

# Mill Seat Landfill Expansion

*Facility ID No. 8-2648-00014*

*Town of Riga, New York*

## Draft Supplemental Environmental Impact Statement



April 2015

**Mill Seat Landfill Expansion  
Facility ID No. 8-2648-00014**

**Town of Riga, New York**



**Draft Supplemental Environmental  
Impact Statement**



**April 2015**



Draft Supplemental Environmental Impact Statement

For The Proposed Mill Seat Landfill Expansion  
303 Brew Road  
Town of Riga, Monroe County, New York

DSEIS Prepared for:

Monroe County, as Lead Agency  
39 West Main Street  
Rochester, New York 14614

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April 2015

Date of Acceptance of DSEIS by Lead Agency: April 1, 2015

Date of Public Hearing: April 16, 2015 at 7:00 p.m.

Location of Public Hearing:

Riga Town Hall  
6460 East Buffalo Road  
Churchville, NY 14428

Deadline for Submittal of Written Comments: May 1, 2015

Submit written comments by mail to:

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Attachments

- Volume 1: Attachment A – Final Scoping Document  
Attachment B – Site Selection Report Summary & Evaluation of Alternatives (August 2014)
- Volume 2: Attachment C – Hydrogeologic Report
- Volume 3: Attachment D – Ecological Correspondence and Reports  
Attachment E – Threatened and Endangered Species Correspondence  
Attachment F – Supporting Air Quality Analysis Data  
Attachment G – Visual Impact Assessment
- Volume 4: Attachment H – Archaeological Reports and Correspondence  
Attachment I – Traffic Report  
Attachment J – Operating Noise Impact Assessment

## Submitted Permit Applications

An extensive set of permit application documents, as listed below, were submitted to the NYSDEC for the Proposed Landfill Expansion on February 27, 2015.

- **6 NYCRR Part 360 Permit Application;**
- **Joint Application for Permit Application; and**
- **Title V Air Facility Permit Application.**

The 6 NYCRR Part 360 Permit Application, which includes the documents listed below, has been submitted to the NYSDEC to demonstrate the Proposed Landfill Expansion's compliance with 6 NYCRR Part 360.

- Engineering Report (Part 360-2.7), including Appendix A to the *Engineering Report* that includes the application form and requested variances;
- Construction Quality Assurance/Construction Quality Control Manual and Technical Specifications (Part 360-2.8), Appendix B to the *Engineering Report*;
- Operation and Maintenance Manual (Part 360-2.9), Appendix C to the *Engineering Report*;
- Contingency Plan (Part 360-2.10), Appendix D to the *Engineering Report*;
- Supporting Landfill Design Calculations and Data, Appendix E to the *Engineering Report*;
- Hydrogeologic Report (Part 360-2.11), Appendix F to the *Engineering Report* and Attachment C to this *DSEIS*;
- Environmental Monitoring Plan (Part 360-2.11), included in Appendix F to the *Engineering Report* and Attachment C to this *DSEIS*;
- Stormwater Pollution Prevention Plan, Appendix G to the *Engineering Report*;
- Operating Noise Impact Assessment (Part 360-1.14(p)), Appendix H to the *Engineering Report* and Attachment J of this *DSEIS*; and
- Construction and Operation Plans (Part 360-2.4, 2.5 and 2.6) or Permit Drawings:

1. Service Area Plan
2. Vicinity Plan
3. Overall Site Plan
4. Bedrock Surface Plan
5. High Groundwater Plan Subgrade Grading Plan
7. Top of Intermediate Cover Plan
8. Final Cover Grading Plan
9. Landfill Grid Tables (Sheet 1 of 2)
10. Landfill Grid Tables (Sheet 2 of 2)
11. Landfill Sections (Sheet 1 of 2)

12. Landfill Sections (Sheet 2 of 2)
13. Liner Details
14. Anchor Trench Details
15. Intermediate Cell Tie-In and Termination Details
16. Existing Liner Tie-in Details
17. Leachate Collection and Conveyance Plan
18. Existing Leachate Conveyance Infrastructure Modification Plan
19. Leachate Conveyance Header Profiles (Sheet 1 of 2)
20. Leachate Conveyance Header Profiles (Sheet 2 of 2)
21. Leachate Pump Station and Valve Pit Details
22. Leachate Infrastructure Modification Details
23. Sideriser Building Plan, Sections and Details
24. Sideriser Piping Details and Sections
25. Sump and Cleanout Details
26. Stormwater Management Plan
27. Stormwater Pond Grading Plans
28. Stormwater Details
29. Landfill Final Cover Details
30. Landfill Gas Collection Plan
31. Landfill Gas Collection Details (Sheet 1 of 2)
32. Landfill Gas Collection Details (Sheet 2 of 2)
33. Fill Progression Plan (Sheet 1 of 3)
34. Fill Progression Plan (Sheet 2 of 3)
35. Fill Progression Plan (Sheet 3 of 3)
36. Boundary Survey Plan
37. Initial Construction Plan

The *Joint Application for Permit Application* was also submitted to the USACE for the Proposed Landfill Expansion on February 27, 2015.

## Glossary of Terms

*6 NYCRR Part 360* – NYSDEC’s solid waste management regulations, codified at 6 NYCRR Part 360 (Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York), effective May 12, 2006.

*6 NYCRR Part 360 Permit Application* – In order to modify the permit, the County must demonstrate compliance with the design, construction, operation, and closure requirements of 6 NYCRR Part 360. The plans and reports listed in Section 2.4 have been submitted as the 6 NYCRR Part 360 Permit Application to demonstrate the expansion’s compliance with current regulations.

*ADC* – Alternative Daily Cover material

*AMSL* – Above Mean Sea Level

*Area of Potential Effect* - Areas of proposed disturbance within the Proposed Site. These areas are depicted in the Powers & Teremy, LLC report in Attachment H of this *DSEIS*.

*Bergen Host Community Agreement* – The Amended and Restated Host Community Agreement by and between Monroe County, New York and the Town of Bergen, New York, the Village of Bergen, New York, the Byron-Bergen Central School District, and the Bergen Fire Department, Inc. dated December 21, 2011.

*B&L* – Barton & Loguidice

*BTU* – British thermal units

*BUD* – Beneficial Use Determination. BUD is a designation made by the NYSDEC as to whether the 6 NYCRR Part 360 regulations have jurisdiction over waste material which is to be beneficially used. Once the NYSDEC grants a BUD, the waste material ceases to be considered a solid waste (for the purposes of 6 NYCRR Part 360) when used in accordance with the NYSDEC’s BUD determination.

*C&D* – Construction & Demolition debris

*CEA* – Critical Environmental Area

*cfm* – cubic feet per minute

*cfs* – cubic feet per second

*County* – Monroe County, New York

*CQA / CQC* – Construction Quality Assurance / Construction Quality Control

*CY* – cubic yard(s)

*DAR-1* – NYSDEC Guidelines for the Control of Toxic Ambient Air Contaminants

*Disposal Capacity* – The amount of capacity available in the solid waste management facility available for the disposal of waste.

*dB* – Decibel. A measurement of sound.

*dBA* – A weighted decibel. A sound level measurement that corresponds to the portion of the sound frequency spectrum to which the human ear is most sensitive.

*DSEIS* – Draft Supplemental Environmental Impact Statement

*EAF* – Environmental Assessment Form

*FSEIS* – Final Supplemental Environmental Impact Statement

*GCL* – Geosynthetic clay liner

*gpad* – Gallons per acre per day

*Greenfield Site* – A landfill in a new, relatively undisturbed location. Due to the need for several hundred acres of land for a new landfill, including buffer areas, this would typically consist of undeveloped land that is currently agricultural or sparsely developed land.

*HDPE* – High density polyethylene

*HMP* – Habitat Management Plan

*Hydrogeologic Investigation Area* – The area studied for bedrock and groundwater characteristics for siting the Proposed Action. This area stretches across the Proposed Site over the existing monitoring well network and various borings, test pits, and piezometers installed as part of previous and current hydrogeologic investigations. This area stretches north to the existing landfill infrastructure, south across Bovee Road to the Proposed Wetland Mitigation Area, and is bounded to the east and west by Wetlands RG-7 and RG-5, respectively and the Proposed Wetland Mitigation Property.

*Joint Application for Permit Application* – Permit application for wetland and stream impacts submitted to NYSDEC and USACE.

*KW* – kilowatt

*KWh* – kilowatt hour

*Landfill Lease Agreement* – The Agreement by and between Monroe County, New York (Lessor) and WMNY (Lessee) dated January 14, 2002 and any Amendments thereafter.

*Lessee* – In an agreement between Monroe County, New York and WMNY, WMNY took responsibility for landfill operations for a 49-year period. WMNY operates the Mill Seat Landfill on behalf of Monroe County.

*Lessor* – In an agreement between Monroe County, New York and WMNY, the County is the owner of the Mill Seat Landfill.

*Leq* – Equivalent steady-state sound level which contains the same acoustic energy as the time varying sound level during a selected time period.

*LFG* – Landfill gas

*LFGTE Facility* – Landfill Gas to Energy facility that utilizes LFG in internal combustion engines to generate electricity.

*Limits of Disturbance* – The total area impacted permanently or temporarily as part of the development of the Proposed Action, including landfill construction and operation, stormwater management, access roads, the removal of a portion of O'Brien Road and Brew Road, and the development of the wetland mitigation area.

*LLDPE* – Linear low density polyethylene

*Local Solid Waste Management Plan* – A planning document prepared by Monroe County, as the solid waste planning unit, pursuant to Section 27-0107 of the Environmental Conservation Law. It includes future solid waste management and recycling goals for the County.

*LOS* – Level of Service

*MCRRF* – Monroe County Resource Recovery Facility/Transfer Station, 1845 Emerson Street, Rochester, NY 14606

*mil* – One thousandth of an inch

*Mill Seat Landfill* – Currently permitted landfill and associated operations.

*Mill Seat Pump Station* – Pump station located on the northern portion of the Permitted Site owned and operated by the Monroe County Pure Waters District. This pump station handles all sanitary wastewater and leachate from the Permitted Site for disposal in the Pure Waters District and treatment at the F.E. Van Lare WWTF. This pump station will also handle leachate from the Proposed Landfill Expansion.

*MSW* – Municipal solid waste



*MW* – megawatt

*Non-RPW* – Non-Relatively Permanent Water

*NYCRR* – New York Official Compilation of Codes, Rules and Regulations

*NYSDEC* – New York State Department of Environmental Conservation

*NYSDOH* – New York State Department of Health

*NYSDOT* – New York State Department of Transportation

*O'Brien Road Culvert Removal and Stream Improvements* – An element of stream mitigation including removal of an existing culvert under O'Brien Road, stream daylighting, and floodplain restoration. This work is a component of the O'Brien Road Wetland Restoration.

*O'Brien Road Wetland Restoration* – The removal of O'Brien Road within the limits of Wetland RG-7 to allow the reconnection of the wetland and the hydrologic continuity of Hotel Creek's Tributary b. This restoration plan is described in Applied Ecological Services, Inc.'s *Ecological Restoration and Management Plan*, which has been submitted to NYSDEC and USACE as part of the *Joint Application for Permit*.

*Owner* – Monroe County is the owner of the Mill Seat Landfill

*Permitted Footprint* – The existing 98.6 acres of the Permitted Site allocated for solid waste disposal within a double composite liner system.

*Permitted Site* – The land on which the Permitted Footprint and associated support features (including a Maintenance Building, Administration Building, Scale House, LFG collection system, leachate collection and storage facility, stormwater management features, access roadways, two (2) soil borrow areas, three (3) petroleum aboveground storage tanks, and a LFGTE Facility) is located, and the land included as part of the Landfill Lease Agreement. The Permitted Site totals 485 acres.

*Permitted Waste Acceptance Rate* – The NYSDEC Approved Design Capacity for the Mill Seat Landfill is 1,945 tons per day, which equates to 597,000 tons per year. This threshold is a daily average and is based on the quantity of solid wastes accepted at the Mill Seat Landfill during a calendar year. Solid wastes that have been approved for use as a beneficial use are not included in this limit.

*Positive Declaration* – A determination made by the lead agency that an action may result in one (1) or more significant environmental impacts and will require the preparation of an environmental impact statement before agency decisions may be

made regarding the action. The positive declaration starts the environmental impact statement process.

*Primary Water Supply Aquifer or Primary Aquifer* – Highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems.

*Principal Aquifer* – Aquifers known to be highly productive or whose geology suggests abundant potential water supply, but which are not intensively used as sources of water supply by major municipal systems at the present time.

*Proposed Action* – The Proposed Landfill Expansion; final cover design modifications to the Permitted Footprint; the proposed wetland impacts and mitigation; the proposed RG-6 Tail impact and mitigation; as well as required actions, including extension of the Landfill Lease Agreement between Monroe County and WMNY, abandonment of a portion of O'Brien Road and a portion of Brew Road, County and Town of Riga approvals of land transfers, and receipt of noise easements.

*Proposed Footprint* – The 118.3 acres allocated for solid waste disposal within the proposed double composite liner system in addition to and directly adjacent to the Permitted Footprint.

*Proposed Landfill Expansion* – The addition of a contiguous footprint to the south of the Permitted Footprint. This defined term is specific to the Proposed Footprint of an additional 118.3 acres, 39.2 acres of overlay onto the Permitted Footprint, and any support features (stormwater management structures, access roads, LFG collection and control infrastructure, and leachate conveyance infrastructure).

*Proposed Site* – The land on which the Proposed Action will be located, including the 485-acre Permitted Site, the Proposed Wetland Mitigation Property, the O'Brien Road abandonment, and any land acquisitions included in the Proposed Action. The Proposed Site totals approximately 828 acres.

*Proposed Stream Mitigation Area* – A section of the Churchville Park Tributary to Black Creek approximately 1,965 linear feet in length. Improvements to the riparian buffer adjacent to this unnamed tributary are proposed as a component of mitigation for impacts to the RG-6 Tail.

*Proposed Stream Mitigation Plan* – The proposed plan, as required by federal regulations, to provide satisfactory compensation for impacts to the RG-6 Tail. This plan has been submitted to the NYSDEC and USACE in the *Joint Application for Permit Application*. The proposed plan consists of two (2) elements: riparian buffer enhancement along the Churchville Park Tributary and culvert removal at O'Brien Road.

*Proposed Wetland Mitigation Area* – The existing and proposed wetland areas within the Proposed Wetland Mitigation Property proposed as remediation to mitigate wetland impacts. Details related to the mitigation are provided in Applied Ecological Services, Inc.’s *Ecological Restoration and Management Plan*, which has been submitted to the NYSDEC and USACE in the *Joint Application for Permit Application*.

*Proposed Wetland Mitigation Property* – Parcels located south of the Permitted Site across Bovee Road. The property is proposed as the primary location for wetland mitigation activities to offset impacts to wetlands from the Proposed Landfill Expansion.

*Pure Waters District* – The County’s network of piping and conveyance systems that ultimately reaches the Northwest Quadrant WWTF or the F.E. Van Lare WWTF.

*RG-6 Tail* – Non-Relatively Permanent Water (stream) that constitutes approximately 1,500 linear feet of stream habitat that receives surface water flow from Wetland RG-6.

*Riga Host Community Agreement* – The Amended and Restated Host Community Agreement by and between Monroe County, NY and the Town of Riga, NY dated January 4, 2011.

*RPW* – Relatively Permanent Water

*SEIS* – Supplemental Environmental Impact Statement

*SEQRA* – State Environmental Quality Review Act, codified in Article 8 of the New York State Environmental Conservation Law with implementing regulations codified at 6 NYCRR Part 617 (Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York).

*SHPO* – New York State Historic Preservation Office

*SPDES* – State Pollutant Discharge Elimination System

*SRP* – Stormwater Retention Pond

*Stage* – A discrete drainage area of a landfill which uses a liner and leachate collection system to provide operational isolation from adjacent stages.

*State* – New York State

*Subcell* – A sub area of the Stage

*TPY* – Tons per year

*USACE* – United States Army Corps of Engineers

*USEPA* – United States Environmental Protection Agency

*USFWS* – United States Fish and Wildlife Service

*Wetlands* – A land area that is inundated or saturated (or meets other primary or secondary indicators of hydrology) by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Under normal conditions, an area needs to satisfy three (3) criteria to be deemed a wetland: presence of wetland hydrology indicators, presence of hydric soil indicators, and a dominance of hydrophytic (water-loving) vegetation.

*WMNY* – Waste Management of New York, LLC operates the Mill Seat Landfill under a lease agreement with Monroe County.

*WMNY Parcel A* – The parcel, totaling 133.6 acres, currently used as a buffer area between the Permitted Site and adjacent residents. It is currently owned by WMNY.

*WWTF* – Wastewater Treatment Facility

### Numbers Referenced in DSEIS

Number Referenced in DSEIS	Number Defined
828 acres	The Proposed Site. Total acreage dedicated for the Proposed Action including any land transactions. It includes parcels of 485 acres, 133.6 acres, 206 acres, 2.91 acres, and 0.8 acres.
485 acres	Total acreage owned by the County. Identified as the Permitted Site.
385 acres	Total acreage included in the Landfill Lease Agreement between WMNY and the County.
98.6 acres	Permitted Footprint of the Mill Seat Landfill.
133.6 acres	WMNY owned property identified as WMNY Parcel A (Tax Parcel ID 183.01-1-1). Includes a house and surrounding area to be subdivided out and maintained under WMNY ownership (22 acres).
206 acres	WMNY owned property identified as Proposed Wetland Mitigation Property. (Tax Parcel IDs 183.01-1-12.1 and 183.01-1-8). Includes a house and surrounding area to be subdivided out and maintained under WMNY ownership (15 acres).
254 acres	Acreage designated for landfill use (within the 485 acres).
370 acres	Approximate total acreage currently owned by WMNY.
303 acres	Approximate acreage expected to be transferred to the County by WMNY.
2.91 acres	Approximate acreage of parcel expected to be transferred from the Town of Riga to the County (Tax Parcel ID 183.01-01-002).
29.9 million cubic yards	Disposal Capacity associated with the Proposed Landfill Expansion.
31 years	Site Life associated with the Proposed Landfill Expansion.
118.3 acres	Proposed Footprint.
39.2 acres	Proposed Landfill Expansion overlay.
216.9 acres	Permitted and Proposed Footprints.
30 acres	Support facilities associated with the Proposed Landfill Expansion (stormwater management structures, access roads, LFG collection and control infrastructure, and leachate conveyance infrastructure).
0.8 acres	O'Brien Road Wetland Restoration limits of disturbance.
0.7 miles	Length of Brew Road abandonment from O'Brien Road to Bovee Road.
0.4 miles	Length of O'Brien Road abandonment from Brew Road to a location west of the O'Brien Road Turnaround (a separate action being completed by the Town of Riga)
13.5 acres	Proposed impacts to Wetland RG-6.
1,500 linear feet	Proposed impacts to the RG-6 Tail.
1,965 linear feet	Proposed Stream Mitigation Area in Churchville Park.
86 acres	Proposed Wetland Mitigation Area (excludes existing or delineated wetlands); based on Applied Ecological Services, Inc. <i>Ecological Restoration and Management Plan</i> dated February 2015 that has

Number Referenced in DSEIS	Number Defined
	<p>been submitted to the NYSDEC and USACE as part of the <i>Joint Application for Permit Application</i>.</p> <p>Includes restoration and creation of: 2 acres of emergent wetland, 4 acres of wet mesic meadow wetlands, 9 acres of wet meadow wetlands, 27 acres of forested wetlands, and 44 acres of native grassland buffer.</p>
136 acres	Existing and proposed wetland areas within the Proposed Wetland Mitigation Property; includes Proposed Wetland Mitigation Area (86 acres) plus existing wetlands or upland woods within the mitigation property (1.4 acres of farmed wetland delineated, 11.5 acres of scrub-shrub wetland , 22.7 acres of wet woods delineated, 5 acres of upland scrub-shrub, 6.4 acres of mesic forest, 2.4 acres of disturbed woods, and 1.6 acres of young disturbed woods).
243.6 acres	Limits of Disturbance associated with the Proposed Landfill Expansion, Proposed Wetland Mitigation Area and Proposed Stream Mitigation Area.

## P.0 Preface

The Mill Seat Landfill was permitted by Monroe County in 1991 after a 20 year planning and public decision making process. Since beginning operations in 1993, the Mill Seat Landfill has provided environmentally sound, cost effective disposal capacity to residents, businesses, and institutions in the County and regional communities. In 2002 the County privatized operations and WMNY became the operator of the facility through a long term Landfill Lease Agreement. The Mill Seat Landfill satisfies the public need to provide local, consistent and reliable management of waste from the City of Rochester and biosolids from the County's two (2) WWTFs. The City of Rochester and surrounding areas are a large population center requiring a substantial amount of residential, industrial, and commercial waste Disposal Capacity. On average 90% of the waste managed at the Mill Seat Landfill originates from within the borders of the County.

The County's integrated environmental infrastructure includes residential single-stream recycling, industrial, commercial and institutional recycling, leaf composting, wood waste processing, waste water treatment, renewable energy production, and resource recovery. These processes still require landfilling for the disposal of the byproducts or non-recoverable end products, which are currently managed at the Mill Seat Landfill. The County's ownership and continued control of its long term environmental infrastructure, which includes the Mill Seat Landfill and its WWTFs, is critical to support a high quality of life and economic development in the County. If additional Disposal Capacity is not provided by the County through the Proposed Landfill Expansion, local waste generators such as environmental infrastructure facilities, residents, and businesses could be subject to increased waste disposal and transportation costs as well as the liability of transporting solid wastes to more distant disposal facilities.

Recognizing that the Mill Seat Landfill has a finite permitted capacity, in 2008 the County and WMNY began discussions with the local community regarding their interest in pursuing life beyond the projected 2018 closure. As a result, Town of Riga leadership commissioned a town wide survey to gain insight into residents' attitudes towards the potential expansion of the Mill Seat Landfill. Direct 2 Market Sales Solutions, in conjunction with BRX Global Research Services Inc., conducted the survey and compiled the results. The survey, with an exceptionally high response rate of 47%, concluded that:

- Residents and other respondents clearly support the continuation of the Mill Seat Landfill.
- Residents see it as providing needed revenues, and most feel that it has little impact, or a positive impact, on their lifestyle.

- Support is also strong for the continued management by WMNY, and ownership by the County.

In 2008 the Town of Riga, the County, and WMNY initiated the process of modifying the existing Riga Host Community Agreement, taking into consideration the potential for the expansion of the Mill Seat Landfill. In January, 2011 an Amended and Restated Host Community Agreement between the County and the Town of Riga was approved by Mill Seat Landfill's Citizen's Advisory Board, the Riga Town Board, and the Monroe County Legislature. In addition, an Amended and Restated Host Community Agreement was executed between the County and the Town of Bergen, the Village of Bergen, the Byron-Bergen Central School District, and the Bergen Fire Department in December, 2011.

The Proposed Landfill Expansion was designed to incorporate certain criteria that were important to the local community. Consistent with the host community agreements, the Proposed Landfill Expansion is:

- Contiguous to the Permitted Footprint;
- No higher than the existing permitted elevation of the Mill Seat Landfill
- No greater than 120% of the existing Permitted Footprint.

If the above criteria are not met, it is grounds to reopen negotiations with the Town of Riga.

The Proposed Landfill Expansion allows for the continuation of operations, consisting of necessary services to manage local waste, which have been taking place since 1993. It is therefore important to note what is not changing, which includes the commitment to:

- Maintain the Permitted Waste Acceptance Rate.
- Maintain site operating conditions.
- Maintain the same origin and type of materials managed.
- Maintain the current hours of operation.
- Maintain commitment to safety and environmental compliance.

The Proposed Landfill Expansion will allow the Mill Seat Landfill to continue to operate beyond 2018 to an anticipated date of 2049. The Mill Seat Landfill has been a community partner for over 20 years and has a proven safety track record and demonstrated environmental compliance history. Host community agreements regarding the Proposed Landfill Expansion were approved in 2011 by the Citizen's



Advisory Board, the County, the Town of Riga, the Town of Bergen, the Village of Bergen, the Byron-Bergen Central School District, and the Bergen Fire Department.

The Mill Seat Landfill is a primary component of County's integrated environmental infrastructure and the Proposed Landfill Expansion will allow for continued long-term, environmentally sound, and cost effective Disposal Capacity. The following *DSEIS* is the result of a planning process, grounded in community-based data, that took place over the course of several years.

## S.0 Summary

### S.1 Introduction

The County is the Owner and permittee of the Mill Seat Landfill. The Mill Seat Landfill is operated by WMNY under a Landfill Lease Agreement with the County. The County and WMNY have been community partners for over 20 years. The Mill Seat Landfill's Solid Waste Management Facility NYSDEC Permit I.D. number is 8-2648-00014. The Permitted Site is located in the Town of Riga, Monroe County, New York. The mailing address is 303 Brew Road, Bergen, New York 14416. The location of the Permitted Site and the Permitted Footprint are shown on Figure S-1.

The County currently owns 485 acres that includes the Permitted Footprint and associated support features (including buildings and structures, stormwater ponds, access roads, and borrow areas). Landfilling operations are still occurring in the Permitted Footprint. The Permitted Footprint covers a total area of 98.6 acres within the roughly 485 acres owned by the County that are dedicated for solid waste management. A general site location map is included as Figure 1.

Of the 485 acres owned by the County, approximately 385 acres is leased to WMNY under a long term Landfill Lease Agreement. The leased parcel includes the Permitted Footprint and associated support facilities for the disposal of MSW from households and commercial and institutional entities. It also accepts selected industrial wastes, biosolids, ash, asbestos, petroleum-contaminated soils, and C&D debris. In accordance with the Riga Host Community Agreement, the Mill Seat Landfill allows for waste generated in communities within the State with the exception of Kings, Queens, New York, Richmond and Bronx counties. On average about 90% of the waste disposed at the Mill Seat Landfill is generated within the County. The Permitted Site also includes operation of a LFGTE Facility that was opened in 2007.

### S.2 Proposed Action

The Proposed Action includes an expansion of the Permitted Footprint and associated support facilities. The Proposed Action will allow the Mill Seat Landfill to continue to operate beyond the permitted Disposal Capacity, providing sufficient capacity to satisfy the community's long-term disposal needs. The Proposed Landfill Expansion is expected to include 118.3 acres of additional double composite lined landfill directly south of the Permitted Footprint, 39.2 acres of overlay on the Permitted Footprint, and associated support facilities for operation of the Proposed Landfill Expansion including stormwater management structures, access roads, LFG collection and control infrastructure, and leachate

conveyance infrastructure. Other actions included as part of the Proposed Action are final cover design modifications to the Permitted Footprint; the proposed wetland impacts and mitigation; the proposed RG-6 Tail impact and mitigation; as well as other required actions that include extension of the Landfill Lease Agreement between the County and WMNY, abandonment of a portion of O'Brien Road (O'Brien Road Wetland Restoration), abandonment of a portion of Brew Road, County and Town of Riga approvals of land transfers, and receipt of noise easements. The total Limits of Disturbance associated with the Proposed Landfill Expansion, Proposed Wetland Mitigation Area, and Proposed Stream Mitigation Area is calculated at 243.6 acres. The "Proposed Site", excluding the Proposed Stream Mitigation Area, is the land on which the Proposed Action will be located and includes the Permitted Site. The location of the Proposed Site is shown on Figure 1.

The Proposed Action will be designed in accordance with the requirements of 6 NYCRR Part 360 regulations. A multi-layer double composite liner system, including low-permeability soil and geomembrane layers, will be constructed beneath the Proposed Footprint, with the exception of areas overlaying the Permitted Footprint, which already has a double composite liner system. The double composite liner system will be installed over a prepared subgrade that will be designed to provide adequate support for the double composite liner system and waste materials. A cross-sectional detail of the proposed double composite liner system required by 6 NYCRR Part 360 is included as Figure S-2.

Primary and secondary leachate collection systems will be integrated into the double composite liner system. The primary leachate collection system will be used to collect liquids which drain to the base of the waste materials. The secondary leachate collection system will be used to collect and remove any liquids which may move through the primary liner system but are still contained in the underlying secondary liner system.

Leachate removal from the primary and secondary leachate collection systems will be directed through a dual-contained piping network. The leachate will be discharged into the Mill Seat Pump Station and subsequently to the County Pure Waters District at a predetermined rate to the WWTF. This leachate management process is consistent with current leachate collection, storage, and disposal techniques.

As the waste placement reaches the final permitted elevations, a multi-layer final cover system will be constructed. The final cover system will provide

isolation of the waste material from vectors and the elements and prevent stormwater infiltration into the waste mass. The top layer of the final cover system will be a vegetated topsoil layer to prevent erosion and LFG emissions while also maintaining the integrity of the final cover system.

Future LFG collection system components will continue to be constructed in the Proposed Footprint as more waste is placed in order to maintain LFG collection and combustion and renewable energy generation as required by the Mill Seat Landfill's Title V Air Facility Permit. The proposed LFG collection system components will tie into the Mill Seat Landfill's existing active LFG collection system, which conveys LFG generated in the landfill to the LFG combustion devices, including flares and the LFGTE Facility, for destruction and renewable energy generation. This system consists of an extensive network of vertical extraction wells and horizontal collection trenches connected by a series of HDPE lateral pipes to a main collection header.

A comprehensive series of temporary and permanent erosion and sediment control features will be installed throughout construction and operation of the Proposed Action. These measures will be designed and implemented to ensure that surface water flows from the Proposed Site will be controlled to prevent off-site sedimentation impacts. Protection of Hotel Creek will be a priority of site stormwater management. As part of the Proposed Action, the Mill Seat Landfill's *Stormwater Pollution Prevention Plan* has been updated to include the necessary erosion and sediment controls.

Development of the Proposed Footprint south of the Mill Seat Landfill will require modification to existing roads intersecting the Proposed Site. The southern portion of Brew Road and the western end of O'Brien Road will be abandoned to accommodate the Proposed Action. Brew Road has been previously modified to limit public access to the Mill Seat Landfill but will be completely abandoned from its intersection with the Proposed Footprint perimeter road and O'Brien Road, south to its intersection with Bovee Road. A private drive will be maintained to allow access to the residential driveway at the south end of Brew Road. The south end of Brew Road will be abandoned and will no longer serve as a connection between O'Brien Road and Bovee Road. O'Brien Road will be abandoned from the County's eastern property line to the existing Brew Road intersection.

Waste quantities for disposal may vary according to economic conditions, waste processing procedures, recycling and waste reduction measures, legal issues, and population changes. The Mill Seat Landfill can only accept a limited

amount of waste based on the Permitted Waste Acceptance Rate, regardless of waste quantities generated. The Mill Seat Landfill currently has a Permitted Waste Acceptance Rate of 1,945 tons per day, not inclusive of BUD material. No modification of the Mill Seat Landfill's Permitted Waste Acceptance Rate or waste acceptance origin is proposed as part of the Proposed Action.

According to a field survey performed January 2, 2015, an assumed waste placement density of 0.80 tons per cubic yard, and the current Permitted Waste Acceptance Rate including BUD materials of 776,000 tons per year, it is anticipated that the Permitted Footprint will no longer have usable airspace for waste placement beyond 2018. Construction of the first Stage of the Proposed Landfill Expansion is scheduled to commence in 2016 to allow for adequate construction time and contingencies. Overall, the Proposed Landfill Expansion will increase the available Disposal Capacity by approximately 29.9 million cubic yards, which is anticipated to provide adequate Disposal Capacity for an additional 31 years depending on actual waste acceptance rates and in-place waste density.

### S.3 Purpose and Need

The purpose of the Proposed Action is to extend the life of the Mill Seat Landfill in order to continue to provide long-term, cost effective waste Disposal Capacity to the residents, businesses and institutional facilities of the County and other regional communities. The City of Rochester and surrounding areas are a large population center requiring a substantial amount of waste Disposal Capacity. While the County's Local Solid Waste Management Plan will continue to emphasize implementation of waste reduction and local recycling/reuse and composting programs, the region will still require a local, dependable facility for the disposal of non-recyclable and non-hazardous waste. By continuing to provide Disposal Capacity at its Mill Seat Landfill, the County will be able to continue to provide environmental and disposal cost security to the community. The County's ownership and control of its long term environmental infrastructure, which includes the Mill Seat Landfill and its WWTFs, is critical to support a high quality of life and economic development in the County. If additional Disposal Capacity is not provided by the County, then it would be subject to the inherent unreliability and unpredictability associated with a reliance upon others for waste disposal.

The County is committed to provide for the environmentally sound disposal of biosolids from the County's F.E. Van Lare WWTF, the County's Northwest Quadrant WWTF, and waste from the City of Rochester. These

treatment plants are critical components of the County's environmental infrastructure, as is the Mill Seat Landfill. Together, they provide environmentally sound and reliable wastewater disposal services to hundreds of thousands of residents and businesses in the community. Not only does the County have a responsibility to F.E. Van Lare WWTF and Northwest Quadrant WWTF, but they also have historical contracts with the City of Rochester that date back to the 1970s to provide Disposal Capacity for the City of Rochester's MSW. This long-standing relationship between the County and the City of Rochester provides a local, environmentally secure, cost effective disposal service to the City's approximately 210,000 residents.

#### S.4 Benefits

In accordance with the Riga Host Community Agreement and the Bergen Host Community Agreement, the County and WMNY provide revenue sharing and other community benefits, which include:

- Revenue sharing to the Town of Riga.
- Revenue sharing to the Town of Bergen.
- Free waste collection and recycling services to Town of Riga residents.
- Monetary payments to Bergen Fire Department and Byron-Bergen School District.
- Completion of a \$12 million water main capital improvement project.
- Reinstated Property Protection Plan.

The host community benefits will be extended upon issuance of all required permits associated with the Proposed Action.

#### S.5 Existing Environmental Setting, Potential Significant Environmental Impacts and Proposed Mitigation Measures

Potentially significant environmental impacts associated with the Proposed Action, which were not addressed in previous SEQRA analyses prepared for the Mill Seat Landfill, are addressed in this *DSEIS*. This *DSEIS* describes the existing environmental setting, potential significant impacts, and proposed mitigation measures relating to the Proposed Action. Potential significant impacts and mitigation measures described include any that may be anticipated within 30-years after final closure of the Proposed Landfill Expansion, which is the minimum post closure monitoring period required by 6 NYCRR Part 360. A public scoping process was undertaken for the Proposed Action, which resulted in a final scoping document that identified the issues to be addressed in this *DSEIS*.

Presented below is a summary of the Proposed Action's potential significant impacts on the environment and the measures proposed to mitigate such potential impacts.

#### S.5.1 Land Use and Agricultural Resources (Section 3.1 of the *DSEIS*)

Land uses adjacent to the Proposed Site include agricultural fields, residential and vacant lots. The Permitted Site and Proposed Site are located on land previously developed for landfill uses or are rural or agricultural in nature. Due to the location of the Proposed Action, changes to land use in the area will be minimal.

Approximately 139 acres of farm fields are located within the Limits of Disturbance, with 36 of these acres located within the Proposed Footprint and 103 acres located within the Proposed Wetland Mitigation Property. Compared to the approximately 37,000<sup>1</sup> total acres of land within the South Western Agricultural District currently within the Town of Riga and neighboring Towns of Chili and Wheatland, and over 139,000<sup>2</sup> total acres of land within an agricultural district within the County, the loss of approximately 139 acres of farmed fields is not considered to be significant.

The Proposed Action will result in 306 acres of land currently located in the South Western Agricultural District being used for non-agricultural purposes. The landowners of these 306 acres of land in the South Western Agricultural District have consented to the non-agricultural use of their land by signing Agricultural District waivers.

#### S.5.2 Geologic Resources (Section 3.2 of the *DSEIS*)

Based on the existing elevations within the Proposed Footprint, the majority of Proposed Landfill Expansion activities will involve the excavation of soils to establish subgrade at the proposed depths and soil placement to construct the Proposed Footprint perimeter berm. Excess soils obtained from subgrade cuts that are not used in berm construction will be stockpiled and utilized for daily cover. Construction will take place in phases, thereby limiting the area of exposed soils and reducing the potential for erosion.

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<sup>1</sup> 2006 Agricultural District Review of the South Western Agricultural District #2, Monroe County, New York prepared by The Monroe County Agricultural and Farmland Protection Board and the Monroe County Planning Board.

<sup>2</sup> Monroe County Farmland Protection Resource Center. <http://www2.monroecounty.gov/planning-farmland.php>

The landfill design complies with 6 NYCRR Part 360, which requires a separation of ten (10) feet between the landfill subgrade and bedrock. As such, no impacts to bedrock geologic resources are anticipated as part of the Proposed Action.

Excavation of soils and construction of the Proposed Landfill Expansion subgrade and other landfill slopes for the Proposed Landfill Expansion will be performed in a manner that will create stable slopes. Laboratory geotechnical testing of soil samples will be conducted during construction to ensure that soil properties meet specifications required for stability and environmental protection.

Since the Proposed Landfill Expansion is located within a seismic impact zone, a stability analysis was conducted to ensure that the proposed design will prevent impacts related to potential seismic events. The design of the Proposed Landfill Expansion will withstand the type of seismic event expected of the area with a factor of safety greater than one (1.0), as required by 6 NYCRR Part 360.

#### S.5.3 Groundwater Resources (Section 3.3 of the *DSEIS*)

The regulations that govern siting, construction, operation, and closure of the Proposed Landfill Expansion (6 NYCRR Part 360) are designed to provide maximum protection to the environment including groundwater resources. The installation of a double composite liner system over relatively low permeability soils, along with a network of groundwater monitoring wells that will continue to be sampled and tested in accordance with an *Environmental Monitoring Plan*, will ensure protection of groundwater resources.

