be carried out for the proposed SMI Valley Infill is presented in the Environmental Monitoring Plan prepared for the Engineering Design Report. A brief description of the important elements of this plan is provided below.

2.4.3.12.1 Site Access and Waste Control

All waste delivery vehicles entering the Seneca Meadows Landfill site will be received at the scale house. Vehicles transporting waste will be stopped at the scale house, assessed for applicable fees and load contents, and directed to the active working face of the SMI Valley Infill.

SMI has a well-developed program to prevent prohibited waste from being disposed of at the Facility, and to assure compliance with State and federal regulations. This existing program will also be implemented in connection with the SMI Valley Infill, and has three components, which are summarized below.

The first element of the Incoming Waste Control Plan is the SMI Special Waste Program, designed to prevent prohibited wastes from being accepted at the landfill, and to assure that wastes are properly managed. The program follows a three-step process to meet this goal: identification of sources which may produce regulated wastes, evaluation/testing of these wastes prior to acceptance at the landfill, and the approval/rejection process for the tested wastes. Non-MSW waste stream must be approved in advance of its delivery to the Facility, or it will be rejected.

The second element of the Incoming Waste Control Plan is the Load Inspection Program, designed as a system of policing the incoming waste loads to assure that no prohibited wastes are accepted at the Facility. While, in most cases, it is not possible to determine whether a waste can be accepted at the landfill by visual inspection, suspect wastes may be identified for further investigation and approval. The Load Inspection Program provides three types of inspections: daily load screening and radioactivity screening at the scale house, visual screening at the working face of the landfill, and random load inspections.

Monitoring of the incoming waste will also take place at the working face. SMI has trained and experienced staff capable of monitoring incoming waste material. The Operations Manager and the Working Face Foreman will monitor activities at the SMI Valley Infill working face throughout the course of the day. Equipment operators are also instructed to be aware of unauthorized waste prior to grading and compacting the waste. Several waste collection vehicles will be chosen randomly on a weekly basis for documented inspection of its contents by the Operations Manager, Working Face Foreman, or designated representative. The results of the inspection will be recorded and maintained on file at the landfill administrative office.

The third element of the SMI Incoming Waste Control Plan is the Employee Training Program, designed to generate awareness among those individuals or institutions who utilize the landfill. The Training Program is designed to familiarize landfill personnel and the public with the regulations and policies which affect operations and procedures at the landfill. The Training Program has three key elements: employee training in the

identification of regulated wastes and procedures for the safe handling of such wastes, posting of signs and placards at the scale house to identify prohibited wastes and penalties for disposal of such wastes, and customer mailings and handouts to provide more detailed information regarding these regulations.

Additional details regarding the receipt, monitoring and handling of incoming waste are described in the Facility Manual for the Seneca Meadows Landfill. Information on the special waste program, load inspection, and personnel roles and training can also be found in the Facility Manual. The same or similar approved procedures will be utilized in connection with the proposed SMI Valley Infill.

2.4.3.12.2 Receipt of Unauthorized Wastes

The proposed SMI Valley Infill will accept only authorized solid wastes, as identified in Section 2.6.1.1 of this DEIS for disposal. The measures described in this Section 2.4.3.12 will prevent and control the delivery of unauthorized waste. A complete discussion of waste acceptance and control practices that will continue to be used for the SMI Valley Infill is presented in the Facility Manual for the Part 360 Permit Application.

2.4.3.12.3 Quality Control Measures to Screen Incoming Wastes

The following quality control measures will continue to be used to screen the waste coming into the SMI Valley Infill:

- Operations personnel will be trained to identify and reject unacceptable loads delivered to the SMI Valley Infill.
- Signs posted at the entrance to the Facility inform incoming traffic of acceptable and unacceptable waste types, and that no hazardous wastes will be admitted for disposal.

2.4.3.12.4 Removal of Unauthorized Wastes

The following measures will continue to be taken to respond to the inadvertent acceptance of unauthorized wastes at the SMI Valley Infill:

- Should an unacceptable waste load be discovered through the screening process, before the waste has been deposited at the working face, the vehicle will be required to leave the Facility.
- In the event that some portion of an unacceptable waste load has been deposited at the working face, on-site equipment will be used to immediately remove and segregate the material, or to control and contain the contaminated area, if safe removal and segregation cannot be accomplished.
- Material that is segregated must be adequately secured and contained to prevent leakage or contamination of the environment.
- If unacceptable waste loads are encountered, the NYSDEC will be verbally informed, with written notification within 7 days of the incident. This written record is summarized in the Annual Report prepared pursuant to Part 360.
- Should a burning or smoldering load within a delivery vehicle be accepted and unloaded, this material will be isolated from previously deposited materials as quickly as possible. Once separated, procedures for extinguishing the material by application of cover soil or water will be applied.
- The Operations Manager will be responsible for ensuring that the unauthorized waste is removed from the Facility Site as promptly as practicable, in accordance with regulatory guidance. The Operations Manager is also responsible for maintaining a record of the unauthorized waste received, its temporary disposition on-site, and its final off-site disposal location.

2.4.3.12.5 Dust Control

Dust control will be accomplished in a number of ways. Vegetative cover will be established on the SMI Valley Infill final cover and on other constructed surfaces in order to minimize erosion from stormwater and wind. Incoming waste delivery vehicles will be tarped when necessary to prevent windblown dust. Operational

safeguards will be employed to prevent fugitive emissions from waste which can become airborne. The Facility includes a paved entrance road to the scales, and these paved areas will be regularly swept and washed to control dust and prevent off-site tracking of dust. Other dust that may be raised from vehicular movement will be controlled by wetting interior access roads with water from on-site water trucks that are available for this purpose. The Facility also includes a wheel wash which is used to clean the tires on outgoing trucks.

A complete discussion of dust control measures that will continue to be used for the SMI Valley Infill is presented in the Facility Manual which is made part of the Engineering Design Report.

The Title V permit for the Facility requires the observation of visible emissions from the flares and other emissions sources on a routine basis as well as conducting visible emissions assessment using USEPA's Reference Method 9 within 24 hours if unusual emissions are observed. SMI also conducts annual opacity testing on the flares and to assess construction and operational dust generation during peak season. The results of this monitoring program indicate that the Facility is in compliance with these requirements.

2.4.3.12.6 Litter Control

Measures will be taken to contain litter as close to the working area as possible. Employees of SMI will pick up litter as required and routinely both on and off the Facility Site. Restriction of the active working area to as small an area as possible will greatly assist in the control of litter. The use of daily cover material will substantially control the potential for blowing litter at the Facility Site. Small amounts of cover material can be spread on the waste during the ongoing operation when wind presents a problem. The proposed operational method and sequencing will provide for a sheltered workface during much of the operation. The active portion of the fill generally progresses in a perpendicular direction with respect to the prevailing wind direction. Trucks off-load waste and clean out any loose debris while at the working face.

Stationary wind fence will be installed in working areas and will be periodically moved as the active work areas are moved. Temporary wind fencing and screens will also be used at working areas, as required. In the event of litter problems at the Facility Site, landfill personnel will work overtime hours to manually pick up blowing litter. In addition, litter pickers will be used as necessary to help control windblown litter during windy seasons of the year. Under extremely windy conditions, waste acceptance and landfill operations will be suspended.

In addition, SMI requires that vehicles delivering wastes or cover material to the Facility Site be appropriately enclosed, covered or their contents secured, to prevent the littering of roadways. The untarping area is located well within the Facility Site boundary.

Brief additional discussions on litter control measures are presented in the Facility Manual. Existing procedures will be utilized in connection with the proposed SMI Valley Infill Area.

2.4.3.12.7 Odor Control

Odor control measures to be employed at the SMI Valley Infill will include the following:

- Limit the idling of over-the-road vehicles that are staged on-site.
- Operation of the landfill gas collection and control system described in Section 2.4.3.7 of this DEIS. This is designed to provide sufficient capacity to collect the landfill gas that is generated and to combust all landfill gas that is collected.
- Operational practices to minimize the size of the working face.
- The application of daily cover, intermediate, and final cover.
- Periodic surface monitoring for landfill gas emissions, and to evaluate collection and cover effectiveness.
- Screening incoming waste for excessive intense odors and limiting the amount of odorous wastes which are accepted.
- Ensuring that leachate vehicles and existing leachate withdrawal wells are properly covered and sealed. The proposed leachate collection system will be maintained under negative pressure to control odor.

- Placement of additional cover on materials known to release strong odors.
- Increasing the rate of the collection and control of landfill gas, if necessary.
- Employment of various control measures when working in waste areas, such as minimizing the duration which an area is open.
- Application of odor neutralizers, suppressants or masking agents. This includes a misting system installed around the Facility Site and the use of solid granular neutralizers on the working area at the end of the day in cold weather.

SMI has also established a complaint management plan (including odor, dust, litter, noise, truck traffic, hours of operation, air contamination, and water quality) as part of its landfill operating permit with the Town. The plan is designed to allow for responsive action by SMI if odors or other nuisances attributable to landfill operations are detected off-site, and is summarized below:

- SMI will maintain its 24-hour per-day, toll-free telephone number for the receipt of citizen complaints regarding landfill operations.
- When the Landfill Operations Manager receives the original odor investigation checklist, he will conduct an investigation of the incident. This investigation will involve the necessary steps to address the issues identified on the odor investigation checklist.
- The Landfill Operations Manager will investigate the complaint and determine what measure(s) if any, should be implemented to mitigate the incident. If required the Landfill Operations Manager, or his designee, will then direct personnel and equipment to mitigate the problem, and complete the odor investigation checklist.
- A copy of completed complaint forms will be filed at the SMI office and a copy of the odor investigation checklist forms will be submitted to the NYSDEC. Each complainant will receive a copy of the completed complaint form relating to their complaint as soon as practicable after the investigation of the reported incident.

2.4.3.12.8 Noise Control

A variety of noise control features that are currently employed at the Facility to maintain Part 360 sound levels will be incorporated into the development and operation of the SMI Valley Infill, including:

- Limit the idling of over-the-road vehicles that are staged on-site.
- Landfill construction and operational phasing plans designed to shield activities where possible.
- Operations will be screened through the use of core berms, which will screen waste disposal operations and help to mitigate noise impacts to the maximum practical extent. These temporary shielding berms will help to mitigate the sound levels of construction activities, landfilling operations, recycling operations, and site traffic.
- Incoming waste vehicles and vehicles and equipment used for landfill operation will be equipped with mufflers. In addition, hush kits may be utilized on certain equipment (e.g., high grade exhaust mufflers, quiet fans, and engine compartment linings).
- Scheduling work crews to operate in sequence rather than concurrently for certain cell developments.
- Minimizing numbers of equipment of a work crew that can be in simultaneous operation at certain development cells.
- Limiting speeds of vehicles on-site and redirecting traffic flows from off-site locations, if such a redirection is feasible, and will result in a reduction in noise impacts.
- Installing level-limited or otherwise restricted backup alarms, to the extent allowable by OSHA.
- Limiting hours of operation for certain work crews when activities can be anticipated to be particularly significant noise sources.
- Annual noise monitoring survey will be conducted around the Facility Site as well as periodic sound level monitoring of construction activities.

Based on recent noise monitoring reporting, off-site impacts due to noise are not expected.

As noted above, all incoming waste vehicles and landfill equipment working at the SMI Valley Infill will have functioning muffler systems to help in mitigating potential nuisance from noise. Should noisy conditions develop as a result of equipment operation, the mufflers on vehicles and equipment will be inspected and replaced if inadequate. While SMI cannot directly control the condition of third-party vehicles delivering waste to the facility, State motor vehicle law requires the use of mufflers. New York State Police and NYSDEC Conservation Officers can conduct routine inspections in this regard. SMI will also consider contractual conditions for its construction contractors and suppliers requiring them to maintain appropriate exhaust systems on their vehicles which are driven to the Seneca Meadows Landfill. Should conditions of high noise levels (exceeding Part 360 requirements) persist over a period of time, appropriate noise barriers will be investigated, or other mitigation measures pursued. These other mitigation measures could include limits on hours of construction and operation and lowering vehicular speed limits on the Facility Site.

The hours of operation for the SMI Valley Infill will be the same as those currently in place for the Facility. Operations directly related to the acceptance and disposal of solid waste will be limited to the hours of 5 a.m. to 8 p.m., Monday through Saturday. The Facility scales will be open to accept waste deliveries from 6 a.m. to 6 p.m. Monday through Saturday. The Facility will be closed on Sundays and designated holidays. If additional construction or operational hours are required for a specific operation or project, specific approvals from NYSDEC and the Town will be requested, as needed.

An annual noise monitoring survey will continue to be conducted by SMI, to ensure that sound levels comply with the requirements of 6 NYCRR Section 360.19(j). A detailed description of this noise monitoring program is presented in the Facility Manual submitted in connection with the Engineering Design Report. Annual noise monitoring reports are submitted as part of the landfill's annual report.

2.4.3.12.9 Vector Control

Proper daily covering of the waste should eliminate problems with insect and mammal pests. Prompt clean-up of blowing papers, debris and wind screens will minimize exposure of this material for vectors. Vectors are greatly discouraged when waste materials are not easily available.

The Facility is designed and will be operated in a manner which minimizes ponding or other standing water on the landfill area, and this will eliminate potential breeding grounds for flies, mosquitoes and other insects.

Should vector control present a problem at the Facility Site, cover soil use can be increased, or an extermination program could be initiated. Any extermination program would be developed in strict accordance with the requirements of the NYSDOH and the NYSDEC.

Additional discussion of vector control measures is presented in the Facility Manual for the SMI Valley Infill prepared in connection with the Engineering Design Report.

2.4.3.12.10 Groundwater, Surface Water, and Sediment Monitoring

Groundwater quality data from a network of monitoring wells which will surround the SMI Valley Infill will be evaluated quarterly to determine potential changes in groundwater quality which could be attributable to the operations of the SMI Valley Infill. If the monitoring program indicates that a potential release has occurred from the SMI Valley Infill, then contingency measures will be implemented to identify and address the probable cause of the release.

Appendix B presents a listing of the Part 363-4.6(h) parameters for which groundwater quality is presently monitored. These same parameters will be monitored in connection with the operation of the proposed SMI Valley Infill. At least one new groundwater monitoring well will need to be installed during the Project at the south end of the Tantalo area to meet spacing requirements for groundwater monitoring wells. In addition, a variety of wells will need to be abandoned during the course of the SMI Valley Infill project. The details of the groundwater

monitoring program associated with the SMI Valley Infill are presented in the Environmental Monitoring Plan which has been prepared in connection with the Engineering Design Report for the SMI Valley Infill.

Surface water and sediment sampling from Black Brook is conducted quarterly to assess the potential for facility-related impact upon surface water quality and sediment quality. This program includes the sampling of water quality and sediment quality at locations on Black Brook which are both upgradient and downgradient of the landfill areas and is in accordance with the requirements of the General Stormwater Discharge Permit and Stormwater Pollution Prevention Plan (SWPPP) for the Facility. Stream flow conditions are also be monitored from three staff gauge locations. Periodic sampling of stormwater quality is conducted to ensure that discharges are in accordance with regulatory requirements and that no adverse impacts will occur. These monitoring programs are described in more detail in Section 4.2 of this DEIS and the Environmental Monitoring Plan which has been prepared in connection with the Engineering Design Report for the SMI Valley Infill.

Monitoring of groundwater in areas which may have been impacted by the Tantalo Landfill will continue. The construction of the new double liner system over the Tantalo Landfill area will result in a decrease in infiltration through the Tantalo disposal area and reduce leachate volume from the Tantalo Landfill area. No physical changes will occur in areas where groundwater monitoring is performed downgradient of the Tantalo area due to the SMI Valley Infill project which would interfere with the ongoing groundwater monitoring program or future groundwater treatment, if needed.

2.4.3.12.11 Leachate Monitoring

The primary and secondary leachate collection system is sampled on a semi-annual basis and tested for the expanded list of parameters as directed in Part 363-4.6(g). The samples are taken from one sump location each year and rotated to another sump location in each subsequent year. Leachate quality is also monitored to ensure compliance with applicable requirements of the Publicly Owned Treatment Works (POTW) which accepts the leachate for treatment.

Liquid from the secondary collection system is sampled on a semi-annual basis for the expanded parameter list, pursuant to Part 363-4.6(g). The volume of flow in the secondary leachate collection system provides data for the operational and contingency groundwater monitoring programs established for the existing landfill operations.

In addition, sampling and analysis of porewater sump locations takes place quarterly, concurrent with the primary and secondary leachate collection system monitoring described above. Porewater samples are analyzed for leachate indicator parameters.

Additional details on leachate monitoring are provided in the Environmental Monitoring Plan section of the Facility Manual submitted in connection with the Engineering Design Report.

2.4.3.12.12 Landfill Gas Monitoring

The landfill gas monitoring program for the SMI Valley Infill Area will be similar to the program currently employed at the Facility and will comply with the requirements of the USEPA's MSW landfill NSPS/EG, which are intended to ensure that emissions from new sanitary landfills are properly controlled. This program will achieve the following objectives:

- Monitor for the presence of combustible gas at subsurface monitoring points located along the perimeter of the landfill footprint.
- Monitor the relative performance and efficiency of the landfill gas collection system.
- Observe conditions at the landfill that may indicate potential gas migration by noting stressed vegetation, ground surface cracks, bubbling fissures, or odor.
- Quantify the volume of gas recovered at the landfill gas flares and at the landfill gas-to-energy facility operated by Seneca Energy.
- Describe the quality of landfill gas recovered at the landfill gas-to-energy facility.

The landfill gas monitoring program is described in the Gas Monitoring and Emissions Control (GMEC) plan, submitted as an Appendix to the Facility Manual which is part of the Engineering Design Report.

Daily inspections of the gas collection system and quarterly checks of the gas migration monitoring wells are also conducted at the Facility. All gas migration measurements taken and recorded by facility staff are summarized on a semi-annual basis and submitted to the NYSDEC, in accordance with the Environmental Monitoring Plan and the Title V permit.

2.4.4 Closure Plan

Sheet 19 of the Engineering Drawings, submitted as part of the Engineering Design Report for the SMI Valley Infill project, shows the proposed final grading for the Project. Sheet 10 of the drawings shows the proposed final stormwater system at these grades.

Fill progression plans have been developed for the proposed SMI Valley Infill Engineering Drawings to depict the sequence of facility construction, waste filling, and final cover placement (See Sheets 12 through 19 of the Engineering Drawings). Additionally, installation of a minimum of 150 acres of synthetic cover in advance of normal closure activities within the first 15 years of the SMI Valley Infill Project.

Generally, SMI's closure procedures will consist of sequential final cover construction, gas collection system installation, drainage facility construction, final access control, and final site grading. Landfill closure certification reports will be prepared for each phase of final cover construction. These certification reports will be prepared in accordance with the regulations and will include record drawings depicting the final condition of the subject area.

Final overall grades for the SMI Valley Infill will not exceed the maximum slope allowed by the Part 360 regulations, or 3 feet of horizontal run for every 1 foot of vertical rise. This 3 on 1 slope will continue to a point near the peak elevation that will result in a minimum 200-foot wide plateau at the top of the fill. This plateau will be graded at a 5 percent slope from the edge of the 3 on 1 slope up to the peak elevation.

For the SMI Valley Infill, in those areas with a 3 to 1 slope, a geomembrane cover system will be placed over the 12-inch intermediate cover soil layer and will consist of the following components, in ascending order:

- A landfill gas venting layer consisting of geosynthetic drainage composite (GDC) layer.
- 40 mil Linear Low-density Polyethylene (LLDPE) membrane liner.
- A GDC drainage layer.
- 12 inches of barrier protection soil.
- Soil suitable for vegetative growth.

The final cover system on the 4 percent slope area will be placed over the surface of a minimum 12-inch intermediate cover soil layer and will consist of the following, in ascending order:

- A landfill gas venting layer consisting of geosynthetic drainage composite (GDC) layer.
- A geosynthetic clay liner (GCL).
- 40 mil Linear Low-density Polyethylene (LLDPE) membrane liner.
- Geotextile cushion (if necessary).
- 12 inches of barrier protection soil.
- Soil suitable for vegetative growth.

Consistent with and accordance with the 2006 Landscape Plan and the Closure and Post-Closure plans for the Facility, the entire Valley Infill will be vegetated with a native seed mixture that will be incorporated with the final cover system. The SMI Valley Infill will actually increase the amount of natural grassland habitat at the Facility Site by +/-47 acres. Table 2-3 describes the seed mixture that will be utilized to create natural grassland habitat within the landfill area. Grassland habitat shall be maintained in accordance with the C-PC plan.

More on the closure plan can be found in the Facility Manual for the SMI Valley Infill Project.

2.4.5 Post-Closure Care

In accordance with requirements of Section 363-9.6(a)(1), SMI will maintain and sample Facility monitoring points during the post-closure period for a period of 30 years beyond final site closure activities. Methodologies, record keeping, reporting, and other procedural requirements addressed during operations and described in the application, apply to the post-closure period. The following summarizes the routine activities that will be provided during the post-closure care period.

Regularly scheduled monitoring which will address groundwater, leachate, landfill gas and surface water will be conducted throughout the post-closure period in accordance with the requirements of the regulations. Sampling and data evaluation will be completed in accordance with the approved Environmental Monitoring Plan and will be submitted to the NYSDEC in accordance with the prescribed reporting format and frequencies. Liquid removal from the primary and secondary collection systems will continue during post-closure. SMI will record primary and secondary leachate quantities as well as landfill gas condensate generated throughout the post-closure period.

Maintenance and repairs on the leachate management system will consist of flushing of the primary leachate collection system piping to maintain leachate removal capabilities. Routine inspection and upkeep of the stormwater management system will continue on an as-needed basis to ensure the surface water management system is working properly. Final cover system integrity will be inspected and maintained throughout the post-closure period. Deep rooted vegetation not included in the landscaping plans will be removed from the final cover and areas that have been disturbed or eroded will be repaired and revegetated. Maintenance of the landfill gas management system will continue throughout the post-closure period to ensure proper performance. Maintenance of environmental monitoring program points of compliance will continue throughout the post-closure period to ensure they are in proper working order.

More on the post-closure care can be found in the Facility Manual for the SMI Valley Infill Project.

2.5 PERMITS AND APPROVALS

For the Project, SMI will seek permits from the NYSDEC, and the Town of Seneca Falls (the Town). SMI will submit to NYSDEC:

- A Part 360 solid waste management facility permit application (Engineering Design Report) including the following:
    - Engineering Drawings.
    - Engineering Report.
    - Quality Assurance / Quality Control Manual.
    - Hydrogeologic Report
    - Facility Manual which will contain the following, along with additional information:
        - Contingency Plan.
        - Site Analytical Plan.
        - Environmental Monitoring Plan.
- An application for a modification to SMI's Subpart 201-6 Title V facility permit.
- A preliminary Drainage Plan and Stormwater Pollution Prevention Plan for approval.
- A Change-in-use request for the Tantalo and A/B Landfill Sites.

SMI will submit to the Town of Seneca Falls:

- A permit application in accordance with the requirements of Town Code Section 185.
- A special use permit application pursuant to Town Code Sections 300- 105, 350-21(D)(5) and 350-46.
- Documentation as requested by the Town for continued approval for acceptance of leachate to Town's wastewater collection and treatment system.

The Project may also require permits and approval from the Town of Waterloo in connection with the relocation of buildings or other structures onto areas of the Facility Site that are located in Waterloo:

- Site plan approval (for building or road relocations) pursuant to Town Code Sections 79-5(B), 79-5(C) and 79-7.
- Building and use permit pursuant to Town Code Sections 135-5(C).
- Special use permit for the relocation of the resident drop-off facility pursuant to Schedule 1 and Town Code Sections 135-5(D).

2.6 PROJECT NEED AND BENEFITS

Before issuing of the required State or local permits to SMI, the NYSDEC, as SEQR Lead Agency, and agencies that are involved agencies under SEQR are required to determine if the Project will result in any significant, unavoidable and unmitigated adverse environmental impacts. If so, each agency must weigh and balance the public need and other social and economic benefits of the Project against the identified environmental impacts. Knowledge of the public need for a project, and the benefits it is intended to provide, assists the agencies in deciding whether any significant and unavoidable environmental impacts are justified.

The proposed SMI Valley Infill will meet the ongoing public need for long-term environmentally-sound disposal capacity in New York State, as described further below. In addition, the Project offers a number of local, regional and statewide benefits, including:

- Ensuring capacity for the disposal of local and regional wastes.
- Satisfying the goals and objectives of the New York State solid waste management plan.
- Preventing the need for new waste management sites and making beneficial use of an existing hazardous waste site
- Employment/contribution to the local and regional economy.
- Significant contribution to local tax base.

2.6.1 Service Area and Waste Stream

This section describes the types and quantities of waste that are disposed at the Seneca Meadows Landfill, and the geographic areas served by the Facility.

The Seneca Meadows Landfill currently provides the most solid waste disposal capacity in New York State, with an approved design waste capacity of 6,000 tons per day (tpd). Based upon its maximum rate of waste acceptance, the Facility is expected to continue to provide disposal capacity through the year 2025. The proposed SMI Valley Infill will create approximately 47 million cubic yards of additional solid waste disposal capacity. The approved design capacity requested by the Project would remain at its currently permitted level of 6,000 tons per day. If operated at its maximum rate of waste acceptance, the SMI Valley Infill will provide approximately 15 years of additional site life.

2.6.1.1 Waste Types Accepted and Solid Waste Characterization

SMI accepts only non-hazardous municipal, commercial and industrial solid waste streams for disposal, in accordance with applicable regulations and its permit. With approval of the proposed SMI Valley Infill, SMI will continue to accept only non-hazardous municipal, commercial and industrial solid waste streams for disposal, in accordance with applicable regulations and its permit. Special waste streams will be characterized by the generator and the available data will be reviewed for acceptability by SMI's Waste Coordinator prior to disposal in accordance with the NYSDEC-approved Special Waste Management Plan of Operation for SMI. No regulated waste streams will be accepted unless the waste hauler provides evidence of a valid 6 NYCRR Part 364 waste transporter permit. Copies of all special waste stream applications are then submitted to the on-site NYSDEC

monitor upon approval by SMI. All necessary information and data relating to the disposal of special wastes will be recorded and available on-site for inspection by the NYSDEC.

2.6.1.2 Solid Waste Quantities

The tables shown under Table 2-1a through 2-1d present a listing of waste categories delivered to SMI from 2020 through 2023, including both wastes and BUD material deliveries. During that period, 68 percent of waste and material deliveries at SMI have been characterized as municipal solid waste, or MSW. Another 12 percent has been characterized as construction and demolition debris or "Processed C&D" / BUD C&D. The remainder is split fairly equally between impacted soils, ash, and other waste or material types.

The data in Tables 2-1a through 2-1d demonstrate that the Facility is operating at or near its permitted capacity and this is indicative of a continued demand for the disposal capacity provided at the SMI Landfill. The proposed SMI Valley Infill will allow SMI to continue to provide the disposal capacity that is needed in the Finger Lakes Region and in other communities throughout New York State.

2.6.1.3 Service Areas

The primary service area of the Facility is New York State, providing waste disposal services for communities and businesses state-wide. The multiple tables in Table 2-2a through 2-2d presents a breakdown of the waste origination locations and tonnages delivered to the Facility during the years 2020 through 2023. It shows 86.1 percent of the waste and BUD materials accepted at the SMI Landfill during that time was generated in New York. The remaining 14 percent of the materials were generated in Massachusetts (9.8%), Connecticut (1.2%), Canada (less than 1%), and other states (each less than 1%). Canada and these other states represent a secondary service area for the Existing Facility.

Three of New York City's five counties (Bronx, Kings and Queens) contributed a combined 30 percent of the deliveries to the SMI Landfill in 2022. Several other downstate counties contributed significant percentages as well, including Nassau (3.1%), Rockland (5.3%), and Westchester (5.2%). Ulster County contributed 7.2 percent and Schenectady County contributed 4.1 percent of total waste and material deliveries during that time.

The Facility provides a significant fraction of the disposal capacity required by these jurisdictions, none of which have MSW landfills within their boundaries. Some of this waste disposal capacity is provided by SMI pursuant to contractual agreements with various public agencies, including the Town of North Hempstead, Sullivan County, Greene County, Montgomery County, and the Ulster County Resource Recovery Agency.

Locally, the importance of the disposal capacity provided at the SMI Landfill is just as pronounced. Most of the counties in the Finger Lakes Region do not have their own landfill disposal capacity and rely on SMI for a significant percentage of their needed disposal capacity. These counties include:

- Cayuga County
- Onondaga County
- Schuyler County
- Seneca County
- Tioga County
- Tompkins County
- Wayne County
- Yates County

In connection with the preparation of this DEIS, Cornerstone examined Annual Reports submitted to the NYSDEC by SMI to determine the quantity of waste and other materials delivered to SMI by each of the eight counties noted above. This information is summarized in Tables 2-2a through 2-2d. Summing the information presented in these tables shows that from 2020 to 2023 the Facility accepted an average of approximately 160,700 tons of solid waste and BUD material from these areas.

During this period, SMI accepted an average of nearly 19,590 tons of solid waste and BUD material annually from Seneca County. An average of nearly 6,937 tons of solid waste and BUD material were accepted annually at the Facility from sources in Wayne County. Onondaga County waste and material deliveries to the SMI Landfill averaged nearly 102,886 tons.

Waste disposal at the SMI Landfill clearly provides for a significant portion of the local need. The development proposed SMI Valley Infill will allow SMI to continue to provide the disposal capacity that is needed in the Finger Lakes Region and in other communities throughout New York State.

Service area boundaries for the proposed SMI Valley Infill are not intended to be permanent or exclusive. Competing solid waste collection and disposal facilities exist within the service area, and this competition benefits the residents and industries located in these areas.

2.6.2 Public Need for Solid Waste Disposal Capacity

As noted above in Section 2.6.1, the Facility provides significant disposal capacity for many communities throughout New York State, including many solid waste planning units that lack any local disposal capacity. Over the years, the SMI Landfill has become increasingly more important in meeting the local, regional and statewide needs for solid waste disposal capacity. The Draft Generic Environmental Impact Statement prepared for the 2007 Landfill Development noted that the SMI Landfill accounted for nearly 11 percent of waste disposal within New York in 1999. As of 2018, the SMI Landfill accounted for approximately 21 percent of the waste disposed of at landfills in New York State.

The current lack of solid waste disposal capacity in many communities throughout New York is primarily due to changes in environmental laws and regulations in the 1970s and 1980s that resulted in strict standards governing the siting, design, construction, and operation of MSW landfills. These new standards caused many of the landfills existing at that time to cease operating and changed the economics of waste disposal such that larger, more regional landfills began to become predominant.

The reduction in statewide solid waste disposal capacity became more pronounced with the closing of New York City's Fresh Kills Landfill in 2001. The Fresh Kills Landfill was operated by the New York City Department of Sanitation (DSNY) and was used to for the disposal of the 11,000 tons of MSW collected from city residents daily. After the Fresh Kills Landfill closed, DSNY implemented an interim plan that relied on DSNY trucks delivering MSW to privately-owned waste transfer stations in and around the city, from which the waste was then transported for disposal, with a significant portion going to out-of-state landfills. In 2010, New York State Department of Environmental Conservation ("NYSDEC" or "DEC") adopted the State Solid Waste Management Plan entitled "Sustainable Materials Management Strategy for New York State Beyond Waste" ("Beyond Waste"). The following excerpts from the NYSDEC's Beyond Waste Plan further describe these conditions:

> *"The state's increasing reliance on waste export from many of its densely populated areas is problematic and potentially unreliable; principles of sustainability and responsibility dictate that materials be managed in the most efficient and environmentally sensitive manner, with consideration of the risks and impacts of out-of-state transportation."(see page 4)*
>
> *"Also important from a public policy and long-term planning perspective is New York State's significant dependence on privately owned facilities in other states for the disposal of more than 16,500 tons of MSW every day (six million tons per year), including virtually all of the solid waste disposed from the City of New York and much of Long Island's waste. While the environmental impact of export has been reduced in recent years by the movement of waste exports by rail instead of truck, exports have increased fivefold during the past 20 years—a trend that runs counter to the self-sufficiency envisioned in the 1987 Plan.*
>
> *"Waste export leaves many New York communities vulnerable to capacity restrictions and additional user fees at out-of-state disposal facilities. For nearly a decade, Congress has reviewed*

legislation that would allow states to constrain the movement of garbage from other states. Fortunately for New York State, no such laws have passed, but the threat of restriction serves as a reminder that the state's reliance on export is not without risks." (See page 20)

The most recent NYSDEC solid waste management plan (titled Building the Circular Economy Through Sustainable Materials Management, adopted December 2023) indicates that a variety of solid waste management facility types, including landfills are critical to the proper management of waste generated in the State. The current solid waste management plan also indicates that there is as little as 16 years of landfill capacity in the state. Considering that the capacity was based on 2018 landfill data the available capacity is now on the order of 10 years. With the length of time it takes to permit a landfill expansion, this application is critical. With SMI accepting roughly 21% of the waste disposed of by New York State municipalities, closure of the landfill by the year 2025 means that significant quantities of waste will need to be redirected. If the SMI Valley Infill is not implemented, the solid waste disposed in the SMI Landfill would have to be diverted to other in-state solid waste landfills (which have limited to no capacity) or other out-of-state landfills, once the maximum capacity at SMI is reached. As discussed in greater detail below, this diversion would generate more Greenhouse Gas (GHG) emissions than those generated by continued disposal at the Facility. Thus, the continued operation of the SMI Landfill is warranted under the Climate Leadership and Community Protection Act "CLCPA"), because its continued operation, particularly with the implementation of certain reduction opportunities (i.e., mitigation) for fugitive emissions, will be more advantageous than transporting and disposing solid waste at distant in-state or out-of-state locations.

The time of closure is approaching for Seneca Meadows Landfill and may be approaching for other Regional Facilities as well from which solid waste streams may need to be diverted.

The proposed SMI Valley Infill will create approximately 47 million cubic yards of additional solid waste disposal capacity, which would provide at least 15 years of additional solid waste disposal capacity to meet the local, regional, and statewide needs.

2.6.2.1 Consistency with the New York State Solid Waste Management Plan

The "2023 New York State Waste Management Plan" does identify the need for landfills and notes that the state needs diverse solid waste management facilities. Consistent with "2023 New York State Waste Management Plan," NYSDEC has either approved or is in the process of reviewing Solid Waste Management plans for several communities in New York. The Landfill is critical to the long-term management of waste in these communities and is identified in their respective Solid Waste Management Plans. The Beyond Waste plan noted that only about half of the 64 planning units in the state have disposal facilities (landfills and/or municipal waste combustors) within their boundaries. The rest rely on disposal capacity in other in-state planning units or out-of-state facilities. Beyond Waste states, *"Therefore, free movement of waste is critical to these planning units and the facilities that serve them. Restrictions on waste exports would potentially impact about 22 percent of New York State's waste that is currently destined for disposal."* Additionally, as of 2018 the percentage of New York State's waste going to the Facility was approximately 21 percent of the state's overall waste stream. The reliance of local communities on the disposal capacity at the Facility still exists.

Furthermore, the implementation of the Project will help meet several environmental goals, including:

- Minimize the Climate Impacts of Materials Management
- Minimize the Need for Long-range Export of Residual Waste
- Maximize Efficiency in Infrastructure Development
- Continue to Ensure Solid Waste Management Facilities are Designed and Operated in an Environmentally Sound Manner

The SMI Valley Infill will help minimize climate impacts because it will include landfill gas collection and control, including energy recovery, which will minimize methane emissions. Potential climate impacts will also be reduced because the SMI Valley Infill will minimize the need for export to more distant out-of-state disposal sites.

The SMI Valley Infill will provide additional capacity for the management of solid waste generated in New York and thereby reduce the amount of waste that is exported for disposal in other states. As noted above and in Section 1.3, New York State's increasing reliance on waste export from many of its densely populated areas represents a significant public policy issue for the NYSDEC, and relying on other states to manage one-fifth of the total waste stream and one-third of MSW stream from New York is problematic and potentially unreliable.

The Project is consistent with this State policy, because it will maintain a diversity of solid waste management options across the state and will provide significant in-state disposal capacity, particularly over the next one to two decades when remaining landfill capacity is expected to dwindle significantly in most other areas of New York State.

2.6.2.2 Local Solid Waste Planning

The SMI Landfill is located in Seneca County, where there is no local solid waste management plan in effect. However, the Facility is part of local waste planning, and receives waste from local municipalities including Seneca Falls and Waterloo.

Seneca County was formerly part of the Western Finger Lakes Solid Waste Management Authority (WFLSWMA) Planning Unit that also included Wayne and Yates counties as members. Ontario County was originally a part of the WFLSWMA, but subsequently withdrew. The WFLSWMA has since been disbanded and the planning unit no longer exists.

2.6.3 Benefits to Local/Regional Economy

This section presents a summary of the economic benefits to the local and regional economies that result from the ongoing operation of the Facility. These benefits include:

- Direct payroll to local workers.
- Payments to local vendors.
- Tax payments.
- Agreement with Seneca Falls POTW for leachate treatment.
- Payments under a Host Community Agreement to the Town of Seneca Falls.
- Payments under a Community Benefits Agreement with the Town of Waterloo
- Property value protection program.
- Contributions to local government units and charitable organizations.

SMI's community involvement and local economic importance was recognized in early 2004 by the Seneca County Chamber of Commerce as the Business of the Year.

The true value of the above noted economic benefits are greater than direct expenditures by SMI because of multiplier effects which ripple through the local economy to create new jobs and income. A multiplier summarizes the total impact that can be expected from an economic activity, like the presence of a large manufacturing or service industry. Multipliers usually range between 1.0 and 3.0 and vary by the amount of economic activity within an area and the interaction of industries within the area (Miller, 2004). While the value of the multiplier associated with ongoing operations of the SMI Landfill has not been calculated, it is worth noting that considerable additional value is created, for example, as SMI employees spend their earnings locally, and as employees of local vendors employed by SMI spend their earnings also.

2.6.3.1 Local Employment and Purchases

SMI represents one of the larger employers in Seneca County. Employment for SMI fluctuates seasonally. Peak employment occurs during the construction season from April through September. SMI has up to 110 employees during the peak season. In prior years when more construction was occurring, such as 2012, these numbers were as high as 154 and 103 (respectively). The majority of these employees live in Seneca County or within a 20-mile radius from the Facility. Total payroll with benefits for SMI employees in 2022 was over $7 million (over $7.3 million including temporary employment payroll), much of which is spent locally supporting other area retail and service businesses. The vast majority of the payroll and benefits goes to employees within a 20-mile radius, including over $6.9 million in 2022. During 2020 to 2022, SMI payroll exceeded $21 million, with over $19.6 million of this going toward employees within a 20-mile radius.

In addition to direct payroll, the operations at SMI generated over $46 million in payments to businesses (SMI vendors) in 2022. These payments support the economy by generating revenue for businesses, and many of these businesses are locally sourced or have locations and employees in the area.

2.6.3.2 Local Host Community Benefit and Tax Revenue

In accordance with the Host Community Agreement with the Town of Seneca Falls, SMI paid fees totaling approximately $3.64 million to the Town of Seneca Falls during 2022. The 2017 payments to the Town represented over 25% of the town's spending budget total for that year and may average an even greater percentage during some years. From 2017 to 2022, the value of these payments to the Town has totaled over $20.5 million.

In addition, free disposal services are provided to the Seneca Falls and to the Village of Waterloo. The free waste disposal services provided to Seneca Falls residents over the last 5 years are values at $704,523. Services provided to Waterloo residents over that same period were valued at $141,519.

SMI has also entered into a Community Benefits Agreement with the Town of Waterloo that, among other things, will result in progressively increasing direct cash payments. The payments have totaled over $1.9 million from 2020 to 2022 and have helped provide tax relief or minimal tax rate increases for residents in the Town of Waterloo since the initial agreement was made.

In addition to the direct cash payments, pursuant to the agreement, SMI also provides the Town with other services. SMI has aligned itself with New York State's waste management goals in trying to encourage environmental stewardship among Seneca County residents. To enhance local recycling collection participation, SMI implemented a complimentary community recycling drop off program. This allows residents who miss their regular recycling day or accumulate extra recyclables, to place materials in drop off boxes stationed at the Facility. SMI also created the first regular e-waste collection site in the Finger Lakes. This free e-waste recycling service, provided for residents and businesses in the Finger Lakes region, includes drive-through unloading of acceptable electronics for secure processing. In 2021, SMI collected 27,698 pounds of e-waste, and in 2022 13,297 pounds were collected. These significant quantities of e-waste may otherwise be difficult to dispose of but can be safely and conveniently dropped off at the Facility.

SMI also provides recycling totes and free recyclables drop-off for large scale events such as Empire Farm Days. SMI also provides services including twice-a-year clean-up containers, annual household hazardous waste collection day and free residential waste disposal for Town residents. In 2015, the value of these services over the following 18 years was estimated to be at least $1.8 million. In addition, SMI also provides free disposal of wastes from the Seneca Falls POTW and Waterloo POTW. Disposal costs of waste materials from those water treatment plants in 2019 were estimated to be valued at around $124,000 for Seneca Falls and $96,000 for Waterloo.

SMI paid over $530,000 in local property and school taxes during 2022. SMI has also paid over $270,000 in New York State sales tax on average over the last three year that also contributes tax revenue for Seneca County.

2.6.3.3 Educational Programs

SMI has established a scholarship program (the Seneca Meadows Awards) to assist local high school seniors planning to pursue education in environmental fields. The program is open to students from each of the Seneca County high schools (Mynderse, Waterloo, Romulus and South Seneca). Multiple students per year are awarded a $1,000 scholarship based on academic achievement, citizenship and extracurricular activities. From 2007 to 2022, the High School Conservation Scholarships have a total value of $184,500. SMI has also been a key supporter of Cornell Cooperative Extensions recycling education efforts in the county. SMI assists the 4-H teen environmental education group, Seneca Green, which puts on various recycling events in the area schools. SMI has also recently engaged in a long-term MOU with two area high schools as part of their early college high school programs where local students are provided with direct career support, site visits, mentorship of students, job shadowing opportunities, project-based learning opportunities, advisement on problem-based learning activities, environmental education opportunities, skills development, and paid internships for students. SMI makes additional donations to conservation education in middle and elementary schools as well, the total value of which are presented in Section 2.6.3.4.

In addition to donations, SMI offers education programs to local primary schools. The primary school program focuses on landfill operations and environmental monitoring. For the past several years, SMI has offered an educational program to Waterloo and Seneca Falls 4th grade classes that focuses on landfill operations and environmental monitoring. SMI has developed high school science education programs with local science teachers for use in IESI – SMI's Community Education Center (CEC), which is located on the east side of Route 414, across from Salcman Road. The purpose of the CEC is to provide curriculum enriching programs that allow students to participate in environmental monitoring and field and laboratory testing of materials related to the environment. The CEC provides bimonthly environmental education programming open to the public. Locals may find a wealth of programming for students at the education center, with activities ranging from macroinvertebrate sampling to biomimicry based building design. All school programs incorporate NYS standards and are developed and facilitated by an Audubon Naturalist Instructor through a long-term strategic partnership with Audubon New York. The Audubon staff also leads public programs at the SMCEC on waste reduction, reusing, recycling, composting techniques, and bird conservation.

Each year SMI holds an open house where several hundred local residents visit the Facility, take a bus tour, and learn how we operate. Kids are treated to games and photo opportunities and families enjoy a chicken BBQ. Comprehensive Facility Site tours are regularly provided for students from elementary to college, as well as for local groups such as the Sampson Veterans Alumni Association. In 2019, SMI over 200 visitors for official site tours including Port Byron High School, Geneva High School, Romulus Central School and Seneca Falls Central School District.

2.6.3.4 Support of Local Charitable Organizations

Over the past 12 years (2010-2022) SMI has contributed over $2.5 million to local charitable organizations. SMI commits to and invests financial resources in over 100 local service organizations, nonprofits, charities and extracurricular groups & clubs on an annual basis.

Examples of organizations that have benefited from recent SMI support include:

HS Graduation Conservation Scholarships (Past 16 years; 2007-2022)	$	184,500.00
Elementary School Environmental Conservation Education	$	20,706.52
Middle / High School Environmental Conservation Education	$	6,596.42
SUNY ESF Graduate Research - Wetlands + Pollinator Education	$	10,500.00
Hobart & William Smith Colleges Bird Lab	$	8,500.00
Seneca County Conservation + Weatherization	$	5,400.00
Cayuga Lake State Park I Love My Park Day	$	2,000.00

Cayuga Lake and Seneca Lake Water Quality - HABs + Nutrient Data	$	25,147.75
Local Waterfowl Conservation	$	69,176.00
Braddock Bay Bird Observatory	$	28,100.00
The Nature Conservancy	$	26,000.00
Trout Unlimited	$	6,200.00
NYS Envirothon	$	2,000.00
Ludovico Sculpture Trail (2007-2015)	$	37,477.00
Donations to local libraries	$	87,981.00
local Fire Departments (includes HCA items)	$	417,265.00
National Womens Hall of Fame	$	86,750.00
New York Chiropractic College	$	60,165.00
Habitat for Humanity	$	56,525.00
Local Food Pantries & Backpack programs	$	144,007.78
Veterans Support Programs	$	61,170.00

SMI regularly participates in the community by volunteering with local groups such as Rotary, It's a Wonderful Life Festival, United Way, and delivering food every week for the local backpack food program for nutritionally underserved children at the local schools.

Finally, in addition to the above charitable work, SMI has created the Seneca Meadows Wetlands Preserve (SMWP), a nature preserve which benefits both the public and local ecosystem. More information on the SMWP can be found in Section 3.6.5 – Public Parks and Recreation Facilities.

3.0 ENVIRONMENTAL SETTING

This section presents a description of the existing regional and site-specific natural resources and the cultural/man-made features which may potentially be affected by the Project. Subsequent sections of the DEIS, including Section 4 - Potential Environmental Impacts and Section 5 – Description of Mitigation Measures, will discuss potential impacts upon the existing resources and features identified here, and what measures will be taken to mitigate or avoid these impacts, respectively.

3.1 EARTH RESOURCES

3.1.1 Topography and Physiography

The Project Area is located in the north-central part of Seneca County, New York. Seneca County is in the Finger Lakes region, near the geographical center of New York State and its northern border about 20 miles south of Lake Ontario. Seneca Lake extends along most of the western side of the County and Cayuga Lake extends along most of the eastern side. The Seneca River traverses easterly across the northern third of the County and receives the outflow of these two lakes.

Seneca County is in two of the major physiographic provinces in New York State. The southern third of the County is in the northern New York section of the Appalachian Plateau, while the remaining portion of the County, including the SMI Property, is part of the Central Lowlands.

The Central Lowlands is a region of low relief bordered to the north by Lake Ontario (elevation 244 feet above MSL and to the south by the Appalachian Plateau (elevations 800 to 2,100 feet msl). The boundary between these two physiographic provinces runs through the middle of Seneca County. Topographic relief and drainage patterns on the Central Lowlands are controlled by bedrock formations of contrasting hardness and glacial deposits.

The Appalachian Plateau consists of a layer-cake sequence of sedimentary bedrock which dips slightly southward forming a tilted mesa. The upturned ends of more resistant formations (sandstone and limestone) have formed north-facing scarps due to long term erosion that cross the region on east-west trends. The Onondaga Scarp crosses Seneca County in the vicinity of Waterloo and marks the division between the Central Lowlands and the Appalachian Plateau.

Glacial activity has played a significant role in shaping the present landscape of the area. The southward flowing continental glacier overrode scarps and encountered pre-existing stream valleys on the Appalachian Plateau. Because the stream valleys represented the path of least resistance, tongues of glacial ice flowed down these valleys, carving and deepening them as the glaciers advanced. As the glaciers melted, these valleys were filled with water and formed what are now the Finger Lakes. All areas in the northern two-thirds of the County are glacial in origin, including the Facility Site. The Facility Site is largely based over areas classified as Lacustrine Silt & Clay, with a thin strip of Till Moraine intersecting the Site toward the southern end. The SMI Valley Infill project is based over the Lacustrine Silt & Clay area.

The Project area is centrally located within the glacial lake plain area of Seneca County and is within the Erie-Ontario physiographic province. The glacial lake plain is a low-lying flat area. As a result of the glacial lake plain, the topography in the Project Area and surrounding area is generally flat, with a minor localized slope to the south. Current elevations in the areas surrounding the Facility typically range from 480 feet to 490 feet. Typical grades in the areas surrounding the Facility Site can be observed on Sheet 3 of the Engineering Drawings for the SMI Valley Infill project.

The most pronounced topographic relief on the Project Area itself is provided by the disposal areas, primarily consisting of the SMI Landfill, the Southeast Landfill and the 2007 Landfill Development. Note that Sheet 3 does

not include topography in the area of the SMI site which reflects the current landfill grades, but those grades can be found on Sheet 5 of the Engineering Drawings. When completed, the SMI Valley Infill will have a peak elevation of 843.5 feet above MSL. A physiographic map of New York State has been provided as Figure 3-1a, while a localized physiographic map of Seneca County is included as Figure 3-1b.

3.1.2 Soils

The surficial soils in the vicinity of the SMI Property have been mapped by the U.S. Department of Agriculture Soil Conservation Service and are illustrated in the Site Soils Map in Appendix H – General Documentation. The Site Soils Map was obtained from the USGS website. The soils mapping was conducted in 1972. The following discussion is based upon the Facility Site soils as mapped prior to landfill activities at the SMI Property and is presented for historical context.