Construction of the Proposed Landfill Expansion will have a negligible impact on groundwater flow rates to Wetlands RG-5 and RG-7. Wetland mitigation activities on the Proposed Wetland Mitigation Property will have minor effects on groundwater flow directions.

There are no primary, principal, or sole source aquifers in the vicinity of the Proposed Site.

#### S.5.4 Surface Water Resources (Section 3.4 of the *DSEIS*)

The Proposed Action will incorporate stormwater management features which will protect both water quality and quantity, so that adjacent



wetlands and streams will not be adversely impacted. Continued implementation of operational practices to prevent the excessive release of sediment and other materials to Hotel Creek will also help to mitigate potential water quality (turbidity) impacts. In addition, surface water monitoring of Hotel Creek and its Tributary b, which flows through a cross culvert under O'Brien Road, will continue.

The Proposed Action will result in impacts to 13.5 acres of regulated wetlands, referred to as Wetland RG-6, and will also impact 1,500 linear feet of an intermittent stream that is herein referred to as the RG-6 Tail. Impacts to these water resources cannot occur without first obtaining permits from the USACE and the NYSDEC. A *Joint Application for Permit Application* has been submitted to the USACE and NYSDEC, which includes a *Proposed Stream Mitigation Plan* for the RG-6 Tail and an *Ecological Restoration and Management Plan* for the Wetland RG-6 impacts.

The *Ecological Restoration and Management Plan* includes the restoration and creation of approximately 42 acres of wetlands on existing agricultural fields at the Proposed Wetland Mitigation Property, along with approximately 44 acres of native grassland buffer enhancements, to offset the loss of 13.5 acres of wetland as shown in the table below.

#### Mitigation Acreages and Proposed Credits for the Proposed Wetland Mitigation Area

Community	Acres Impacted	Acres Restored	Proposed Credit Ratio	Total Credits Proposed
Forested wetlands	13.5	27	(1:1)	27
Emergent wetlands	0	2	(1:1)	2
Wet meadow wetlands	0	9	(1:1)	9
Wet Mesic meadow wetlands	0	4	(2:1)	2
Native Grassland Buffer	0	44	(10:1)	4.4
<b>Totals</b>	<b>13.5</b>	<b>86</b>	<b>-</b>	<b>44.4</b>

Impacts to the RG-6 Tail will be mitigated by establishing riparian buffer enhancements for approximately 30 feet on each side of the Churchville Park Tributary to Black Creek, for a distance of approximately 1,965 linear feet. Due to the limited ecological functions and values

associated with the RG-6 Tail in its existing condition, the proposed RG-6 Tail mitigation will compensate for these impacts at slightly more than a one to one (1:1) ratio.

Additional mitigation will be provided as a result of the O'Brien Road Wetland Restoration, which will result in an enhancement of Wetland RG-7 by restoring eight tenths (0.8) of an acre of wetland and an improved hydrologic connection to Hotel Creek's Tributary b.

#### S.5.5 Stormwater Resources (Section 3.5 of the *DSEIS*)

The change in land use will increase the amount of stormwater runoff, necessitating the need for the construction of one (1) new SRP (new SRP-7) and the modification of the existing eastern borrow area SRP (modified SRP-8) to offset the increased stormwater runoff rates from the Proposed Landfill Expansion. Accurate sizing of the proposed SRPs will ensure that no increase in peak flow exiting the Proposed Site will occur following construction of the Proposed Landfill Expansion. In order to prevent impacts to the water temperature in Hotel Creek, SRP outflows will be routed to Wetland RG-5 or Wetland RG-7 to avoid direct flow into Hotel Creek.

In addition to the permanent final stormwater system design and implementation, interim and temporary measures will be taken to ensure the mitigation of potential erosion at the Proposed Site. This will include the design and construction of intermediate SRPs for each Subcell as well as temporary erosion and sediment controls installed during each construction project. An erosion and sediment control plan will be developed for each construction project utilizing accepted practices from the NYSDEC Practices for Erosion and Sediment Control. This plan will also outline an inspection schedule for a minimum of one (1) weekly inspection of the erosion and sediment control system.

Further mitigation measures include the continued monitoring of water quality in Hotel Creek, including surface water temperatures, both upstream and downstream of the Proposed Site to ensure the continued preservation of Hotel Creek's water temperatures. No adverse impacts from the Permitted Footprint's stormwater management system have been documented to-date and no further impacts are anticipated as part of the Proposed Action.

### S.5.6 Ecological Resources (Section 3.6 of the *DSEIS*)

No impacts to State protected or rare species or natural communities are anticipated as part of, or as a result of, the Proposed Action. In addition, no observations of other protected species, unique plant assemblages, or significant natural communities were noted.

Habitat considered suitable for roosting or migrating individuals or colonies of northern long-eared bats is present within the Limits of Disturbance for the Proposed Action. Though suitable northern long-eared bat habitat was identified within the Limits of Disturbance, much of the Proposed Action will be constructed on lands dominated by non-woody habitats such as agricultural fields and meadows. This greatly minimizes any potential impacts that the Proposed Action may have on this candidate species. Regardless, to mitigate potential impacts on northern long-eared bats, any trees greater than three (3) inch diameter at breast height that require removal will only be felled within the USFWS' Time of Year Conservation Cutting Window: October 31 to March 31. This seasonal tree clearing is proposed as a conservation measure for the northern long-eared bat.

### S.5.7 Critical Environmental Area (Section 3.7 of the *DSEIS*)

Hotel Creek, which crosses the Proposed Site south of the Proposed Footprint, was designated as a CEA by the Town of Riga in 1990. The entire length of Hotel Creek and its Tributary b located within the municipal limits of the Town of Riga are included in this CEA. Hotel Creek and its Tributary b were designated as a CEA due to their reported unique qualities as potential trout habitat and possible spawning grounds. Despite the reasons for the CEA designation, however, no trout species have been observed during ecological site visits within the segments of Hotel Creek or its Tributary b that are located within the limits of the Proposed Site.

Through stormwater management design elements, water quality within Hotel Creek is anticipated to remain the same as what had led to the stream's designation as a CEA. Water flow rates within Hotel Creek will also remain similar to existing conditions, despite the fact that Hotel Creek will no longer receive seasonal flows from the RG-6 Tail. Instead, flows from a proposed SRP (SRP-7) located south of the Proposed Footprint will occur and will mimic the current water flow path from the terminus of the RG-6 Tail to Hotel Creek (through Wetland RG-5). Water

quality monitoring of Hotel Creek will be continued, to assure that it is fully protected from potential adverse impacts.

#### S.5.8 Air Resources (Section 3.8 of the *DSEIS*)

The primary source of air emissions from the Proposed Action is LFG, which results from the decomposition of MSW. LFG at the Proposed Site will continue to be collected via an active LFG collection system that consists of vertical extraction wells and horizontal collectors. The collected LFG is conveyed in pipes to the LFGTE Facility, where it is combusted in eight (8) LFG to electricity generator-sets that produce approximately six and four-tenths (6.4) megawatts of electricity for sale to the electric grid. Flares are available to destroy any collected LFG that is above the capacity of the eight (8) engines, or during periods when one (1) or more engines are shut down (for maintenance, repairs, etc.).

An air impact analysis was performed via computer dispersion modeling, to determine the concentration of air emissions at off-site receptor locations. Utilizing a set of conservative modeling assumptions, the results of this air impact analysis indicate that all applicable air quality guidelines and standards will be met and that emissions will be below significant impact thresholds for criteria pollutants.

A slight reduction in greenhouse gas emissions is anticipated as a result of the Proposed Action, due to an anticipated reduction in on-site soil mining activities. Continued operation of the LFGTE Facility will also help offset greenhouse gases that result from the generation of electricity at fossil-fuel power plants.

#### S.5.9 Visual and Aesthetic Resources (Section 3.9 of the *DSEIS*)

To evaluate the potential visibility of the Proposed Landfill Expansion from ground level vantage points, a *Visual Impact Assessment* was completed within a five (5) mile study area. The Proposed Landfill Expansion was the focus of the analysis, as the other portions of the Proposed Action are expected to have little to no visual impacts. The visual impact assessment procedures utilized for the Proposed Landfill Expansion are consistent with methodologies developed by the NYSDEC. According to the analysis completed as part of the *Visual Impact Assessment*, portions of the Proposed Landfill Expansion will likely be visible from six (6) of the eight (8) vantage point locations examined. These vantage points also have visual impacts from the Mill Seat Landfill.

No historically significant sites are expected to be visually impacted by the Proposed Landfill Expansion. The existing Mill Seat Landfill is not visible from Riga Academy or the Lake Street Historic District. The balloons used in the visual analysis to simulate the Proposed Landfill Expansion were not visible either, so the Proposed Action is not expected to impact these historic sites. The proposed condition will be visually similar to current conditions. None of the affected sites are considered to be aesthetically significant.

Evaluations as presented in the *Visual Impact Assessment* indicate that the Proposed Action's overall impact on the visual character of the area will vary depending upon distance of the viewer from the Proposed Site.

#### S.5.10 Historic and Cultural Resources (Section 3.10 of the *DSEIS*)

There are no historic structures surrounding the general vicinity of the Proposed Site that are listed on the State and National Registers of Historic Places. Consultation of the National Register of Historic Places revealed two (2) National Register Listed places within five (5) miles of the Proposed Site: Riga Academy in the Town of Riga, Monroe County and the Lake Street Historic District in the Village of Bergen, Genesee County. These two (2) National Register Listed sites are located outside of the Proposed Site and will not be impacted. This has been confirmed through correspondence with SHPO. Furthermore, the Proposed Action is not visible from the Riga Academy and the Lake Street Historic District and therefore no impacts to these areas are anticipated

Cultural resource investigations were undertaken for the Proposed Site in accordance with SHPO protocols and procedures. The findings and documentation from these investigations will be reviewed further with SHPO to seek concurrence with a determination that the Proposed Action will not adversely impact significant cultural resources.

#### S.5.11 Transportation/Traffic (Section 3.11 of the *DSEIS*)

Traffic associated with the Proposed Action is anticipated to utilize the same routes as under existing conditions. Based on the current LOS of the roads in question as well as the maximum projected traffic volumes, based on worst case scenario conditions, the roads included in the haul route can accommodate the projected volumes with very little impact to through traffic.

Transportation and traffic related impacts identified in the traffic analysis are minor and do not warrant the implementation of any new transportation mitigative measures. The LOS analysis indicates that there will be minimal to no change in the LOS ratings for key intersections.

Traffic patterns may be impacted in the area surrounding the Proposed Site due to the proposed abandonment of portions of Brew Road and O'Brien Road. The western end of O'Brien Road intersects Brew Road within the limits of the Proposed Action. A portion of Brew Road intersects the permitted eastern borrow area; in which soil borrow activities have already begun. There is currently one (1) driveway access off of this southern portion of Brew Road and seven (7) driveway accesses on O'Brien Road. The abandonment of approximately seven-tenths (0.7) of a mile of the southern portion of Brew Road from O'Brien Road to Bovee Road will include providing a new driveway access off of Bovee Road for the Brew Road residence. Approximately four-tenths (0.4) of a mile of O'Brien Road will also be abandoned, which includes the O'Brien Road Wetland Restoration.

With regard to the proposed abandonment of portions of Brew Road and O'Brien Road, both are low volume rural roadways and the proposed traffic changes will have negligible impact on the surrounding roadway network.

#### S.5.12 Odor (Section 3.12 of the *DSEIS*)

Mill Seat Landfill odors have been effectively managed through proper landfill operations and progressive installation of an active LFG collection system. The potential for odor sources and levels associated with the Mill Seat Landfill are anticipated to be the same during operation of the Proposed Landfill Expansion. Odors may emanate from the working face as waste is placed and from fugitive gas emissions generated from the landfill. The Permitted Waste Acceptance Rate is not proposed to increase and, correspondingly, the size of the working face will not change. Fugitive LFG emissions, however, may increase because as more waste is placed and decomposes, more LFG will be generated from the Permitted Footprint and Proposed Footprint, with the potential to escape into the atmosphere. The impact to the surrounding area, however, is not expected to be significant due to the mitigation measures proposed and those currently in place. These mitigation measures include covering waste with six (6) inches of soil or an approved ADC at the end

of each working day, installing interim or final cover systems, and extending the LFG collection system as needed to capture and control LFG.

#### S.5.13 Noise (Section 3.13 of the *DSEIS*)

Working face operations will be the predominant source of noise at the Proposed Site. Working face operations include waste trucks entering the active waste disposal area, dumping waste, heavy equipment pushing and compacting the waste, and trucks exiting the area. In order to assess operational noise and community background sound levels, acoustical measurements were made with calibrated sound level meters at locations surrounding the Proposed Site, as well as at the working face of the Permitted Footprint to determine operational equipment and waste truck noise. The background monitoring locations correspond to the NYSDEC approved noise monitoring locations that are monitored quarterly in accordance with the Mill Seat Landfill's *Environmental Monitoring Plan*. These locations provide a representation of sound levels around the Proposed Site near off-site properties.

An assessment of potential noise impacts was undertaken in accordance with a NYSDEC guidance document for conducting such analyses. The assessment consisted of conservative noise propagation assumptions to determine sound levels from the Proposed Site at off-site receptor locations (nearby residential, vacant, and agricultural lands) and at the boundary of the Proposed Site.

The predicted increase in the sound level at all receptor locations is less than five (5) dBA, which is at levels in which human reactions to such noise increases ranges from unnoticed to tolerable. In addition, with the exception of the closest receptor location to the Proposed Footprint, predicted sound levels at off-site receptors are less than or equal to 55 dBA – which is the level deemed to be sufficient to protect health and welfare, and in most cases, not create an annoyance.

The worst case nature of this noise analysis should be noted – this analysis assumes that the working face is operating closest to the off-site receptor, with the loudest side of operations directed towards the receptor, during the loudest hour of daily activity --and yet at virtually all locations it is still well below the 55 dBA USEPA threshold specified to protect public health and welfare and not create an annoyance.

The applicable NYSDEC regulatory standard for landfill operations is an hourly Leq of 57 dBA at the Proposed Site property line. All but two (2) locations are projected to be in compliance with the 6 NYCRR Part 360 regulatory limit of 57 dBA at the Proposed Site boundary. The projected maximum Leq [one (1) hour] at the nearest southeastern property line is 58.3 dBA and the projected maximum Leq [one (1) hour] at the nearest southwestern property line is 59.0 dBA. As mitigation for these potential noise impacts, noise easements have been obtained from both of these property owners.

In an effort to reduce noise generation and propagation, the Proposed Action will also be designed and operated to minimize potential noise impacts to off-site receptors.

## S.6 Alternatives Analysis

Alternatives to the Proposed Action have been analyzed in the *Site Selection Report Summary and Alternatives Analysis* (B&L, 2014), which is included in the *DSEIS* as Attachment B. Presented below is a brief overview of the alternatives considered.

- No Action/Waste Exportation

The current Mill Seat Landfill permit has a Permitted Waste Acceptance Rate of 1,945 tons per day. At this maximum tonnage, the Permitted Footprint is estimated to run out of Disposal Capacity by the end of 2018. Under the “no action” alternative, no additional solid waste would be accepted at the Mill Seat Landfill once its Disposal Capacity has been fully consumed. At that point in time, County waste would have to be disposed of elsewhere.

The waste exportation alternative is, therefore, the likely result of the “no-action” alternative. It would require that wastes generated within the County be disposed of at a facility not controlled by the County. Use of this alternative would subject County residents and businesses to the inherent unreliability and unpredictability associated with reliance upon non-County-controlled waste disposal. Such disposal would be subject to fluctuations in the solid waste and fossil fuel markets which could negatively impact waste disposal costs. Even though the High Acres Landfill and Recycling Center is located within the County and could accept a portion of waste that has historically been disposed of at the Mill Seat Landfill, it is not publicly-controlled.



The no action/waste exportation alternative fails to meet the need for local publicly-controlled solid waste Disposal Capacity, including capacity required by contract for the County's WWTFs and the City of Rochester.

- Greenfield Site

An alternative to the Proposed Action is to pursue the development of a new landfill at a Greenfield Site. Historically, the process of siting and permitting a new landfill site in the County has taken over 20 years. This means that the Mill Seat Landfill's Permitted Footprint will be out of available Disposal Capacity well before a new Greenfield Site disposal location could be ready to accept waste, which would mean that waste exportation would need to be implemented in the interim.

In addition to the drawbacks associated with the waste exportation alternative, pursuit of a Greenfield Site would eventually result in the cessation of all host community benefits that are currently associated with the Mill Seat Landfill and the Proposed Action.

The environmental benefits of consolidating the monitoring and environmental protection responsibilities to one (1) site and one (1) governing entity, as is the case with the Proposed Action, would also eventually end if the Greenfield Site alternative were to be implemented.

The Greenfield Site alternative fails to meet the need for an economical and community-accepted disposal location and would not meet local publicly-controlled waste Disposal Capacity requirements in the short term due to the lengthy siting and permitting process for another in-County landfill.

- Previous Siting Options

In 1988, an independent study of previous landfill siting data was undertaken, including a review of the 1979 study by the Committee to Evaluate Landfill Sites that ultimately resulted in the permitting and construction of the current Mill Seat Landfill. The 1988 study was performed upon inception of 6 NYCRR Part 360 and utilized 6 NYCRR Part 360 criteria that are still applicable today, which means that the results of that study are still valid as a siting tool.

Potential locations for new landfill sites that were previously eliminated from further consideration based on 6 NYCRR Part 360 requirements, for example, are still valid and would not provide an alternative in-County site for landfill development. In addition, the final two (2) locations previously considered as alternatives to the selected Mill Seat Landfill site location, the Bovee Road and Davis Road sites, remain impractical for development as landfill sites. Not only do these locations have additional undesirable characteristics, but developing either one as a new landfill site would involve an extensive investment of capital, time, and potentially significant adverse environmental impacts in comparison to the Proposed Action's contiguous expansion at the Mill Seat Landfill.

This alternative fails, therefore, to meet the need for an economical and environmentally sound disposal location, and would not be able to provide local publicly-controlled waste Disposal Capacity in the required time frame.

- Alternative Scale and Magnitude

Several on-site alternative layouts were developed and evaluated as part of the project development process. These alternatives were evaluated on a relative comparison basis. Environmental, cost and logistical considerations were analyzed for each alternative to determine practicability and ultimately to identify the least environmentally damaging practicable alternative that satisfies the project purpose and need. While some on-site expansion alternatives minimized impacts in one (1) area, they resulted in increased impact or conflicts in others.

Eight (8) conceptual footprint configurations were prepared for analysis as potential expansions of the Mill Seat Landfill. Each footprint configuration was analyzed for double composite liner acreage, disturbance acreage, potential Disposal Capacity, site life, and wetlands impacts. These criteria were used to determine which on-site alternative best satisfied the project's purpose and the County's need. Three (3) out of the eight (8) proposed alternatives met the site's 25-year Disposal Capacity requirement without inefficient use of resources. Of the three (3) potential alternatives, Alternative 7 (i.e., the Proposed Footprint) impacts the smallest area of wetlands.

The Proposed Footprint (Alternative #7) represents the least environmentally damaging practicable alternative for expansion of the Mill Seat Landfill due to a number of factors including acceptance by the host community, avoidance of environmental risks associated with overlaying existing leachate monitoring structures, and overall cost efficiency. Most importantly, this option provides the Mill Seat Landfill with sufficient Disposal Capacity outlined in the evaluation criteria so that this process will not need to be completed again for over 30 years. Also, the positive community acceptance related to this option is likely to result in a reasonable SEQRA and permitting review time frame, helping to ensure the availability of continuous local Disposal Capacity to the County.

While this alternative results in impacts to some wetlands at the Proposed Site, it avoids and will ultimately result in the protection of, the remaining wetlands on the Proposed Site. Protection of remaining aquatic resources along with restoration and enhancement activities, through the proposed wetland and stream mitigation plans, will ensure that there is no net loss of aquatic resource function as a result of the Proposed Action.

- Alternative Waste Disposal Technologies

Many waste disposal technologies are available as alternatives to landfilling. Some, such as plasma arc gasification, mechanical/biological treatment, and anaerobic digestion, have not been proven environmentally or economically feasible in the United States for MSW management. Others, such as waste-to-energy, MSW mixed composting, and ethanol production, are more proven technologies but they have other limitations and disadvantages (including the amount of time that would be required to find a suitable location and secure the necessary environmental permits and approvals to build a new MSW management facility). Furthermore, all would still require landfilling for the disposal of the byproducts or end products of the alternative technologies.

In summary, none of these alternative waste disposal technologies are suitable alternatives to the Proposed Action.

## S.7 SEQRA

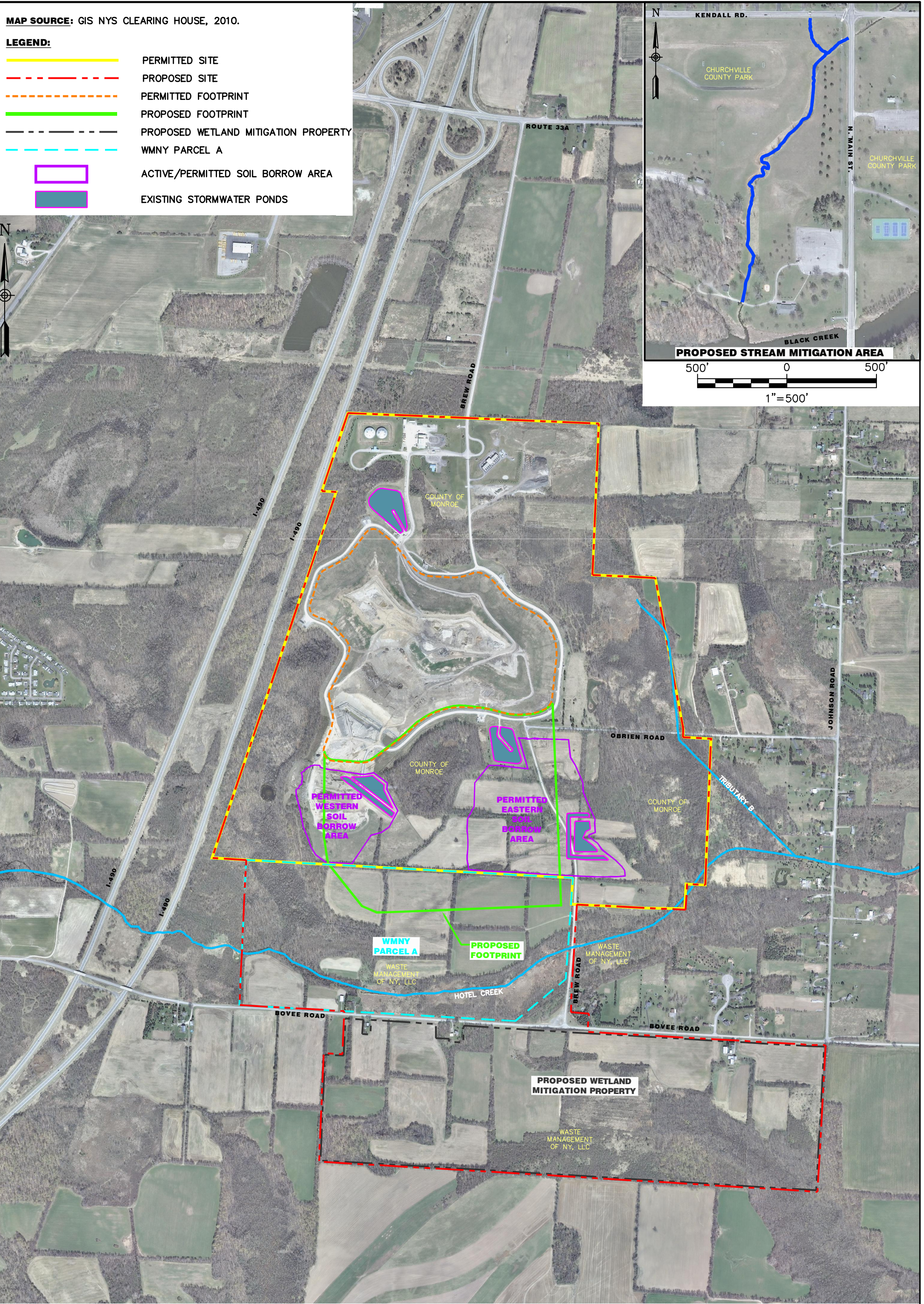
This *DSEIS* has been prepared in accordance with the requirements of SEQRA which, in general terms, is a process for the consideration of environmental factors in the planning stages of discretionary actions that are directly undertaken, funded, or approved by local, regional, and state agencies.

Several steps in the SEQRA review process remain. The public has an opportunity to comment on this *DSEIS*, either at the public hearing or in writing during the public comment period, as indicated on the inside cover of this *DSEIS*. The County, as SEQRA Lead Agency, will address all relevant and substantive comments received during the public comment period and incorporate these responses to comments into the FSEIS.

Once the FSEIS is prepared and accepted by the County, a Statement of Findings will be prepared that relies upon information contained in the FSEIS and that balances environmental, social and economic considerations with regard to the Proposed Action. The adoption of a Statement of Findings represents the County's final step in the SEQRA process for the Proposed Action.

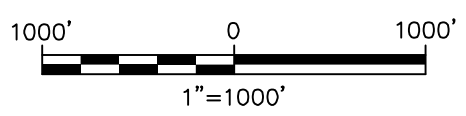
In addition to its completion of the SEQRA process, the County will need to obtain permits from the NYSDEC and USACE before it can proceed with the Proposed Action. Those regulatory agencies have their own regulatory requirements that govern their review and consideration of permit applications. Both agencies will, however, provide opportunities for public review and comment as part of their permit review processes.





**Barton & Loguidice, D.P.C.**

Date	Scale
APRIL, 2015	1" = 1000'



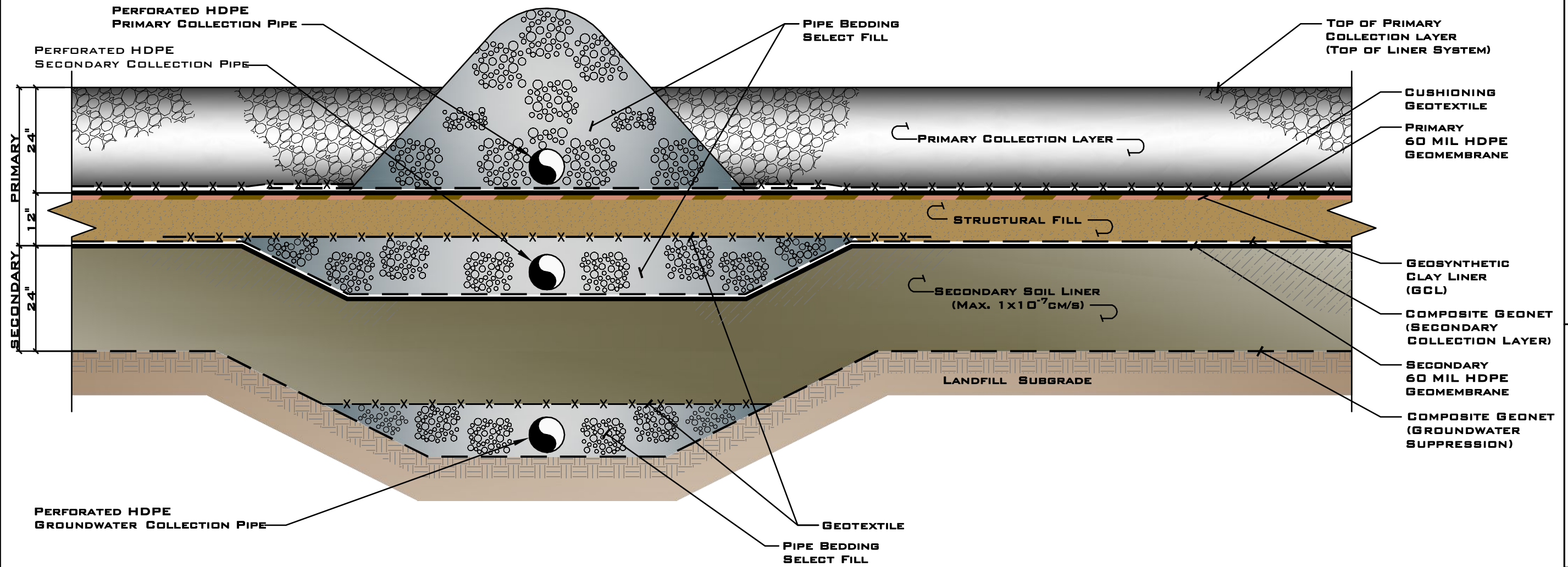
MILL SEAT LANDFILL  
 PROPOSED LANDFILL EXPANSION DSEIS  
 SITE LOCATION MAP

TOWN OF RIGA  
 MONROE COUNTY, NEW YORK

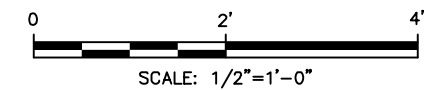
Figure Number
S-1
Project Number
1242.022



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## DOUBLE COMPOSITE LINER SYSTEM DETAIL



MILL SEAT LANDFILL  
 PROPOSED LANDFILL EXPANSION DSEIS

DOUBLE COMPOSITE LINER SYSTEM DETAIL

TOWN OF RIGA

MONROE COUNTY, NEW YORK



Date  
 APRIL, 2015

Scale  
 AS SHOWN

Figure Number  
 S-2

Project Number  
 1242.022

## 1.0 Project Description and Background

The County is the Owner and permittee of the Mill Seat Landfill. The Mill Seat Landfill is operated by WMNY under a Landfill Lease Agreement with the County. The County and WMNY have been community partners for over 20 years. The Mill Seat Landfill's Solid Waste Management Facility NYSDEC Permit I.D. number is 8-2648-00014. The Permitted Site is located in the Town of Riga, Monroe County, New York. The mailing address is 303 Brew Road, Bergen, New York 14416. The location of the Permitted Site and the Permitted Footprint are shown on Figure 1.

The County is seeking a 6 NYCRR Part 360 Solid Waste Management Permit modification from the NYSDEC to implement the construction and operation of portions of the Proposed Action. The Proposed Action will allow the Mill Seat Landfill to continue to operate beyond the permitted Disposal Capacity, providing sufficient capacity to satisfy the community's long-term disposal needs. The Proposed Action is expected to include 118.3 acres of additional double composite liner system directly south of the Permitted Footprint, 39.2 acres of overlay on the Permitted Footprint, and approximately 30 acres of disturbance associated with additional support facilities for operation of the Proposed Landfill Expansion including stormwater management structures, access roads, LFG collection and control infrastructure, and leachate conveyance infrastructure. Other aspects of this Proposed Action include final cover design modifications to the Permitted Footprint; the proposed wetland impacts and mitigation; the proposed RG-6 Tail impact and mitigation; as well as required actions, including extension of the Landfill Lease Agreement between the County and WMNY, abandonment of a portion of O'Brien Road (O'Brien Road Wetland Restoration), abandonment of a portion of Brew Road, County and Town of Riga approvals of land transfers, and receipt of noise easements. The "Proposed Site", excluding the Proposed Stream Mitigation Area, is the land on which the Proposed Action will be located and includes the Permitted Site. The location of the Proposed Site is shown on Figure 1.

### 1.1 Project Background

The original siting of the Mill Seat Landfill was ultimately a 23 year Greenfield Site selection and development process that involved many municipalities, organizations, individual members of the public, and other agencies. This planning and decision-making process began in 1970 and continued into the late 1980s when the Mill Seat Landfill was selected as the preferred location for the County's long-term solid waste management facility.

Once the Mill Seat Landfill location was selected as the preferred site for a new landfill, the SEQRA and permitting processes commenced. These processes included extensive opportunities for public review and comment, and

took place over the course of several years. In 1990, a DSEIS and FSEIS were prepared for the reduction of the landfill footprint from 104.5-acres to approximately 98.6-acres. At the conclusion of the SEQRA and permitting processes, the NYSDEC issued the Mill Seat Landfill a 6 NYCRR Part 360 construction permit on August 1, 1991 and landfilling operations began in 1993 upon receipt of the permit to operate, which was issued April 15, 1993. Since that time, several modifications to the operating permit have been approved by the NYSDEC including:

- Permit modification for approval of petroleum contaminated soil for use as ADC and addition of whole tires as unauthorized waste, May 2, 1994.
- Permit modification to allow direct haul of acceptable wastes to landfill and bypass the transfer station, July 1, 1994.
- Leachate recirculation demonstration project, prepared by Clark, Patterson, Mossien September 9, 1994.
- New permit condition to include recyclables recovered by the County in the annual report, June 19, 1995.
- Permit modification to allow for leachate recirculation prepared by Clark Patterson Associates, July 17, 1995.
- Permit renewal dated May 5, 2001.
- Permit modification for WMNY to take over operations of the Mill Seat Landfill from the Owner prepared by Clark Patterson Associates and Earth Tech, Inc., August 2002.
- Revisions to engineering documentation including: Operations and Maintenance Manual (January 2003), Contingency Plan (January 2003), Final Cover Design Modifications (October 2002), Design Modifications for Stages III-B, IIIB-1, and IV (March 2004), and Construction Quality Assurance/Quality Control Plan (April 2004).
- Environmental Monitoring Plan modifications (May 2011) and Site Analytical Plan modifications (September 2003).
- Wetlands Delineation Report – Mill Seat Landfill dated September 1990, updated May 2002, July 2002 and August 2009.
- Habitat Management Plan, dated February 2005, updated in May 2011.
- 6 NYCRR Part 360 Permit renewal prepared by Barton & Loguidice, P.C. and modification for on-site borrow areas prepared by McMahon & Mann Consulting Engineers, P.C., issued July 22, 2011.



In the 2002 Landfill Lease Agreement between the County and WMNY, WMNY assumed responsibility for the operations, maintenance, and permitted Stage construction of the Mill Seat Landfill for a minimum 20-year period and up to 49-years for post-closure monitoring. The County owns the Permitted Site, while WMNY currently owns some adjacent buffer and ancillary areas and operates all landfill and support activities. It is currently estimated that the Permitted Footprint will no longer have usable airspace for waste placement beyond 2018. The Proposed Action is being pursued in order to continue to ensure economical, long-term Disposal Capacity for waste generated within the County for at least 25 years beyond 2018.

## 1.2 Site Description

The County currently owns 485 acres that includes the Permitted Footprint and associated support features (including buildings and structures, stormwater ponds, access roads, and two (2) soil borrow areas). Operations are still occurring in the Permitted Footprint. The Permitted Footprint covers a total area of 98.6 acres within the roughly 485 acres owned by the County that are dedicated for solid waste management. A general site location map is included as Figure 1.

Of the 485 acres owned by the County, approximately 385 acres is leased to WMNY under a long term Landfill Lease Agreement. The leased parcel includes the Permitted Footprint and associated support facilities for the disposal of MSW from households and commercial and institutional entities. The Mill Seat Landfill also accepts selected industrial wastes, biosolids, ash, asbestos, petroleum-contaminated soils, and C&D debris. The Permitted Site also includes operation of a LFGTE Facility that was opened in 2007.

### 1.2.1 Existing Facility

The Mill Seat Landfill consists of one (1) active disposal area; a Maintenance Building, Scale House, LFG collection systems, leachate collection and storage facilities, an Administration Building for WMNY personnel, stormwater management features, access roadways, two (2) soil borrow areas, two (2) petroleum aboveground storage tanks, and a LFGTE Facility. A summary of the main facilities and support systems included in the current landfill development is described below and included as Figure 2 – Existing Conditions.

Waste is currently transported to the Mill Seat Landfill directly by municipalities, private haulers, or from the MCRRF transfer station via

transfer trailers. The main haul route includes the use of I-490, Route 33A, and the northern portion of Brew Road between NYS Route 33A and the Mill Seat Landfill. The Mill Seat Landfill entrance is located at the southern terminus of northern Brew Road, approximately three-quarter (0.75) mile south of Route 33A.

The Mill Seat Landfill entrance off of Brew Road is equipped with weigh scales to register the weights of the incoming and outgoing waste vehicles. A network of paved and gravel access roads serves to direct traffic once within the Permitted Site. The main access road runs east/west after crossing the weigh scales then turns south/north to reach the perimeter access road or to access the Permitted Footprint. The perimeter access road circumvents the entirety of the Permitted Footprint and extends into the on-site soil borrow areas to the south. Additional roads service the leachate storage area, three (3) petroleum aboveground storage tanks, Maintenance Building, Administration Building, stormwater management features, LFGTE Facility, and additional non-scale access to the Permitted Footprint perimeter road.

#### 1.2.2 Existing Permitted Footprint

The Permitted Footprint was constructed and permitted with a double composite liner system, and is located centrally on the Permitted Site. Stages I, II, III, and IV of the Mill Seat Landfill were addressed in the original SEQRA review process and in the construction and operation permits issued in 1991 and 1993, respectively. The initial permit application was prepared in 1989 and has subsequently been modified to change the landfill operator to WMNY, amend the final cover design, and add two (2) on-site soil borrow areas. The Mill Seat Landfill consists of four (4) Stages, each constructed in one (1) to three (3) phases as shown on Figure 2. The first Subcells of the Mill Seat Landfill, known collectively as Stage I, consist of 19.6 acres and were constructed in 1991 with the first waste placement in 1993. Subsequent Stage II, constructed in 1994, totals approximately 32.7 acres on the eastern side of Stage I and began waste placement in 1997. Stage III, located centrally between Stage I and II was constructed in three (3) phases beginning with 12 acres in 2001 and completing the total of 23 acres in 2006. Stage IV, located southwest of the pre-existing Stages, was constructed in three (3) phases in 2008 through 2013 and totals 23 acres of double composite lined area.