The soils in the immediate vicinity of the Project Area are dominated by high-lime soils developed on glacial lake sediments. These soils are the Odessa-Lakemont association which are characterized by deep, somewhat poorly drained and poorly drained soils that have a silty clay loam to silty clay subsoil. The surrounding vicinity has high to medium-lime soils developed on glacial lake sediments or glacial till.

The dominant soils occurring at the Project Area are Niagara Silt Loam (Ng), Odessa silty clay loams (OdA, OdB), and Alden mucky silt loam (Ac). Other soil types that occur in the Project Area are Schoharie silty clay loam (ShA, ShB), Canandaigua silty loam (Ca), Cazenovia silty loam (CeB), Collamer silty loam (CoB), Schoharie silty loam (SeB), and Lakemont silty clay loam (LcA).

3.1.3 Geology and Hydrogeology

A Hydrogeologic Investigation Report for the Project has been prepared, based on information drawn from the Part 360 Site Investigation Report prepared for the Seneca Meadow Landfill Expansion last revised in December 2006 and subsequent groundwater monitoring events, characterizing the geology and hydrogeology of the Project Area. The Hydrogeological Investigation Report has been submitted as part of the Engineering Design Report for the SMI Valley Infill and information from that report is also summarized below.

During the Cenozoic Era, the region consisted of a flat plain that was being uplifted to create major streams which developed a pattern of north-south trending valleys. The valleys were carved in bedrock and extended north of the Cayuga and Seneca Lake troughs. During the Pleistocene Period, the continental ice sheet, which extended southward from eastern Canada into Pennsylvania and elsewhere, covered this region. At least two periods of glaciation are believed to have occurred in Seneca County. The glaciers flowed southward, concentrating their erosive action along the northward-sloping pre-glacial valleys of Cayuga and Seneca Lakes. Glacial till was deposited over most of this region during the glacier advances. As the last glacier retreated, glaciolacustrine sediments consisting mostly of fine-grained silts and clays were deposited in glacial lakes that occurred in the low areas forming the lake plain. Sand and gravel were deposited in broad plains as outwash deposits or in ridges or mounds as kame, esker, and morainal deposits. The thickest deposits of glacial drift are present in the buried valleys that extend north of the Cayuga and Seneca Lake troughs.

Since the withdrawal of the last ice sheet, post-glacial erosion has re-excavated some of the pre-glacial or interglacial valleys and at the same time has formed post-glacial valleys. Cascades and falls mark places where the post-glacial streams have cut through the mantle of drift and re-exposed the underlying rocks.

A generalized structural contour map of the top of bedrock at the Facility Site is presented in Figure 3-2. The bedrock of Seneca County consists of sedimentary rocks of Upper Silurian through Upper Devonian Age which dip to the south and southwest. Due to the dip, the oldest bedrock formation is exposed in the north portion of the County, with successive exposures of younger formations occurring southward.

The formations in the northern third of the County are described in order from the oldest to the youngest, as follows. The Camillus Shale, a member of the Salina Group, is the oldest and most northerly bedrock unit. The

lower part of the Camillus Shale is composed of soft gray shale interbedded with thin layers of dark dolomitic limestone, and the upper part is composed of gypsiferous shale in which there are thin beds of dolomitic limestone. The Bertie Formation, also a member of the Salina, lies directly over the Camillus Shale. The Bertie is primarily a dolomite, although shales and anhydrite occur in some locations. The Cobleskill Dolomite of Silurian age occurs immediately above the Bertie Formation and is about 8 to 15 feet thick. Above this is the thin (10 feet) Rondout Formation which consists chiefly of a dark shaley dolomitic limestone. The Manlius Limestone, of lower Devonian age, overlies the Rondout and consists of a thin bed of hard limestone that pinches out in the vicinity of Waterloo. The Oriskany Sandstone, estimated to be only 3 to 6 inches thick, separates the Manlius Limestone from the overlying Onondaga Limestone. The Onondaga is a dense hard limestone, about 80 feet thick in this area, with finely laminated partings of carbonaceous shale (Rickard, 1969; Rickard & Fisher, 1970; and Crain, 1974).

Regional Surface Water Flow

Seneca County is regionally located in the center of the Western Oswego River Basin which ultimately drains into Lake Ontario (Crain, 1974). This basin includes drainage from the four largest Finger Lakes (Cayuga, Seneca, Keuka, and Canandaigua). Additionally, the section of the Barge Canal north of the lakes, the Seneca River and the Clyde River are also within this Basin.

The Clyde and Seneca Rivers receive the majority of flow from the Finger Lakes. Eventually, drainage from the Basin reaches the Seneca River which, in turn, flows northeast to the Oswego River. The Oswego River flows north-northwest into Lake Ontario.

The Clyde River subbasin and, more specifically the Black Brook watershed, is the principal drainage feature in the Project Area. Black Brook is a tributary to the Montezuma National Wildlife Refuge, which lies adjacent to the Clyde River and north of Cayuga Lake. The Black Brook watershed drains an area of 19.75 square miles, or 12,644 acres. Topography within the watershed is basically flat with elevations ranging from 572 feet above MSL to approximately 385 feet.

Black Brook originates about one mile west of the Facility Site and flows in a generally easterly direction as it approaches the Project Area. At the Facility Site boundary on the west, Black Brook, as a result of the realignment associated with the 2007 Landfill Development, flows northward and around the permitted landfill area, and then flows southerly and ties back into the original stream channel. Approximately 1.5 miles east of the Facility Site, Black Brook turns northward, and flows approximately another 6 miles, where it enters the Montezuma Wildlife Refuge. From there, it flows via the regional system into Lake Ontario.

The Erie-Ontario Plain physiographic province occurs in the northern portion of Seneca County and the western Owego River Basin. Groundwater is obtained throughout the Central Lowland in quantities generally sufficient for domestic and farm supplies and, in many areas, in quantities sufficient for municipal and industrial supplies.

All of the unconsolidated deposits in the Central Lowland are used as sources of water supply to some extent. However, the coarse-grained deposits (sand, and sand and gravel) far outweigh the others in importance. Most of the coarse-grained deposits consist of glacial outwash laid down on a surface of low relief, resulting in deposits that are usually thin. This is especially true of the surficial sand and gravel in the western half of the Erie-Ontario Plain.

In general, the unconsolidated aquifers in the vicinity of the Project Area are confined to the valleys and are somewhat thicker than those in the western half of the Erie-Ontario Plain. In addition, the scattered and extensive deposits of outwash are not as evident as those in the western half. The layers of sand and of sand and gravel are commonly interbedded in thick sequences of fine-grained material. Although some of these zones may have fairly high transmissibilities, the only available recharge is usually through the overlying lake deposits. This results in low perennial yields. In many of the northern valleys, the coarse-grained deposits are both at the surface and beneath thin lake deposits. Therefore, they are more easily recharged and have higher perennial yields than aquifers in the deeper valleys farther south. In much of the northern part of the area, the deposits are

in hydraulic contact with the Erie Canal, or with perennial streams. This greatly increases the maximum yields of the deposits. The yields of many deposits, however, are limited by their thinness, which results in low transmissibilities and, therefore, low individual well yields. Generally, yields from wells in the northern portion range from less than 1 to about 100 gpm. Higher yields may sometimes be obtained in areas overlain by coarse-grained deposits or along stream valleys (Crain, 1974).

The cores of almost all the drumlin-shaped hills in the Seneca Falls area seem to contain either sand and gravel or sand. Because these sand and gravel deposits are usually very permeable, their yield tends to exceed that of the underlying bedrock (Crain, 1974).

The deposits of till and silt and clay are very extensive in the Erie-Ontario Plain. As previously discussed, these deposits have a very low permeability. Therefore, the tills and lake deposits will not yield large quantities of water and many are not productive enough for domestic supplies. Most successful wells in the till actually tap layers or lenses of coarse-grained material, where present (Crain, 1974).

Two main types of bedrock aquifers occur in the Erie-Ontario Plain, carbonate rocks and shales containing soluble rocks. Differing yields from well to well in the bedrock aquifers depend to a large degree on the overlying material and their topographic position.

In the Erie-Ontario Plain, carbonate bedrock occurs in the north adjacent to Lake Ontario and in the south adjacent to the border with the Appalachian Plateau. Shales contain soluble rocks and crop out in the middle of the Erie-Ontario Plain province between the carbonate rock units. Wells in these rocks generally tend to have somewhat higher yields than those in the carbonate rocks, with most wells yielding at least enough water for small domestic supplies. These rocks can yield only as much water on a perennial basis as is available for recharge. Therefore, the greatest yields are in low-lying areas along streams and in areas where the rocks are overlain by sand and gravel (Crain, 1974).

Location of Primary and Principal Aquifers

The location of potential primary or principal aquifers in the vicinity of the Project Area were determined by reference to Kantrowitz and Snavely (1982) and Miller (1988). These references both confirm that the Project Area does not occur on or adjacent to any primary or principal aquifers. The supporting documentation for the 2007 Landfill Development project also concluded that no impact to primary or principal aquifers would be made, and the SMI Valley Infill project will occur entirely within existing Facility footprint areas assessed as part of the DGEIS for the 2007 Landfill Development.

Regional Groundwater Flow

On a regional scale, the groundwater flow is controlled by the bedrock hydrogeologic unit and is in the direction of the bedrock dip as the major portions of the void space resulting from jointing and dissolution is along the bedding planes which generally follow the dip. In addition, the unconformity between Bertie/Cobleskill and the Onondaga Formations acts as a zone of preferential groundwater flow. Bedrock is covered by broad soil veneers which consist of predominately glacial till, ground moraine and glaciolacustrine deposits. These fine-grained deposits should not cause significant lateral movement of groundwater due to low permeabilities. Regional bedrock groundwater flow is in a general southward direction to discharge areas along the Seneca River (Seneca-Cayuga Canal).

As described above and in detail in SIR, the Onondaga and Bertie/Cobleskill formations can be described as generally massive limestone and dolostone with rock core and caliper logging indicating the presence of horizontal to sub horizontal (along bedding planes) fractures. Observed weathering along the fractures is indicative of groundwater movement and the fractures form a network of interconnected fractures through which groundwater flows beneath the Facility Site. Groundwater flow within fractured rock may be characterized as either a “porous media equivalent” or a “conduit system” (EPA, June 1991). Briefly, groundwater flow through fractured rock representing a porous media equivalent occurs through a network of fractures with similar values of hydraulic conductivity, with no single fracture, or set of fractures, representing a preferential flow path.

Conversely, conduit system flow is represented by one or more large open fractures or dissolution channels with hydraulic conductivity values orders of magnitude greater than those observed in the surrounding area that serve as preferential flow paths.

The determination as to whether a fractured rock aquifer behaves as a porous media equivalent (as opposed to conduit system flow) can be assessed through pumping test responses, configuration of the water table, the ratio of fracture scale to the area of investigation, distribution of hydraulic conductivity, and variations in water quality (EPA, June 1991). Each of these methods of assessment (i.e., criteria) as they relate to determining if bedrock groundwater flow in the area adjacent to and south of Tantalo behaves as a porous media equivalent (i.e., there is no evidence of large fractures that result in preferential flow paths) were performed.

In summary, the collected data described in more detail in the SIR provide multiple lines of evidence to indicate the bedrock within the study area represents an equivalent porous media and there is no evidence to suggest the presence of major fractures that could potentially represent a preferential flow path. Notably, porous media equivalency in fractured rock (i.e., the absence of conduit flow resulting in preferential flow paths) is well documented in the literature and in particular by Thackston (1989) and Merin (1989).

3.1.4 Geotechnical

The geotechnical information regarding the landfill site was obtained from existing geotechnical and hydrogeologic data obtained and reduced specifically for this site, subsurface geotechnical explorations performed to specifically address the geotechnical properties of soil units, and from previous hydrogeologic and geotechnical studies performed at the Facility. A review of site hydrogeological and geotechnical data showed that the proposed landfill development areas are generally underlain by five soil layers. The stratigraphy at the Facility Site consists of the following:

- Glaciolacustrine Silt and Clay
- Glacial Till
- Bedrock
- Recent Fill Materials
- Municipal Solid Waste

A stability analysis was performed based on this stratigraphy and site conditions. The analysis will be provided in the Engineering Report.

Seismic Impact Zones

Part 363-5.1(i) states that new landfills and lateral developments are not permitted in seismic impact zones unless certain demonstrations regarding the structural integrity of the landfill are made.

A seismic impact zone is defined as an area with a ten percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 250 years as delineated on the most current version of USGS Survey Map or as delineated on another approved source. Based on correspondence from the NYSDEC approving the use of the most current seismic hazard maps posted on the USGS seismic hazard mapping web page, a review of the USGS map entitled Two-percent probability of exceedance in 50 years map of peak ground acceleration, 2014 (which is accepted as equivalent to 10% in 250 years) and associated data indicates the Facility Site's maximum horizontal acceleration is 0.071g. As the mapped acceleration does not place the Facility Site in a seismic impact zone, the potential impacts from earthquakes are limited and the design does not require seismic analysis per the regulations.

3.2 WATER RESOURCES

Existing groundwater and surface water resources and wetlands that are present at the Facility Site and in the vicinity are addressed in this section of the DEIS.

3.2.1 Groundwater

Groundwater flow at the Facility Site occurs in the overburden soils and fractured bedrock. Groundwater monitoring including water level measurements occurs on a quarterly basis per the Environmental Monitoring Plan for the permitted landfill operation. Groundwater flow directions were evaluated using water level measurements obtained from the routine quarterly monitoring. Figure 3-3 presents a map of the Facility Site's groundwater well locations. Also depicted on the figure are leachate and porewater monitoring locations. Information in this section is derived from the 1998 DEIS (EMCON/Wehran–New York, Inc., 1998), that supported the application for the Part 360 and Part 201 permits under which the SMI Landfill presently operates, and from the Site Investigation Report prepared by Cornerstone for the SMI Valley Infill project.

In general, the vertical flow component in overburden units is much greater than the horizontal flow component. An exception is in proximity to surface water bodies, where localized horizontal flow does occur. The surface water bodies include Black Brook and the various stormwater ponds. Groundwater does discharge to these surface water bodies, but due to the strong vertical gradients in the overburden, the source of the water is limited to the areas near the surface water body. The geologic units that comprise the overburden are of very low permeability. Therefore, the overall groundwater flow rates and velocities are low relative to those found in the bedrock. Groundwater flow in the bedrock is under confined conditions, primarily horizontal, and to the southwest. In the south-central portion of the Facility Site, there is a bedrock knob, or high point, of lower hydraulic conductivity. Groundwater flow from this feature is radial in the area surrounding the knob, with a vertical component of flow. As flow from the knob enters the lower bedrock it returns to the regional pattern which is to the south/southwest. Figure 3-4 presents maps depicting the bedrock groundwater level contours in the vicinity of the Project Area during the months of October 2018 and May 2019.

Recharge to the bedrock aquifer occurs from the unconsolidated deposits above by downward flow and from adjacent bedrock by lateral flow. No bedrock discharge areas occur on the Project Area. The likely bedrock discharge location is at the Seneca Valley to the south.

At the current time, groundwater is not used at the Facility, and no groundwater pumping or recharge activities occur on the Facility Site. Water for various site operations is supplied to the Facility by the Town of Waterloo municipal system, which obtains its water from Seneca Lake. All locations downgradient of the Facility are serviced by the public potable water supply system. A Declaration of Covenants and Restrictions exists on the SMI property associated with residual groundwater contamination in the bedrock aquifer from the Tantalo Waste Disposal Area. The groundwater contamination is contained on property owned by SMI, as verified through a groundwater monitoring network pursuant to the OU-1 and OU-2 remedy implementation. The Declaration of Covenants and Restrictions restricts use of groundwater on the SMI Property where it may be contaminated. Monitoring of these Operating Units in accordance with NYCRR Part 375 is performed as described within the Operations, Maintenance, And Monitoring Plan (OM&M) for the Tantalo Site, Site Number 8-50-004. This plan is divided into two volumes, one for each of Operable Unit No. 1 (OU-1) and Operable Unit No. 2 (OU-2). The plans were prepared by HydroQual Environmental in December 2007 and July 2008, respectively. An addendum to the OM&M plans regarding Emerging Contaminants was prepared by Tetra Tech and submitted to NYSDEC on December 29, 2020. This addendum added 1,4-Dioxane and Per & Polyfluoroalkyl Substances (PFAS) to the Tantalo monitoring program.

In general, the overburden unit in the Project Area functions primarily as a recharge unit. Precipitation falling on the Facility Site that infiltrates into the ground flows vertically through overburden deposits. There is a prevailing downward vertical gradient between overburden and bedrock hydrogeologic units, which is consistent with the regional hydrogeologic system of low permeability, fine-grained soils overlying higher permeability bedrock. This downward vertical gradient is more dominant on the south side of the Black Brook channel which formerly bisected the Facility before it was relocated as part of the 2007 Landfill Development. Upon entering the bedrock, groundwater assumes a more horizontal direction of flow.

In bedrock, the horizontal flow component is much greater than the vertical flow component because horizontal fracturing is much more prevalent than vertical fracturing and groundwater will flow along these fractures as a preferred flow path.

Because of the strong vertical flow component in overburden units, horizontal groundwater flow in the overburden would occur only in close proximity to surface water features where there is sufficient relief to promote lateral flow.

Although the groundwater flow around the bedrock knob is in a radial flow pattern from the bedrock knob area, the predominant flow component within the immediate area of the bedrock knob is downward even though some radial flow will occur. Once flow reaches the regional bedrock flow system (elevation 430' ASML and below), flow becomes southwesterly. Radial influence of the bedrock knob is localized, as seen by the relatively flat gradient in the bedrock regime proximate to the knob. The Seneca River is the localized discharge area for bedrock groundwater from the Facility Site.

The southerly component of flow is consistent with the regional dip of the bedrock. The dominance of flow pathways aligned with bedding planes because of bedrock void space are caused by jointing and dissolution along bedding planes, which generally follow dip.

The higher groundwater elevations in the bedrock knob area indicate easterly and northerly components to groundwater flow in the shallow bedrock over a limited distance. In the area of the SMI Landfill, flow is predominantly to the south.

The overburden units are considered collectively as an aquitard — a low permeability unit that can store and slowly transmit groundwater. The bedrock can be classified as a confined aquifer since it is overlain by low permeability soils, exhibits piezometric heads above the bottom of the confining unit, and can store and transmit water at rates sufficient to supply water supply wells. The exception to this is in the immediate vicinity of the bedrock knob where groundwater hydraulic heads in the rock are slightly lower than the bottom of the overburden layer. In this area, the bedrock would be considered unconfined.

Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) are the only two PFAS compounds for which draft groundwater guidance values are provided in the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances under NYSDEC's Part 375 Remedial Programs document dated April 2023 Sites that exceed the values of 2.7 ng/l for PFOS or 6.7 ng/L for PFOA may need to be assessed as part of the remedy selection process in accordance with Part 375 and DER-10. In order to provide context to the samples collected on site the data will be compared to the 2.7/6.7 ng/l values.

Emerging contaminant sampling occurs as part of the Tantalo monitoring as discussed in this section. The data are presented annually in the Tantalo Periodic Review Report and Combined Annual Report submitted each year by September 1st. PFAS sampling is performed in the spring and fall in accordance with Modified USEPA Method 537, This includes the analyses of up to 40 different PFAS compounds. The range of results vary across the Facility Site based on the proximity of the groundwater monitoring well to the Tantalo source area near the bedrock knob. The most recent reporting (2023) indicates that wells located closest to the knob have PFOA and PFOS concentrations ranging from non-detect (ND) to 10 ng/l and ND to 12 ng/l respectively. Wells located downgradient of the plume have PFOA concentrations ranging from ND to 11 ng/l and were ND for PFOS. The concentration levels in some of the wells indicate that PFAS sampling should continue to occur as part of the Tantalo monitoring plan.

Analysis for 1,4-dioxane is performed in accordance with USEPA Method 8270 SIM. Similar to the above, 1,4-dioxane concentrations for wells located within the Tantalo plume range from ND to 9.2 µg/l , while the concentration of 1,4-dioxane in wells downgradient of the plume range from ND to 2.9 µg/l. These concentrations are above the NYSDEC's Maximum Contaminant Level of 0.35 µg/l for this compound in groundwater indicating that continued groundwater monitoring will be required.

Emerging contaminant sampling was conducted at the request of the NYSDEC on September 27, 2018, at SM-0016SB, T-25SB, and T-25 DB. These locations were presented in a Work Plan written by Cornerstone dated July 12, 2018, which was accepted by the NYSDEC in a letter dated August 9, 2018. The results for 1,4-dioxane ranged from 0.20 to 0.65 µg/L. PFAS concentrations ranged from ND to 39 ng/l (T-25SB) for PFOA and ND to 3.9 ng/l (T-25SB) for PFOS.

Additional emerging contaminant sampling was conducted November 06, 2019, at several groundwater monitoring locations throughout the Facility including Visitor Center Well, T-23SB, T-25SB, T-25DB, T-34SB, T-34DB, T-38SB, T-38DB, SM-0003SB, SM-0008LL, SM-0008SBR, WEX-0206LL, and WEX-0206SB. Concentrations of 1,4-Dioxane ranged from 0.028 to 1.4 ug/L. PFAS concentrations ranged between ND and 13 ppt (T-25B) for PFOA and ND to 4.1 ppt (T-25SB) for PFOS.

Finally, two residential wells were sampled for 1,4-dioxane at the request of the NYSDEC in a letter dated July 13, 2020. Cornerstone prepared a Work Plan dated November 4, 2020, that was approved by the NYSDEC. Sampling included properties at 1743 and 1755 North Road Waterloo, NY. The results of this sampling were presented to the NYSDEC via a letter report dated June 2, 2021. The results showed that well 1743 had 0.033 µg/L of 1,4-dioxane and well 1755 was ND. These samples were below the groundwater screening level of 0.35 µg/L.

3.2.1.1 Groundwater Quality

From a drinking water quality perspective, natural groundwater quality in the area is characterized as being hard, with large amounts of dissolved solids. Taste, odor, dissolved solids, and hardness of water were some of the groundwater problems for about 25 percent of the water wells inventoried in the Western Oswego River Basin (Crain, 1975). The SMI site is in the northern area of the basin.

The total depth of the water supply wells in the vicinity of the Project Areas range from 17 to 195 feet. Given the thickness of the overburden, the shallow wells have historically obtained water from the overburden deposits, while the deep wells benefit from the yield in the bedrock. Almost invariably, homeowners around the Facility who have previously had supply wells reported that the water from their wells was hard. Several homeowners have also indicated that there are color and odor problems with their well water. These water quality observations are attributable to the natural groundwater quality conditions of the region.

Existing groundwater quality at the Facility has been evaluated through the collection and analysis of groundwater samples collected from monitoring wells. In accordance with permit requirements for the SMI Landfill, quarterly groundwater sampling and analysis have been conducted on approximately 60 monitoring wells associated with the permitted SMI Landfill operation. Additional groundwater wells exist on site which are not currently part of the EMP monitoring operations.

Site-Specific Groundwater Quality

Groundwater monitoring data for the Existing Facility are evaluated on a quarterly basis using Stiff and Piper diagrams, by comparison to 6 NYCRR Part 703 Class GA groundwater quality standards, and/or through statistical analyses using DumpStat© software. Quarterly reports are prepared that present the data and evaluations along with an annual report. Overall, the results of the monitoring and reporting show that the Existing Facility is in compliance with the Part 703 Class GA groundwater quality standards, with the exception of two areas that are known to be previously contaminated, are not associated with the current landfill operation, and/or are undergoing remediation. As previously described, locations immediately downgradient of the Facility and the Tantalo Waste Disposal Area, are provided with public water supply from surface water sources. The areas of localized impacts are as follows:

- Adjacent to the Facility entrance road. Increasing trends in sodium, chloride, and other parameters at three wells adjacent to the entrance road are attributed to road salt used in the permitted landfill operation.

- Associated with the Tantalo Waste Disposal Area. Groundwater impacts associated with the Tantalo Waste Disposal Area have been well defined through the remedial investigation, and subsequent groundwater characterization and monitoring performed for the remedial action implementation and operation, maintenance, and monitoring. The groundwater impacts are defined by two areas, the shallow (overburden) groundwater and the bedrock groundwater.
    - Shallow: Groundwater flow is predominantly vertical with a very limited lateral flow component. Volatile organic compounds associated with the Tantalo Waste Disposal Area are present above the Part 703 Class GA groundwater quality standards in shallow (overburden) groundwater in localized areas, principally adjacent to monitoring wells T-1 and T-15. The limited extent of impacts and predominantly vertical flow are documented in routine monitoring and reporting.
    - Bedrock: Groundwater flow in the bedrock is predominantly to the southwest, and a groundwater plume of volatile organic compounds has been defined down gradient of the Tantalo Waste Disposal Area. This plume is completely contained within SMI Property.

The remediation of this groundwater plume (OU-2) has been ongoing since 2007, and remediation efforts have resulted in lowering concentrations of volatile organic compounds and a retraction of the plume. Statistical analyses performed as a part of the Existing Facility groundwater monitoring have shown significant trends of generally decreasing concentrations which reflect the positive results from the remediation work at the Tantalo Waste Disposal Area. Noteworthy, since 2010, injections of electron donor material have occurred outside of the footprint of the Tantalo Waste Disposal Area in the down-gradient plume area.

Although chlorinated volatile organic compound (CVOC) concentrations have been reduced from their baseline concentrations throughout the Facility Site, and despite the fact that key reductive dechlorination metrics such as ORP, and methane concentrations, etc. have displayed evidence of dechlorination throughout the Facility Site, in a few key wells (SE-100, IN-6S, IN-7S and T-39SB) concentrations have either increased or remained stable for the last few reporting periods. Where concentrations have increased, the compounds detected were generally breakdown/ daughter products of the original contaminant, and these temporary concentration increases are representative of effective reductive dechlorination. Per conversations with the NYSDEC in the Spring of 2021, SMI developed a work plan for third electron donor injection event during the winter of 2024 at key locations to maintain optimal conditions for continued groundwater remediation.

Cornerstone mobilized to the Facility Site in January 2024 to begin the new well installations alongside drilling subcontractor Parratt Wolff. The scope of work included the installation and injection of electron donor product and a bioremediation inoculant into several wells located north monitoring well T-39SB and the installation of a new downgradient sentinel well cluster (T-40DB/SB). Subsequent to the well drilling, Cornerstone returned to the Facility Site to implement electron donor injections beginning in January 2024. Injection procedures (material and amounts) were generally consistent with the original OU-2 remediation program. The wells at the Facility can be seen in Figure 3-3. It should be noted that all the continued activity associated with maintaining and monitoring the OU-2 remediation is occurring outside the proposed SMI Valley Infill footprint. The results of the recent injections will be included in subsequent annual reports for the Tantalo site.

If future groundwater monitoring indicates that additional injections would be of value, such future injections would also be in the down-gradient plume area and development of the SMI Valley Infill Area would not interfere with the injections.

Additional information on groundwater monitoring procedures, parameters, and data analyses can be found in the Facility's Environmental Monitoring Plan. Additional information on groundwater monitoring procedures, parameters, and data analyses can be found in the Facility's Environmental Monitoring Plan.

3.2.2 Surface Water

3.2.2.1 Drainage Basins

The Project Area lies in the center of the Western Oswego River Basin, which covers 2,600 square miles. The dominant features of this river basin are the 4 largest Finger Lakes (Cayuga, Seneca, Keuka, and Canandaigua). The Clyde and Seneca Rivers receive the majority of flow from the Finger Lakes. Eventually, drainage from the basin reaches the Seneca River which then flows into the Oswego River to the northeast. The Oswego River flows north-northwest into Lake Ontario. A tributary of the Seneca River (Black Brook), which was realigned as a part of the 2007 Landfill Development project, flows north of the Project Area. Figure 3-5 presents maps depicting surface water sampling points and features in the immediate vicinity of the Project Area.

3.2.2.2 Floodplain

The floodplain represents the area adjoining a river, stream, lake, or other body of standing water that has been, or may be, covered by floodwater. The 100-year floodplain is most often used as an indication of the flooding potential for a certain site. The 100-year flood is the flood resulting from a storm which has a one percent probability of occurring in any given year. This determination is based on statistical analyses of stream flow records available for the watershed and analyses of rainfall and runoff characteristics in the general region of the watershed.

Currently, the Federal Emergency Management Agency (FEMA), which has overall responsibility to administer the National Flood Insurance Program (NFIP), has on file for the Town of Seneca Falls, Seneca County, New York, (Community No. 360756) the following effective Flood Insurance Rate Map (FIRM) for the Project Area:

- The FIRM dated February 3, 1981, based on analyses done for the Flood Insurance Study for the Town of Seneca Falls dated August 3, 1981.
- A Letter of Map Revision (LOMR) dated January 5, 2000, effective July 5, 2000 (which was based on a modeling report prepared by EMCON, dated December 1998) to reflect updated topography and hydraulic analyses.

However, this mapping does not yet reflect the realignment of Black Brook. As part of the realignment project, a Conditional Letter of Map Revision was prepared (URS Corporation, revised August 2006), and submitted to FEMA for review. The Conditional LOMR was used to show the new floodplain boundaries that would be established following the completion of the Black Brook realignment, and also establish that the flood elevations would not be increased by the realignment or cause flooding on adjacent properties not owned by SMI. In letters to the Towns of Seneca Falls and Waterloo, dated April 5, 2007, FEMA stated that "…the proposed project meets the minimum floodplain management criteria of the NFIP.", and that when the project is complete ". . . revision to the FIRM and FBFM [Flood Boundary and Floodway Map] would be warranted." Based on the hydrologic and hydraulic analyses in the Conditional LOMR, the SMI Valley Infill Area is wholly outside the 100-year floodplain boundary. Construction of the Black Brook realignment was completed in early 2013.

The consideration of flood risk as it pertains to climate change is discussed in Section 4.6.3.2.

3.2.2.3 Surface Water and Sediment Quality

Regionally, Black Brook is a tributary to the Clyde River and Barge Canal, New York State (NYS) Water Index Number Ont. 66-12-52-1, as identified in 6 NYCRR Part 898. It flows through the Montezuma National Wildlife Refuge about 7.5 miles downstream of the Project Area. It is classified as a Class C fresh surface water in accordance with 6 NYCRR Part 701. The best usage and suitability of Class C waters is defined by 6 NYCRR Section 701.8 as follows:

"The best usage of Class C waters is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes."

The realignment of Black Brook routed the stream through wetland areas and included pools, riffles, and meanders to promote a natural channel design consistent with the best usage goals of Class C waters.

Site-Specific Surface Water and Sediment Quality

Extensive surface water quality monitoring has been undertaken at the Existing Facility, in accordance with an approved Environmental Monitoring Plan (EMP) and Site Analytical Plan (SAP). Since the realignment of Black Brook, surface water quality data is obtained on a quarterly basis at four locations, as follows:

- SW-017, up gradient of the Existing Facility, just as Black Brook enters property owned by SMI.
- SW-018, adjacent to the SMI Landfill and downstream of the west basin stormwater pond effluent discharge point.
- SW-019, at the downstream limit of the Black Brook realignment prior to the confluence with the former stream channel.
- SW-020, just downstream of the confluence of the realigned Black Brook channel and the former stream channel.

In addition, potential impacts to stream sediment quality were evaluated by comparing the results for samples taken adjacent to and downstream from the landfill (SS-018, SS-019, SS-020) to the results obtained for upstream sample SS-017.

The surface water and sediment sampling locations are shown on Figure 3-5. Surface water and sediment samples are obtained four times per year. The 2023 sampling was performed in February, May, August, and October, and the results are included in the Seneca Meadows Quarterly and Annual environmental monitoring reports submitted to the NYSDEC. Surface water samples obtained from Black Brook are analyzed for both a modified Part 360 routine list (three quarters), and a modified Part 363-4.6(h) baseline list (one quarter) of parameters. The parameters include a series of leachate indicator parameters, metals, and organic indicators (e.g., TOC, BOD). Sediment samples are analyzed for a modified Part 363-4.6(h) routine list including leachate indicator parameters, metals, phenols, and organic indicators. Trigger Value exceedances in the sediment samples for 2023 are summarized in Table 3-1.

In general, the surface water quality results obtained during 2023 are consistent with prior results and indicate that the downstream water quality is comparable to upstream water quality and does not reflect impacts from the Existing Facility. Comparisons of the quarterly upstream and downstream surface water and sediment analytical results showed no substantial increases in the downstream results that could be directly attributed to the facility.

Except for aluminum, exceedances of the NYSDEC Class C surface water standards occurred at both the upstream and downstream sample locations throughout the year, indicating that the exceedances can be attributed to natural water quality or an off-site source. The NYSDEC Class C surface water standard exceedance for aluminum occurred in samples SW-019 and SW-020 during the third quarter and were significantly below the respective trigger value for aluminum. A summary of exceedances to Class C standards in surface water for 2023 is given in Table 3-2.

The results of grain size testing on the first, second and third quarter sediment samples showed that all sediment samples contained greater than 50% clay-size and finer sediment, which met the field sampling goal specified in the EMP. During Q4 the SS-020 was slightly below the 50% threshold.

A comparison of the analytical results for sediment samples collected during the four quarters of sampling showed that one or more of the samples taken downstream of the Facility exhibited higher values for various parameters as compared to the sample taken upstream of the Facility (SS-017). Phenolics, lead, and nitrogen were among the parameters most frequently exceeding the trigger values each quarter. The higher downstream values were

attributed to the higher TOC contents of the downstream samples which occur due to their presence in a wetland environment, and drier weather for the year. Trace metals have been known to have an affinity for sediment organic matter.

The sediment analytical results for each quarterly Black Brook sampling event were compared to the NYSDEC guidance values for screening contaminated sediment (NYSDEC, 2014). The sediment analytical results for each quarterly sampling event were found to be lower than the NYSDEC Class A guidance limits, indicating little or no risk to aquatic life.

Evaluations of the 2023 quarterly monitoring results for the Black Brook surface water and sediment samples showed no indication of potential impacts by the landfill facility.

3.2.2.4 Leachate and Gas Condensate Quality

The development of a proven system to efficiently manage the leachate generated during the life of a waste disposal facility includes: an estimate of the leachate generation rate; the design of the baseliner; the functioning of the overall leachate management system, including the collection and transfer system; the design of the final cover; and the mechanisms for the treatment and disposal of the collected leachate.

The leachate collection system is divided into three components: a leachate collection system, a leachate conveyance system, and a leachate storage and transfer system. Each of these components has been designed in accordance with the design and performance criteria set forth in 6 NYCRR Sections 363-6.6 through 6.13.

In 2023, leachate samples were collected from above the primary liner systems of all lined fill areas of the landfill, from a manhole that accesses the A/B drain of the A/B Overfill Areas, from the east and west ends of the SM-11 drain at the south side of the SMI Landfill, and from designated leachate recovery wells at the SMI Landfill. Samples of liquid from the secondary liner systems of each landfill area were also collected. Composite samples of gas condensate were collected from various storage tanks at the Facility. Figure 3-4 shows the leachate monitoring locations.

Sampling is conducted in the second and fourth quarters each year and tested for the expanded list of parameters as directed in the Part 360 regulations. Liquids collected from the secondary liner systems are also sampled in the first and third quarters and analyzed for the baseline list of parameters. Samples are taken from various sump locations each year and rotated to other sump locations in each subsequent year. Liquid from the secondary collection system is also be sampled on a semi-annual basis for the expanded parameter list, pursuant to Part 360. Leachate quality is also monitored to ensure compliance with applicable requirements of the Publicly Owned Treatment Works (POTW) which accepts the leachate for treatment.

In addition, sampling and analysis of one porewater sump location takes place quarterly, concurrent with the primary and secondary leachate collection system monitoring described above. Porewater samples are analyzed for leachate indicator parameters.

See the results in Table 3-3 for Leachate Recovery Well, Primary Leachate, Secondary Leachate and Gas Condensate Quality Sample Results for 2023. The quality of the leachate generated by the SMI Landfill falls within the range typically expected. Results in Table 3-3 have been broken out by parameter type for ease of use.

Evaluation of the analytical results showed that most general chemistry parameters except hexavalent chromium, total cyanide, nitrate, and sulfide were elevated in the leachate and gas condensate samples relative to naturally occurring groundwater at the Facility Site. Arsenic, barium, boron, chromium, iron, magnesium, manganese, nickel, and sodium were also elevated. Aluminum, cobalt, lead, mercury, potassium, vanadium, and zinc were slightly elevated relative to groundwater concentrations.

Among the VOCs detected in the leachate and gas condensate samples, acetone and 2-butanone (MEK) exhibited the highest concentrations. A few SVOCs, mainly 3+4 methylphenol and phenol, were detected in the leachate and gas condensate samples. No PCBs were found in the leachate or gas condensate.

Samples collected from the east and west ends of the SM-11 drain continue to show slight to moderate exceedances of the groundwater standards for several analytes. The sample from manhole 1 of the A/B Overfill Area exhibited a chemistry similar to that of the leachate recovery wells at the SMI Landfill.

Emerging contaminate samples have been collected several times on site for raw leachate, condensate, and permeate. On March 12, 2018, split samples were collected from the reverse osmosis (RO) system concentration, RO system permeate, raw mixed leachate, and two primary raw leachate samples for 1,4-dioxane and PFAS. Results for 1,4-dioxane ranged from 0.16 (RO system permeate) to 210 ug/L (raw mixed leachate/RO system concentrate). PFAS samples ranged from 0.47 (RO system permeate) to 3,500 ppt for PFOA (RO system concentrate) and ND (RO system permeate) to 570 ppt for PFOS (RO system concentrate).

A grab sample was collected on November 10, 2020, from the RO system concentrate and analyzed for 1,4-dioxane and PFAS. Results were 270 ug/L for 1,4-dioxane, 3,200 ppt for PFOA and 680 ppt for PFOS.

A grab sample was collected on April 06, 2021, from the RO system permeate and analyzed for 1,4-dioxane and PFAS. Results were 3.6 ug/L for 1,4-dioxane, 3.5 ppt for PFOA and 0.77 ppt for PFOS.

A grab sample was collected on April 06, 2021, from the raw leachate and analyzed for 1,4-dioxane and PFAS. Results were 150 ug/L for 1,4-dioxane, 1,400 ppt for PFOA and 210 ppt for PFOS.

Comparisons of the chemical data for samples from the primary liner systems, secondary liner systems, and porewater beneath the liner systems of the lined landfills at the Facility show no evidence for leakage of the liners.

The Facility operates a biological treatment system with capacity to treat 200,000 gallons per day of leachate transferred to the on-site storage facility. The updated treatment system includes aeration, agitation, biological treatment, an ultrafiltration process and reverse osmosis. The existing RO system will be used primarily when updated system is inoperable in an emergency or for scheduled maintenance. Depending upon system outputs and efficiency, it is possible the two treatment systems will be run sequentially (e.g., the current reverse osmosis system may be used to further scrub the concentrate from the new system's reverse osmosis stage). Three byproducts will result from the treatment systems; RO permeate, RO concentrate, or raw leachate that has been biologically treated in the updated system. The permeate will generally be discharged into the local POTW forcemain. The concentrate will be treated through the leachate concentrate evaporator, trucked off-site to surrounding POTW facilities or in a contingent situation recirculated into the waste mass. The biologically treated leachate that is not treated through ultrafiltration and reverse osmosis will be trucked off site to a WWTP or in a contingent situation be recirculated in the waste mass.

The leachate concentrate evaporator is designed to treat up to 60,000 gallons per day of either raw leachate or leachate concentrate from the treatment systems or raw leachate on site.

Residual waste from the evaporator centrifuge will be in solid form and will be profiled and approved as special waste prior to disposal at the working face.

Leachate not treated on site will be transported off site using 8,000-gallon tank transfer trailers. SMI currently holds agreements with the Village of Seneca Falls Wastewater Treatment Plant (sewer connection) and several other POTWs to accept leachate from the Facility. SMI has arranged disposal agreements with multiple facilities to provide both routine and contingency disposal capacity that is greater than expected leachate generation rates.

SMI maintains contracts with local hauler and service providers and also owns a vac truck to manage the needed leachate pumping and hauling services at the Facility.

3.2.2.5 Stormwater Quality

Stormwater runoff from the SMI Landfill that has not come in contact with waste is currently directed via swales and a perimeter channel to the retention / sediment basins located on both the east and west sides of the fill area. There are 6 retention / sediment basins in use, with 3 on the east side of the Facility and 3 on the west side. The

east side ponds have a total current capacity of approximately 128-acre-feet while those on the west side have a total current capacity of approximately 44.7-acre-feet.

The stormwater runoff from the Southeast Landfill and the 2007 Landfill Development areas are managed through the use of collection ponds, pumping points, and a series of conveyance structures where it passes under Salcman Road, and into the South Pond System. Four retention / sediment basins are used to collect water from these areas. Collected surface water / construction waters are manually pumped to South Pond 3. When South Pond 3 reaches approximately 474 feet MSL, water is transferred into South Ponds 1, 2, or 4. The south side ponds have a total current capacity of approximately 284.7-acre-feet.

In accordance with the SMI Landfill permit, the current stormwater management operation utilizes a batch process approach to stormwater quantity and quality control. The stormwater flows are regulated by control valves which allow flow to enter only one of the ponds at a time. Upon reaching design capacity, the controls for the operational pond are closed and flows are directed to one of the other ponds. After appropriate retention time, stormwater in the full pond is sampled and, if within specific water quality limits, pumped to discharge channels directing the flow to Black Brook (East and West Pond Systems) or to the Seneca-Cayuga Canal (South Pond System).

During 2023, a total of 20 discharge events from the retention / sediment basins were conducted. These are summarized in Table 3-4. A total of about 180.4 million gallons of stormwater were transferred into the Black Brook. The average discharge volume of these events was 9 million gallons.

Routine Facility inspections are performed by qualified personnel weekly to check the effectiveness of stormwater BMPs and for evidence of actual or potential discharges of contaminated stormwater. Additionally, since soil disturbance is currently (and will likely remain) greater than five acres at one time, an erosion and sediment control inspection is performed by qualified personnel twice every seven calendar days. Quarterly visual monitoring is also performed at each of the four stormwater sampling points to check for indications of polluted or contaminated stormwater. An annual dry-weather flow monitoring is done once per year to verify there are no non-stormwater discharges occurring at any of the sampling points. The sampling points are also monitored twice per year for semi-annual benchmark and numeric effluent limitations. Points SW-005, SW-021, and SW-022 are sampled for the parameters covered under Sector L of the MSGP. Point SW-023 is sampled for the parameters covered under Sectors L, N, and P of the MSGP. The results of the required monitoring are summarized and submitted to the NYSDEC in an Annual Certification Report (ACR) and Discharge Monitoring Reports (DMR). The ACR and DMRs are kept with the Facility SWPPP for a minimum period of five years.

An Annual Certification Report for the 2023 Calendar year was submitted electronically to the NYSDEC on January 19, 2024. The 2023 ACR reported zero exceedances of Numeric Effluent limitations and one exceedance of an MSGP Benchmark Cut-off concentration. The one exceedance (iron) was attributed to increased sediment from passing vehicles on SR 414 and was effectively addressed with increase sweeping activities. No visual indications of stormwater pollution or contamination were observed during the Quarterly Visual Monitoring at each sampling point in 2023. The 2023 Annual Dry Weather Monitoring did not indicate the presence of any non-stormwater discharges. As noted above, documentation of the stormwater monitoring required by the MSGP can be found on-site with the facility's SWPPP.

The consideration of impacts to stormwater as it pertains to climate change is discussed in Section 4.6.3.1.

3.2.3 Wetlands

Wetlands have previously been delineated on the entire Facility Site and were studied extensively in connection with the approval of the 2007 Landfill Development. As part of that project, significant acreage of wetlands was created as part of the mitigation for the wetland taking that occurred. Some remaining wetlands on the Facility Site and other SMI Property are now covered under conservation easements. Figure 3-6 shows the location of wetland and conservation easements. There are no wetlands or conservation areas within the Project Area, and

the Project will not affect any nearby wetlands as it is entirely contained within the footprint of areas that have already been used for waste landfilling or landfill Facility operations.

3.3 AIR RESOURCES

This section contains a summary and description of existing air quality conditions at the Facility and the surrounding area as well as a compilation of the emissions from the Facility. The Facility Site and surrounding area are primarily a rural environment with interspersed commercial establishments and, based on ambient monitoring data, experiences good overall air quality. The area has a demonstrated history of compliance with State and Federal air quality standards.

SMI routinely monitors landfill gas emissions by performing surface emissions monitoring. The surface monitoring is performed quarterly and is intended to satisfy the requirements of the USEPA's New Source Performance Standards (NSPS) for municipal solid waste landfills. Surface emissions monitoring is conducted in accordance with the Facility Surface Emission Monitoring Plan along a serpentine pattern across the landfill surface. The quarterly surface emissions monitoring determines the concentration of methane at the surface of the landfill. The monitoring is performed with a Flame Ionization Detector (FID), Foxboro OVA Model TVA 1000 or equivalent following EPA Method 21. The meter's probe inlet is placed 5 to 10 centimeters above the ground during sampling along the 30-meter serpentine pattern across the surface of the landfill. Technicians follow a pre-established grid pattern. Meteorological conditions are monitored to ensure the monitoring is performed during typical meteorological conditions.

Consistent with NSPS, any surface readings that exceed background levels by greater than 500 ppm methane are marked, and the location is recorded. Subsequently, cover maintenance to the location or vacuum adjustments to adjacent extraction wells to increase the gas collection in the vicinity of each exceedance is initiated. After adjustment are made at any exceedance location, the follow-up monitoring is conducted, including:

- Re-monitor each location within 10 days of the original exceedance. If the re-monitoring indicates a second exceedance for the same location, additional corrective action is taken, and the location is re-monitored again within 10 days of the second exceedance.

If any location that initially showed an exceedance has a methane concentration less than 500 ppm methane above background at any 10-day re-monitoring, the location will be re-monitored one month from the initial exceedance. If the one month re-monitoring indicates no exceedance, no further monitoring is required until the next quarterly monitoring period. If the one month re-monitoring shows an exceedance, corrective action and re-monitoring on the 10-day schedule will be initiated. For any location where monitored methane concentration equals or exceeds 500 ppm above background three times within a quarterly period, a new well or other collector shall be installed within 120 calendar days of the initial exceedance, or an alternative remedy can be submitted to NYSDEC for approval. This monitoring program demonstrates the on-going effectiveness of the landfill gas collection/control system at SMI.

The Facility is equipped with an active landfill gas collection and control system as described in Sections 2.4.3.7 and 2.4.3.8 of this DEIS. Emissions associated with the Seneca Meadows Landfill operations, along with projections and measurements of the resulting air quality impact in surrounding areas are described in Section 3.3.3. In preparation of CLCPA analysis, the emission inventory of existing emissions considered GHG emissions. Description of the GHG emission inventory for CLCPA analysis is provided in Section 4.6.1.

3.3.1 Climate and Meteorology

The climate of Seneca County may be classified as humid continental. Atmospheric air flow is predominately continental which is slightly modified by the Finger Lakes (Seneca and Cayuga Lakes) and Lake Ontario, whose primary influence is in moderating the temperature and increasing the growing season. In the spring, the cold lake waters serve as a heat sink, and the rate of normal temperature increases is slowed down. The lakes also tend to

minimize extremely high temperatures during the summer. In the fall, warm surface waters retard the normal rate of air temperature decline. In the winter, the lakes tend to prevent severely cold temperatures in comparison with inland areas of similar physiography. The smaller Finger Lakes to the south have much less of an effect.

These bodies of water are not near enough or large enough to cause a condition known as fumigation, an inversion effect reducing the ability of contaminants to disperse and increasing local impact. Fumigation can be present at sources in very close proximity (<3 km) to very large bodies of water. None of these bodies of water would likely cause such a fumigation episode at the Facility Site. Structures such as landfills can cause a downwash effect or micro-climate in certain circumstances which could increase emission concentrations in particular areas near the landfill.

Seneca County receives relatively light precipitation. Precipitation data for Seneca County recorded by the National Oceanic and Atmospheric Administration (NOAA) between the years 1990 and 2020 indicates the mean annual precipitation observed at the Geneva Weather Station was 34.61 inches. Average monthly precipitation in Seneca County is relatively uniform with no well-defined wet or dry seasons. The lightest monthly precipitation normally occurs in winter, and the heaviest from late in the spring to mid-summer (USDA, 1972).

Meteorological conditions are important in assessing the air quality in a particular area. Once compounds are emitted into the atmosphere, the meteorological conditions present at the time will determine how those compounds are dispersed and, therefore, the impact they will have on the surrounding environment.

The closest long-term National Weather Service meteorological stations is in Syracuse, New York, which is approximately 41 miles east of the Facility Site. This station has weather data/records dating back to approximately 1930 for a number of meteorological parameters. Mean temperature, precipitation and snowfall from 1990 through 2022 is presented in Table 3-5. Average wind speeds and directions were used to generate a wind rose for the Facility Site. The wind rose reveals winds generally from the west (see Figure 3-7 for wind rose).

Prevailing wind speed and direction are important determinants for air quality emissions impacts. The predominant wind direction, as is typical for the area, is from the west. Winds from the northeast or southeast quadrants are infrequent and are typically associated with cyclonic storms.