### 1.2.3 Existing Double Composite Liner System

The double composite liner system consists of two (2) separate composite liner systems, one (1) constructed above the other. Each composite liner system consists of a leachate collection and removal system underlain by a composite of low permeability natural soil or GCL and HDPE geomembrane. A cross-sectional detail of the proposed double composite liner system required by 6 NYCRR Part 360 is included as Figure 3.

From top to bottom, the following is the cross-section of the double composite liner system for the most recent Mill Seat Landfill construction, Stage IV-C.:

- Primary Collection Layer - 24" Stone Drainage Layer (minimum permeability of one (1)  $\times 10^{-2}$  cm/s)
- Cushioning Geotextile - 16 oz/yd non-woven geotextile
- Primary 60 mil textured HDPE geomembrane
- Geosynthetic Clay Liner (Slopes less than 25%)
- 12" structural fill (Slopes less than 25%)
- Composite Geonet - Geocomposite drainage layer
- Secondary 60 mil textured HDPE geomembrane
- 24" Secondary Soil Liner (compacted low permeability soil)
- Composite Geonet - Geocomposite groundwater suppression system layer

The Mill Seat Landfill has an extensive double composite liner system monitoring network to meter the primary and secondary leachate collection system flow rates in different areas. The existing double composite liner systems maintain secondary flow rates well below the 20 gpad maximum required by 6 NYCRR Part 360, based on a 30-day rolling average. Laboratory analytical data also indicates that the water collected in the groundwater suppression system, as well as the water collected in the perimeter monitoring well network, is not impacted by leachate.

### 1.2.4 Existing Leachate Storage, Treatment, and Disposal

Precipitation such as rain, snow, or liquid from the disposed waste that percolates down through the waste mass and accumulates

constituents from the decomposing waste becomes leachate. Leachate is contained within the Mill Seat Landfill by the double composite liner system and is conveyed for collection and treatment by the leachate collection and conveyance system. Leachate generated within the Mill Seat Landfill is collected by pumping or gravity conveyance headers from the Permitted Footprint to the County Pure Waters District via the Mill Seat Pump Station north of the Permitted Footprint.

Approximately 19.6 million gallons of leachate were collected for treatment in 2013. The total annual leachate quantities during the four (4) year period from 2010 through 2013 are summarized below from the NYSDEC annual reports. The quantity of leachate generated and collected varies from year to year with annual precipitation as well as with the progression of the Mill Seat Landfill Stage construction.

**Table 1 - Annual Leachate Quantity Summary**

<u>Year</u>	<u>Gallons</u>
2013	19,649,165
2012	15,304,493
2011	20,639,606
2010	19,682,953

The existing leachate storage tanks are currently used as backup storage in the event that the Mill Seat Pump Station cannot accept leachate for disposal in the County Pure Waters District. Each tank has a capacity of approximately 1,500,000 gallons with two (2) feet of freeboard. The two (2) tanks are glass-lined aboveground storage tanks with a total storage capacity of 3,000,000 gallons. They are located in the northwestern corner of the Permitted Site. The two (2) tanks are surrounded by a perimeter impoundment trench to provide secondary containment required by 6 NYCRR Part 360. The trench is capable of holding roughly 1.85 million gallons, which exceeds the 6 NYCRR Part 360 requirement for 110% capacity of the largest tank.

If access to the County Pure Waters District is unavailable for any reason, the leachate storage tanks are also connected to a leachate loadout area via a dedicated pumping system for transport with tanker trucks. The tanker trucks will transport the leachate to the F.E. Van Lare WWTF for treatment. If leachate can temporarily be neither pumped into the County Pure Waters District nor hauled to the F.E. Van Lare WWTF,

the leachate is stored in the two (2) leachate storage tanks, as backup until transport is available. If hauling is necessary, the backup facility for leachate removal is the Northwest Quadrant WWTF. An additional option for leachate disposal if the Mill Seat Pump Station is non-operational is to over the road haul the leachate from the leachate storage tanks to the Monroe County Fleet Center located at 145 Paul Road, Chili, New York. At the Fleet Center, the leachate can be off-loaded to the County Pure Waters District for disposal at the F.E. Van Lare WWTF. The current leachate management plan is shown schematically in Figure 4 and includes the final treatment destination of the leachate.

### 1.2.5 Existing LFG Collection System

LFG is a naturally occurring byproduct resulting from the anaerobic decomposition of organic material contained in wastes placed in landfills. Approximately 50% of the LFG produced is methane. The remaining half of LFG is primarily carbon dioxide. Trace amounts of non-methane organic compounds are also produced. The Mill Seat Landfill operates an active LFG collection system in order to control the emissions of these gases. The active LFG collection system operations and emissions are regulated through the USEPA Title V Program, which is overseen and enforced by the NYSDEC. As such, the Mill Seat Landfill is required to track and report landfill-related emissions to the NYSDEC on a quarterly basis to demonstrate compliance with the regulations. The Permitted Site is currently operating under Mill Seat Landfill's Title V Air Facility Permit (ID 8-2648-00014/00011), effective September 11, 2006 and which remains in effect beyond its initial expiration date of September 10, 2011 while NYSDEC reviews the permit renewal application.

LFG is collected from all operational Stages of the Mill Seat Landfill. The LFG collection system consists of a series of vertical collection wells, horizontal collection trenches, wellheads, and conveyance piping. There are over 100 active LFG extraction points. As portions of the Mill Seat Landfill are constructed and filled, additional LFG collection infrastructure is installed in an effort to increase LFG collection for beneficial use, odor control, and emissions control. The LFG collection system is connected to a series of blowers which apply a vacuum to the system, increasing the LFG collection efficiency. LFG is then conveyed via the vacuum and conveyance piping to a central location for destruction and renewable energy generation. The LFG is managed in one (1) of the following control devices:

- LFGTE Facility – The LFGTE Facility is located northeast of the Permitted Footprint and east of the Scale House and Administration Building. It handles the majority of the LFG collected. Refer to Section 1.2.6 for more information on this facility.
- Zink Enclosed Flare – This 3,500-cfm flare is located adjacent to the LFGTE Facility.
- Parnell Candlestick Flare – This 3,000-cfm flare is used for emergency backup purposes. It is located centrally on the Permitted Site, just north of the Permitted Footprint.
- Proposed LFGTE Facility II – The County is currently in the process of developing a LFGTE Facility II adjacent to the existing LFGTE Facility. This facility is proposed to utilize LFG from the Permitted Footprint.

See Figure 5 for a schematic of the LFG collection system.

LFG condensate is collected from the main 24-inch LFG collection header, which follows the perimeter of the Permitted Footprint and directs LFG flow to either the LFGTE Facility or the backup flare for destruction. The condensate is collected along the header in three (3) knockouts, each with a sump pump to pump the condensate into leachate Pump Stations 1 and 2. The condensate is combined with leachate and transferred to the leachate collection and storage facility, which discharges to the Mill Seat Pump Station.

#### 1.2.6 Existing LFGTE Facility

The LFGTE Facility is owned and operated by the County and WMNY, respectively. The LFGTE Facility is located northeast of the Permitted Footprint and east of the Scale House and Administration Building on the Permitted Site owned by the County.

The LFGTE Facility, which began operation in 2007, produces electricity from the collected LFG through the use of internal combustion engines. The LFGTE Facility currently operates under the same Title V Air Facility Permit (Permit ID 8-2648-00014/00011) as the Mill Seat Landfill. The LFGTE Facility is an eight (8) engine plant producing six and four-tenths (6.4) MW of electricity. The currently operational eight (8) engines are Caterpillar 3516 engines. Each engine is capable of producing 800 kW of electricity with plant production maximized at six and four-tenths (6.4) MW during 100% operation. With the collection and destruction and

renewable energy generation of the LFG, the resulting greenhouse gas offsets based on USEPA estimates are equivalent to the carbon sequestered annually by nearly 60,000 acres of forest, annual greenhouse gas emissions from 52,000 passenger vehicles, or carbon dioxide emissions from nearly 31 million gallons of gasoline consumed. The LFGTE Facility generates enough electricity to power roughly 6,000 homes.

There is currently no beneficial use of the waste heat from the LFGTE Facility operation.

#### 1.2.7 Permitted Final Cover System

As referenced above in Section 1.1, final cover system modifications were proposed by WMNY in 2002 and were subsequently approved by the NYSDEC in a 6 NYCRR Part 360 permit modification issued in 2005. The Permitted Footprint side slope final cover system cross-section above the waste mass for slopes between 25% and 33%, from top to bottom, are as follows:

- Six (6) inch topsoil layer
- 24 inch barrier protection layer
- Composite geonet
- 40 mil textured (both sides) LLDPE geomembrane
- Gas venting geotextile
- 12 inch intermediate cover layer

The Permitted Footprint top slope final cover system above the waste mass for slopes less than 25%, from top to bottom, are as follows:

- Six (6) inch topsoil layer
- 24 inch barrier protection layer
- Composite geonet
- 40 mil textured (both sides) LLDPE geomembrane
- 18 inch low permeability soil layer (maximum coefficient of permeability is  $1 \times 10^{-6}$  cm/sec)
- Gas venting geotextile
- 12 inch intermediate cover layer

### 1.2.8 Acceptable Wastes

The Mill Seat Landfill is one (1) of two (2) active MSW landfills located in the County. The second landfill is the High Acres Landfill & Recycling Center located in the Town of Perinton. This facility is owned and operated by WMNY. Wastes generated both within the County and outside the County, with the exception of wastes generated from Kings, Queens, New York, Richmond and Bronx counties, are accepted at the Mill Seat Landfill. All waste that is delivered to the MCRRF is transferred to the Mill Seat Landfill for disposal. In addition, private haulers may deliver waste directly to the Mill Seat Landfill for disposal. Besides the MCRRF, there are several other transfer stations operated by a municipality or privately in the County, which ultimately dispose of waste at the Mill Seat Landfill. The Town of Clarkson owns a transfer station that transports waste directly to the Mill Seat Landfill; and the Town of Hamlin owns a transfer station that transfers waste to the MCRRF for final disposal at the Mill Seat Landfill. Metalico previously operated a transfer station that transported waste directly to the Mill Seat Landfill; however, at this time this facility is temporarily closed.

The Mill Seat Landfill accepts mixed MSW generated by residents, institutions, and commercial entities. It also accepts selected industrial wastes, biosolids, ash, asbestos, and C&D debris. ADC, in the form of materials which have been assigned a BUD by the NYSDEC, such as petroleum contaminated soils, are used at the Mill Seat Landfill as a cost savings and revenue generating measure.

The Mill Seat Landfill does not accept septic tank effluent, regulated radioactive wastes, liquid wastes (<20% solids), junked vehicles, hot ashes, regulated hazardous waste, household hazardous waste from the County's ecopark, whole tires, separated recyclable materials, untreated regulated medical waste, vehicle batteries, waste oils, scrap metal, sealed containers, explosives, pesticides, chemicals, and uncontaminated yard wastes.

### 1.2.9 Existing Site Capacity and Expected Site Life

The Permitted Footprint encompasses approximately 98.6 acres of double composite lined area. According to a field survey performed January 2, 2015, an assumed waste placement density of 0.80 tons per cubic yard, and the current Permitted Waste Acceptance Rate including BUD materials of 776,000 tons per year, it is anticipated that the Permitted



Footprint will no longer have usable airspace for waste placement beyond 2018.

### 1.3 Proposed Action

The Proposed Action includes an expansion of the Permitted Footprint and associated support facilities. Overall the Proposed Landfill Expansion is expected to include 118.3 acres of additional double composite lined landfill directly south of the Permitted Footprint, 39.2 acres of overlay on the Permitted Footprint, and approximately 30 acres of disturbance associated with additional support facilities for operation of the Proposed Landfill Expansion including stormwater management structures, access roads, LFG collection and control infrastructure, and leachate conveyance infrastructure. Other actions included as part of the Proposed Action are final cover design modifications to the Permitted Footprint; the proposed wetland impacts and mitigation; the proposed RG-6 Tail impact and mitigation; as well as required actions, including extension of the Landfill Lease Agreement between the County and WMNY, abandonment of a portion of O'Brien Road (including the O'Brien Road Wetland Restoration), abandonment of a portion of Brew Road, County and Town of Riga approvals of land transfers, and receipt of noise easements.

The Proposed Action will be located on the 485 acres currently owned by the County plus the 340 acres currently owned by WMNY. The locations and layouts of the new site access roads and SRPs are included in Figure 6. Approximately 303 acres of WMNY's property are expected to be transferred to the County following the issuance of the 6 NYCRR Part 360 Permit for the Proposed Action, including the parcels that are proposed to be dedicated to wetland mitigation. In addition, one (1) parcel owned by the Town of Riga will be transferred to the County. O'Brien Road will be abandoned at the County's property line east of the intersection with Brew Road.

The Proposed Landfill Expansion will require connection of the double composite liner system to the existing adjacent Stages to provide a continuous double composite liner system. No vertical expansion is planned for the Proposed Landfill Expansion. The ultimate elevation of the Proposed Landfill Expansion (including final cover system) is 875 feet AMSL, which is the same as the existing permitted maximum elevation.

Waste quantities for disposal vary according to economic conditions, waste processing procedures, recycling and waste reduction measures, legal issues, and population changes. However, the Mill Seat Landfill can only accept a limited amount of waste based on the Permitted Waste Acceptance Rate,

regardless of waste quantities generated. The Mill Seat Landfill currently has a Permitted Waste Acceptance Rate of up to 1,945 tons per day, not inclusive of BUD material.

According to a field survey performed January 2, 2015, an assumed waste placement density of 0.80 tons per cubic yard, and the current Permitted Waste Acceptance Rate including BUD materials of 776,000 TPY, it is anticipated that the Permitted Footprint will no longer have usable airspace for waste placement beyond 2018. Construction of the first Stage of Proposed Landfill Expansion is scheduled to commence in 2016 to allow for adequate construction time and contingencies. Overall, the Proposed Landfill Expansion will increase the available Disposal Capacity by approximately 29.9 million cubic yards, which is anticipated to provide adequate Disposal Capacity for an additional 31 years depending on actual waste acceptance rates and in-place waste density. No modification of the Mill Seat Landfill's Permitted Waste Acceptance Rate is included as part of the Proposed Action.

To provide adequate soils for construction and operation of the Proposed Action, off-site soils will be obtained from one (1) or more off-site permitted mine locations. Soils will be transported by truck and limited to legal weight limits on roads. Traffic impacts will be discussed in Section 3.11.

Additional details related to the Proposed Action are included in Sections 2.0 and 3.0 of this *DSEIS*.

#### 1.4 State Environmental Quality Review Act Process

SEQRA establishes a process for the consideration of environmental factors in the planning stages of discretionary actions that are directly undertaken, funded, or approved by local, regional, and state agencies. The SEQRA review of the Proposed Action must be completed before any SEQRA involved agency (NYSDEC, the Town of Riga, and the County) make any final decisions regarding whether to approve and undertake the Proposed Action. NYSDEC has discretionary approval over the issuance of the 6 NYCRR Part 360 permit modification and other environmental permits and is therefore an involved agency under SEQRA. The Town of Riga has discretionary approvals related to property subdivisions and modifications to O'Brien Road and property transfers and is therefore an involved agency under SEQRA. These involved agencies have agreed to the County's designation as SEQRA lead agency for the Proposed Action.

Since a Final Environmental Impact Statement was prepared for the Mill Seat Landfill during the initial permitting process that was completed in 1989, the County determined that only the potential significant adverse impacts associated with the Proposed Action that were not addressed in the prior SEQRA analyses, will be included in the *DSEIS* for the Proposed Action. Other environmental impact statements have been prepared previously for the Mill Seat Landfill and are listed below:

- Draft and Final Environmental Impact Statements dated 1989 associated with the original siting of the Mill Seat Landfill.
- Draft and Final Supplemental Environmental Impact Statements dated 1990 associated with the proposal to reduce the footprint of the Mill Seat Landfill from 104.5 acres to approximately 98.6 acres.
- Draft and Final Supplemental Environmental Impact Statements dated 2011 associated with the Mill Seat Soil Borrow Area.

The County completed Parts 1 through 3 of the SEQRA Full EAF for the Proposed Action. After reviewing Part 1 of the EAF, the County classified the Proposed Action as a Type I action (as this term is defined under the SEQRA regulations set forth at 6 NYCRR Part 617.4(b)). The County requested and obtained concurrence from the NYSDEC and the Town of Riga, as involved agencies, in the County acting as Lead Agency. After establishing Lead Agency, the County made its determination of significance for the Proposed Action and issued a Positive Declaration dated April 19, 2013. A formal scoping process has been undertaken, as outlined in the SEQRA regulations (6 NYCRR Part 617.8).

In April 2013, the County determined that the draft scoping document was ready for public review and comment. The draft scoping document was provided, along with the Notice of Public Scoping Meeting, for public review. Copies of the draft scoping document were sent to interested and involved agencies. A notice was published in the Environmental Notice Bulletin on April 24, 2013, acknowledging issuance of a Positive Declaration for the Proposed Action and providing details regarding public scoping and comment.

A public scoping meeting was held on May 13, 2013. In addition to this opportunity to provide comments in person, the public was also provided a mailing address and an e-mail address so that comments could be submitted in writing at any time during the public comment period. The scoping public comment period was held from April 24 to May 28, 2013. All comments received during the public comment period were reviewed and considered during the preparation of the final scoping document. The final scoping document was

completed and published in July of 2013. The final scoping document is attached as Attachment A.

The final scoping document identified the potentially significant issues and impacts that will be addressed in this *DSEIS*. This *DSEIS* is the principal document that describes the technical and environmental information related to the Proposed Site and that assesses potential impacts associated with the Proposed Action. The *DSEIS* includes a discussion of the project's background, purpose, public needs and benefits, as well as social and economic considerations. This document is consistent with the requirements set forth by SEQRA and 6 NYCRR Part 617 to facilitate discussion as well as public and agency review with regard to the Proposed Action.

Several steps in the SEQRA review process remain. The public has an opportunity to comment on this *DSEIS*. Any additional information reasonably necessary to respond to comments will be analyzed and included in the FSEIS prepared for the Proposed Action. A Public Hearing will be held to solicit comments related to this *DSEIS*. The Lead Agency will address all relevant and substantive comments received during the public comment period and incorporate responses to these comments into the FSEIS. Once the FSEIS is prepared and accepted by the County, serving as the Lead Agency, a Statement of Findings will be prepared that considers all information in the FSEIS in addition to a balancing of environmental, social and economic considerations with regard to the Proposed Action. The adoption of a Statement of Findings represents the final step in the SEQRA process for the Proposed Action. NYSDEC and the Town of Riga will each prepare and file a SEQRA Statement of Findings noting all considerations leading up to their individual agency's decision-making, such as issuance of required permits and approvals for all or part of the Proposed Action.

## 1.5 Project Purpose

The purpose of the Proposed Action is to extend the life of the Mill Seat Landfill in order to achieve the goals and objectives listed below.

- To continue to provide long-term, cost effective waste Disposal Capacity to the residents, businesses and institutional facilities of the County and other regional communities. The City of Rochester and surrounding areas are a large population center requiring substantial Disposal Capacity. While the County's Local Solid Waste Management Plan will continue to emphasize implementation of waste reduction and local recycling/reuse

and composting programs, the region will still require a local, dependable facility for the disposal of non-recyclable and non-hazardous MSW.

- To secure additional Disposal Capacity in the County beyond the current useful life of the Mill Seat Landfill that will ensure that locally controlled, environmentally sound, and reliable Disposal Capacity will be provided without interruption for at least an additional 25 years.
- To protect against the unreliability of transporting waste to other locations if the Mill Seat Landfill were to close. The Mill Seat Landfill is the only publicly-controlled waste disposal provider in the County; the High Acres Landfill & Recycling Center, although also located within the County, is privately owned and market controlled. Closing the Mill Seat Landfill once all currently permitted Disposal Capacity is consumed could subject residents and businesses to increased waste disposal prices from associated transportation costs and the liability of transporting solid wastes to more distant disposal facilities.
- To continue to provide a reliable, environmentally sound, cost-effective disposal site on County-owned property for approximately 100,000 tons per year of biosolids generated from the County's WWTFs.
- To provide a long term source of revenue for the local economy. Currently, the economic benefits derived from the continued operation of the Mill Seat Landfill will end in 2018 when the usable Disposal Capacity is consumed. With the Proposed Landfill Expansion of approximately 29.9 million cubic yards of Disposal Capacity, the Mill Seat Landfill can provide for an additional 31 years of affordable waste disposal and subsequent revenue for the local economy.
- To accomplish all of the above in a manner that is acceptable to the local community.

## 1.6 Public Needs and Benefits

### 1.6.1 Needs

Near-Term Need for New Disposal Capacity – According to a field survey performed January 2, 2015, an assumed waste placement density of 0.80 tons per cubic yard, and the current Permitted Waste Acceptance Rate including BUD materials of 776,000 tons per year, it is anticipated that the Permitted Footprint will no longer have usable airspace for waste placement beyond 2018. New waste Disposal Capacity for use by County residents and businesses will be needed by the end of 2018.

Biosolids Disposal Need – The County is committed to provide for the environmentally sound disposal of biosolids from the County’s F.E. Van Lare WWTF and the County’s Northwest Quadrant WWTF. These treatment plants are critical components of the County’s environmental infrastructure, as is the Mill Seat Landfill. Together, they provide environmentally sound and reliable wastewater disposal services to hundreds of thousands of residents and businesses in the community.

City of Rochester’s Disposal Needs – Not only does the County have a responsibility to F.E. Van Lare WWTF and Northwest Quadrant WWTF, but it also has historical contracts with the City of Rochester that date back to the 1970s to provide Disposal Capacity for the City of Rochester’s MSW. This long-standing relationship between the County and the City of Rochester provides a local, environmentally secure, cost effective disposal service to the City’s approximately 210,000 residents.

Need for Local Publicly Controlled Disposal Capacity – By continuing to provide Disposal Capacity at the Mill Seat Landfill, the County will be able to continue to provide environmental and disposal cost security to the community. The County’s ownership and control of its long term environmental infrastructure, which includes the Mill Seat Landfill and its WWTFs, is critical to support a high quality of life and economic development in the County. If additional Disposal Capacity is not provided by the County, then it would be subject to the inherent unreliability and unpredictability associated with a reliance upon others for waste disposal. Tipping fees charged by others would be subject to market fluctuations and the County, and County residents and businesses, would be subject to the variability of the market should the County not provide a secure cost efficient long term disposal option. As shown on the graph in Appendix A to the *Site Selection Report Summary and Evaluation of Alternatives*, included as Attachment B to the *DSEIS*, when the Mill Seat Landfill was opened in 1993 tipping fees in the County decreased and they have continued to remain stable at approximately \$48/ton in 2013; therefore, it is likely that tipping fees would increase at other facilities should a County-owned facility become unavailable. Longer haul distances to a disposal site would also increase the County’s exposure to changes in diesel fuel prices which, in recent history, have risen substantially.

Need for Site Life of at least 25 Years – At the current Permitted Waste Acceptance Rate of 1,945 tons per day, the minimum site life goal of 25 years would require Disposal Capacity of at least an additional 20 million

cubic yards. A minimum site life of 25 years beyond the current useful life of the Mill Seat Landfill is imperative since experience indicates, as summarized further below, that if a new Greenfield Site were to be pursued, it would require in the range of 20 years to successfully complete such an endeavor. Therefore, for any landfill expansion alternative that would offer less than 25 years of additional site life (if such an alternative were to be selected), the County would need to immediately commence a search for a new Greenfield Site – while it concurrently undertakes the steps necessary to obtain all necessary permits and approvals for an expansion of the Mill Seat Landfill. This would be a tremendous strain upon public resources.

The County's Greenfield Site development process took place between 1970 and 1993 – a total of 23 years were needed to ultimately open and begin operations at the Mill Seat Landfill. The extremely time consuming and extensive process involved with successfully developing a new Greenfield Site has not diminished in recent years, since the most recent new Greenfield Site developed in New York State, the Oneida-Herkimer Solid Waste Authority's regional landfill site, took 18 years to develop (from the initiation of site selection to the date the new landfill received its first truckload of waste).

The extensive off-site alternatives analysis which ultimately resulted in the selection of the Mill Seat Landfill included criteria for low permeability soils. Any search for a new Greenfield Site would also place a priority upon locations that have geologic conditions suitable for potential development of a landfill – locations with thick deposits of low permeability soils. Such geologic conditions are required by 6 NYCRR Part 360, as part of the NYSDEC's landfill siting criteria (see 6 NYCRR Part 360-2.12). While these geologic conditions are required for landfill sites because they provide a natural soil barrier that will minimize potential migration of contaminants from a landfill, those same geologic conditions also promote the ponding of water that contributes to the formation of wetlands. The geologic conditions required for landfill sites is what often results in wetland permitting issues for landfill expansion projects as well as for new Greenfield Sites. Examples of this inherent regulatory conflict have arisen throughout the state in recent years. For example, recent landfill expansions that have also involved wetland impacts include those at the High Acres Landfill & Recycling Center in the County, the Seneca Meadows landfill in Seneca County, plus the Oneida-Herkimer Solid Waste Authority's Greenfield Site in Oneida County.

Environmental Stewardship – The County is committed to continued environmental stewardship. The selection of a long-term disposal alternative will minimize environmental impacts while satisfying the overall purpose and need for the Proposed Action.

#### 1.6.2 Benefits

In accordance with the Riga Host Community Agreement and the Bergen Host Community Agreement, the County and WMNY provide revenue sharing and other community benefits which include:

- Revenue sharing to the Town of Riga.
- Revenue sharing to the Town of Bergen.
- Free waste collection and recycling services to Town of Riga residents.
- Monetary payments to Bergen Fire Department and Byron-Bergen Schools.
- Completion of a \$12 million water main capital improvement project.
- Reinstated Property Protection Plan.

The host community benefits will be extended upon issuance of all required permits associated with the Proposed Action.

Additional local environmental benefits include the development and availability of local environmental infrastructure and continued elimination of the biosolids incineration operation. Local control of the Mill Seat Landfill not only provides a sanitation service to the area but also ensures control over the design, construction and operation of the Mill Seat Landfill's environmental safeguards. Expansion of the Mill Seat Landfill will consolidate any potential environmental impacts and monitoring to a site where a long-term monitoring obligation already exists as opposed to construction of a new site.

Other local community benefits that the Mill Seat Landfill has provided since the Mill Seat Landfill's inception include:

- Water Supply Protection Program – As part of the original permitting of the Permitted Site, the County agreed to provide for the extension by the Monroe County Water Authority of public water mains to serve the vicinity of the Permitted Site. At no cost to the municipalities or residents, this County-funded water main



extension provided water to local residents who were previously without municipal water.

- Property Value Protection Program – To guarantee property values for neighbors of the Mill Seat Landfill, the County agrees to provide compensation to owners of identified properties at the time of the sale of their property in the event of monetary loss as a result of the County’s siting of the Permitted Footprint. This benefit will be reinstated to owners of the identified properties should the Proposed Landfill Expansion be permitted.
- Purchases of Goods and Services – It is estimated that the Mill Seat Landfill provides approximately \$5,000,000 per year back into the community in the way of purchasing goods and services from the surrounding area.

The Town of Riga, as the Host Community, receives direct economic benefits in the form of guaranteed annual payments of at least \$450,000 for as long as the Mill Seat Landfill is still accepting solid waste for disposal. The Town of Bergen Fire Department, which services the area in which the Permitted Site is located, receives annual maintenance and capital reserve fees from the Mill Seat Landfill to provide fire protection. The Mill Seat Landfill also makes annual payments to the Byron-Bergen Central School District in Genesee County, New York as well as offers educational programs to the students. A summary of the economic benefits provided to the Host Communities are summarized in Table 2.

**Table 2 - Summary of Host Community Benefits**

<b>Host Communities</b>	<b>Benefit as per Host Community Agreements</b>	<b>Monetary Benefit to Date</b>
<b>Town of Riga (Revenue Sharing)</b>	<ul style="list-style-type: none"> <li>• \$3.65 per ton of MSW (annual guaranteed payment of \$450,000)</li> <li>• \$1.25 per ton of BUD materials</li> <li>• \$0.03 per ton of MSW (Renewable Energy Benefit Payment)</li> </ul>	Over \$20 million since opening
<b>Town of Riga &amp; Village of Churchville Residents</b>	<ul style="list-style-type: none"> <li>• County agrees to provide collection of the residential solid waste generated from residential units in the Town of Riga and Village of Churchville and collect recyclables generated within the Town and Village, at no cost to the Town or Village or their residents.</li> </ul>	Free household garbage & recycling; annual benefit of \$516,000 (Approximate)
<b>Town and Village of Bergen</b>	<ul style="list-style-type: none"> <li>• \$25,000 – one-time payment upon execution of the Bergen Host Community Agreement</li> <li>• \$25,000 – one-time payment upon NYSDEC approval of the expansion of the Landfill</li> <li>• \$0.10 per ton of MSW</li> </ul>	Over \$117,000 since opening
<b>Byron-Bergen Central School</b>	Payments to the School District are based on an increase or decrease in property tax revenues to be received by the School District (from the portion of the School District in the Town of Riga)	Over \$1.26 million since opening (Payment made for the 2012-2013 School Year was \$92,793)
<b>Bergen Fire Department</b>	<ul style="list-style-type: none"> <li>• For as long as the Fire Department is obligated to service the Mill Seat Landfill, maintenance fees and capital reserve fees shall be paid to the Fire Department based upon the previous year's fee multiplied by 102%;</li> <li>• \$10,000 – one-time payment upon execution of the Bergen Host Community Agreement;</li> <li>• \$10,000 – one-time payment upon NYSDEC approval of the expansion of the Landfill.</li> </ul>	Over \$128,000 since opening 2013 Fees: Maintenance Fees = \$4,370 Capital Reserve Fee = \$2,913

### 1.7 Consistency with Local and State Solid Waste Management Plans

The Proposed Action is consistent with the County's recently prepared draft *Local Solid Waste Management Plan*, which calls for the continued use of the Mill Seat Landfill for the disposal of non-recyclable, non-hazardous, and non-divertable MSW. Continued waste disposal service will be required during implementation of other tasks in the *Local Solid Waste Management Plan*, including increasing recycling, yard waste diversion, and organics diversion. Providing for long-term waste Disposal Capacity for non-recoverable wastes through use of the Proposed Footprint is consistent with the *Local Solid Waste Management Plan's* objectives. This draft *Local Solid Waste Management Plan* recently completed its public comment period and is currently under review by the NYSDEC.

The State Solid Waste Management Beyond Waste Plan adopted December 2010 (Beyond Waste) emphasizes the State's solid waste management hierarchy, which prioritizes waste reduction and recycling followed by waste energy recovery, where feasible, with landfilling for the remaining waste materials. Beyond Waste recognizes the primacy of local planning units in the development of Local Solid Waste Management Plans, which are reviewed by the NYSDEC to ensure consistency with state solid waste management policies embodied in Beyond Waste. The integration of state policies into the current draft *Local Solid Waste Management Plan* and the explicit inclusion of the continued landfill use in that plan demonstrate consistency of this Proposed Action with both Beyond Waste and the County's draft *Local Solid Waste Management Plan*.

### 1.8 Alternatives Considered

Alternatives to the Proposed Action have been analyzed in the *Site Selection Report Summary and Alternatives Analysis* (B&L, 2014), attached as Attachment B, and are enumerated further in Section 9.0. The following alternatives were evaluated:

- No Action/Waste Exportation
- Greenfield Site (potential for siting a new landfill)
- Alternative Landfill Sites (Previous Siting Options)
- Alternative Scale and Magnitude
- Alternative Waste Disposal Technologies

### 1.9 Existing Permits and Approvals for Mill Seat Landfill

The Mill Seat Landfill was built and is operating in accordance with permits issued by the NYSDEC. An expansion requires modification of existing permits. The County is the Lead Agency and has SEQRA responsibilities to assess the potential environmental impacts of this Proposed Action and issue appropriate findings. In addition to the 6 NYCRR Part 360 Permit, the Mill Seat Landfill also maintains other permits for Federal and State program compliance requirements including a SPDES General Permit for Stormwater Discharges related to Industrial Activities, Mill Seat Landfill's Title V Air Facility Permit (Federal regulations – Subpart WWW of 40 CFR 60), and an Article 24 Freshwater Wetlands Permit for construction and operation of the on-site soil borrow area. Specifics related to additional permit requirements of the Proposed Action are discussed in Section 2.9.

## **2.0 Proposed Landfill Expansion**

### **2.1 General Project Description**

Currently, landfill operations are occurring in the Permitted Footprint, which is the area permitted by the NYSDEC for disposal. The Permitted Footprint covers a total area of 98.6 acres within the 485-acre Permitted Site. The Proposed Landfill Expansion will add 118.3 acres of double composite liner system directly adjacent to the southern boundary of the Permitted Footprint, plus 39.2 acres of overlay on the Permitted Footprint. The maximum permitted elevation of the Proposed Landfill Expansion will be the same as the maximum permitted elevation of the Mill Seat Landfill. The Proposed Landfill Expansion will provide an additional estimated 29.9 million cubic yards of Disposal Capacity.

The Proposed Landfill Expansion will be designed in accordance with the requirements of 6 NYCRR Part 360. A multi-layer double composite liner system, including low-permeability soil and geomembrane layers, will be constructed beneath the Proposed Footprint, with the exception of areas overlaying the Permitted Footprint, which already has a double composite liner system. The double composite liner system will be installed over a prepared subgrade that will be designed to provide adequate support for the double composite liner system and waste mass.

Primary and secondary leachate collection systems will be integrated into the double composite liner system. The primary leachate collection system will be used to collect liquids which drain to the base of the waste mass. The secondary leachate collection system will be used to collect and remove any liquids which may move through the primary liner system but are still contained in the underlying secondary liner system.

Leachate removal from the primary and secondary leachate collection systems will be directed through a dual-contained piping network. The leachate will be discharged into the County Pure Waters District at a predetermined rate to the WWTF. This proposed leachate management process is consistent with current leachate collection, storage, and disposal techniques.

As the waste placement reaches the final permitted elevations, a multi-layer final cover system will be constructed. The final cover system will provide isolation of the waste mass from vectors and the elements and prevent stormwater infiltration into the Mill Seat Landfill and Proposed Landfill Expansion. The top layer of the final cover system will be a vegetated topsoil layer to prevent

erosion and LFG emissions while also maintaining the integrity of the final cover system.

Future LFG collection system components will continue to be constructed in the Proposed Footprint as waste is placed in order to maintain LFG collection and combustion/destruction, and renewable energy generation, as required by the Mill Seat Landfill's Title V Air Facility Permit. The LFG collection system components in the Proposed Landfill Expansion will tie into the Mill Seat Landfill's existing active LFG collection system, which conveys LFG generated in the Mill Seat Landfill to the LFG combustion devices, including the LFGTE Facility and flares, for renewable energy generation and destruction. This system consists of an extensive network of vertical extraction wells and horizontal collection trenches connected by a series of HDPE lateral pipes to a main collection header.

A comprehensive series of temporary and permanent erosion and sediment control features will be installed throughout construction and operation of the Proposed Action. These measures will be designed and implemented to ensure that surface water flows will be controlled to prevent off-site sedimentation impacts. Protection of Hotel Creek will be a priority of site stormwater management. As part of the Proposed Action, the Mill Seat Landfill's *Stormwater Pollution Prevention Plan* has been updated to include the necessary erosion and sediment controls.

The development of the Proposed Footprint south of the Mill Seat Landfill will require modification to existing roads intersecting the Proposed Site. The southern portion of Brew Road and the western end of O'Brien Road will be abandoned to accommodate the Proposed Landfill Expansion. Brew Road has been previously modified to limit public access to the Mill Seat Landfill but will be completely abandoned from its intersection with the Proposed Footprint perimeter road and O'Brien Road, south to its intersection with Bovee Road. A private drive will be maintained to allow access to the residential driveway at the south end of Brew Road. The southern portion of Brew Road will be abandoned and no longer serve as a connection between O'Brien Road and Bovee Road. O'Brien Road will be abandoned from the County's eastern property line to the existing Brew Road intersection.

Construction and operation of the Proposed Landfill Expansion requires large volumes of soil for subgrade preparation, the double composite liner system construction, the application of daily and intermediate cover soils, and eventually for construction of the final cover system. Since the Proposed Landfill

Expansion overlays the two (2) existing soil borrow areas, additional soils will be required for construction and operation. The two existing (2) soil borrow areas were sized only to accommodate the construction and operation of the Permitted Footprint and will no longer be available for use upon subgrade construction of the Proposed Footprint. Subgrade preparation can provide some soil but will not be sufficient over the life of the Proposed Landfill Expansion. It is proposed that soil will be transported from one (1) or more off-site permitted mines when needed for the Proposed Action.

In order to maintain County control of the Proposed Site, the ownership of a number of parcels will be transferred to the County as part of this Proposed Action. One such property, WMNY Parcel A, tax parcel ID 183.01-1-1 totaling 133.6 acres, currently functions as a buffer area between the Permitted Site and adjacent residents and is currently owned by WMNY. The property on which the Proposed Footprint will be located will be transferred to the County by WMNY following issuance of permits and prior to construction. Land identified on Figure 1 as the Proposed Wetland Mitigation Property, tax parcel IDs 183.01-1-12.1 and 183.01-1-8, will be transferred to the County from WMNY and will be used for the construction and restoration of wetlands as mitigation for wetlands to be impacted by development of the Proposed Footprint. One (1) other parcel owned by the Town of Riga at the Bovee Road and Brew Road intersection will be transferred to the County by the Town following issuance of permits and prior to construction. As previously indicated, portions of Brew Road and O'Brien Road will also be abandoned and the adjacent property owners, primarily the County and WMNY, will take ownership of these lands. These properties are adjacent to those owned or to be transferred to the County for landfill operations.