In general, the less stable (calm) an air mass is the greater potential it has for dispersion. The air mass below the mixing height has the characteristics for good vertical mixing. Above the mixing height the air is relatively calm and an inversion condition may exist. An inversion exists when stable air with warm temperature lies above lower temperature air which prevents mixing and dispersion. Low mixing heights of less than 220 yards (about 200 meters) and wind speed of less than 5 mph are consistent with poor dispersion.

3.3.2 Ambient Air Quality Monitoring

3.3.2.1 Regional Air Quality Monitoring

Comprehensive, continuous air quality monitoring data is collected by the NYSDEC at a network of measurement stations throughout New York State. Individual measurements at these stations are designated for use as part of either the National Ambient Air Quality Monitoring Stations (NAMS) or the State and Local Air Monitoring Stations (SLAMS) systems. The NAMS stations are part of the national network established under the Clean Air Act (CAA) of 1977 (revised in Title I of the CAA Amendments of 1990 (CAAA)). The NAMS data is utilized to determine compliance with the National Ambient Air Quality Standards (NAAQS) for the following pollutants: ozone, carbon monoxide, particulate matter less than 10 microns (PM-10), lead, sulfur dioxide (SO_2), and nitrogen dioxide. These pollutants are referred to as the criteria pollutants. Ozone is believed to be caused by a photochemical reaction between volatile organic compounds (VOC) and the oxides of nitrogen (NO_x).

Areas determined by this sampling network to be within the limits set forth in the NAAQS are determined to be in attainment while areas not meeting the NAAQS are determined to be in one of five classes of non-attainment depending upon the air quality values determined to be present. States with a non-attainment area are required to

prepare State Implementation Plans (SIPs) for submittal to the USEPA which describe how the State will bring these areas into attainment. Attainment status also determines the emissions level in tons per year (TPY) which defines major source applicability to Title V permitting and other programs in the CAAA.

While the area of the Facility Site is in attainment with the NAAQS, it lies in an area referred to as the ozone transport region (OTR) which runs from Virginia to Maine. As the name implies, the OTR was set up due to the ozone from one area being relatively mobile and moving from one area to another. Due to its presence in the OTR, all of New York State is considered to be in ozone non-attainment regardless of airborne concentrations.

The NYSDEC operates a total of 8 air monitoring sites within Regions 7 and 8, as shown in Figure 3-8. Of the monitoring sites, 3 are in NYSDEC Region 7 and 5 in NYSDEC Region 8. The sites contain a mix of manual and continuous recording instruments. The manual sites generally involve measurement of particulates, metals and/or acid deposition over discrete periods of time while continuous sites provide tracking and logging of gaseous pollutant concentrations as a continuous function of time. All 8 sites are designated as part of the NAMS network, providing one measurement location for PM-10, one for lead, six for SO_2, five for ozone (0_3), and three for carbon monoxide (CO).

The nearest NAMS station to the Facility is an ozone measurement site located in the Town of Williamson, Wayne County. All others are located in Rochester and Addison, New York at a distance of approximately 40 to 70 miles west and south, respectively. Due to the distance of these stations from the Facility Site and the general difference in surroundings (metropolitan vs. rural) the data may not be entirely representative of the actual conditions at the Facility Site. However, it does represent the most thorough database of information and should reflect the general pattern of air quality in the area. Appendix C contains a listing and comparison between the New York State and Federal ambient air quality standards.

Based on a review of the latest available 4 years of monitoring data (between 2019 and 2022) from the above sites presented in the “Division of Air Resources 2022 Annual New York State Air Quality Report Ambient Air Monitoring System” average concentrations for all contaminants were all well below the State and Federal standards. The data is an indication of overall good ambient air quality in the area.

Further air quality discussion, related to the Facility Site is included in Sections 3.5.3, 3.7, and 4.3. In addition, the Air Quality Modeling Report has been provided by GHD in Appendix K.

3.3.2.2 Community Level Air Quality Monitoring

In addition to regional ambient air monitoring conducted by the NYSDEC, community level air monitoring was conducted through the Community Air Screen (CAS) program. Launched by the NYSDEC, the CAS program helped better understand toxic air pollutants at the community level. NYSDEC received applications for the CAS program and accepted the application from Seneca Falls Environmental Action Committee. Air samples were collected for formaldehyde analysis in addition to air samples collected for analysis of 43 volatile organic compounds (VOCs) routinely collected in the CAS program. In June and July 2018, two 1-hour air samples were collected for VOCs and seven 1-hour air samples were collected for formaldehyde near the Seneca Meadows Landfill in the Town of Seneca Falls. The samples were analyzed by NYSDEC’s laboratory and the results were evaluated for potential air quality concerns. NYSDEC concluded that results were below short-term and long-tern health-based air concentration values, and all results were similar to concentrations found in NYSDEC’s ambient air monitoring network. The results of the Seneca Falls community air screening can be seen in the NYSDEC report included in Appendix K.

A pilot ambient monitoring program was commissioned by SMI and conducted in 2019 with the objective to track and evaluate the influence of site-specific weather conditions which may contribute to off-site landfill odors, and investigate emissions detected off-site during various weather patterns/conditions. Monitoring was conducted using continuous monitors in targeted perimeter locations and areas of potential receptors owned or controlled by SMI, and by using mobile devices to investigate emissions detected off-site. Landfill odors at SMI have been

characterized as coming from two primary sources; landfill gas, and waste/trash (operational odors). It was decided that methane would be used as a benchmark detector gas with the assumption that landfill odor-causing gases travel in the same path as methane gas.

The ambient monitoring network consisted of four fixed stations, each containing instruments (Aeris Pico) for low level methane concentration measurements, meteorological measurements, data telemetry, and solar and wind power. A fifth station was mounted in an SMI vehicle that included a meteorological instrument, and a global positioning system (GPS) in order to provide location data. The data collected during the pilot ambient monitoring program showed wind speed and direction are key indicators of the meteorological conditions conducive to detecting odors, particularly in stable conditions when the wind is blowing towards a populated area. In addition, low wind speeds (both stable and unstable wind conditions) result in higher methane readings and increases the frequency of odor reports. Higher methane readings occurred during seasonal changes due to decreased wind speeds.

An on-going hydrogen sulfide (H_2S) ambient air monitoring program is currently being conducted by SMI to continuously monitor H_2S concentrations at targeted perimeter locations to evaluate the presence of off-site landfill gas and associated constituents of that gas related to odor. The air monitoring is being conducted in general accordance with NYSDEC's Field Protocol for Collecting and Analyzing Hydrogen Sulfide in Air with an Acrulog H_2S Parts Per Billion Monitor dated 10/27/20. The air monitoring includes data collection and management, reporting and investigation, and corrective actions for any exceedance of the 1-hr H_2S standard. All current data, reports and investigations, and corrective actions are submitted to NYSDEC.

3.3.2.3 Air Dispersion Modeling

Since the landfill is currently in operation, it was possible to provide a quantitative analysis of the emissions from the Existing Landfill (defined collectively as the Existing/AB Overfill, Southeast Landfill (SELF), Southeast Bumpout (SBO), the Western Expansion (WEX) and Northern Expansion (NEX) Landfills) to be used as a baseline for the proposed SMI Valley Infill. This analysis includes point source and fugitive source emission sources.

An air dispersion modeling analysis for the Existing Landfill was submitted in January 2019 for the addition of a concentrate/leachate evaporator in order to demonstrate compliance with the standards described in 6 NYCRR Part 212. In 2021, an updated air dispersion modeling analyses for the Existing Landfill was submitted for the leachate treatment system upgrades and was performed in accordance with the modeling protocol submitted with the initial application for the concentrate/leachate evaporator. In 2023, an updated analysis was completed following a Flux Chamber Study to quantify H_2S emissions through the landfill cover. Summary of the Flux Chamber study is described in Section 3.5.4.5. Based on the 2023 results, all maximum predicted concentrations are within the acceptable Annual and Short-term Guideline Concentrations (AGC/SGC) limits.

As part of the SMI Valley Infill's Title V Application, an air dispersion modeling protocol was submitted, and modeling methodology was completed in accordance with 6 NYCRR Part 212 and the DEC DAR-10 document. Modeling results for maximum predicted ground-level concentrations were compared with NYSDEC's DAR-1 AGC and SGC values. The calculated and measured impact of those emissions off site is included in the Air Quality Modeling Report for both the existing and proposed landfill areas included in Section 4.3.2 and can be referenced in Appendix K.

Emissions from point sources (those that exhaust through a stack) and fugitive emissions (those that cannot reasonably be collected, and which thus do not exhaust through a particular point) were calculated based on available emission factors, engineering calculations, analytical data, and computer models. The resulting impact of these sources to off-site receptors was evaluated using both computer dispersion modeling and mathematical dispersion calculations, following procedures and guidelines established by State and Federal regulatory

agencies. The resulting impact concentrations were compared to State and Federal standards or guidelines, where applicable.

In addition to point source and fugitive emissions, nuisance emissions (particularly odor) have been investigated in detail. The qualitative assessment of the presence of odor has been supplemented with quantitative analysis for the “ingredients” of the odor and the toxicity of these compounds has been assessed based on health risk.

3.3.3 Air Emissions from the Seneca Meadows Landfill

This section contains an estimate of emissions associated with the Seneca Meadows Landfill operations, along with projections and measurements of the resulting air quality impact in surrounding areas.

The principal air emission from a municipal solid waste (MSW) landfill facility is landfill gas which results from the decomposition of refuse. Landfill gas is generated as a by-product of chemical and biological waste decomposition within the waste mass of all such facilities. The volume and rate of landfill gas is based on many factors including:

- Type and composition of waste
- Amount of biodegradable materials
- Age of waste
- Moisture content
- pH and temperature

Landfill gas production is accelerated when the available oxygen is used up and the decomposition becomes anaerobic. This generally occurs within a 1 to 2-year period after waste placement and cover, usually peaking after final cover is applied and continues for several years after.

There are two principal concerns regarding the production and emission of landfill gas. The first involves the explosion and fire hazard associated with the accumulation of large concentrations of methane gas in a confined space. The second issue includes off-site concerns such as: odor and nuisance issues, air emissions, and criteria pollutants both from the landfill gas and as a by-product of combustion as a means of controlling landfill gas.

Typical landfill gas is comprised of approximately 50 percent methane; 50 percent CO_2 (by volume); and small quantities of ammonia, hydrogen sulfide, nitrogen, hydrogen chloride, carbon monoxide, and various VOCs. Typically, less than 1 percent (by volume) of landfill gas is non-methane organic compounds (NMOCs). Primary emissions of concern from landfills include NMOCs and methane as well as CO, NO_x and HCl as by-products of combustion. The chlorinated compounds are converted to hydrogen chloride (HCl) in the combustion process. NMOCs include volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and odorous compounds.

The air dispersion modeling referenced in Section 3.2.3.3 is based on laboratory analytical data from annual landfill gas samples collected at the landfill. At DEC’s request, modeling and emissions estimates are based on an average of the most recent 5-years of analytical data. The 2023 air dispersion modeling was based on laboratory analytical data from 2018-2022, with the exception of hydrogen sulfide for landfill surface fugitive emissions that was based on measured values from the 2023 surface emissions flux study.

Until 1995, landfill gas (LFG) from the Seneca Meadows Landfill was passively vented via diffusion or by other non-mechanical means. In 1995, SMI installed a 2,000 cubic feet per minute (CFM) enclosed flare with a blower to actively draw gas from the landfill (two additional 4,000 CF enclosure flares have been added since 1995 as LFG generation has dramatically increased). Gas collection piping installation began in 1994. SMI also sells a portion of the collected LFG for the generation of electricity to Seneca Energy. The Seneca Energy LFGTE, which is an independently owned, operated, and permitted facility, currently has 18 internal combustion engines used to generate electricity. A nearby renewable natural gas facility converts landfill gas into natural gas. The existing flares are guaranteed by the respective manufacturers to comply with the requirements of the USEPA New Source Performance Standards (NSPS) (the flares are permitted by SMI). Combustion sources at the Facility

have actual stack tests performed to demonstrate compliance with the NMOC destruction efficiency requirements of the NSPS (40 CFR 60.752 Standards for Air Emissions from Municipal Solid Waste Landfills (60.752 (b)(2)(iii)(B), and testing methods at 40 CFR 60.8 and 60.754 (d)).

Since the initial landfill gas collection and control system was installed, SMI has continued to increase the quantity of LFG collected by their gas collection system by designing and constructing additional landfill gas extraction wells and horizontal collectors. The landfill gas collection system is further detailed in Section 3.7.3.

In addition, an extensive on-site landfill gas investigation was performed in March 1997 to determine surface emissions and emission rates, and to evaluate Health Risks. The results of this program were included in the 1998 DEIS which supported the application for the Part 360 and Part 201 permits under which the Facility presently operates.

Existing and future landfill gas production has been estimated using the USEPA Landfill Gas Model (LandGEM version 3.02). The USEPA generated this model to estimate landfill emissions as an integral part of the NSPS rule. This model is generally considered by the USEPA to be very conservative for purposes of estimating actual Facility emissions in that it most likely will result in an overestimation of Facility emissions. The emissions resulting from LFG which has been collected and run through a control device (flare or engine) is referred to as controlled emissions or point source emissions (including the by-products of combustion, primarily CO and NO_x). Point source emissions also include storage tank emissions and Facility heating equipment. Fugitive emissions are those that cannot reasonably be collected and thus are not exhausted through a point or control device. They include uncollected LFG emissions, road dust particulate emissions, and construction emissions.

A detailed emission inventory of air pollutant emissions from the Seneca Meadows Landfill for the previous 24 months (average of 2022 and 2023 actual emissions) is presented in Table 3-6. A more recent additional Emissions Inventory for the Facility is available in Appendix D.

Based on the USEPA model, the existing landfill operations produced about 13,948 CFM of landfill gas in 2023 (12,414 CFM collected based on model). All landfill gas collected is directed to control devices. The existing control capacity is as follows:

- Enclosed Flare/Thermal Oxidizer: 3,000 CFM
- Enclosed Flare: 2,000 CFM
- Enclosed Flare (2): 4,000 CFM
- Concentrate/Leachate Evaporator: 780 CFM
- Total Combustion Capacity: 13,780 CFM
- Current Permitted Total Combustion Capacity: 15,107 CFM
- Current Permitted Total Flare Capacity: 18,293 CFM

As discussed above, LFG production is anticipated to increase as the in-place waste decomposes and closure activities are implemented. The LFG production from the currently permitted landfill operations was projected to peak in 2016 at approximately 15,521 CFM of gas collected. The quantity of fugitive emissions will decrease when the landfill is closed and under final cover. Final cover and cover efficiency is described in Section 4.3.1.2. It should be noted that some of the LFG that is not captured by a properly maintained collection system potentially permeates through the landfill soil covers and is released to the atmosphere as fugitive emissions, however, some of the gas is retained within the landfill and still more is degraded biologically through cover oxidation. The USEPA Greenhouse Reporting Rule (under 40 CFR Part 98, Subpart HH) identifies that 10-35% of methane may be oxidized by the cover system. SMI's existing Title V permit accounts for an additional enclosed flare to be installed if gas production increases to exceed current total control capacity. The landfill gas model is generally conservative, and observations of the gas collection system and surface monitoring scans conducted since the gas model was completed indicate that less gas is currently being produced than was initially predicted.

LFG and LFG combustion emissions are not the only emissions from the landfill. Other emission sources for the Existing Landfill are as follows:

Storage Tank Emissions — the Facility has 3 leachate holding tanks, 1 concentrate tank, 2 sulfuric acid tanks, 1 permeate tank, 2 permeate storage tank, 2 intermediate concentrate tanks, 2 feed pH adjustment tanks, 6 storage tanks for various petroleum products (gasoline/diesel/kerosene), and 9 storage tanks for lubricating oil. Emissions are generated from the volatilization of these liquids and from the working and breathing losses from the filling and unloading of the tanks.

Leachate Treatment System Emissions – the Facility has 1 Dynatec System consisting of 1 bioreactor and 1 ultrafiltration/reverse osmosis (RO) system, 1 ROCHEM RO system, 1 concentrate evaporator, and 1 enclosed flare operating in thermal oxidizer mode.

Heating Equipment Emissions — the Facility also has liquid propane gas heaters for heating office spaces and waste oil burners for heating other buildings.

The following emissions are emissions associated with construction and operation of the existing landfill operations and are identified for SEQR purposes, but they do not count toward determination of Title V permitting applicability (6 NYCRR Part 201) or New Source Review and Prevention of Significant Deterioration (6 NYCRR Part 231) regulations:

Fugitive Emissions — Fugitive emissions are those not collected by a properly functioning control system. These are mainly VOCs from the landfill.

Mobile Source Combustion Emissions (Operational) — Mobile sources used during operations include trucks bringing in waste and cover soil and tanker trucks hauling away concentrate. Emissions from these sources include emissions from the internal combustion engines.

Off-Road Vehicle (ORV) Combustion Emissions (Operational) — The operational equipment used at the Facility including dozers, compactors, scrapers, dump trucks, etc. generate emissions from their internal combustion engines.

Off-Road Vehicle (ORV) Combustion Emissions (Construction) — Construction equipment includes dump trucks for cover soils, dozers, excavators, loaders, etc.

Off-Road Vehicle (ORV) PM Emissions, Operational and Construction — In addition to combustion emissions, the construction equipment generates particulate emissions from moving of waste and soil.

Road Dust Emissions, Operational and Construction —Equipment and soil and waste hauling trucks generate particulate matter emissions from traveling over paved and unpaved roads.

Soil Storage - SMI is permitted to use certain contaminated soils (primarily petroleum-contaminated soils) as daily cover (this is considered a beneficial use). These soils must then be covered with 6 inches of intermediate cover soil if additional waste placement does not occur on this material within 24 hours. SMI's Part 360 permit allows these soils to be stored on site for up to 90 days before being used as daily cover. Relatively small quantities of volatile organic compounds would be expected to be emitted from these soil piles during storage.

Tire Shredding - SMI has a permit to operate a tire shredding facility at the Facility Site. The actual shredding occurs under a stream of water and no measurable air emissions are produced. The shredder is powered by electric motors which also produce no on-site emissions. Therefore, the tire shredder is included here for information purposes only.

H_2S emissions monitoring is currently on-going as described in Section 3.3.2. GHG emissions are described in Section 4.6.1.

3.4 ECOLOGICAL RESOURCES

The Project Area consists exclusively of land that has been previously disturbed by the construction and operation of the Facility and by the operation and remediation of the Tantalo Waste Disposal Area. Disturbance of areas of the Facility Site which are not already utilized for Facility operations will not occur as part of this project.

No natural vegetation communities will be disturbed in connection with the construction of the SMI Valley Infill Area. The Project Area footprint consists of cleared bare land, developed industrial land, and closed or inactive landfill areas. Vegetation in these cleared and developed areas is very limited to occasional common weeds and grasses that are typical of disturbed areas. Some of the closed or inactive landfill areas, including the Tantalo Waste Disposal Area and the Southeast Landfill have a final cover system with a top layer consisting of grassy vegetation to prevent erosion and to maintain the integrity of the final cover system. Vegetated areas that are part of the final cover system are periodically mowed to prevent the growth of trees or other deep-rooted vegetation.

Requirements for Natural Resource Habitat Management were incorporated into the Closure and Post-Closure (C-PC) Plan submitted as part of the Stage 2 permitting process for the current Facility. When NYSDEC provided a modified wetland permit on November 26, 2008, the correspondence indicated that the requirement for a Natural Resource Habitat Management Plan was satisfied by including native grassland bird habitat. Like the remainder of the SMI Facility, the SMI Valley Infill project will be seeded and maintained as a native grassland bird habitat upon completion of the Project.

The vegetative communities located in the Project Area offer unsuitable habitat to most species of wildlife due to the degree and frequency of human intrusion upon the landscape and the lack of vegetative cover that provides food opportunities. Wildlife observed in these areas is limited to birds and mammals common to areas of heavy human presence. No State and/or federal-listed endangered, threatened, special concern, rare or exploitably vulnerable fauna are known to occur in the Project Area.

There are no regulated wetlands or water areas within the Project Area.

A 2006 study was conducted by BHE Environmental, Inc. to evaluate the potential for impacts to the endangered Indiana bat resulting from the 2007 Landfill Development and relocation of Black Brook. Extensive habitat assessments and monitoring were conducted as part of this study. While Indiana bats have been found to occur in the general area of the SMI Landfill during summer roosting season, potential impacts to roosting habitat can be avoided through seasonal restrictions on project-related tree removal. Indiana bats typically forage in areas with deciduous tree coverage. Considering all potential impacts to Indiana bat resulting from the Landfill Expansion and Black Brook habitat relocation project, BHE concluded that the Project was not likely to adversely affect Indiana bats.

The SMI Valley Infill Area consists of developed industrial land and closed or inactive landfill areas that include no trees or natural vegetation that would represent potential roosting and/or foraging habitat for the Indiana bat. Accordingly, the Project will not adversely affect this species.

There are two other rare/endangered species listed by NYSDEC in the general vicinity, the bald eagle and the osprey, but both are reported for areas in and immediately adjacent to the Montezuma National Wildlife Refuge. None were observed on or in the immediate vicinity of the Project Area, and none are likely to utilize the Project Area because no suitable nesting or feeding habitats for either of these species are present.

3.5 EXISTING LANDFILL CONDITIONS AND OPERATIONAL SETTING

3.5.1 Grading and Other Site Features

Existing grades and other site features are shown on Sheets 3 and 5 of the Engineering Drawings. As determined by the March 2019 topographic survey, the highest portions of the active SMI Landfill have reached an elevation

of approximately 726 feet above MSL. At its current elevation, the SMI Landfill is approximately 245 feet above the surrounding average land grade of 480 feet. The Southeast Landfill has reached an elevation of approximately 704 feet above MSL which is its maximum permitted peak elevation.

A tire processing facility is also located on the Facility Site as shown on Sheet 5 and is currently operating under the SMI's Part 360 permit which was issued on October 31, 2017. This facility is used to shred tires which are used as replacement for natural aggregate. For the SMI Valley Infill Area, this facility will continue to operate and provide tire chips which will be used in the construction of the LFG collection system and the leachate collection system.

3.5.2 Existing Landfill Liner and Leachate Collection System

The development of the Facility has spanned a period of time during which the state-of-the-art technology and the regulatory requirements for landfill liner systems evolved. As a result, the SMI Landfill is underlain with a variety of different liner types consisting of a natural soil containment, an engineered in-situ liner, an engineered re-compacted soil liner, and an engineered soil liner with a blanket drain. The Southeast Landfill and the A/B Landfill area, which were developed pursuant to the 1999 Part 360 Permit, as well as the 2007 Landfill Development areas developed pursuant to the 2008 Part 360 Permit, are underlain by double composite liner systems. A discussion of these prior waste disposal areas was presented in Section 2.3 of this DEIS.

Leachate and condensate are collected through the Facility's extensive collection system and are conveyed to the on-site leachate storage tanks. The Facility routinely produces an estimated 45 to 60 million gallons of leachate annually, or an average of about 125,000 to 165,000 gallons per day (gpd). This generation rate is currently in decline due to recent capping efforts. Historically the vast majority of raw landfill leachate has been tanker trucked to several municipal wastewater treatment plants (WWTPs), except for a relatively small quantity that was discharged directly to the Town of Seneca Falls sanitary sewer system which is tributary to the Town of Seneca Falls WWTP.

In 2013 SMI completed the construction and start-up of a treatment system which consists of a reverse osmosis facility to provide for the treatment of leachate. The treatment system (consisting of sulfuric acid addition to lower the pH, sand filters, and three stage skid-mounted reverse osmosis units) is designed to treat 120,000 gpd of raw landfill leachate. Processed concentrates are stored in a 110,000-gallon storage tank. SMI has one other leachate storage tank for regular leachate that hold 500,000 gallons each, and one with 1,720,000 gallons of storage capacity is also present on the Facility Site. In 2018, the Reverse Osmosis system treated over 21,000,000 gallons of leachate.

Since start–up this facility has operated to produce about 70 percent permeate (84,000 gpd) that is discharged to the Town of Seneca Falls sanitary sewer system and WWTP and 30 percent concentrate (36,000 gpd) that is trucked to one of the contracted WWTPs. This represented a significant reduction in the amount of landfill leachate that needs to be trucked to the contracted WWTPs over the last 10 years.

An updated/enhanced treatment system has recently been installed that is designed to treat 200,000 gallons per day of leachate brought to the on-site storage facility. The updated treatment system now includes aeration, agitation, biological treatment, an ultrafiltration process and reverse osmosis. Three byproducts now result from the treatment system: RO system permeate and concentrate, and raw leachate that has been biologically treated. The permeate will generally be discharged into the local POTW forcemain. The concentrate will be treated through the leachate concentrate evaporator or trucked off-site to surrounding POTW facilities. The small volume of biologically treated leachate that will not be treated through ultra filtration and reverse osmosis will be trucked off site to a WWTP.

SMI is continually investigating alternatives for treatment of the concentrate from the reverse osmosis treatment units to reduce the number of tanker truck loads transported to contracted WWTPs. One alternative that has been put into place is aforementioned leachate/concentrate evaporator system. The system is designed to treat up to

60,000 gpd. Leachate being sent to the evaporator for treatment will be transported via forcemain from the leachate storage facility. The evaporator will use up to 800 scfm of LFG as its fuel source.

Residual waste from the evaporator centrifuge will be in solid form and will be profiled as special waste prior to disposal at the working face. Currently, the Evaporator system is located at the northwest edge of the Tantalo Landfill area and will need to be relocated eventually during the course of the SMI Valley Infill project.

Tank trucks are operated by haulers licensed under 6 NYCRR Part 364 to convey leachate to other wastewater treatment plants with which SMI has made arrangements for leachate acceptance for treatment and disposal.

Leachate quality data is routinely collected as part of the Seneca Meadows Environmental Monitoring Plan. The 2023 data is summarized in Table 3-3. Regular sampling and analysis of emerging contaminants is not currently required at the Facility.

Leachate recirculation is the reintroduction of landfill leachate into the lined landfill cells. Leachate recirculation provides a means of optimizing environmental conditions within the landfill to provide enhanced stabilization of landfill waste, as well as treatment of moisture moving through the waste mass. Under its current permit, SMI is allowed to use leachate recirculation upon written approval from the Department. A current request and responses to Department comments can be seen in Appendix H to this report. As described in the request dated April 27, 2023 and subsequent response document dated January 29, 2024, SMI currently proposes to recirculate biologically pre-treated concentrate from the reverse osmosis (RO) leachate treatment system. Circulation would occur with an onsite tanker truck transporting up to 8,000 gallons of liquid, 2 to 5 times per day, (evenly distributed) to the working face. The liquid would be deposited in a leachate recirculation trench adjacent to the active waste placement areas. The leachate recirculation trench will be large enough to handle the quantity of biologically pre-treated concentrate that would be processed on any given day. The previous days' working face will cover the prior day's recirculation trench, and a new recirculation trench will be established adjacent to the active working face for that day. This process will prevent the Facility from oversaturating any certain area while the biologically pre-treated concentrate is being absorbed into the waste mass. The Facility intends to recirculate an annual average of up to 27,500 gallons/day for 250 operational days/year, or 6,875,000 gallons/year while not exceeding a 40,000 gallons/day maximum.

The gas collection and odor control systems were designed to accommodate the additional moisture resulting from leachate recirculation (as discussed above and in the referenced attachments), this includes the design and spacing of vertical wells and horizontal collectors. Monthly wellhead monitoring and quarterly surface emissions monitoring will verify the gas collection system is operating affectively. If routine operational monitoring indicates that additional collectors are needed the system will be expanded as necessary.

Based on the proposed volumes the waste density is estimated to increase less than 3%. Considering this negligible increase in density and that the recirculation would occur at least 100 feet from the outside slopes, there are not significant stability considerations.

3.5.3 Landfill Gas Management System

The LFG collection system currently consists of the following:

- 511 vertical LFG collection wells
- 341horizontal collection wells
- One 3,000 cfm enclosed flare/thermal oxidizer
- One 2,000 cfm enclosed flare
- Two 4,000 cfm enclosed flares
- One 780 cfm concentrate/leachate evaporator
- Eighteen internal combustion engines and an RNG facility owned and operated by Seneca Energy
- One centralized blower station containing four 250 HP blowers
- Landfill gas collection header
- 10 condensate tanks

The horizontal collectors consist of 6-inch HDPE slotted pipe set in No. 2 washed stone or tire chips and covered by No. 2 washed stone or tire chips. Trench size is a minimum 18 inches wide by 18 inches deep.

Vertical gas wells consist of a 2 foot bore hole set to a typical depth of 75 percent of the depth of the waste or to a maximum depth of approximately 100 feet, or until liquid is encountered. The collection pipe is 6-inch slotted HDPE connected with a tee to the horizontal collectors. The boreholes are backfilled with No. 2 washed stone.

The gas collection system is routinely upgraded to collect additional LFG and to ensure NSPS compliance which requires a system capable of handling all of the LFG generated from the Facility. The design of the gas collection system for the Southeast Landfill was modified in 2004 to account for leachate recirculation and changes in fill progression. This new design was also incorporated into several new wells installed in the Existing Landfill starting in 2004. However, as of 2016, the Facility no longer recirculates leachate into the landfill.

In 2018, applications for a concentrate/leachate evaporator as an addition to existing leachate management operations was submitted to the NYSDEC. The concentrate/leachate evaporator can process up to 1,400 barrels/day (approximately 58,800 gallons/day) of reverse osmosis concentrate or an equivalent volume of leachate. A portion of the collected gas is utilized in the leachate/concentrate evaporator (780 scfm) for evaporation of the concentrate or leachate and combustion of collected LFG. In 2021, application for a leachate pretreatment system and a dual-purpose enclosed flare/thermal oxidizer was submitted to the NYSDEC for the purpose of reducing emissions from the concentrate/leachate evaporator. The leachate pretreatment system converted an existing 500,000-gallon leachate storage tank into a bioreactor to remove hydrogen sulfide, ammonia, organics, and fatty acids that would be otherwise be evaporated downstream of the leachate treatment process within the concentrate/leachate evaporator. The dual purpose enclosed/thermal oxidizer flare can be operated as either a regular enclosed flare combusting LFG or can be operated as a thermal oxidizer to combust LFG along with off-gas from the concentrate/leachate evaporator.

Existing and future landfill gas production has been estimated using the USEPA Landfill Gas Model. While this model is generally considered to be very conservative, it was used so that the gas collection system, based on the model, would be sufficient.

The existing and proposed landfill gas control devices at SMI and Seneca Energy facilities provide sufficient capacity to combust the expected quantity of gas to be collected by the existing landfill operations (an estimated maximum of 15,521 CFM collected in 2016).

Condensate from the extracted landfill gas is collected in eight 2,000-gallon tanks located along the header piping, one 3,000-gallon tank serving the gas header on the southwest corner of Area 3 on the AB Overfill, and one 48-inch diameter HDPE sump located at the gas treatment facility immediately before the flare. In addition, the electrical generation facility contains integral gas drying equipment which also produces condensate. During 2022, a total of 1,611,793 gallons of condensate was collected from gas collected for energy production. This

condensate is sampled for chemical quality and then transported to a wastewater treatment plant for treatment and disposal, similar to the leachate handling described in Section 3.5.2.

3.5.4 Existing Odor Management System

The existing surface emission monitoring program intended to satisfy the requirements of the USEPA's NSPS for municipal solid waste landfills is described in Section 3.3.

3.5.4.1 1997 Facility Odor Investigation

SMI performed a detailed odor investigation, developed in cooperation with the NYSDEC, NYSDOH and EMCON, in the spring of 1997. The investigation is described in detail in the 1998 DEIS prepared for the previous Southeast Landfill. The purpose of the sampling program was to further evaluate the impact of emissions from the landfill to off-site receptors. No measurable effect of the landfill gas emissions from the Facility was found, despite the reported presence of landfill odors at the sampling points. All concentrations were below the New York State Air Guide Annual Guideline Concentrations (AGCs) established by the NYSDEC.

The results of the 1997 investigation are summarized below.

Twenty-four locations on the landfill surface were sampled using the USEPA flux chamber method and analyzed using direct reading instruments (photoionization detector, flame ionization detector, and hydrogen sulfide analyzer) for total hydrocarbon, total ionizable hydrocarbon and hydrogen sulfide analysis. In addition, the sample location with the highest detected reading and the most representative sample location (based on the average methane concentration) were sampled for the complete list of parameters via the flux chamber sampling method.

The 8 flux chamber samples (highest and most representative from each of the four areas) were analyzed via Method TO 14 plus ethyl acetate, ethyl butanoate, ethyl pentanoate, methyl pentanoate, limonene, alpha and beta pinene, plus a library search, and Methods 15 and 16 for sulfur compounds. Ethyl acetate, ethyl butanoate, ethyl pentanoate, methyl pentanoate, limonene, alpha and beta pinene were added due to their odor characteristics. Analytical results were converted into a mass/area/time rate for use in dispersion modeling. Air quality dispersion modeling of the sources of compounds identified in the sampling results was performed using the Industrial Source Complex — Short Term, Version 3 (ISCST3). The off-site receptors that were used were 15 discrete locations (i.e., known actual receptors).

To assess the potential for unacceptable risk, ambient air concentrations modeled from the actual soil gas measurements were compared with health-based air guidance values, primarily the AGCs. All site-related concentrations were below AGCs, by varying proportions expressed as safety factors. AGCs were not available for all compounds. Most of the detected chemicals not listed in the Air Guide were tentatively identified compounds (TICs). For these, a variety of other toxicity values were reviewed, including occupational limits, USEPA reference concentrations and experimental values from the literature. Overall, there was no indication that site-related emissions were above acceptable health-based levels.

Based on the findings and results from the completion of the sampling, analysis, and dispersion modeling, no exceedances of published health-based guidance values or guidelines were identified with landfill gas emissions from the Facility. Although not all of the chemicals emitted by the landfill were identified, and the carcinogenic potential of many known chemicals has yet to be established, the results of the study indicate that the estimated carcinogenic risk from speciated volatile organic compounds is very low. Hydrogen sulfide and mercaptans from the landfill were not present in off-site ambient air at levels expected to result in health effects among exposed individuals. A copy of the Final Report — Landfill Gas Sampling/Risk Evaluation and Ambient Sampling Program was included as Appendix C of the 1998 DEIS.

3.5.4.2 Odor Control System

Since these landfill gas emission studies were completed, SMI has continued to upgrade the landfill gas collection and control system and has employed other mitigation measures designed to control odor. An extensive multi-sector odor control system has been installed around the perimeter of the Facility and within. This system includes a network of atomizing misters (which release neutralization deodorizing chemicals into the air) has been installed to neutralize odor around the perimeter of the landfill areas, and mobile unites for strategic positioning around the Facility Site as necessary. This misting system is not required due to any shortfall in the design capabilities of the landfill gas collection and control system. Rather the misting system has been employed to mitigate potential odor impacts from freshly placed solid waste.

SMI also routinely employs waste screening practices that identify whether a commercial or industrial waste stream has a potential for odor before that material is authorized for acceptance at the landfill. While SMI will continue to accept wastes which have the potential for odor, this process enables potentially problematic waste streams to be identified and to prepare SMI operations staff to take appropriate action; for example, the immediate placement cover material, if such a waste is delivered, placing such wastes in trenches that can be immediately covered, and waste handling and packaging restrictions. The process is also used by SMI to determine whether such a waste stream should be accepted at all. For example, SMI has limited the acceptance of certain sewage treatment plant sludges on this basis.

SMI has continued to upgrade and employed other mitigation measures designed to control odor. Odor control measures to be employed at the SMI Valley Infill are summarized in Section 2.4.3.12.7

3.5.4.3 On-Going Odor Management/Response System

SMI performed another detailed odor investigation, developed in cooperation with GHD, that was conducted in the Winter of 2016. The investigation is described in detail in the 2017 Odor Control Report. The purpose of the investigation was to determine the likely sources of odors and to identify areas for improvement to be implemented quickly. The results of the investigation are summarized below.

The scope of the assessment included surface scans using a flame ionization detector (FID) in general conformance with USEPA method 21, ambient monitoring using a van mounted spectrometer (Picarro instrument) at and around the landfill, physical inspection of landfill surfaces, interviews with site personnel, evaluation of as-built drawings of the landfill gas collection system (GCS), and review of GCS operation data. Both FID and Picarro instruments were used to monitor methane. Although methane is odorless, since landfill gas is approximately 50 percent methane, it is a strong indicator of the presence of landfill gas, and therefore odors. It should be noted the investigation completed surface scans similar to, but also much different from, the surface scan procedures prescribed in the landfill NSPS and should not be used for compliance purposes.

The surface scans, physical inspection of landfill surfaces, and ambient monitoring were completed concurrently over two days. The surface scans and physical inspection of landfill surfaces were used to identify sources of odors while the ambient monitoring provided a qualitative comparison of the significance of difference sources (leaks, etc.) for the purposes of addressing odors. Surface scans showed several areas with elevated levels of landfill gas and ambient monitoring showed two areas with elevated levels of landfill gas where improvements could be made. The GCS evaluation based on as built drawings of the Western Expansion Landfill (WEX), well monitoring data for WEX, and vacuum and flow data for the blowers showed areas for improvement regarding well balancing. In addition, site conditions for barometric pressure were reviewed to determine the relation and significance to increased odor.

The results of the assessment showed several areas of improvement to reduce odor. Recommendations included reviewing the adequacy of the wellhead balancing frequency and corrective action for active collection points, measuring liquid level and flows in all collectors, tracking barometric pressure and increasing system vacuum slightly during periods of rapidly decreasing barometric pressure, and increasing vacuum on other landfill areas

on a well-specific basis. SMI modifies the LFG Collection system on a continual basis in order to stay atop odor control practices and minimize impacts. The Annual Reports for the Facility summarize ongoing modifications to the LFG system.

SMI has also established a complaint management plan (including odor, dust, litter, noise, truck traffic, hours of operation, air contamination, and water quality) as part of its landfill operating permit with the Town. The plan is designed to allow for responsive action by SMI if odors or other nuisances attributable to landfill operations are detected off-site, and is summarized below:

- SMI will maintain its 24-hour per-day, toll-free telephone number for the receipt of citizen complaints regarding landfill operations.
- When the Landfill Operations Manager receives the original odor investigation checklist, he will conduct an investigation of the incident. This investigation will involve the necessary steps to address the issues identified on the odor investigation checklist.
- The Landfill Operations Manager will investigate the complaint and determine what measure(s) if any, should be implemented to mitigate the incident. If required the Landfill Operations Manager, or his designee, will then direct personnel and equipment to mitigate the problem, and complete the odor investigation checklist.
- A copy of completed complaint forms will be filed at the SMI office and a copy of the odor investigation checklist forms will be submitted to the NYSDEC. Each complainant will receive a copy of the completed complaint form relating to their complaint as soon as practicable after the investigation of the reported incident.

3.5.4.4 Ambient Monitoring Work Plan

In addition to the 1997 odor study, a 2019 pilot ambient monitoring program was completed to track and evaluate the influence of site-specific weather conditions which may contribute to off-site landfill odors, and investigate emissions detected off-site during various weather patterns/conditions. The results of the 2019 pilot ambient monitoring program are summarized in Section 3.3.2.2. An on-going H_2S ambient air monitoring program is currently being commissioned by SMI and is summarized in Section 3.3.2.2.

After the 1997 odor study, SMI has continued to upgrade and employed other mitigation measures designed to control odor. Odor control measures to be employed at the SMI Valley Infill are summarized in Section 2.4.3.12.7.

3.5.4.5 H_2S Surface Emission Rate Quantification

The H_2S Surface Emission Rate Quantification monitoring program was completed to evaluate the surface emissions of H_2S in order to refine an air dispersion modeling evaluation completed in 2021. The purpose of the monitoring program was to quantify the flux rate of H_2S from the surface of the existing landfill areas (based on field measurements) in order to identify representative emission rate inputs to refine the H_2S dispersion modeling evaluation performed for the Leachate Treatment System Upgrades. The H_2S surface emission measurement program was designed based on the guidance provided in USEPA document EPA/600/8-86/008, dated February 1986, entitled “Measurement of Gaseous Emission Rates from Land Surfaces Using an Emission Isolation Flux Chamber” (Guideline).

Considering the large spatial extent of landfill operations (approximately 346.5 acres), the quarterly methane (CH_4) surface emissions monitoring (performed on a 30-meter grid system across the entire landfill area) was used to optimize the H_2S surface emissions measurement program and obtain the required confidence goal for the H_2S surface emissions measurement design (as identified in the Guideline). This method was used considering CH_4 as a surrogate gas, representing the levels and variation of landfill gas emissions across the entire landfill area. Using the obtained survey results, designed H_2S measurements focused more sampling effort on areas with higher and/or more variable emissions and less on areas with low or no emissions information.

GHD conducted a statistical evaluation of the surface scan data to develop the set of flux chamber samples that would be representative of the overall emissions from the landfill cover systems. The statistical analysis was conducted separately for the three (3) landfill areas. Based on the Guideline, each zone is required to have a certain number of samples to achieve the required confidence level. Once this number was established for each zone, the specific measurement locations were chosen based on accessibility and safety of the sampling teams. As a result, a total of 204 grid locations were sampled across the entire landfill.

A flux-chamber system was designed in accordance with the Guideline and used for the measurements. The system consisted of an isolation chamber, clean odor-free sweep gas, thermocouple, TVA FID, and Jerome 631X H_2S Analyzer. The system was tested in a controlled setting prior to the measurements to confirm the overall system accuracy.

At each identified location, the flux-chamber system was placed over the surface area to be sampled and worked into the ground so that the grooves on the bottom of the chamber were embedded into the landfill surface. For locations that were on the HDPE liner, a flux-chamber with a foam bottom was used to isolate the air in the chamber. When the sweep gas was introduced into the chamber the pump was turned on and sweep air was introduced, the operator recorded the start time, sweep gas rate, inside chamber temperature, ambient air temperature, methane concentration inside the chamber using the TVA FID, and exit gas concentration using the Jerome analyzer. At the beginning of each sampling day, the Jerome and TVA were calibrated according to the manufacturing specifications to confirm that the instruments were taking accurate readings.

The surface flux measurements tended to be higher in areas with daily cover compared to areas of intermediate and final cover, which is expected based on the respective cover properties. The daily cover material, which is typically 6 inches to 1 foot of soil applied over waste at the end of each working day, will provide increased potential for a preferential pathway for the migration of landfill gas. In addition, the shallower depth of daily cover material (versus 3 feet or more for final cover systems) provides a shorter time of migration through cover material and the associated exposure to air and subsequent oxidation of the H_2S, in comparison with an intermediate or final cover system.

Using this conservative approach, measured H_2S emission rates were 70-99% less than previously predicted emission rates. The final results were less than previously predicted values. The H_2S Surface Emission Rate Quantification Summary Report can be referenced in Appendix K.

3.5.5 Existing Stormwater Management System

Stormwater runoff from the SMI Landfill that has not come in contact with waste is currently directed via swales and a perimeter channel to the retention / sediment basins located on both the east and west sides of the fill area. There are 6 retention / sediment basins in use, with 3 on the east side of the Facility and 3 on the west side. The east side ponds have a total current capacity of approximately 128-acre-feet while those on the west side have a total current capacity of approximately 144.7-acre-feet.

The stormwater runoff from the Southeast Landfill and the 2007 Landfill Development areas are managed through the use of collection ponds, pumping points, and a series of conveyance structures where it passes under Salcman Road, and into the South Pond System. Four retention / sediment basins are used to collect water from these areas. Collected surface water / construction waters are manually pumped to South Pond 3. When South Pond 3 reaches approximately 474 feet MSL, water is transferred into South Ponds 1, 2, or 4. The south side ponds have a total current capacity of approximately 284.7-acre-feet.

In accordance with the SMI Landfill permit, the current stormwater management operation utilizes a batch process approach to stormwater quantity and quality control. The stormwater flows are regulated by control valves which allow flow to enter only one of the ponds at a time. Upon reaching design capacity, the controls for the operational pond are closed and flows are directed to one of the other ponds. After appropriate retention time, stormwater in

the full pond is sampled and, if within specific water quality limits, pumped to discharge channels directing the flow to Black Brook (East and West Pond Systems) or to the Seneca-Cayuga Canal (South Pond System).

During 2023, a total of 20 discharge events from the retention / sediment basins were conducted. These are summarized in Table 3-4. A total of about 180.4 million gallons of stormwater were transferred into the Black Brook. The average discharge volume of these events was 9 million gallons.

3.5.6 Existing Sound Levels Background Information

SMI performs annual surveys to monitor sound levels at various approved representative receptor locations surrounding the Facility. The results of this monitoring from years 2018 and 2023 are presented in Appendix E of this DEIS and described in more detail in Section 3.6.4. Specific sound levels from the period of 2015 to 2023 are summarized in Table 3-14.

The applicable numerical standards for the Facility are provided in 6 NYCRR Section 360.19(j). The sound level monitoring at SMI Landfill indicates that the Facility is currently in compliance with these part 360 regulations. Although sound monitoring locations experienced sound levels that were above the numerical criteria note in Part 360, the sound levels recorded at these locations are characterized by off-site roadway/highway, or environmental (wind, rain, insect) noise.

3.5.7 Existing Groundwater Monitoring System

As previously stated in Section 3.2.1, the Facility maintains a system of groundwater monitoring wells with the objective of analyzing groundwater quality in the immediate vicinity of the waste cells. This allows SMI to distinguish potential land disposal facility impacts from normal water quality variations at the Facility Site. The network of groundwater monitoring wells has been designed based on the layout of the landfill and with regard to the groundwater flow and geologic stratigraphy in the Facility Site and surrounding areas. The groundwater well system is also utilized to monitor the Tantalo site OU-1 and OU-2 remedy that has been implemented, as described in Section 3.2.1. Figure 3-3 shows the location of groundwater monitoring wells at the Facility.

Sampling and analysis of groundwater for the Site will occur quarterly during January, April, July and October for the parameters identified in the Part 360 baseline and routine water quality analysis tables, copies of which are presented in Appendix B.

A semi-annual monitoring program is in place for the Tantalo Waste Disposal Area which includes five overburden monitoring wells (OU-1) and 32 bedrock monitoring wells (OU-2). In addition, more frequent quarterly monitoring is performed when electron donor is injected to monitor performance more closely during and immediately following the injection period. These data provide a picture of existing water quality conditions associated with the SMI Landfill, the Southeast Landfill, the 2007 Landfill Development, the proposed SMI Valley Infill Area areas, and the Tantalo Waste Disposal Area. For the permitted SMI Landfill operation, sampling and analysis of groundwater is based on Part 363-4.6(h) water quality tables, alternating between the routine and baseline parameters. A list of the parameters routinely sampled as part of the groundwater monitoring program is presented in Appendix B. Sampling and analysis of groundwater for the Tantalo Waste Disposal Area is based on volatile organic compounds and monitored natural attenuation parameters.

3.6 COMMUNITY RESOURCES AND CHARACTERISTICS

3.6.1 Land Use, Zoning, and Planning

3.6.1.1 Land Use

As depicted on Sheet 4 of the Engineering Drawings for the SMI Valley Infill Project, the SMI Landfill is located on approximately 900 acres of land, primarily to the west of Route 414 with a small portion of the Facility Site to the

east of Route 414. West of Route 414, Salcman Road provides access to the Facility's interior, including the landfill areas, scale house and access roads, the leachate storage and treatment facility, the TPF, administrative offices, maintenance shops, stormwater retention ponds, and other ancillary facilities. The Seneca Meadows Landfill consists of the 112-acre SMI Landfill, the 67-acre Southeast Landfill, and the 181-acre 2007 Landfill Development. The SMI Valley Infill Area is located in the area between these existing landfill cells. SMI's Resource Recovery Park to the east of Route 414 includes a landfill gas to energy facility and RNG gas production facility.

SMI owns approximately 2,400 acres of land in total, including a number of properties neighboring and in close proximity to the SMI Landfill. West of the Facility Site, SMI owns 194-acres of property in the Town of Waterloo, which is being developed as the Meadows View Mine to provide soil materials needed for the construction and operation of the SMI Landfill.

East and north of the Resource Recovery Park, SMI owns and operates the Seneca Meadows Wetlands Preserve is a 576-acre conservation site with public access and trail amenities. SMI has also dedicated some 500 acres of contiguous land with floodwater conveyance wetlands for permanent preservation, bringing the total preserved land to 1,100 acres.

SMI Property holdings in the vicinity of the Facility include several small residential properties along Burgess Road to the west and North Road to the south of the SMI Landfill. Additionally, SMI owns properties with active farm operations to the south and east of the Seneca Meadows Wetlands Preserve, along Black Brook Road.

Generally, land use in the area surrounding the SMI Landfill is rural to the east and west with some moderate-density residential and commercial development along main roadways. The Village of Waterloo to the southwest, and the former Village of Seneca Falls to the southeast, are characterized by relatively moderate density residential and commercial uses.

Much of the land surrounding the Facility is in agricultural use. While SMI allows much of its land to the east and west of the SMI Landfill to be actively farmed, the closest off-site agricultural property is a portion of the Burgess Farm, located approximately 1,500 feet west of the SMI Valley Infill Area footprint between Burgess Road and the SMI Landfill. Further west of Burgess Road in the Town of Waterloo, to the north in Junius and Tyre, and east in Seneca Falls, agriculture is the primary land use occupying much of the area.

The residential properties nearest to the SMI Landfill are located along Burgess Road to the northwest of the existing landfill cells. As landfill operations transition from current locations in the 2007 Landfill Development to the SMI Valley Infill Area in the future, the distance between these Burgess Road homes and daily operations will increase from approximately 3,000 feet to 3,300 feet at the closest point. Approximately five residential properties are located along North Road, south of the SMI Landfill. Operations in the SMI Valley Infill will occur at a similar distance from these homes (2,800 feet at closest point) as under current operations in the 2007 Landfill Development.

Interchange 41 of the NYS Thruway is located approximately 2 miles north of the SMI Landfill. The interchange area includes several gas stations with associated convenience stores, as well as restaurants. NYS Route 318 provides access to the Waterloo Premium Outlets, a retail shopping complex with 75 outlet stores located approximately 4 miles west of the interchange.

NYS Route 414 provides access to the SMI Landfill from Interchange 41. East of the Facility, Route 414 is lined by several highway commercial properties, including storage units, construction contractors, automotive and trucking repair and delivery, and other light industrial operations.

Directly south (approximately 3,900 feet) of the SMI Landfill, large-scale retail and other commercial development including a Walmart Supercenter, hotels, car dealerships, fast food restaurants, BonaDent Laboratories, and other businesses are accessed in the vicinity of the Route 414/North Road intersection.

The Village of Waterloo is just east of this commercial area. North Street is lined by several smaller-scale commercial uses in the Village, as well as the Seneca County Fairgrounds directly south and west of the SMI Landfill. Senior living and care facilities including the Seneca Nursing & Rehabilitation Center, Finger Lakes Health, and Huntington Living Center are located south of the SMI Landfill within the Village of Waterloo. Residential neighborhoods constitute much of the remaining area in the Village.

3.6.1.2 Zoning

The current zoning for the Project Area and surrounding lands is indicated in depicted on Sheet 3 of the Engineering Drawings for the SMI Valley Infill. The Town of Seneca Falls has a Zoning Ordinance in effect. Current zoning of the part of the Facility Site proposed for development of the SMI Valley Infill is M-2, Refuse Disposal and Reclamation. Similarly, the zoning for the section of the Facility in Waterloo is Industrial (I). The proposed use is in compliance with each Town's zoning requirements for their district, subject to the issuance of special use permits.

Surrounding zoning districts in the Town of Seneca Falls include: M-2 (Refuse Disposal and Reclamation), C-2 (Highway Commercial) for parcels to the east along both sides of NYS Route 414, F-P (Floodplain) on both the north and south sides of Black Brook along NYS Route 414 and farther to the east, A-1 and A-2 (Agricultural) for open lands to the east of NYS Route 414 and some parcels north of the SMI Landfill, and M-1 (Industrial) for parcels along the east side of NYS Route 414 south of Salcman Road as well as south of the Southeast Landfill and the SMI Valley Infill. South of the Facility, C-2 zoning extends to properties east and west of NYS Route 414, south to the Seneca River. There are several pre-existing non-conforming residential uses located within the C-2 zone along the east side of NYS Route 414.

Parts of the Facility Site, as well as some of the surrounding land areas to the west and south are in the Town of Waterloo. As stated previously, all Facility operations are within the Industrial zoning district. This can be observed in the Town of Waterloo's Comprehensive Plan, which was adopted January 23, 2017. The comprehensive plan states that the Town will continue to prohibit the creation of new landfill areas; the SMI Valley Infill is consistent with this objective, as no new waste landfilling areas are proposed within the Town of Waterloo. The Comprehensive Plan also shows a buffer zone between landfill areas and other parts of the Town, which will not be infringed upon by the SMI Valley Infill construction or operations. Changes to the road layout and facilities related to the SMI Valley Infill will occur within the Town of Waterloo Industrial Zone. These changes will remain consistent with the existing special use permit for SMI and with the Schedule I use listed at #63 in the Town of Waterloo Code, Section 135(A), use number 63 – Solid Waste Recycling or Transfer Operations. Town of Waterloo residents currently utilize the solid waste transfer operations at the residential drop-off center/ Citizens Dropoff Area, which is within the Town of Waterloo. Other uses such as tire stockpiling will continue within the Industrial zone as well.

In 2016, the Town of Seneca Falls passed Local Law #3 of 2016 which, among other things, prohibited the Town of Seneca Falls from issuing any permits to solid waste management facilities after December 31, 2025. Subsequently, SMI brought an action in Seneca County Supreme Court seeking to have Local Law #3 declared annulled on a number of grounds, including because the Town of Seneca Falls failed to comply with the requirements of the New York State Environmental Quality Review Act. On July 27, 2022, SMI filed a motion for partial summary judgment seeking a determination from the Court that Local Law #3 is null and void. The Court's decision on SMI's motion is pending.

3.6.2 Transportation

3.6.2.1 Existing Traffic Conditions

Access to the Facility is via one entry located on Salcman road, at its intersection with NYS Route 414. Salcman Road is owned by SMI as a private road and does not allow for the passage of through traffic. SMI has widened

the pavement on Salcman Road to accommodate the queuing of waste delivery vehicles. Between 40 to 46 tractor trailer rigs can be staged in this queuing area near the entrance, with further capacity for queuing closer to the scales.

NYS Route 414, which provides the primary access to the Facility, is a north-south arterial roadway between NYS Route 318 and Interstate 90 (the NYS Thruway) to the north, and NYS Routes 5 and 20 to the south. The SMI Landfill is bordered to the west by Burgess Road, a local collector providing access primarily to the Town and Village of Waterloo (and other nearby areas to the west). No public access to the SMI Landfill is provided from Burgess Road, but the Facility Site is accessed by the Salcman Road intersection with Burgess Road for truck traffic moving soil to the Facility from the adjacent Meadow View Mine, also owned by SMI. An access road connecting NYS Route 414 to the SMI LFG management facilities and leachate storage facility was constructed in 1998. This road is not used for waste deliveries to the Facility and traffic is limited to activities related to LFG flaring operation and leachate tanker trucks.

3.6.2.2 Traffic Contribution from the Existing Facility

In order to establish a baseline for traffic conditions, traffic analyses were conducted and included in the DGEIS for the 2007 Landfill Development. Similar traffic analyses were conducted to understand the current traffic conditions and compare them to the results presented in 2006. These analyses were performed on both incoming traffic internal to the Facility and traffic on NYS Route 414.

Incoming Facility Traffic

Quantification of vehicle traffic related to the Facility operation was performed using information provided by SMI during both analysis periods. The methods used to estimate traffic generated from the operation includes analysis of available operational information, including:

- Scale records of truck deliveries of waste and cover soils from January 2002 through December 2004 and November 21, 2021 through November 20, 2022. A summary of the 2004 data and data from a 12-month period over 2021 and 2022 can be seen in Table 3-7.
- Estimates of Employee trips, including lunch time traffic during both analysis periods.
- Visitor Register sign-in records for June 2004 and June 2022.

Scale records indicated a daily average traffic flow, during the busiest month (August 2004) over the initial analysis period, of approximately 518 truck trips (Table 3-7), delivering waste, cover soils and building materials to the Facility, which generated approximately 1,036 trip ends per day. The average for the 12-month period in 2004 was 433 trips, or 866 trip ends. For purposes of this DEIS, the term "trip end" refers to a single one-way vehicle movement resulting from either a trip entering or leaving the Facility. Scale data between November 2021 and November 2022 indicates a daily average traffic flow of approximately 351 truck trips (or approximately 702 trip ends per day), delivering waste, cover soils, and building materials into the Facility during the busiest month (November 2021). The average for the 12-month period in 2021 and 2022 was 276 trips, or 552 trip ends – which is significantly less than the 12-month period from 2004.

Hourly truck traffic distribution was also analyzed for the DGEIS for the 2007 Landfill Development between 4:00 AM through 9:00 PM for the years 2002 through 2004. The largest number of trucks was reported for the year 2004 with over 134,000 trucks. The peak hourly distribution of trucks occurred between 7:00 AM and 8:00 AM for two of the three years (2003 and 2004) of the initial analysis period. Table 3-8 shows the 2004 data as compared to the data that was obtained from the scale records between November 2021 and November 2022. The number of trucks for the 2021-2022 time period was 98,031. The hourly traffic distribution range was expanded to 3:00 AM through 9:00 PM due to a small number of trucks entering the Facility between 3:00 AM and 4:00 AM. The hourly percentage distribution of trucks is relatively similar with a slight skew. There appears to have been an increased percentage of trucks arriving at the Facility during the 3:00 AM through 7:00 AM time period. The peak hourly distributions were still clustered in the 7:00 AM through 12:00 PM time period, with the peak for the 2021-2022 data occurring between 9:00 AM and 10:00 AM. Percentage distribution of trucks appears to decrease more

rapidly in the 2021-2022 data set with a lower percentage of truck traffic entering the Facility in the afternoon as compared to the 2004 data. Ultimately, there was not a significant change to the hourly truck traffic distribution between 2004 and 2021-2022.

The number of visitors to the Facility during June 2004 was analyzed based on a tabulation of visitor log records. The daily average number of visitors was 12 and peak daily visitors was 21. The peak season number of employees at that point was 166. Table 3-9 shows the June 2004 data as compared to the June 2022 data. The 2022 data was also based on a tabulation of visitor log records. The daily average number of visitors for June 2022 was 1 and peak daily visitors was 5. The current peak season number of employees is estimated to be 110. It is assumed that the decrease in employee and visitor traffic is due to an increase in remotely handled business.

Altogether, the total number of trips at the Facility as seen in Table 3-10 for the busiest month of 2004 included 1,076 trip ends from trucks, an additional 540 trip ends were estimated to occur from employee (498) and visitor traffic (42). The total traffic related to the Facility in August 2004 is estimated to be 1,576 trip ends daily. For the busiest month in the 2021-2022 time period, there were a total of 702 trip ends from trucks and an additional 340 trip ends were estimated to occur from employee (330) and visitor traffic (10). The total traffic related to the Facility in November 2021 is estimated to be 1,042 trip ends daily.

Estimated peak hourly generation was also analyzed and compared to the results presented in the 2006 DEIS. The 2004 data estimated the peak hourly traffic generation at 265 vehicles occurring between 12:00 PM and 1:00PM, as seen in Table 3-10. That peak hour estimate was confirmed by a traffic count that was taken by Clough, Harbour and Associates in May 2005 at the intersection of Salcman Road and Route 414. Table 3-10 shows the previously presented data along with what was obtained recently. The recent data, also presented in Table 3-10, still indicates the peak hourly traffic generation occurring between 12:00 PM and 1:00 PM, but the estimated peak number of vehicles decreased to 175. The traffic count conducted by Clough, Harbour and Associates (CHA) on February 7, 2023, confirms that the estimated peak hour was among the most voluminous observed during the study. The actual peak occurred between 9:00 AM and 10:00 AM. The majority of the traffic occurred between 7:00 AM and 1:00 PM.

It is clear that while the incoming waste rates has not changed since the last DEIS was completed, there is a defined reduction in both truck traffic and total traffic entering the Facility. This decrease in truck trips can be attributed to increased hauling efficiency since the previous DEIS analyses were performed (a greater number of loads currently come in via transfer trailer, whereas in the past, truck traffic included a higher percentage of compactor smaller trucks). The decrease in employee and visitor traffic is due to an increase in remotely handled business. It should be noted that the comparison of annual waste acceptance tonnages between 2004 and 2022 indicate that the decrease in truck trips is not due to a decrease in waste tonnage acceptance, as acceptance tonnage in 2022 was slightly higher than in 2004.

SR 414/Intersection Traffic

Additionally, for the DGEIS for the 2007 Landfill Development, the annual Traffic Volume Report prepared by the Traffic Monitoring Unit of the Highway Data Services Bureau of the New York State Department of Transportation (NYSDOT) was reviewed for Seneca County, New York. Specifically, the annual average daily traffic (AADT) count for Route 414 located to the east of the Facility was reviewed. The AADT for the year 2003 was 5,516 vehicles. The 2019 Traffic Volume Report was reviewed for comparison. The AADT for all vehicles on Rt 414 in the year 2019 was 6,711 vehicles. A summary of this data can be seen in Table 3-11.

Based on the previous estimated total of 1,576 trip ends daily to the landfill and average 2003 daily traffic count of 5,516 vehicles on Route 414, it was estimated that approximately 29% of the vehicles traveling on Route 414 were from traffic related to the Facility. Utilizing the recent estimates of 1,042 daily trip ends to the landfill and average 2019 daily traffic count of 6,711 vehicles on Route 414, it is estimated that the percentage of vehicles traveling on Route 414 related to the Facility has decreased to 16%.

The results of the May 2005 traffic counts at the intersection of Salcman Road and Route 414, performed by CHA, were compiled and presented in the DGEIS for the 2007 Landfill Development. The data showed vehicle movements in 15-minute increments from 6:00 am to 6:00 pm. A compilation of truck entering, including waste delivery trucks and materials delivery trucks, during that same period was also presented. The data confirmed that most of the vehicles accessing the Facility arrived by traveling southbound on Route 414 and making a right turn onto Salcman Road. The data also showed that total traffic on Route 414 north of Salcman road during the 12-hour analysis period was 5,619 vehicles, of which 1,380 vehicles (about 25%) were attributable to SMI operations. A February 2023 traffic count, also conducted by CHA, was designed to match the parameters of the previous study for comparison. A summary of the data results from the 2023 count can be seen in Table 3-12. The data again confirmed that most of the vehicles accessing the Facility arrived by traveling southbound on Route 414 and making a right turn onto Salcman Road. The data also showed that total traffic on Route 414 north of Salcman road during the 12-hour analysis period was 4,291 vehicles, of which 754 vehicles (about 18 %) were attributed to SMI operations – which is consistent with the other analysis method showing a reduction in the total traffic and influence of traffic from the Facility since 2005.

Lastly, in addition to assessing the traffic counts on SR414 and accessing the Facility, an assessment of the intersection at the entrance (SR414 and Salcman Road was performed). The intersection was designed in 2007 and constructed shortly thereafter. The original design analysis, which was made part of the Final Generic Environmental Impact Statement (Shaw, 2006) for the last development showed the intersection to have acceptable services levels for the traffic on SR 414 and entering the Facility. This report is included in Appendix F. The 2023 Traffic Study also included a level of service assessment of the intersection of NYS Route 414 and Salcman Road, the entry/exit point of the Facility. The study determined that the overall intersection and each lane group is currently operating at an acceptable Level of Service (LOS) of B and the current operating level is comparable to the design LOS presented in 2007. The February 2023 Traffic Study can be seen in Appendix F.

There have not been any significant changes to the Facility which would create changes in site traffic since the original traffic counts and analyses were prepared in the 2005 to 2007 time frame. The acceptance rate of waste at those times was 6,000 TPD is currently 6,000 TPD and will remain there through the SMI Valley Infill project. Construction and general operations have also remained consistent since this time, and there has not been an increase in construction-related or employee and visitor vehicle traffic. No new facets of SMI's operation have been introduced which incur significant vehicular traffic. Through the conduction of the traffic study with data collected between November 2021 and February 2023, it has been determined that the Facility has seen a decrease in vehicle traffic since 2004 and that the intersection at the entrance to the Facility is operating at the same level of service as designed in 2007. It is assumed that increased hauling efficiency, increased remotely handled business, and a significant increase in development in the surrounding area has ultimately led to the decrease of the Facility's overall contribution to traffic along NYS Route 414. As such, the SMI Valley Infill project is not expected to have any traffic impacts that would increase traffic beyond current levels and impact surrounding roadways.

3.6.2.3 Regional Traffic Patterns

The Facility serves as both a local and State-wide solid waste disposal provider. Traffic related to current operations is primarily from trucks hauling solid waste to the landfill; however, additional traffic volumes are generated from the importation of cover soils (also truck traffic), and from employee and visitor traffic (primarily passenger vehicles). With the exception of waste deliveries from local sources such as Seneca Falls and Waterloo, nearly all waste deliveries arrive at the Facility from the north, by traveling southbound on NYS Route 414 before entering the Facility on Salcman Road.

As part of the proposed SMI Valley Infill project there are no changes proposed for how trucks access the Facility. No significant change in landfill related traffic patterns is expected sine the large majority of waste delivery traffic will continue to process to the Facility Site from the north on SR 414. Seneca Meadows Landfill is conveniently

located off the New York State Thruway. All downstate waste haulers are required to utilize Interstate 81 to the Thruway (I-90) and truckers are urged by the Facility to use the Interstate Highway System.

3.6.3 Utilities and Services

The following public services are provided to the Facility:

Service	Provider
Fire	Waterloo District Volunteer Fire Department and Seneca Falls Volunteer Fire Department
Police Protection	New York State Police (Waterloo Station) Seneca County Sheriff
Ambulance	North Seneca Volunteer Ambulance Service
Water	Burgess Road Water District
Utilities	New York State Electric & Gas
Sewer	Seneca Falls Sewer District
Highway	Town of Seneca Falls Highway Department

Current demand generated by the SMI operations for public services are minimal and well within the existing capacities of the designated providers. Emergency services to the Facility may rarely be required.

As described in Section 2.6.3, financial support for public services available to the Facility is provided through general property tax levies or special district assessments on the property. Indirect support for a variety of local public service organizations is also provided through cash donations (e.g., police vehicles, new ambulance, fire equipment and communications equipment). Finally, voluntary support is provided directly from SMI to the various volunteer emergency services as part of the company's annual local, charitable support.

Potable water and sewer services are paid for through user fees assessed by the utility owners. Some leachate collected as part of landfill operations is conveyed by forcemain to the Seneca Falls Sewer District publicly-owned treatment works (POTW). The remainder may be recirculated, treated with the evaporator, or shipped off-site for treatment. SMI paid for the construction of the sewer system extension which services the Facility. SMI also contracts with other POTW's throughout the region who accept tanker truck shipments of leachate which cannot be treated or reused locally.

As noted in Section 3.5.2 above SMI now operates a reverse osmosis facility for the on-site treatment of leachate. Since start–up this facility has produced about 70 percent permeate (84,000 gpd) that is discharged to the Town of Seneca Falls sanitary sewer system.

For electrical power, SMI relies primarily on electricity produced at Seneca Energy's landfill gas-to-energy facility which operates on the eastern part of the Facility Site. Excess power from the Seneca Energy facility is sold directly to New York State Electric & Gas (NYSEG), the local electric utility. In the event that the Facility is required to use more electricity than can be generated, NYSEG would be the provider.

Community and Private Water Supplies

Both surface water and groundwater are used for potable water supply in Seneca County. The majority of towns and villages in Seneca County utilize surface water for their community water supply. Most communities utilize either Seneca Lake or Cayuga Lake. The Village of Waterloo obtains water from Seneca Lake. Seneca Falls uses water from Cayuga Lake (NYSDOH, 1982).

Formerly used private water supply wells in the vicinity of the SMI Landfill are primarily located along Burgess Road, west of the Facility, and NYS Route 414 to the east. During the 1990s, public water supply pipelines were installed (at SMI's expense) along Burgess Road and NYS Route 414 as well as Salcman Road, and North Road. Residents and businesses in these areas were formerly dependent upon private drinking water wells, but now use public water supplies.

Businesses located north of Black Brook along NYS Route 414 still rely upon private well water. The SMI Education Center also utilizes a private well, which is subject to quality testing. It should be noted that the wells north of the Black Brook on NYS Route 414 are hydraulically upgradient of the landfill and thus cannot be impacted by either Facility operations or by the proposed SMI Valley Infill Area.

As noted in Section 3.2.1, an extensive groundwater quality monitoring system is employed in connection with Facility operations.

3.6.4 Ambient Sound Level Conditions

Sound level surveys are performed annually to identify levels of environmental noise received along boundaries of the Facility to characterize operations in compliance with requirements of the NYSDEC 6 NYCRR Part 360 facility permit (NYSDEC Permit 8-4532-00023/00001-0). The process follows basic NYSDEC Program Policy "Assessing and Mitigating Noise Impacts" (DEP-00-1) ("DEC Noise Policy") and State Environmental Quality Review (SEQRA) criteria to minimize noise impacts. Sound levels received along the Facility Site boundaries are identified by surveys at representative locations displayed on Figure 3-9. Ambient sound levels areas are measured at 10 locations, both on the Facility Site and at representative receptor areas in the vicinity of the Facility Site and the monitored sound levels are compared to the sound level criteria contained in the Part 360 Regulations. Sound level measurements are obtained during operations and during non-operating hours. The most recent annual noise survey report (2023) and the survey report from 2018 for the Facility, completed by Aurora Acoustical Consultants, are included in Appendix E of this DEIS. The existing sound levels at the Facility comply with the requirements of 6 NYCRR Part 360 Section 360.19(j).

Levels of sound are measured in units called decibels. Since the human ear cannot perceive all pitches or frequencies equally well, these measurements are adjusted or weighted to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dB(A). The A-weighted sound levels expressed in decibels are used to evaluate hearing damage risk and community annoyance impact. These values are also used in federal, State, and local noise ordinances. All sound level values utilized in the DEIS are A-weighted. In addition, since dB(A) describes a sound level at just one moment, and very few noises are constant but rather vary over time, other ways of describing sound over extended periods are needed. One way of describing variable sound is to describe the fluctuating sounds heard over a specific time period as if it had been a steady, unchanging sound. A description called the equivalent sound level, L_{eq}, can be computed. L_{eq} is the constant sound level that, in a given situation and time period, i.e., 1 hour = $L_{eq(1)}$, conveys the same sound energy as the actual varying sound over the same time period and is used as the average sound level.

The Facility sound monitoring periods are typically performed in the summertime, during the annual peak period of landfill operations, maintenance activities, and construction. The 10 survey locations have been used in past annual sound surveys for some time, which allows for comparisons of sound levels from year to year.

The noise survey locations surrounding the Facility are shown in Figure 3-9, and described as follows:

Location 1 – represents former residential-use properties on the east side of NYS Route 414. The house on the Facility Site is used as a construction office and is not currently used for residential purposes.

Location 2 – is adjacent to the eastern retention ponds and the NEX on the east side of NYS Route 414.

Location 3 – is located on the eastern Facility boundary along NYS Route 414, east of the SMI Landfill, representing an existing residential property on the east side of the highway and former residential-use property on the west side of the highway, on property holdings of SMI. The residence is located on property on the east side of the highway approximately 300 feet to the northeast of the survey location in the Highway Commercial zoning district. The former residential property is located on the west side of the highway approximately 700 feet to the north of the survey location in the Highway Commercial zoning district.

Location 4 – represents residential-use properties along the east boundary of the landfill just northeast of the SMI Landfill in the Highway Commercial zoning district. The adjoining properties include a residential property on the west side of NYS Route 414 located approximately 250 feet north of the survey location, and two residential properties on the east side of NYS Route 414 located approximately 600 feet and 800 feet east of the survey location. Other surrounding properties are property holdings of SMI and are wooded and undeveloped.

Location 5 – is located northwest of the SMI Landfill in a low-density residential neighborhood in the Town of Waterloo. The neighborhood was represented by survey Location 5, located on the western boundary of the Facility Site with a residential property holding of SMI.

Location 6 – is located on the western boundary of the Facility Site opposite the WEX landfill area, near residential-use properties located on the east and west sides of Burgess Road. The properties that adjoin the Facility Site are used for agricultural purposes. Two residences are located on properties on the east side of Burgess Road that adjoin the western boundaries, one on property that directly borders the Facility Site and one on property that is contained within a subdivision of the first property. Properties on the west side of Burgess Road include undeveloped private properties, and holdings of SMI extending west of Burgess Road to Powderly Road.

Location 7 – is located near the southwest corner of the Facility Site and adjoins a number of residential-use properties on the east side of Burgess Road between Salcman Road and North Road. The properties include existing residences. Four of the five residential properties are holdings of SMI. North of the Salcman Road and Burgess Road intersection are a number of vacant residential-use properties that are current SMI holdings.

Location 8 – is located on the north side of North Road to the west of the railroad grade crossing. The survey locations adjoined the landfill southern storm water retention ponds and the materials storage area. On the south side of North Road there are several residential-use properties contained within the boundaries of the Village of Waterloo. Non-residential facilities in the vicinity of the survey location include the offices for the Seneca County government, and commercial dental laboratory facilities in the Village of Waterloo and in a Highway Commercial zoned district of the Town of Seneca Falls.

Location 9 – is located along the southern boundary of the Facility Site on the north side of North Road to the east of the road to the bus garage. On the south side of North Road there are several residential-use properties contained in the boundaries of the Village of Waterloo. Non-residential properties in the vicinity of this survey location include the North Seneca Ambulance, Inc. facility, the Seneca County Fairgrounds, the Waterloo School District bus garage and maintenance facility, and undeveloped properties adjacent to the bus garage that are holdings of SMI.

Location 10 – is located on the western boundary of the Facility Site, approximately 1,600 feet north of Survey location 6. The property adjoins agricultural-use properties on the east side of Burgess Road. The survey location is opposite a former residential property on the west side of Burgess Road, which is a current holding of SMI.

Existing sound levels at these locations have been established during past Noise assessments. Actual background sound levels vary over time, from day to day, and cannot be characterized be a single value.

Environmental conditions can vary in ways such as weather or the presence of wildlife, while human-impacted conditions such as traffic levels and nearby active uses can also create different background sound levels. Updated representative sound levels have therefore been selected from the existing 2023 Noise Assessment data, during monitoring periods coinciding with normal landfill operating hours and periods before or after the hours of normal waste acceptance. Table 3-13 shows representative sound levels taken at each location in 2023, as well as what time of day that monitoring occurred.

Monitoring is performed using sound level loggers that continuously recorded the average sound levels at each survey location throughout the survey periods. The logged levels are averaged over consecutive fifteen-minute time periods, designated as $L_{eq\text{-}15\ min}$. Also recorded were the minimum and maximum sound levels determined for each time period (L_{min}, L_{max}). The fifteen-minute average L_{eq} -1 hr levels were logarithmically summed into one-hour averages ($L_{eq\text{-}1\ hr}$) and compared to the one-hour average sound level limits contained in the 6 NYCRR Part 360 Regulations.

The boundary sound levels are further characterized with short-term sample measurements obtained with a portable sound level analyzer. The sampling is performed three times at each location. The average sound levels for each sampling period are presented in the report as further means of evaluating Facility sounds acceptability in comparison to the Part 360 sound level limits.

The monitored average sound levels are compared to the sound level limits specified for a suburban community character in the Part 360 Regulations to evaluate the acceptability of Facility sound levels. The suburban community designation was chosen to represent the community around the Facility based on the character of the residential community, the extent of adjoining commercial and industrial development, and the type and volume of traffic on adjoining roadways. The suburban sound level limits are considered to be 62dB during daytime operations and 52dB at night.

The information contained in this section was derived from the Annual Noise Surveys prepared for SMI by Aurora Acoustical Consultants, Inc., over the period from 2015 to 2023 to portray expected sound levels at the various monitoring locations over a representative period. Monitoring activities during the span from 2015-2023 were performed while the landfill was filling in various areas around the Facility, in accordance with its fill progression plan. Landfill activities consisted of normal daily waste acceptance from tractor trailers and municipal trucks, with placement and compacting by a number of bulldozers and compactors. One or more trailer tippers were also in use. End of day operations consisted of daily cover placement with articulated trucks, bulldozers, and compactors.

Construction activities also occurred regularly during this 2015 to 2023 span across all areas of the Facility and more specifically, along the western property lines. These construction activities included excavation and transport of soil, bulldozer grading, and soil drilling. Future construction work for the SMI Valley Infill will occur within the limits of the existing waste placement areas, and at locations further from property lines and receptors represented by activities monitored in the noise studies from the aforementioned monitoring period. The 2023 annual survey reported that major construction activities were not observed in progress during the sampling surveys, including any liner development. The report predicts that for construction activities outside of the survey period, the construction sources located within the confines of the landfill berms would not generate perceptible sound levels at any location.

Construction for the SMI Valley Infill will occur at a greater distance from property boundaries than previous construction projects occurring over the last permit period. The review of Annual Reports since 2015 showed that the Facility Site remained in compliance with Part 360 noise regulations even when construction projects were underway closer to the edge of the property than the area of the SMI Valley Infill footprint. A table depicting the range of hourly average sound level for each year is provided in Table 3-14. While specific years saw sound levels that that were above the Part 360 levels during some monitoring periods, in all cases the sound was a result of background noise or external or environmental noise not attributed to the landfill (e.g., rain or traffic from adjacent roadways).

As reported in the 2023 annual report, landfill waste placement operations at the Stage 5 landfill cell were imperceptible at Locations 1,2,3, and 4 along the eastern boundaries of the Facility. Waste trucks passing by on the berm plateau were faintly perceptible during lulls in highway traffic of State Route 414, but did not significantly contribute to the measured sound levels.

As displayed in the range of readings on Table 3-14, the hourly-average sound levels measured at Locations 1 and 2 frequently experienced sound levels higher than the standard daytime and nighttime Part 360 levels due to traffic and the Seneca Energy RNG Facility (background). These frequent elevated sound levels were not attributed to the Seneca Meadow Landfill.

As shown on Table 3-14, the range of hourly-average sound levels at Locations 3 and 4 was below the Part 360 daytime sound level of 62dB in some years, while in other years the range went slightly above this level. The majority of daytime and nighttime sound levels at these locations from 2015 to 2023 were below the regulatory standard, but occasional elevated sound levels were found. Noise reports stated that landfill operations were not perceptible at these locations and therefore did not appreciably contribute to sound levels.

The 2023 annual report concluded that landfill operations did not significantly contribute to sound levels measured at Locations 5, 6, 7, and 10 along the Facility's western boundaries adjoining residential-use properties. landfill waste placement operations using bulldozers and compactors were faintly perceptible at Location 5. At Location 6, daytime landfill waste placement operations were faintly to partly perceptible and sounds of leachate collection system maintenance with trucks along the western access road were perceptible at times. Sounds from waste truck traffic and soil truck pass-bys on site roads and Salcman Road were briefly perceptible at Location 7 to the south, while landfill waste placement operations at the Stage 5 cell were imperceptible. To the north, the landfill waste placement operations at the Stage 5 cell were partly perceptible. The range of hourly average levels reported over the period from 2015 to 2023 were most commonly below the daytime Part 360 standard, with nighttime levels also typically below the standard. In limited cases the measured hourly-average during this span were above the Part 360 levels for a variety of attributed reasons including insect noise, distant traffic events, and wind.

As reported in the 2023 annual report, at Locations 8 and 9 the sounds of Stage 5 cell waste placement operations were imperceptible. Waste truck traffic and soil trucks on site roads and Salcman road, as well as water trucks filling at the south retention pond, were partly perceptible. The range of hourly average levels reported over the period from 2015 to 2023 were most commonly below the daytime Part 360 standard, with nighttime levels also typically below the standard. Certain individual hourly-average sound level measurements were above Part 360 levels; however, they were due to environmental factors not associated with the landfill. Elevated sound levels were more common at night when the landfill was not operating, with few elevated sound levels found during the day from 2015 to 2023.

Overall, regarding the landfill and its effects on sound levels at all monitoring locations, the reports found that the sound levels observed at these locations comply with Part 360 requirements.

3.6.5 Public Parks and Recreation Facilities

The Hamlet of Seneca Falls is one of 14 Urban Cultural Parks in New York State. The Park comprises 360 acres in the historic core of the Hamlet, including the Cayuga-Seneca Canal and National Park and historical attractions. The Seneca Falls Urban Cultural Park Management Plan (Fortner and Prigmore, 1986) was adopted by the former Village and the New York State Office of Recreation and Historic Preservation in July 1986. That plan set forth a blueprint for the proposed growth of this district through the year 1994.

In 1995 the Seneca Falls Urban Cultural Park Management Plan was developed many recommendations that have been implemented in subsequent years, including the following:

- Development of the national park sites.
- Development of the canal in the business district.

- Improvements to the community center.
- Development of a trail from Seneca Falls to Waterloo.
- Improvements to the streetscape.
- Development of outdoor exhibit pieces.

The Cayuga-Seneca Canal was constructed in 1828 to connect Cayuga and Seneca lakes to the Erie Canal to the north. The canal traverses both villages of Seneca Falls and Waterloo and is just over 1 mile south of the Project Area. It is part of a larger canal system that is operated by the New York State Canal Corporation. The New York State Canal Corporation is a subsidiary of the New York State Thruway Authority. State legislation transferred responsibility and day-to-day operations for the 524-mile Canal System from the State Department of Transportation to the Thruway Authority in 1992. The Canal Corporation's goal is to transform the Canal System into a world class recreationway, with clustered development to foster recreation, tourism and economic development, while preserving the natural and historical environment of the System and its adjacent communities. In 1996, the Thruway Authority and Canal Corporation launched a five-year, $32.3 million initiative to preserve and develop the Canal System for the 21st century. The Canal Revitalization Program presented a realistic and achievable approach to Canal System development. The Authority and Corporation are committed to a new program of strategic investment in partnership with businesses and local communities.

In 1995, the Beyer Blinder Belle Consortium prepared the New York State Canal Recreationway Plan for the New York State Canal Recreationway Commission. The fundamental goals of the Plan are to preserve the best of the past; enhance recreational activities; and foster appropriate and sustainable economic development. The Canal Recreationway is defined as a linear park developed for boating and other recreational uses, taking advantage of the canal's historic heritage, preserving the beauty of its natural setting, and utilizing recreationway improvements to enhance the economic development potential of the canal regions. The Cayuga-Seneca Canal is one of the 15 thematic canal regions identified in the plan. The plan calls for the development of 7 canal harbors to provide major boating and tourist amenities at key canal locations. Seneca Falls has been recommended as the location for the canal harbor which would serve as the gateway to the Finger Lakes.

The Canal Harbor in Seneca Falls has been completed along with canal harbors in six other cities along the canal system. Completion of these canal harbor projects is expected to raise investor confidence in the future of the canal system and spur private investment in additional project components such as marinas, charter and tour boat operations, and tourism and hospitality services.

Another attraction to the area is the Montezuma National Wildlife Refuge, which is located about 5 miles northeast (7.5 stream miles) of the Project Area, consists of 8,000 acres, and serves as a habitat for a variety of important species including bald eagle and osprey as well as migrating geese and ducks. According to Ms. Andrea Stewart of the Montezuma National Wildlife Refuge, the park had 160,230 visitors in 2004. Cayuga Lake State Park is comprised of 190 acres and is located about 4 miles southeast of the Project Area, just off Route 89. Seneca Lake State Park is located in the Town of Waterloo, about 5.6 miles southwest of the Project Area.

North of the National Wildlife Refuge, the State of New York also owns approximately 6,300 acres of conservation land. This property, known as the Northern Montezuma Wildlife Management Area, is managed by the NYSDEC. The most recent acquisition to this area included a 752-acre farm in the Town of Savannah in Wayne County.

Parks and recreational services in the Town of Seneca Falls consists of three main venues. A Community Center is located at 35 Water Street and contains a gymnasium, a fitness room, a video game room, meeting rooms, staff offices, a kitchen and lounge area. Kid's Territory is located on West Bayard Street and contains a playground, a gazebo area, six sports fields and a concession stand. Vince's Park is located at the intersection of Routes 5 and 20 and Route 318. This park contains an outdoor swimming pool, volleyball courts, two softball fields, a soccer court, two tennis courts, horseshoe pits, a miniature golf course, a restaurant café, picnic areas and an enclosed pavilion. The most recent addition to these facilities is a skate park located at the rear of the Community Center, which includes ramps and sitting areas (Town of Seneca Falls Website, 2004).

SMI has developed a large nature preserve and park as well to add to the host of recreational and educational areas available to residents of the area. The 1,100-acre Seneca Meadows Wetlands Preserve (SMWP) complex includes 576 acres of wetland and grassland habitats, as well as other natural habitats such as upland savannah and tall grass prairie. The preserve hosts various important or at-risk bird species and is protected through an Audubon New York conservation easement. Over 7 miles of trails, overlook structures, and storm shelters can be found for visitor use. The area has become a popular hiking and bird watching spot and received a designation as an Important Bird Area (IBA) from Audubon New York in 2014. Furthermore, in 2017 a formal partnership was developed with Braddock Bay Bird Observatory to install a radio tower to collect and track bird flight data. Braddock Bay Bird Observatory chose a site atop the Seneca Meadows Landfill to launch a new radio tower for the tracking efforts. In addition to the above recreational and ecological uses, the SMWP is also used for educational purposes for outside groups and in college and university studies, including a pollination study through 2020 and a plant and pathogen research study through 2024. Thanks to the conservation easement, the SMWP will continue to be a valuable resource well into the future.

3.6.6 Demographics

3.6.6.1 Local and Regional Economy

Seneca County is primarily a rural, agricultural community with an industrial and manufacturing based economy and a population in 2020 of 33,814, according to the US Census. The 10 townships and 4 villages of the County are located between Seneca and Cayuga Lakes in the Finger Lakes Region; Seneca County is bordered by Wayne County to the north, Ontario and Yates Counties to the west, Schuyler and Tompkins Counties to the south and Cayuga County to the east.

The population in Seneca County is concentrated in the Towns of Seneca Falls (27 percent) and Waterloo (22 percent) reflecting the historic concentration of employment opportunities. In total, the counties in the labor market area (Ontario, Tompkins, Wayne, Yates, and Seneca), referred to as the Seneca LMA, experienced an increase in population over the time from 2010 to 2020.

From 2017 to 2021, about 57.1% of the population age 16+ years was a part of the civilian labor force. As of 2020, the three NAICS industry sectors employing the most people in Seneca County were: educational services, health care and social assistance at 27.5 percent; manufacturing at 13.4 percent; and retail trade at 10.5 percent.

The following data contains employment data for many of the largest businesses in the county, as recorded in the online “Seneca County Employer List” maintained by the Seneca County IDA.

Top Private Seneca County Employers	Number of Employees
del Lago Resort & Casino	1,400*
Prime Outlets	1,200
Goulds Pumps ITT Industries	1,000+ full time
ARG Trucking Corp.	557
Seneca Cayuga ARC	355
Hillside Children’s Center	317
New York Chiropractic College	275
Xylem Inc.	202

Huntington Living Center	200
NYS Electric & Gas	175
BonaDent Dental Laboratories	161
Seneca Nursing Home and Rehabilitation	150
Petro Stopping Center	137
Seneca Meadows Inc.	103
Geneva General Hospital	100+

*Total number of employees could not be found, but was previously estimated to be around 1,400 part and full-time employees.

Unless noted otherwise, the aforementioned employment statistics include both full- and part-time employees, although not all employers distinguished between full- and part-time employment in the same way. Part-time employees are expected to make up a significant fraction of the totals listed, particularly for retail and service businesses.

3.6.6.2 Existing Jobs and Economic Contributions of Landfill Operations

SMI contributes significantly to the local economy through direct payroll, payments to local vendors, tax payments and other contributions to local government units. As detailed in Section 2.6.3, SMI represents the fourteenth largest private employer overall and the fourth largest industrial (i.e., non-retail and non-service) employer in Seneca County.

SMI is one of the largest employers in Seneca County. Employment for SMI fluctuates seasonally. Peak employment occurs during the construction season from April through September. Recently, SMI has had up to 110 employees during the peak season. In prior years when more construction was occurring, such as 2012, these numbers were as high as 154. The majority of these employees live in Seneca County or within a 20-mile radius from the Facility. Total payroll with benefits for SMI employees in 2022 was over $7 million (over $7.3 million including temporary employment payroll), much of which is spent locally supporting other area retail and service businesses. The vast majority of the payroll and benefits goes to employees within a 20-mile radius, including over $6.9 million in 2022. During 2020 to 2022, SMI payroll exceeded $21 million, with over $19.6 million of this going toward employees within a 20-mile radius.

In addition to direct payroll, the operations at SMI generated over $46 million in payments to businesses (SMI vendors) in 2022. These payments support the economy by generating revenue for businesses, and many of these businesses are locally sourced or have locations and employees in the area.

In addition, free disposal services are provided to the Seneca Falls and to the Village of Waterloo. The free waste disposal services provided to Seneca Falls residents over the last 5 years are values at $704,523. Services provided to Waterloo residents over that same period were valued at $141,519. Additional value is added through programs discussed previously, such as the e-waste disposal program and holding Household Hazardous Waste collection events.

Over the past twelve years, SMI has contributed over $2.5 million to local charitable organizations. SMI commits to and invests financial resources in over 100 local service organizations, nonprofits, charities and extracurricular groups & clubs on an annual basis. See Section 2.6.3.4 for more information on this charitable work.

Secondary economic activity is more difficult to estimate with any certainty, but its presence is obvious from observations at local establishments and from anecdotal information. For example, the Nice & Easy gas station and convenience store located at the intersection of Route 414 and Route 318 near the NYS Thruway Exit 41, has reported that 50 to 70 percent of its daytime income is derived as a result of landfill operations through the sales of fuel, food, and drinks. Other local businesses such as restaurants, hotels, gas stations and convenience stores, similarly benefit from the landfill's presence.

SMI paid over $530,000 in local property and school taxes during 2022. SMI has also paid over $270,000 in New York State sales tax on average over the last three year that also contributes tax revenue for Seneca County. The cost of local services such as: police and fire protection, ambulance services and educational facilities, which are attributable to SMI are minimal. The landfill requires limited police and fire protection with a contracted security firm and its in-house fire-fighting capabilities. SMI adds no additional burden to the public school system.

SMI has a significant financial impact on the Town of Seneca Falls by providing direct cash payments to the Town of Seneca Falls pursuant to an agreement between SMI and the Town, which is based upon a variable dollar multiplier applied to the annual amount of waste disposed of at the landfill. The dollar multiplier varies with the total tonnage of waste disposed and escalates over time. In accordance with the Host Community Agreement with the Town of Seneca Falls, SMI paid fees totaling approximately $3.64 million to the Town of Seneca Falls during 2022. The 2017 payments to the Town represented over 25% of the town's spending budget total for that year and may average an even greater percentage during some years. From 2017 to 2022, the value of these payments to the Town has totaled over $20.5 million.

SMI has also entered into a Community Benefits Agreement with the Town of Waterloo that, among other things, will result in progressively increasing direct cash payments. The payments have totaled over $1.9 million from 2020 to 2022 and have helped provide tax relief or minimal tax rate increases for residents in the Town of Waterloo since the initial agreement was made.

As noted previously, the true value of the above noted economic benefits are greater than direct expenditures by SMI because of multiplier effects which ripple through the local economy to create new jobs and income. Multipliers usually range between 1.0 and 3.0 and vary by the amount of economic activity within an area and the interaction of industries within the area. In 2016 SMI hosted a Master's Candidate in Planning from Cornell University that was responsible for assessing economic impacts of the Facility on Seneca County utilizing IMPLAN and input- output analysis and determined the regional economic impacts that Seneca Meadows has is estimated to be $72 million annually. The study determined that there is a spillover and multiplier effect, and for every $1.00 in revenue generated at SMI, $1.30 in economic activity is generated within Seneca County. Furthermore, for every person employed by SMI, 2.7 people are employed in Seneca County.

The information presented in this section clearly demonstrates the positive economic impact that SMI has in Seneca County and especially in the Town of Seneca Falls. SMI supports the local economy with tens of millions of dollars provided through direct payroll, payments to local vendors, tax payments and direct payments made to the local communities, pursuant to the agreement between SMI and each of the Towns. Hundreds of thousands of dollars are also donated by SMI to charitable causes. SMI provided between on the order of 110 full-time, well-paying jobs to local residents, a number which will be maintained with the development of the SMI Valley Infill Project. All of these factors combined result in a significant fiscal impact on the economic conditions in Seneca County, making SMI a vital part of its economic base.

3.6.6.3 Population and Housing

Seneca County is a primarily rural community with a population of approximately 33,814, according to the 2020 census. The population is concentrated in the Hamlet of Seneca Falls (26.7 percent) and Village of Waterloo (21.8 percent), and the surrounding Towns reflecting the historic concentration of employment opportunities with a few large employers in those locations. The combined population of the Towns of Seneca Falls and Waterloo (including the hamlet and village) is 16,405 (9,027 people in Seneca Falls and 7,378 people in Waterloo).

Housing unit type is primarily single-family homes, with an owner occupancy rate of 72.5 percent in 2022 (Town of Seneca Falls). Residential uses in the vicinity of the Facility are discussed in Section 3.6.1 of this DEIS.

3.6.6.4 Environmental Justice Areas & Disadvantaged Communities

While the Facility is not located within a potential Environmental Justice Area, SMI has voluntarily agreed to follow the enhanced public participation provisions of Commissioner Policy-29 (CP-29), Environmental Justice and Permitting. Specifically, SMI is facilitating increased public participation in conjunction with the NYSDEC permit renewal review. This process will include opportunities for residents to become informed about and provide comments on the permit renewal and modification.

SMI will submit periodic written report updates to NYSDEC throughout the enhanced public participation plan process. These progress reports will include, among other items, public documents produced during the previous period, recordings of any formal public meetings, the current stakeholder list, descriptions of outreach activities, substantive concerns raised to-date; resolved and outstanding issues; the components of the plan yet to be implemented, an expected timeline for completion of the plan, and other work completed in the permitting process. These progress reports will be posted on the Facility website and physical copies will be placed in the repositories.

SMI will prepare a final report certifying in writing that the public participation process was completed in conformance with the NYSDEC-approved Plan prior to a final decision being made on the permit renewal and modifications. The report will also include the full record of documents produced for the process and recordings of meetings included as appendices. The final report will be posted on the Facility website and placed in an appropriate local repository.

The New York State Climate Leadership and Community Protection Act ("CLCPA") was signed into law in 2019 and sets goals to reduce greenhouse gas ("GHG") emissions across the state and to increase the amount of energy from renewable resources. The Climate Act requires that state agencies prioritize and maximize reduction of greenhouse gases and co-pollutants in disadvantaged communities. While the mapping is not finalized, the criteria and draft mapping for determining where within the state the state disadvantaged communities are located indicates that the Facility Site is located within a disadvantaged community (Census tract ID# 36099950400). Section 3.7 and 4.6 describe in more detail how the Project and associated appropriate mitigation measures are in alignment with the CLCPA.

3.6.7 Archaeological and Historical Resources

The 47-acre area where new liner will be constructed for the SMI Valley Infill, the overfill areas, and the support areas to the south of the landfill (around the existing office) consists entirely of areas already developed and significantly disturbed. The areas include the Tantalo Waste Disposal Area and adjoining areas that are currently being used in connection with the operation of the SMI Landfill. Previous studies conducted on the Project and surrounding areas indicate a lack of significant archaeological or historic resources.

A number of cultural resources investigations have been conducted in the vicinity of the SMI Facility since 1992. These investigations have been related to previous development projects at the SMI Landfill as well as projects unrelated to the Facility on nearby lands. The DGEIS prepared for the 2007 Landfill Development (Shaw EMCON/OWT, Inc., June 2005) summarized these investigations and did not identify Archaeological or Historical Resources in the Project Area.

3.6.8 Visual and Aesthetic Conditions

The existing visual character of the regional setting of the Project Area is that of a nearly level and linear plain interspersed with glacially formed drumlins. The region is a nearly even mix of mature deciduous forest and active or passive agricultural lands. The sideslopes and high points of drumlins are frequently wooded with the exception

of some gently rolling landforms suitable for agriculture. As noted in Section 3.6.1, the surrounding area includes a combination of agricultural, industrial, commercial, and residential land uses. The Project is approximately 4.6 miles from Cayuga Lake.

Saratoga Associates performed a Visual Resource Assessment (VRA) in connection with the Project. The purpose of the VRA was to identify potential visual and aesthetic impacts and to provide an objective assessment of the visual character of the Project, using standard accepted methodologies of visual assessment, from which agency decision-makers can render a supportable determination of visual significance. Consistent with VRA practice, the assessment evaluates the potential visibility of the Project and objectively determines the difference between the visual characteristics of the landscape setting with and without the Project in place. The process follows basic NYSDEC Program Policy "Assessing and Mitigating Visual Impacts" (DEP-00-2) ("DEC Visual Policy") and State Environmental Quality Review (SEQRA) criteria to minimize impacts on visual resources. The VRA for the SMI Valley Infill is presented in Appendix I of this DEIS.

The Project Area is entirely within the operational area of the SMI Landfill located along Route 414 at Salcman Road in the Town of Seneca Falls, NY. The Facility has been an operating landfill since 1958. Existing permitted landfill operations (active, inactive and closed areas) and the Proposed SMI Valley Infill occupy approximately 360 acres of the Facility Site. The natural ground elevation within the SMI Valley Infill Area ranges from approximately 480 to 500 feet above mean sea level (msl). The majority of the Project Area has been heavily disturbed by landfill construction and active filling operations, including removal of vegetation and overburden soil. Consequently, much of the Project Area is characterized by an irregular ground surface (including roadways, ditches, excavated areas, and steep sloped landfill). The Project area includes the 26-acre Tantalo Waste Disposal Area which has been covered with a low permeability cap with vegetative cover since 2007.

The SMI Landfill has a permitted elevation of about 774 feet above MSL and is generally covered and seeded. The Southeast Landfill (SELF) and the SELF Bump-out currently have permitted peak elevations of 724 feet and 700 feet, respectively. The area of the Western Expansion, which contains permitted Stages 5 and 6, has a maximum permitted elevation of about 684 ft above MSL.

Active filling is ongoing in the permitted 2007 Landfill Development. Uncovered waste material is found only within areas of daily operations. Areas of active waste material filling are covered on a daily basis with mined soils, or alternate daily cover materials. Waste operations are conducted behind berms and embankments to screen the operations to the extent possible.

Several one-story metal and wood frame buildings and a tire recycling facility and maintenance facility are located approximately at the southern portion of the Facility Site. As discussed previously, some of these buildings are within the proposed Landfill Footprint or immediately adjacent and will require relocation during the SMI Valley Infill project.