## 2.2 Definition of Service Area, Waste, and Site

### 2.2.1 Service Area

The Mill Seat Landfill is the only municipally-owned active MSW landfill in the County. High Acres Landfill & Recycling Center is also located in the County but is privately owned and operated. Other MSW landfills in western New York include Ontario County Landfill (in Ontario County), Seneca Meadows Landfill (in Seneca County), Modern Landfill (in Niagara County), and Allied Niagara Falls Landfill (in Niagara County).

There is a regional component to the flow of solid waste, which is not confined to a single county. Pursuant to the Riga Host Community Agreement, the Mill Seat Landfill currently accepts waste from within and outside the County, with the exception of Kings, Queens, New York,

Richmond and Bronx counties. Table 3 displays the top five (5) geographic origins of waste to the Mill Seat Landfill, on average, from 2011 to 2013. As indicated in the table, the County accounts for almost 91% of the total waste accepted at the Mill Seat Landfill, followed by Genesee and Livingston counties accounting for 6.0 percent (6%) and one and six-tenths percent (1.6%), respectively. These percentages do not include BUD material.

**Table 3 - Average Top Five (5) Geographic Origins of Waste Delivered to Mill Seat Landfill, 2011-2013**

<b>Table 3 – Average Top Five Geographic Origins of Waste Delivered to Mill Seat Landfill, 2011-2013</b>	
Monroe County, NY	90.5%
Genesee County, NY	6.0%
Livingston County, NY	1.6%
Orleans County, NY	0.6%
Wyoming County, NY	0.6%
Other Origins within NY	0.8%
<b>Total</b>	<b>100%</b>

*Source: NYSDEC, Facility Annual Reports, 2011-2013*

The Proposed Landfill Expansion will continue to serve a similar area, including the County, as currently served by the Mill Seat Landfill.

### 2.2.2 Types and Quantities of Waste

Solid wastes accepted at the Mill Seat Landfill consist of MSW and NYSDEC-authorized non-hazardous commercial and industrial wastes including C&D debris and friable and non-friable asbestos as defined by 6 NYCRR Part 360. Waste types that are not accepted at the Mill Seat Landfill include hazardous and regulated radioactive wastes, bulk liquids, untreated medical wastes, and any other wastes that do not meet the 6 NYCRR Part 360 definition of solid waste. The Mill Seat Landfill also accepts non-hazardous industrial and commercial wastes under a special waste program in accordance with the requirements of 6 NYCRR Part 364 New York Waste Transporter Permit Regulations, and in accordance with its 6 NYCRR Part 360 Permit. A listing of the materials prohibited from disposal at the Mill Seat Landfill can be found in Section 6.0 of the *Operations and Maintenance Manual*.



Wastes to be accepted in the Proposed Footprint will be representative of the waste stream presently authorized by the NYSDEC for the existing operations and include acceptance of mixed MSW, C&D debris, industrial wastes, ash from MSW energy recovery, ash from coal energy production, asbestos, petroleum contaminated soil, WWTF biosolids, and treated medical waste.

During operation of future Stages, the Proposed Landfill Expansion will accept BUD material, which will typically account for 20% to 30% by weight of the incoming waste stream. These materials are waste materials that the Proposed Landfill Expansion can utilize beneficially, generally as cover material, in their landfilling operations, while preserving clean soils. Examples of acceptable BUD materials and their beneficial use include but are not limited to the following:

**Table 4 - BUD Materials**

Examples of BUD Materials	Beneficial Use
WWTF Incinerator Ash	Daily Cover
Bottom Ash from coal fired boilers	Daily Cover
Bottom Ash/Fly Ash Mixture	Daily Cover
Contaminated Soils	Daily Cover
Construction and Demolition Debris Materials	Daily Cover
Mixed Glass Cullet	Daily Cover
Wood Chips	Daily Cover

The quantities of solid wastes to be accepted at the Proposed Landfill Expansion will fluctuate according to regional waste generation rates, economic conditions, weather, and season. The Permitted Waste Acceptance Rate of 1,945 tons per day is not proposed to change with the Proposed Landfill Expansion.

### 2.2.3 Site Location

The Proposed Site is depicted in Figure 1 as being south of Route 33A, east of Interstate Route 490, west of Johnson Road, and bordering Bovee Road to the north and south. The Proposed Site is approximately one (1) mile southeast of the Village of Bergen. The Proposed Footprint is located directly south of the Permitted Footprint.

#### 2.2.4 Site Description

The area surrounding the Proposed Site is rural with a mix of residential and agricultural uses. Of the 828 acres included in the Proposed Site, currently 98.6 acres are allocated as the Permitted Footprint. The Proposed Landfill Expansion will increase this footprint by 118.3 acres to a total of 216.9 acres of Permitted Footprint and Proposed Footprint. The disturbance acreage is projected to be more than the proposed 118.3 acres and could be up to approximately 243.6 acres, including development associated with the Proposed Wetland Mitigation Area, Proposed Stream Mitigation Area, 30 acres of landfill support facilities, abandonment of the southern portion of Brew Road, and the abandonment of a portion of O'Brien Road including the O'Brien Road Wetland Restoration. This includes support feature construction as well as temporary construction disturbance area.

#### 2.3 Property Ownership and Control

The Mill Seat Landfill is owned by the County and is currently operated by WMNY as part of a minimum 20-year Landfill Lease Agreement with the County that commenced in January 2002. Figure 1 depicts the site boundaries and ownership.

The portion of the Proposed Site to be utilized for the southern portion of the Proposed Footprint is currently private property owned by WMNY. The County intends to acquire this property upon receipt of the permit modification for the Proposed Action. Additional property, owned by WMNY as well, will be acquired by the County for wetland mitigation prior to any construction or wetland impacts.

#### 2.4 Project Design

The Mill Seat Landfill is regulated primarily by 6 NYCRR Part 360 and has an existing permit to operate. In order to modify this permit and expand beyond the currently permitted limits, the County must demonstrate compliance with the design, construction, operation, and closure requirements of 6 NYCRR Part 360. The following plans and reports have been submitted to the NYSDEC in support of the 6 NYCRR Part 360 Permit Application to demonstrate compliance with current regulations.

- *Engineering Report* (Part 360-2.7), including Appendix A to the *Engineering Report* that includes the application form and requested variances;
- *Construction Quality Assurance/Construction Quality Control Manual and Technical Specifications* (Part 360-2.8), Appendix B to the *Engineering Report*;
- *Operation and Maintenance Manual* (Part 360-2.9), Appendix C to the *Engineering Report*;
- *Contingency Plan* (Part 360-2.10), Appendix D to the *Engineering Report*;
- Supporting Landfill Design Calculations and Data, Appendix E to the *Engineering Report*;
- *Hydrogeologic Report* (Part 360-2.11), Appendix F to the *Engineering Report* and Attachment C to this *DSEIS*;
- *Environmental Monitoring Plan* (Part 360-2.11), included in Appendix F to the *Engineering Report* and Attachment C to this *DSEIS*;
- *Stormwater Pollution Prevention Plan*, Appendix G to the *Engineering Report*;
- *Operating Noise Impact Assessment* (Part 360-1.14(p)), Appendix H to the *Engineering Report* and Attachment J of this *DSEIS*; and
- *Construction and Operation Plans* (Part 360-2.4, 2.5 and 2.6) or Permit Drawings.

These permit application documents have been submitted to the NYSDEC in advance of the public issuance of this *DSEIS*. A brief summary of the conceptual design and layout of the Proposed Action is provided in the following section.

#### 2.4.1 Site Layout

As described in Section 1.0 of this *DSEIS*, the Proposed Action will take place exclusively on property already owned by the County or to be transferred to the County by WMNY. Approximately 254 acres of the County owned 485 acres are currently developed as landfill and associated infrastructure. This includes one (1) active disposal area; a Maintenance Building, Administration Building, Scale House, LFG collection system, leachate collection and storage facilities, stormwater management features, access roadways, two (2) soil borrow areas, three (3) petroleum aboveground storage tanks, and a LFGTE Facility. A total of

approximately 243.6 acres of development will occur in addition to the existing 254 acres of landfill and associated infrastructure, although some overlap is expected due to the overlay of the Proposed Landfill Expansion onto the Permitted Footprint. An additional 148 acres of landfill development will occur including 118.3 acres of double composite lined landfill area and approximately 30 acres of landfill support facilities. All proposed infrastructure to support the Proposed Footprint will tie-in to the existing infrastructure where possible to minimize site disturbance. The majority of the existing infrastructure is located north of the Mill Seat Landfill, such that the Proposed Footprint will not interfere in current landfill operations nor require the development of new ancillary support systems. The Proposed Action will result in impacts to 13.5 acres of USACE jurisdictional wetlands (13.4 acres of NYSDEC jurisdictional wetlands) identified as Wetland RG-6 and activities associated with worth within the 100-foot buffer. Approximately eight-tenths (0.8) of an acre of temporary disturbance will occur for the abandonment of a portion of O'Brien Road including the O'Brien Road Wetland Restoration. Approximately 86 acres of Proposed Wetland Mitigation Area will be developed on the Proposed Site as well.

Figure 6 depicts the site plan with the Proposed Landfill Expansion and associated infrastructure. The existing Maintenance Building, Administration Building, Scale House, and LFGTE Facility will remain unchanged. The leachate storage area will require some modification to collect leachate from the expanded leachate collection system. Landfill access roads and stormwater management systems will similarly be expanded to accommodate the Proposed Footprint and account for the replacement of a portion of the perimeter road, the O'Brien and Brew Road intersection, and two (2) SRPs all of which are located within the area of the Proposed Footprint. Brew Road is proposed to be abandoned from its intersection with the west end of O'Brien Rd south to its intersection with Bovee Road. O'Brien Road is proposed to be abandoned at the County's property line east of its intersection with Brew Road. Abandoning O'Brien Road prior to its travel through NYSDEC mapped freshwater Wetland RG-7 will protect the wetland community from unnecessary traffic and loitering, and also provides the opportunity to remove the existing roadway embankment and culvert within the wetland to provide a more continuous connection within Wetland RG-7 (as proposed by the O'Brien Road Wetland Restoration project).

The Proposed Landfill Expansion will maintain the proper horizontal and vertical setbacks. The limits of the Proposed Footprint are offset a minimum of 100 feet from the County's property line, in accordance with 6 NYCRR Part 360. The Proposed Footprint will also maintain a minimum 100-foot offset from Hotel Creek to the south, and from Wetlands RG-5 and RG-7 to the west and east, respectively. No elevation increase is proposed as part of the Proposed Landfill Expansion and the proposed double composite liner system will maintain the required separation from bedrock. Seasonal high groundwater levels will be managed through the use of a groundwater suppression system and a waiver, as provided by 6 NYCRR Part 360-2.13(d), of the groundwater separation requirement of five (5) feet due to the construction of a groundwater suppression system at the bottom of the proposed double composite liner system. The groundwater separation waiver has been included in the 6 NYCRR Part 360 Permit Application. No vertical setback issues are anticipated with the Proposed Landfill Expansion.

#### 2.4.2 Site Capacity and Expected Site Life

The Proposed Landfill Expansion will increase the available Disposal Capacity by approximately 29.9 million cubic yards. At the Permitted Waste Acceptance Rate of 1,945 tons per day and the site's historical waste density, the Proposed Landfill Expansion is anticipated to provide 31 years of adequate Disposal Capacity. Actual waste quantities received and actual airspace utilization will determine the actual site life. No increase to the currently Permitted Waste Acceptance Rate is proposed.

#### 2.4.3 Double Composite Liner System

The 6 NYCRR Part 360 regulations that govern siting, construction, operation, and closure of the Proposed Landfill Expansion are designed to provide maximum protection to the environment including groundwater and surface water resources. The installation of a double composite liner system over relatively low permeability soils, along with a network of groundwater monitoring wells, will ensure protection of groundwater resources.

Precipitation percolating down through the waste mass will create leachate as it comes into contact with disposed wastes. The leachate will be contained within the leachate collection and removal system. Leachate collection and removal is an integral component of the double composite

liner system. The double composite liner system consists of two (2) separate composite liners, one (1) overlying the other. Each composite liner system consists of a low permeability soil or GCL and HDPE geomembrane. The leachate collection layers are situated immediately above each HDPE geomembrane and direct the flow of leachate to the removal system and temporary storage area for ultimate disposal in the County Pure Waters District.

The proposed double composite liner system (Figure 3) will be compliant with 6 NYCRR Part 360 and similar in design to the existing double composite system. The lower, or secondary, liner system will be constructed utilizing a two (2) foot thick low permeability soil layer with a maximum hydraulic conductivity of  $1.0 \times 10^{-7}$  cm/s with an overlying 60 mil (0.060 inch) HDPE geomembrane. The secondary leachate collection system will be constructed over the secondary liner system and will consist of a composite geonet and perforated collection pipes. The upper, or primary liner system will consist of a 12 inch structural fill soil layer and a geosynthetic clay liner overlain with a 60 mil HDPE geomembrane. The primary leachate collection system is situated above the primary composite liner system and consists of a two (2) foot thick granular soil drainage layer with perforated collection pipes.

As part of Stage V-A development, the double composite liner system of the Proposed Footprint will tie into the existing double composite liner system of the Permitted Footprint. The tie-in will occur in the same way newly constructed Stage developments tie-in to the existing Stages. The cover soils will be excavated to expose the different layers of the double composite liner system to allow for direct connection between the geosynthetics and soil layers resulting in a continuous double composite liner system beneath the waste disposal area. Construction of the tie-in in this manner will allow for waste placement to overlie the in-place waste mass of the Mill Seat Landfill, forming a continuous waste mass. The placement of waste over portions of the Permitted Footprint will require the removal of the existing intermediate cover. It is anticipated that the intermediate cover will be removed in a systematic manner as waste placement in the Proposed Landfill Expansion overlay progresses.

A groundwater suppression system will be constructed as part of the double composite liner system to minimize the upward buoyancy forces associated with groundwater. This layer will consist of a composite geonet which will convey groundwater to collection trenches located at the

low point of each Stage. Collection pipes within these trenches will convey the collected groundwater to the low end of the Stages where the groundwater will be pumped out via a separate pumping system within the sideriser pump station for final discharge into the surrounding surface waters. In the unlikely event that the sampling required by 6 NYCRR Part 360 indicates groundwater contamination, the piping within the sideriser building will be modified to allow the groundwater to be collected within the leachate collection system.

For the Proposed Footprint, the leachate collection system for each Stage will be equipped with metering systems to continuously monitor secondary flow rates and primary liner system performance. Monitored flow rates, based on a 30-day rolling average, will be provided to the NYSDEC in accordance with 6 NYCRR Part 360.

The Permitted Footprint's leachate collection system will require modifications to develop the Proposed Landfill Expansion. Three (3) existing Stage II Subcells will require significant modification in order to continue leachate collection and conveyance from these areas with the development of the Proposed Landfill Expansion. In order to continue proper leachate management through the development of the Proposed Landfill Expansion, the primary, secondary, and groundwater collection laterals for these Subcells will be swept and extended outside the limits of the Proposed Footprint. The laterals will be extended at a slope such that the minimum pipe slope is maintained but also such that the pipes will not intersect the proposed subgrade or double composite liner system of the Proposed Footprint. The existing primary and secondary leachate transfer manholes for these Subcells will be removed and replaced with new double contained infrastructure. Under this configuration, the modified leachate conveyance piping will still be monitored with the remaining Stage II leachate flows at existing Pump Station No. 1. The Stage IIIB-1 cleanout at the high point of the Stage will also require modification through an extension. This extension will be during the construction of Stage V-B. Along with the leachate transfer manhole relocations and lateral extensions, this cleanout extension is the only other modification to the existing leachate collection and conveyance infrastructure that requires modification to accommodate the Proposed Landfill Expansion. The extension of the cleanout will allow for flushing of the primary leachate collection pipe for Stage IIIB-1 in accordance with 6 NYCRR Part 360-2.9(j)(3). Refer to Figure 7 for further information on proposed modifications to the existing leachate collection system.

## 2.4.4 Stormwater Management

### 2.4.4.1 Existing Conditions

The existing stormwater management system is designed to collect and convey stormwater from the Permitted Site, including the Permitted Footprint area and two (2) existing soil borrow areas, and discharge the stormwater to the surrounding waterways in a controlled manner such that the surrounding waterways' water quality is unaffected. The stormwater system is also utilized to minimize erosion and to collect and contain sediment prior to discharge. The existing stormwater system at the Permitted Site includes a series of grass, riprap and gabion basket-lined swales that direct the runoff to several SRPs around the Permitted Site. The Permitted Site is currently divided into seven (7) drainage areas, two (2) of which will be impacted by the Proposed Landfill Expansion.

The existing area where the Proposed Footprint is planned is divided into two (2) drainage areas that discharge stormwater to the SRPs or off-site. The first drainage area (Drainage Area 1, DA-1) handles the stormwater runoff from the southern portion of the Mill Seat Landfill, the western borrow area, and overland flow south of the Permitted Footprint. Runoff from the Mill Seat Landfill drains to existing SRP-2 which discharges to regulated Wetland RG-6 from the east and eventually to analysis Discharge Point 1 (DP-1) located in Hotel Creek as it crosses Brew Road. DP-1 is the analysis point for DA-1. The western soil borrow area flows to existing SRP-7, which discharges into Wetland RG-6 from the west and eventually to DP-1. Overland flow south of the Mill Seat Landfill flows south to Hotel Creek and DP-1. The second drainage area (Drainage Area 2, DA-2) to be impacted by the Proposed Landfill Expansion includes runoff from the eastern soil borrow area, which drains directly to existing SRP-8. Existing SRP-8 discharges east to analysis Discharge Point 2 (DP-2), which is located in Wetland RG-7. These drainage areas both run off into Hotel Creek and eventually off-site. The discharge structures for each drainage area will be designed such that existing peak flows are not exceeded.



Refer to Section 3.5.1 of this DSEIS for further information on the existing stormwater management system and analysis discharge points.

#### 2.4.4.2 Proposed Landfill Expansion Stormwater Management

To manage potential effects of the Proposed Landfill Expansion on the stormwater management system, stormwater control structures will be developed. The control structures will include side slope diversion berms and down chutes on landfill slopes with final cover and stone lined ditches around the perimeter of the Proposed Footprint. These controls collect and convey the stormwater to SRPs where the water is stored and slowly discharged to existing waterways in a controlled manner consistent with existing flows and quality. Due to the relatively long landfill side slopes (slope lengths in excess of 500 feet), the side slope diversion berms will be necessary to break up the drainage lengths and prevent excessive erosion and soil loss.

The two (2) drainage areas analyzed for the existing conditions outlined in Section 2.4.3.1 of this *DSEIS* have also been analyzed for future conditions that will exist with the Proposed Landfill Expansion. Based on the analyses, the following stormwater controls will be implemented for the Proposed Landfill Expansion:

- Existing SRP-2 will be removed since it will be completely covered by the Proposed Footprint.
- The existing SRP for the eastern borrow area (existing SRP-8) will require modification to ensure that the pond can properly manage runoff from the Proposed Landfill Expansion. Existing SRP-8, which currently only manages stormwater runoff from the eastern borrow area, will be modified such that its design maintains consistency with the New York State Stormwater Management Design Manual and can sufficiently attenuate its stormwater flows. The following modifications will be made to existing SRP-8: the addition of a new forebay, an increase in berm height for increased storage, and the modification of the outlet structure to sufficiently attenuate flows.

- Existing SRP-7 for the western borrow area will be completely covered by the Proposed Footprint and require removal. A new SRP-7 will be constructed on the south end of the Proposed Footprint.

Based on the topography of the Proposed Site, stormwater run-on from adjacent developed and undeveloped parcels will be negligible. Both the new SRP-7 and the modified SRP-8 will be constructed to allow for continued discharge into the surrounding wetlands and ultimately to Hotel Creek without an increase in the peak discharge rate or reduction in water quality.

A summary of SRP design parameters and sizing calculations has been included in the 6 NYCRR Part 360 Permit Application. The modeling and site discharges are also described in further detail in Section 2.4.3.3 of this *DSEIS*. An overview of the stormwater drainage areas is included in Figure 21.

#### *2.4.4.3 Stormwater Runoff Modeling and Site Discharges*

To model existing conditions at the Permitted Site, the stormwater runoff to the existing SRPs was calculated using HydroCAD software. Since only the area of disturbance was analyzed for changes in drainage patterns, all runoff to the design points will likely change. Stormwater runoff from the Proposed Footprint was therefore analyzed at the two (2) discharge design points for both existing and proposed conditions. Refer to Section 3.5.1 of this *DSEIS* for further description of the location of the discharge design points. Both drainage areas were analyzed to ensure the maximum discharge rate at each will not increase due to the Proposed Landfill Expansion and that the water quality will not be adversely affected. Wetland monitoring, currently on-going to assess impacts to the wetland area, is anticipated to continue following build-out of the Proposed Landfill Expansion.

New drainage areas for the Proposed Site were developed based on the proposed developed conditions and the new stormwater runoff was calculated using HydroCAD software. The developed drainage flows were then routed through the proposed SRPs and appropriate SRP capacities and outlet structures were designed.

In order to be at or below the existing rate of maximum stormwater discharge off-site, the proposed SRPs were sized such that they can retain the increase in stormwater runoff from the Proposed Landfill Expansion without directly discharging off site. The final calculations indicated that the proposed new conditions incorporating the Proposed Landfill Expansion and stormwater ponds resulted in peak outflows equal to or less than existing conditions. Therefore, the proposed SRP-7 is of sufficient size to handle the stormwater from the Mill Seat Landfill incorporating the Proposed Landfill Expansion. In addition, the modified SRP-8 is sufficient to handle the increased runoff from the Proposed Landfill Expansion. A summary of the stormwater modeling results is included in Table 5. Refer to the 6 NYCRR Part 360 Permit Application for further information on stormwater runoff and stormwater pond sizing calculations.

**Table 5 - Stormwater Modeling Results**

Pre-Development vs. Post Development Peak Flows		
	Drainage Area 1 (DP-1)	Drainage Area 2 (DP-2)
Existing Area (acres)	279.471	42.203
Proposed Area (acres)	251.536	53.172
Peak Flows, pre-development (cfs)	1-year	13.09
	10-year	49.19
	25-year	64.60
	100-year	91.01
Peak Flows, post-development (cfs)	1-year	9.19
	10-year	30.86
	25-year	39.86
	100-year	56.41

The stormwater quality will continue to be assessed by sampling the outfalls of the SRPs as outlined in the Mill Seat Landfill's *Environmental Monitoring Plan* (included with the *Hydrogeologic Report* in Attachment C).

#### 2.4.4.4 Erosion and Sediment Control

Additional stormwater management practices will be implemented during construction and general operations to prevent off-site migration of runoff and sediment into surrounding surface water bodies. Vegetation will be established on exposed soil as

soon as possible to prevent erosion. Other erosion control measures such as silt fence, hay bales, or temporary ditches will be installed hydraulically upgradient of surface water bodies during earth moving activities to prevent siltation.

A variety of soil erosion and sediment control structures (i.e., ditches, swales, stone check dams, silt fences, down chutes, etc.) will be monitored routinely, and maintained as necessary as outlined in the *Stormwater Pollution Prevention Plan*. On a monthly basis or after each significant rainfall, the operating staff will inspect all completed drainage control structures for evidence of erosion damage or excessive siltation. Where damage has been rendered, the structure shall be repaired as soon as possible, prior to the next storm event. Where silt has breached a siltation control structure or filled a ditch, the sediment will be removed as soon as possible, prior to the next storm event, and the structure repaired or replaced as needed.

In addition to the drainage conveyance structures, all SRPs are to be monitored for sediment volumes. Where SRPs are filled to 50% capacity or where the sediment impacts operation (e.g., siltation of an outlet structure), the areas will be dredged or cleaned to restore original storage volume and operation. Dredgings may be used as daily cover on the Mill Seat Landfill or Proposed Landfill Expansion. Drying of the dredgings may be necessary to maintain workability.

The *Stormwater Pollution Prevention Plan* will further ensure environmental protection with special attention to the protection of water quality and quantity of water flowing from the Proposed Action that eventually flows to Hotel Creek. This updated *Stormwater Pollution Prevention Plan* is included in the 6NYCRR Part 360 Permit Application. Refer to the *Stormwater Pollution Prevention Plan* for further erosion and sediment control structure monitoring and maintenance.

#### 2.4.5 Water Quality Monitoring Program

6 NYCRR Part 360 requires each landfill to have an approved Environmental Monitoring Plan that addresses groundwater and surface water monitoring. The Mill Seat Landfill has an approved *Environmental Monitoring Plan* dated May 2011 that addresses groundwater and surface

water monitoring. An updated *Environmental Monitoring Plan* that also addresses groundwater and surface water monitoring as it relates to the Proposed Landfill Expansion has been completed by GEI Consultants and is included in Attachment C. The purpose of water quality monitoring is to detect whether there are any potential landfill-derived impacts by comparing periodic monitoring results with previous results at the same point (intrawell comparisons), and by comparing general upgradient and downgradient water quality.

The *Hydrogeologic Report*, prepared by GEI Consultants, includes an extensive hydrogeologic analysis which provides an evaluation of existing groundwater quality in the area of the Proposed Footprint. The *Hydrogeologic Report* is included in Attachment C.

#### 2.4.6 Water Quality Monitoring Requirements

The updated *Environmental Monitoring Plan* satisfies 6 NYCRR Part 360 and is capable of detecting whether there are any landfill-derived impacts to groundwater and surface water. It is significant to note that during the operating history of the Mill Seat Landfill, there have been no landfill-derived impacts to groundwater or surface water. The updated *Environmental Monitoring Plan* describes environmental monitoring for the Mill Seat Landfill and Proposed Landfill Expansion, including the location of all monitoring points, the sampling schedule, and the methods of sample collection and preservation. Chain of custody documentation, laboratory analyses to be performed, analytical and statistical methods, and reporting requirements are also discussed in the updated *Environmental Monitoring Plan*.

Under the approved *Environmental Monitoring Plan*, on-site monitoring wells are sampled quarterly<sup>3</sup> during operation, closure, and post-closure. In a calendar year, monitoring wells will be sampled for baseline parameters during one (1) quarter and for routine parameters during two (2) remaining quarters. The Mill Seat Landfill has an established water quality history and is exempt from sampling during the first quarter. The baseline sampling event will be rotated among the three (3) sampling quarters annually.

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<sup>3</sup> Quarterly sampling excludes the winter months (January through March); sampling frequency is therefore three (3) times per year.

Laboratory analyses will be performed by a laboratory certified by the NYSDOH or Environmental Laboratory Program and will follow the New York State Analytical Services Protocol. NYSDEC has the opportunity to split samples during any of the water monitoring sampling events for analysis at a laboratory of its choice. The analytical results will be reviewed by WMNY to ensure the Proposed Landfill Expansion complies with the 6 NYCRR Part 360 Permit. Monitoring results will be submitted to NYSDEC as required by 6 NYCRR Part 360. The following information will be included in these reports:

- A table showing the sample collection date, the analytical results, designation number for each environmental monitoring point sampled, applicable water quality standards and/or NYSDOH guidance values;
- Additional tables or graphical representations comparing current water quality, pre-construction water quality, and upgradient water quality, as needed;
- A discussion of results, including any parameters detected above background concentrations or water quality standards; and
- Third-party data validation report covering at least 20% of baseline parameter analyses.

In addition, the following information will be compiled for NYSDEC:

- An annual report containing a summary of the water quality information with special note of any changes in water quality that have occurred throughout the year;
- Laboratory QA/QC documentation; and
- A statistically significant increase in any parameter (to be reported within 14 days of such determination).

#### 2.4.6.1 Groundwater Quality Monitoring

The evaluation of existing groundwater quality takes into account the presence of the Permitted Footprint, which is located immediately upgradient of the Proposed Footprint. Existing groundwater monitoring wells are located upgradient and within the Proposed Footprint. There are also wells located cross gradient and downgradient of the Permitted Footprint.

The horizontal well spacing of new wells will satisfy the 6 NYCRR Part 360 requirements of 500 feet for downgradient wells and 1,500 feet for upgradient and cross-gradient wells. Monitoring wells will be installed to monitor the overburden/bedrock interface and deeper bedrock. Monitoring well construction details will follow the 6 NYCRR Part 360 requirements regarding well screen placement, well development (pumping) procedures, and proper decommissioning (sealing) of wells not to be used. Wells now situated within the Proposed Footprint will be decommissioned before the double composite liner construction takes place at that location.

#### 2.4.6.2 Surface Water Quality Monitoring

6 NYCRR Part 360 requires surface water monitoring where there are water bodies adjacent to solid waste management sites. Surface water quality monitoring at the Mill Seat Landfill and Proposed Landfill Expansion will be performed as required by the *Environmental Monitoring Plan*. Surface water quality monitoring will include sampling of on-site SRPs when flowing, locations in downgradient wetlands, and several locations along Hotel Creek – two (2) of which will be located in the areas where Hotel Creek receives indirect runoff from the Proposed Action and locations farther downstream. The number and specific details related to the surface water sampling, including the sampling locations, sampling procedures, sampling frequency, and sampling parameters, will be specified in the NYSDEC-approved *Environmental Monitoring Plan*.

#### 2.4.7 Leachate Storage, Treatment, and Disposal

The constructed double composite liner system within each Stage will resemble a ridge and valley. The sloped sides of the double composite liner system will facilitate leachate flow towards the low end of the Stage for leachate collection and pumping from the Stage using a sump and sideriser pumping station. The double composite liner system will maintain a minimum slope of two percent (2%) and a maximum slope of 33%. The sideriser pump stations will be located along the eastern perimeter road of the Proposed Footprint. Once metered in the sideriser pump stations, leachate will travel via double-walled gravity conveyance pipe (i.e., a pipe within a pipe) to a new pump station (Pump Station No. 4), which will transfer the leachate to the Mill Seat Pump Station at the north end of the

Permitted Site or the leachate storage tanks for disposal in the County Pure Waters District.

Utilizing a double-walled pipe configuration will allow for leak detection of the main inner carrier pipe. A separate leachate conveyance pipe network will be utilized for leachate generated in the Proposed Footprint. See Figure 4 for a schematic of the leachate management system. Figure 7 outlines the proposed locations of the sideriser pump stations, Pump Station No. 4, Mill Seat Pump Station and leachate piping.

To attenuate peak flow situations from the Proposed Footprint, when the Mill Seat Pump Station is down for maintenance, or if there is a temporary interruption of service in the County Pure Waters District, the existing leachate storage tanks may be utilized. On-site leachate storage consists of two (2) glass-lined aboveground steel tanks capable of storing approximately 1,500,000 gallons of leachate each. These tanks minimize the acreage needed to provide leachate storage on-site and meet the storage requirements of 6 NYCRR Part 360-6.3.

As with current operations, the primary disposal facility for leachate will be via the Mill Seat Pump Station to the County Pure Water District's F.E. Van Lare WWTF in Rochester, New York. The F.E. Van Lare WWTF has adequate capacity and the means to properly treat the leachate. The WWTF is required to meet strict discharge standards set forth by the NYSDEC. The biosolids from the treatment process is then returned to the Mill Seat Landfill for disposal. The backup WWTF for Mill Seat Landfill and Proposed Landfill Expansion leachate is Northwest Quadrant WWTF in Greece, New York. An additional option for leachate disposal if the Mill Seat Pump Station is non-operational is to over the road haul the leachate from the leachate storage tanks to the Monroe County Fleet Center located at 145 Paul Road, Chili, New York. At the Fleet Center, the leachate can be off-loaded to the County Pure Waters District for disposal at the F.E. Van Lare WWTF. A copy of the current agreements with the WWTFs are included in Appendix A of the 6 NYCRR Part 360 Permit Application.

A preliminary site-wide leachate generation estimate has been completed through the use of historical leachate collection data. Figure 8 shows the anticipated leachate generation from the Permitted Footprint and Proposed Landfill Expansion over time. The maximum leachate generation is estimated to peak at nearly 22 million gallons in one (1) year.



The estimates were performed assuming a progression of final cover system installation on the remaining uncapped portions of the Permitted Footprint and the Proposed Footprint. Leachate generation is expected to peak when the final Subcell begins accepting waste, which is projected to be 2045.

#### 2.4.8 LFG Collection System

An active LFG collection system is currently installed in the Permitted Footprint and is included as part of the Proposed Landfill Expansion. Various aspects of the LFG collection system are covered under the Mill Seat Landfill's Title V Air Facility Permit. This permit has undergone several modifications and renewals, the most recent effective in September 2006 (another permit renewal/modification is currently pending). A Title V Facility Air Permit modification has been prepared to account for the Proposed Landfill Expansion and has been submitted to NYSDEC.

The following description is of the LFG collection system that will be part of the Proposed Landfill Expansion, which will essentially be an extension of the LFG collection system that is already in place at the Mill Seat Landfill. The LFG collection system will be designed primarily with a series of horizontal collection trenches for collection of LFG during operation and vertical extraction wells for collection of LFG from areas that have reached final grades or an interim elevation which allows for vertical well installation. In addition, LFG will also be collected from the primary leachate collection layer utilizing the primary collection pipe cleanouts and additional piping installed on top of the double composite liner system.

The construction of the horizontal collection trenches will utilize perforated piping encapsulated in a stone-lined trench to create a preferential pathway for LFG movement. The dimensions will be approximately three (3) feet wide by three (3) feet deep. The perforated pipe will transition to solid pipe prior to penetrating the side slope of the waste mass to minimize oxygen intrusion. Typical spacing between trenches will be ten (10) to 30 feet vertically and 75 to 100 feet horizontally. The operator will install horizontal collection trenches during waste placement operations for connection to the collection system as soon as adequate waste cover placement prevents air intrusion.

Once the waste reaches final elevation, vertical LFG extraction wells will be installed to augment the horizontal trenches. These wells will

be drilled to a depth sufficient to penetrate a minimum of three-fourths (3/4) the depth of waste. The typical vertical extraction well will be approximately three (3) feet in diameter and contain a perforated pipe that is backfilled with stone. The vertical well piping will extend through the surface of the waste mass and connect to a conveyance header using a wellhead. The wellhead is used to monitor LFG quality, system pressures, and flow rate. These metrics indicate the efficiency of LFG collection and can be adjusted to optimize LFG collection in the well field.

The active LFG collection system will be connected to a network of header pipes used to convey the LFG to the LFGTE Facility. The existing flares are located centrally on the Permitted Site to provide backup control capacity should the LFGTE Facility be shut down for an extended period of time. Additional engines, flare capacity or other technologies that may be developed may be added as necessary to accommodate increased LFG generation. Figure 9 outlines the proposed locations of the collection trenches, extraction wells, flares, and LFGTE Facility tie-ins. More detail is included in the 6 NYCRR Part 360 Permit Application.

#### 2.4.9 Landfill Gas to Energy Facility

The LFGTE Facility is currently operated under the same Title V Air Facility Permit as the Mill Seat Landfill. The currently permitted LFGTE Facility consists of eight (8) Caterpillar® G3516C LFG fueled reciprocating internal combustion engines, and ancillary equipment to support electricity generation. The LFGTE Facility has the potential to generate approximately six and four-tenths (6.4) megawatts of electricity under base load operating conditions.

### 2.5 Landfill Construction

The Proposed Landfill Expansion will be built in Stages. Construction of the Proposed Footprint will be in accordance with 6 NYCRR Part 360, the governing regulations for solid waste management facility construction and operation. In order to fulfill the applicable 6 NYCRR Part 360 requirements and in support of this SEQRA review, a 6 NYCRR Part 360 Permit Application package was prepared as outlined in Section 2.4 of this *DSEIS*. The 6 NYCRR Part 360 Permit Application package has been submitted to the NYSDEC.

The *Engineering Report* was prepared to present the overall conceptual design of the Proposed Landfill Expansion and to support the application for a construction and operating permit. The 6 NYCRR Part 360 Permit will be for the

life of the Proposed Landfill Expansion with permit renewals required every ten (10) years. The Proposed Landfill Expansion consists of five (5) Stages, with an additional site life capacity of approximately 31 years at the Permitted Waste Acceptance Rate and waste densities. The following Sections describe the Proposed Landfill Expansion development and construction requirements.

### 2.5.1 Landfill Development

Figure 10 outlines each of the proposed Stages, or waste disposal areas, in proposed development sequence. Construction plans include five (5) Stages built over the life of the Proposed Landfill Expansion, totaling approximately 118.3 acres of double composite lined area. The Stage numbers and order of construction may vary according to final regulatory approvals.

Based on the proposed development sequence, the initial development will consist of Stages V-A and VI-A (totaling 12.6 acres of double composite liner construction with 4.8 acres of overlay onto the Mill Seat Landfill) in order to avoid immediate impact of Wetland RG-6. Initial development will be followed by Stage V-B (8.6 acres of double composite liner with an additional 32.2 acres of overlay onto the Mill Seat Landfill) and then Stage VI-B (13.4 acres of double composite liner with an additional 2.3 acres of overlay onto the Mill Seat Landfill). The remaining four (4) Stages VII, VIII, IX-A, and IX-B, 20.8 acres, 21.5 acres, 21.6 acres, and 19.8 acres, respectively, will have no additional lateral overlay onto the Mill Seat Landfill. Each Stage will likely be constructed in two (2) or more Subcells to limit the area of double composite liner system constructed and left exposed prior to waste placement to roughly ten (10) acres or less. Each Stage has a separate sump except for Stage IX, which combines two (2) Stage valleys into one (1) sump.