Two different landfill gas recovery operations utilize the gases produced by decaying waste at the Landfill. Seneca Energy, Inc. (an unaffiliated company) owns and operates a 17.6 MW landfill gas-to-energy facility and a RNG production facility. Both of these facilities are located on the east side of NYS Route 414, in the Renewable Resource Park. Trucks currently access the Facility Site from NYS Route 414 via Salcman Road. The solid waste landfill operations are conducted behind berms and embankments to screen the operations to the extent possible. However, glimpses of day-to-day operations periodically occur from off-site locations.

The peak and side slopes of the SMI Landfill are generally visible from several vantage points along Route 414 and Burgess Road. Based on a topographic survey from March 2019, the top of the SMI Landfill was presently at an elevation of approximately 726.50 feet above MSL which places it approximately 245 feet above the surrounding grade. The Southeast Landfill and the SELF Bump-out were at near-peak elevations of 705 feet and 670 feet in March 2019, respectively and are prominently visible from the east and from several vantage points along Route 414. Active operations were conducted in Stages 3 and 4 of the 2007 Landfill Development up until somewhat recently, and elevations in these areas have reached 677 in 2019. These areas are visible from nearby

locations on Burgess Road. Active landfilling currently occurs in Stages 6A and 6B of the Western Expansion, where grades have reached approximately 570 ft above MSL in the areas closest to the adjacent Stage 3.

3.7 CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT (CLCPA) AND COMMUNITY RISK AND RESILIENCY ACT (CRRA)

3.7.1 CLCPA

The New York State CLCPA was signed into law in 2019 and sets goals to reduce greenhouse gas ("GHG") emissions across the state and to increase the amount of energy from renewable resources. As defined by the United Nations, climate change refers to the long-term shift in temperatures and weather patterns and is primarily due to the anthropogenic GHG emissions. These changes include changes in air and water temperatures, melting glaciers, diminishing snow cover, shrinking sea ice, rising sea levels, ocean acidification, and increasing atmospheric water vapor. These changes result in more intense weather events, and pose risks to food supply, water supply, environment, and costal communities globally. Climate-driven impacts are magnified in historically marginalized communities that have been is proportionately affected by and are on the front lines of climate. NYS is no exception, and these climate driven impacts are affecting the local public health, natural resources, environment, and economy. The CLCPA is a climate change mitigation plan put New York on a path toward carbon neutrality while ensuring equity, system reliability, and a just transition from a fossil fuel economy to a robust clean energy economy.

The goals of the CLCPA include 70% renewable electricity by 2030, 100% zero-emissions electricity by 2040, 40% reduction in statewide GHG emissions from 1990 levels by 2030, 85% reduction in statewide GHG emissions from 1990 levels by 2050, and next zero emissions statewide by 2050. GHGs are quantified as CO_2 equivalent (CO_2-eq) on the basis of their global warming potential ("GWP"). The GWP was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO_2. The time period used by the USEPA for GWPs is 100 years but is specified to 20 years for the CLCPA. The CLCPA mitigation of GHG emissions within the waste sector focus primarily on fugitive methane emissions and is summarized by three themes: reduce, reuse, and recycle waste; Monitor, detect, and reduce fugitive emission; and establish markets for recovered resources and biogas utilization. The theme of establishing markets for recovered resources and biogas utilization includes solid waste management facilities such as landfills and pushes for capturing LFG for strategic and local use as the State transitions to electrification. Use of LFG for energy/electrical utilization will help meet the requirements and goals of the Climate Act while avoiding future reliance on fossil fuels.

3.7.1.1 Disadvantaged Communities (DACs)

Although the Landfill is not within range of Potential Environmental Justice Areas (PEJA), an several areas around the Landfill has been identified as Disadvantaged Communities according to the Disadvantaged Communities Criteria (Census Tract 36099950200, 36099950300, and 36099950400). To address Section 7(3) of CLCPA, the DEC is required to prioritize the reduction of GHG emissions and co-pollutants in Disadvantaged Communities. As defined under ECL 75-0101(3), co-pollutants means HAPs produced by GHG sources. The list of pollutants defined as HAPs under 6 NYCRR 200.1(ag) does not include particulate matter. Therefore, HAP emissions have been included as part of this analysis, but not particulate matter (PM). A summary of the existing burdens, and environmental or public health stressors for these communities is shown below. The percentile below shows how the Census Tract compares to the 4,918 Tracts across the state.

DAC	Existing Burdens	Environmental and Public Health Stressors
36099950200	Proximity to remediation sites – 79% Proximity to regulated management plan sites – 40% Housing Vacancy Rate – 23% Industrial/Manufacturing/Mining land Use – 77% Extreme heat projections – 56% Agricultural land – 95% Driving time to hospitals or urgent/critical care – 78% Low vegetative cover – 17% Benzene Conc. (Modeled) –15% Particulate Matter (PM2.5) – 14% Traffic Diesel Trucks – 38% Traffic Number of Vehicles – 26% Wastewater Discharge – 66%	Benzene Conc. (Modeled) –15% Particulate Matter (PM2.5) – 14% Traffic Diesel Trucks – 38% Traffic Number of Vehicles – 26% Wastewater Discharge – 66% Asthma ED Visits – 14% COPD ED Visits – 89% Heart Attack (MI) Hospitalization – 74% Low Birthweight – 66% Pct Adults Age 65+ – 71% Pct w/ Disabilities – 80% Pct w/o Health Insurance – 65% Premature Deaths– 68%
36099950300	Proximity to regulated management plan sites – 32% Housing Vacancy Rate – 55% Industrial/Manufacturing/Mining land Use – 28% Extreme heat projections – 56% Flooding in inland areas (projected) – 6% Agricultural land – 95% Driving time to hospitals or urgent/critical care – 77% Low vegetative cover – 13% Benzene Conc. (Modeled) – 13% Particulate Matter (PM2.5) – 14% Traffic Diesel Trucks – 14% Traffic Number of Vehicles – 7% Wastewater Discharge – 66%	Benzene Conc. (Modeled) – 13% Particulate Matter (PM2.5) – 14% Traffic Diesel Trucks – 14% Traffic Number of Vehicles – 7% Wastewater Discharge – 66% Asthma ED Visits – 14% COPD ED Visits – 89% Heart Attack (MI) Hospitalization – 74% Low Birthweight – 66% Pct Adults Age 65+ – 64% Pct w/ Disabilities – 59% Pct w/o Health Insurance – 57% Premature Deaths – 68%
36099950400	Proximity to remediation sites – 77% Proximity to regulated management plan sites – 53% Proximity to active landfills – 77% Housing Vacancy Rate – 74% Industrial/Manufacturing/Mining land Use – 66% Extreme heat projections – 56% Agricultural land – 94% Driving time to hospitals or urgent/critical care – 35% Low vegetative cover – 24% Benzene Conc. (Modeled) – 16% Particulate Matter (PM2.5) – 15% Traffic Diesel Trucks – 50% Traffic Number of Vehicles – 26% Wastewater Discharge – 69%	Benzene Conc. (Modeled) – 16% Particulate Matter (PM2.5) – 15% Traffic Diesel Trucks – 50% Traffic Number of Vehicles – 26% Wastewater Discharge – 69% Asthma ED Visits – 14% COPD ED Visits – 89% Heart Attack (MI) Hospitalization – 74% Low Birthweight – 66% Pct Adults Age 65+ – 60% Pct w/ Disabilities – 99% Pct w/o Health Insurance – 47% Premature Deaths – 68%

3.7.1.2 Greenhouse Gases

As described in Section 3.3.3 and 3.5.3, the existing LFG collection system collects LFG to be combusted in flares or sold to end users as a means to control fugitive GHG. The current end user utilizes LFG for electricity generation and RNG generation. The use of LFG for electricity and RNG generation aligns with the CLCPA theme for solid waste and is another potential benefit of the Project should SMI continue to sell collected LFG to end users of this market. In addition, Section 3.3.3 describes the leachate treatment system that reduces the amount of tanker trucks needed to truck leachate/concentrate off site. Therefore, this leachate treatment system reduces the GHG emissions associated with the tanker trucks.

3.7.1.3 HAP

The Facility's HAP emission sources are primarily from LFG and leachate. The existing measures to control HAP emissions are the LFG collection and control system. The LFG collection and control system reduces the amount of fugitive LFG and reduces the HAPs of the collected LFG through combustion. As part of previous Title V Modification Applications for the Facility, air modeling was completed, and results showed compliance with all NYSDEC and federal air quality standards and has not disproportionately impacted the local disadvantaged communities.

3.7.2 Consideration of Future Physical Climate Risks for the SMI Valley Infill

Section 9 of the CLCPA added a requirement to the existing Community Risk and Resiliency Act ("CRRA") that applicants for "major permits" under ECL Article 70, such as the Applications, must "demonstrate that future physical climate risk has been considered." Physical climate risks potentially relevant to the location of the SMI Valley Infill include flooding, greater rainfall volumes, availability of water and other natural resources needed by the community. Because the SMI Valley Infill does not provide resources to the surrounding community (other than disposal services), climate change at the SMI Valley Infill location will not have an impact on the availability of natural resources to the community. However, flooding and increased rainfall volumes as a result of climate change could have an impact on the operation and function of the Project. These potential impacts are discussed in more details in Section 4.6.

3.7.3 Estimated Actual Emissions

Below is a comparison of the assumptions used for calculating potential emissions (applying very conservative Potential to Emit (PTE) assumptions from the Title V Permit Modification Application) versus the expected actual emissions for the Existing Facility and the SMI Valley Infill Project applying both the 100-year Global Warming Potential (GWP) per the Title V permit modification application and applying the higher 20-year GWP values:

Parameter	*2023 Existing Actual*	*2040 Existing and Valley Infill PTE*	*2030 Existing and Valley Infill PTE*	*2030 Existing and Valley Infill Actual*	*2050 Existing and Valley Infill PTE*	*2050 Existing and Valley Infill Actual*
Peak LFG Generation (scfm)	12,501	16,836	14,692	13,209	10,873	7,984
Collection Efficiency (%)	87	95	94	94	95	95
Peak LFG Collection (scfm)	10,845	15,539	13,130	11,991	10,329	7,585
Total GHG Emissions (TPY CO_2eq) [1] [2] [3] [4]	592,384	862,103	925,824	655,932	389,881	290,888
HAP Emissions (TPY)	2.0	8.0	7.4	6.5	3.9	3.6

For a more detailed analysis, the CLCPA Assessment that was submitted to NYSDEC on February 10, 2023, can be referenced in Appendix J.

3.7.4 Potential for Alternative Technologies

The potential for alternative technologies has been addressed in the CLCPA Assessment submitted to NYSDEC on February 10, 2023, can be referenced in Appendix J.

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[1] Global warming potential values over 100 years: CO_2 = 1, CH_4 = 25, N_2O = 298
Global warming potential values over 20 years = CO_2 = 1, CH_4 = 84, N_2O = 264
(Global warming potential values over 20 years are significantly higher than over 100 years)
[2] Total GHG emissions includes CO_2eq biogenic GHG emissions and CO_2eq anthropogenic emissions.
[3] The totals presented here only represent the worst-case (peak) year of emissions from the Valley Infill Project and do not account for the emission reduction opportunities discussed in Appendix J.
[4] In addition, Waste Connections is committed to identifying better technologies to measure and manage fugitive emissions from landfills across the entire organization, including the Seneca Meadows Landfill.

4.0 POTENTIAL ENVIRONMENTAL IMPACTS

The construction and operation of the Project has the potential for both short- and long-term socioeconomic and environmental effects. Potential environmental impacts include the following:

- Changes in topography, soils, and drainage.
- Geotechnical changes.
- Effects on surface water quality and stream sediments.
- Effects on groundwater quality.
- Effects on air quality (i.e., increased dust generation; increased LFG generation; increased odor potential).
- Effects on ecological resources, including flora, fauna, and wetlands.
- Effects on the local economy.
- Effects on traffic and local roadways.
- Noise generated by waste hauling vehicles and landfill equipment.
- Visual and aesthetic impacts.

This section presents and evaluates the environmental impacts which could potentially occur if the Project is implemented, in conjunction with Section 5 of this DEIS which presents a summary of the measures that will be utilized to mitigate and/or avoid these impacts.

4.1 EARTH RESOURCES

4.1.1 Topography

The operation of the Facility has already resulted in modification of the topography of the Project Area. Natural elevations across the Facility Site range from 490 feet above MSL in the south to 480 feet above MSL in the north. The SMI Landfill currently has maximum permitted elevation of 774 feet above MSL, which is approximately 290 feet above the surrounding grade elevation. Development of the Project will continue to change the grades within the existing landfill footprint. The SMI Valley Infill Area represents a total of approximately 47 acres of new liner area, including approximately 26 acres above the Tantalo Waste Disposal Area. In addition, the SMI Valley Infill Area will include additional waste placement on approximately 126 acres that are already permitted including portions of the Southeast Landfill and the 2007 Landfill Development. Increasing the elevation of the Project Area through the development of the SMI Valley Infill Area will result in increased visibility of the Project Area from certain vantage points in the surrounding area. The final grade of the SMI Valley Infill project is planned to be 843.5 feet above MSL. Approximately, 48 acres to the south of the proposed waste placement areas will be used or repurposed for stormwater storage and site infrastructure. This entire area is currently used for existing stormwater storage and site infrastructure.

The Facility Site grading plan was submitted for review to the Federal Aviation Authority (FAA) for an evaluation of potential impacts to air traffic. The FAA Determination (Aeronautical Study No. 2019-AEA-13102-OE) concluded that the Project would not exceed obstruction standards and that no impacts to air traffic would occur. The FAA review required the filing of a notice prior to the start of construction and upon reaching the final height, and that the structure is to be marked/lighted in accordance with FAA requirements. In accordance with this determination, an area at the top of the landfill will be marked/lighted as directed once final grades have been reached. The FAA findings are included as Appendix G.

As required in the January 2020 FAA determination, a follow-up was performed with the FAA to determine whether or not the Facility met FAA guidelines for a potential wildlife attractant near an airport. Correspondence via E-mail determined that the proposed SMI Valley Infill is in compliance with the FAA guidance and found not to

be a wildlife attractant that would affect an airport. A copy of these correspondence and the FAAs determination is included in Appendix G.

4.1.2 Geology

The subsurface geological integrity of the Project Area will not be adversely impacted during either the construction or operational phases of the Project. Minor impacts due to the alteration of the Facility Site topography will result in the movement of surficial soils during construction of the lateral portion of the SMI Valley Infill Area and the relocated facilities. However, some bedrock alterations will be made to a knob of bedrock at the south end of the Project Area, as explained in Section 2.4.1.2. Removal of the bedrock knob in this area will entail the use of blasting followed by conventional excavation, and then followed up by further processing of the bedrock to develop a usable product. The limits of bedrock removal are depicted on Sheet 7 of the Engineering Drawings. Following removal of the bedrock, structural fill will be placed in the excavation to achieve the required 10-foot separation between the bottom of the liner system and top of bedrock as required by 6 NYCRR Section 363-5.1(a).

As discussed in Site Investigation Report made part of the Engineering Design Report, bedrock fracturing and its relation to groundwater flow and impacts in the area are not relevant to, or impacted by, the Project. There are no major fractures underlying the Facility Site (inclusive of the Facility, Project Area, Tantalo Waste Disposal Area, and the surrounding area) that represent a potential preferential flow path for groundwater flow. Rather, there are multiple lines of evidence that support the conclusion that bedrock groundwater flow underlying the Facility Site represents a porous media equivalent as defined by USEPA.

While blasting is proposed in the proposed SMI Valley Infill footprint, blasting mechanics and technology is such that the impacts below the excavation zone will be minimized. The International Society of Explosive Engineers (ISEE) Blasters Handbook, 18th edition, states in Chapter 26, that "….if a charge is deeply buried or totally confined without a nearby free face, the rock cannot be displaced (although it is damaged around the explosive) and more of the energy is transferred as ground vibration." For the proposed excavation to establish the subgrade, there will be a free rock face at the upper surface of the rock. Therefore, boreholes can be installed exactly to the depth needed (subgrade minus 10-feet), explosives detonated, and the cracking limited to a small area around the explosive and the zone above the bottom of the borehole. The blasting program will be designed so that the fracturing is limited to the zone needed to remove the rock.

Furthermore, because the blasting will occur essentially within the horizontal limit of the contamination associated with Tantalo, the limited potential for downward propagation of cracks should have no significant impact on the migration of the plume further away from the center of the plume.

This is further supported by the blasting has already occurred in Stage 4 of the existing WEX. The blasting for Stage 4 – which occurred on the edge of the zone of contamination – did not result in noticeable impacts to the plume contaminant levels and migration.

4.1.3 Soils

Excavation of soil for the preparation for landfill construction and waste placement is a component of the proposed development. During project construction, there will be a disturbance of surficial soils in the Project Area. The majority of the disturbance will result from subgrade and baseliner preparation activities. The excavated soils will be used in the construction of the SMI Valley Infill Area for use as subgrade fill, operational berms as well as for use as operational cover. The actual use of a particular soil will be a function of the soil characteristics (i.e., texture, composition, permeability). Soil excavation and movements will be carried out in a manner that will minimize off-site impacts due to dust and erosion to the maximum extent possible. No removal of soils from the Facility Site is anticipated over the useful life of the Project.

Soils required for daily and intermediate cover for the SMI Valley Infill will be supplemented with imported soils and authorized alternatives as required. It is anticipated that final cover material, including soil suitable for vegetation, will come primarily from off-site sources. SMI intends to source as much of the off-site soils as possible from the Meadow View Mine, which is also owned by SMI and is located on property adjacent to the Facility Site. In addition, alternative cover materials will be utilized to supplement the supply of operational construction materials. Potential traffic impacts from these soil deliveries are discussed in Section 4.5.4 of this DEIS. Soils imported to the Facility Site for use in the SMI Valley Infill will be obtained from approved and permitted commercial sources.

Soil excavation, handling and movements, including the stockpiling of imported soils material, will be carried out in a manner to minimize off-site impacts resulting from dust and/or erosion, in accordance with the conditions of the SPDES General Permit for Storm Water Discharges from Construction Activities. The Facility Site's current SWPPP and Spill Prevention Control and Countermeasure (SPCC) plan will also be modified to incorporate the SMI Valley Infill Project, although overall changes will be minimal. Measures that will be implemented during both the construction and operational phases of the SMI Valley Infill Area to minimize fugitive dust and soil erosion are presented in Section 5 of this DEIS. They include:

- Use of an engineered stormwater management system in accordance with 6 NYCRR Section 363-4.3(f) that includes erosion and sediment control measures, and practices to stabilize soil surfaces and prevent or reduce soil migration/losses due to the erosive forces of stormwater impact and runoff.
- The incorporation of stormwater collection and conveyance structures including diversion swales, downchutes, stilling basins, channels, and culverts. These conveyance structures are designed to function effectively under the range of anticipated rainfall events.
- The use of daily, interim, and final cover as well as the rapid establishment of vegetative cover to prevent erosion and sedimentation.
- Dust control will be provided by a combination of measures incorporating a paved entrance road, enforced access road speed limits, road watering, and periodic cleaning of paved areas by a streetsweeper. The quick establishment of vegetation will also be used as a dust control measure.

4.1.4 Geotechnical Impacts

Extensive geotechnical investigations have been undertaken over the years in different areas around the Facility Site. The results of these investigations have been included as part of the Site Investigation Report submitted to the NYSDEC as part of the Engineering Design Report for the SMI Valley Infill project. These geotechnical studies provide an excellent understanding of the Facility Site conditions. Further consideration for the geotechnical characteristics which have been identified and used in the proposed SMI Valley Infill design are presented in the Engineering Design Report.

Geotechnical considerations from the previous studies included stability of cut/fill slopes during the construction of the facility, landfill stability during operation and after reaching final configuration, potential for bearing capacity failure of landfill subgrade, and settlement of landfill subgrade and its effect on baseliner and leachate collection system. With increasing use of geosynthetic materials in the construction of the landfill liner systems, the interface shear strengths between the different components of the baseliner system typically control the stability of the landfill slopes. Therefore, the interface shear strengths must be taken into account in the landfill design and construction. Since the Project Area is not located within a seismic impact zone, a seismic analysis was not required. Information on these analyses and the results can be found in the Engineering Design Report. Overall, the analysis found that geotechnical stability will be sufficient for the Project. In Section 3.5.2, the proposed (under existing permit) leachate recirculation was discussed and based on the proposed volumes the waste density is estimated to increase less than 3%. Considering this negligible increase in density and that the recirculation would occur at least 100 feet from the outside slopes, there are not significant stability considerations as a result of potential leachate recirculation.

Based upon these previous analyses, SMI expects that potential geotechnical impacts can be addressed in the engineering design for the proposed SMI Valley Infill Area to ensure that it will meet regulatory and engineering requirements. As stated above, a complete evaluation of the geotechnical considerations for the SMI Valley Infill project are included in the Engineering Design Report.

4.2 WATER RESOURCES

4.2.1 Surface Water Resources

The Project will not result in significant adverse long-term environmental impacts to the surface water resources in the vicinity of the Project Area. The filling areas of the Project will be constructed within the existing waste footprint, and current controls for stormwater and general Site practices for these areas will be maintained to prevent impacts to nearby surface waters. Areas of the Project outside of the waste disposal footprint are also in close proximity to existing surface water controls, which will be utilized accordingly.

The construction and operation of the SMI Valley Infill will include a series of engineering design controls to mitigate potential impacts that could occur. These will include the continuation of the current practice of batch discharge of surface water and stormwater, after detention in sediment basins and following testing and NYSDEC approval prior to each discharge event. The development and operation will be completed under a SPDES General Permit for Storm Water Discharges from Industrial Activities which will ensure that surface water control designs are effective. Therefore, no adverse surface water impacts are anticipated as a result of construction and operation of the proposed SMI Valley Infill Area.

4.2.1.1 Potential Impacts to Floodplains

As discussed in Section 3.2.2.2, Floodplain, Flood Boundary and Floodway (FBFW) maps prepared for the Town of Seneca Falls as a part of the Conditional Letter of Map Revision, indicate that the entire SMI Valley Infill Project will not be located within the limits of the 100-year floodplain associated with Black Brook. The proposed SMI Valley Infill Area will not have a significant impact on floodplains and will be constructed in accordance with the Part 360 regulations in a manner which will prevent the encroachment of flood waters upon those facilities; will not pose a significant hazard to human life, wildlife, fisheries, or land or water resources; and will not restrict the flow of the 100 year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.

4.2.1.2 Sedimentation and Erosion

Soil erosion and sediment control measures in accordance with the conditions of the SPDES General Permit for Storm Water Discharges from Construction Activities consistent with New York State guidelines, implemented during the initial phases of construction, will include placement of temporary control structures such as:

- Hay bales.
- Siltation fencing,
- Diversion channels,
- Sedimentation basins.

These and other similar control measures, will be implemented as necessary during the initial construction phases in order to reduce potential sedimentation or erosion problems created by the Project. The planned drainage features and stormwater management system for the Seneca Meadows Landfill at the end of the SMI Valley Infill Project is shown on the Engineering Drawings, Sheet 10. Stormwater will be directed to detention/sedimentation basins for stormwater detention, settling of suspended solids, prior to a batched discharge, following testing and NYSDEC approval for each discharge event.

Because the infiltration of precipitation into landfilled refuse is a major factor in the generation of leachate at a landfill, the proposed engineering design will utilize specific features and best management practices to minimize this infiltration and to control stormwater runoff. The design will direct stormwater flow away from the active areas of refuse placement. Additionally, the landfill construction and operation techniques utilized will enhance overland flow of stormwater from areas of waste placement. Ponding will not be allowed to occur over in-place wastes. These measures combined with the use of daily, intermediate, and final cover, will minimize the generation of leachate.

Proposed drainage control measures can be summarized as follows:

- The surface water drainage system comprised of diversion swales, downchutes, stilling basins, channels, culverts and related structures, is designed to safely convey the predicted 100-year peak discharges from the landfill areas to the detention/sediment basins; and
- The use of detention/sedimentation basin will be incorporated into the proposed engineering design, will minimize downstream sedimentation and increased volume from stormwater runoff.

The stormwater collection and conveyance structures are designed to safely convey the predicted 100-year peak discharges from the landfill areas to the detention/ sedimentation basins and follow accepted stormwater design practices and New York State guidelines.

Scheduled visual inspections at the Facility Site will reveal if contamination due to a leachate release has occurred. In addition, an inspection of finished grade side slopes and cover areas will be made after periods of intense rainfall. Areas of deep erosion will be repaired immediately.

Occasionally, differential settlement in completed landfill areas may cause depressions in which precipitation may pond. These depressions will be regraded to direct standing waters away from the fill areas, and toward the on-site drainage features. Installation and maintenance of these control features will be conducted in accordance with the engineering design specifications as presented in the Engineering Design Report and plans and will follow the applicable NYSDEC regulations as well as good engineering practices for such facilities. Silt fencing and hay bales will be installed as necessary to provide temporary controls for the prevention of sedimentation and erosion.

The stormwater management system for the Project have been designed to ensure the continued high degree of protection currently afforded surface waters. Stormwater management for the SMI Valley Infill Area has been designed for long-term control of erosion and sedimentation, while enhancing water quality that is discharged to Black Brook and its tributaries. The design also addresses perpetual water quality enhancement for continued surface water quality protection throughout the SMI Valley Infill Area's post-closure period.

On behalf of SMI. Cornerstone has prepared a Drainage Design Report and Preliminary Stormwater Pollution Prevention Plan (SWPPP) in support of the 6 NYCRR Part 360 requirements related to drainage and the requirements for coverage under the SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) (GP-0-17-004). A copy of the MSGP is included in Appendix C-1 of the SWPPP. The SWPPP has been specifically developed to meet the requirements of the MSGP and maintain coverage under SMI's existing MSGP SPDES ID NYR00A672 upon permitting of the SMI Valley Infill project. Sector specific requirements are initiated by landfill activity (Sector L), vehicle and equipment maintenance facilities with fueling operations (Sector P), and recycling facilities (Sector N). During and after construction of the SMI Valley Infill, for the remainder of the useful like for the landfill, stormwater will generally be managed by three batch discharge pond systems: the new East Pond System (Ponds E-4 through E-6), the West Pond System (Pond W-1 through W-4), and the South Pond System (Pond S-1 through S-3 plus proposed S-4). The East Pond System and West Pond System will generally be used to retain stormwater from the existing SMI Landfill as well as a portion of the Western Expansion (WEX) area and proposed Valley Infill area. These ponds will discharge to Black Brook. The South Pond System will be used to retain stormwater from the existing Southeast Landfill (SELF), SELF areas (EX2 and EX-3), a portion of the WEX area as well as most of the proposed Valley Infill area.

The South Pond System discharges to a drainage channel that flows off-site in a southerly direction prior to discharging into the Cayuga-Seneca Canal. Presently, SMI discharges stormwater from the landfill areas on a batch discharge basis from the South, West, and East Pond Systems. Typically, stormwater is detained in SMI ponds for at least a 30-day period (2 weeks for settling, followed by sampling and analysis and approval for discharge from the DEC) before being discharged which is typically an additional 30-day period. The water quality being discharged out of batch holding cells is regularly monitored to assess the impact/effectiveness of the landfill's stormwater management system.

A detailed program to monitor the performance of the basin is presented in the Environmental Monitoring Plan (EMP) section of the Facility Manual which has been prepared as part of the Engineering Design Report for the proposed SMI Valley Infill Area.

Erosion and sediment control practices consistent with the USDA Soil Conservation Service (SCS) publication entitled "New York State Guidelines for Urban Erosion and Sediment Control," will be employed during landfill operation. Permanent surface water control features will be designed in accordance with the New York State Stormwater Design Manual.

4.2.1.3 Leachate Generation and Management

The long-term quality of the surface water surrounding the Existing Facility will not be affected by the development of the proposed SMI Valley Infill Area. The potential to generate leachate will be minimized through the utilization of mitigative engineering design controls and features.

Stormwater runoff that comes into contact with solid waste will be controlled and prevented from entering the detention/sedimentation basins and will be managed through the landfill's leachate management system. Precipitation that infiltrates into the in-place solid waste as well as moisture inherent to the refuse, will be contained and collected by the leachate management system. This system is divided into several components, including the baseliner and leachate collection system which provides for both primary and secondary collection and removal of leachate. The collected leachate will then be conveyed to the storage/transfer area, where the leachate will be transferred for treatment to an approved off-site facility.

The SMI Valley Infill Area liner and leachate collection system will be designed to address the requirements of 6 NYCRR Part 363-7.1(f). The double composite liner system, as described previously in Section 2.4.3.5, will offer a high degree of environmental protection by providing effective leachate containment. Leachate quality and quantity measurements in the primary and secondary leachate collection systems, will detect developing system problems and allow for rapid implementation of corrective measures if necessary. The SMI Valley Infill will include an extensive environmental monitoring network, incorporating surface water monitoring locations that will be sampled and analyzed periodically in accordance with the EMP.

The development of the proposed SMI Valley Infill will allow for sequential filling, placement of intermediate cover and final closure in order to minimize leachate generation at various stages of the landfill's operational life. However, it is anticipated that the volume of leachate generated by the SMI Valley Infill components will result in an overall increase from existing quantities.

The existing leachate storage facility meets the requirements of 6 NYCRR Section 363-6.20.

Leachate Storage

The leachate storage and treatment facility consist of two nominal 500,000-gallon steel storage tanks, a 1,772,000-gallon steel storage tank, and 110,000-gallon steel storage tank. One of the 500,000-gallon leachate tanks is being used as a biological treatment tank and thus is no longer considered a leachate storage tank. The remaining 500,000-gallon leachate storage tank has a usable capacity of 485,000 gallons. The usable volume allows for an additional capacity equivalent to one foot of freeboard. The 1,772,000-gallon tank has two feet of freeboard as does the 110,000-gallon tank. All the tanks are covered and the freeboard should not be impacted

by rainfall events. The three smaller tanks are located within a secondary containment berm capable of holding 110 percent of the tank's total capacity. The larger tank is ringed by a second steel tank that is open to the atmosphere and has a capacity of 2,051,000 gallons, or approximately 116 percent of the primary tank's total capacity. The 1,772,000- and 110,000-gallon tanks will be dedicated to temporary storage of leachate concentrate generated by the on-site reverse osmosis treatment (RO) system.

Since the existing tank volume is in excess of what is required to accommodate currently permitted landfill operations, the existing tanks are expected to provide sufficient excess storage capacity to accommodate the anticipated on-site leachate generation that will occur with the proposed SMI Valley Infill. The projected leachate generation over the life of the SMI Valley Infill is not anticipated to exceed recent maximum annual generations as the Facility Site will undergo capping events that will reduce leachate generation prior to or nonconcurrent with the installation of new liner areas.

Leachate Recirculation

Leachate recirculation is the reintroduction of landfill leachate into the lined landfill cells. Leachate recirculation provides a means of optimizing environmental conditions within the landfill to provide enhanced stabilization of landfill waste, as well as treatment of moisture moving through the waste mass. Under its current permit, SMI is allowed to use leachate recirculation upon written approval from the Department. A current request and responses to Department comments can be seen in Appendix H to this report. As described in the request dated April 27, 2023 and subsequent response document dated January 29, 2024, SMI currently proposes to recirculate biologically pre-treated concentrate from the reverse osmosis (RO) leachate treatment system. Circulation would occur with an onsite tanker truck transporting up to 8,000 gallons of liquid, 2 to 5 times per day, (evenly distributed) to the working face. The liquid would be deposited in a leachate recirculation trench adjacent to the active waste placement areas. The leachate recirculation trench will be large enough to handle the quantity of biologically pre-treated concentrate that would be processed on any given day. The previous days' working face will cover the prior day's recirculation trench, and a new recirculation trench will be established adjacent to the active working face for that day. This process will prevent the Facility Site from oversaturating any certain area while the biologically pre-treated concentrate is being absorbed into the waste mass. The Facility intends to recirculate an annual average of up to 27,500 gallons/day for 250 operational days/year, or 6,875,000 gallons/year while not exceeding a 40,000 gallons/day maximum. Odor management during recirculation is discussed in more detail in Section 3.5.2.

Based on the proposed volumes of leachate recirculation, the waste density is estimated to increase less than 3%. Considering this negligible increase in density and that the recirculation would occur at least 100 feet from the outside slopes, there are not significant stability considerations.

PFAS Treatment Pilot Study

In addition to the existing PFAS treatment through on-site biological and RO treatment systems, SMI proposes to install a pilot PFAS treatment system that will utilize foam fractionation (FF) to remove PFAS from the landfill leachate. Foam fractionation is a physical separation process that is effective at removing PFAS from the landfill leachate based on their affinity to adsorb to the surface of the air bubbles that are formed during the treatment process. Air bubbles are injected at the base of the treatment column and rise through the landfill leachate where the PFAS adhere to the surface of the air bubbles. Once the air bubbles reach the surface of the water column, a foam containing the PFAS from the landfill leachate is formed. That foam can then be removed from the surface of the water column and disposed of. While the POTW facilities receiving leachate currently do not have PFAS limitations, proposed system is being proactively developed to address PFAS levels within the leachate. As it is likely that POTWs will have leachate discharge levels imposed on their permits and operations in the near future, the proposed pilot system is an initial step in providing a significant benefit to the POTWs and improving the overall discharge quality from the POTWs.

SMI has collected leachate, condensate, and permeate samples for emerging contaminants. The results of these samples are outlined in Section 3.2.2.4. Currently there are no regulatory values for emerging contaminants for leachate to be compared against. It is expected that PFAS compounds are present in elevated concentrations in all MSW leachate based on the leaching of PFAS compounds from the variety of wastes containing PFAS placed in landfills. Future leachate sampling for emerging contaminants is required per section 363-4.6 (f)(8)(iii). The leachate samples collected from the primary leachate collection system of new cells must be analyzed semi-annually for expanded parameters (Table 3B section 364.4.6) which include PFAS,1,4-dioxane and radionuclides for a minimum of five years after cell operation begins. This frequency can be reduced by the NYSDEC if the concentrations of contaminants does not change significantly. The secondary leachate collection systems will be monitored semi-annually for the baseline parameters, which does not include emerging contaminants for five years and can be reduced after that if concentrations do not change significantly.

4.2.2 Groundwater Resources

The proposed SMI Valley Infill will be designed, constructed, and operated in accordance with the requirements of the Part 360 solid waste management regulations. These features will prevent the release of contaminants and will minimize the potential for adverse impacts to groundwater resources.

Precipitation that infiltrates the landfill percolates down through the waste. As it moves through the waste, it picks up various constituents from the waste and becomes leachate. This could present a potential impact to groundwater should a significant release of landfill leachate occur. However, the SMI Valley Infill Area will include a liner and leachate collection system that will, as previously noted, meet the requirements of Part 360. The proposed baseliner will meet, at a minimum, the specific requirements of 6 NYCRR Section 363-6. A double composite liner system, as detailed in Section 2.4.3.5 of this DEIS, will be constructed and will provide for both primary and secondary collection and removal of leachate. Results of groundwater monitoring show that the Existing Facility is in compliance with the Part 703 Class GA groundwater quality standards, with the exception of a few areas that are known to be previously impacted, are not associated with the current landfill operation, and/or are undergoing remediation. Areas with known historical groundwater impacts are listed in Section 3.2.1.1. Double composite liner systems have proven performance at the Facility Site and across the State of New York.

Construction of the SMI Valley Infill Area double composite liner system above the Tantalo Waste Disposal Area will have the added benefit of further cutting off infiltration through the Tantalo waste mass. Currently, a geocomposite cap exists above the Tantalo Waste Disposal Site as a result of the OU-1 remedial action. The presence of this geocomposite cap and the leachate collection system has resulted in the following:

- A reduction in leachate generation as documented in the Tantalo Waste Disposal Area semi-annual and annual reports to the NYSDEC.
- Lowering of the head in the leachate mound that formed prior to closure/remediation of the Tantalo Waste Disposal Site, which both eliminated leachate seeps and reduced leachate migration to the underlying bedrock aquifer.
- Lowering of the overall groundwater elevations in the vicinity of the Tantalo Waste Disposal Area through a reduction in infiltration. Since the closure of the Tantalo Waste Disposal Area in 2007, ongoing construction associated with the SMI Landfill resulted in double composite liner construction along the perimeter of the Tantalo Waste Disposal Area to the west, north, and east. Except for influences associated with surface and groundwater infiltration into the leachate collection system, levels at the Tantalo Waste Disposal Area have declined. This decline is a result of the limited area where recharge of rainwater can occur within the perimeter between the cap for the Tantalo Waste Disposal Area and the double composite lined landfill cells. Declines in groundwater elevation have further reduced the leachate head within the Tantalo Waste Disposal Area and thus the potential for migration of leachate to the underlying bedrock aquifer.

As part of the preparations for the SMI Valley Infill project, including subgrade, liner, and utility installation, limited areas of Tantalo's geocomposite cap will be temporarily removed. Materials excavated from under the cap will be placed back within the Tantalo Landfill footprint underneath the cap prior to the cap being restored. Cap removal activities will be performed in such a manner so as to minimize leachate infiltration by minimizing the amount of time the cap is removed and use of stormwater controls. The cap will be reinstalled in accordance with the original design plans. Therefore, cap removal is not anticipated to have a significant adverse impact on the water levels within the Tantalo waste mass.

As the above discussion indicates, even with just a single geocomposite cap, the beneficial effects on the Tantalo Waste Disposal Area are evident. With a double composite liner system over the entire 47 acres – including the area around Tantalo that is not capped, recharge will be effectively completely cut off and because the overburden is a predominantly vertical flow system, groundwater/leachate elevations within the Tantalo Waste Disposal Area will further decline. The reduction in recharge (i.e., preventing the migration of precipitation through the existing waste) is anticipated to result in a long-term improvement in water quality. Furthermore, the leachate collection system for Tantalo – which will function the SMI Valley Infill project – will collect increased flow resulting that could potentially occur as a result of the overlying waste loads proposed as part of the SMI Valley Infill.

It is also worth noting that residents and businesses downgradient of the proposed SMI Valley Infill Area are connected to a public water supply system and private wells are no longer used for drinking water within the study area of the related Site Investigation Report. Some residents have maintained their historical wells for other purposes such as car washing and lawn maintenance. The historical location of private water supply wells, and information obtained during previous investigations related to these wells, may be found in the 1997 SIR.

Furthermore, a liner leak is unlikely to go undetected and unabated because of the monitoring that will be taking place in the secondary collection or leak detection layer, in the porewater system, and in the groundwater downgradient of the Landfill. An exceedance of the Action Leakage Rate in the secondary collection layer or degradation of water quality in the secondary collection layer or pore water system would be an early warning of a potential liner leak. In addition, quarterly groundwater monitoring will provide groundwater quality data which will be used to assess liner integrity. And, as noted above, double composite liner systems are in-place in many areas of the landfill, and routine monitoring shows that groundwater meets the Part 703 groundwater quality standards. Areas which do not have a double composite lining system are still monitored by the down-gradient groundwater monitoring system as well.

SMI will continue to regularly monitor the amount of liquid removed from the secondary containment systems to ensure the integrity of the primary liner systems. Should steady-state flow rates exceed 20 gallons per acre per day during the operation of the SMI Valley Infill Area, then SMI will notify the NYSDEC and undertake a response protocol to mitigate the potential leak. The detailed procedures are specified in the Environmental Monitoring Plan / Site Analytical Plan sections of the Facility Manual for the currently permitted landfill operations. In addition, a comprehensive array of groundwater monitoring wells will allow for early on-site detection of potential groundwater contamination and the institution of corrective measures, if necessary. These procedures, which are specified in detail in the Facility Manual for the Facility operations, include notification of NYSDEC, local government officials and potentially affected property owners whenever a statistically significant change occurs in groundwater quality within the limits of the Facility Site.

SMI will continue to monitor for emerging contaminants as outlined in the OM&M Plan for Tantalo and described in Section 3.2.1. This includes quarterly sampling and reporting as part of the annual Tantalo Periodic Review Report. Currently, there are no required remedial actions for the PFAS compounds that have been detected on site.

As part of the Final Design Report for the Tantalo Waste Disposal Site OU-2 (Groundwater), a contingency plan was submitted to address conditions if the OU-2 remedy did not perform as planned. This report titled Draft Final – Contingency Plan for Operable Unit No. 2 (OU-2) Tantalo Waste Disposal Site, Site Number 8-50-004 by HydroQual Environmental Engineers & Scientists, P.C., included several potential modifications to the selected

remedy (additional injection wells, modification of dosing, or bioaugmentation) or alternative remedies (aerobic biodegradation, in-situ chemical oxidation, conventional groundwater extraction and treatment technology). While it is acknowledged that the proposed SMI Valley Infill project is over the Tantalo waste mass and partially over the current plume because regional groundwater flow is to the south, these contingencies are still viable. Because of the extensive controls which are included in the design, construction and operation of the SMI Valley Infill Area, and based upon the results of groundwater monitoring for an extensive period of time, and because the ability to monitor and control the contamination associated with the Tantalo landfill, it is concluded that the Project will not have any adverse impact on groundwater resources. This is discussed in more detail in the following section.

4.2.2.1 Inactive Hazardous Waste Disposal Site Remedial Programs

As part of the Engineering Design Report for the proposed SMI Valley Infill, an evaluation was conducted to satisfy the specific requirements as defined in 6 NYCRR Section 360.16(h). This section of the regulations requires an evaluation of significant impacts that the proposed SMI Valley Infill Area would have on potential, ongoing, or completed inactive hazardous waste disposal site remedial programs associated with the Class 4 Tantalo Waste Disposal Area or A/B Landfill.

As indicated in the 16(h) report, remedial actions for both Tantalo Operable Units OU-1 and OU-2 are either complete or currently being implemented. OU-1, addresses the waste disposal area itself, included excavation of waste, installation and operation of a leachate/groundwater collection trench, grading, and capping of the Facility Site. All of which is complete. Remedial actions within the OU-1 are complete.

OU-2 addresses bedrock groundwater and consists of enhanced monitored natural attenuation through the injection of nutrients at nine injection wells located near the southern end of the Tantalo Site. Some of these injection wells will be abandoned as part of the SMI Valley Infill construction, with one or more additional injection well(s) proposed, and the potential to install additional injection wells downgradient of the Tantalo Site if and as needed.

Groundwater monitoring (OU-2) is performed down gradient of the Tantalo Waste Disposal Area, and the SMI Valley Infill will not affect monitoring in these down-gradient locations. In addition, if further electron donor injections are necessary based on monitoring data to enhance monitored natural attenuation within the Tantalo Waste Disposal Area plume, the SMI Valley Infill will not interfere with these injections as ongoing monitoring and maintenance activities have confirmed that such injections are best applied down gradient, outside of the footprint of the Tantalo Waste Disposal Area. Notably, the installation and monitoring of additional wells is proposed to further enhance monitorability and the design of a groundwater extraction and treatment system has been provided as a contingent measure to demonstrate capture and treatment of targeted groundwater if needed. Overall, no significant changes or impacts are expected to the land use at the Facility Site, or its operation as a solid waste management facility.

No significant adverse impacts to surface water and groundwater resources from the Project are expected to occur. A combination of design features (including a double composite liner system), operational practices and an on-going environmental monitoring program will ensure that no significant adverse impacts will occur as a result of the operation of the SMI Valley Infill.

To provide further support, a three-dimensional groundwater flow model was developed and calibrated to both pre-capping and post-capping conditions at the Tantalo landfill. The calibration included matching groundwater levels in the waste and heads in the bedrock as well as changes in the rate of leachate collection. The model then simulated the impact of four proposed valley fill construction activities that had the potential to alter heads within the bedrock and impact the direction and rate of the VOC plume. The model simulated these activities individually as well as in a transient run of the expected valley fill construction period that included overlapping activities. The results from these model predictions show that groundwater levels within the shallow soil and waste on the Tantalo site will temporarily rise during construction, but no higher than those during pre-capping conditions and that the majority of that water will be captured by the existing leachate collection system. The model also

predicted that changes in heads within the bedrock will be relatively small (less than one foot) and that the proposed activities will not materially change the direction or rate of groundwater flow, nor have a significant impact on the CVOC plume.

In accordance with 6NYCRR Part 360-16(h), an evaluation has been completed to assess impacts that the proposed SMI Valley Infill project may have on potential, ongoing, or completed inactive hazardous waste disposal site remedial programs associated with the Tantalo site. Based on the assessment presented in the referenced report, the proposed SMI Valley Infill will neither interfere with potential, ongoing, or completed remedial programs at the Tantalo Waste Disposal Area or AB Site, interfere with the ability to monitor those remedial programs, nor expose the environment or public health to a significantly increased threat of harm.

4.3 AIR RESOURCES

This section will evaluate potential air impacts resulting from both the construction and operation of the proposed SMI Valley Infill. Potential impacts to air quality from the SMI Valley Infill include fugitive dust, vehicular emissions, and landfill gas emissions.

The potential impacts on air resources from the SMI Valley Infill were conservatively estimated and were evaluated cumulatively with the potential impacts from the anticipated emissions of the SMI Landfill.

The quantity of landfill gas generated from both the SMI Landfill and the proposed SMI Valley Infill was conservatively estimated using a computer model prepared by the USEPA (LandGEM Version 3.02). The amount of that landfill gas which could be emitted directly to the atmosphere (fugitive emissions) was conservatively derived based upon an estimated collection efficiency. Emissions related to the combustion of landfill gas were estimated based on the maximum volume of landfill gas projected to be collected in the peak year of gas generation. These maximum fugitive and combustion emissions were combined and evaluated according to 6 NYCRR Part 212 and NYSDEC's DAR-1 guidelines (formerly Air Guide 1).

The use of various conservative assumptions provides a high level of assurance that the emissions and environmental impacts of the Project will not be underestimated for evaluation purposes.

Each of the procedures used to estimate emissions and impacts is described in this section of the DEIS.

4.3.1 Estimated Air Pollutant Emissions

4.3.1.1 Construction Emissions

Disturbance or exposure of unvegetated soil surfaces creates a potential for particulate (dust) emissions through the operation of equipment and the force of the wind. Both soils excavated on-site, as well as soils imported from permitted off-site sources, will be incorporated into the SMI Valley Infill as construction and operation materials. Some stockpiling of soils will be required, and storage of this soil will increase the exposure of surface materials to wind action and could potentially result in particulate emissions if left uncontrolled.

During dry periods, water will be applied to mitigate any fugitive dust conditions that may occur. The quick establishment of vegetative cover on completed landfill work areas, and the protection of any stockpiled soils with vegetative cover, crusting agents, water and other coatings will also reduce dust problems.

Combined emissions from vehicle exhausts and other equipment used during the construction of the SMI Valley Infill will occur. Such emissions are addressed by vehicle emission standards under the Federal Clean Air Act and are not expected to result in any significant adverse impacts.

Overall mitigation measures, such as minimizing the area of grading/excavation at a given time, use of water to wet down loose soil particles, and quick establishment of vegetative cover on soil stockpiles and areas that will no

longer be disturbed, will reduce the potential for fugitive dust to a level that no significant off-site impacts are anticipated.

Air emissions from construction activities are not expected to significantly increase above the annual emissions from these activities estimated for the SMI Valley Infill, in that the amount of construction, cover and capping will be similar on a year-to-year basis.

PM10 and PM2.5 emissions from the Infill were modeled and compared to the following National Ambient Air Quality Standard (NAAQS):

- PM2.5
  - 9 µg/m^3 annual concentration for primary standard.
  - 15 µg/m^3 annual concentration for secondary standard.
  - 35 µg/m^3 24-hour concentration for primary and secondary standards.
- PM10
  - 150 µg/m^3 24-hour concentration for primary and secondary standards.

Modeled project emissions were below NAAQS thresholds.

While the Project includes various construction activities, those activities are not expected to increase significantly above those in the base year of 2018. Similarly, the waste acceptance rate is not proposed to be increased, so the associated vehicle and equipment traffic will not increase significantly, other than to account for the change in traffic routes. Additionally, SMI will work to minimize the area of the working face to reduce potential of fugitive emissions.

As discussed in Section 2.4.1.1, there will be brief periods of time when the geosynthetic cap for the Tantalo Landfill will need to be opened to allow for construction. The duration of this phase of the Project will be minimized to the extent possible to reduce the potential for fugitive air emissions. Due to the age and nature of the waste, landfill gas generation is anticipated to be negligible, and the potential for air emissions is limited. Air monitoring for worker and community protection will be detailed in the HASP that will be submitted to NYSDEC as part of the workplan specific to the Tantalo Waste Disposal Site.

4.3.1.2 Operational Emissions

Emissions from the proposed SMI Valley Infill will be generated in the same manner as for the currently permitted landfill operations, primarily through:

- The generation of landfill gas (LFG) from the aerobic and anaerobic decomposition of in place municipal solid waste.
- Combustion emissions from the collection and control of LFG.
- Fugitive dust emissions from the operation of the landfill.

Other emissions will include:

- Emissions from the internal combustion engines from equipment used for construction and operation of the landfill.
- Storage tank emissions for petroleum vehicle fuel.
- Heating equipment for the on-site facilities.
- Other operations and maintenance activities.

Landfill Gas Emissions

The Existing Landfill will continue to generate emissions once it no longer accepts waste and has received its final capping. Similarly, the SMI Valley Infill will begin to produce LFG shortly after it begins accepting waste and will continue to produce LFG for several years after they stop accepting waste.

Landfill gas generation will peak at different times in the Existing Landfill, and the proposed SMI Valley Infill. The USEPA Landfill Gas Generation model was used to estimate the LFG generated annually for each of these disposal areas to estimate total annual emissions. The following equation is used in the USEPA Landfill gas model and is found in the USEPA document "AP-42 - A Compilation of Air Pollution Emission Factors (11/98)," Section 2.4 Municipal Solid Waste Landfills:

$Q_{CH4} = 1.3\ L_0\ R\ (e^{-kc} - e^{-kt})$

Where:

Q_{CH4} = Methane generation rate at time t, m^3/yr.

L_0 = Methane generation potential, m^3 CH_4/Mg refuse.

R = Average annual refuse acceptance rate during active life, Mg/yr.

e = Base of the natural logarithm, approximately 2.72.

k = Methane generation rate constant, yr^{-1}

c = Time since landfill closure (c=0 for active landfills).

t = Time since the initial refuse placement, yrs.

Total landfill gas was estimated using the composition of 50 percent methane, 50 percent CO_2 so that two times the m^3/yr results reported by the model would be total landfill gas. Waste volume was based on the expected incoming volume of 2,180,000 tons per year of waste. Cover/BUD was assumed to add an additional 20 percent to the waste volume for a total of 2,616,000 tons per year. A review of prior years' waste acceptance records indicate that 21.15 percent of the waste accepted at the SMI Landfill was non-putrescible industrial waste (consisting of ash, asbestos, and other inert wastes). Based on this information, for purposes of estimating landfill gas generation, 21.15 percent of the waste volume was discounted as waste material which would not result in landfill gas generation, resulting in an average of 2,062,716 tons per year of waste accepted from which landfill gas will be generated.

The estimated quantities of landfill gas generated different parts of the Facility have been compiled and can be found in Appendix D.

Landfill gas emissions will be managed by the construction and operation of a landfill gas collection and control system, described in Section 3.5.3 of this DEIS. USEPA has estimated the efficiency of landfill gas collection systems to generally be between 60 to 85 percent during the operation phases of the landfill, and 95 percent or greater after closure and final cover is applied. The collection efficiency during operation of the proposed system for the SMI Valley Infill is expected to be greater than that of the Existing Landfill because the gas collection system will be installed concurrently with the initial placement of waste instead of after the majority of the waste is in place. This will allow for better distribution of the collection system and provide for a more effective area of influence for the collection of gas. The use of a synthetic cap is also proposed for the Project that will allow for an increased efficiency once applied since it minimizes the potential for air intrusion. Accordingly, an overall efficiency of 89% has been estimated.

The gas collection design and control plans for the SMI Valley Infill will be prepared and submitted to the USEPA for review, in accordance with federal regulations (New Source Performance Standards (NSPS)). The gas collection system will be designed to handle the expected maximum gas flow, thus providing greater control of odors and other fugitive emissions. Collection and control plans for the gas collection system of the currently permitted landfill areas have already been submitted to the USEPA. In addition, as noted previously the

engineered landfill gas collection system and control equipment for existing and proposed facilities and the landfill surface will be monitored to demonstrate that the entire system is functioning properly. The effectiveness of the landfill gas collection system, however, is not the calculated collection efficiency; it is the demonstrated overall performance of the system. The surface monitoring required by the Federal New Source Performance Standards, as discussed below, verifies if emissions are leaving the surface of the landfill and requires corrective action if exceedances are discovered.

As noted previously in Section 3.3.3, since the completion of the 1997 landfill gas emission study, SMI has been conducting periodic monitoring of landfill gas emissions from the landfill surface pursuant to the requirements of the NSPS regulations to measure the effectiveness of the landfill gas collection and control system. The monitoring takes place in a grid pattern similar to that which was employed in the landfill gas sampling study. The monitoring program results demonstrate the effectiveness of the landfill gas collection/control system of the currently permitted landfill operations.

Landfill gas emissions collected from the SMI Valley Infill will be controlled through combustion in flares, or for off-site utilization. These facilities will provide at least 98 percent destruction efficiency (by volume) of non-methane organic compounds (NMOC) to provide for the control of the maximum quantity of LFG projected to be generated. SMI also continues to evaluate other end users of the landfill gas including users that would use the gas as a source of fuel, off-setting the use of other fossil fuels such as coal or natural gas.

Considering landfill gas estimated to be generated in connection with the proposed Valley Infill Landfill Area, it is projected that LFG generation will peak in 2039. At that time approximately 14,740 CFM of LFG will be required to be combusted from all areas based on an overall collection efficiency of 89 percent as described in the Emissions Inventory (part of Appendix D). New Source Performance regulations require gas collection from both active and closed areas of a landfill (verified by on-site monitoring). Gas collection equipment will be in place to handle the projected volume landfill gas.

The landfill gas collection and control system will limit the emissions of fugitive landfill gas. The measure of effectiveness of the landfill gas collection system is not the control efficiency, which is extremely difficult to reliably calculate, it is the performance of the system. The performance of the system is verified by the surface emission monitoring methods previously described. Regardless of the control efficiency calculated, surface emissions must be maintained below the regulatory threshold in order to comply with Federal regulations. As mentioned above, the USEPA NSPS requires that monitoring of the surface of the landfill be performed on a quarterly basis to demonstrate that surface concentrations of LFG are below 500 ppm of methane (which accounts for approximately 50 percent of landfill gas). Exceedances of the 500 ppm level requires prompt corrective action such as addition of cover, adjustment of collection wells or increase in gas collection. The area would then need to be re-monitored within 10 days to demonstrate compliance. Continued exceedances would result in the addition of collection and control devices to increase gas collection in the area.

PM emissions from combustion sources including flares and engines contribute to PM 2.5 emissions from the Facility. While very little sampling data on PM 2.5 emissions from landfill gas combustion exists, data from the engine manufacturer indicates that some PM 2.5 will be emitted. One of the primary sources of PM 2.5 emissions from combustion is the fine particulate matter in ambient air drawn in during the combustion process that is not actually generated by the combustion process itself.

Fugitive Dust Emission

Fugitive dust emissions are minimized through the implementation of a dust suppression program, which includes street sweeping and routine watering.

Fugitive dust emissions from the SMI Valley Infill will be similar to the emissions which occur from the currently permitted landfill operations. These particulate emissions are created by construction and operation equipment (excavators, loaders, dozers, dump trucks, compactors, and backhoes) traveling on and off-road, and as a result of soil disturbance and waste placement. Fugitive dust emissions are created from the following sources:

- Off-road construction equipment (excavators, dozers, off-road dump trucks, etc.).
- Waste placement/covering.
- Off-road operational equipment (loaders, scrapers, compactors).
- Vehicles for hauling and placement of cover soils (paved and unpaved roads).
- Waste hauling vehicles (paved and unpaved roads).
- Miscellaneous vehicles.

Since the acceptance rate is not expected to increase, fugitive dust emissions related to operational activities are projected to remain constant and, therefore, were not included in the air quality modeling analysis.

Emissions Summary

Emissions from the Facility will vary over time as different sections of the SMI Valley Infill are constructed, operated and closed with the application of final cover. Table 4-1 summarizes predicted peak total emissions from the SMI Valley Infill and is considered a “worst case” analysis since it represents a combination of conservative emissions estimates. 2039 was used to estimate the impact of landfill gas emissions since that is the year when landfill gas generation is projected to be at its highest levels. In 2039, fugitive landfill gas emissions will peak due to the lack of complete final cover for the SMI Valley Infill project. Combustion emissions will also peak in 2039 as the final cover is applied and the landfill gas collection efficiency increases. Annual particulate emissions are also listed in Table 4-1 for a typical construction year although construction and other dust producing activities would be declining by 2039. There are no expected significant adverse impacts of particulate emissions at the peak year of construction.

It should be noted that the 57.30 tons per year of fugitive NMOC is based on the analysis of the NMOC concentration of the actual landfill gas within the existing landfill gas collection system (approximately 535 ppm).

The generation of landfill gas is an unavoidable consequence of the Project, and the quantities of gas which will be generated have been estimated conservatively using a numerical model/protocols developed by the USEPA. The majority of this landfill gas will be collected and directed to combustion or control devices. All available gas is directed to the flares operated by SMI or sold for off-site utilization. This will result in combustion emissions such as carbon monoxide, nitrogen oxides, sulfur dioxide, and other combustion by-products which would not be present if this combustion did not take place and landfill gas was emitted directly to the atmosphere. However, USEPA and NYSDEC regulations require the use of landfill gas collection and control devices in order to limit the direct discharge of landfill gas to the atmosphere, and most of the equipment which will be used to combust the anticipated landfill gas generated by the SMI Valley Infill is already in place for use in connection with the control of emissions from the gas generated from the currently permitted landfill operations.

Combustion emissions from mobile sources (primarily CO and NO_x) attributed to construction and operational equipment are expected to be similar to levels associated with currently permitted landfill operations. These emissions, typical for construction projects, will be seasonal and short-term relative to the life of the landfill. Operational traffic is not expected to increase in connection with the SMI Valley Infill since there is no proposed increase in the waste acceptance rate. Heavy-duty vehicle emissions are specifically addressed in Title II of the federal Clean Air Act. Section 202 requires the EPA to set emission standards for heavy-duty, on-road vehicles; Section 213 addresses non-road engines. Vehicles associated with the Facility will need to conform with subsequent rules under the Clean Air Act. In addition, the emissions from these sources will decline before facility emissions listed in Table 4-1 peak. Based on this information, no significant adverse impacts are expected from vehicular emissions.

Once the emissions from a facility have been estimated, it is possible to calculate the concentration at which these contaminants will be present in the air. These concentrations may then be compared to applicable regulatory limits and accepted health risk-based values. Point source emissions from the Facility and fugitive landfill gas emissions (including hazardous air pollutant emissions) are included in the ambient air quality impact analysis below.

H_2S emissions monitoring is currently on-going as described in Section 3.3.2. GHG emissions are described in Section 4.6.1.

4.3.2 Air Quality Impact Analysis

The impact of the emissions is evaluated by determining the concentrations of the individual contaminants as they leave the Facility and potentially come into contact with various off-site receptors. These off-site concentrations were compared to guidance concentrations established by the NYSDEC in the document "DAR-1, Guidelines for the Control of Toxic Ambient Air Contaminants" (formerly Air Guide –1). Annual Guideline Concentrations (AGCs) are annual average concentrations developed to protect the environment and the public health from the effects that may be associated with long-term exposure to the individual contaminant. Short-term Guideline Concentrations (SGCs) address any significant health or environmental effects at off-site receptors which might be associated with acute (short-term) exposures to air contaminants. These guideline concentrations were developed by the NYSDEC and the NYSDOH for reviewing area and source air permits to protect public health and the environment. The concentrations are similar to occupational exposure limits developed by the Occupational Safety and Health Administration (OSHA) and other agencies, except the AGCs are intended to account for a lifetime of potential exposure.

A conservative approach to predict the effects of dispersion on a contaminant being emitted and the subsequent impact concentration of the contaminant off-site is to perform a screening analysis using the NYSDEC DAR-1 guidance procedures. This screening analysis is a very conservative model intended to determine maximum impact without requiring significant amount of data or level of effort. If the screening analysis indicates potential exceedances of AGCs and SGCs, then a more rigorous, but less conservative, dispersion model could be performed. Further analysis may be performed by using one of several computer dispersion models that allow the user to input more site-specific information including meteorological data. The more detailed the input data, the more sophisticated the model becomes making the results more realistic and representative of actual conditions.

The impact associated with the proposed SMI Valley Infill project was based on the following sources:

- Existing Landfill (including the AB Overfill, SELF, SBO, WEX, and NEX)
- Proposed SMI Valley Infill.
- Leachate Storage Tanks.
- 2,000 CFM Enclosed Flare.
- Two 4,000 CFM Enclosed Flares.
- Future Enclosed Flare.
- 3,000 CFM Enclosed Flare/Thermal Oxidizer.
- 780 CFM Concentrate/Leachate Evaporator.

Landfill gas composition was compiled from the average concentrations detected over several sampling events conducted between 2017 and 2021. Landfill gas generation rates were based on the maximum year of landfill gas production (2039 and 14,740 CFM of landfill gas collected), assuming that 89 percent of the landfill gas would be collected, and up to 11 percent would be emitted as fugitive, and the gas would be comprised of the compounds and concentrations from the previous sampling. The impacts for all sources for each compound were compared to the respective AGC and SGC values published in DAR-1. In addition to the speciated compounds, emissions of criteria pollutants carbon monoxide (CO), oxides of nitrogen (NO_x), hydrogen chloride (HCl), sulfur dioxide (SO_2) and PM 10, were included in the evaluation. Most chlorinated compounds in landfill gas will be converted to HCl when combusted in a flare or internal combustion engine. CO and NO_x, the primary compounds emitted from the combustion of landfill gas, were included for comparison to the National Ambient Air Quality Standards (NAAQS).

The USEPA's AERMOD model was utilized to estimate the dispersion of each individual compound for comparison to the AGCs and SGCs. Each of the compounds were below the respective AGC and or SGC.

In addition, CO, NOx, SO_2 and PM 10 were compared to NAAQS using USEPA's AERMOD model assuming that all of the gas collected was combusted. CO, NOx, SO_2 and PM 10 impacts were below the respective annual, hourly and 24-hour NAAQS threshold. A summary of the modeling results and the associated DAR-1 and NAAQS values is included as Table 4-2.

In addition to air quality standards, the calculated impact concentrations were compared to odor threshold levels published by the American Industrial Hygiene Association. The document entitled Odor Thresholds for Chemicals with Established Occupational Health Standards, 2nd Edition (AIHA, 2013), reviewed and evaluated odor data providing average (mean) and ranges of reported odor thresholds from several sources. The maximum contaminant impact calculated was below the mean odor threshold for all compounds where an odor threshold was provided (see Table 4-2). A few of the short-term calculated impact concentrations were above the lower range of odor thresholds, however, none were over the upper range of the odor threshold. While this calculated impact may be above an odor threshold based on a conservative calculation, this is not anticipated to be a significant occurrence. SMI is currently employing all reasonable measures to control landfill gas emissions and odors resulting from landfill operations and is continuing to explore new alternatives. Such measures include the use of odor neutralizers and masking agents that will continue to be employed in working areas to control odors that may be generated by from the landfilling of recently placed waste. The ingredients of the deodorizers/neutralizers is a proprietary formula but, according to the manufacturers, does not contain or have ever contained toxic substances. The products used are non-hazardous in their application. As discussed in Section 4.5.9.3 DEC's 2019 community air screening program focused on the impact of emissions from the odor neutralizers/deodorizers and found the air quality results in the community were consistent with concentrations in rural areas in NYS.

Based on the detailed analyses which were conducted and summarized above, no significant adverse impacts associated with air emissions from the proposed SMI Valley Infill are expected to occur. While some odor impacts may occasionally be detected, all reasonable measures will be employed to minimize off-site impact, as detailed in Sections 2.4.3.12.7 and 5.1. During the year when peak emissions are expected to occur from the SMI Valley Infill, concentrations of compounds modeled specific to landfill gas are not projected to exceed individual health-based guidance values or applicable standards or guidelines established by the USEPA and NYSDEC, which can be found in Appendix K.

Odors associated with the requested leachate recirculation program (allowed under the existing permit) are not anticipated. Unlike the last time recirculation was performed at the Facility in 2016, the leachate currently proposed for recirculation is chemically different. The RO concentrate is biologically pre-treated, and the previous concentrate was not. Odor causing parameters, along with fatty acids, are greatly reduced through the biological pre-treatment process. However, if abnormal waste odors from the recirculation area are detected outside the active recirculation area, mobile neutralizing odor control systems as described in Section 3.5.4.2 will be mobilized and sprayed into the recirculation area to mitigate any odors.

4.3.3 Compliance with Standards and Guidelines

Based on the emission calculations and impact analysis presented previously and other information included in the Title V Renewal Application for the Facility (Appendix D), the proposed SMI Valley Infill can be constructed and operated in accordance with all applicable standards for air pollution control, including:

- Federal New Source Performance Standards (40 CFR Part 60 Subpart WWW and Subpart XXX - Standards of Performance for Municipal Solid Waste Landfills)
- The following sections of 6 NYCRR Part 200 et seq.:
    - 200 General Provisions
    - 201-1, General Provisions
    - 201-3, Exemptions and Trivial Activities
    - 201-5, State Facility Permits

- 201-6, Title V Facility Permits
- 201-7, Federally Enforceable Emission Caps
- 202-1, Emissions Testing, Sampling and Analytical Determination
- 202-2, Emission Statements
- 212, Process Emission Sources

Compliance with the applicable requirements will be required to be demonstrated during and beyond the active life of the SMI Valley Infill by monitoring and recordkeeping requirements required by the individual regulations and the Title V Permit for the Facility.

4.3.4 Odors

A summary of previous, existing and future odor control for the Facility is described in Sections 2.4.3.12.7 and 3.5.4. Advanced technologies being evaluated for odor control are described in Section 5.6. a summary of Ambient Air Monitoring using Acrulog Stations is described in Section 3.3.2.2.

4.4 ECOLOGICAL RESOURCES

No significant vegetative or wildlife resources will be impacted by the Project. The SMI Valley Infill Area represents a total of approximately 221 acres, with 26 acres of overfill above the Tantalo Waste Disposal Area and 126 acres of overfill above the Southeast Landfill and the 2007 Landfill Development. Areas which are planned for construction are already a part of either the landfill footprint, the Tantalo footprint, or active operational areas for landfill support. None of the areas that will be affected by the construction of the Project contain significant habitat or ecological resources.

Project impacts to areas surrounding the Project Area will be indirect due to noise, air emissions, and human activities, similar to those at the existing landfill. Terrestrial areas surrounding the Project Area are not expected to be negatively impacted by the expansion activities. Being bounded by landfill operations on the north, east and west, the SMI Valley Infill area is generally further away from these surrounding areas than Existing Facility operations. These surrounding areas are already exposed to the operational and construction activities associated with the Existing Facility and have not been impacted to measurable degree. Continuation of the waste disposal activities in connection with the SMI Valley Infill will not have a significant adverse impact these ecological resources in these surrounding areas.

As described in Section 2.4.4, the SMI Valley Infill project will be seeded with native grassland vegetation for bird habitat upon completion of the Project. This will result in a positive impact with an additional 47 acres of native grassland habitat compared to the previously permitted projects at the Facility. This additional acreage includes both the Tantalo area and other operational areas that were not previously part of the Facility's waste footprint and will be developed for the SMI Valley Infill. These 47 acres would otherwise remain as part of the Tantalo Cap and currently developed operational areas (including roadways, maintenance buildings, and other facilities). As such, the Project would result in a larger continuous area of native grassland habitat for birds, mammals, and other animals that utilize grassland habitats in proximity to human developments.

4.4.1 Rare, Endangered or Threatened Species

As noted in Section 3.4 of this DEIS, species observed at the SMI Property as part of the 2006 studies were normal and common for the area. No rare, threatened or endangered species were observed, and none were reported for the Facility Site by the NYNHP. There are two such species listed by NYNHP in the general site vicinity, the bald eagle and the osprey, but both are reported for areas in and immediately adjacent to the Montezuma National Wildlife Refuge. None were observed on or in the immediate vicinity of the Project Area and none were considered likely to utilize the Facility Site since no suitable nesting and / or feeding habitats for either of these species are present. As noted previously, the Project Area is identified as potentially being within the

range of the Indiana bat and could support the species. However, a lack of trees or nesting habitat within the Project area negates potential for this species to be impacted by the Project.

A search of the online New York Nature Explorer database, which is maintained by the NYSDEC, was performed for the Towns of Seneca Falls and Waterloo. The database did not return results for threatened or endangered animals, birds, insects or reptiles. A pair of endangered flowering plants, the Northern Bog Violet and Seaside Crowfoot, were identified. A pair of threatened flowering plants, the False Hop Sedge and Shrubby St. John's Wort, were also identified. This report is included in Appendix H – General Documentation.

The DGEIS for the 2007 Landfill Development concluded that no significant adverse impacts to rare, endangered or threatened species were expected to result from the Project. Considering that the SMI Valley Infill will be entirely within the footprint of existing landfilled areas, active landfill areas with no suitable habitat, and the aforementioned observations, it is concluded that there are no significant adverse impacts to rare, endangered or threatened species are expected as a result of the SMI Valley Infill project either.

4.4.2 Wetlands

The SMI Valley Infill will not result in the disturbance of federal and/or New York State jurisdictional wetlands.

4.5 COMMUNITY RESOURCES

4.5.1 Economic Impacts

4.5.1.1 Fiscal Impacts to Municipal Government

The Project is not expected to increase the current costs for local government services such as: police and fire protection, ambulance services, and educational facilities. The Existing Facility requires minimal police and fire protection due to an on-site security system and basic fire-fighting capabilities. The Project will not add additional pupils to the public school system, since additional employees needed for the Project are expected to be available from the present local labor force. Should new students be added to the local educational system as a result of future SMI employees relocating to Seneca County, those future costs will be assigned to the residential land use taxes where the employees reside.

SMI currently provides a direct cash payment to the Town of Seneca Falls through an existing agreement. In accordance with the Host Community Agreement with the Town of Seneca Falls, SMI paid fees totaling approximately $3.64 million to the Town of Seneca Falls during 2022. From 2017 to 2022, the value of these payments to the Town has totaled over $20.5 million.

SMI has also entered into a Community Benefit Agreement with the Town of Waterloo that, among other things, will result in progressively increasing direct cash payments which are expected to total over $9.2 million over the next 15 years (payments have totaled over $1.9 million from 2020 to 2022). In addition to direct tax relief, the agreement will provide funding for town services which directly benefit the town residents, including sewer and water line construction and repair, road construction and repair and the maintenance and construction of town buildings. The first of these annual payments of $150,000 has already resulted in tax relief for town residents by way of reduced town property tax rates, and more payments have occurred to similar benefit since. The Town Supervisor has noted that the tax rate is likely to continue to decrease as a result of the agreement with SMI. In addition to the direct cash payments, pursuant to the agreement, SMI will also be providing the Town with other services such as twice a year clean-up containers, annual household hazardous waste collection day and free residential waste disposal for Town residents. The value of these services through the life of the SMI Valley Infill project is estimated to be at least an additional $1.8 million, if not more.

4.5.1.2 Impact on Area Economy

SMI contributes significantly to the local economy through direct payroll, payments to local vendors, tax payments and other contributions to local government units. As detailed in Section 3.6.6, SMI represents the fourteenth largest private employer overall and the fourth largest industrial (i.e., non-retail and non-service) employer in Seneca County.

The information presented previously in Section 3.6.6.2 clearly demonstrates the positive economic impact that SMI has in Seneca County and especially in the Town of Seneca Falls. SMI has supported the local economy with tens of million through direct payroll, payments to local vendors, tax payments and direct payments made to the Town of Seneca Falls. Over the past twelve years, SMI has contributed over $2.5 million to local charitable organizations. SMI commits to and invests financial resources in over 100 local service organizations, nonprofits, charities and extracurricular groups & clubs on an annual basis. SMI represents one of the larger employers in Seneca County. Employment for SMI fluctuates seasonally. Peak employment occurs during the construction season from April through September. Recently, SMI has had up to 110 employees during the peak season. These factors combined result in a significant fiscal impact on the distressed economic conditions in Seneca County, making SMI a vital part of its economic base.

Furthermore, the true value of the above-noted economic benefits is greater than direct expenditures by SMI because of multiplier effects which ripple through the local economy to create new jobs and income. Multipliers usually range between 1.0 and 3.0 and vary by the amount of economic activity within an area and the interaction of industries within the area. In 2016 SMI hosted a Master's Candidate in Planning from Cornell University that was responsible for assessing economic impacts of the Facility on Seneca County utilizing IMPLAN and input-output analysis and determined the regional economic impacts that Seneca Meadows has is estimated to be $72 million annually. The study determined that there is a spillover and multiplier effect, and for every $1.00 in revenue generated at SMI, $1.30 in economic activity is generated within Seneca County. Furthermore, for every person employed by SMI, 2.7 people are employed in Seneca County.

The information presented in this section clearly demonstrates the positive economic impact that SMI has in Seneca County and especially in the Town of Seneca Falls. SMI supports the local economy with tens of millions of dollars provided through direct payroll, payments to local vendors, tax payments and direct payments made to the local communities, pursuant to the agreement between SMI and each of the Towns. Hundreds of thousands of dollars are also donated by SMI to charitable causes. All of these factors combined result in a significant fiscal impact on the economic conditions in Seneca County, making SMI a vital part of its economic base. The construction and operation of the proposed SMI Valley Infill Area will provide for a continuation of these economic benefits.

4.5.2 Land Use, Zoning, and Planning

No adverse impacts to local land use and zoning are expected to occur as a result of the Project. As noted in Section 3.6.1.2, the SMI Valley Infill area is currently zoned M-2 (Refuse Disposal and Reclamation), and the proposed use is consistent with the Town of Seneca Falls zoning requirements for this district. The Project is located within the limits of the landfill's existing usage area except for the Tantalo area, which is centrally located in the Project Area and M-2 zone and is also previously filled.

As stated in Section 3.6.1.2, there are also no expected adverse impacts for the Town of Waterloo due to the SMI Valley Infill. The Project will make some alterations in the Industrial zone which will remain consistent with the Waterloo Comprehensive Plan and will not involve waste placement areas in Waterloo.

Potential physical impacts to surrounding land uses such as noise, water quality and air quality, are addressed separately in other subsections of Section 4 of the DEIS. To address the potential for impacts to the value of residential properties in the vicinity of the landfill, Seneca Meadows has established Property Value Protection

Plans in both the Towns of Seneca Falls and Waterloo. These plans assist residential property owners that sell their home in receiving fair market value of their properties considering the presence of the landfill.

Upon closure, the landfill is planned to be vegetated as a native grassland. More information can be found in Section 4.4.

In 2016, the Town of Seneca Falls passed Local Law #3 of 2016 which, among other things, prohibited the Town of Seneca Falls from issuing any permits to solid waste management facilities after December 31, 2025. Subsequently, SMI brought an action in Seneca County Supreme Court seeking to have Local Law #3 declared annulled on a number of grounds, including because the Town of Seneca Falls failed to comply with the requirements of the New York State Environmental Quality Review Act. On July 27, 2022, SMI filed a motion for partial summary judgment seeking a determination from the Court that Local Law #3 is null and void. The Court's decision on SMI's motion is pending.

4.5.3 Services and Utilities

The Project will not result in significant adverse impacts on community services. Current service demands from the Existing Facility are within the capabilities of the service providers and are projected to remain at similar levels if the SMI Valley Infill is approved. Existing community services are adequate to meet this demand and do not need to be expanded to accommodate the Project.

The Facility operations incorporate various fire prevention measures including screening of incoming waste to detect smoldering loads and ensure proper fueling of vehicles. SMI's staff are trained to use fire extinguishers to respond to a small fire. Cover soil stockpiles and a water truck used for dust suppression, can also be utilized to suppress a smoldering load which may be detected in an incoming waste vehicle. However, in the event of a significant fire, the Waterloo Fire Department will be called in to respond. SMI maintains a cooperative relationship with the Fire Department and, in response to its request in connection with the tire processing facility, SMI has purchased foam fire suppressant which is kept on hand for use by the Fire Department, if necessary.

Additional details regarding fire prevention or fire response procedures are provided in the Facility Manual as part of the Engineering Design Report

4.5.4 Traffic/Transportation Routes

No changes to overall site access are proposed in connection with the Project. Comparison of the traffic data shown in the DGEIS for the 2007 Landfill Development to the data obtained between November 2021 and November 2022 has shown no increase in traffic volumes to the Facility Site. The volume of traffic will remain consistent with current levels and current waste acceptance rates will be maintained. No significant change in landfill-related traffic patterns is expected since the majority of waste delivered will continue to proceed to the Facility Site from the New York State Thruway, which is located approximately 3 miles to the north. Traffic impact from soil acquisition will also remain consistent. In the past, cover soils were obtained from onsite excavation of the current stormwater ponds. Cover soils are now obtained from Meadow View Mine and result in no increased traffic to the Facility Site.

While the amount of traffic has decreased slightly due to changes in landfill client type over time, and an increase in remotely handled business, the type of traffic coming to the Facility Site has changed. That is, the incoming tonnage has remained consistent while the number of total trips to the landfill has decreased. This is because trucks that can more efficiently transport materials are being used. However, because the more efficient vehicles are typically equipped with more axels and/or load distributing tires, the wear on the local roads would not necessarily be increased by this change in traffic type. Furthermore, it is clear that any increases in the total number of trips along SR 414 since 2002 (when the incoming tonnage rate was adjusted to 6,000 tpd) are not from the landfill. As seen in Table 3-11, traffic estimated by the NYSDOT at two locations along SR 414 increased

from 2003 to 2019 by 20 to 30%. Again, these increases and the potential associated road wear, are not from the landfill.

There is continued potential for landfill trucks to track mud or debris on local highways in close proximity to the Facility Site, but no more than current levels. SMI will continue to utilize street sweepers near the entrance of the Facility on NYS Route 414 to minimize impacts from tracking. SMI will work with the local DOT office to develop a revised roadway debris mitigation plan for State Route 414 to address concerns from that agency.

As part of the Final Supplemental Environmental Impact Statement (Shaw, 2007), the issue of traffic pattens through the region was extensively addressed. That documentation established several relevant facts associated with the regional traffic including:

- The NYSDOT noted the tractor trailers are allowed to use the local state highways as long as the meet the established height weight and width restrictions.
- The NYSDEC estimated that when evaluating the total number of vehicles per day through many of the regional communities, the potential number of trucks traveling to SMI (up to 200 trucks per day of 30-ton trailers based on 6000 tons per day), the number of vehicles is a relatively small percentage of the total going through the Finger Lakes section on a daily basis. This was noted to be especially true when one considered that not all trucks come from the south or east and use the Thruway. While minor changes in the type of vehicles that may be entering the Facility Site has changed since this 2007 assessment, it can't exceed the 200 trucks per day that were assessed in 2007 because the 6000 tons per day limits is not changing.
- Noise and safety impacts experienced by the local communities from all truck (not just waste trucks) could be addressed by more enforcement of speed limits or safety regulation compliance. However, it was noted that neither the NYSDEC or SMI is in a position to enforce the speed limit and local noise ordinances.
- The NYSDEC staff elevated the discussion in 2007 to NYSEC executive staff due to the fact that the regional traffic impacts were a much broader issue than the particular landfill expansion proposed in 2006.

As discussed in Section 3.6.2, the Facility serves as both a local and State-wide solid waste disposal provider. Traffic related to current operations is primarily from trucks hauling solid waste to the landfill; however, additional traffic volumes are generated from the importation of cover soils (also truck traffic), and from employee and visitor traffic (primarily passenger vehicles). With the exception of waste deliveries from local sources such as Seneca Falls and Waterloo, nearly all waste deliveries arrive at the Facility Site from the north, by traveling southbound on NYS Route 414 before entering the Facility on Salcman Road.

As part of the proposed SMI Valley Infill project there are no changes proposed for how truck access the Facility. No significant change in landfill related traffic patterns is expected sine the large majority of waste delivery traffic will continue to process to the Facility Site from the north on SR 414. Seneca Meadows Landfill is conveniently located off the New York State Thruway. All downstate waste haulers are required to utilize Interstate 81 to the Thruway (I-90) and truckers are urged by the Facility to use the Interstate Highway System. A regional map of the primary truck route can be seen in Figure 4-1.

Considering the findings in 2007 and the fact that the tonnage limits are not changing as a result of the proposed SMI Valley Infill project, significant impacts will not occur from or to the regional traffic patterns. A discussion of the emissions from the existing traffic in the surrounding Disadvantaged Community can be found in Section 4.6.2.

4.5.5 Sound Level / Noise Impacts

The sound levels associated with the construction and development of the Project will be consistent or less than existing and historical levels from Facility operations and therefore do not represent an impact. Because of the

location of the SMI Valley Infill in relation to the existing landfill operations (greater distance and significant screening) all sound levels at potential receptors will be not greater than those currently experienced and in most conditions the sound levels will be significantly lower.

During development and operation of the SMI Valley Infill, sounds will be produced by two sources: 1) equipment employed during phased construction of the SMI Valley Infill Area and 2) landfill operating equipment, including hauling vehicles. Construction of the SMI Valley Infill Area will require the use of equipment such as backhoes, compactors, dozers, loaders, and trucks. Sounds produced by equipment will vary throughout the day and during the entire construction period of the Project. During a typical work shift, construction equipment may be idling while preparing to perform a task or operating at maximum capacity. As a result, construction, operation, and hauling vehicle sound levels will vary during a typical day. Average construction sound levels over a full construction work shift are expected to be considerably lower than peak levels. In addition, the SMI Valley Infill will be constructed and operated closer to the center of the landfilling areas of the Facility Site than many areas which have already been landfilled. With the same rates of construction and filling expected during the lifetime of the SMI Valley Infill as current operations, sound levels are expected to be lower at the Facility Site boundaries and potential receptors than many prior landfill sections at SMI. Furthermore, much of the construction (and all of the liner construction) will be behind the WEX landfill, the SMI Landfill, and the SELF Landfill. A small portion of operational activity will occur immediately South of WEX Stage 4 however the activity it consistent with current conditions (material storage, truck traffic and staging). Therefore, sound levels will be at or below current levels and there will not be an impact associated with the SMI Valley Infill.

Sounds generated by waste delivery vehicles, plus compactors, dozers and other equipment involved in landfilling operations, will cause sound levels similar to those currently generated by the Facility operations. The impact of these sounds to surrounding receptors will vary with the working height of the SMI Valley Infill, the distance of landfilling to nearby potential receptors, and atmospheric conditions. As the working face of the landfill progresses, sound levels generated by the operating equipment will shift accordingly.

Based on historical sound monitoring of locations 5, 6, 7, 8, 9, and 10 with landfill operations and construction occurring in the western cells of the 2007 Landfill Development, the construction and operation of the SMI Valley Infill Area is not expected to result in an increase in sound levels from truck traffic and landfill equipment at these residential receptors adjacent to the Facility. Sound monitoring Locations 1 through 4 represent former or existing residential uses, but are not located directly on residential properties, with actual receptors located even further away from these areas than Locations 5 through 10. As reported in Section 3.6.4, landfill sounds are generally imperceptible at Locations 1 through 4 and in compliance with the SEQR requirements of the NYSDEC's Program Policy "Assessing and Mitigating Noise Impacts" and Part 360 requirements. As a result, an increase in sound levels is also not expected at these locations. Peak sound levels at these receptors during the progression of the SMI Valley Infill will be less than those currently experienced in connection with the operation of the Existing Facility owing to the increased distance from the SMI Valley Infill operations than current and previous operations to the nearest potential receptors. As noted previously in Section 3.6.4, annual sound level monitoring shows that sound levels from the Facility are in compliance with sound level guidelines established by SEQR and Part 360. Landfill operations during the 2023 sound level monitoring period were in Stage 5 toward the Northwest end of the landfill, which is closer to Noise Monitoring Locations 6 and 10. Landfill operations did not cause exceedances of the Part 360 standard sound levels.

The requirements of the NYSDEC's Program Policy "Assessing and Mitigating Noise Impacts", with regards to identifying and evaluating sound levels, impacts, and mitigation, are addressed by existing annual noise reports as summarized in Section 3.6.4. An additional evaluation has been performed to verify that sound levels from the proposed Valley Infill will remain in compliance with the Part 360 requirements at two locations where operations may occur closest to residential property lines.

While the annual surveys support compliance with the Part 360 regulations to ensure the compliance of the proposed SMI Valley Infill project with the Part 360 regulations for sound levels, calculations were performed to

estimate the sound levels of on-site operations at two points on the boundaries of the SMI Property that are closest to residential property lines. In one case, calculations were made to determine whether sound levels would be acceptable at the property directly west of Noise Monitoring Location 9 (see Figure 3-9). This property houses a “bus garage”. The bus garage property – which is zoned residential - could potentially receive sound from the planned truck turnaround area displayed on Sheet 11 of the Engineering Drawings, and the nearest point of SMI Valley Infill operations.

Regular filling operations were calculated using sound level of 81 decibels (dB) Leq measured at 50 feet, as established for site operations in the DGEIS for the 2007 Landfill Development and the Noise Impact Analysis presented in the 1998 FEIS (Table 4-3). Sound levels for queueing truck traffic were assumed to be 74dB Leq measured at 50 feet based on the USDOT Federal Highway Administration’s Construction Noise Handbook Calculated sound levels at the property lines were compared with the Part 360 limits of 62dB Leq during daytime hours (7am to 10pm) and 52dB Leq during night hours (10pm to 7am). As stated in the Part 360 regulations, these limits were applied to properties with residential uses.

The calculated sound level at the bus garage property from the combined truck turnaround and regular filling operations is acceptable during daytime hours, but during the hours from 5am-7am when trucks queue onsite and some operations begin, this could exceed the applicable nighttime noise standard. While this location already experiences similar operation (material storage, truck traffic and staging), is adjacent to an industrial user, and has been shown to meet the Part 360 regulations as part of the annual surveys, an earthen berm will be incorporated which will mitigate sound levels at this location.

Additional calculations were also performed to determine whether properties to the west of Noise Monitoring Location 6 could be impacted by operational noise from the SMI Valley Infill project. The closest point from the edge of the SMI Valley Infill area to the property line for these properties was determined to be roughly 675 feet. Sound levels from operations at this point also meet the daytime standard but do not meet the nighttime standard. SMI has committed to operating at least 100 feet from the edge of the proposed infill waste mass between the hours of 5am to 7am, so operations would be blocked from having a direct line of sight to the edge of the property line by the existing waste mass. The increase in attenuation due to the waste mass and an increase in distance reduces the sound level at this point of the property line to meet Part 360 nighttime regulations.

SMI is committed to meeting SEQR and Part 360 requirements for sound levels. As part of the SMI Valley Infill project, SMI will perform continuous sound level monitoring prior to 7AM at the western property boundaries when operations are within 100 feet of the edge of the waste plateau on the west side of the Facility Site to ensure that operations are compliant during the hours from 5am-7am. In the event that operations are found to cause exceedances of the applicable 52dB standard during these hours, SMI will work with NYSDEC to implement a solution to this issue. Otherwise, SMI will not operate within 100 feet of the edge of the waste mass plateau on the west side of the SMI Valley Infill during the hours from 5am-7am so that exceedances of the Part 360 regulations will be prevented.

In addition to the noise attenuation berm along the southeast edge of the Facility Site, and the sound level monitoring, general best management mitigation measures will be implemented to maintain the sound levels to be consistent with current operations. These measures will be similar to those employed by the currently permitted landfill operation, in order to maintain continued compliance with the requirements of Part 360. As noted in Section 5 of this DEIS, a variety of sound level control features will be incorporated into the design and construction of the SMI Valley Infill, including:

- Landfill construction and operational phasing plans designed to shield activities where possible.
- Operations will be screened through the use of core berms, which will screen waste disposal operations and help to mitigate sound level impacts to the maximum practical extent. These temporary shielding berms will help to mitigate the sound of construction activities, landfilling operations, recycling operations, and site traffic.

- Incoming waste vehicles and vehicles and equipment used for landfill operation will be equipped with mufflers. In addition, hush kits may be utilized on certain equipment (e.g., high grade exhaust mufflers, quiet fans, and engine compartment linings).
- Scheduling work crews to operate in sequence rather than concurrently for certain cell developments.
- Minimizing numbers of equipment of a work crew that can be in simultaneous operation at certain development cells.
- Limiting speeds of vehicles on-site and redirecting traffic flows from off-site locations, if such a redirection is feasible, in such a way that it will result in a reduction in sound level impacts.
- Installing level-limited or otherwise restricted backup alarms (if possible).
- Limiting hours of operation for certain work crews when activities can be anticipated to be particularly significant sound sources.
- Annual sound level monitoring survey will be conducted around the Facility Site as well as periodic sound level monitoring of construction activities, as needed.

Background sound levels at the Facility Site are established annual Noise assessments. Actual background sound noise levels vary over time, from day to day, and cannot be characterized be a single value. Environmental conditions can vary in ways such as weather or the presence of wildlife, while human-impacted conditions such as traffic levels and nearby active uses can also create different background sound levels. As background sound levels represent levels without the operation of the Facility, there will be no change to background sound levels as a result of the SMI Valley Infill project.

4.5.6 Demographics

4.5.6.1 Local Economy

The Project will result in an overall positive economic impact for both the local community and the local economy. These impacts are associated with continued employment and job creation, fiscal impacts to the Town of Seneca Falls and Town of Waterloo, as well as other impacts on the area economy, and are discussed below.

Job Creation

As noted in Section 3.6.6.2, employment at the Facility fluctuates seasonally. SMI has up to 110 employees during the peak season. In prior years when more construction was occurring, such as 2012, these numbers were as high as 154.The majority of these employees live in Seneca County or within a 20-mile radius from the Facility. Total payroll with benefits for SMI employees in 2022 was over $7 million (over $7.3 million including temporary employment payroll), much of which is spent locally supporting other area retail and service businesses. The vast majority of the payroll and benefits goes to employees within a 20-mile radius, including over $6.9 million in 2022. During 2020 to 2022, SMI payroll exceeded $21 million, with over $19.6 million of this going toward employees within a 20-mile radius. Lesser construction needs in recent years have contributed to a reduction in these numbers as stated in Section 3.6.6.2, but the approval of the SMI Valley Infill project would result in an increase employment again.

Construction and operation of the SMI Valley Infill Area will continue to provide significant employment opportunities for the local community. The construction and the operation of the SMI Valley Infill Area will continue to require approximately the same number of employees as the currently approved landfill operation.

Corresponding employment benefits will be realized by area vendors and suppliers providing goods and services to support the construction activities and construction workers. As noted in Section 3.6.6 of this DEIS, the operations at the Facility generated over $46 million in payments to local businesses and vendors in 2022. Local contractor services of a similar order of magnitude will be required in connection with the SMI Valley Infill Area.

4.5.6.2 Population and Housing

The Project will not restrict development of adjacent properties and is not anticipated to have any adverse impact on current population or housing trends, as discussed in Section 3.6.6 of this DEIS. Due to positive economic impacts associated with the proposed SMI Valley Infill, described in Section 4.5.1, the local residents will continue to enjoy lower property taxation, among other benefits.

4.5.7 Archaeological and Historical Resources

As summarized in Section 3.6.7 of this DEIS, the Project Area will be entirely contained within the footprint of the areas that were evaluated as part of the DGEIS for the 2007 Landfill Development. That DGEIS reported no archaeological or historical resource concerns, and as such, the SMI Valley Infill will not impact archaeological or historical resources.

To ensure consistency with the previous reports, a submission for the Project was made to the Office of Parks, Recreation and Historic Preservation (OPRHP) using the department's Cultural Resource Information System (CRIS) tool. The OPRHP reviewed the SMI Valley Infill project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). In a letter dated May 19, 2022, the OPRHP review concluded that "no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project." Subsequent to the May 19, 2022 letter, OPRHP requested additional information to assess the change in height of approximately 73.5 feet. More specifically, they requested a five-mile Visual Impact Study to assess the impact of all resources listed and eligible for listing in the State and National Registers of Historic Places. The Visual Resources Assessment (Appendix I), with the requested information, was submitted through the CRIS tool on May 3, 2024.

While OPRHP noted that proposed Project has the potential to visually impact resources eligible and/or listed in the State and National Registers of Historic Places, the Project, as proposed, will result in a three percent increase in potential visibility once the landfill reaches its maximum capacity in fifteen years. It was also noted that that once the Project is complete, out of the historic resources which do not currently have a view of the Facility, 4.6% will have views of proposed SMI Valley Infill Project. Therefore, OPRHP notes that with the limited increase to existing views and limited areas of visibility to resources that currently do not have views it was their opinion that the Project will have No Adverse Impact on historic resources. The OPRHP correspondence, including the letter summarizing their review of the Visual Resources Assessment and the No Adverse Impact Statement can be seen in Appendix H.

As directed by Congress in 2019, the National Park Service (NPS) prepared a National Heritage Area Feasibility Study of the Finger Lakes region of New York State. In 2019, the NPS determined that the Finger Lakes region fulfills the criteria for a national heritage area (NHA) designation. National Heritage Areas are designated by Congress as places where natural, cultural, and historical resources combine to form cohesive, nationally important stories. The federal government does not acquire land, manage land, or change land use controls through the creation of a National Heritage Area. The National Park Service only provides technical, planning, and financial assistance to National Heritage Areas while decision-making authority is retained by the local people. While the area is currently designated as eligible to become an NHA, it will require national legislation to complete the process.

The proposed SMI Valley Infill is not anticipated to impact the potential designation of an NHA, as follows:

- The landfill is already located within an existing designated National Heritage Area (Erie Canalway National Heritage Corridor) and was present at the time the NHA was established (circa 2000).
- the SMI Valley Infill is contained within the boundaries of the existing site.
- the office of OPRHP has indicated No Adverse Impact to historical and cultural resources (many of which are cited in the feasibility study supporting the NHA designation).

4.5.8 Visual and Aesthetic Impact

The SMI Valley Infill project will be phased in such a manner that filling operations will remain at or below the maximum elevation of the Existing Landfill for as long as possible. Eventually, the SMI Valley Infill project will be filled to a maximum elevation of about 843.5 above MSL, which is approximately 69 feet higher than the existing permitted maximum elevation. The Seneca Meadows Landfill is about 4.6 miles from the edge of Cayuga Lake.

This section is a summary of the Visual Resource Assessment (VRA) for the Project prepared by Saratoga Associates, which is included in Appendix I of this DEIS.

The visual impact assessment included the following steps:

- Define the existing landscape character/visual setting to establish the baseline visual condition from which visual change is evaluated.
- Conduct a visibility analysis (viewshed mapping and field investigations) to define the geographic areas from which portions of the Project might be seen.
- Identify sensitive aesthetic resources.
- Depict the appearance of the Facility upon completion of construction.
- Evaluate the aesthetic effects of the visual change (qualitative analysis) resulting from project construction, completion and operation.
- Identify opportunities for effective mitigation.

This VRA extended to a 5-mile radius from the high point of the Project Area. The Seneca Meadows Landfill (as currently permitted) is visible from approximately 16.3 percent of the 5-mile radius study area. Visibility of the Seneca Meadows Landfill is most widespread in the rural agricultural landscape areas from cleared lands with down slope vistas in the direction of the Facility. Much of these portions of Seneca County have historically been cleared for agricultural use.

While the viewshed map indicates small areas of project visibility from the downtown areas of the Hamlet of Seneca Falls and the Village of Waterloo, field confirmation determined the prevalence of mature street trees and site landscaping combined with one- and two-story residential and commercial structures block most views in the direction of the Project. Direct views of the Seneca Meadows Landfill are more prevalent on the outskirts of the 2 population centers where localized residential and commercial structures, street trees and site landscaping are less likely to provide a visual barrier. Direct views of the Seneca Meadows Landfill are also found along NYS Route 414, Burgess Road and North Road in the vicinity of the Facility Site. Intermittent views are also found in isolated locations along NY Route 5/US Route 20 and NY Route 318.

Within the 5-mile radius study area, there would be a small increase in the number of areas that will be able to see the Facility upon completion of the SMI Valley Infill project. In total, Saratoga Associates determined that an additional 2.7 percent of the study area would be able to see the Facility upon completion of the Project. The VRA found that areas of new visibility are typically limited to relatively small geographic extensions of adjacent lands that already have views of the Seneca Meadows Landfill. In newly affected areas, views will be limited to the upper portions of the Project appearing above the foreground tree lines. In addition, much of the newly affected areas are currently in agricultural use and do not represent an increase in Facility views from potentially sensitive vantage points. The proposed SMI Valley Infill represents a continuation of existing visibility of the Seneca Meadows Landfill at most locations and any increase in viewshed area resulting from construction of the Project is minimal. The VRA concluded that over 82 percent of the study area will have no visibility of the Existing Landfill or Project.

The VRA identified resources of statewide significance, resources of local interest, and an expanded inventory including places of local sensitivity or high intensity of use within the study area. Overall, 82 potential visual receptors were identified and evaluated by the VRA. Each inventoried visual receptor was evaluated to determine whether a visual impact might exist. This consisted of reviewing viewshed maps and field observation to determine whether or not these individual locations would have a view of the Project. This analysis determined

that the Facility and or the Project is not and would continue to not be visible from most of these locations, and that the SMI Valley Infill would be visible only from the 22 locations that the Existing Facility is already visible from.

The Seneca Meadows Landfill is directly visible to a varying degree from homes in the residential areas on the northern perimeter of the Village of Waterloo. The majority of homes in these neighborhoods are substantially or fully screened from the Existing Facility by neighboring residential structures and local vegetation.

It is difficult to estimate the number of homes that currently have views of the Seneca Meadows Landfill or will potentially have views of the SMI Valley Infill when constructed. However, given the close proximity of residences to each other and the density of local vegetation, views of the proposed SMI Valley Infill will mainly affect residences and businesses which currently have a view of the Seneca Meadows Landfill. Residential areas that do not currently view the Facility will remain largely unaffected.

The VRA contains viewshed maps and a visual resource map in Figures A1, A2 and B1, respectively of the VRA Report. These maps help to illustrate the current and potential visibility of the Project within the study area, as well as indicate where key visual resources within the study area are located.