The initial construction of Stages V-A and VI-A and associated support facilities will proceed after the solicitation of competitive bids and proposals for the work. Competitively procured contractors, WMNY personnel, or some combination thereof, may choose to undertake subsequent Subcell expansions. The construction of a landfill is a substantial undertaking requiring several different types of construction equipment. Construction workers will use bulldozers, front-end bucket loaders, water trucks, dump trucks, hydraulic excavators, rollers, and other heavy equipment to accomplish the work. The Stages may take one (1) or more construction seasons to complete.

### 2.5.2 Construction Quality Assurance/Construction Quality Control

Trained CQA/CQC technicians will supervise and inspect the installation of the double composite liner systems. CQA/CQC tests for soil placement, soil liners, drainage media, geosynthetic materials, and synthetic geomembrane seams verify that the material is installed to the required specifications to ensure performance and compliance with applicable standards and regulations. The construction documents submitted to the NYSDEC for approval at various phases of the Proposed Landfill Expansion's build-out will contain a detailed discussion of the CQA/CQC procedures planned, including Contract Drawings and Specifications.

WMNY personnel or other contracted engineers will compile a construction certification report for each Subcell which summarizes construction activities and the testing results. They will then submit these construction certification reports to the NYSDEC for review and approval prior to any waste placement in a newly constructed Subcell. Construction documents submitted to the NYSDEC will contain a detailed discussion of the CQA/CQC procedures planned, including construction specifications.

*A Construction Quality Assurance/Construction Quality Control Manual* has been prepared as part of the 6 NYCRR Part Permit Application package and submitted to the NYSDEC. This *Construction Quality Assurance/Construction Quality Control Manual* details the procedures to ensure that the materials and methods used to construct the Proposed Landfill Expansion meet the design criteria and specifications set forth in 6 NYCRR Part 360. While the Proposed Landfill Expansion is under construction, one (1) or more CQA/CQC personnel will be on-site at all times to document and verify that all installation and construction activities meet Contract Drawings and Specifications.

Laboratory and field tests conducted at specified intervals on materials used to construct the double composite liner system will ensure quality throughout Proposed Landfill Expansion construction. Soil tests will be conducted to verify that all soil liner material placed has the proper moisture content, thickness, density, and permeability. Inspection and testing of the geomembrane liners will ensure that the double composite liner system meets the minimum thickness required, and that the seams between overlapping panels of geomembrane are welded in accordance with the Technical Specifications. Tests on the stone material used for the

primary leachate collection layer will confirm that this material placement is appropriately thick and meets the specified minimum permeability.

Upon completion of each low permeability soil layer, the surface of the soil will be kept moist to prevent desiccation and cracking, which would compromise the continuity of the soil layer and its effectiveness as a low permeability barrier. Only essential traffic over completed areas of soil liner will be allowed.

Storage of the geotextiles and the 60 mil HDPE geomembrane for future use in the double composite liner system will sufficiently protect said materials from dust, dirt, and other sources of damage. Measures will be utilized during placement to prevent damage from handling procedures, vehicle traffic, and leakage of hydrocarbons (e.g., fluids from construction vehicles). In haul road locations, the completed layers of the double composite liner system will be protected from damage utilizing extra layers of the geotextiles and increased soil thicknesses.

Protection of the geotextile and geomembrane liners from damage will continue through the placement of the overlying leachate collection layers. A geotextile cover will protect in-place leachate collection layers and prevent the mixing of dirt and other foreign material.

### 2.5.3 Soil Management

Both on-site and off-site soils will be used in subgrade and double composite liner system construction, operational cover soil application, and final cover system construction. On-site soil will be removed where possible from the Proposed Footprint as Stage development progresses in an effort to bring such areas to their proposed subgrade elevations prior to double composite liner system construction. It will be necessary to segregate on-site and off-site borrow as topsoil, soils for double composite liner system and final cover construction, and for operational cover soil. The final cover system and other applications will require stockpiled topsoil. Double composite liner systems, final cover system installation, and general operations require finer-grained materials that have a lower permeability. Operational soil cover application or construction of roadways or embankments typically requires coarser-grained materials.

There are not sufficient soils within the Proposed Landfill Expansion for use in subgrade construction, perimeter berm and roadway

construction, and operational soil placement over the entire life of the Proposed Landfill Expansion. As a result, it will be necessary to obtain additional soil materials from off-site sources. In order to supplement the on-site soils, soil will be obtained from one (1) or more off site permitted mine locations. Table 6 below illustrates the estimated general soil balance for the Mill Seat Landfill and Proposed Landfill Expansion:

**Table 6 - Estimated Soil Balance**

<b>Soil Need</b>	<b>Volume Needed (CY)</b>	<b>Available On Site (CY)</b>	<b>Fulfilled Through BUD Acceptance (CY)</b>	<b>Required From Off Site (CY)</b>
<i>Landfill Construction<sup>1</sup></i>	1,393,151	1,078,637	N/A	<b>314,514</b>
<i>Landfill Operations<sup>2</sup></i>	3,406,667	0	3,327,488	<b>79,179</b>
<i>Landfill Closure<sup>3</sup></i>	524,898	0	N/A	<b>524,898</b>

1. Landfill construction includes soils for construction of the subgrade, stormwater ponds, double composite liner system and intermediate cover. Volume available on-site includes a projected removal of soils from the permitted borrow areas based on current operational soil needs.
2. Landfill operations include daily cover soils accounting for BUD utilization.
3. Includes installation of final cover system on both the Permitted and Proposed Footprints.

Based on the estimates above, approximately 918,591 CY of off-site soil are needed for the construction, operation and closure of the Mill Seat Landfill and Proposed Landfill Expansion. However, soil needs can vary from year to year and project to project depending on various factors such as the properties of the soils encountered, the quantity of ADC material brought to the site, and incidental on site uses. As such, soil will be brought to the Proposed Site as necessary to avoid excessive stockpiling and unnecessary truck trips. Refer to Section 3.11 for more information on traffic analysis and impacts.

Historically, the on-site soils have been suitable for various uses in construction and operations including use as daily and intermediate cover, structural fill and berm embankment. Other soils, such as low permeability liner soil and granular drainage soils, require hauling to the Proposed Site, similar to previous construction projects at the Mill Seat Landfill. All off-site soils will be brought to the Proposed Site from a permitted soil mining operation.

Clearing and grubbing of existing vegetation will be performed in advance of the staged landfill construction and operation activities, in an effort to minimize disturbed areas and prevent erosion. Stone-lined

ditches, sediment traps, stormwater ponds, and aggressive reseeding of disturbed areas as soon as practical will provide siltation and erosion control measures down-slope of the fill and borrow areas. Temporary erosion control methods such as silt fences, stone check dams, and hay bales will also control any particular erosion problem areas that occur during operation and construction.

## 2.6 Landfill Operation

All landfill operations, including those of the Proposed Landfill Expansion, are subject to 6 NYCRR Part 360. These regulations govern specific actions regarding waste placements and daily landfill operations. They will be adhered to as set forth in 6 NYCRR Part 360 and as described in this *DSEIS*.

### 2.6.1 Hours of Operation

Hours of operation for the Proposed Landfill Expansion will be the same as the Mill Seat Landfill. Operation, including daily cover placement, at the Proposed Landfill Expansion will be Monday through Friday from 6:00 a.m. to 6:30 p.m., Saturday from 6:00 a.m. to 3:00 p.m., and Saturdays following holidays from 6:00 a.m. to 6:30 p.m. Holidays on which construction and operation activities are prohibited include New Year's Day, Memorial Day, July 4<sup>th</sup>, Labor Day, Thanksgiving, and Christmas. Construction and maintenance activities may be conducted between 7:00 a.m. to 9:00 p.m. If a change in hours is needed for a special project, the NYSDEC will be notified in writing.

### 2.6.2 Site Access

Waste vehicles will access the Proposed Site from Route 33A to Brew Road. The existing infrastructure will allow access to the weigh scales for weighing both in and out of the Proposed Landfill Expansion. The Proposed Landfill Expansion will require relocated or additional access roads within the Proposed Site for transportation to the working face, as the current roads on the south side of the Mill Seat Landfill pass through the proposed construction zone.

Once weighed, traffic will move along the access roads to a temporary access point on the active working face. WMNY personnel will direct each waste vehicle to a specific location to unload. Waste vehicles will deposit the solid waste and return to the Scale House to record the outgoing weight and receive a weight receipt prior to departure from the

Proposed Site. If a waste vehicle utilizes a tare weight, only the incoming weight of the vehicle is necessary to measure, as a previously established outgoing weight standard applies to these vehicles.

### 2.6.3 Waste Inspections

Waste inspection procedures currently used at the Mill Seat Landfill will apply to the Proposed Landfill Expansion. WMNY personnel are trained in waste screening for prohibited wastes. MCRRF transfer station personnel are also trained to screen for prohibited wastes even before being transferred to the Mill Seat Landfill. In the event that WMNY personnel observe unauthorized wastes during unloading, they will notify the hauler and the hauler will be responsible for removing the waste and disposing of it properly. If unauthorized waste is discovered after delivery and the hauler cannot be identified, WMNY personnel will segregate the unauthorized waste from the remainder of the waste stream and arrange for an authorized disposal firm to transport and properly dispose of the waste. Repeat offenses will be grounds for prohibition from using the Proposed Landfill Expansion in the future. If WMNY personnel suspect any unauthorized wastes as hazardous, they will immediately notify the NYSDEC. The Mill Seat Landfill's annual report submitted to the NYSDEC will include a record of each incident, which identifies the type and final disposition of the unauthorized waste.

In addition to the constant waste screening during typical operations, random waste inspections at the Proposed Landfill Expansion will be conducted once per week or more frequently at the discretion of the WMNY Operations Manager. Trucks selected at random for waste inspection will unload waste while moving forward to create a thin layer of waste for spot checking. WMNY personnel will visually examine the wastes for the presence of unauthorized materials. Any unauthorized wastes will be returned to the vehicle and in the event of suspected illegal activity, the NYSDEC will be notified.

WMNY personnel will maintain records as to daily, weekly, monthly, and yearly tonnage totals with waste type recorded for each incoming truck. As per the Mill Seat Landfill's 6 NYCRR Part 360 Permit, these records shall be maintained for the life of the Proposed Action. Waste inspections will be recorded on special forms and with photographs if necessary. The Mill Seat Landfill's annual report to the NYSDEC will also include a summary of this information.



#### 2.6.4 Waste Placement

WMNY personnel, with the use of a dozer, will place only waste materials which do not have the potential to penetrate the double composite liner system or compromise its integrity in the initial lift of waste overlying the double composite liner system. Visual inspection of this initial lift will ensure that potentially damaging materials such as pipes, timbers, large metal items, or pointed objects are removed prior to disposal. The completed first lift will be approximately five (5) to ten (10) feet thick with compaction only on the top layer of the lift.

A steel wheel compactor will typically spread and compact additional waste lifts above the first lift in two (2) foot thick layers. A maximum thickness of two (2) feet will allow for more compaction and decrease waste settling later on.

Some wastes, such as asbestos, require special handling. These procedures are detailed in the *Operations and Maintenance Manual* included in the 6 NYCRR Part 360 Permit Application.

Daily and intermediate cover soil applications will consist of soil reclaimed from cover removal, BUD soils or an approved alternative cover material. Daily cover of six (6)-inch thickness will be applied to the working face at the end of each workday. Landfill surfaces where no additional waste is to be placed for at least 30 days will receive intermediate cover of one (1)-foot thickness. For additional erosion control, the intermediate cover will be seeded with temporary cover vegetation when applicable. To the extent practicable, the intermediate and daily cover will be removed to facilitate the migration of leachate through the waste mass down to the leachate collection system and to conserve soil material. Removal will occur before the placement of the next lift of waste to the greatest extent possible.

WMNY, as the operator, plans to utilize alternative daily and intermediate cover materials when applicable as approved by the NYSDEC. This action will maximize operational flexibility and improve overall project economics. The Mill Seat Landfill currently uses many approved alternate covers including but not limited to petroleum-contaminated soils, ash, stabilized biosolids, and C&D debris on its operational Stages. Use of these alternate covers and others approved by the NYSDEC will continue with the Proposed Landfill Expansion. The County and/or WMNY will seek the approval of additional alternative

materials on a case-by-case basis, utilizing detailed information that is specific to the alternative cover of interest.

#### 2.6.5 Landfill Operation Equipment and Personnel

A variety of heavy equipment is necessary to operate the Mill Seat Landfill. This equipment will be adequate to operate the Mill Seat Landfill on a daily basis with any one (1) unit down for service or repair. The following is a list of landfill equipment currently used at the Mill Seat Landfill and their functions, which will also be used for operation of the Proposed Action.

- Landfill Compactor – Spread and compact solid waste, as well as spread daily cover. The compactor is restricted to the working face when above the double composite liner system, where a minimum of five (5) feet of selected and carefully compacted refuse has been placed over the double composite liner system.
- Bulldozer – Spread cover materials for daily, intermediate and final cover, loosen or stockpile soil in borrow areas prior to loading, construct runoff diversion berms, spread solid waste, maintain roadways and compact solid waste if other equipment is being repaired or unavailable.
- Articulated Off-Road Haul and Dump Trucks – Move soil from excavated location to final location. Truck access is restricted to portions of the double composite liner system which have a minimum of five (5) feet of selected and carefully compacted refuse in place.
- Excavator – Excavate and load cover materials, construct diversion berms and drainage swales, miscellaneous site maintenance, and heavy loading and lifting.
- Loader – Loading of stockpiled materials and compaction.
- Roller – Maintenance of access roads and compaction.
- Water Truck – Dust control during dry periods of the year, and first line of defense for firefighting.
- Sweeper – Maintenance of asphalt roadways.
- Snow Plow – Moving snow from site access and service roads.
- Service/Support Vehicles – Miscellaneous operations.

WMNY personnel will carry out the day-to-day tasks of soil cover excavation and the compaction and cover of waste. These personnel will generally consist of a District Manager, Operations Manager, Landfill Equipment Operators, Mechanics, and a Scale Operator. The District Manager, Operations Manager, and other landfill personnel deemed necessary have been trained in landfill solid waste management procedures at a NYSDEC-approved training course.

## 2.6.6 Site Contingencies and Controls

### 2.6.6.1 Contingency Plan

The NYSDEC requires the development of a *Contingency Plan* to account for actions in response to emergencies or special conditions during construction, operation, and landfill post-closure. A *Contingency Plan* has been developed for the Proposed Landfill Expansion and submitted to the NYSDEC as part of the 6 NYCRR Part 360 Permit Application. This *Contingency Plan* primarily focuses on potential leachate releases due to compromised double composite liner system integrity or spills and the prevention of groundwater or surface water impacts. The 6 NYCRR Part 360 required double composite liner system underlying all municipal solid waste landfills operating in the State already provides a significant level of environmental protection, as proven by testing and previous performance. Ensuring that the constructed double composite liner system meets the design criteria set forth in 6 NYCRR Part 360, monitoring flow rates in the leachate collection systems for early detection of potential liner leakage, and monitoring the water quality of the water collected in the groundwater suppression system will prevent the leachate generated from the Mill Seat Landfill and Proposed Landfill Expansion from impacting groundwater resources. The following sections provide more detail on the preemptive environmental protection, leachate collection, and leak detection systems, as well as the actions to mitigate potential releases, accidents, or unusual conditions.

### 2.6.6.2 Double Composite Liner System Performance Monitoring

WMNY personnel will continually measure the flow rates within the primary and secondary leachate collection systems and the groundwater suppression system within each Stage by flow

meters located in the sideriser buildings. The USEPA and NYSDEC mandate an allowable operational secondary flow rate of 20 gpad, based on a 30-day rolling average. If the flow rate monitoring from the secondary leachate collection system indicates a leakage rate of greater than 20 gpad based on the 30-day rolling average, WMNY personnel will implement a response action plan that includes:

- Notify the NYSDEC Region 8 Solid Waste Office in writing within seven (7) days.
- Evaluate operational procedures to determine potential liner damaging operations or occurrences.
- Within 14 days, submit in writing a preliminary description of the amount of liquid, the suspected source, and how it will be corrected.
- Collect samples from the secondary leachate collection system of that Stage for 6 NYCRR Part 360 Baseline Water Quality Analyses. A review of these analyses may assist in determining where the leak may be in the double composite liner system.
- Include the secondary leachate collection system as sampling points for quarterly 6 NYCRR Part 360 Routine Water Quality Analyses.
- Monitor quality and quantity of the groundwater suppression system flow.
- Evaluate all feasible corrective actions, including whether the filling process should be changed and whether any waste should be removed for liner inspection.
- Implement the appropriate corrective action as determined through the evaluation conducted above.
- Monitor remedial actions implemented for a period of 30 days and submit a report to the NYSDEC outlining the results of the remedial actions.
- If the secondary leakage rates remain above 20 gpad, submit monthly reports to the NYSDEC describing the remedial actions implemented, the results of those actions and any new actions that need to be addressed or taken.

- Resume normal operations and monitoring upon reducing the secondary leakage rate below 20 gpad.

#### 2.6.6.3 Odor Control

Several techniques and procedures are implemented as standard practice to minimize potential odors both on-site and off-site. Such odor control practices are as follows:

- covering the waste with six (6) inches of soil or an approved ADC at the end of each working day;
- installing interim or final cover systems; and
- installing an active LFG collection system.

Should odors become a problem off-site, WMNY personnel will commence an investigation to locate the source of the odors (e.g., working face, trucks) and initiate reasonable actions to eliminate or mitigate the problem. Potential actions to mitigate odors include:

- reducing the size of the working face;
- using increased thicknesses of daily cover;
- installing final cover over areas that have been filled to final grade; and
- installing vertical LFG extraction wells or other collection components that are tied into the active LFG collection system.

Should odors be discovered through inspection or complaint by surrounding residents, WMNY personnel will remediate any odors as soon as possible. For further information, refer to the *Contingency Plan* which was provided in the 6 NYCRR Part 360 Permit Application.

#### 2.6.6.4 Dust Control

Dust control on access, haul roads, and borrow areas will be accomplished by the following means:

- water truck;

- street sweeper; and
- minimizing unvegetated areas.

A water truck will be utilized to apply water as dictated by dust conditions on all access roads and Brew Road north of the Mill Seat Landfill. All paved access roads, including Brew Road, will be swept as necessary. Unvegetated areas such as borrow areas will be limited to the minimum practicable operational size. Vegetation will also be reestablished as quickly as possible on areas which will not be used for a significant period of time. No chemical methods are permitted or proposed for dust suppression.

#### 2.6.6.5 Litter Control

On windy days, there will be a tendency for loose papers and plastics to migrate when they are unloaded. Waste received on-site must be contained in enclosed, covered, or secured vehicles. Litter will also be reduced by selecting lower lifts of the landfill working face when conditions are extremely windy. Moveable temporary fencing will also be placed near the working face to maximize debris containment. Placement of cover material will be required at times other than the end of the day to further control blowing litter.

In addition to the procedures noted above, the Mill Seat Landfill has a permanent litter fence on the prevailing downwind (eastern) side to aid in the collection of windblown debris. The litter fence will be extended to surround the Proposed Footprint.

Personnel will police windblown refuse along the Proposed Footprint perimeter as necessary and at least weekly. There will be thorough removal of litter from the areas which have a tendency to collect windblown litter, such as permanent litter fences and tree lines. After final snowmelt in the spring, litter removal will occur as necessary. Temporary personnel may be utilized to pick papers from the area surrounding the site following periods of high winds when blowing litter may become an issue.

#### 2.6.6.6 Pest Control

Proper operational and maintenance measures are in place to prevent or limit pests on-site. Measures to control pests include

the adequate compaction of wastes, minimization of the working face area, the use of at least six (6) inches of daily cover material or approved ADC over the working face, proper application of intermediate cover to inactive landfill areas, and litter control. Any materials used as alternative daily cover must demonstrate effectiveness as both cover soil and as a vector deterrent as prerequisites for approval by the NYSDEC for use. If periodic inspections identify increasing vector activity, more stringent management practices, such as trapping or deterrent, will be explored for vector control. These practices will continue as an operational and maintenance measure for the Proposed Landfill Expansion.

#### 2.6.6.7 Fire Control

Appropriate operational and maintenance measures will be in place to prevent the risk of fires on-site. If the situation presents itself, the primary risk of fires will arise from small amounts of smoking or smoldering waste which is mixed with other wastes delivered to the Proposed Landfill Expansion. Proper inspection of waste loads for hot or burning items at the transfer stations or working face by trained personnel prior to delivery or placement will reduce this risk.

In the event that smoking or smoldering waste is delivered to the Proposed Landfill Expansion, it will be pushed aside, saturated with water and covered with soil to extinguish any fires. The waste will not be placed in the Proposed Landfill Expansion until it has been extinguished. If such waste is delivered to the Proposed Landfill Expansion, the responsible hauler will be notified to review and implement, as necessary, corrective procedures.

Small fires which may occur in the upper lifts (depth of 20 feet or less) of an active Stage after placement of waste will be extinguished by excavating the waste, spreading it out, and covering with water and/or soil until it is extinguished. These fires will be handled by WMNY personnel with on-site equipment. Small fires may also be fought with on-site fire extinguishers and, when appropriate, the water truck. All heavy equipment and pickup trucks which operate on or near the active working face will be required to have an operable fire extinguisher in the cab. The Permitted

Footprint has a perimeter water main with hydrants located at intervals to aid in firefighting if necessary.

Larger subsurface landfill fires (depth greater than 20 feet) may not be able to be handled by WMNY personnel. Excessive surface settlement, venting of smoke through cover soils, high carbon monoxide content in the LFG extraction system, and elevated temperatures in the LFG extraction system are possible subsurface fire indicators. If a deep seated fire occurs within the waste mass, NYSDEC Region 8 shall be notified immediately. Specialized landfill fire contractors may be necessary to extinguish a deep seated landfill fire. Possible fire control techniques include water injection or inert gas injection. Additional borings may be necessary to analyze the waste mass and provide added injection points.

Other fires, including those in any of the Permitted and Proposed Site's structures, will be called into the County Emergency Communication Department by dialing 911.

## 2.7 Landfill Closure Preparation and Process

Landfill closure will be implemented in accordance with 6 NYCRR Part 360-2.15. The conceptual closure plan for the Mill Seat Landfill and Proposed Landfill Expansion is included in the 6 NYCRR Part 360 Permit Application. The final closure plan will be submitted to the NYSDEC within 60 days before the last receipt of waste, or within 60 days before the permit expiration date. Closure activities must be completed in accordance with the final closure plan within 210 days following last receipt of waste, unless otherwise approved by the NYSDEC. If desired, portions of the Mill Seat Landfill and the Proposed Landfill Expansion may be closed prior to final waste acceptance. The top and side slope final cover systems are detailed further in Figure 11 of this *DSEIS*. This final cover system cross-section will be applied to the Permitted Footprint and the Proposed Footprint.

Prior to constructing the final cover system, the final waste lift and intermediate cover soil will be graded to bring the closure area to the permitted finished grades. Any vegetative growth established during operation will be removed prior to the construction of the final cover system. The intermediate cover layer consisting of a minimum thickness of 12 inches of common fill will be placed over the waste mass within thirty (30) days of reaching final grades. The final cover system will be placed on slopes of no less than four percent (4%) and



a maximum of 33%. Refer to Figure 12 of this *DSEIS* for the proposed final conditions.

An active LFG collection system will be constructed as described in Section 2.4.7 of this *DSEIS*. The system will be comprised of a series of horizontal LFG collection trenches which outlet through the side slope of the waste mass that will primarily be utilized during operations and vertical extraction wells that are typically installed as waste reaches its final elevation. Vertical extraction wells may also be extended during waste placement. The horizontal LFG collection trenches are proposed to be installed during waste placement as a means of odor reduction and LFG collection during operation with minimal impacts on it. Once the waste reaches the proposed final elevations, additional deep vertical LFG wells will be augured into the waste mass to aid in LFG collection in areas where vertical extraction wells could not be extended during operations or where older vertical extraction wells require replacement.

With the installation of an active LFG collection system over both the Permitted Footprint and Proposed Footprint, a gas venting layer as outlined in 6 NYCRR Part 360-2.13(p) is not necessary. The original intent of the gas venting layer required by 6NYCRR Part 360-2.13(p) was for passive venting of LFG to the atmosphere from beneath the final cover system using a shallow vent system. The LFG management system for both the Permitted Footprint and Proposed Footprint is an active LFG collection system incorporating both vertical extraction wells and horizontal collection trenches. In an active LFG collection system, the presence of a gas venting layer beneath the barrier layer of the final cover system could provide a preferential pathway for the transmission of LFG, instead of through the waste mass as desired by an active LFG collection system. This could potentially result in short circuiting of the LFG collection system, thereby reducing the radius of influence of the LFG extraction well or horizontal collector resulting in marginal LFG extraction. The presence of a gas venting layer would more readily allow air intrusion through a potential defect in the final cover system in the immediate areas surrounding penetrations of the LFG collection system through the final cover system, or near the edges of the final cover system. Possible risks associated with air intrusion into the waste mass include potential subsurface fires, adverse impacts on the LFG quality and poor performance of emission control devices. A variance application for removal of the gas venting layer from the final cover system design has been included in the 6 NYCRR Part 360 Permit Application. The variance application is applicable to both the Permitted Footprint and Proposed Footprint.

The top slope final cover system will be constructed on slopes that are greater than four percent (4%) and less than 25%. In accordance with 6 NYCRR Part 360-2.13(s), the main hydraulic barrier of the top slope final cover system is a composite consisting of a textured 40 mil LLDPE geomembrane which directly overlays a GCL. The side slope final cover system will be constructed on slopes that are greater than or equal to 25% to a maximum slope of 33%. In accordance with 6 NYCRR Part 360-2.13(s), the main hydraulic barrier for this side slope final cover system consists of 40-mil textured LLDPE geomembrane.

A lateral drainage layer consisting of composite geonet will be placed above the LLDPE geomembrane of the top slope and side slope final cover system to prevent excessive head build-up that could potentially lead to unstable conditions. The same composite geonet utilized for the side slope final cover system construction will be utilized for the top slope final cover system. The side slope drainage layer will daylight at each side slope diversion berm using corrugated polyethylene drain pipe in an effort to reduce the drainage lengths. The drainage layer is terminated at the toe of slope with a stone toe drain consisting of drainage stone material. The toe drain and side slope diversion swales discharge the water collected by the lateral drainage layer to the stormwater management system.

An 18 inch thick barrier protection layer of soil material will be placed above the drainage layer to assist in the protection from frost, root penetration, and erosion. This is a variance of the 24-inches of barrier protection soil outlined in 6 NYCRR Part 360-2.13(s)(3). The barrier protection layer thickness reduction will not affect the vegetative growth or the geomembrane barrier layers. Reduction of the barrier protection layer will not have any detrimental effects related to freeze-thaw cycles on the 40-mil LLDPE geomembrane barrier layer of the final cover system. The geomembrane material properties are not subject to the effects of freeze-thaw cycles. Several completed closures in the State have demonstrated these properties. In addition, the elimination of six (6) inches of barrier protection soil will reduce the quantity of soil that will need to be mined from and transported to the Proposed Site. A variance application for the reduction in the barrier layer thickness has been included in the 6 NYCRR Part 360 Permit Application. The variance application is applicable to both the Permitted Footprint and Proposed Footprint.

A six (6) inch layer of topsoil will be installed over the protection layer to establish sustainable and substantial vegetative growth that will help control erosion and increase the percentage of incident precipitation that is removed

through evapotranspiration. Erosion control materials will be added as necessary to aid in erosion control.

An alternative final cover system may also be used to close the Permitted Footprint and Proposed Footprint. As part of the alternative final cover system, the active LFG management system will be constructed, including the variance from 6 NYCRR Part 360-2.13(p) for elimination of the gas venting layer. The alternative final cover system only applies to the landfill side slopes, not the landfill top slopes. In side slope applications where slopes are greater than 25% but not exceeding 33%, the main hydraulic barrier of the alternative final cover system is a 50 mil structured LLDPE geomembrane installed directly on the prepared intermediate cover layer. The alternative side slope final cover system incorporates a non-woven geotextile directly over the 50 mil structured LLDPE geomembrane to promote lateral drainage. The remaining soil cover layers will remain the same as the typical final cover system cross-section, including the variance for reduction in the barrier protection thickness. Refer to the 6 NYCRR Part 360 Permit Application for the alternative final cover system detail.

## 2.8 Landfill Post-Closure Monitoring and Site Uses

Maintenance of the final cover system and support infrastructure including leachate collection and storage, LFG collection and control, and surface water collection and control, will continue after closure of the Proposed Landfill Expansion for the duration of the post-closure period. The minimum duration is 30 years after waste placement in the last Stage is complete, unless otherwise approved by the NYSDEC. Surface water, groundwater, and explosive gas monitoring will occur during the post-closure period as required by the 6 NYCRR Part 360. See the updated *Environmental Monitoring Plan* in Attachment C for more information.

Restrictions exist for the future uses of a closed landfill. The NYSDEC must review any future use of the Proposed Landfill Expansion after closure and final cover system installation so that uses comply with site characteristics and do not interfere with post-closure monitoring. The NYSDEC also reviews environmental exposures and safety concerns at this time, which includes an evaluation of ways in which the integrity of the environmental protection measures such as the final cover system, drainage, double composite liner system, monitoring system, or leachate and stormwater controls may be compromised.

Due to these environmental restrictions, other closed landfills can be utilized as open spaces, nature preserves, recreational trails, bird sanctuaries,

golf courses, and other conservation and/or recreational areas. The landfill disposal area itself is not generally suitable for building any structures for a number of years after closure due to the potential for settling and the need to ensure the integrity of the final cover system.

A LFGTE Facility is currently generating renewable energy at the Mill Seat Landfill and will continue to do so during operation of the Proposed Landfill Expansion and post-closure period while sufficient quantities of LFG are available for such beneficial use.

Post-closure uses for the Proposed Footprint will be assessed in the same manner as the Permitted Footprint due to their proximity. There are currently no plans for the future use of the post-closure Proposed Site.

## 2.9 Permits and Approvals Required for Proposed Action

The following permits, reviews, and approvals have been identified as being applicable to the Proposed Action:

- Compliance with the requirements of SEQRA;
- A 6 NYCRR Part 360 Permit modification to construct and operate a solid waste management facility. This includes a waiver of the groundwater separation requirement of five (5) feet due to the groundwater suppression system, which is the bottom layer of the proposed double composite liner system. In addition, variances are proposed for a reduction in the final cover system barrier protection layer thickness over the Permitted Footprint and Proposed Footprint, elimination of the final cover system gas venting layer over the Permitted Footprint and Proposed Footprint, and the prohibition of constructing a solid waste facility within the boundary of a regulated wetland. The County has submitted the 6 NYCRR Part 360 Permit Application for development of the Proposed Landfill Expansion to the NYSDEC prior to the submission of this *DSEIS*. A listing of these documents was previously provided in Section 2.4 of this *DSEIS*;
- USACE Section 404 Individual Permit , NYSDEC Section 401 Water Quality Certification , and NYSDEC Article 24 Freshwater Wetlands Permit for the disturbance of approximately 13.5 acres of wetland and 1,500 linear feet of stream, in addition to other temporary impacts and disturbances within regulated wetland adjacent areas;
- An update to the Mill Seat Landfill's existing *Stormwater Pollution and Prevention Plan* for compliance with the NYSDEC State SPDES General

Permit for Stormwater Discharges from Industrial Activities (GP-0-12-001). For landfills, General Permit GP-0-12-001 also includes procedures for management of stormwater discharges from Construction Activities;

- A Title V Air Facility Permit for LFG and combustion emissions, pursuant to applicable requirements of Federal regulations found at Subpart WWW of 40 CFR 60; and

In addition, various other easements and approvals are needed to support the Proposed Action, including:

- Extension of Landfill Lease Agreement between the County and WMNY;
- County adoption and NYSDEC approval of the County's Local Solid Waste Management Plan;
- Town of Riga approval of a portion of O'Brien Road abandonment including the O'Brien Road Wetland Restoration;
- Town of Riga approval of Brew Road abandonment and release to adjacent landowners;
- County and Town of Riga approval of land transfers;
- Execution of Noise Easements; and
- Agricultural District landowner waivers.

### **3.0 Existing Environmental Setting, Potential Significant Environmental Impacts and Proposed Mitigation Measures**

The following topics were addressed in the original 1989 and 1990 Draft and Final EIS (Clark Engineers & Associates):

- Earth Resources (Topography, Soils, Geology),
- Surface Water Resources,
- Groundwater Resources,
- Air Resources (Air Quality and Odors),
- Terrestrial Ecology (Vegetation, Wildlife, Wetlands, Agriculture),
- Land Use and Zoning,
- Property Assessment and Tax Revenues,
- Population,
- Transportation,
- Community Services,
- Archaeological and Historic Resources, and
- Noise.

The following topics were updated in the soil borrow area January 2011 DSEIS (McMahon & Mann):

- Geology/Soils,
- Water Resources (Groundwater, Surface Water),
- Air Resources,
- Terrestrial and Aquatic Resources,
- Wetlands Hydrology and Ecology,
- Wildlife Habitat Management Area,
- Endangered, Threatened & Protected Species,
- Archaeological and Historic Resources,
- Transportation/Traffic,
- Land Use and Zoning,
- Noise,
- Visual/Aesthetic, and
- Demographics.

Potentially significant environmental impacts associated with the Proposed Action, which were not addressed in previous SEQRA analyses prepared for the Mill Seat Landfill, will be addressed in this *DSEIS*. As part of the scoping review process for the Proposed Action, it was determined that this *DSEIS* will be limited to the following issues:

- Land Use and Agricultural Resources (Section 3.1)
- Geologic Resources (Section 3.2)
- Groundwater Resources (Section 3.3)
- Surface Water Resources (Section 3.4)
- Stormwater Resources (Section 3.5)
- Ecological Resources (Section 3.6)
- Critical Environmental Area (Section 3.7)
- Air Resources (Section 3.8)
- Visual and Aesthetic Resources (Section 3.9)
- Historic and Cultural Resources (Section 3.10)
- Transportation(Traffic) (Section 3.11)
- Odor (Section 3.12)
- Noise (Section 3.13)

This section of the *DSEIS* will discuss the existing environmental setting, potential impacts and proposed mitigation measures relating to the Proposed Action. Potential impacts and mitigation measures described in this section also include any that may be anticipated within 30-years after final closure of the Proposed Landfill Expansion, which is the minimum post closure monitoring period required by 6 NYCRR Part 360.

### 3.1 Land Use and Agricultural Resources

#### 3.1.1 Existing Environmental Setting

The Town of Riga's zoning ordinance classifies the Permitted Site as "Rural/Agricultural." The County has a degree of immunity from local zoning and land use regulations as provided by statute and case law. Further, the Permitted Site and the Proposed Site are also governed by the Riga Host Community Agreement. The Riga Host Community Agreement does not require that the County obtain the consent of the Town of Riga for the Proposed Action. The County will continue to inform the Town of Riga and the Mill Seat Landfill Citizens' Advisory Board on the progress of the Proposed Action.

Based on field observation, land uses adjacent to the Proposed Site include agricultural fields, residential and vacant lots. The Permitted Site and Proposed Site are located on land previously developed for landfill uses or are rural or agricultural in nature. Figure 13 of this *DSEIS* depicts the land use of the Proposed Site and surrounding areas.

At the time the County purchased the Permitted Site, the land was part of the South Western Agricultural District. During initial screening of Greenfield Sites for the Mill Seat Landfill, parcels within Agricultural Districts were not considered unless the owner expressed a willingness to sell the land to the County. The Permitted Site was one such location. The Agricultural District designation was removed during the eight (8) year renewal of the South Western Agricultural District. As such, the Permitted Site is surrounded by, but not included in, the South Western Agricultural District. The remainder of the Proposed Site (approximately 343 acres), including the Proposed Wetland Mitigation Property, currently lies within the South Western Agricultural District, which is depicted in Figure 14.

### 3.1.2 Potential Significant Environmental Impacts

Due to the location of the Proposed Action, changes to land use in the area will be minimal. Approximately 139 acres of farm fields are located within the Limits of Disturbance, with 36 of these acres located within the Proposed Footprint and 103 acres located within the Proposed Wetland Mitigation Property.

Compared to the approximately 37,000<sup>4</sup> total acres of land within the South Western Agricultural District currently within the Town of Riga and neighboring Towns of Chili and Wheatland, and over 139,000<sup>5</sup> total acres of land within an agricultural district within the County, the loss of approximately 139 acres of farmed fields is not considered to be significant.

The Proposed Action will result in 306 acres of land currently located in the South Western Agricultural District being used for non-agricultural purposes.

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<sup>4</sup> 2006 Agricultural District Review of the South Western Agricultural District #2, Monroe County, New York prepared by The Monroe County Agricultural and Farmland Protection Board and the Monroe County Planning Board.

<sup>5</sup> Monroe County Farmland Protection Resource Center. <http://www2.monroecounty.gov/planning-farmland.php>



### 3.1.3 Proposed Mitigation Measures

The proposed non-agricultural use of 306 acres of land in the South Western Agricultural District has been consented to by the landowners, in the form of signed Agricultural District waivers. The Proposed Action will have no significant adverse impacts on other land uses or agricultural resources.

## 3.2 Geologic Resources

### 3.2.1 Existing Environmental Setting

Several subsurface exploration programs have been conducted at the Permitted Site in response to landfill siting, permitting, and development activities since 1980. The investigations are documented in the following reports and summarized with the most recent geologic findings below:

- Todd Giddings Associates, Inc. (TGA) – June 1980
- TGA – September through October 1982
- TGA and Erdman, Anthony Associates (EAA) – April through November 1984
- Dunn Geoscience Corporation (Dunn) – October through December 1986
- H&A of New York – September 1988
- H&A of New York – February through March 1989
- H&A of New York – May 1989 through July 1989
- AMEC Geomatrix, Inc.
  - Phase I – December 2005 through March 2007
  - Phase II – March through April 2008
  - Phase III – August 2010
- GEI Consultants, Inc. – Ongoing Hydrogeologic Investigation for Potential Lateral Expansion beginning September 2013
- GEI Consultants, Inc. – Hydrogeologic Investigation – February 2015 (Attachment C)

The Proposed Site is situated within the Erie-Ontario Lowlands physiographic province. The region is typified by broad plains of relatively low relief, underlain by gently south-southwestward dipping (50 to 80 ft/mile) sedimentary bedrock of the early Paleozoic age. Land surface elevations in the lowlands province vary between 245 feet AMSL at the

Lake Ontario Shore, to nearly 1600 feet AMSL in the Southern Tier of New York State, at the boundary of the Allegheny Plateau (Appalachian Uplands Province). The regional bedrock is covered by a veneer of glacially derived sediments that exhibit four (4) distinct glacial successions.

### Overburden Geology

The glacial sediments in the Erie-Ontario Lowlands were deposited between 25,000 and 10,000 years ago during the Wisconsin Stage of the Pleistocene Era. These deposits generally include a mantle of glacial lodgment till which locally was transformed into elongated ridges (drumlins) indicating the general direction of ice-sheet advancement. The edges of three (3) drumlins remain, Pinnacle Hill, Blue Hill, and Science Hill, situated near the boundaries of the Proposed Wetland Mitigation Property. Other deposits on the Permitted Site have since been removed due to site development. A variety of sand, gravel, silt, and clay deposits reflect variable depositional environments associated with the glaciation, including glacial melt water, ice marginal or glacial lacustrine (lake) regimes. Topographic highs in the region are generally composed of till deposited under the basal ice flow near the margins of the continental ice sheet, with lower areas generally exhibiting sequences of silt and clay deposited in pro-glacial lakes. Glacial outwash deposits throughout the area consist of poorly sorted sand and gravel, often reflecting the trend of melt water streams flowing southward from the ice margin. Well defined beach ridges reflect several lake elevation stages across the region, the most prominent being the ridge along Route 104 in the northern portion of the County.

The thickness of overburden materials encountered in the Hydrogeologic Investigation Area ranges from zero (0) to 37 feet, and greater than 68 feet atop the drumlins accessible for investigation on the Proposed Wetland Mitigation Property. The extent of the Hydrogeologic Investigation Area is shown on Figure 15 of this *DSEIS*. Overburden materials consist of a dense lodgment till and coarse-grained till with laterally discontinuous silty sand or sand and gravel units in isolated borings at the ground surface or below the surficial till in areas on the Proposed Wetland Mitigation Property.

The dense lodgment till typically directly overlies bedrock across the Hydrogeologic Investigation Area and ranges, where present, from

one (1.0) to 28.8 feet in thickness. It was encountered extensively in the northern portion of the investigation area and in the eastern portion of the WMNY-owned Parcel A beneath the sand and gravel unit. The till is also prevalent across the Proposed Wetland Mitigation Property and ranges in thickness from one-half (0.5) to 64.7 feet. It is a dense to very dense brown to purple-red till composed of greater than 50 percent fines (silt and clay fraction) with sand and trace gravel.

The coarser-grained till typically overlies the dense lodgment till or directly over bedrock in some areas and varies in thickness between one (1) to 21.7 feet. It is also laterally extensive across the Hydrogeologic Investigation Area atop the dense lodgment till with the exception of the south-central and eastern portions of the investigation area. The coarse-grained till is a dark brown to reddish brown sandy, clayey silt with trace fine sand. Frequent large cobbles and small boulders were encountered during investigations.

Sand and gravel deposits were encountered beneath the ground surface in the central-eastern portion of the Hydrogeologic Investigation Area and in isolated areas in the western and southern portion of the investigation area, as well as east of Science Hill and within the Science Hill drumlin on the Proposed Wetland Mitigation Property. The sand and gravel unit is loose to firm, well-graded sand with medium to coarse subangular gravel. The material was found in thicknesses up to 17 feet in the south eastern portion of the Hydrogeologic Investigation Area. Substantial quantities of cobble and boulder materials were also observed. On the Proposed Wetland Mitigation Property, the material is a loose brown silty sand with gravel, ranging in thickness from seven (7) to ten (10) feet.

See Attachment C for the *Hydrogeologic Report*.

### Bedrock Geology

The surficial bedrock strata in the western New York region range in age from the uppermost Ordovician age Queenston Formation (Richmond Group) along the southern shore of Lake Ontario to the Upper Devonian age shales of the Allegheny Plateau in the Southern Tier. These bedrock strata consist dominantly of interbedded shales, sandstones, siltstones, and limestones, with more resistant dolostone units forming east-west trending escarpments to the north (Niagara Escarpment) and south (Onondaga Escarpment). The Paleozoic bedrock section thickness

varies between 2,000 feet along the southern shore of Lake Ontario to over 9,000 feet in the Southern Tier unconformably overlying the crystalline Precambrian basement complex. The Vernon Shale subcrops on the Proposed Wetland Mitigation Property and is exposed at the ground surface in the area of Hotel Creek.

The primary structural feature associated with the regional bedrock is the Clarendon-Linden fault complex. The fault complex is located approximately five (5) miles west of the Proposed Site and trends northeast to southwest. Several uniquely oriented fracture sets are superimposed upon the bedrock surface, reflecting several distinct stress conditions. The most dominant northwest trending fracture set is attributed to stresses arising from deformation associated with the later Paleozoic Appalachian Orogeny. A more detailed description of these structural bedrock features can be found in the Mill Seat Landfill Hydrogeologic Report Permit Application (H&A, 1989).

The Proposed Site is located in a seismic impact zone, as defined by the United States Geologic Survey.

The bedrock in the Hydrogeologic Investigation Area is the Vernon Formation, which has been extensively evaluated during previous investigations. The bedrock is composed of an interbedded shale and limestone that frequently exhibits a high degree of weathering near its top and in instances where shale is more prevalent than limestone. The weathered bedrock is a gray to olive brown shale with interbedded clay and resistant layers of limestone, typically one (1) to three (3) feet in thickness, but up to 14 feet. The bedrock surface generally slopes from west to east and is closest to the ground surface in the south-central portion of the Hydrogeologic Investigation Area (five (5) to six (6) feet below ground surface) and at Hotel Creek, where it is exposed. The bedrock underlying the Proposed Wetland Mitigation Property generally slopes inward towards the wetland areas from the south-southwest and east. The highest bedrock elevations on the Proposed Wetland Mitigation Property underlie the Pinnacle and Blue Hill drumlins.

See Attachment C for the *Hydrogeologic Report*.

### 3.2.2 Potential Significant Environmental Impacts

The Proposed Action will unavoidably alter the geologic resources of the Proposed Site.

Based on the existing elevations within the Proposed Footprint, the majority of Proposed Landfill Expansion activities will involve the excavation of soils to establish subgrade at the proposed depths and soil placement to construct the Proposed Footprint perimeter berm.

Final grades for the Proposed Landfill Expansion include side slopes at 33% (three (3) horizontal to one (1) vertical) and top slopes at a minimum of four percent (4%). The landfill side slopes will be developed to an elevation ranging between 852 and 874 feet AMSL on the south facing slope. The eastern and western side slopes will be developed to elevations ranging between 840 and 874 feet AMSL. The top slopes will be developed from these elevations at a minimum four percent (4%) slope to promote proper surface water drainage and collection in accordance with 6 NYCRR Part 360. The maximum elevation of the Proposed Landfill Expansion will be 875 feet AMSL, which is equivalent to the maximum permitted elevation for the Mill Seat Landfill.

The landfill design complies with 6 NYCRR Part 360, which requires a separation of ten (10) feet between the landfill subgrade and bedrock. As such, no impacts to bedrock geologic resources are anticipated as part of the Proposed Action.

Potentially significant impacts related to unstable slopes and seismic events have been analyzed as part of the 6 NYCRR Part 360 Permit Application, and stability and seismic calculations can be found in the 6 NYCRR Part 360 Permit Application.

### 3.2.3 Proposed Mitigation Measures

To prevent and/or minimize the potential for impacts related to these activities, a number of engineering design controls and mitigation measures, as discussed below, will be implemented.

Construction of the Proposed Action will involve filling of low areas and excavation of overburden soils from within the Limits of Disturbance. The excavated soils will be compacted and re-graded as necessary for construction and operations. Soils may also require wetting or drying to

meet compaction requirements. Amendments to the soil, such as bentonite, may also be necessary to meet requirements. Laboratory geotechnical testing of soil samples will be conducted during construction to ensure that soil properties meet specifications required for stability and environmental protection.

Excavation and stockpiling of soils on site will create exposed soil areas. However, construction of the Proposed Landfill Expansion will be performed in phases, thereby limiting the area of exposed soils and reducing the potential for erosion. Only ten (10) acres will be stripped and excavated at any given time for Subcell construction, unless otherwise approved by the NYSDEC. Stockpiled soils that will not be in use for extended periods of time will be temporarily re-vegetated to reduce the potential for erosion. In addition, temporary stabilization and silt fences will be used to control sediment from runoff that occurs in areas of excavation and stockpiling of soils.

The alteration of site drainage due to construction and excavation will be mitigated by redirecting runoff to the sediment control system and SRPs in accordance with the Permit Drawings and proposed *Stormwater Pollution Prevention Plan*.

Excavation of soils and construction of the Proposed Landfill Expansion subgrade and other landfill slopes for the Proposed Landfill Expansion will be performed in a manner that will create stable slopes. Engineered slopes will be constructed no steeper than three (3) feet horizontal for every one (1) foot of vertical elevation. In accordance with 6 NYCRR Part 360-2.7, the Proposed Landfill Expansion subgrade will be designed for a minimum factor of safety of two (2.0) for subgrade settlement and bearing capacity. The Proposed Landfill Expansion subgrade will have a minimum grade of two percent (2%) to prevent ponding and minimize infiltration of liquids through the double composite liner system. The groundwater suppression system will reduce hydrostatic pressure on the double composite liner system and subgrade soils by draining groundwater before it comes in contact with the double composite liner system to further promote stability. The top of the Proposed Landfill Expansion will have a minimum grade of four percent (4%) to promote drainage and prevent stormwater infiltration, which has the potential to compromise the stability of the waste mass.

Since the Proposed Landfill Expansion is located within a seismic impact zone, a stability analysis analyzed the proposed design to ensure that it will prevent impacts related to potential seismic events. The design of the Proposed Landfill Expansion will withstand the type of seismic event expected of the area with a factor of safety greater than one (1.0), as required by 6 NYCRR Part 360. The results of the seismic analysis are included in the 6 NYCRR Part 360 Permit Application.

### 3.3 Groundwater Resources

#### 3.3.1 Existing Environmental Setting

##### Groundwater Quality

Groundwater quality at the Mill Seat Landfill has been monitored for nearly two (2) decades. The current groundwater quality monitoring program for the Mill Seat Landfill includes sampling of: 17 wells screened in the B-Zone (lower overburden/weathered bedrock interface), 18 wells screened in the A-Zone (upper 20 feet of bedrock), and seven (7) wells screened in the Z-Zone (approximately 40 to 80 below the top of bedrock).

Groundwater monitoring wells installed in and around the Proposed Landfill Expansion were sampled during the Fourth Quarter 2013 and the Second Quarter 2014, concurrent with the existing quarterly landfill monitoring program, to assess groundwater quality in the Proposed Landfill Expansion area. The timing of sampling was such that seasonal low and seasonal high groundwater conditions were represented.

Groundwater quality in the B-Zone, A-Zone, and Z-Zone in the Proposed Landfill Expansion is discussed in detail in the *Hydrogeologic Report* in Attachment C. The overall B-Zone and A-Zone groundwater quality in the Proposed Landfill Expansion area is comparable to groundwater quality at the Mill Seat Landfill.

The deep bedrock Z-Zone groundwater quality is generally marked by increased concentrations of sulfate, total dissolved solids and total hardness when compared to the A- and B- Zones beneath the Permitted Footprint and the Proposed Footprint. Deeper bedrock groundwater samples also reflect increased concentrations of dissolved metals, including boron, calcium,

magnesium, potassium and sodium. Slightly to moderately reducing conditions are often encountered in the deeper bedrock flow system beneath the Mill Seat Landfill. Deep bedrock wells exhibited slightly to moderately oxidizing conditions underneath the Proposed Landfill Expansion during the November 2013 and April 2014 sampling events.

The *Hydrogeologic Report*, prepared by GEI Consultants, includes an extensive hydrogeologic analysis which provides an evaluation of existing groundwater quality in the area of the Proposed Footprint. The *Hydrogeologic Report* is included in Attachment C.

### Groundwater Flow

Groundwater flow across the region occurs both within the fractured bedrock units and, to a lesser extent, the overlying unconsolidated glacial deposits. The fine grained nature of the overburden sediments generally confines groundwater within the lower overburden units, and groundwater occurrence within a few feet of the ground surface may often exist as water table or perched conditions. Discharge points for overburden groundwater include streams and seeps, springs, or wetlands where the overburden-bedrock interface intersects the land surface. Precipitation which infiltrates through the glacial overburden, combined with numerous streams and wetlands, act to recharge bedrock groundwater throughout the region. Groundwater flow within the bedrock units occurs principally within the interconnected network of horizontal and vertical fractures. Typically, this fracture frequency increases toward the bedrock surface, resulting from both weathering and erosional stress relief. As fracture frequency and interconnections decrease with depth, the rate of groundwater flow correspondingly decreases. Although several small-scale bedrock groundwater divides occur throughout the region, the dominant bedrock groundwater flow direction is northeast in the direction of exposed bedrock in the Genesee River gorge toward Lake Ontario.

Depth to groundwater in the Proposed Footprint is generally seven (7) to ten (10) feet from the ground surface. The saturated thickness of the upper water-bearing zone varies from one (1) foot to 20 feet thick. Groundwater flow in the overburden soils generally



emanates very slowly radially outward from the central area of the Proposed Footprint near Wetland RG-6 where flow occurs westerly toward Wetland RG-5, southerly toward Hotel Creek, and easterly toward Wetland RG-7. The majority of groundwater flow occurs in the upper fractured bedrock near the interface between overburden and bedrock. This area of flow is referred to as the B-zone. B-zone groundwater flow direction is to the northeast beneath the Permitted Site and toward the east (toward Wetland RG-7) and south (toward Hotel Creek) beneath the Proposed Footprint.

The A-Zone groundwater flow occurs at a depth of approximately 30 feet below the top of bedrock in the Proposed Landfill Expansion area. Groundwater flow in the A-Zone is northeasterly beneath the Permitted Footprint and easterly to south easterly beneath the Proposed Footprint.

The Z-Zone is the lowermost hydrogeologic unit characterized for the Permitted Footprint and Proposed Footprint. The Z-Zone consists of a bedrock interval generally between 40 and 80 feet below the top of bedrock. The groundwater flow direction in the Z-Zone is northeasterly beneath the Mill Seat Landfill and easterly beneath the Proposed Footprint.

Within the Proposed Wetland Mitigation Property, groundwater occurs at or near the ground surface near wetland areas and at depths of four (4) to six (6) feet at locations distant from wetland areas. Groundwater occurs much deeper, tens of feet, within the topographically elevated drumlins. On the eastern two-thirds (2/3) of this property, groundwater flow is generally inward across the Proposed Wetland Mitigation Property, from the drumlins, where the highest groundwater levels are encountered, to the lower elevations of the wetlands across the center of that property and flows to the southeast. Groundwater present in the western one third (1/3) of the property flows north toward Hotel Creek.

#### Primary, Principal, and Sole Source Aquifers

Primary aquifers mapped in the vicinity of the Proposed Site are shown by NYS Geographic Information System aquifer mapping. The Batavia Water Supply Aquifer and the Irondo-Genesee Aquifer are the closest mapped Primary Aquifers to the

Proposed Site. The Batavia Water Supply Aquifer, also known as the Tonawanda Creek aquifer, is located approximately 12 miles southwest of the Proposed Site. The aquifer materials consist of unconfined, stratified and well sorted glacial outwash sand and gravel deposits (USGS Water Resources Investigation Report, 85-4096). The Batavia Water Supply Aquifer occurs within the Tonawanda Creek watershed and has no hydraulic connection to water-bearing deposits in the area of the Proposed Site. The Irondo-Genesee Aquifer is located approximately 18 miles northeast of the Proposed Site and is situated east of the Genesee River beneath the valley fill area of Irondequoit Creek. The aquifer materials consist of stratified glacial till, glacial drift, cemented sand and gravel, and deeply buried cobbles and boulder deposits. These deposits were dropped during deglaciation of the Wisconsin ice sheet and in-fill a remnant channel of the historic flow path of the Genesee River (USGS Water Resources Investigation Report, 88-4145). The Irondo-Genesee Primary Aquifer is located east of a major groundwater flow divide associated with the Genesee River; therefore, this Primary Aquifer and its water quality will not be affected by the Proposed Action.

NYSDEC Technical and Operational Guidance Series 2.1.3 - Memorandum for Primary and Principal Aquifer Determinations, was prepared to clarify the meaning of the terms “Primary Water Supply Aquifer” and “Principal Aquifer” and to establish guidance for determining whether an aquifer is designated as such. The memorandum lists Primary and selected Principal aquifers in Upstate New York. Both the Irondo-Genesee and Batavia Primary Aquifers are designated as such, which is consistent with NYS GIS mapping.

However, current NYSDEC and NYS GIS aquifer mapping shows a “mid-yield unconfined aquifer” transecting the Proposed Site. The source of the GIS data , according to the NYS Clearinghouse metafile data, is historic mapping of surficial unconsolidated sand and gravel deposits mapped at a scale of 1:250,000 and reported by T. S. Miller (1988) in USGS Water Resources Investigation Report, 88-4076 . Miller based his maps mainly on area well yields and county and state surficial geologic mapping that was conducted prior to hydrogeologic investigations that were completed in the Town of Riga related to Mill Seat Landfill

development. Permeable, unconfined saturated sand and gravel deposits were not identified in the area of the Mill Seat Landfill during the hydrogeologic investigations conducted for the original permit application for construction of the Permitted Site. Consistent with those investigations, recent hydrogeologic investigations of saturated soils on the Proposed Site identified fine-grained soils having low hydraulic conductivity with low well yields. Based on guidance in NYSDEC Technical and Operational Guidance Series 2.1.3 for classifying aquifers, it is concluded that a Principal Aquifer does not exist on the Proposed Site.

This conclusion is consistent with findings presented in the Hydrogeologic Investigation Report prepared by H&A (1989). The report was submitted to the NYSDEC with the original permit application for the Permitted Site. Section 3.2.4.4 of the H&A report documented that the NYSDEC reviewed available data concerning aquifers in the area of the (then) proposed landfill during the DEIS process, and, in a May 25, 1989 comment letter, stated the following, “staff have reviewed the site-specific hydrogeologic information, and it is our official determination that a principal aquifer does not underlie the site.” Hydrogeologic data collected during investigations on property south of the Permitted Site are consistent with hydrogeologic conditions encountered in the area of the Mill Seat Landfill. Based on NYSDEC guidance described in NYSDEC Technical and Operational Guidance Series 2.1.3 and site conditions found during subsequent hydrogeologic investigations of the Proposed Site, evidence supports the conclusion that the 1989 determination that a Principal Aquifer does not underlie the Permitted Site is also valid for and can be extended to apply to the Proposed Site.

USEPA Sole Source Aquifer mapping was also reviewed to determine whether any such areas are designated near the Permitted Site or Proposed Site. The mapping indicates an absence of sole source aquifers near the Mill Seat Landfill and the Proposed Landfill Expansion. In fact, no sole source aquifers are designated within the County or adjoining Counties.

### 3.3.2 Potential Significant Environmental Impacts

#### Groundwater Quality

In the unlikely scenario where landfill leachate leakage occurs in the Proposed Landfill Expansion area, the dissolved phase constituents present in leachate would migrate very slowly in low permeability till. Seepage velocities calculated for the groundwater flowing in the till were calculated to flow at a rate of a few inches per year. Attenuation to soil particles and organic matter in the till would further retard the rate of constituent migration. Investigation data indicates water in the till flows toward the upper weathered bedrock (B-Zone). If constituents reached the bottom of the till, they would travel laterally in the B-Zone. Dispersion and diffusion could allow constituents to migrate laterally downward into shallow bedrock groundwater (A-Zone). Groundwater flow in bedrock is uniform and predominantly horizontal. Flow vectors are upward near the wetland areas east of the Mill Seat Landfill as evidenced by artesian flow conditions in some existing wells located closest to Wetland RG-7. Dissolved phase constituents present in the A-Zone would not migrate vertically deeper based on essentially horizontal hydraulic gradients measured between the A-Zone and Z-Zone wells and a much greater horizontal flow component. Water quality deeper than 40 feet in the bedrock would not be affected by a hypothetical release of leachate from the Proposed Landfill Expansion.

It is significant to note that during the operating history of the Mill Seat Landfill, there have been no landfill-derived impacts to groundwater.

#### Groundwater Flow

Groundwater flowing in overburden, the B-zone, and portions of the A-zone bedrock within the Proposed Footprint and areas beyond will ultimately flow to either Wetland RG-5 (which includes the wetland area bordering Hotel Creek) or Wetland RG-7. Calculations presented in Attachment C indicate the average annual groundwater flow rate to:

- Wetland RG-5 and Hotel Creek is approximately 1,700 cubic feet/day

- Wetland RG-6 is approximately two (2) cubic feet/day
- Wetland RG-7 is approximately 2,100 cubic feet/day.

Construction of the Proposed Landfill Expansion will eliminate Wetland RG-6 and its discharge drainage tail. Therefore, lateral flow of groundwater in the till will continue eastward adding this minor volume of groundwater recharge to Wetland RG-7.

These groundwater flow rates are minor and represent five percent (5%) or less of the total volume of recharge to the wetland areas (i.e., more than 95% of recharge to Wetlands RG-5 and RG-7 is derived from precipitation and overland flow).

#### Primary, Principal, and Sole Source Aquifers

The closest Primary Aquifers to the Proposed Site, the Batavia Water Supply Aquifer and the Irondo-Genesee Aquifer, will not be affected as a result of the Proposed Action. These aquifers are located many miles from the Mill Seat Landfill and are not associated with the same watersheds as the Proposed Site. In addition, the results of on-site hydrologic investigations indicate that a Principal Aquifer does not underlie the Proposed Site.

### 3.3.3 Proposed Mitigation Measures

#### Groundwater Quality

Potential impacts to groundwater resources on the Proposed Site will be significantly minimized by the Proposed Action's design and by compliance with 6 NYCRR Part 360 regarding design standards, siting criteria, and groundwater monitoring requirements.

The 6 NYCRR Part 360 regulations that govern siting, construction, operation, and closure of the Proposed Landfill Expansion are designed to provide maximum protection to the environment including groundwater quality. The installation of a double composite liner system over relatively low permeability soils, along with a network of groundwater monitoring wells, will ensure protection of groundwater quality. Details related to the double composite liner system were previously discussed in Section 2.4.2 of this *DSEIS*.

6 NYCRR Part 360 requires each landfill to have an approved *Environmental Monitoring Plan* that addresses groundwater monitoring. The Mill Seat Landfill has an approved *Environmental Monitoring Plan* dated May 2011 that addresses groundwater monitoring. An updated *Environmental Monitoring Plan* that addresses groundwater monitoring as it relates to the Proposed Action has been completed by GEI Consultants and is included in Attachment C.

#### Groundwater Flow

Construction of the Proposed Landfill Expansion will have a negligible impact on groundwater flow rates to Wetlands RG-5 and RG-7. Wetland mitigation will have minor effects on groundwater flow directions.

#### Primary, Principal, and Sole Source Aquifers

The inclusion of additional mitigation measures is not necessary due to the absence of primary, principal, and sole source aquifers in the vicinity of the Proposed Site.

### 3.4 Surface Water Resources

#### 3.4.1 Existing Environmental Setting

##### Surface Water

The Town of Riga is situated within the Upper Genesee River Drainage Basin (6 NYCRR Part 821). The Genesee River watershed encompasses approximately 2,500 square miles and is composed of predominantly agricultural areas. The Genesee River originates in the uplands of Pennsylvania and flows northward to Lake Ontario. It is fed by a number of tributaries, including Black Creek, located less than four (4) miles from the Proposed Site. The 125-square mile Black Creek watershed is a sub-watershed of the Genesee River and its drainage area includes the Proposed Action and nearby towns of Riga, Chili, Wheatland, Sweden, and Ogden in the County, as well as a large portion of eastern Genesee County. Black Creek is in turn fed by a number of sub-tributaries, including Hotel Creek (NYSDEC Water Index No. Ont. 117-19-9) and its Tributary b (NYSDEC Water Index No. Ont. 117-19-9-b), to which the Permitted Site and Proposed Landfill Expansion ultimately

drain. The Proposed Wetland Mitigation Property drains to the southeast through a series of mapped wetland complexes and an unmapped stream into Tributary 2 of the Blue Pond Inlet (NYSDEC Water Index No. Ont. 117-19-4-P11-1-2), which flows through Blue Pond and Mill Creek, and eventually into Black Creek in the Town of Chili.

Seven (7) streams are mapped (6 NYCRR Part 821) within one (1) mile of the Proposed Site. Figure 16 depicts the stream locations. These seven (7) streams are detailed as follows:

- Hotel Creek (Ont. 117-19-9)
- Tributary a of Hotel Creek (Ont. 117-19-9-a)
- Tributary b of Hotel Creek (Ont. 117-19-9-b)
- Tributary a of Tributary 2 of Blue Pond Inlet (Ont. 117-19-4-P11-1-2-a)
- Tributary a of Tributary 6a of Oatka Creek (Ont. 117-25-6a-a)
- Tributary 1 of Tributary 6a of Oatka Creek (Ont. 117-25-6a-1)
- Tributary 11 of Black Creek (Ont. 117-19-11)

Two (2) of the seven (7) mapped streams intersect the Proposed Site (Hotel Creek and its Tributary b). Hotel Creek is not within the Limits of Disturbance; however, its Tributary b flows through a cross culvert under O'Brien Road. Hotel Creek (Ont. 117-19-9) flows west to east across the southern portion of the Proposed Site, turns northeast, and eventually flows into Black Creek. A tributary to Hotel Creek (Ont. 117-19-9-b) originates on the eastern portion of the Proposed Site and flows south into Hotel Creek. Overland flow from the Permitted Site enters surrounding Wetlands RG-5 and RG-7 before ultimately reaching Hotel Creek. All seven (7) mapped streams within one (1) mile of the Proposed Site are classified as Class C waters with C Standards (6 NYCRR Part 821). Class C waters are not included in the definition of a protected stream according to 6 NYCRR Part 608 – Use and Protection of Waters. According to the NYSDEC, the best use of Class C fresh surface waters is for fishing. These waters are suitable for fish, shellfish, and wildlife survival and may also be suitable for primary and secondary contact recreation such as swimming and fishing (6 NYCRR Part 701.8). Class C waters are

not, however, used for drinking water supply systems and do not meet the NYSDOH drinking water standards. In addition to this classification, Black Creek and its minor tributaries, which includes Hotel Creek, is a New York State 303(d) listed impaired water due to phosphorous loading from agricultural and municipal activities (Draft 2014 Section 303(d) List, NYSDEC).

Surface water quality in adjacent wetlands and Hotel Creek is routinely monitored at seven (7) locations in accordance with the current *Environmental Monitoring Plan* for the Permitted Site. Sample locations S-1, S-2, S-5 and S-8 monitor surface water quality of Hotel Creek near the Mill Seat Landfill and farther downstream. Surface water in wetlands bordering the Permitted Footprint to the north and east of the Mill Seat Landfill is monitored by sample locations S-3, S-4, and S-6. These sample locations are shown on mapping in the *Hydrogeologic Report* in Attachment C. Sediment quality is monitored at each surface water sampling location. Samples are analyzed for the 6 NYCRR Part 360 Baseline List of analytical parameters once each year and the 6 NYCRR Part 360 Routine List of analytical parameters during other sampling events. Surface water temperature is continuously measured in Hotel Creek at location S-8 situated approximately three (3) miles downstream from the Permitted Site between the months of April and January in accordance with the current *Environmental Monitoring Plan*. In addition, dissolved oxygen readings are measured weekly during this time period.

#### Freshwater Wetlands

The wetlands identified on the Proposed Site are predominantly classified as palustrine forested systems; however, pockets and patches of emergent, scrub-shrub, wet meadow, and open water areas were noted throughout the Proposed Site (as illustrated by Figure 18). The most recent delineated wetland boundaries are included on Figure 17, along with the approximate locations of NYSDEC mapped streams. The location and functions of these water and wetland resources were considered during site design efforts to minimize potential impacts to the extent practicable. Potential impacts to the wetlands are detailed further in Section 3.4.2 and proposed wetland mitigation measures are discussed in Section 3.4.3.



### *Delineation Associated with the Permitted Site and Proposed Landfill Expansion*

Clark Engineers & Associates completed a wetland delineation at the Mill Seat Landfill in the early 1990s. Due to the age of this fieldwork and the absence of delineation data for much of the area south of the Permitted Footprint, B&L updated wetland mapping on the Proposed Site. Wetland field delineations were initiated in November 2008, and continued in June 2009, as part of the proposed soil borrow area project. This fieldwork was completed for an approximate 280-acre area located south of the Permitted Footprint. Four (4) wetlands were identified as a result of this delineation effort: Wetland A (represents Wetland RG-5), Wetland B (represents Wetland RG-6), Wetland C, and Wetland D (represents Wetland RG-7). The soil borrow area project was progressed and permitted to provide soil to meet the demand for construction and operation activities of the Permitted Footprint. The eastern (approximately 42 acres) and western (approximately 20 acres) borrow areas were approved for construction in 2011.

This field delineation effort resulted in Wetland B (RG-6) totaling 12.54 acres in size and Wetland C totaling 0.76 acres. The boundaries of Wetland A (RG-5) and Wetland D (RG-7) extended outside of the delineated area; therefore, a total acreage could not be determined for these two (2) wetlands. Delineated Wetlands A (RG-5), B (RG-6), and D (RG-7) were determined to meet state and federal jurisdiction criteria, thereby placing them under the jurisdiction of the NYSDEC and the USACE. The 100-foot adjacent area of Wetlands RG-5, RG-6, and RG-7 is also regulated by the NYSDEC.

In addition to the four (4) wetlands, one (1) other Water of the U.S. and one (1) woodland pond were also identified (Figure 17). A channelized drainage feature was observed starting at the outlet of Wetland RG-6. This channel represents a stream resource identified as the RG-6 Tail, which is discussed in detail below. This channel carries water from Wetland RG-6, south, for a total of 1,500 linear

feet. The flow then passes through a set of clay culvert pipes and follows a less defined channel until it flows into Wetland RG-5. A woodland pond was identified by the NYSDEC in the field and subsequently added to the Proposed Site's wetland mapping. This feature was determined to be under state jurisdiction due to its proximity to Wetland RG-5.

Wetland C was observed to be potentially isolated from other wetlands and waters. No defined inlets or outlets for this wetland were documented in the field. This isolated determination was confirmed by the USACE during a jurisdictional determination site review. The USACE issued an Approved Jurisdictional Determination for the eastern and western soil borrow areas on April 29, 2011 (No. 2006-01224, included in Attachment D). Methodologies and results of the on-site 2009 delineation effort are also included in Attachment D to this *DSEIS*.

Additional wetland delineation efforts were completed within the limits of the Proposed Site between 2010 and 2012. These field investigations resulted in the delineation and mapping of additional portions of Wetlands RG-5 and RG-7.

#### *Delineation Associated with the Proposed Wetland Mitigation Property*

Fieldwork to delineate wetlands within the Proposed Wetland Mitigation Property were initiated in October 2011. As part of this wetland delineation field effort, a total of five (5) wetland areas were identified and delineated within the limits of the Proposed Wetland Mitigation Property (see Attachment D for B&L's 2011 Wetland Delineation Report for the Mahar Property at the Mill Seat Landfill Facility). Identified wetland areas were individually labeled alphabetically from A to E (Attachment D - Wetland Delineation Report for the Mahar Property at the Mill Seat Landfill Facility – Figure 5). Delineated wetlands A, B, C, and E were determined in the field to be 'isolated' wetlands, meaning that these areas are not hydrologically, biologically, or chemically connected to a Traditionally Navigable Water,

as defined by the USACE. Wetlands B, C, and E represented wooded depressional areas in the landscape that were seasonally inundated.

Wetland A was located in a low spot along Bovee Road. Stormwater runoff from the roadway collected in this area; however, no culverts were observed at this location that hydrologically connected Wetland A with any wetlands on the Proposed Site, or waters north of Bovee Road. Wetland D, which represents NYSDEC mapped Wetland RG-33, drains southeast from the Proposed Wetland Mitigation Property and then east where it flows into a NYSDEC mapped stream, Ont. 117-19-4-P11-1-2-a (Tributary a of Tributary 2 of Blue Pond Inlet). Wetland D represents the headwater wetland of Tributary 2 to Mill Creek (also known as Blue Pond Inlet).

A jurisdictional determination was requested from the USACE to confirm the field observations related to federal jurisdiction of Wetlands A, B, C, D, and E within the Proposed Wetland Mitigation Property. The USACE issued an Approved Jurisdictional Determination for the Proposed Wetland Mitigation Property on June 11, 2014 (No. 2006-01224, included in Attachment D). This determination confirmed that Wetlands A, B, C, and E are isolated and not under federal regulation. It was confirmed that Wetland D (RG-33) is regulated by the USACE under Section 404 of the Clean Water Act and by the NYSDEC under Article 24 (Freshwater Wetland Act) of the Environmental Conservation Law. The NYSDEC will also regulate any ground disturbance activities within the 100-foot adjacent area to this wetland resource. The wetlands delineated within the Proposed Wetland Mitigation Property are shown on Figure 17.

#### *Re-Delineation Associated with Wetland RG-6*

In August 2013, B&L completed a revised delineation of NYSDEC mapped freshwater Wetland RG-6. Wetland RG-6, in its entirety, was re-delineated since the wetland is located within the limits of the Proposed Landfill Expansion and the previous delineation was completed before

implementation of the Northcentral/Northeast Regional Supplement to the Corps of Engineers Wetland Delineation Manual (Interim released October 2009, Version 2 released January 2012). The revised boundaries of Wetland RG-6 encompass 13.5 acres. The RG-6 Tail that conveys flow from Wetland RG-6 south to Wetland RG-5 was reconfirmed in the field as meeting the definition of a Water of the U.S. The jurisdiction of these two (2) resources was confirmed as part of the June 2014 Approved Jurisdictional Determination (No. 2006-01224, included in Attachment D). Wetland RG-6 is under the jurisdiction of the USACE and the NYSDEC (which also regulates the 100-foot adjacent area), while the RG-6 Tail only meets criteria for federal jurisdiction by the USACE. A Supplemental Wetland Delineation memorandum was completed to document the 2013 fieldwork. This document is included in Attachment D to this *DSEIS*. The most recent wetland and water boundaries delineated within the Proposed Site are included on Figure 17.

#### *Delineation Associated with O'Brien Road*

Based on the Limits of Disturbance for the Proposed Action, O'Brien Road will need to be abandoned east of its intersection with Brew Road to the County east property line. Abandoning and removing the roadway to the County property line within NYSDEC mapped freshwater Wetland RG-7 will help to better protect the wetland community and provide a continuous open channel connection of Tributary b. A wetland delineation of the eastern limits of Wetland RG-7 was completed during August 2013 to ascertain the extent of Wetland RG-7. The delineated limits of Wetland RG-7 along O'Brien Road are included on Figure 17 and are detailed in the Supplemental Wetland Delineation memorandum provided in Attachment D (B&L, October 2013). This portion of Wetland RG-7 meets criteria for state and federal regulation by the NYSDEC and USACE, respectively.

## Wetland Monitoring

The Article 24 permit issued by the NYSDEC for the soil borrow project includes a condition to conduct annual monitoring of these wetlands, as was proposed in the approved *Wetland Monitoring Plan* (B&L, January 2011) for Wetlands RG-5, RG-6, and RG-7.

Monitoring of Wetlands RG-5, RG-6, and RG-7 was initiated in Spring 2010 to record the baseline condition of these wetlands, prior to the start of soil excavation in the borrow areas. A baseline condition report (*Wetland Monitoring & Assessment – Baseline Report & 2011 Annual Report*) was completed in October 2011 to establish the methodology for data collection, to stipulate the procedure for reporting the findings of the monitoring events, and detail the results of the first annual monitoring effort (2011). Four (4) years of annual monitoring of Wetlands RG-5, RG-6 and RG-7 have been completed to-date and the results submitted to NYSDEC. These monitoring efforts are planned for the life of the soil borrow project.

The main focus of these annual wetland monitoring efforts is Wetland RG-6, due to its location between the two (2) soil borrow areas. Wetlands RG-5 and RG-7 are located more than 100-feet from the soil borrow project limits; however, these two (2) wetlands are also included, to a lesser extent, in the annual monitoring. Activities completed during annual monitoring efforts for Wetland RG-6 and the RG-6 Tail include: a functions and values assessment, surface water sampling, wildlife observations, amphibian surveys, photograph surveys, and a vegetative analysis. Surface water sampling and vegetative analysis activities are also completed for Wetlands RG-5 and RG-7, at two (2) water sampling locations and one (1) vegetation plot in Wetland RG-5, and at one (1) water sampling and vegetation plot in Wetland RG-7.