To demonstrate how the actual SMI Valley Infill Area will appear within the study area from a variety of representative distances and locations, 11 photo simulations were prepared. High-resolution photographic realistic simulations of the proposed SMI Valley Infill have been prepared for representative receptor locations. Because the visibility of the SMI Valley Infill Area will most commonly affect local residents from nearby homes and during daily travel along local roads, and most open vistas of the Project typically occur in isolated locations along roadways, views selected for photo simulation favor such views even though the number of viewers will not be large. Figures C1 through C11 of the VRA (Appendix I) provide photographs of existing conditions, simulations of currently permitted conditions and simulations of proposed conditions at the 11 locations.

Consistent with the existing Seneca Meadows Landfill, the proposed SMI Valley Infill will continue as a dominant visual element from certain nearby vantage points. By contrast, from nearby northern vantage points the SMI Valley Infill will be screened from most locations.

Similar to the visibility of the currently permitted Seneca Meadows Landfill during the operational activities, periodically visible construction vehicles and relatively small areas of active landfilling would create a contrast in color and texture with the vegetative patterns of the surrounding visible landscape. This contrast would be particularly noticeable from viewpoints located to the south within the foreground distance zone (within ½ mile). These differences would be substantially diminished with distance and largely unnoticed from background viewing locations (beyond 4 miles).

The SMI Valley Infill project will not be visible from the Cayuga Lake State Park, while the Facility is currently seasonally visible through deciduous vegetation at a small section of the NYS Scenic Byway along Cayuga Lake near the NY Chiropractic college. The SMI Valley Infill Project may marginally increase the seasonal visibility of the landfill in this area through deciduous vegetation, as depicted in Figure C10 of the Appendix I.

It is important to note that, except in southern portions of the SMI Valley Infill, active filling operations will be screened by the adjacent landforms until landfilling reaches the top elevation of these adjoining landfill areas. Once reaching this visible elevation proposed mitigation measures, including progressive lift berming and daily cover of exposed waste material will limit visibility of active operations from offsite vantage points.

The vertical component of the proposed SMI Valley Infill will result in a height increase to a maximum of about 843.5 feet above MSL. Receptors located along Route 414 will generally experience similar visual impacts with the SMI Valley Infill as they currently experience with the Existing Facility. For receptors located along North Road, the SMI Valley Infill Area will also become a somewhat more prominent visual feature. The views of the Seneca Meadows Landfill and the SMI Valley Infill from visual reference point #45, located at the Seneca County Fairgrounds, about 3,000 feet southwest of the SMI Valley Infill, is presented in Figure C-7 of the VRA. The

current and simulated views of the Seneca Meadows Landfill and the SMI Valley Infill from visual reference point #50 which is located on NYS Route 414 about 6,300 feet south southeast of the SMI Valley Infill Area is presented in Figure C-7 of the VRA. These impacts will be mitigated to the extent possible as described below and in Section 5 of this DEIS.

Overall, the visual conditions presented by the SMI Valley Infill will be consistent with the currently permitted conditions at the Facility Site. The Project represents a continuation of existing visibility of the Facility operations with limited areas of new visibility. Visual patterns and composition of the Project will be consistent with what is already seen, and in the large majority of areas the effect of the Project is a change the degree of exposure rather than a new or visually different impact. Areas of new visibility area typically small geographic extensions of adjacent lands that area already affected by existing views of the Facility. In such areas, the upper portions of the Project will appear low to intervening tree line and similar in form, line color and texture with the local landscape.

In order to minimize potential visual impacts to the maximum practical extent, the SMI Valley Infill Area will incorporate a variety of mitigation measures, including:

- Maintain the lowest elevation of operations for as long as possible.
- Construct progressive lift berms (core berms) to screen filling operations.
- Preserve existing on-site vegetation.
- Revegetation of landfill area.
- Use of neutral/natural-colored appurtenances and components.

4.5.9 Potential Impacts to Human Health

4.5.9.1 Compliance with Air Emission Standards

As discussed in Sections 3.3.2.3, 3.3.3, and 4.3.3, the Facility is, and in the SMI Valley Infill will be, in compliance with all applicable standards and guidelines, including the Federal New Source Performance Standards (40 CFR Part 60 Subpart WWW and Subpart XXX: Standards of Performance for Municipal Solid Waste Landfills), the National Ambient Air Quality Standards, the New York State Ambient Air Quality Standards, the NYSDEC Guidelines for the Control of Toxic Ambient Air Contaminants, and the Facility's Title V permit.

Under the Clean Air Act, a facility's Title V sets forth all emission limits for all regulated emission sources at a facility into a single comprehensive permit. The Facility's Title V permit imposes emission limits for the following pollutants: non-methane organic compounds (NMOC), total volatile organic compounds (VOCs), carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur dioxide (SO_2), particulate matter (PM), total hazardous air pollutants (HAP), and hydrogen sulfide (H_2S).

Under the Clean Air Act, USEPA was tasked with setting the New Source Performance Standards and the National Ambient Air Quality Standards for air pollutants, accurately reflecting the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air (42) USC § 7408). In setting the standards, USEPA was required to consider:

- Variable factors (including atmospheric conditions) which of themselves or in combination with other factors may alter the effects on public health or welfare of such air pollutant.
- The types of air pollutants which, when present in the atmosphere, may interact with such pollutant to produce an adverse effect on public health or welfare.
- Any known or anticipated adverse effects on welfare.

In addition, USEPA was required to confer with appropriate advisory committees, federal agencies, and the academic community regarding the latest scientific information concerning exposure to pollutants. Moreover, USEPA is required to modify the standards as appropriate as new scientific information becomes available on the health impacts of the pollutants.

EPA set New Source Performance Standards and the National Ambient Air Quality Standards for VOCs, CO, NOx, SO2, PM, and HAP to protect the public health from any known or anticipated adverse effects associated with the presence of such air pollutants in the ambient air, allowing an adequate margin of safety (42 USC § 7409).

Similarly, as discussed in Section 4.3.2, when setting the Guidelines for the Control of Toxic Ambient Air Contaminants, NYSDEC analyzed the impacts of air pollutants on public health. Guidelines for the Control of Toxic Ambient Air Contaminants (AGCs) are annual average concentrations developed to protect the public health from the effects that may be associated with long term exposure to contaminants. Short term Guideline Concentrations (SGCs) address any significant health or environmental effects at off-site receptors which might be associated with acute (short term) exposures to air contaminants. These guideline concentrations were developed by the NYSDEC and the NYSDOH for reviewing area and source air permits to protect public health and the environment. The concentrations are similar to occupational exposure limits developed by the Occupational Safety and Health Administration (OSHA) and other agencies, except the AGCs are intended to account for a lifetime of potential exposure.
In contrast, New York State Ambient Air Quality Standard for H2S are based on nuisance odors, rather than health.

As discussed in Section 3.3.3., landfill gas contains hydrogen sulfide. Sulfur-containing chemicals, such as hydrogen sulfide, can have a rotten-egg smell. Hydrogen sulfide is not a carcinogen and has not been shown to cause cancer in humans. (https://www.atsdr.cdc.gov/toxfaqs/tfacts114.pdf). Hydrogen Sulfide is also not a hazardous air pollutant (42 U.S. Code § 7412).
Hydrogen sulfide is produced by a variety of sources in a community, even those without landfills. For instance, wet soil, wetlands, stormwater drains, sewer pipes, liquid manure (commonly used as fertilizer on farm fields), and municipal wastewater treatment plants all emit hydrogen sulfide.
(https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2020.01127/full; https://www.osha.gov/hydrogen-sulfide/hydrogen-sulfide-workplaces).

The geography surrounding the Facility is home to vast wetland areas, including the Montezuma National Wildlife Refuge, which comprises over 8,000 acres of wetlands.

The New York State Ambient Air Quality Standard for hydrogen sulfide is 10 parts per billion (ppb) (over a one-hour period) (6 NYCRR Part 257). The purpose of New York State standard is to prevent disagreeable odors, and is not a health-based standard. To prevent the health-based risks of H2S, OSHA set a health-based standard of 10,000 ppb for worker safety and protection (29 CFR 1926.55). OSHA's health-based standard of 10,000 ppb standard is three orders of magnitude higher than New York State's odor-based standard of 10 ppb. Thus, hydrogen sulfide can be smelled at concentrations far lower than are associated with adverse health effects. Landfill gas from the Facility is, and landfill gas from the SMI Valley Infill Project will be, collected and routed to a nearby energy facility to produce electricity and pipeline-quality gas and any remaining collected landfill gas is flared. This reduces hydrogen sulfide emissions to the maximum extent possible (approximately 89%).

Only treated leachate is discharged to the local sewers which does not produce any objectionable odors.

The Facility's Title V permit requires the Facility to demonstrate compliance with the New York State odor-based air quality standard of 10 ppb. To demonstrate compliance with this requirement, the Facility installed ambient monitoring equipment around the perimeter of the Facility Site pursuant to a NYSDEC-approved work plan, and the monitoring data is submitted to NYSDEC. The vast majority of the time, hydrogen sulfide is not detected. On a few occasions, hydrogen sulfide has been measured at levels exceeding 10 ppb. In accordance with the approved workplan upon such exceedances SMI conducts a follow-up investigation. The follow-up investigations have detected no exceedances of the NYS standard attributable to the landfill. Moreover, hydrogen sulfide is at all times orders of magnitude below the OSHA health-based standard of 10,000 ppb.

4.5.9.2 Geospatial Monitoring for Air Pollution (GMAP)

Geospatial Monitoring for Air Pollution (GMAP) is a mobile air monitoring vehicle operated by USEPA, designed to measure the concentration of air pollutants. GMAP is equipped with analyzers for methane, benzene, toluene, ethylbenzene, xylene, and total volatile organic compounds (VOCs). Since 2012, GMAP has been used across the country to assess potential emissions and determine their sources. USEPA recently took GMAP measurements in the vicinity of the facility, however, that data has not yet been made available to SMI.

4.5.9.3 Community Air Screen Program

As discussed in Section 3.3.2.2., community level air monitoring was conducted through the Community Air Screen (CAS) program. Launched by the NYSDEC, the CAS program helped better understand toxic air pollutants at the community level. NYSDEC received applications for the CAS program and accepted the application from Seneca Falls Environmental Action Committee. To evaluate the potential impact on air quality from the Facility, including from the Facility's use of odor neutralizers/ deodorizers, air samples were collected for formaldehyde analysis in addition to air samples collected for analysis of 43 volatile organic compounds (VOCs) routinely collected in the CAS program. In June and July 2018, two 1-hour air samples were collected for VOCs and seven 1-hour air samples were collected for formaldehyde near the Seneca Meadows Landfill in the Town of Seneca Falls. The samples were analyzed by NYSDEC's laboratory and the results were evaluated for potential air quality concerns. NYSDEC concluded that results were below short-term and long-tern health-based air concentration values, and all results were similar to concentrations found in NYSDEC's ambient air monitoring network. The results of the Seneca Falls community air screening can be seen in the NYSDEC report included in Appendix K and are also available at https://extapps.dec.ny.gov/docs/air_pdf/cassenecafalls.pdf.

First, the samples were compared with short-term health-based air concentration values, which are derived to protect the general public from adverse exposure to toxic air contaminants for short-term exposures of one-hour. The general public includes infants and children, and other individuals who may be susceptible. Examples of health outcomes from short-term exposures may include headaches, nausea, allergic reactions, asthma exacerbation, and irritation to the eyes, nose, and throat. All results were well below the short-term health-based air concentration values. NYSDEC concluded that the results demonstrate that there is not a potential health threat or an immediate public health concern.

Second, the samples were compared with long-term health-based air concentration, which are ambient (for outdoor air) annual-based concentrations that have been derived to protect the public's health from long-term (e.g., continuous lifetime) exposure to an air pollutant, such as cancer. The results demonstrated that all but the following three (3) VOCs were below the long-term health-based comparison values: 1,2-dichloroethane, benzene, and carbon tetrachloride. NYSDEC stated that the aforementioned VOCs are commonly found above the long-term health-based comparison values in most areas of the State. NYSDEC determined the measured concentrations for these three VOCs represent a range of 1 to 3-in-a-million cancer risk, which NYSDEC stated is a low level of risk and below the level warranting follow-up testing.

Next, the sample results were compared with ambient air monitoring concentrations from NYSDEC's air toxics monitoring network. NYSDEC has operated an air toxic monitoring network across the State since 1990. The purpose of the ambient air toxics monitoring network is to support NYSDEC's efforts to reduce human exposure and health risks from air toxics. The comparison evaluated whether the sampling results from the program are significantly different from air monitoring concentrations at other locations in the State. NYSDEC determined that the sampling results were similar to the monitoring concentrations found at other rural locations in New York State.

4.5.9.4 Mobile Emission Estimates

As discussed in Section 3.7.1.1, three areas around the Landfill have been identified as Disadvantaged Communities (DACs) according to the Disadvantaged Communities Criteria (Census Tract 36099950200,

36099950300, and 36099950400). The CLCPA Analysis included a mobile emissions analysis to evaluate the potential impacts of emissions from trucks driving to and from SMI. As discussed further in the CLCPA Analysis, waste that arrives at the SMI comes from several off-site sources at an average distance of 195 miles away and enters from Route 414. Leachate that is transported off site by leachate tanker trucks goes to off-site wastewater treatment plants at distances ranging from 4 to 268 miles and exists onto Route 414. Lastly, soil used for SMI Landfill cell construction, final cover construction, and operations arrives from off-site NYSDEC-permitted sources and enters from Route 414 or arrives from on-site borrow areas and enters from Burgess Road. The CLCPA Analysis estimated the emissions of greenhouse gasses (GHG) and hazardous air pollutants (HAP) produced by GHG sources. As discussed in the CLCPA Analysis, several activities will be implemented to reduce or offset GHG and HAP emissions associated with mobile emissions. These activities include:

- SMI will undertake a review to determine the feasibility of additional on-site leachate treatment to further reduce GHG emissions from off-site hauling.
- Conversion of at least 10% of operational support vehicles to low emission vehicles by 2030 if such vehicles are commercially available.
- Install two charging slots for general public use.
- SMI will annually review available technologies to support a viable conversion of operational heavy equipment such as excavators, loaders, articulating haul trucks, etc. to alternative fuel when commercially feasible.

4.5.9.5 New York State Department of Health Study

The New York State Department of Health (NYSDOH) maintains a cancer registry tracking the incidence of cancer across New York State, by year. NYSDOH uses the cancer registry to characterize patterns of cancer by pre-determined geographical locations across the state. When the rate of a specific cancer is higher than expected, this may, or may not, constitute a cancer cluster. According to the NYSDOH, “[s]cientists define a cancer cluster as a larger number of cancers than expected in a specific geographic area or in a specific group of people during a certain time period. Unusual patterns of cancer (clusters) do occur,” most often for unknown reasons.(https://www.health.ny.gov/statistics/cancer/environmental_facilities/mapping/about/concerned_about_cancer_in_your_community.htm).

NYSDOH identified a lung cancer cluster, LU-H-17, spanning the northern portion of Seneca County, the southern portion of Wayne County, the eastern portion of Ontario County, and the western portion of Cayuga County. LU-H-17 is one of approximately 50 lung cancer clusters in New York State. LU-H-17 was identified using data collected in 2011 through 2015, using New York State (including New York City) as a reference population. This means that the rate of cancer was compared to the average rate of cancer across New York State, including New York City.

The NYSDOH determined that including New York City in the reference population could artificially misrepresent the rate of cancer. Due to various factors, such as the relatively young population of New York City and relatively low smoking rate, people living in New York City have much lower rates of lung cancer in comparison to the rest of the state.

NYSDOH is thus currently undertaking a data analysis of cancer cluster LU-H-17. In this study, NYSDOH is analyzing the lung cancer data in the northern portion of Seneca County, including census tracts 9505 and 9506 in Waterloo; tract 9507 in Fayette, tracts 9502, 9503, and 9504 in Seneca Falls; and tract 9501 in Junius and Tyre. These are the three geographic units in Seneca County that were part of lung cancer cluster LU-H-17.

For this data analysis, NYSDOH will compare the observed and expected lung cancer cases diagnosed between 1996 and 2020 in the above-described geographic region, adjusting for age and sex, and will consider demographic and socioeconomic characteristics and smoking rates. In accordance with NYSDOH’s standard procedures for this type of detailed data analysis of upstate New York populations, NYSDOH will use New York State excluding New York City as the reference population.

The pending NYSDOH data analysis, because of its nature, will not allow a determination of the cause of the lung cancer incidence in the populations studied. According to NYSDOH, “[T]he type of studies that can be done by a state health department, cancer incidence studies, cannot answer the questions people have about the causes of cancer. Cancer incidence studies can only determine whether cancer is being diagnosed more or less often than expected. They cannot answer why increased cancer incidence occurred.” (https://www.health.ny.gov/statistics/cancer/environmental_facilities/mapping/about/concerned_about_cancer_in_your_community.htm).

According to NYSDOH, “Unfortunately, the amount of information that can be obtained about why a cluster might be occurring, or what might be causing it, is usually quite limited. (https://www.health.ny.gov/statistics/cancer/environmental_facilities/mapping/about/concerned_about_cancer_in_your_community.htm).

Therefore, the pending NYSDOH data analysis will not be able to address the cause(s) of the lung cancer incidence. Notably, as stated by authoritative sources, including the U.S. Centers for Disease Control and Prevention, smoking is the primary cause of cancer, causing over 80% of lung cancer incidence, and exposure to naturally-occurring radon gas is the second leading cause of lung cancer; other risk factors including exposure to asbestos, arsenic, diesel exhaust, and some forms of silica and chromium. (https://www.health.ny.gov/statistics/cancer/registry/abouts/lung.htm#:~:text=In%20New%20York%20it%20is,women%20die%20from%20this%20disease).

Based on the compliance with the health-based standards as discussed in Section 4.5.9.1, the Seneca Meadows Landfill has had no impact and the SMI Valley Infill will have no impact on lung cancer rates.

4.5.9.6 Potential Air Emissions from Leachate Within Public Sewers

As discussed in Section 3.2.2.4, the Facility operates biological and RO treatment systems to treat leachate on-site. Only treated leachate will enter the public sewers through an agreement with the Town of Seneca Falls. Since the leachate is treated, there are no potential air emission impacts from leachate within public sewers.

4.6 CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT (CLCPA) AND COMMUNITY RISK AND RESILIENCY ACT (CRRA)

4.6.1 Greenhouse Gas Impacts

As described in Section 3.7, the CLCPA has set goals to reduce GHG emissions and increase the amount of energy from renewable resources. In 2023, a CLCPA Assessment was completed to assess the proposed Valley Infill project's GHG emission impacts relative to the goals of CLCPA, and draws on related policies and regulations concerning climate impact assessments such as the December 8, 2021, DEC Proposed Policy titled, "The Climate Leadership and Community Protection Act and Air Permit Application" (the "DAR 21 policy"), and the December 2021 Draft Commissioner Policy titled, "The Climate Leadership and Community Protection Act and Air Permit Application" (CP 49). As part of the CLCPA Assessment, the Title V Permit Modification Application’s (submitted in July 2020) emissions inventory for GHG emission was updated from using 100-year global warming potential (GWP) values as provided in 40 CFR 98 Subpart A to 20-year GWP values for comparison as provided in 6 NYCRR 496.5. GHG emission sources include LFG generation from the landfilling of Municipal Solid Waste (MSW), and exempt sources. As described in Section 3.3, LFG is collected through a GCCS and is combusted or sold to third party end-users. Combustion of methane reduces the total carbon dioxide equivalent GHG emissions.

In 2010, New York State Department of Environmental Conservation ("NYSDEC" or "DEC") adopted the State Solid Waste Management Plan entitled "Sustainable Materials Management Strategy for New York State Beyond

Waste" ("Beyond Waste"). In 2023, NYSDEC adopted the latest version of the New York State Solid Waste Management Plan entitled "Building the Circular Economy Through Sustainable Materials Management" ("2023 New York State Waste Management Plan" or the "Plan") that builds upon New York State's 2010 Beyond Waste Plan. The Plan is intended to guild actions over the next decade, 2023-2032, to change New York State's current linear economy to a circular economy. The linear economy consumes raw materials and results in the majority of materials being landfilled, while a circular economy supports processes, activities and systems that make effective use of materials and keeping valuable materials circulating in the economy.

The Plan sets forth six major Focus Areas, each with 2 to 10 goals for a total of 31 goals. The Focus Areas are Waste Reduction and Reuse, Recycling and Recycling Market Development and Resiliency, Product Stewardship and Extended Producer Responsibility, Organics Reduction and Recycling, Toxics Reduction in Products, and Advanced Design and Operation of Solid Waste Management Facilities and Related Activities. Each goal has set 1 to 17 identified Action Items for a total of 175 Action Items. Together, these Action Items are intended to increase New York State's recycling of its waste stream to 85% by 2050. As described in Section 6 of the Plan, diversion of organics away from landfills will reduce the methane generated in them, therefore, reduce the uncaptured emissions of methane.

While the "2023 New York State Waste Management Plan" does not identify landfilling as the preferred waste management option, it does identify the need for landfills. Beyond Waste states that New York landfills and municipal waste combustors "comply with regulations that are among the most protective in the nation." The Plan intends to build onto the current regulations to minimize GHG emissions and protect the public. Consistent with "2023 New York State Waste Management Plan," NYSDEC has either approved or is in the process of reviewing Solid Waste Management plans for several communities in New York. The SMI Valley Infill is critical to the long-term management of waste in these communities and is identified in their respective Solid Waste Management Plans. The 2023 New York State Waste Management Plan also encourages energy recovery from landfill gas ("LFG") such as electricity generation or High British Thermal Unit ("HBTU") gas generation, which is another potential benefit of the Project should SMI continue to sell collected LFG to end users for electrical or HBTU gas generation. LFG collected from the Existing Facility and the SMI Valley Infill Project can continue the generation of electricity and/or HBTU gas at the end user's renewable energy facility.

It is acknowledged that GHG emissions are generated from the landfilling of MSW as part of the SMI Valley Infill Project. However, SMI manages waste at the Facility generated in the region--waste which is generated regardless of the SMI Valley Infill Project's existence—and provides the avenue to manage this waste with the least amount of GHG emissions. If SMI the Valley Infill Project does not exist, even more GHGs would be generated to manage the same waste because additional GHG emissions would be generated to transport the waste farther away and manage it at other facilities (if those facilities existed and had capacity). Should waste composition change, or if other waste management options become available in the future, GHG emissions from the Facility will be reduced accordingly. In the meantime, the SMI Valley Infill Project provides a means of managing the waste generated in the community and surrounding region that not only meets or exceeds all air regulations, but also is the least impactful waste management option for GHG emissions currently available. Finally, SMI has identified numerous reduction opportunities (see Section 5.6) to further mitigate GHG and HAPs emissions associated with the SMI Valley Infill Project.

4.6.2 Impacts on Disadvantaged Communities

As discussed in Section 3.7, air modeling was completed to demonstrate compliance with all NYSDEC and federal air quality standards. Section 4.2 details leachate collection and groundwater protection provisions. Based on this information, no adverse impacts to Disadvantaged Communities are anticipated. SMI has voluntarily prepared and submitted to NYSDEC a Public Participation Plan to review the SMI Valley Infill with the community and respond to questions and comments including Disadvantaged Communities.

As part of CLCPA, Seneca Meadows has proposed a number of mitigation measures (see Section 5.6), all of which have the potential to have a positive impact on the local Disadvantaged Communities. Of note, Seneca Meadows is the proposed planting of 25 acres of trees (approximately 2,725 trees) on land within the Disadvantaged Communities.

4.6.2.1 Co-Pollutant Emissions

NYSDEC's DAR-21 policy outlines the requirements for analyses developed pursuant to Section 7(2) of the Climate Leadership and Community Protection Act (CLCPA) in support of air pollution control permit applications. Although not covered by DAR-21, decisions impacting disadvantaged communities should also comply with Section 7(3) of the CLCPA which requires that decisions made by state agencies do not disproportionately burden those communities. Section 7(3) further requires that state agencies prioritize reductions of GHG emissions and co-pollutants in those communities. As defined by ECL Section 75-0101(3), co-pollutants means hazardous air pollutants produced by greenhouse gas emissions sources. As detailed within New York State Climate Justice Working Group's "Technical Documentation on Disadvantaged Community Criteria", proximity to an active landfill may not represent any actual risk or even exposure. The approach applied does not consider dispersion and toxicity of pollutants, and magnitude of emissions. Therefore, as part of the CLCPA Assessment, HAPs emissions were quantified, and air dispersion modeling was completed as described in Section 3.3.2.3 as part of the Title V Application.

4.6.2.2 Other Impacts

Other impacts such as odors and traffic are described in Section 4.3.4 and 4.5.4 respectively.

4.6.3 Community Risk and Resiliency Act (CRRA)

Section 9 of the CLCPA added a requirement to the existing Community Risk and Resiliency Act ("CRRA") that applicants for "major permits" under ECL Article 70, such as the Applications, must "demonstrate that future physical climate risk has been considered." Physical climate risks potentially relevant to the location of the SMI Valley Infill and which could potentially impact the SMI Valley Infill include flooding and greater rainfall volumes, these potential impacts have been considered in the following sections.

4.6.3.1 Greater Rainfall Volumes

Consistent with the methodology outlined in the document titled *Observed and Projected Climate Change in New York: An Overview*, NYSDEC 2021, projected rainfall volumes have been assessed and will not have a significant impact on the proposed development. The referenced document recommends the use of storm event data from the Northeast Regional Climate Center as it is regularly updated data. As discussed in the Engineering Design Report for the SMI Valley Infill, the design of the Facility already includes the use of the 100-year 24-hour extreme storm event (5.34 inches) that is consistent with the Northeast Regional Climate Center for the design of applicable conveyance and stormwater storage features. Furthermore, the Engineering Design Report outlines how the design of the Facility includes an assessment of the impact of up to a 500-year 24-hour storm event (7.65 inches). Using the recommended storm event projection tool for the high greenhouse gas emission scenario at the Facility, through the year 2100, the projected mean 100-year, 24-hour storm event has the potential to increase by 23%. If the 100-year, 24-hour design storm of 5.34 inches were to increase by 23% that would result in a storm event of 6.57 inches which is well under the 500-year storm that has been assessed as part of the stormwater plan in the Engineering Design Report. Additionally, by 2100 the Facility will have been fully stabilized for many years, slopes will be less significant on the waste mass due to settlement, and the potential impact from extreme storm events will continue to be limited.

The occurrence of extreme rainfall events can also result in increased annual rainfall totals which could have an impact on the leachate generation rates. Table 3 from the *Observed and Projected Climate Change in New York:*

An Overview, NYSDEC 2021 document includes projected changes in annual rainfall totals for several regions of the State out to the year 2100. However, only the projections for 2020 and 2050 are relevant for the SMI Valley Infill project, as the Facility is projected to be capped – significantly reducing leachate generation rates.

As discussed in Section 3.7.2.1 of the Engineering Design Report, leachate generation rates would be at their maximum during the initial operations stage. During the active operations stage, leachate generation is still high, but considerably less than during initial operations. Leachate generation rates will continue to decrease as the Facility operates and is eventually capped during its final closure stage. Greater quantities of waste provide more moisture holding capacity, reducing leachate generation rates. Leachate generation will be further reduced with the installation of a final cover, which limits the ability of stormwater to penetrate into the landfill, during the final closure stage. The table below shows the design maximum leachate generation rates for each phase of the Project. The maximum expected leachate generation rate for the SMI Valley Infill Landfill, including accounting for initial operation conditions, is 135,750 gallons per day. The Engineering Design Report describes the leachate storage and removal systems for the SMI Valley Infill. The total on-site leachate storage capacity available to SMI throughout the lifetime of the Project is 2,207,000 gallons. In the event of a contingency where leachate disposal was interrupted, the total design contingency storage is 16.3 days at this maximum expected leachate generation rate. However, the contingency storage time will vary throughout the Project lifetime, as leachate generation rates change.

According to Figure 1 in *Observed and Projected Climate Change in New York: An Overview,* NYSDEC 2021 the Facility is located in ClimAID Region 1 (Western New York). The estimates for increased annual rainfall for the beginning of each phase were interpolated from the 2020 and 2050 estimates for Region 1 in Table 3 from *Observed and Projected Climate Change in New York: An Overview*. The increased annual rainfall estimate, adjusted maximum leachate generation, and adjusted contingency storage for each phase are shown in the table below. This method conservatively assumes that all of the annual rainfall increases is converted to leachate.

Phase	Approx. Year Ending	Increased Annual Rainfall (Average Estimate)	On-Site Leachate Storage Capacity (gal)	Design Maximum Leachate Generation (gpd)	Adjusted Maximum Leachate Generation (gpd)	Design Contingency Storage Time (days)	Adjusted Contingency Storage Time (days)
Pre-Dev (2025)	2025	4.5%	2,207,000	136,379	142,516	16.2	15.5
Phase 1	2027	4.7%	2,207,000	94,470	98,910	23.4	22.3
Phase 2	2029	4.8%	2,207,000	91,081	95,453	24.2	23.1
Phase 3	2031	4.9%	2,207,000	99,167	104,026	22.3	21.2
Phase 4	2033	5.1%	2,207,000	102,203	107,415	21.6	20.5
Phase 5	2037	5.4%	2,207,000	83,105	87,593	26.6	25.2
Phase 6	2040	5.6%	2,207,000	68,830	72,684	32.1	30.4
Closure (2040)		5.6%	2,207,000	<68,830	<72,684	>32.1	>30.4

As shown, increased annual rainfall totals will not significantly decrease contingency storage time throughout the Project lifetime at the Facility. The storage afforded by the existing tanks is intended to allow the Facility time to locate additional storage and disposal services. However, as described in the Facility Manual (Section 18.2.2.6), SMI not only has its own treatment capacity, but the Facility also has pre-arranged disposal agreements with multiple other facilities to provide both routine and contingency disposal capacity that is greater than expected leachate generation rates. It is unlikely that leachate disposal is fully interrupted because of the multiple options for disposal that are maintained. In the event that one disposal provider stops allowing deliveries, existing providers will be used to provide the needed disposal capacity. In addition, new providers are regularly identified

for disposal capacity. The Facility's standard operation practice of arranging for and maintaining multiple leachate storage providers will allow the Facility to properly manage leachate volumes should increased rainfall occur.

4.6.3.2 Future Flood Risk

The *New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act* document provides guidance for assessing future physical climate risk due to sea-level rise, storm surge, and flooding. In accordance with the methods outlined in this document, extreme flood events were assessed for the SMI Valley Infill project and will not have a significant impact on the Project.

Table 2 in the referenced document describes an appropriate method to assess flood hazards areas for structures:

- *The elevation and horizontal flood-hazard area that result from adding two feet (three feet for critical facilities) of freeboard to the base flood elevation (BFE) and extending this level to its intersection with the ground. The document defines the BFE as "the elevation of surface water that has a 1-percent chance of being equaled or exceeded in any year, commonly known as the 100-year flood." Given the definition of critical infrastructure given on page 24 of the document, the analysis for the SMI Valley Infill project was completed by adding three feet of freeboard to the BFE.*

The document further states that the "BFE used in design planning should be the highest of any BFE on the project site, as indicated by a FIRM and accompanying effective flood insurance study (FIS), a FEMA preliminary or advisory FIRM and accompanying FIS, or an engineering analysis of current conditions using accepted hydrologic and hydraulic engineering techniques…Applicants and programs should ensure they use the most recent flood-risk information available."

As stated in Section 3.2.2 of this report, the current FIRMs FEMA has on file for the Project Area (dated 1981 and 1998) do not reflect the realignment of Black Brook, a channel that was redirected around the landfill expansion site in 2013. FEMA determined that the Conditional Letter of Map Revision (CLOMR) prepared as part of the Black Brook realignment (URS Corporation, August 2006) met the minimum floodplain management criteria of the FIRM.

As shown in Table 1 of a memo sent by SMI to the Town of Seneca Falls in 2013 noting completion of the Black Brook channel relocation, and included in Appendix H of this document, the post-construction 100-year water surface elevations at each cross-section location in the hydraulic model were consistent with the design estimates submitted to FEMA in the CLOMR. The hydrologic and hydraulic analyses in the CLOMR show that the SMI Valley Infill Area is wholly outside the 100-year floodplain. Upon completion of the Project, SMI submitted to the Town a Letter of Map Revision (LOMR) to update the effective FEMA maps. Final LOMR modeling resulted in minor difference to what was represented in the referenced memo. However, the FIRM maps have not been updated to represent the current site flood boundaries.

As such, this analysis was completed using the post-construction 100-year water surface elevations presented in Table 1 of the referenced memo. The hydraulic cross-section locations were compared the proposed site topography for the various features of the SMI Valley Infill project.

Taking the as-built 100-year water surface elevations at the hydraulic cross sections, a 3-foot freeboard, extended out to its intersection of the surrounding ground was added to estimate the extent of future flooding. While the waste placement areas and berms associated with the SMI Valley Infill are either 100-plus feet above the flood elevations or located at the south end of the Facility Site, well away from flood areas there are areas the SMI Valley Infill project that could be impacted. More specifically, an extreme flood event could potentially encroach the areas around the stormwater management ponds on the western and eastern edges of the Facility Site. The table below shows the hydraulic cross section locations most proximate to the three pond systems, the existing grades and the appropriate extreme flood elevation.

Station ID	Flood Elevation (+3 ft.)	Approximate Lowest Existing Ground Surface Elevation (ft)
12000 (West Ponds 1/4, 2, 3)	485.19	481
6002 (East Ponds 1, 2, 3)	481.30	482.8
4004 (East Ponds 4, 5, 6)	480.52	479

While the eastern and western sedimentation basins are designed to contain a 100-year storm event, it is possible that they will overtop during an extreme flood event. However, the Best Management practices implemented by the Facility in accordance with its Industrial SWPPP permit would minimize the impact of this flooding. The slow velocity of the flood water would minimize erosive effects if they were to encroach upon or overtop the pond berms. The Facility's stormwater and leachate management systems will allow the Facility to properly function should an extreme flood event occur.

5.0 DESCRIPTION OF MITIGATION MEASURES

The successful operation of an environmentally acceptable solid waste sanitary landfill requires detailed consideration of both the natural and man-made resources existing in the area of the designated site. This section discusses the measures to mitigate, minimize, and avoid adverse environmental impacts that are to be incorporated into design elements and operational and closure plans for the Project. This discussion of mitigation measures is presented according to the types of environmental impacts identified in Section 4 of this DEIS. Potential impact areas for which no potential adverse impacts were identified in Section 4 are not discussed in this section.

5.1 EARTH RESOURCES

Change in Topography/Increased Elevation/Visual and Aesthetics

As described in Sections 4.1.1 and 4.5.8 of this DEIS, the Project will result in a change in existing topography at the Facility Site. The vertical component of the SMI Valley Infill will result in a height increase compared to the currently permitted maximum elevation of 774 feet above MSL. The new maximum permitted elevation is planned to be 843.5 feet MSL. The change in site topography that will result will increase visibility of the Facility within a limited portion of the surrounding area. Mitigation measures will be employed to reduce the identified impacts.

Erosion and Sediment Control

Mitigation measures associated with the grading work and elevation changes required for the construction and operation of the Facility are prevalent through-out the design of the SMI Valley Infill project. During the entire construction and operation of the SMI Valley Infill, the Facility will implement erosion reduction and sediment control practices, including:

- Erosion Control Mat (ECM) on slopes and areas of high stormwater flow.
- Establishment of vegetative cover.
- Diversion channels.
- Stilling basins.
- Mulching.
- Stone check dams.
- Silt Fence.
- Rip-rap/Rock Outlet protection in acres of high stormwater flow.

Stormwater runoff from within the Facility footprint is captured will be treated in on-site retention basins prior to discharge. Stormwater run-off from the Facility is currently collected and conveyed to the west, east and south retention ponds as shown in the Engineering Drawings, Sheet 10. A system of channels and culverts directs stormwater run-off from final cover slopes into the ponds. The pond system consists of separate impoundments to allow a quiescent period to allow sediment deposition prior to discharge. Treatment and discharge of the stormwater will only occur on a batch discharge basis after the stormwater has been tested. The current operation of the ponds will be maintained through the life of the SMI Valley Infill.

Stability

To ensure the proposed topographical changes do not result in impacts associated with stability, geotechnical analysis of the native soils, design subgrade, and design final grades of the proposed landfill has been completed to address the suitability of the design to maintain the integrity of the solid waste containment systems. The geotechnical analysis includes slope stability, subgrade settlement and bearing capacity. The stability analyses encompass evaluations of landfill cell grading, berm fill, soil subgrade under both waste and soil fill, operational conditions, baseliner (veneer), and final cover (veneer). Settlement calculations involve assessment of anticipated

subgrade settlement, post-settlement baseliner slope, post-settlement leachate collection system slope, and baseliner strain.

Visual Aesthetics

Several mitigation techniques designed to minimize visual and aesthetic impacts are included as part of the Project, including:

- Maintain the lowest elevation of operations for as long as possible.
- Construct progressive lift berms to screen operational activities to the maximum extent practicable.
- Preserve existing on-site vegetation.
- Revegetate the landfill as areas are closed.
- Use of neutral/natural colored appurtenances and components.

The following describes each of these mitigation techniques in more detail:

Maintain the Lowest Elevation of Operations for as Long as Possible

As discussed previously, the visibility of the proposed landfill will progressively increase with elevation. Not only will the visible surface area of the landform gradually increase with height as seen from receptors, but the Project will become visible from additional receptors as the landfill extends above the existing horizon created by intervening landforms and vegetation.

To delay these impacts for as long as possible, the proposed SMI Valley Infill Area will be phased so that landfilling will occur at the lowest available elevations for as long as possible. In general, filling will progress in a series of 15 to 20-foot high vertical lifts. Landfilling within each successive lift will begin only after all available surface area within the preceding lift has been utilized and visible side slopes have received herbaceous vegetation, soil cover and plantings. Although this mitigation will not reduce the long-term visibility of the Facility, it will postpone impacts associated with the increase in height.

This technique has been successfully applied individually within both the A/B Landfill and the Southeast Landfill.

Construct Progressive Lift Berms to Screen Filling Operations

The visibility of waste disposal operations has been identified as a potential impact. To minimize the duration and magnitude of operational impacts, landfilling within each successive vertical lift will be phased in a manner which will screen much of the day-to-day operations from off-site receptors.

Upon initiating each successive vertical lift, a berm constructed of waste material will be placed along the perimeter of the lift area. All external side slopes will receive cover soils and grass plantings. The purpose of this interim berm is to help create a visual barrier which progressively screens views of waste hauling as well as daily operational areas of uncovered waste material. These berms will be maintained at a minimum height of 15 feet above the current elevation of the active fill area.

Maximum visibility of operational impacts will occur during the period of berm construction when waste material is being placed at the perimeter of the lift area. During this period, waste hauling and operation vehicles, as well as uncovered waste, will be visible from some off-site receptors not screened by intervening landforms or topography. However, such views will be relatively short in duration compared to the duration of the internal filling operations the interim berm is designed to screen.

Preserve Permanent Planted Berms Along Sensitive Perimeter Areas

To minimize the visual impacts created during the construction and operational period of the SMI Valley Infill Area and to improve the visual quality of long-term views, permanent earthen berms and screening plantings have been constructed along sensitive perimeter areas of the Facility in accordance with previously submitted landscaping plans. These berms are densely planted with a vegetative screen of deciduous and evergreen species of varying heights. A mix of native vegetative species has been selected to provide a dense visual screen

which is consistent in character with the regional landscape. Additional berm construction in perimeter areas is not planned, as the existing landscaping plans have already instituted berms in sensitive perimeter areas. Additional tree plantings may take place on SMI Property as close as possible to bordering roadways requiring screening, but outside of the right-of-way for the roads, and utility easements (both overhead and underground) which might run adjacent to the roadways in some areas.

Preserve Existing On-site Vegetation

Existing on-site vegetation provides an effective visual screen to several areas of existing and proposed activity and will be preserved to the maximum extent possible. Of particular importance is the heavily wooded area fronting NYS Route 414 to the north, east and west of the Facility. This vegetation currently screens much of the Facility and limits the duration of views to the Southeast Landfill area. The preservation of these wooded areas will have a similar mitigative benefit in connection with the SMI Valley Infill.

5.2 WATER RESOURCES

Groundwater Quality

No significant adverse impacts to groundwater are anticipated as a result of the implementation of the SMI Valley Infill Area. However, in the unlikely event of a release of landfill leachate to the groundwater, the Project Area possesses certain hydrogeologic properties based on its location and underlying geology which serve to minimize the potential for impact on local groundwater resources. These properties include:

- The SMI Valley Infill Area is not located within the zone of influence of public water supply wells and all nearby downgradient locations are serviced by public potable water supply systems which derive their water from surface water sources. Therefore, the risk of potential impacts to local residences is low.
- Natural quality of local groundwater is less than desirable for use as a potable water source due to hardness, high levels of dissolved solids, and taste and odor problems. In addition, existing water quality in the area downgradient of the SMI Valley Infill Area is already of degraded quality. Both of these conditions minimize the potential for the SMI Valley Infill Area to have significant negative impacts on groundwater quality.
- The hydrogeology of the Project Area allows for prompt detection and remediation of a leachate release.
- The SMI Valley Infill project's double composite liner system over the existing geosynthetic cap of the Tantalo area will result in decreased infiltration through the Tantalo disposal area.

In addition to the above-noted site qualities, the SMI Valley Infill will include a liner and leachate collection system which meets the requirements of 6 NYCRR Part 363, and incorporates the following features to mitigate potential releases to the groundwater:

- Double composite liner system, as described in Section 2.4.3.5 of this DEIS. This type of liner system offers a high degree of environmental protection and has been shown by theory and significant experience in New York State, and elsewhere, to be an extremely effective means for providing containment of leachate in landfills.
- The SMI Valley Infill will include an extensive groundwater monitoring network which will be sampled and analyzed periodically in accordance with the formally established Environmental Monitoring Plan.
- The operation of the SMI Valley Infill will include pre-established Contingency Plans, for both landfill operations and groundwater monitoring, which define procedures to be followed in the event of emergencies and unusual circumstances. This will allow landfill personnel to detect and correct problems before significant adverse impacts could occur.
- Leachate quality and quantity measurements in the primary and secondary leachate collection systems to monitor for developing problems with the liner containment system, allowing for implementation of a corrective measure prior to groundwater impacts.

Stormwater/Surface Water Quality/Soil Erosion

As described in Section 4.2, the Project could affect surface water quality through an increase in soil erosion or release of stormwater which has come in contact with solid waste materials during construction activities. However, with the design and implementation of effective mitigation measures, as described in Sections 3.5.5 and 4.2 and summarized below, the SMI Valley Infill will not result in adverse impacts to surface water quality.

The Project will comply with all surface water quality discharge limits/permits issued for the Facility; the Stormwater Pollution and Prevention Plan and Spill Prevention, Control and Countermeasure Plans developed for operations at the Facility; and the SPDES General Construction Permit provisions. The Best Management Practices incorporated into these permits and plans will be utilized as part of the daily operations.

The stormwater management system for the Project includes erosion and sediment control measures and practices to stabilize soil surfaces and prevent, or reduce, soil migration/losses due to the erosive forces of stormwater impact and runoff, both during construction and operation.

Stormwater collection and conveyance structures including diversion swales, downchutes, stilling basins, channels, and culverts. The conveyance structures are designed to function effectively under the range of anticipated rainfall events, including those considered to be “worst case.”

Stormwater detention/sediment basins will be utilized for the treatment and batch discharging of stormwater runoff prior to its discharge to Black Brook. Water quality in the basins and areas upstream and downstream of the landfill areas will continue to be monitored.

The quality of the surface water runoff from the Project will be controlled through methods of landfill construction and operation that will prevent runoff from areas where waste is uncovered.

The operational phasing of the SMI Valley Infill will minimize the amount of area open at one time. Stormwater will be diverted away from operational areas to the maximum possible extent, thereby minimizing the generation of leachate. As portions of the SMI Valley Infill reach final elevation, these areas will receive a final cap and permanent vegetative cover will be established. This measure will minimize leachate generation and will prevent erosion and sedimentation from stormwater runoff.

In addition to the continued operation of on-site biological and RO treatment systems, SMI proposes to install a pilot PFAS treatment system that will utilize foam fractionation (FF) to remove PFAS from the landfill leachate. Foam fractionation is a physical separation process that is effective at removing PFAS from the landfill leachate based on their affinity to adsorb to the surface of the air bubbles that are formed during the treatment process. Air bubbles are injected at the base of the treatment column and rise through the landfill leachate where the PFAS adhere to the surface of the air bubbles. Once the air bubbles reach the surface of the water column, a foam containing the PFAS from the landfill leachate is formed. That foam can then be removed from the surface of the water column and disposed of. While the POTW facilities receiving leachate currently do not have PFAS limitations, proposed system is being proactively developed to address PFAS levels within the leachate. As it is likely that POTWs will have leachate discharge levels imposed on their permits and operations in the near future, the proposed pilot system is an initial step in providing a significant benefit to the POTWs and improving the overall discharge quality from the POTWs.

5.3 AIR RESOURCES

As discussed in Section 4.3, potential air quality impacts from the Project are related to releases of waste decomposition gases (if uncontrolled), fugitive dust and odor, as well as emissions from the increased utilization of construction equipment and trucks transporting waste and soils. These impacts will be mitigated by a number of design aspects of the SMI Valley Infill. including the following:

- Phased development of the SMI Valley Infill will minimize the size of the operational areas, thereby reducing the potential for dust and odor.
- An active gas collection and treatment system consisting of gas venting layer within the final cover system, gas collection wells to withdraw gas from the venting layer, gas collection piping, condensate collection, and gas combustion units, as described in Section 2.4.3.7 of this DEIS.
- The application of daily, intermediate and final cover, and, if necessary, other operational measures to control odor as described in Sections 2.4.3.12.7 of this DEIS.
- Limit the idling of over-the-road vehicles that are staged on-site.
- The use of odor neutralizers and masking agents will continue to be employed in working areas to control odors that may be generated by from the landfilling of recently placed waste. Odor neutralizers/deodorizers generally consist of dilute essential oils and biodegradable ingredients applied in accordance with manufacturers recommendations.
- Dust control will be provided by a combination of measures described in Section 2.4.3.12.5 of this DEIS, including, quick establishment of vegetative cover, paved entrance road, enforced access road speed limits, road watering, the use of the wheel wash facility, and periodic cleaning of paved areas by a street sweeper.
- Airborne litter will be controlled by minimizing the size of the working face, sheltering disposal operations from prevailing winds, and the use of daily cover and both stationary and movable wind fencing, as described in Section 2.4.3.12.6 of this DEIS.
- Surface monitoring program for LFG emissions and to evaluate cover effectiveness.
- Screening of incoming waste for excessive intense odors and limit the amount of odorous sludges which are accepted at the Facility.
- Ensuring that leachate vehicles and withdrawal wells are properly covered and sealed.
- Providing for sufficient flare and energy recovery engine capacity to combust all LFG which can be collected.
- Placement of additional and intermediate cover on areas and materials known to release stronger odors.

5.4 ECOLOGICAL RESOURCES

Ecological/Vegetation Impacts/Wildlife Habitat

As described in Section 4.4, the SMI Valley Infill project will not result in the loss or disturbance of natural habitat areas. All areas intended for construction are either part of the Existing Landfill footprint or adjacent to it and part of current landfill operational areas. Some vegetated areas of the Existing Landfill will be disturbed and covered over, but these losses will not affect any endangered or rare species. Ample space in the surrounding landfill footprint and countryside exists for species such as mice or deer who coexist closely with humans.

Disturbed areas will be revegetated as soon as practical after reaching final grades. The Closure Plan for the SMI Valley Infill Area will provide for the establishment and maintenance of vegetative cover on the final cover system at the Facility. This vegetative cover will include a variety of herbaceous and woody species that will be maintained in a condition that will approximate an upland old field habitat. This habitat can support ground nesting birds and other fauna and will enhance the overall diversity of the ecosystem.

As described in Section 2.4.4, the SMI Valley Infill project will be seeded with native grassland vegetation for bird habitat upon completion of the Project. This will result in a positive impact with an additional 47 acres of native grassland habitat compared to the previously permitted projects at the Facility. This additional acreage includes both the Tantalo area and other operational areas that were not previously part of the Facility's waste footprint and will be developed for the SMI Valley Infill. These 47 acres would otherwise remain as part of the Tantalo Cap and currently developed operational areas (including roadways, maintenance buildings, and other facilities). As such, the Project would result in a larger continuous area of native grassland habitat for birds, mammals, and other animals that utilize grassland habitats in proximity to human developments.

The proposed end-use for this Facility is currently designated as open space.

5.5 COMMUNITY RESOURCES

Land Use

The Project is consistent with local land use laws. The following attributes of the SMI Valley Infill will mitigate potential adverse land use impacts:

- The SMI Valley Infill is composed of property owned by SMI, and waste filling operations will be located entirely within Seneca Falls Land Use Control District M-2, which allows for refuse disposal and reclamation activities. Operations occurring in Waterloo will be consistent with the Industrial zoning designation given to SMI properties within Waterloo.
- The configuration of the proposed SMI Valley Infill has been designed to maintain a minimum separation distance of 100 feet between the Facility Site boundary and the limit of proposed waste placement specified in New York State Solid Waste Management Facility (Part 363) regulations. The Project design will provide a setback in excess of the required 100 feet along the remaining perimeter of the proposed SMI Valley Infill. Appropriate set-backs will also be maintained from State Highway 414, and the utility easements and rights-of-way which run parallel to it.
- The proposed end use of the SMI Valley Infill will be to maintain the area as open space following final closure.