Four (4) years of annual monitoring of Wetlands RG-5, RG-6 and RG-7 have been completed to-date. The results of the 2011, 2012, 2013, and 2014 surveys indicate that the

vegetation at all monitoring locations is healthy and continues to represent a diverse wetland community. A dominance of hydrophytic vegetation was documented at all vegetative plots during the sampling events. Surface water sampling has confirmed that the borrow area excavation is not affecting hydrology within Wetland RG-5, RG-6, or RG-7. Amphibian survey results and wildlife observations for Wetland RG-6 have been consistent and have not indicated that any impacts are occurring to the wetland. The baseline functions and values assessment for Wetland RG-6 identified that site conditions met suitability requirements for two (2) functions or values: flood flow alteration and wildlife utilization. Function and value evaluations completed during the 2011, 2012, 2013, and 2014 monitoring years indicate that characteristics for the flood flow attenuation and wildlife utilization functions continue to be met.

#### *Recharge to Wetlands from Precipitation and Overland Flow*

The detailed hydrologic analysis of the Proposed Action presented in the *Hydrogeologic Report* (Attachment C of this *DSEIS*) conservatively estimated annual recharge rates to the adjacent wetlands bordering the Proposed Landfill Expansion from precipitation and overland flow for comparison to recharge from groundwater flow. Average annual precipitation and overland flow recharge rates to the wetlands under current conditions were estimated to be:

- Wetland RG-5 – 33,100 cubic feet/day
- Wetland RG-6 – 9,900 cubic feet/day
- Wetland RG-7 – 36,300 cubic feet/day

Under existing conditions, flow from Wetland RG-6 flows south via a drainage swale (RG-6 Tail) through a portion of Wetland RG-5 and flows to Hotel Creek. Both Wetlands RG-5 and RG-7 ultimately flow to Hotel Creek.

#### RG-6 Tail

An intermittent stream draining Wetland RG-6, referred to as the “RG-6 Tail”, drains generally south into a forested wetland complex (Wetland RG-5) before ultimately entering Hotel Creek.

The existing physical condition of the RG-6 Tail is characterized by features representative of a low-gradient, intermittent stream channel. The stream exhibits a flattened, consistent bed slope with minimal feature variability (distinct pools, riffles, and glides are non-existent). Substrates are comprised primarily of finer sand, silt and some small gravel particles. Woody debris in the form of fallen tree limbs comprises a great deal of the structural element of the instream habitat. Large deposits of fallen leaves are a prominent feature along the course of the streambed. The persistence of these mats through the summer gives indication that seasonal high-flow events (such as snowmelt or spring runoff, for example) are typically not sufficient enough to mobilize this leafy material and transport it downstream to adjacent portions of the Hotel Creek system.

The physical character of the RG-6 Tail has been greatly impacted by human activity. Historically, this stream has been straightened and ditched in order to accommodate development of the agricultural fields which are located on both sides of the stream and that are still actively farmed today. The 'ditch and berm' method (excavation of the streambed and deposition of the spoils along the top of the stream bank) used to straighten the stream has resulted in a channel that lacks sinuosity and exhibits high, relatively steep banks that disconnect the stream from its adjacent floodplain. Unlike a similar situation where a steeper streambed gradient and higher-energy flow events would undoubtedly lead to extensive bank failure and erosion, stream bank erosion along the RG-6 Tail is very limited due to the low channel slope and limited volume and velocity of runoff events. Impacts associated with modifications to the channel and conversion of adjacent land use have resulted in a reduction in the ecological functions and values associated with this stream relative to those provided by more pristine or unimpaired streams of similar type.

Encroachment of adjacent agricultural fields upon the RG-6 Tail riparian buffer has substantially reduced buffer width. Composition of this diminished buffer is affected by regular disturbance within the riparian corridor, which supports conditions favorable to the establishment and occurrence of invasive plant species.

### RG-6 Tail Functions and Values

Within the RG-6 Tail, ecological functions and values are limited by the lack of bed feature variability and the seasonal lack of surface flow, both of which significantly limit the quantity and quality of instream habitats, particularly for fish. Other organisms, such as amphibians and macroinvertebrates, are able to utilize pockets of water that do persist year-round, although these are isolated and relatively few in number. Because low-flow conditions (during which extensive portions of the RG-6 Tail are completely dry) typically persist for long periods of time, biological productivity and corresponding size and diversity of populations of aquatic organisms utilizing the isolated pockets of surface water that do persist are extremely limited. For example, a cursory assessment of substrates within these isolated surface water pockets revealed the presence of only one (1) macroinvertebrate taxa (Amphipoda, commonly referred to as scuds), and these were found in very low numbers.

The primary contributions of intermittent tributaries like the RG-6 Tail to the downstream perennial stream system (specifically Hotel Creek) are the flow of cool water and inputs of nutrients and organic material that comprise the foundation of the aquatic food chain. Unlike other similar tributaries that drain to Hotel Creek in a more pristine or unaltered condition (like Tributary b, for example), the relative value of these primary benefits provided by the RG-6 Tail is limited by the degree to which the stream and adjacent riparian corridor have been altered over time. Because impacts to the riparian buffer have resulted in a reduction in buffer width and species diversity (including establishment of invasive species within the buffer), both quantity and composition of coarse organic matter contributed to the stream system is affected.

As evidenced by the persistence of deposited mats of dead leaf material in the streambed for extended periods of time without noticeable 'flushing' of leaf litter during spring runoff, it is likely that the transport of organic material and nutrients to Hotel Creek is also limited. This assessment can be attributed not only to the minimal transport capability exhibited by the stream due to its low bed gradient, but also to the fact that limiting physical habitat parameters such as seasonally-reduced surface water availability



and poor substrate composition limits the diversity of macroinvertebrate populations in the stream. Coupled with insufficient flows to effectively move nutrients downstream, the fact that this stream lacks the physical habitat parameters necessary to support a viable population of macroinvertebrates that would work to break down coarse woody- and leaf debris into smaller particles (fine particular organic matter) that could be more easily transported downstream, greatly reduces the nutrient-supply function provided by the RG-6 Tail.

Contributions of sediment and nutrients to Hotel Creek are also reduced by the presence of Wetland RG-5 situated between the downstream end of the RG-6 Tail and Hotel Creek. It is well understood that among the range of beneficial functions provided by wetlands is the ability to attenuate flows and to act as 'sinks' for the accumulation of sediments and nutrients that would otherwise flow directly to the receiving stream. This same function holds true of Wetland RG-5, in that it serves to store a portion of the nutrients and organic material that might be transported downstream from the RG-6 Tail, ultimately offsetting some of the benefit to Hotel Creek provided by that particular function. More information on Hotel Creek is included in Section 3.7.

### 3.4.2 Potential Significant Environmental Impacts

#### Surface Water Impacts

Landfill construction will affect approximately 118.3 acres of the approximate 750 acres that comprise the collective drainage basins of Wetlands RG-5, RG-6, and RG-7. The fully constructed Proposed Landfill Expansion will affect the direction of runoff from precipitation that currently falls within the current area of the RG-6 basin. Runoff from precipitation in the current RG-6 basin area of the Proposed Landfill Expansion area will be redistributed to either the basin of Wetlands RG-5 or RG-7 based on the surface contours of the constructed final cover system and the slope of drainage ditches constructed along the Proposed Footprint perimeter. Surface water captured by these ditches will flow to SRPs and discharge to either Wetland RG-5 (via new SRP-7) or Wetland RG-7 (via modified SRP-8). Design analysis indicates surface runoff from approximately 56 acres of land surface situated on the eastern

side of the RG-6 basin that currently flows to Wetland RG-5 and Hotel Creek via the RG-6 Tail will be redistributed and flow to Wetland RG-7. The total acreage of the drainage basin areas affected by changing topography and installing storm water conveyance ditches is approximately five percent (5%) of the total wetland drainage basin acreage. The difference in overland flow volume produced by this change is considered negligible in the analysis. Therefore, the change in recharge volume to either Wetland RG-5 or RG-7 caused by the Proposed Landfill Expansion construction will have minimal effect on wetland basin water budgets. Therefore, mitigative measures will not be required to adjust existing annual water balances to the wetland areas and ultimately Hotel Creek. Additional details related to water balance volumes are provided in the 6 NYCRR Part 360 Permit Application submitted to the NYSDEC.

Clearing of vegetation, excavation of soil for double composite liner system installation, re-grading of soils, and stockpiling of soils all create the potential for erosion. Surface water runoff carrying sediment-laden water could, if left unmitigated, cause siltation and flooding of receiving surface water resources.

#### Wetland Impacts

The Proposed Action will result in impacts to 13.5 acres of USACE jurisdictional wetlands (13.4 acres of NYSDEC jurisdictional wetlands) identified as Wetland RG-6 (Figure 17) and activities associated with work within the 100-foot buffer. In addition, other temporary activities and disturbances within regulated wetland adjacent areas are proposed, including the 100-foot regulated buffers of NYSDEC regulated wetlands RG-7, RG-33, and RG-14.

Impacts to Wetlands RG-5 and RG-7 during the operation of the Proposed Action are expected to be minor. Stormwater runoff from landfill operations is the primary source of potential operational impacts to these wetlands. A *Stormwater Pollution Prevention Plan* will be in effect for the Mill Seat Landfill and Proposed Landfill Expansion and runoff will be controlled by a stormwater management system and will meet predevelopment

peak outflows. Additional information related to stormwater management is provided in Section 3.5.

As evidenced by the health of the wetlands monitored as part of the Annual Wetland Monitoring (B&L, 2013), the Mill Seat Landfill has demonstrated that potential landfill operational impacts can be addressed and that current operations are not negatively impacting adjacent wetland systems. With on-site monitoring during landfill operations any potential issues can be addressed prior to impacts occurring.

#### RG-6 Tail Impacts

Approximately 1,500 linear feet of the RG-6 Tail will be permanently lost (filled) as part of the Proposed Action. All associated functions and values provided by this stream resource, although minimal due to contributing natural and human-induced conditions, will be permanently lost. Functions and values lost through this impact will be replaced at a Proposed Stream Mitigation Area located outside of the Proposed Site.

The existing impaired character of the RG-6 Tail, and corresponding limitations in transporting organic material and nutrients to Hotel Creek, greatly minimizes the impact that the filling of the RG-6 Tail will have upon the provision of this function.

#### 3.4.3 Proposed Mitigation Measures

The mitigative measures proposed to reduce potential impacts to surface water resources are described in the following section.

#### Surface Water Mitigation

The Proposed Action will incorporate stormwater management features, described in more detail in Section 3.5.3, which will protect both water quality and quantity, so that adjacent wetlands and streams will not be adversely impacted. Continued implementation of operational practices to prevent the excessive release of sediment and other materials to Hotel Creek will also help to mitigate potential water quality (turbidity) impacts. In addition, surface water monitoring of Hotel Creek and Tributary b will continue.

### Wetland Mitigation

Attachment B provides a summary of the site selection and evaluation process that culminated in selection of the Proposed Action as the least environmentally damaging practicable alternative. It includes a focus on how potential adverse impacts to wetlands were avoided and minimized, while concurrently satisfying the Proposed Action's public purpose and goals.

A mitigation site selection process was completed by Applied Ecological Services, Inc. to locate an appropriate area for the compensatory mitigation of 13.5 acres of USACE jurisdictional wetlands (13.4 acres of NYSDEC jurisdictional wetlands) that are proposed to be impacted as a result of the Proposed Action.

Potential mitigation sites were investigated in the vicinity of the Mill Seat Landfill. Based on size, timing, and proximity to the Mill Seat Landfill, a portion of the Proposed Site has been selected as the preferred mitigation location for the majority of the impacts. In addition to the selected Proposed Wetland Mitigation Property, wetland restoration and enhancement of a portion of Wetland RG-7 along O'Brien Road is proposed (O'Brien Road Wetland Restoration). The removal of O'Brien Road within the limits of Wetland RG-7 will allow for the reconnection of the wetland and will improve the hydrologic continuity of Hotel Creek's Tributary b.

The Proposed Wetland Mitigation Property is located within the Proposed Site and is currently dominated by wetlands and agricultural land uses.

The Proposed Wetland Mitigation Area is proposed to provide a minimum of 44 wetland mitigation project credits (Table 7 & Figure 19) from the restoration and creation of freshwater wetlands and native grassland buffers. The credits include 40 credits of wetland restoration/creation (forested wetlands, emergent wetlands, wet meadow wetlands, and wet mesic meadow wetlands) and four and four-tenths (4.4) credits of native grassland buffer enhancement in the Proposed Wetland Mitigation Area. The permanent impacts to forested Wetland RG-6 will be mitigated at a 2:1 (two to one) creation/mitigation to impact ratio.

**Table 7 - Mitigation Acreages and Proposed Credits for the Proposed Wetland Mitigation Area**

<b>Community</b>	<b>Acres Impacted</b>	<b>Acres Restored</b>	<b>Proposed Credit Ratio</b>	<b>Total Credits Proposed</b>
Forested wetlands	13.5	27	(1:1)	27
Emergent wetlands	0	2	(1:1)	2
Wet meadow wetlands	0	9	(1:1)	9
Wet Mesic meadow wetlands	0	4	(2:1)	2
Native Grassland Buffer	0	44	(10:1)	4.4
<b>Totals</b>	<b>13.5</b>	<b>86</b>	<b>-</b>	<b>44.4</b>

The mitigation elements proposed in Table 7 and shown on Figure 19 will compensate for the unavoidable taking of 13.5 acres of USACE and NYSDEC jurisdictional wetlands in association with the Proposed Action. The Proposed Wetland Mitigation Area will generate credits for the sole purpose of completing wetland mitigation activities in support of the Proposed Action. These credits, along with the O'Brien Road Wetland Restoration, will provide more than the required compensation for impacting 13.5 acres of wetlands.

One (1) of the goals of the proposed wetland mitigation plan is to restore wetlands and native grassland buffers on existing agricultural fields at the Proposed Wetland Mitigation Area. The communities to be restored/created include forested, emergent, wet meadow, and wet-mesic meadow wetland types and native grassland buffer. Protection/Preservation of existing upland woods will also occur in the Proposed Wetland Mitigation Area. Enhancement of Wetland RG-7, where the O'Brien Road Wetland Restoration is to occur, will result in eight tenths (0.8 acres) of restored wetland and an improved hydrologic connection to Tributary b. The majority of the wetland functions and values to be lost through the filling of Wetland RG-6 will be satisfactorily replaced and mitigated through the proposed creation and restoration activities at the Proposed Wetland Mitigation Area and through the O'Brien Road Wetland Restoration.

Further details related to the Proposed Wetland Mitigation Area are provided in Applied Ecological Services, Inc.'s *Ecological Restoration and Management Plan*, which has been submitted to the NYSDEC and USACE in the *Joint Application for Permit Application*.

#### RG-6 Tail Mitigation

Through consultation with the USACE, it has been determined that the RG-6 Tail is a stream resource under federal jurisdiction and mitigation for impacting (filling) approximately 1,500 linear feet of the RG-6 Tail will be provided. Given the limited ecological functions and values associated with the RG-6 Tail in its existing condition, the proposed RG-6 Tail mitigation will compensate for these impacts at a one to one (1:1) ratio.

An evaluation of stream conditions, functions, and values was conducted at the RG-6 Tail in April 2014 utilizing the Stream Visual Assessment Protocol (*USDA-NRCS, 2009*). As described in Section 3.4.1, the functions and values provided by the RG-6 Tail prior to the impact are those most closely associated with its riparian buffer, specifically the provision of organic matter and nutrients that form the basis of the food web to receiving perennial downstream reaches of the Hotel Creek system. The three (3) primary goals of the *Proposed Stream Mitigation Plan* are:

- Preservation of existing riparian buffers;
- Enhancement of the quality and composition of existing buffers to include increased plant species diversity, removal of invasive plant species (where applicable), increased strata composition (herbaceous, shrub, and tree layers within the buffer), and increased buffer width; and
- Establishment of riparian buffer enhancements for approximately 30 feet on each side of the stream where such buffer currently does not exist.

The Proposed Stream Mitigation Area is located along the Churchville Park Tributary to Black Creek, approximately five (5) miles from the Proposed Site. The Proposed Stream Mitigation Area is in the same drainage basin as the RG-6 Tail. The

Proposed Stream Mitigation Area is approximately 1,965 linear feet in length. The narrow width of the stream flowing through the potential mitigation site maximizes the benefit that these measures will have upon the relative improvement of the riparian buffer over its existing condition. In addition to the replacement of ecological functions and values lost due to impacts to the RG-6 Tail, the Proposed Stream Mitigation Area provides opportunity for educational and interpretive outreach since it is located on County-owned property (Churchville Park).

Figure 20 depicts the proposed location of the stream reach to be considered for improvement to compensate for the permanent impacts to the RG-6 Tail (1,500 linear feet). *The Proposed Stream Mitigation Plan* has been submitted to the NYSDEC and USACE in the *Joint Application for Permit Application*.

The O'Brien Road Culvert Removal and Stream Improvements are an additional benefit incorporated into the *Proposed Stream Mitigation Plan*.

### 3.5 Stormwater Resources

#### 3.5.1 Existing Environmental Setting

There are currently three (3) designated surface water sampling locations positioned prior to potential flow into Hotel Creek. These locations are all hydrologically upgradient from where potential site stormwater flows into Hotel Creek. Analytical data compiled from these locations are included in the monitoring reports submitted to the NYSDEC. To date, no impacts to Hotel Creek are indicated by the results of this sampling. Two (2) of these three (3) sampling locations are located within the limits of the Proposed Landfill Expansion. For more information, refer to the *Stormwater Pollution Prevention Plan* included in the 6 NYCRR Part 360 Permit Application submitted to the NYSDEC.

SRPs have been constructed on the Permitted Site to handle stormwater runoff as shown in Figure 21. The design of the ponds allows for the runoff to be attenuated and released into surrounding surface waters. Existing SRPs include:

- Stormwater Retention Pond No. 1 (SRP-1) – located north of the Mill Seat Landfill and handles runoff from the northern, eastern, and

western portions of the Permitted Footprint. SRP-1 flows into Wetland RG-7.

- SRP-2 – located south of the Mill Seat Landfill and handles runoff from the southern portion of the Permitted Footprint. SRP-2 flows into Wetland RG-6, and will be ultimately removed given that it is within the limits of the Proposed Footprint.
- SRP-5 – located northeast of SRP-1 and handles runoff from the administrative area, landfill weigh scales, maintenance building, and leachate storage area. SRP-5 flows into Wetland RG-7.
- SRP-7 – located southwest of the Permitted Footprint and handles only runoff from the western borrow area. SRP-7 flows into Wetland RG-6, and will be ultimately relocated given that it is within the limits of the Proposed Footprint.
- SRP-8 – located southeast of the Permitted Footprint and handles only runoff from the eastern borrow area. SRP-8 flows into Wetland RG-7.

The Proposed Landfill Expansion is divided into two (2) separate drainage areas. Generally, stormwater runoff from the Proposed Footprint area currently drains south towards Hotel Creek where it flows off-site. Surface water runoff from the Permitted Footprint and surrounding areas recharges Wetlands RG-5, RG-6, and RG-7. Runoff to these wetlands from the Permitted Site is routed through three (3) currently active SRPs (SRP-2, SRP-7, and SRP-8). Two (2) additional SRPs (SRP-1 and SRP-5) exist to the north of the Permitted Footprint and flow into Wetland RG-7, but will not be affected by the Proposed Action and are therefore not analyzed for impacts.

Analysis Discharge Point 1 (DP-1) is the analysis point for Drainage Area 1 (DA-1) and is located in the southeast corner of the Proposed Site, at the culvert where Hotel Creek flows underneath Brew Road. It includes flow from a portion of the Permitted Footprint area (which is routed through SRP-2), the western soil borrow area (which is routed through SRP-7), and overland flow from the undeveloped southern portion of the Permitted Site. SRP-2 handles runoff from the southern portion of the Permitted Footprint area and also recharges Wetland RG-6. Wetland RG-6 eventually flows into Wetland RG-5 and Hotel Creek. SRP-7 recharges Wetland RG-6. The remaining overland flow runs south to Hotel Creek. Both SRPs controlling runoff from DA-1 will be removed due to the



Proposed Landfill Expansion; as such, new SRP-7 will be constructed on the south end of the Proposed Footprint to attenuate runoff from the development area. The discharge structure will be designed such that existing peak flows to DP-1 are not exceeded with development of the Proposed Action.

Analysis Discharge Point 2 (DP-2) is the analysis point for Drainage Area 2 (DA-2). DP-2 is located southeast of the Mill Seat Landfill where the permitted eastern borrow area pond, SRP-8, flows into Wetland RG-7. Runoff to this point under existing conditions includes the eastern borrow area. The DP-2 outfall flows into Wetland RG-7, which intersects Hotel Creek in the southeastern corner of the Proposed Site. SRP-8 will remain following development of the Proposed Landfill Expansion but will be modified to attenuate flow from the Proposed Footprint area. The discharge structure for SRP-8 will be modified in order to not exceed existing peak flows to DP-2.

### 3.5.2 Potential Significant Environmental Impacts

The Proposed Action will alter the natural topography of the undeveloped portion of the Proposed Site, which will result in changes to overland flow to Hotel Creek. Development of the Proposed Action, including associated stormwater ponds and perimeter roads, will disturb up to 145 acres that were not previously used for landfill operations, with the exception of the existing borrow areas. A portion of the disturbance acreage will occur on the eastern section of the Proposed Site which is located in a separate drainage basin than the Permitted Footprint. Therefore, stormwater management of the Proposed Site will not be manageable by the existing SRPs without increasing peak runoff.

The increase in disturbed acreage from the Proposed Footprint will increase the peak flow of stormwater runoff; however, as previously stated, there will be no increases in peak flow to DP-1 or DP-2. Refer to Section 2.4.3, Table 5 for a summary of pre-development and post-development peak flows. The construction of the Proposed Landfill Expansion will also require that existing SRP-2 and existing SRP-7 eventually be abandoned, as they will be covered by the Proposed Footprint. In addition, the development of the Proposed Footprint perimeter roads will result in an increase in low permeability area at the Proposed Site, which will in turn result in an increase in peak stormwater runoff if left unmitigated.

### 3.5.3 Proposed Mitigation Measures

The change in land use will increase the amount of stormwater runoff, necessitating the need for the construction of one (1) new SRP (new SRP-7) and the modification of the existing eastern borrow area SRP (modified SRP-8) as shown in Figure 21 to offset the increased stormwater runoff rates from the Proposed Landfill Expansion. Accurate sizing of the proposed SRPs will ensure that no increase in peak flow exiting the Proposed Site will occur following construction of the Proposed Landfill Expansion. The drainage areas and discharge locations for existing and proposed conditions at the Proposed Landfill Expansion area are shown on Figure 21. Sampling locations will be relocated appropriately, as development of the Proposed Footprint progresses, to continue monitoring surface water quality.

The design of the SRPs complies with the requirements of the SPDES Multi-Sector General Permit for Stormwater Discharges from Industrial Activity (GP-0-12-001), which mandates use of the standards documented in the New York Stormwater Management Design Manual, and 6 NYCRR Part 360. As such, the SRPs must provide treatment of the Water Quality Volume (the 90% runoff event as described in the New York State Stormwater Management Design Manual), the Channel Protection Volume (24-hour extended detention of the one (1)-year, 24-hour storm), Overbank Flood Control (attenuation of the peak flow from the ten (10)-year, 24-hour storm), and the Extreme Flood Control (attenuation of the peak flow from the 100-year, 24 hour storm). 6 NYCRR Part 360 also requires attenuation of the peak flow from the 25-year, 24-hour storm. Refer to the 6 NYCRR Part 360 Permit Application for further information regarding SRP design.

In addition to the permanent final stormwater system design and implementation, interim and temporary measures will be taken to ensure the mitigation of potential erosion at the Proposed Site. This will include the design and construction of intermediate SRPs for each Subcell as well as temporary erosion and sediment controls installed during construction of each Subcell. An erosion and sediment control plan will be developed for each construction project utilizing accepted practices from the NYSDEC Practices for Erosion and Sediment Control. This plan will also outline an inspection schedule for a minimum of one (1) weekly inspection of the erosion and sediment control system.

In order to prevent impacts to the water temperature in Hotel Creek, SRP outflows will be routed to avoid direct flow into Hotel Creek. The passing of stormwater runoff from the proposed and modified SRPs through existing wetland resources will allow for surface waters to commingle and equalize in temperature, should the detention of stormwater runoff lead to increased temperatures. Further mitigation measures include the continued monitoring of water quality in Hotel Creek, including surface water temperatures, both upstream and downstream of the Proposed Site to ensure the continued preservation of Hotel Creek's water temperatures. No adverse impacts from the Permitted Footprint's stormwater management system have been documented to-date and no further impacts are anticipated as part of the Proposed Action. Therefore, no additional mitigation measures are necessary.

### 3.6 Ecological Resources

Information regarding the site ecology surrounding the Proposed Site was gathered through site visits, observations in the 1989 EIS, aerial photography interpretation, review of prior studies, and correspondence with various agencies. Based on these sources, details describing the ecological resources identified and available at the Proposed Site are provided in the following sections.

#### 3.6.1 Existing Environmental Setting

##### Ecological Zones

The majority of the County (including the Proposed Site) is located within the Great Lakes Plain Ecological Major Zone (Zone B) and the Erie-Ontario Plain Minor Zone, according to the Ecological Regions of New York State (Will, et al., 1982 and Dickinson, 1983). This major ecological zone stretches from southern Erie County, along the southern and eastern shores of Lake Erie and Lake Ontario, to northern Jefferson County. This zone includes some important industrial and transportation centers, such as the Cities of Buffalo, Rochester, Syracuse, and Watertown. Characteristics associated with these major and minor ecological zones are as follows:

- **Topography:** Structurally, the zone is like a plateau with horizontal rock formations. Since this ecological zone is not elevated far above sea level, it basically constitutes a flat plain.

- Elevation: Less than 800 feet in most of the zone.
- Soils: The zone's soils are generally limy situated on glacial till over undulating to rolling terrain or on glacial lake sediments over level to undulating terrain. The soils tend to be medium to fine textured.
- Vegetation: This zone is situated in the elm-red maple northern hardwood natural vegetation zone. Approximately one-fifth (1/5) of the zone's land is forested. The average Town is 15 percent wooded.
- Land Use: Manufacturing is the chief source of income in this zone, followed by agriculture. Vegetable, grain, and fruit farms are the major agricultural activity, with some dairy and poultry farms. In addition, there are many major transportation routes in the zone.

#### Physiographic Regions

The Proposed Site is located within the Interior Plain Physiographic Region of the United States (2003). Within this region, the Proposed Site is mapped within the Central Lowland Province and the Eastern Lake Section, which wraps around the south and east sides of Lake Ontario. The Interior Plains are often recognized by the presence of compressed layers of sedimentary rock, formed from sediments left by shallow inland seas that once covered the region. This region is noted as being fairly flat with limited topographic relief.

#### Vegetative Cover Types

National Land Cover Database (2006) is a 16-class land cover classification system that has been applied across the entire United States at a spatial resolution of 30 meters (MRLC, 2006). This data is based primarily on the classification of 2006 satellite data. According to the National Land Cover Database, the following land uses and cover types are located on the Proposed Site: barren land, developed/low intensity, developed/open space, pasture/hay, planted/cultivated crops, deciduous forest, mixed forest, and woody wetlands. Though these descriptors accurately detail elements of the Proposed Site, it was determined that the National Land Cover Database information could not provide an accurate and up-to-date

depiction of the current uses of land within the Proposed Site. As an alternative, a site specific land use/land cover data layer was created based on orthoimagery interpretation and field knowledge of the Proposed Site. Figure 22 shows the cover type mapping for the Proposed Site. This mapping includes the following land cover/land use classifications: Developed/ Disturbed Area (includes Permitted Footprint and borrow area limits), Waters of the U.S. (including wetlands), Agricultural (includes croplands, pastures, and hay fields), Upland Meadow, Deciduous Forest, Residential, and Shrubland.

Site specific freshwater wetland cover type mapping was also created using orthoimagery interpretation and on-site observations noted during field reconnaissance by B&L and Applied Ecological Services, Inc. from 2008 to 2013. This wetland cover type mapping further breaks down the Waters of the U.S. cover denotation (Figure 22) into distinct freshwater wetland types based upon vegetative cover characteristics. Five (5) palustrine wetland types were identified within the boundaries of the Proposed Site: emergent, forested, open water, scrub-shrub, and wet meadow (Figure 18). The following sections provide a brief description of the characteristics associated with each freshwater wetland type.

- Emergent – Erect, rooted, herbaceous hydrophytic plants characterize emergent wetlands. This vegetation can be observed throughout the majority of the growing season. These wetlands typically have standing water above the soil surface for a portion of the year and often include fringe communities around open water edges. Emergent wetlands were primarily identified within Wetland RG-5 along the northern boundary of Hotel Creek; emergent pockets were also mapped throughout Wetlands RG-6 and RG-7.
- Forested – Forested wetlands are dominated by woody vegetation taller than 20 feet, where soil is at least periodically saturated or covered by water. Forested wetlands at the Proposed Site commonly included deciduous trees with an understory of hydrophytic herbaceous vegetation. This is the predominant wetland type mapped within Wetlands RG-5, RG-6, RG-7, and RG-33.

- Open Water – Open water cover types generally consist of perennial streams, ponds, and lakes. At the Proposed Site, depths of standing water may range from less than one (1) - foot to more than six (6) feet. The substrate of these areas may consist of bedrock, gravel, sand, or mud. Vegetation may include rooted or floating aquatic species. Only a few open water areas were mapped at the Proposed Site. One (1) created pond is located in Wetland RG-5 and a couple open water locations are mapped in Wetland RG-7.
- Scrub-Shrub – This wetland type is primarily found in areas that were formerly open or otherwise cleared. Scrub-shrub wetlands are often found in areas of shallow standing water. Woody vegetation that is less than 20 feet in height helps classify this wetland type. Pockets of scrub-shrub wetlands are mapped in northern portions of Wetland RG-5 and RG-7, and in the western section of Wetland RG-33.
- Wet Meadow – Wet meadow wetlands often include areas that are associated with active fields, were formerly fields, or other areas characterized by herbaceous vegetation. In the field, this wetland type was often associated and interspersed with other palustrine types. Wet meadow wetlands often resemble grasslands but are usually drier than other marsh types except during periods of seasonal high water. These wetlands are commonly without standing water; however, the high water table allows the soil to remain saturated at or near the soil surface. Areas of wet meadow were identified at abandoned agricultural field locations along the northern boundaries of Wetlands RG-7 and RG-33.

### Wildlife

Annual wetland monitoring within Wetland RG-6 includes wildlife observations and amphibian surveys. Prior to the initiation of this monitoring program, flora and fauna species richness, abundance, and diversity were annually collected through 2004 as part of a biomonitoring permit condition (2004 Bio-Monitoring Report, Stantec, February 2005).

The 2013 Annual Wetland Monitoring and Assessment Report indicated that the wildlife species that were identified were common to the western New York State area, either as permanent residents or seasonal migrants. No state or federal protected species were observed during these survey events. Overall, many of the same species are observed annually; however, some species, like the pickerel frog (*Lithobates palustris*) and the eastern cottontail (*Sylvilagus floridanus*) were documented within Wetland RG-6 for the first time during the 2013 monitoring. The following is a cumulative list of wildlife species observed within Wetland RG-6 during the 2011-2013 monitoring events.

### Birds

American crow (*Corvus brachyrhynchos*)

Yellow warbler (*Setophaga petechia*)

American robin (*Turdus migratorius*)

Song sparrow (*Melospiza melodia*)

Herring gull (*Larus argentatus*)

Turkey vulture (*Cathartes aura*)

Northern mockingbird (*Mimus polyglottos*)

European starling (*Sturnus vulgaris*)

Rose-breasted grosbeak (*Pheucticus ludovicianus*)

Common grackle (*Quiscalus quiscula*)

Blue jay (*Cyanocitta cristata*)

Downy woodpecker (*Picoides pubescens*)

American robin (*Turdus migratorius*)

Red-winged blackbird (*Agelaius phoeniceus*)

White-breasted nuthatch (*Sitta carolinensis*)

Red-tailed hawk (*Buteo jamaicensis*)

American tree sparrow (*Spizella arborea*)

Killdeer (*Charadrius vociferous*)

Northern cardinal (*Cardinalis cardinalis*)

Canada goose (*Branta canadensis*)

Warbling vireo (*Vireo gilvus*)

Eastern phoebe (*Sayornis phoebe*)

Northern (Baltimore) oriole (*Icterus galbula*)

Yellow-rumped warbler (*Dendroica coronata*)

Gray catbird (*Dumetella carolinensis*)

Red-eyed vireo (*Vireo olivaceus*)

Mallard (*Anas platyrhynchos*)

Yellow-bellied sapsucker (*Sphyrapicus varius*)

### Amphibians

Unidentified tadpoles

Pickerel frog (*Lithobates palustris*)

Northern leopard frog (*Lithobates pipiens*)

Spring peeper (*Pseudacris crucifer crucifer*)

Gray tree frog (*Hyla versicolor*)

Mammals

White-tailed deer (*Odocoileus virginianus*)

Eastern gray squirrel (*Sciurus carolinensis*)

Red squirrel (*Sciurus vulgaris*)

Eastern chipmunk (*Tamias striatus*)

Eastern cottontail (*Sylvilagus floridanus*)

Woodchuck (*Marmota monax*)

Raccoon (*Procyon lotor*)

In addition to the wildlife observations included in the wetland monitoring reports, Applied Ecological Services, Inc. completed Natural Resource Inventories of the Proposed Site in 2012. Wildlife encountered during the site visit was comprised of bird species, utilizing the Proposed Site or flying over, and a few amphibian vocalizations in wetland areas. Commonly seen and heard songbirds included those of open and brushy agricultural lands, such as the American robin, Northern cardinal, turkey vulture, red-winged blackbird, song sparrow and field sparrow. In the woodlands, flickers and downy woodpeckers were observed or heard. Wildlife encountered during the site visit of the Proposed Wetland Mitigation Area included songbirds common to open and brushy agricultural lands and woodlands, such as the American robin, Northern cardinal, turkey vulture, yellow-rumped warbler, pileated woodpecker, song sparrow, field sparrow, blue jay, American crow, red-tailed hawk and red-winged blackbird. Amphibians heard calling were spring peepers.

Though wildlife sightings were recorded during Applied Ecological Services' April and May 2012 site investigations, the main objectives of these visits were to map vegetative cover types and to inventory plant species located within the Proposed Site. Plant communities were identified, confirmed, and mapped, and plant species in each community type were recorded. Complete inventories are included in the Natural Resource Inventories found in Attachment D. No endangered, threatened or rare plant or animal species were confirmed during these field efforts; however, five (5) native plant species recognized as being exploitably vulnerable were identified on the Proposed Site, which are discussed below under the "Site Visits" heading.



## Endangered or Threatened Species

### New York State Queries

The New York Natural Heritage Program was contacted for information regarding the reported presence of any endangered species, threatened species, species of special concern, or significant natural communities within or adjacent to the Proposed Site. A response was received from the New York Natural Heritage Program on June 10, 2013 (Attachment E), which reported the presence of a significant natural community within the Proposed Site and a historical record of a state endangered plant species. A Silver Maple-Ash Swamp community was identified in association with Hotel Creek wetlands. The NYSDEC's Environmental Resource Mapper was reviewed to determine the exact location of this mapped natural community. The Silver Maple-Ash Swamp is identified along a tributary and associated wetlands that drain into Hotel Creek, east, and downstream, of the Proposed Site. The New York Natural Heritage Program indicates that this community is of a moderate size with a combination of mature forest and springs, and very few exotic plant species. No other instances of significant natural communities are mapped within one (1) mile of the Proposed Site limits.

The New York Natural Heritage Program query also identified that the New York State endangered log fern (*Dryopteris celsa*) was identified within the Riga Swamp in 1964. More recent observations or records are not documented. The Riga swamp refers to the Silver Maple – Ash Swamp community location discussed above. This wetland complex is located outside, and downstream, of the Proposed Site. Log fern specimens were not observed within the Proposed Site. New York Natural Heritage Program correspondence is included in Attachment E.

To further confirm that no additional records of state protected species or significant natural communities exist for the Proposed Site or adjacent areas, a search of the NYSDEC's Nature Explorer was completed to identify potential state listed threatened or endangered species or natural communities within the Town of Riga. In addition to the records of the already discussed Silver Maple – Ash Swamp and the log fern, this search identified historic

records of the blackchin shiner (*Notropis heterodon*) and recently confirmed records of a Northern White Cedar Swamp significant natural community.

Based on the Town of Riga site map that accompanies the results, the historic records of the blackchin shiner are more closely associated with the Town of Wheatland, located southeast of the Town of Riga and Proposed Site. The generalized location that accompanies this record eclipses the southern Town of Riga municipal boundary. The year this species was last documented is 1948; the documented location at that time was downstream of, and not adjacent to, the Proposed Site. The blackchin shiner is not protected in New York State and was not observed within Wetland RG-6, the RG-6 Tail or Hotel Creek during any on-site investigations. Presence of the Northern White Cedar Swamp community was confirmed for the Town of Riga in 1991. The Town of Riga site map depicts two (2) Northern White Cedar Swamp locations, neither of which is near the Proposed Site. Additional locations of this natural community type were not observed within the Proposed Site during field activities. Results from this online search are included in Attachment E.