To mitigate potential adverse impact on surrounding residential property owners, SMI will continue to implement a "Value Protection Plan" for residents of Seneca Falls in connection with the SMI Valley Infill. The purpose of this program is to compensate the owners of eligible properties (within 3/4-mile radius of the SMI Valley Infill) for monetary loss at the time of the sale of their property as a result of the continued operation of the SMI Valley Infill Area. The Town of Waterloo has also executed a Community Benefit Agreement that among other things explicitly extends the provisions of the property value protection plan to residents in Waterloo who were not be covered by the existing property value protection plan for Seneca Falls residents but who will be within ¾ mile of the SMI Valley Infill.

Transportation

The Project will not result in additional traffic, because there will be no increase in the waste delivery rate, the delivery of construction materials, and arrival of landfill or construction employees to the Facility. Therefore, no additional mitigation measures will be required with respect to potential adverse transportation impacts.

Noise

The Project is not expected to result in increased sound levels at receptors surrounding the SMI Property due to SMI Valley Infill construction and operational activities that will occur. Sound level monitoring activities have consistently concluded that the Facility does not exceed applicable Part 360 regulations and meets SEQR guidelines for sound levels due to landfilling operations. Since the SMI Valley Infill project will be further from the boundaries of the property than other sections of the landfill due to being centrally located amid the landfill's footprint sound levels from both construction and operations will be lower. SMI remains committed to ensuring that sound level impacts to surrounding receptors are avoided or minimized. The following measures, which have been successfully implemented in connection with the construction and operation of the Southeast Landfill, will be implemented to mitigate potential adverse noise impacts:

- Landfill construction and operational phasing plans designed to shield activities where possible.
- Screening berms will be constructed along the perimeter of the SMI Valley Infill where appropriate.
- Operations will be screened through the use of core berms, which will screen waste disposal operations and help to mitigate noise impacts to the maximum practical extent. These temporary shielding berms

will help to mitigate the sounds of construction activities, landfilling operations, recycling operations, and site traffic.
- All incoming waste vehicles and vehicles and equipment used for landfill operation will be equipped with mufflers. In addition, hush kits may be utilized on certain equipment (e.g., high grade exhaust mufflers, quiet fans, and engine compartment linings).
- Scheduling work crews to operate in sequence rather than concurrently for certain cell developments.
- Minimizing numbers of equipment of a work crew that can be in simultaneous operation at certain development cells.
- Limiting speeds of vehicles on-site and redirecting traffic flows from off-site locations, if such a redirection is feasible, and will result in a reduction in sound level impacts.
- Installing level-limited or otherwise restricted backup alarms.
- Limiting hours of operation for certain work crews when activities can be anticipated to be particularly significant noise sources.
- Annual sound level monitoring survey will be conducted around the SMI Valley Infill as well as periodic sound level monitoring of construction activities.
- Additional mitigation measures, such as noise barriers or noise easements, will be employed, if necessary, to meet the requirements of the Part 360 regulations.

SMI is committed to meeting Part 360 requirements for sound levels. As part of the SMI Valley Infill project, SMI will perform continuous sound level monitoring prior to 7AM at the western property boundaries when operations are within 100 feet of the edge of the waste plateau on the west side of the Facility Site to ensure that operations are compliant during the hours from 5am-7am. In the event that operations are found to cause exceedances of the applicable 52dB standard during these hours, SMI will work with NYSDEC to implement a solution to this issue. Otherwise, SMI will not operate within 100 feet of the edge of the waste mass plateau on the west side of the SMI Valley Infill during the hours from 5am-7am so that exceedances of the Part 360 regulations will be prevented.

Additionally, SMI will install a berm between the bus garage property to the southwest of the Pond S-4 areas and relevant operating areas. The berm will be above the height of trucks in the proposed turnaround area and will be in an “L” shape curving away from the corner point of the bus garage property and will be constructed roughly 50’ from the edge of the bus garage property at its closest point. With this reduction, the sound level meets Part 360 standards.

Economic Impacts

Due to the lack of identified significant adverse impacts besides potential property value losses described above, no further mitigation measures are necessary. Rather, as described in Section 4.5.1, the Project will result in a positive economic impact on the local economy. The following measures which will be implemented are largely responsible for these positive impacts.

- Wages, salaries, and benefits of the employees required for the construction and operation of the SMI Valley Infill will provide a substantial contribution to the regional economy.
- Purchasing of local goods and services required for the construction and operation of the SMI Valley Infill Area will also provide a substantial contribution to the regional economy.
- The payment made to the Town of Seneca Falls under the existing agreement between SMI and the Town through the end of waste acceptance at the Facility.
- The payment made to the Town of Waterloo under the recently signed Community Benefit Agreement between SMI and Waterloo through the Year 2023.

5.6 CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT (CLCPA)

As discussed in Section 4.3, potential air quality impacts from the Project are related to releases of waste decomposition gases (if uncontrolled), fugitive dust and odor, as well as emissions from the continued utilization of construction equipment and trucks transporting waste and soils. As part of the CLCPA Assessment, the following mitigation measures have been considered in addition to those listed in Section 5.3:

- Install and operate gas collection infrastructure before required by regulation.
- Maximize volume of LFG sent to renewable energy production to offset fossil fuel usage.
- Monitoring of cover penetrations during quarterly surface scans before required by Subpart XXX.
- Utilization of drone technology every six months to identify areas of improvement to reduce fugitive emissions starting in 2025.
- Additional gas well monitoring, increase well monitoring and tuning to bi-weekly.
- More frequent cover inspections, increase inspections to weekly or bi-weekly.
- Lower action level for surface emissions monitoring to 200 ppm methane. For personnel safety, the working face and dangerous areas will be avoided.
- Installation of gas well dewatering on an as-needed basis.
- Installation of 150 acres of synthetic cover on interim slopes in advance of normal closure activities between the years 2025-2040 of the SMI Valley Infill Project.
- Conversion of at least 10 percent of operational support vehicles to electric by 2030 if such vehicles are commercially available.
- Installation of solar technology.
- Install two charging slots for general public use. Possible locations for the stations are the SMI Education Center and the Resource Recovery Park.
- Determine the feasibility of additional on-site leachate treatment to further reduce GHG emissions from off-site hauling. SMI is setting a goal of 25 percent reduction in trucks trips by 2025 and if feasible, 50 percent reduction in leachate disposal truck trips by 2030.
- Work with the Town of Seneca Falls on an organic diversion program. SMI agrees to fund an organics diversion program for the local community for organics that are delivered separately to the landfill. Details of this program will be worked through with the Town.
- Annually review available technology to support a viable conversion of operational heavy equipment such as excavators, loaders, articulating haul trucks, etc. to alternative fuel when commercially feasible. If feasible, the long-term goal would be to convert 10 percent of the heavy equipment fleet to electric or similar lower emissions by 2035.
- Evaluate and implement, if feasible, CO2 removal from emissions in conjunction with SMI's third party energy partner with an anticipated start date of 2035. The details of this mitigation measure will be evaluated at the feasibility stage.
- Yard waste aerobic composting facility (outdoor windrow style) to service local communities. SMI to evaluate the feasibility to include food waste.
- Plant 25 acres of trees (approximately 2,725 trees) on land within the Disadvantaged Community. SMI will raise the saplings to adulthood.

These mitigation measures along with the mitigation measures described in Section 3.7 will help ensure that the disadvantaged communities will not be adversely affected by HAPs emissions.

5.7 CONCLUSION

Construction and operation of the Project, as described in Section 2, will include a number of design, construction and operating practices, as noted above, that will mitigate, minimize, or avoid significant adverse impacts.

6.0 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

Certain environmental impacts of the Project cannot be completely mitigated. The impacts that cannot be avoided will be reduced to the greatest extent possible through the proposed engineering design, specific mitigation measures summarized in Section 5 of this DEIS, and the use of good management practices in the operation of the SMI Valley Infill. The unavoidable environmental impacts associated with the construction and operation of the Project include changes associated with topography and some increase visibility a continuation of potential noise, odor and dust impacts, and a continuation of leachate and LFG generating activities.

As presented previously in Section 4.5.8 of this DEIS, the SMI Valley Infill will represent a continuation of existing visual impacts with limited areas of new visibility. In order to minimize continuations of existing visibility to the maximum practical extent, the SMI Valley Infill Area will incorporate a variety of mitigation measures, including:

- Maintain the lowest elevation of operations for as long as possible.
- Construct progressive lift berms to screen filling operations.
- Preserve existing on-site vegetation.
- Revegetation of landfill area and the use of neutral colored gas collection equipment.

These measures are described in more detail in Section 5 of this DEIS.

The VRA found that there will be a 4.6 percent increase in area within the 5-mile study radius where the SMI Valley Infill project will be visible over the area where the Existing Facility can be seen. Of those new areas, the VRA demonstrated that most new locations where the SMI Valley Infill will be visible are areas where the permitted Existing Facility is visible and are merely extensions of views of what is currently permitted. Additionally, many of the areas where the Facility will be newly visible following construction of the SMI Valley Infill are agricultural field, thereby limiting the number additional receptors. Upon final closure the views of the Facility will be that of a native grassland area. The proposed plan was the subject of an FAA study which concluded that the Project would have no impact to air traffic.

The traffic patterns on the roadways in the vicinity of the Project are not expected to change as a result of construction and operation of the SMI Valley Infill over current conditions. The SMI Valley Infill will not cause changes in traffic service levels at the intersections of Salcman Road with State Route 414, as described in Section 4.5.4 of this DEIS. However, the duration of the traffic associated with the Facility operations will be lengthened by approximately 15 years.

Engineering measures will be incorporated into the landfill design and operation to mitigate the impact of noise, odor, and dust originating from landfill construction and operation. Due to the Facility's configuration, location and operational controls, no impacts to off site receptors are expected. Although odor impacts may occasionally be detected, all reasonable measures will be employed to control LFG emissions and to minimize off site impacts, as detailed in Sections 2.4.3.12.7 and 5.3.

The SMI Valley Infill will continue to conform to the sound level standards set forth in the Part 360 regulations. Annual sound level studies associated with the current operations have found that they conform with the sound level standards, and the SMI Valley Infill project will have a footprint that is further from property boundaries than many current operational areas.

Waste disposal operations in the SMI Valley Infill will increase the duration of leachate and LFG production. Because the duration of the operation of the Seneca Meadows Landfill will be extended, the associated generation of LFG and leachate will be occurring for a longer period of time. These increases are being mitigated through the utilization of the expanded leachate and LFG management systems described in detail in Sections 2.4.3.5 and 2.4.3.7 of this DEIS, respectively.

Future land uses will be compatible with the character of the surrounding area and the Town of Seneca Falls and Seneca County development goals. Changes in topographical characteristics caused by the Project will effectively preclude intense development of the Facility, though this is already the case as the area has already been used for landfilling. Although usage is expected to be limited, the area will still be utilized as a nature area in accordance with the post-closure reclamation goals outlined in the Facility Manual.

7.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The management of solid waste has become, in recent times, one of the more significant environmental issues facing local communities. The current standard of living many people enjoy, results in the generation of a variety of solid wastes, and if they are not recycled, these must be disposed of while at the same time protecting environmental quality and public health. Even as waste reduction and recycling programs have expanded significantly, there remains a large portion of the waste stream which must be disposed, and this occurs primarily at landfill facilities. While techniques to further reduce the overall amount of waste generated continue to be examined, and other types of facilities to process, recover and dispose of waste are being researched, there are presently no methods of waste management that can completely exclude landfilling as a part of the process. Although landfill development and operation are a necessary part of solid waste management, there are typically irreversible and irretrievable commitments of resources associated with this process.

The development of the Project will cause certain irreversible and irretrievable commitments of natural, man-made, and financial resources. Although a full range of engineering design features and environmentally-sound mitigation measures will be implemented to minimize these commitments to the greatest extent possible, some resources will become unavailable for future use.

7.1 NATURAL RESOURCES

Certain natural resources will be committed, and unavailable for future use as a result of the development and operation of the SMI Valley Infill components.

The SMI Valley Infill will encompass a total of approximately 221 acres of the Project Area. All of this area consists of land that has already been developed for landfill area and other uses in connection with the Existing Facility operations. The remainder of the area is over the former Tantalo Landfill, which had also been developed for prior landfilling. The use of these previously landfilled areas limits the impact on natural resources over those that would be affected if a greenfields location had been developed. Vegetation will be established on the closed, capped SMI Valley Infill in accordance with detailed closure plan developed for the Project Area.

Another natural resource impacted is the soil that will be necessary for the construction and operation of the SMI Valley Infill, including daily, intermediate, and final cover materials. The use of natural soils will be minimized to the extent possible by the use of BUD and alternative operating cover (AOC) materials and tire chips in construction and operational applications. Although soils from on-site sources will be utilized in the development of the SMI Valley Infill, some of the soils required will be obtained from permitted off-site sources. These soils will be used to fulfill cover material requirements, and as a component of the baseliner system and other construction elements. Once incorporated into the developed SMI Valley Infill, these soils will be considered as permanently committed to the Project.

7.2 ENERGY CONSUMPTION AND MAN-MADE RESOURCES

The use of fuels will also be required in the construction and operation of the Project. Non-renewable fossil fuel, in the form of gasoline and diesel fuel, will be consumed by the machinery required to construct the landfill baseliner and ancillary facilities associated with the construction of the Project components. Additional non-renewable fossil fuel will be consumed by the equipment used in conjunction with the operation of the SMI Valley Infill Area areas over the course of its anticipated life span. The use of these sorts of resources are unavoidable at the present time and similar resources would be required to address the solid waste through other means if this project was not constructed.

Human resources will also be committed in order to develop the Project. In order to construct and operate the Project, labor, building materials, and equipment will be necessary. Various workers employed in connection with the construction of the SMI Valley Infill will be unavailable for other construction projects during the same time frame. The building materials and equipment utilized during the construction/operation of the Project (i.e., the soils, both on-site and imported; liner and piping materials; and other associated construction materials) will be committed to the development of the SMI Valley Infill and therefore will not be available for use in other development projects.

7.3 FINANCIAL RESOURCES

Financial resources are those funds that are expended before, during, and after the development of the Project. These resources include development capital as well as operational, closure, post-closure, and monitoring costs.

Development capital refers to the costs associated with constructing the SMI Valley Infill and includes engineering, financial, legal and other professional services, labor and materials, and project financing. Included in these costs are the premiums for insurance and other risks that are part of any type of construction/development venture. This project also requires that SMI make a long-term financial commitment with respect to the Facility closure and post-closure care (i.e., maintaining facility monitoring for groundwater, leachate, LFG and surface water; removal and treatment of liquid from primary and secondary collection systems; maintaining and repairing, as necessary, the leachate management system and stormwater management system; inspection of the final cover system; and operation and maintenance of the LFG management system). The commitment of these resources for the SMI Valley Infill makes them unavailable for other uses.

There will also be costs associated with the daily operations of the SMI Valley Infill. The commitment of these monetary resources to operate and maintain the Facility renders them unavailable for other uses.

8.0 ALTERNATIVES TO THE PROPOSED ACTION

8.1 OBJECTIVES AND CAPABILITIES OF SMI

The objective of the Project is to add capacity to the SMI Facility Landfill in the Town of Seneca Falls in a timely fashion in order to provide critically needed solid waste disposal services locally and for the State. The Seneca Meadows Landfill is the largest landfill in New York State, with a permitted waste capacity of 6,000 tons per day (tpd). Based upon its current rate of waste acceptance, the Facility has remaining useful life through 2025.

The Seneca Meadows Landfill provides waste disposal services for communities and businesses across New York State, the Facility's primary service area. During the period from 2016 through 2018, 90.2 percent of the waste and materials accepted at the Facility (including beneficial use determination (BUD) materials) were generated in New York State. Three of New York City's five counties (Bronx, Kings and Queens) deliver a significant amount of their MSW for disposal at the Seneca Meadows Landfill, as do several other downstate counties, including Nassau, Rockland, Ulster, and Westchester. The Facility provides a significant percentage of the disposal capacity required by these jurisdictions, none of which have MSW landfills within their boundaries.

Locally, the importance of the disposal capacity provided at the Seneca Meadows Landfill is just as pronounced. Most of the counties in the Finger Lakes region do not have their own disposal capacity and rely on the Seneca Meadows Landfill for a significant percentage of their disposal needs.

The proposed SMI Valley Infill Area will meet the ongoing public need for long-term environmentally-sound disposal capacity in New York State, as described previously in Section 2.6.

8.2 NO-ACTION ALTERNATIVE

To establish a baseline for assessing the relative costs and benefits of the Project, SEQRA requires a discussion of the no-action alternative. The no-action alternative discussion is intended to describe and evaluate the adverse or beneficial impacts that are likely to occur on the Facility Site and in the community in the absence of the Project.

The no-action alternative means that the Project would not be built. Under the no-action alternative, the unavoidable adverse impacts which are described in Section 6 of this DEIS would not occur at the Project Area; however, those impacts could occur at another site where landfill capacity would need to be developed. As described below, the no-action alternative would result in economic and environmental uncertainties as well as in the cessation of many of the economic benefits to the region that would result from the SMI Valley Infill.

Closing the Facility would eliminate a significant amount of landfill capacity currently available in the region and the State. As noted previously, the Facility provides necessary waste disposal capacity for numerous areas in the Finger Lakes region and the entire State of New York.

Because solid waste will continue to be generated within areas serviced by the Seneca Meadows Landfill, alternative methods for management and disposal of this waste would be required by those communities. The actual method and location of this alternative disposal and/or processing would have to be determined. Due to the quantities of waste that would need to be directed to alternative disposal sites, it is likely that much of the waste would be placed in other landfills, potentially located in other states. Acceptance of wastes at these out-of-State facilities would depend on landfill capacity and the status of laws or other restrictions which prohibit the importation of wastes.

The required re-routing of solid waste to other facilities (which may not be readily available) necessitated by a No Action alternative creates the potential for deposition of wastes at facilities with less protective environmental

pollution control measures. Also, in many instances there will be a greater total haul distance to these other solid waste management facilities with a resulting increase in overall costs, energy use and environmental impacts of longer distance transportation, as well as the accompanying adverse impacts and costs associated with the siting, construction and operation of additional waste transfer facilities necessary to haul waste material to other disposal sites within or outside the State.

As the existing sites in New York State capable of accepting the Facility's wastes have limited capacity and remaining useful site life, redirecting these wastes to other facilities would only be a short-term solution. Over the long term, at least one of the following alternatives would be required:

- Major modification and new development at existing facilities.
- Development of new facilities within the State.
- Hauling the wastes to facilities outside of the State.

A long lead time (-10 years) is typically required to plan, design, secure permits and construct either a major modification of an existing facility and even longer time frames (15 years or more) for developing a landfill at a new location in New York State. Furthermore, there is no assurance that such long-term alternatives could in fact be successfully implemented in a time frame that would meet the continued public need for disposal capacity.

Accordingly, the no-action alternative offers no significant advantages as compared to the Project and likely would result in significantly increased environmental impacts, energy use, and costs.

Providing the additional disposal capacity that the SMI Valley Infill Area would provide for the management of solid waste generated in New York is also consistent with NYSDEC policy to reduce the amount of waste that is exported for disposal in other states. Beyond Waste notes that only about half of the 64 planning units in New York State have disposal facilities within their boundaries and the rest rely on disposal capacity in other in-state planning units or out-of-state facilities. Beyond Waste states, *"Therefore, free movement of waste is critical to these planning units and the facilities that serve them. Restrictions on waste exports would potentially impact about 22 percent of New York State's waste that is currently destined for disposal."*

The Project need is demonstrated by the public need for long-term environmentally-sound solid waste disposal capacity. In addition, SMI is committed to maintaining its record of environmental compliance and to assuring that ongoing landfill operations continue to have a very positive economic benefit to the local and regional economies.

Finally, and perhaps most significantly for the local area, the negative economic impact associated with the no-action alternative will be substantial for local businesses and local government. This would result in the loss of up to 166 jobs locally and the elimination of one of the largest private employers in the County. The loss to the business community of at least $7.6 million in annual payroll (including temporary employment agency payments), and the current approximate $14.3 million in direct spending to local vendors by SMI would be substantial.

In addition, payments to local government would be eliminated. This is substantial and far outweighs any service costs attributable to the SMI Valley Infill. Host community payments to the Town of Seneca Falls now generate over $3.3 million annually for the Town of Seneca Falls. The loss of these payments would result in a huge property tax increase for Town residents. The positive impact of the Facility's payments in reduced property taxes to individuals and businesses would be eliminated, making the area less attractive for future economic growth. Finally, closure of the Facility will likely raise the cost of waste disposal for local surrounding areas which currently use the Facility.

The payments for the Host Community Agreement with Town of Waterloo, while not as substantial, would still be a loss of at least $600,000 per year for the Town. In addition, the fees are scheduled to increase over time through the end of the agreement, so actual losses would be more significant. Closure of the Facility would very likely result in a tax increase for town residents, and residents would also likely have to pay higher costs for waste disposal.

With the implementation of the no-action alternative, waste disposal activities at the Facility are anticipated cease during the year 2025. However, even with the cessation of new waste receipts, the already in-place quantities of solid waste would still remain at the Facility Site. This existing in-place waste will require ongoing management over the post-closure period and as such facilities for the management of leachate and LFG would still be required.

The reasonably foreseeable uses of the property if the SMI Valley Infill was not implemented, combined with the continuing need for the environmentally sound/cost effective regional private waste disposal capacity, results in the no-action alternative having little environmental benefit and while resulting in a substantial economic cost to the local area.

8.3 ALTERNATIVE LANDFILL SITES

Prior to planning for the 2007 Landfill Development that was approved, SMI had engaged in a long-term planning process and evaluated its options for continued operations at or near the Facility Site. During that process, SMI landholdings were evaluated as to their overall suitability at meeting a variety of technical, business and environmental criteria. These criteria included:

- Need for sufficient site life.
- Sufficient size to allow for continuation of current operation.
- Adequate buffer and setback areas.
- Environmental criteria, such as wetlands, streams and floodplains.
- Suitable geology, hydrology and soil types.
- Jurisdictional boundaries, setbacks and ROWs.
- Proximity to Existing Facility infrastructure and work force.
- Feedback from the Town of Seneca Falls regarding road setbacks and enhancement of the commercial corridor along Route 414.
- Need for an environmentally sound project.

Following the issuance of its 1999 Solid Waste Facility Permit, SMI began to identify various site options on its landholdings that might be potentially suitable for development. However, these had one or more impediments/restrictions or limitations on their development, such as zoning, wetlands, timing, or failure to meet business objectives for capacity and lifespan.

As a result, using these same criteria, in 2001 and again in 2002, SMI approached the Town of Seneca Falls with a request to rezone additional properties to an M-2 classification. Permitted uses in an M-2 district include, by special use permit, Solid Waste Management Facilities. It is the only zoning district that allows landfills. In 2001, SMI approached the Town to explore the possibility of rezoning part of the former Lawrence Farm property (now part of the SMI Property on the east side of Route 414) as an M-2 district. Representatives of the Town viewed this proposal unfavorably because it was felt that the location of a new landfill area on the other side of Route 414 from the Southeast Landfill would create an unfavorable visual impression with negative consequences for the Town. Instead, Town representatives suggested that SMI evaluate the Dove Property (now part of the Seneca Meadows Wetlands Preserve) as a potential candidate site for re-zoning to an M-2 district. Subsequently, after conducting preliminary environmental suitability studies, in the fall of 2002 SMI requested the rezoning of the Dove Property, an approximately 800-acre property located on the east side of Route 414, adjacent to SMI's east side landholdings, on which SMI then had an option to purchase. The rezoning would have required the Town Board to first rescind a local law established in 2000 that specifically prohibited the creation of additional M-2 zoning. There was significant public opposition to the creation of an additional M-2 district, and the Town Board rejected the removal of the M-2 prohibition.

After this decision, and with the urging of the Town Board, SMI refocused its assessment of alternatives for the 2007 Landfill Development area to its landholdings within the existing M-2 district. This resulted in the plan that

was ultimately approved for the 2007 Landfill Development by realigning Black Brook, while providing for an extensive Wetland Mitigation Project.

As part of the extensive environmental review of the 2007 Landfill Development, SMI also investigated the feasibility of several other off-site alternatives. An Alternative Site Identification and Evaluation Study was conducted to identify and evaluate potential landfill development sites as an alternative to additional development of the existing landfill. The study area included Seneca, Wayne, Ontario and Yates counties. In addition, the study discussed the landfill siting potential in the other ten New York State counties that provide the bulk of the waste currently disposed at the Existing Facility. The study also discussed the landfill siting realities of Connecticut and Massachusetts, two of the other main states that send or sent waste to the Seneca Meadows Landfill.

The study was based on a multi-step screening process of areas in the four-county region utilizing suitability mapping overlay techniques. The process was based on Geographic Information Systems (GIS) mapping and analysis. The site identification process mapped and evaluated site suitability criteria developed jointly between SMI and the NYSDEC and other involved agencies.

An additional suitability criterion based on local laws and zoning was developed based on discussions with the NYSDEC and ACOE and added to the study process. Among other things, this required the collection and analysis of local laws and zoning information for the 50 towns located within the 4-county study area.

The results of the study identified candidate landfill site locations by focusing on the Part 360 and additional site suitability criteria.

Next, research of local laws and zoning identified which towns within the study area permit landfill development. Nineteen towns met this criterion and, therefore, were carried to the next level of site evaluation.

Within these 19 towns, the applicable zoning district were evaluated to determine if they contained areas that were sufficient in size to meet the Project need for approximately 700 acres. This resulted in a reduction of the number of towns where potentially viable candidate sites could be identified to fifteen. The Town of Seneca Falls already utilizes its only properly zoned (M-2) area for the Seneca Meadows Landfill so this reduced the number of towns to fourteen.

Candidate greenfield sites were identified in 12 of the 14 towns based on site suitability variables. These variables were weighted based on their relative importance with the land use variables being assigned the highest weights. These included the Town of Savannah and the Town of Arcadia.

Three greenfield sites in the two towns (Savannah and Arcadia) were identified as potential candidates. Sites within the towns of Savannah and Arcadia were considered sufficiently accessible by State highway to warrant further evaluation through windshield surveys. A windshield survey of the three candidate site locations evaluated local land use compatibility, general site conditions, and highway accessibility, and in conjunction with the other site evaluation criteria were used to assess and compare the three candidate sites and the existing SMI site.

The outcome of the alternative site assessment indicated that all three of the greenfield sites would result in the taking of significant areas of productive agricultural lands and dramatic changes in the rural community character of these areas for which a suitable mitigation plan is uncertain. None of these sites were determined to be suitable alternatives.

In addition to the evaluation off-site alternatives described above, the potential for expanding the three pre-existing landfills in the four-county region (Seneca, Wayne, Ontario and Yates counties) was also explored. These locations include the Ontario County landfill, the Town of Arcadia landfill, and the Town of Galen/Lyons joint landfill.

None of these sites were determined to be practicable alternatives to the 2007 Landfill Development for a number of reasons. The Ontario County Landfill is owned by Ontario County and is under contract Casella Waste for facility operations, and as such, that facility is not available to SMI. The Arcadia and Galen/Lyons landfills were

inactive closed landfills owned by the respective towns. Among other deficiencies, both of those alternative sites have insufficient acreage available to meet the capacity needs of the SMI waste shed.

For these same reasons, none of these pre-existing or greenfield sites are practicable alternatives to the SMI Valley Infill.

8.4 ALTERNATIVE SITE LAYOUTS ON THE FACILITY SITE

This section of the DEIS identifies other on-site development alternatives that are within the M-2 zone. The zoning of the Facility Site and nearby parcels is shown on Sheet 3 of the SMI Valley Infill Engineering Drawings. As can be seen from this drawing, only a very limited portion of M-2 zoned land remains outside of the Existing Landfill footprint. Furthermore, the land zoned M-2 that is north of the landfill has mainly been characterized as wetland area, which provides a significant barrier to its development for landfill uses. This leaves a minor section of M-2 zoned land potentially useful for landfilling, located just south of the SELF Bumpout area.

The area just south of the SELF is approximately 24.5 acres in size and is rectangular in shape. The relatively narrow area and elongated shape do not lend themselves well to the facets of landfill design, which require reasonably sloped side hills for landfill areas that would restrict the amount air space which could be constructed in this area. Furthermore, this area is currently occupied by the tire processing facility, which is an important part of the Facility operations and tire disposal capacity in New York State. While the tire processing facility could be relocated, this adds to the required capital cost for creation of a new landfill cell in this area. Additionally, a new landfill cell in this area would be closer to Waterloo and Seneca Falls residential areas than many other areas of the landfill, including the proposed SMI Valley Infill Area. This alternative is considered not economically practicable because of the small scale and isolated location.

Other alternatives described in the 2007 Landfill Development DGEIS document (Shaw EMCON/OWT, Inc., June 2005) were reconsidered for this project. The first of these was called “A-5 M-2 North” in that document, and was discussed in Section 5.2.2.1.4 and depicted on Figure 5-1 of the 2007 Landfill Development DGEIS. The A-5 area at the time was designed to encompass about 25.5. acres in an old field at the northern limits of the M-2 zone in Seneca Falls. An isolated expansion cell in this area was estimated to provide about 2 million tons of potential waste disposal volume and would provide around a year of landfill life. However, a modern design for A-5 would be restricted by the now redirected Black Brook channel, it also exists in an area designated as wetlands, and access would require development in a flood-plain. These factors would make constructing the A-5 area significantly impactful on the environment. An added negative factor is that the isolated cell would be a fair distance from the main landfill area, which would increase emissions associated with truck traffic. Overall, area A-5 is considered not economically practicable because of the small scale and isolated location.

Previously described alternative A-4 Black Brook North is located in a soil mining area in an old field at the northern limits of the M-2 zone and encompasses 7.2 acres. This alternative would provide approximately 300,000 tons of airspace or less than 2 months of airspace. Overall, area A-4 Black Brook North is considered not economically practicable because of the small scale and isolated location.

Another alternative that was considered in 2006 is the “B-3 SMI LF Buildout”, which was discussed in Section 5.2.2.2.3 and displayed on Figure 5-2 the 2007 Landfill Development DGEIS document. Alternative B-3 entails significant development of about 159 acres of areas to the north, east, and west of the Facility Site. The buildout would also include overfilling of some areas of the Facility, resulting in a total landfill footprint of 300 acres and an estimated 29.5 million tons of disposal capacity. However, significant barriers exist to this development. For one, as mentioned for scenario A-5 above, Black Brook has now been redirected through the design area, which would significantly cut into the allowable landfill footprint. Added to this, much or all of the newly developed area is considered wetlands. Finally, Exxon/Mobil and Buckeye oil pipelines that run through the Facility Site in this area would require relocation for the Project to be carried out. While this alternative has the size and lifespan to make a viable project, the Project would require that a vast amount of reparatory work be performed to make up for the

wetland areas that would be destroyed or disturbed. This alternative would require a significant wetlands impact but without any added benefits (e.g., substantial increase in site life). This alternative is therefore not considered practicable.

Although several alternative site designs exist that could fit within the M-2 zoned area, as explained above, the SMI Valley Infill Project was concluded to be the most viable option for continued use of the current site past 2025.

8.5 ALTERNATIVE DESIGN CONCEPTS FOR THE SMI VALLEY INFILL

Several alternative subgrade designs were considered for the proposed SMI Valley Infill project. These alternatives can be found in Figures 8-1 through 8-5 and are described in more detail below.

Subgrade Option A (Figure 8-1) was designed to minimize the amount of required structural fill by generally following the existing grades of the closed Tantalo Inactive Hazardous Waste Landfill. This option would have required the leachate from roughly half of the proposed new liner footprint drain into existing cells with the other half draining to a proposed new sump to the south. Additionally, this option would have required cleanout lengths for leachate collection pipes on the order of ~2,500 LF which is not currently considered to be practical. For these reasons, Subgrade Option A was not considered a viable design solution.

Subgrade Option B (Figure 8-2) was designed to divert leachate to the south and west to limit the need to send additional leachate into the existing SELF/SBO cells. Similar to Subgrade Option A, Option B would require a large area of new liner footprint (27.5 acres) to drain into existing cells and would have required impractical cleanout lengths. Additionally, Option B would require a complex “shingled” liner tie-in from the existing SELF liner to the proposed liner and is not currently considered to be a viable design solution.

Subgrade Option C (Figure 8-3) was designed to maximize airspace of the proposed SMI Valley Infill project. This option would have involved the removal of the existing Tantalo waste mass, significant rock cut, and cleanout lengths for leachate collection pipes on the order of ~2,250 LF. For these reasons, Subgrade Option C was not considered a viable design solution.

Subgrade Option D (Figure 8-4) was designed to minimize the area of new leachate entering existing cells, while minimizing impacts to the existing Tantalo cap geomembrane and barrier clay, minimizing required structural fill, and keeping leachate collection pipe cleanout lengths manageable (on the order of ~1,500 LF). Subgrade Option D was ultimately refined to create the currently proposed subgrade design. Two other design alternatives were considered as potential refinements of option D. The first alternative which is demonstrated on Figure 8-5 was developed to minimize required bedrock cut. This design was not considered viable because it shifted the proposed sumps towards the interior of the cell and posed sump accessibility and maintenance concerns. The second alternative considered raising the entire proposed cell floor ~15’ vertically to completely avoid disturbances to the Tantalo cap geomembrane and barrier clay. This alternative increased the area of new leachate entering existing cells and increased the required amount of structural fill to establish the subgrade on the order of 750,000 CY, creating additional impact associated with hauling structural fill from offsite.

Alternatively, we have considered a scenario where the site could be remediated by removing the entire waste mass for Tantalo prior to the development of the SMI Valley Infill. To implement this alternative, the removal of the existing certified 26-acre cap would be required along with the disturbance of an estimated 800,000 to 1,000,000 cubic yards of waste (or, approximately 800,000 to 1,000,000 tons of material). Due to the complexities of relocating waste and managing an excavation of this magnitude, this project would likely take at least two construction seasons (one for excavation and one for regrading the area), delaying the operation of the SMI Valley Infill and postponing the availability of the much-needed airspace that it will create. Construction of this alternative scenario would include the removal of the existing Part 360 cap over Tantalo that currently serves as an effective barrier to infiltration into the waste mass. The wholesale removal of the cap would result in significantly increased infiltration rates within the Tantalo area for an extended period of time. The site and

surrounding community would also be exposed to additional odor and air quality impacts as the wastes would be exposed to the atmosphere and moved off the site during waste relocation.

Excavated MSW from Tantalo would have to be disposed of off-site because the existing landfill would not have the capacity. It is important to note that by removing the 800,000 to 1,000,000 cubic yards of Tantalo waste, no additional airspace for MSW disposal would be created. The design of the SMI Valley Infill subgrade predominantly slopes to the south to allow for effective leachate collection and removal. The void created by removing the Tantalo waste would need to be replaced with structural fill to create the required grades for the SMI Valley Infill subgrade.

As described above, the excavated Tantalo waste would be disposed of off-site and because there are no landfills in the state with the capacity to take in that amount of waste in a one year period the waste could be transported hundreds of miles away. The additional greenhouse gas emissions (GHG) from the transport of large quantities of waste would impact other communities – including the disadvantaged communities around the landfill - and conflict with the States goals to reduce GHG emissions.

This alternative scenario involving the removal of the entire Tantalo waste mass is neither required nor recommended for the following reasons:

- Tantalo is currently controlled with an existing cap that creates an effective barrier restricting infiltration.
- Tantalo will not be significantly impacted by the additional loading of the proposed SMI Valley Infill.
- As seen throughout this report, the groundwater contaminants already in the overburden and bedrock matrices will not be significantly impacted by the proposed SMI Valley Infill.
- Complete removal of the Tantalo waste mass will be complex and time-consuming – thus delaying the availability of the critical airspace the proposed SMI Valley Infill will provide.
- Wholesale removal of the existing Tantalo cap will eliminate an effective barrier to infiltration and result in significantly increased infiltration within the Tantalo area.
- Complete waste removal / relocation could result in additional odor and air quality impacts.
- Complete waste removal / relocation will significantly increase the amount of structural fill needed to be hauled to the site to construct the proposed subgrade.
- Complete waste removal / relocation would involve the transport of large quantities of waste to other facilities or states which would impact other communities and conflict with the states goals to reduce GHG emissions.

Finally, due to the complexities and challenges described above, the estimated costs of this alternative scenario are highly variable and unduly prohibitive. The following cost assumptions were considered to develop an approximate cost estimate for this scenario:

- ~$10 per ton to excavate the waste within Tantalo.
- ~$5 per ton of excavated waste for waste handling, staging, and characterization.
- ~$75 per ton for off-site disposal.

The overall cost to excavate and relocate the waste would be on the order of $72 to $90 million dollars. This cost, which could grow significantly depending on how far the waste would have to be transported (estimated transport and disposal costs up to $200 per ton are not unheard of in the northeast), makes the removal and relocation of the existing waste mass infeasible.

The proposed subgrade presented in the Engineering Drawings was chosen as the only viable option due to the limitations and restrictions to the alternative design concepts. The proposed subgrade design minimizes diversion of new leachate into existing cells, minimizes impacts to the existing Tantalo geomembrane cap and barrier clay (approximately 3% of the cap will be disturbed for a limited duration), minimizes the import of structural fill, and maintains leachate collection pipe lengths and slopes manageable for cleanouts and positive drainage. While the proposed design does involve limited waste relocation and disturbance of the existing Tantalo cap geomembrane and barrier clay, the impacts are consistent with those experienced during the closure of the Tantalo site.

Additionally, it should be noted that the design includes the relocation of existing Tantalo waste that currently is only capped by asphalt and placing it under a geomembrane cap. The precautions used to ensure minimal effects include, minimizing construction time, eliminating the staging of Tantalo wastes, and prevention of stormwater run-on into the excavation areas. The finished grades for the proposed SMI Valley Infill which have been shown to be viable from an engineering and impact perspective, are required to create adequate landfill life considering the need for capacity in the state and the length of time required to permit additional airspace.

8.6 CONCLUSIONS

During the planning and conceptual design of the SMI Valley Infill a variety of alternatives were considered in the context of their ability to meet the Project purpose as well as the requirements 6 NYCRR Part 360 and other applicable regulations.

Considering the documented public need for environmentally sound disposal capacity in New York State and considering the significant limitations of alternative landfill site and design selection by a variety of State, local and federal regulations, the Project will minimize or avoid adverse environmental impacts to the maximum extent practicable.

9.0 GROWTH INDUCING IMPACTS

Although the development of the proposed Project in and of itself is not considered to be growth inducing, there are potential beneficial aspects of the Project which could have the effect of promoting the economic growth in the local community:

- The Project will continue to employ a significant local labor force at the Seneca Meadows Landfill. It will also employ additional individuals who transport the waste, who will provide and transport construction materials (liner and piping materials and soils), and who may be associated with the ancillary landfill operation activities such as the leachate treatment facilities.
- The Project will also create economic benefit to local vendors and suppliers utilized by the employees (i.e., groceries, restaurants, vehicles, gasoline, banking, etc.).
- The Project, through the utilization of LFG to energy technology will provide a beneficial use of LFG by creating saleable energy and fuel product. As presented in Section 2 of this DEIS, resulting lower energy costs creates the potential for additional development in the area as a result of having a readily available, cost competitive energy source. The Project would also help meet the demand for renewable energy resources in the State.
- By developing the SMI Valley Infill at a site that already exists, SMI is taking advantage of the infrastructure and systems that are in place and functioning. This is a positive aspect of the Project, and can be viewed as a benefit and cost savings to the community, as opposed to the development of new infrastructure and systems at another location, potentially causing both additional environmental and economic impacts and burdens.
- Fees to be paid to the Towns of Seneca Falls and Waterloo can be used by the towns to help keep down local property tax rates. Any agreements that replace or succeed the agreement that currently exists, will extend the ability of the towns to promote economic growth by providing additional services or maintaining a low tax rate.

10.0 EFFECTS OF THE USE AND CONSERVATION OF ENERGY

10.1 ANTICIPATED SHORT-TERM AND LONG-TERM LEVELS OF CONSUMPTION

The Project will involve the phased construction of the SMI Valley Infill in accordance with the engineering design. As such, energy consumption in the form of fuel use will be required for baseliner preparation and construction of the expanded landfill areas. However, on an annual basis, no significant increase in fuel use or energy consumption is anticipated to occur as a result of the Project. Although similar equipment used to carry out the construction, operations and maintenance activities at the SMI Valley Infill, an increase of approximately 15 years in the duration of operational energy (i.e., fuel and electricity) consumption will occur. However, this continued fuel consumption is likely less than would occur if the Project were not developed and waste haulers were required to travel longer distances to remaining available solid waste disposal sites. In addition, the RNG facility already has infrastructure in place to replace some of the fuels consumed by utilizing landfill gases produced from the waste being disposed at the landfill.

There will be no increase in the waste acceptance rate at the SMI Valley Infill. Therefore, there will be no increase in the number of vehicles traveling to and from the Facility or in the number or type landfill equipment at the working face to deposit, compact and cover the waste.

10.2 INDIRECT EFFECTS ON ENERGY CONSUMPTION

No significant increase in energy consumption is anticipated to result from the development of the SMI Valley Infill:

- There is a potential for an increase or decrease in fuel consumption which is waste source dependent.
- There will be no new preprocessing of solid waste (i.e., there will be no baling, shredding, or other methods of waste handling) that would require the use of energy-intensive equipment. Tire shredding operations are planned to continue as they currently do.
- Recovery of landfill gas for the purpose of generating electrical energy and gaseous fuel product. The SMI Valley Infill will supply LFG to the landfill gas-to-energy and RNG facilities operated by Seneca Energy, which will produce saleable energy and fuel product, and create economic development opportunities.

10.3 ENERGY CONSERVATION MEASURES

While the operational methods proposed for the SMI Valley Infill are not designed for the specific purpose of energy conservation, there are some indirect benefits that will contribute to energy conservation:

- There will be continued operation of a facility whose location minimizes travel distances within the region.
- There will be the continued acceptance of transfer waste, allowing regional consolidation of wastes prior to delivery to the landfill site.
- The continued location of a facility which is convenient to major population centers.
- Specified, limited hours of operation.
- Increased, long-term availability of LFG from gas for the production of electricity and RNG fuel will offset the need to consume non-renewable fossil fuel for electricity production and create a saleable end-product fuel.

10.4 CLCPA GOALS FOR ENERGY

As noted in the DAR 21 Policy, as part of the CLCPA assessment of indirect emissions from stationary sources, emissions have been analyzed generated by off-site energy plants supplying energy used on the site of the Project. As the off-site fossil fuel-based energy consumption for the Project is not expected to increase or change from historic values or use, current fossil fuel-based energy consumption rates were used to calculate the GHG emissions associated with indirect emissions from stationary sources. There are two sources of indirect emissions from stationary sources for off-site fossil fuel-based energy consumption: propane heating and electrical power.

The emissions associated from off-site fossil fuel-based energy consumption are not anticipated to significantly change as the result of the SMI Valley Infill Project.

Please note that due to the Facility's rural location, small employee base, lack of public transportation to the Facility, and safety concerns for walking/biking along Route 414 to access the Facility, alternate travel methods that could contribute to a GHG emission reduction associated with employee travel are not available.

10.4.1 Off Site Propane Energy Consumption

Propane is used in furnaces (< 10 million Btu/hour) to heat on site buildings. This propane consumption has been included in the Title V Permit Modification Application. For additional detail, see the List of Exempt Activities Form of the Title V Modification Application submitted July 2020.

In the absence of the SMI Valley Infill Project, the Facility will still need to be maintained and the on-site buildings will still be required to be heated. Therefore, the emissions associated with off-site propane consumption is not anticipated to significantly change as the result of the SMI Valley Infill Project.

10.4.2 Off Site Electrical Energy Consumption

Electricity is used throughout the Facility for lighting and powering of tools, equipment, and office appliances. The typical annual amount of electricity used by the Facility is estimated to be 3,347,094 kWh (based on meter readings provided by NYSEG for the period of January 15, 2021, through January 13, 2022). To calculate the indirect emissions for electricity used at this facility, EPA's eGRID Power Profiler was used to determine how electricity is generated in this region. Gas, nuclear, and hydro power generation accounts for over 91 percent of electricity generation for the region of NPCC Upstate New York ("NYUP"). According to the Power Profiler, the eGRID subregion of NYUP has a 5.3 percent line loss and the annual use of 3,347,094 kWh of electricity results in 4,952 tons of CO_2.

In the absence of the SMI Valley Infill Project, the landfill will still be maintained during post closure for many years. Therefore, the emissions associated with electricity consumption is not anticipated to significantly change as the result of the SMI Valley Infill Project.

10.4.3 Activities to Reduce Emissions

The CLCPA Analysis submitted to NYSDEC on February 10, 2023, proposed several mitigation measures to reduce emissions. In addition to reducing emissions, several of those measures will also reduce energy demands associated with the SMI Valley Infill, including:

- Maximizing volume of LFG sent to renewable energy production to offset fossil fuel usage.
- Conversion of at least 10 percent of operational support vehicles to electric by 2030 if such vehicles are commercially available. This will include two additional charging slots for general public use.
- SMI will undertake a review to determine the feasibility of additional on-site leachate treatment to further reduce GHG emissions from off-site hauling. SMI is setting a goal of 25 percent reduction in trucks trips by 2025 and if feasible, 50 percent reduction in leachate disposal truck trips by 2030.

- SMI will annually review available technology to support a viable conversion of operational heavy equipment such as excavators, loaders, articulating haul trucks, etc. to electric when commercially feasible. If feasible, the long-term goal would be to convert 10 percent of the heavy equipment fleet to electric or similar lower emissions by 2035.
- Installation of solar technology.
- Install two charging slots for general public use. Possible locations for the stations are the SMI Education Center and the Resource Recovery Park.

11.0 REFERENCES

Crain, C.J., Ground-water Resources of the Western Oswego River Basin, New York: NYSDEC Basin Planning Report ORB-5, 1974.

Crain, C. J., Chemical Quality of Groundwater in the Western Oswego River Basin, New York. NYSDEC Basin Planning Report, ORB-3 1975.

Cornerstone Engineering and Geology, PLLC, Engineering Design Report, Seneca Meadows Landfill, SMI Valley Infill, May 10, 2024.

EMCON/Wehren-New York, Draft Environmental Impact Statement, The Expansion of the Seneca Meadows Landfill, Seneca Falls, New York, Revised June 1998

Gardner, Kent. Economic & Fiscal Impact of Seneca Meadows Landfill on Town of Seneca Falls and Seneca County. CGR, Inc., September 2016.

International Society of Explosive Engineers (ISEE) Blasters Handbook, 18th edition.

Irwin H. Kantrowitz and Deborah S. Snavely, Availability of water from aquifers in upstate New York USGS Open-File Report 82-437, 1982

Merin, I.S., 1989. Characterization of Fractures in Devonian Siltstones, Northern Appalachian Plateau: Implications for Ground Water Flow, Proceedings of the Third National Outdoor Action Conference on Aquifer Restoration, Groundwater Monitoring and Geophysical Methods, Association of Groundwater, Science and Engineering, May 22-25, 1989, Orlando, FL.

Miller, Wayne P. Economic Multipliers: How Communities Can Use Them for Planning. University of Arkansas Division of Agriculture. Cooperative Extension Service, 2004.

Miller, T.S., Unconsolidated Aquifers in Upstate New York - Finger Lakes Sheet, U.S.

New York State Department of Environmental Conservation. Beyond Waste – A Sustainable Materials Management Strategy for New York State. Adopted December, 2012.

New York State Department of Environmental Conservation. Building the Circular Economy Through Sustainable Materials Management, December, 2023.

New York State Department of Environmental Conservation. New York State Guidelines for Urban Erosion and Sediment Control.

New York State Department of Environmental Conservation. New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act. August 2020.

New York State Energy Research and Development Authority. Responding to Climate Change in New York State Technical Report – Final Report No. 11-18. November 2011.

New York State Department of Environmental Conservation. Observed and Projected Climate Change in New York State: An Overview. August 2021.

Thackston, J., Meeks, Y. Strandberg, J., and Tuchfeld, H., 1989. Characterization of a Fractured Flow Groundwater System at a Waste Management Facility, Proceedings of the Third National Outdoor Action Conference on Aquifer Restoration, Groundwater Monitoring and Geophysical Methods, Association of Groundwater, Science and Engineering, May 22-25, 1989, Orlando, FL.

Shaw EMCON/OWT, Inc., Draft Generic Environmental Impact Statement, Seneca Meadows Landfill Expansions, Seneca Falls, New York, June 2005.

Shaw Environmental, Inc., Final Generic Environmental Impact Statement, Seneca Meadows Landfill Expansions, Seneca Falls, New York, August 2006.

Shaw Environmental, Inc, Final Supplemental Environmental Impact Statement, Seneca Meadows Landfill Expansions, Seneca Falls, New York, July 2007.

United States Environmental Protection Agency, June 1991. “Delineation of Wellhead Protection Areas in Fractured Rocks” EPA 570/9-91-009.

U.S. Department of Transportation Federal Highway Administration. Construction Noise Handbook. August 2017.

Application for a Conditional Letter of Map Revision (CLOMR) – Expansion of Seneca Meadows Landfill and Fill for Future Development, Seneca Meadows, Inc. Revised August 2006.

12.0 LIMITATIONS

The work product included in the attached was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and thus should be relied upon and used by our client recognizing these considerations and limitations. Cornerstone Engineering, and Geology, PLLC shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.