#### Federal Query

The USFWS New York Field Office's Information, Planning, and Conservation (IPaC) System was queried to determine whether any federally listed endangered, threatened, or candidate species are known to inhabit areas within the Proposed Site. The USFWS' Information, Planning, and Conservation System identified two (2) federally protected species that may occur within the Limits of Disturbance for the Proposed Site: the bog turtle (*Glyptemys muhlenbergii*) and the northern long-eared bat (*Myotis septentrionalis*). A habitat assessment was completed on site to determine if suitable habitat for these two (2) species was available. A printout of the USFWS' Information, Planning, and Conservation System results is included in Attachment E.

#### Bog Turtle

The bog turtle is classified as a federally threatened species. Since wetland habitat was identified within or adjacent to the Proposed Action's Limits of Disturbance, the

potential for this species to utilize portions of the Proposed Site was identified. A more detailed habitat assessment was completed within portions of Wetlands RG-5, RG-6, RG-7, RG-33, and delineated wetlands A, B, C, E, and F within the Proposed Wetland Mitigation Area. Terrestrial Environmental Specialists, Inc. conducted a Phase 1 Bog Turtle Habitat Survey in December 2013 and January 2014 on approximately 663 acres of land. The Phase 1 survey was completed by evaluating the on-site wetlands to determine their suitability to provide appropriate habitat for the species. Vegetation was the main criterion assessed to make this determination.

Bog turtles require the use of calcareous wetlands, which often consist of open sphagnum bogs, wet meadows, and wet pastures. Wetlands inhabited by bog turtles are typically spring-fed with shallow, slow-moving surface water, deep mucky soils, and hummocky or tussock-forming vegetation. Terrestrial Environmental Specialists, Inc. evaluated each wetland location to determine the dominant resource characteristics and to assess their overall suitability to support bog turtle populations. A total of nine (9) wetlands were surveyed; none of the wetlands exhibited characteristics indicating the potential for bog turtle habitat (2014). One (1) open-canopy wet meadow area was noted within Wetland RG-33; however, no fen habitat characteristics were identified. No additional field efforts were recommended due to the lack of suitable habitat for the species. The Phase 1 report is included in Attachment E.

#### Northern Long-Eared Bat

The northern long-eared bat has recently been added as a candidate endangered species to the federal Endangered Species Act. Though this species is not planned to be formally recognized as a federal endangered species until April 2015, potential impacts to the northern long-eared bat should be considered and addressed for any project funded, approved, or undertaken by a federal agency.

A habitat assessment for the northern long-eared bat was completed for areas located within the Proposed Landfill Expansion but outside of the east and west borrow area limits, which are already cleared of vegetation. Suitable summer roosting habitat for northern long-eared bats consists of live trees and/or snags, three (3) inches or greater in diameter at breast height. This species of bat commonly uses cavities, cracks, crevices, and holes under peeling bark or within the trunk of the tree as temporary or long-term roost locations. Over 35 species of trees have been recognized as having the potential to exhibit suitable characteristics for roosting activities (USFWS, 2014).

Suitable roosting habitat for the northern long-eared bat was identified within the Proposed Site. Forested Wetland RG-6 (13.5 acres) is proposed to be cleared as part of the Proposed Action, in addition to tree-lines and deciduous forest patches that surround the RG-6 Tail and the agricultural fields within the Proposed Site.

#### Site Visits

Species recognized by the NYSDEC as being exploitably vulnerable are likely to be elevated in status to threatened in the near future if their numbers continue to decrease. White trillium (*Trillium grandiflorum*) and Christmas fern (*Polystichum acrostichoides*) were identified within an upland deciduous forest community; bloodroot (*Sanguinaria canadensis*) was observed in a shrubland and treeline community; and turtle head (*Chelone glabra*) was noted in Wetland RG-5 during Applied Ecological Services, Inc. completed Natural Resource Inventories in 2012. A plant suspected to be Canada lily (*Lilium canadense*) was recorded within Wetlands RG-7 and RG-33. This species is also identified as an exploitably vulnerable plant (6 NYCRR 193.3). Because the individuals of this species were not flowering at the time of the field investigations, positive identification could not be made. There is a possibility that these individuals represented the New York State endangered Michigan lily (*Lilium michiganense*). Additional field visits to positively identify the *Lilium* plants resulted in no individuals of either species being found. Michigan lily was last documented in Monroe County in 1990, as part of the New York Flora

Association's Flora Atlas (2014). No exploitably vulnerable plants were observed within the limits of Wetland RG-6 or the RG-6 Tail.

### Habitat Management Plan

An original Wildlife HMP was developed in 1992, at the time the Mill Seat Landfill was initially constructed. The HMP included the implementation of a system of habitat protection and enhancement practices, which have continued to be maintained. This HMP was updated in 2006 and minor modifications were made to address the soil borrow activities in 2011. The HMP generally involves:

- Maintaining and improving as much existing wildlife habitat as possible outside the area of landfill development.
- Installation of nesting boxes for cavity nesting waterfowl at selected locations.
- Annual late summer mowing of meadow areas to reset the natural succession in those areas. The maintenance of meadow areas preserves habitat diversity on site and promotes utilization by a greater variety of songbird species.
- Placement of brush piles along wooded/field edges to enhance wildlife cover.
- Planting of conifers to provide visual stands/screens.
- Development of open water/aquatic beds within existing wetlands to create additional habitat diversity and to encourage greater use by waterfowl.
- Opportunities for public recreation – hiking trails.

## 3.6.2 Potential Significant Environmental Impacts

### Vegetative Cover Type Impacts

Much of the Proposed Action is located within a previously disturbed area since over one-third (1/3) of the 148-acre disturbance area for the Proposed Landfill Expansion, approximately 56 acres, is located in the permitted soil borrow areas. Regardless, the clearing and removal of current vegetative cover types will be required. The approximate cover type acreages mapped within the Proposed Action include: 61.0 acres – agricultural, 23.1 acres – deciduous forest, 177.7 acres –

developed/disturbed areas, 13.9 – Waters of U.S., 11.9 acres – meadow, and 12.1 acres – shrubland. Undeveloped lands located outside the Proposed Landfill Expansion's Limits of Disturbance will remain and will continue to provide a diversity of different vegetative communities.

Cover type conversions will also occur within the Proposed Wetland Mitigation Area. Portions of the following vegetative cover types and land uses are proposed to be modified as part of the wetland mitigation plan: agricultural, deciduous forest, meadow, and shrubland. These cover type conversions will be beneficial in that invasive plant species will be better managed on the Proposed Wetland Mitigation Property and active agricultural lands will be transformed into higher quality vegetative cover types. The use of native plantings and seed will further improve the overall ecological value of the Proposed Wetland Mitigation Area. Though cover type conversions and land disturbance are necessary components of the Proposed Action, surrounding higher quality areas (i.e., wetlands, streams) will remain physically undisturbed.

#### Wildlife Impacts

No direct impacts to wildlife species are anticipated as part of the Proposed Action; however, permanent displacements of some species and populations may occur. The Proposed Action will result in 148 acres of ground disturbance; however approximately 56 acres of this area are already disturbed or permitted for disturbance as part of the soil borrow areas. Potential wildlife impacts within these 56 acres were previously considered during an environmental review of the soil borrow areas. Wildlife species documented utilizing Wetland RG-6 and surrounding areas are common for western New York State. Given the types and amounts of available habitats that will remain undeveloped within the Proposed Site, and that are available on surrounding properties, displaced wildlife will be able to relocate to these adjacent suitable habitats. Although these effects are unavoidable, they will not have a significant impact on the abundance, population size, or distribution of plant or animal resources that are currently in the area. No significant adverse impacts to wildlife populations in the area are anticipated.

### Threatened and Endangered Species Impacts

No impacts to state protected or rare species or natural communities are anticipated as part of, or as a result of, the Proposed Action. In addition, no observations of other protected species, unique plant assemblages, or significant natural communities were noted.

#### Bog Turtle Impacts

Based on the site observations documented during Terrestrial Environmental Specialists, Inc.'s Phase 1 Bog Turtle Habitat Survey for the Proposed Action, no suitable habitat for the bog turtle was identified within the project's Limits of Disturbance. Based on the results of the habitat site assessment and the review of additional available information, the project is anticipated to have no effect on the bog turtle. No additional field investigations or coordination efforts are warranted for this species at this time.

#### Northern Long-eared Bat Impacts

Suitable roosting habitat for northern long-eared bat individuals or populations was identified within the disturbance limits of the Proposed Action. It is estimated that approximately 23.1 acres of forested area will be cleared within the Proposed Landfill Expansion Limits of Disturbance, including 13.5 acres of forested Wetland RG-6. Though suitable northern long-eared bat habitat was identified within the Proposed Action limits, much of the Proposed Action will be constructed on lands dominated by non-woody habitats such as agricultural fields and meadows. This greatly minimizes any potential impacts that the Proposed Action may have on this candidate species.

Additional forested/shrub dominated hedgerows and treelines located within the Proposed Wetland Mitigation Area may experience cover type conversions. Potential impacts associated with these conversions will be considered as the review of the *Ecological Restoration and Management Plan* is commenced with the USACE.

The habitat assessment and suitability details, and proposed conservation measure, will be provided to the USFWS for their consideration and comment. Further coordination will be completed with the USFWS during the federal permitting process with the USACE. Because this species is expected to be formally added to the list of federally endangered species (pursuant to the Endangered Species Act of 1973) in April 2015 and the Proposed Action will not be under construction prior to that time, additional coordination and/or surveying efforts may be required with regard to potential impacts to the northern long-eared bat.

#### HMP Impacts

Activities associated with the Mill Seat Landfill HMP are located outside of the Proposed Landfill Expansion area; therefore, the existing HMP does not require modifications. The elements of the HMP will continue to be maintained and executed to promote ecosystem health and diversity within the Proposed Site.

### 3.6.3 Proposed Mitigation Measures

#### Vegetative Cover Type Mitigative Measures

Given the type of project being proposed, there are no alternatives to ground disturbance within the Limits of Disturbance. Ultimately, the Proposed Landfill Expansion will be re-vegetated after it is closed and the final cover system is installed.

#### Wildlife Mitigative Measures

Since no significant direct impacts to wildlife species are expected, mitigative measures are not necessary.

#### Threatened and Endangered Species Mitigative Measures

Habitat considered suitable for roosting or migrating individuals or colonies of northern long-eared bats is present within the Limits of Disturbance for the Proposed Action. Tree removal within the Proposed Site will be required. Though suitable northern long-eared bat habitat was identified within the Limits of



Disturbance, much of the Proposed Action will be constructed on lands dominated by non-woody habitats such as agricultural fields and meadows. This greatly minimizes any potential impacts that the Proposed Action may have on this candidate species. Regardless, to mitigate potential impacts on northern long-eared bats, any trees greater than three (3) inch diameter at breast height that require removal will only be felled within the USFWS' Time of Year Conservation Cutting Window: October 31 to March 31. This seasonal tree clearing is proposed as a conservation measure for the northern long-eared bat. Additional coordination and/or surveying activities may be required in association with the formal listing of the northern long-eared bat to the federal endangered species list, currently anticipated for April 2015.

#### HMP Mitigative Measures

No features of the most recent HMP are currently being implemented within the Proposed Footprint; therefore, no mitigative measures to the existing HMP are necessary.

### 3.7 Critical Environment Area

#### 3.7.1 Existing Environmental Setting

Local and state agencies can designate CEAs within their respective boundaries and properties. In order for an area to be deemed a CEA, it must contain rare or locally significant qualities. Of the eight (8) CEAs designated in the County, only one (1) intersects the Proposed Site: Hotel Creek CEA. The remaining seven (7) CEAs are all located within the City of Rochester and are not relevant to the matters addressed in this *DSEIS*.

Hotel Creek, which crosses the Proposed Site south of the Proposed Footprint, was designated as a CEA by the Town of Riga in 1990. A portion of Wetland RG-5 and its 100 foot regulated adjacent area are located between the Proposed Landfill Expansion and Hotel Creek. The entire length of Hotel Creek and its Tributary b located within the municipal limits of the Town of Riga are included in this CEA. The stream runs as close as 310 feet to the Limits of Disturbance at the southeast corner of the Proposed Landfill Expansion berm. Hotel Creek and its Tributary b were designated as a CEA due to their reported unique qualities as potential trout habitat and possible spawning grounds.

Despite the reasons for the CEA designation, however, no trout species have been observed during ecological site visits within the segments of Hotel Creek or its Tributary b that are located within the limits of the Proposed Site. Within a majority of the Proposed Site, and prior to its crossing underneath Brew Road, Hotel Creek is characterized by an undefined channel with no distinct bed or banks. This portion of the stream is located within a well-defined forested wetland system, Wetland RG-5, and does not exhibit stream conditions typically associated with high quality trout waters in New York State. Sequences of riffles, pools, and runs and the presence of overhanging bank vegetation are not exhibited within Hotel Creek until further downstream, outside of the Proposed Site boundaries. In addition, the NYSDEC designates water quality classifications for all mapped surface water resources within New York State. Under this mapping, the segment of Hotel Creek that is located within the Proposed Site is not recognized as exhibiting water qualities that could support trout populations. This portion of Hotel Creek and its Tributary b are recognized as having C,C Class and Standards. Fish stocking lists show that no freshwater fish species, including trout, were stocked by the NYSDEC into Hotel Creek in 2013 or 2014.

### 3.7.2 Potential Significant Environmental Impacts

The collection and detention of stormwater in ponds has the potential to raise the temperature of water flows from the Proposed Site. However, no direct flow of water from the Proposed Site to Hotel Creek will occur. Future flow of collected surface water will flow into existing wetland areas, as they do currently, and commingle with surface water prior to flowing into Hotel Creek. This will allow for thermal buffering of SRP outflows and a minimal impact to water temperatures in Hotel Creek.

Due to the ultimate flow of the SRPs to a CEA, temperature monitoring of Hotel Creek has been in place as part of the Mill Seat Landfill's *Environmental Monitoring Plan* since 1993. Review of temperature, dissolved oxygen, and analytical data for the past decade of monitoring indicates Mill Seat Landfill activities have not impacted water quality in Hotel Creek or the adjacent wetlands. Daily surface water temperature changes were gradual and responded to changes in air temperature. No rapid rises in stream temperatures that could not be explained by changes in air temperature were observed. Dissolved oxygen measurements were typically nine (9) parts per million or higher indicating abundant availability of dissolved oxygen to aquatic organisms.

Inorganic constituent concentrations detected in upstream samples were similar to those detected in downstream samples. Leachate indicator parameters (i.e., landfill related volatile organic compounds, phenolic compounds, biological oxygen demand, and ammonia) were not detected or elevated in the surface water samples analyzed from Hotel Creek or the surrounding wetlands. Although Hotel Creek is shallow and subject to temperature swings based on ambient air temperature, over 20 years of monitoring data indicates no significant impacts to water temperature from Mill Seat Landfill activities.

Removal of existing areas of riparian corridor along the RG-6 Tail, as well as removal of mature vegetation in various portions of the Proposed Site as part of the Proposed Action, also has the potential to negatively affect Hotel Creek by way of thermal impacts. As the Hotel Creek CEA was established in part due to the potential for Hotel Creek to support trout populations, maintenance of cool water temperatures compatible with a coldwater fishery is critical to perpetuating the objective of the CEA.

### 3.7.3 Proposed Mitigation Measures

Impacts to the Town of Riga's CEA will be limited due to certain design aspects integral in the management of stormwater on the Proposed Site. The concerns for impacts to Hotel Creek revolve primarily around the quality and quantity of water flowing into this stream. Runoff from the Permitted Footprint and Proposed Footprint requires special management to ensure no water comes into contact with waste; in this case, however, a sufficient quantity of clean water must still be allowed to run off into Hotel Creek to maintain existing water flows within this resource. A new SRP (SRP-7) is proposed to flow to a Water of the U.S. to the southwest of the Proposed Footprint (portion of the RG-6 Tail) and eventually to Wetland RG-5, which encompasses the Hotel Creek channel. Since the wetland areas form an important part of the Hotel Creek watershed, features of the stormwater management system which protect the quality and quantity of water flowing from the Proposed Footprint to the wetlands, will in turn be protective of the water quality and quantity in Hotel Creek. Impacts to water quality are not expected due to proposed mitigation measures but will be monitored in accordance with the *Stormwater Pollution Prevention Plan*.

Through stormwater management design elements, water quality within Hotel Creek is anticipated to remain the same as what had led to the stream's designation as a CEA. Water flow rates within Hotel Creek will also remain similar to existing conditions, despite the fact that Hotel Creek will no longer receive seasonal flows from the RG-6 Tail. Instead, flows from a proposed SRP (SRP-7) located south of the Proposed Footprint will occur and will mimic the current water flow path from the terminus of the RG-6 Tail to Hotel Creek (through Wetland RG-5).

### 3.8 Air Resources

#### 3.8.1 Existing Environmental Setting

This section contains a description of existing air quality conditions at the Proposed Site and the surrounding area, as well as a compilation of emissions from the existing emissions sources. The Proposed Site and surrounding area is primarily a rural environment with interspersed commercial and agricultural facilities. Based on existing ambient monitoring data, the area experiences good overall air quality and has a demonstrated history of compliance with applicable standards.

Since the Mill Seat Landfill is currently in operation, a quantitative analysis of the emissions from the Permitted Footprint can be used as a baseline for the Proposed Action. This analysis includes point source and fugitive emission sources. The calculated impact of those emissions off-site is included in the Air Quality Impact Analysis for both the Permitted and Proposed Footprints.

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.

## Climate and Meteorology

The climate of the County may be classified as humid continental. Atmospheric air flow is predominately continental which is slightly modified by 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. Lake Ontario also tends to minimize extremely high temperatures during the summer. In the fall, warm surface waters slow the normal rate of air temperature decline. In the winter, the lake tends to prevent severely cold temperatures in comparison with inland areas of similar physiography. However, since Lake Ontario never freezes, cold air crossing the lake becomes saturated by moisture resulting in lake effect snowfalls that create bands of snow that generate about half of the 70 to 120 inches of snow the area typically receives.

The County receives relatively light precipitation. Precipitation data for the County recorded by the National Oceanic and Atmospheric Administration between the years 2000 and 2013 indicates the mean annual precipitation averages 35.16 inches or about three (3) inches per month. Average monthly precipitation in the County is relatively uniform with no well-defined wet or dry seasons.

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 station is in Buffalo, New York, which is approximately 56 miles west of the Proposed Site. This station has weather data/records dating back to approximately 1930 for a number of meteorological parameters. Mean temperature, precipitation and snowfall from 2004 through 2013 is presented in Attachment F – Supporting Air Quality Analysis Data.

According to the New York State Climate Office, the prevailing wind direction in the State is from the west with a southwest component in the summer months and a northwest component during the winter months. Occasional well-developed storms from the Atlantic coast can produce damaging winds and rain.

In general, the less stable (calm) an air mass, 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 five (5) miles per hour are consistent with poor dispersion.

#### Ambient Air Quality Monitoring

Comprehensive, continuous air quality monitoring data is collected by the NYSDEC at a network of measurement stations throughout the State. Individual measurements at these stations are designated for use as part of either the National Ambient Air Quality Monitoring Stations or the State and Local Air Monitoring Stations systems. The National Ambient Air Quality Monitoring stations are part of the national network established under the Clean Air Act of 1977 (revised in Title I of the Clean Air Act Amendments of 1990). The National Ambient Air Quality Monitoring data is utilized to determine compliance with the National Ambient Air Quality Standards for the following pollutants: ozone, carbon monoxide, particulate matter less than ten (10) microns (PM-10), particulate matter less than two and one-half (2.5) microns (PM-2.5), lead, sulfur dioxide, and nitrogen dioxide. These pollutants are referred to as Criteria Pollutants. Areas determined by this sampling network to be within the limits set forth in the National Ambient Air Quality Standards are determined to be in attainment while areas not meeting the National Ambient Air Quality Standards are determined to be in one (1) of five (5) classes of non-attainment depending upon the air quality values found to be present. States with a non-attainment area are required to prepare State Implementation Plans for submittal to the USEPA which describe how the state will bring these areas into attainment. Attainment status also determines the emissions level, expressed in TPY, which defines major source applicability to Title V Air Facility permitting and other programs in the Clean Air Act.

While the area of the Proposed Site is in attainment with the National Ambient Air Quality Standards, it lies in an area referred to as the ozone transport region which runs from Virginia to Maine. As the name implies, the ozone transport region was set up due to the ozone from one (1) area being relatively mobile and moving from one (1) area to another.

Due to its presence in the ozone transport region, all of the State is considered to be in ozone non-attainment regardless of airborne concentrations.

The NYSDEC operates four (4) air monitoring sites within NYSDEC Region 8 in Rochester, Williamson, Addison, and Elmira. The sites contain a mix of manual and continuous recording instruments as detailed in the table below.

**Table 8 - Air Monitoring Sites in NYSDEC Region 8**

<b>Location</b>	RG&E Substation 30 Yarmouth Road Rochester, NY	Wayne County Occupational Center 4440 Ridge Road Williamson, NY	Pinnacle State Park 1904 Pinnacle Road Addison, NY	Sullivan St. Water Treatment Plant Elmira
<b>Compounds monitored for</b>	Ozone, sulfur dioxide Low level carbon monoxide, nitrogen oxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, particulate matter less than 10 microns metals, particulate matter less than 2.5 microns speciation, black carbon, mercury, toxics, carbonyl, polycyclic aromatic hydrocarbons	Ozone	Ozone, Low Level sulfur dioxide Low Level carbon monoxide, nitrogen oxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, particulate matter less than 2.5 microns speciation , sulfate, toxics	Ozone, SO2

The nearest air monitoring station to the Permitted Site is at the RG&E substation in Rochester. Due to the distance of these stations from the Proposed Site and the general difference in surroundings (metropolitan vs. rural) the data may not be entirely representative of the actual conditions at the Proposed Site. However, it does represent the most thorough database of information and should reflect the general pattern of air quality in the area.

Based on a review of the latest available three (3) years of monitoring data (between 2011 and 2013) from the above sites presented in the New York State Ambient Air Quality Report for 2013, average concentrations for all contaminants were below the State and Federal standards for all pollutants. The USEPA listing of Current Nonattainment Counties for All Criteria Pollutants lists the County as being in Marginal Non-Attainment for 8-Hour Ozone only (as it is in the ozone transport region); the County is in attainment for all other pollutants. Aside from Marginal Ozone Non-Attainment, the data is an indication of overall good ambient air quality in the area.

#### Air Emissions from Mill Seat Landfill

This section contains an estimate of emissions associated with the existing operations at the Permitted Site. LFG is collected via an active LFG collection system. The LFG collection system consists of a series of vertical and horizontal collectors installed within the waste mass. Centrifugal blowers maintain a vacuum on the waste mass and deliver the LFG to a series of internal combustion engines and flares. These flares and engines provide destruction of the methane and other compounds present within the LFG, and the engines have the additional benefit of generating electricity which is provided to the local grid.

The Mill Seat Landfill operates under a Title V Air Facility Permit (Permit No. 8-2648-00014/00011) issued by the NYSDEC that includes specific permit conditions regarding operation of the LFG collection system that must be adhered to. Combustion sources have had stack tests performed to demonstrate compliance with the non-methane organic compounds destruction efficiency requirements of the New Source Performance Standards (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 LFG collection system was installed, the Permitted Site has continued to increase the quantity of LFG collected by its LFG collection system by designing and constructing additional LFG extraction wells with horizontal collectors.

Existing and future LFG production has been estimated using the USEPA Landfill Gas Model (LandGEM version 3.02). The USEPA created this model to estimate landfill emissions as an integral part of Federal air regulations. This model is generally considered to be conservative for



purposes of estimating actual facility emissions because it typically provides 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 carbon monoxide and nitrogen oxide). 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.

#### Facility Description

LFG is collected via an active LFG collection system which consists of vertical extraction wells and horizontal collectors. The primary means of control of the collected LFG is through eight (8) LFGTE generator-sets at the LFGTE Facility that produce electricity for sale on the open market. Approximately six and four-tenths (6.4) megawatts of electricity is produced. Flares are available to destroy the LFG collected that is above the capacity of the eight (8) engines, or during periods when one (1) or more engines are shut down (for maintenance, repairs, etc.). The Permitted Site is not yet subject to the operational standards of 40 CFR Part 60, Subpart WWW (New Source Performance Standards for MSW Landfills) since periodic Tier II testing has demonstrated that uncontrolled emissions of non-methane organic compounds are less than 50 megagrams per year.

The principal air emission from a MSW landfill is LFG which results from the decomposition of refuse. LFG 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 LFG is based on many factors including:

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

LFG production is accelerated when the available oxygen is used up and the decomposition becomes anaerobic. This generally occurs within a one (1) to two (2) year period after waste placement and cover, usually peaking after a final cover system is installed and continues for several years thereafter.

There are two (2) principle concerns regarding the production and emission of LFG. 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 LFG and as a by-product of LFG combustion.

Typical LFG is comprised of approximately 50% methane, 50% carbon dioxide (by volume), and small quantities of hydrogen sulfide and various volatile organic compounds. Typically less than one percent (1%) (by volume) of LFG is non-methane organic compounds. Primary emissions of concern from landfills include non-methane organic compounds and methane as well as carbon monoxide, nitrogen oxide and hydrogen chloride as by-products of combustion. The chlorinated compounds in LFG are converted to hydrogen chloride in the combustion process. Non-methane organic compounds include volatile organic compounds, hazardous air pollutants, and odorous compounds.

A portion of the incoming MSW is comprised of C & D waste and inert materials. For an estimate of future LFG generation rates, an assumed worst-case putrescible tonnage of MSW and BUD materials was used. An 85% collection efficiency was used to determine the amount of LFG collected and the resulting fugitive emissions. Attachment F presents results of the updated LFG models, which shows the estimated amount of LFG collected in the Permitted Footprint and Proposed Footprint. Based on these calculations, the peak year of LFG generation for the Permitted Site will be 2018, with a total of approximately 4,152 cfm collected from the Permitted Footprint. The peak year of LFG generation for the Proposed Landfill Expansion will be the final year of waste acceptance, with a total of approximately 6,210 cfm LFG collected.

#### Fugitive LFG

Some of the LFG that is not captured by a properly maintained LFG collection system may potentially permeate through the landfill soil covers and be released to the atmosphere as fugitive emissions, although some

of the LFG can be retained within the landfill and still degrade biologically. The primary constituents of concern for LFG are methane, non-methane organic compounds, volatile organic compounds, and hazardous air pollutants. Hazardous air pollutants and volatile organic compounds are a portion of the non-methane organic compounds. The estimate of fugitive LFG was based on the expected LFG generation multiplied by one (1) minus the assumed collection efficiency of the LFG collection system of 85%.

Fugitive greenhouse gas emissions were calculated by assuming that LFG is approximately 50% methane and 50% carbon dioxide by volume.

#### LFG Control

Collected LFG is routed from the Permitted Footprint through a LFG header and directed to the existing control devices which consist of eight (8) Caterpillar 3516 engines, one (1) 3,500 cfm enclosed flare, and one (1) 3,000 cfm open flare that is used solely as a back-up control device. Emission estimates were based on the use of these control devices for the combustion of LFG. The following summarizes the capacity of these control devices:

Control Device	Current Capacity (cfm)
LFGTE Facility (8-Caterpillar 3516 Engines)	2,506
Zink Enclosed Flare	3,500
Total	<u>6,006</u>

Combustion of LFG in either the engines or flares results in emissions of non-methane organic compounds, volatile organic compounds, carbon monoxide, nitrogen oxide, sulfur dioxide, particulate matter, and hazardous air pollutants, including hydrogen chloride.

It is assumed that the LFG is combusted primarily in the engines, with the flares combusting the remaining LFG.

## Fugitive Dust

Off-road particulate matter emissions are primarily caused by the moving and handling of materials by heavy equipment such as loaders and bulldozers. The emissions were calculated based on the equipment and hours of operation for both operational and construction vehicles, and include such activities as soil handling and waste placement. While the Proposed Action includes various construction activities, those activities are not expected to increase significantly above current levels. Similarly, the Permitted 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 and the addition of 16 trucks per day of cover material.

Operational vehicles and waste hauling vehicles also generate particulate emissions from traveling on both the paved and unpaved roads at the Mill Seat Landfill. These emissions consider particulate matter that is stirred up by vehicle tires on the road surface as opposed to the actual movement of soil.

Particulate matter emissions from road dust were calculated based on information provided by WMNY personnel, which include vehicle traffic, such as types of equipment and roads/paths traveled, as well as distances traveled and hours of operation. A series of USEPA published emission factors and emission factor equations were utilized in the performance of this work. Emissions are based on routine operations for a typical year of landfill operation. Table 1 in Attachment F presents the calculation of fugitive dust emissions for the Permitted Site and the resulting change in emissions as a result of the Proposed Action.

## Facility Emissions Sources

The following is a list of emission sources and controls at the Permitted Site:

- LFGTE Facility – The LFGTE Facility is located northeast of the Permitted Footprint and east of the Scale House and Administration Building. It handles the majority of the LFG collected. It is comprised of eight (8) Caterpillar 3516 internal combustion engines used to generate electricity from LFG. Refer to Section 1.2.6 for more information on this facility.

- Zink Enclosed Flare – This 3,500-cfm flare is located adjacent to the LFGTE Facility.
- Parnell Candlestick Flare – This 3,000-cfm flare is used for emergency backup purposes. It is located centrally on the Permitted Site, just north of the Permitted Footprint.
- Proposed LFGTE Facility II – The County is currently in the process of developing a LFGTE Facility II adjacent to the existing LFGTE Facility. This facility is proposed to utilize LFG from the Permitted Footprint.
- Two (2) 1,500,000 gallon leachate storage tanks.
- Fugitive LFG emissions

The Mill Seat Landfill also has several smaller sources that are considered minimal or exempt from NYSDEC permitting rules. These sources include the following:

- Parts washers
- Petroleum storage tanks
- Natural gas furnaces
- Propane furnaces
- Emergency generators
- Used oil furnace
- Portable gasoline generators
- Portable diesel generators / pumps
- Odor neutralizer equipment

A summary of the emissions from the Permitted Site for 2013 are presented in Table 2 in Attachment F.

### 3.8.2 Potential Significant Environmental Impacts

The following is a discussion of the air emissions and subsequent impact of those emissions resulting from the construction and operation of the Proposed Action. These potential impacts include fugitive dust, vehicular emissions and LFG related emissions. The quantity of LFG from both the Permitted Footprint and the Proposed Footprint was conservatively estimated using USEPA's LandGEM gas generation model and guidance documents by assuming that each year the Proposed Site will receive a worst-case quantity of putrescible waste. The amount of LFG which could potentially be emitted to the atmosphere was also

conservatively assumed using a collection efficiency of 85% that is below the design collection efficiency of the LFG collection system.

The impact of peak fugitive and combustion emissions were evaluated following the screening analysis requirements set forth in NYSDEC's DAR-1 guidelines. Particulate matter emissions were evaluated in accordance with NYSDEC's Policy CP-33 Assessing and Mitigating Impacts of Fine Particulate Matter Emissions, and Greenhouse Gases were considered in accordance with NYSDEC guidance policy Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements. Details regarding each of these procedures used to predict emissions and subsequent impacts are described in the following section. The Proposed Landfill Expansion's application for a Title V Air Facility Permit modification has been submitted to the NYSDEC and includes additional details and supporting documentation.

The Proposed Landfill Expansion is a new emission source at the Proposed Site. Accordingly, the emissions generated by the Proposed Landfill Expansion must be compared to the significance thresholds listed in 6 NYCRR Part 231. The Mill Seat Landfill is currently a major source for carbon monoxide and nitrogen oxide under Prevention of Significant Deterioration and Non-Attainment New Source Review rules.

#### Construction Emissions

Particulate air emissions from construction activities occur when unvegetated soils are handled, loaded or unloaded, from soil stockpiles and from heavy equipment operations. Application of water to dry surfaces and roads will help minimize airborne dust and vegetative cover will be applied to soil stockpiles and finished grades. Crusting agents and other coatings will be considered as appropriate.

Emissions from vehicles and heavy equipment will occur during construction activities. These emissions are addressed by vehicle emissions standards under the Federal Clean Air Act and are not expected to result in any significant adverse impact.

Air emissions from construction activities are not expected to be significantly higher than from existing operations. The amount of construction, daily or intermediate cover, and final cover system installation activities will be similar to those experienced in previous years.

In accordance with NYSDEC Policy CP-33, projects with an emissions increase of 15 tons per year or more of particulate matter less than ten (10) microns must be modeled and compared to NYSDEC's Significance Threshold of three-tenths (0.3) micrograms per cubic meter as an annual concentration and five (5) micrograms per cubic meter as a 24-hour concentration.

In order to demonstrate compliance with NYSDEC CP-33, both fugitive and point source emissions associated with the project were quantified. Fugitive emission sources are described above. Point source particulate emissions result from the combustion of LFG from engines and flares. Since the Proposed Action is a continuation of existing operations, changes in fugitive emissions are limited to changes in traffic patterns and materials handling.

Based on the estimated increase of six point nine (6.9) TPY of particulate matter that is less than ten (10) microns, as shown in Table 1 in Attachment F, the increase is less than the 15 TPY threshold for significance identified in the NYSDEC CP-33 Policy. According to the NYSDEC CP-33 Policy "if primary particulate matter less than ten (10) microns emissions from the project do not equal or exceed 15 TPY, then the particulate matter less than two and one-half (2.5) microns impacts from the project shall be deemed insignificant and no further assessment shall be required under this policy."

#### Operational Emissions

Emissions from the Proposed Action will include emissions from the same sources as current operations, including:

- Fugitive LFG emissions
- Open and enclosed flare emissions
- Leachate storage tanks
- Internal combustion engines used to generate electricity
- Parts washers
- Three (3) petroleum aboveground storage tanks
- Natural gas furnaces
- Propane furnaces
- Emergency generators

- Used oil furnace
- Portable gasoline generators
- Portable diesel generators / pumps
- Odor neutralizer equipment

With the exception of fugitive LFG emissions and the increase of secondary emissions from the combustion of additional LFG, most of the remaining emissions sources are expected to remain very close to current emission rates. As detailed below, the Proposed Landfill Expansion will generate additional LFG to be collected and controlled. A discussion of fugitive LFG emissions is detailed in the Ambient Air Quality Impact Analysis.

#### LFG Emissions

Emissions from the Permitted Footprint will peak about the final year of waste acceptance and while it will decrease over time, it will continue to generate LFG for several decades. The Proposed Footprint will begin generating LFG shortly after waste is initially placed and, similar to the Permitted Footprint, will peak about the final year of waste acceptance and begin to decline. The USEPA's LandGEM model was used to estimate LFG generation from both areas.

USEPA document AP-42 "A Compilation of Air Pollution Emission Factors", in Section 2.4, Municipal Solid Waste Landfills, recommends a methane generation potential value of 100 cubic meters per megagram be used along with a methane generation rate constant (k) or particle size multiplier of  $0.04 \text{ yr}^{-1}$ . A review of actual LFG collection volumes from the past several decades indicates that the Permitted Footprint is generating slightly more LFG than the equation predicts using these parameters. Therefore, the methane generation potential value of 115 cubic meters per megagram has been used in the modeling to conservatively predict the volume of LFG that will be produced from the Proposed Landfill Expansion (excluding the Permitted Footprint). Using these parameters and a worst-case putrescible waste acceptance rate results in a peak LFG generation rate of 7,306 cfm, which at an 85% LFG collection efficiency equates to a peak of approximately 6,210 cfm of LFG collected.

Calculated emissions for the Proposed Landfill Expansion are provided in Table 3 in Attachment F.



### Future LFG Utilization

Since the Permitted Footprint and Proposed Footprint will continue to generate LFG for several decades, and because LFG utilization technologies are continually evolving, it is not certain what combination of control devices will be utilized throughout the life of the Permitted Footprint and Proposed Footprint. Certainly LFG is a valuable renewable fuel source and it is desired to utilize the LFG to the greatest extent possible. In order to be able to evaluate the emissions impact of the Proposed Landfill Expansion, emissions were calculated assuming that LFG will be combusted in the LFGTE Facility and flares, including a proposed 3,500 cfm enclosed flare. The County and WMNY will, however, continue to evaluate additional uses for the LFG including:

- The installation of additional reciprocating internal combustion engines;
- Gas-to-liquids (diesel fuel) facility;
- High BTU Plant;
- Off-site medium BTU Plant;
- Other technologies that may be developed throughout the life of the Permitted Footprint and Proposed Footprint.

By assuming the LFG will be combusted in engines and an enclosed flare, potential impacts from future air emissions can be conservatively estimated and compared to the significance thresholds for both Prevention of Significant Deterioration and Non-Attainment New Source Review. Based on this approach, the Proposed Landfill Expansion will result in a significant increase of carbon monoxide and nitrogen oxide. Accordingly, a Best Available Control Technology review has been performed for carbon monoxide and a Lowest Achievable Emission Rate review has been performed for nitrogen oxide. These reviews and associated dispersion modeling are included in the application for a Title V Air Facility Permit modification for the Proposed Action, which has been submitted to NYSDEC.

The County has applied for a Title V Air Facility Permit modification for the installation of three (3) CAT 3520 engines at the Mill Seat Landfill, as part of what is referred to as proposed LFGTE Facility II. While the proposed LFGTE Facility II is a separate project from the Proposed Action, both projects will undergo dispersion modeling and Best Available Control and Lowest Achievable Emission Rate technology reviews.

Therefore, even though the projects are separate and distinct, there will be no avoidance of any applicable requirements.

The Proposed Landfill Expansion will increase the peak LFG generation rate of the Proposed Site to 8,608 cfm, of which 7,317 cfm is projected to be collected (inclusive of both the Permitted Footprint and Proposed Footprint). It is assumed that the LFG will be combusted primarily in the engines, with the flares combusting the remaining LFG. The future combustion scenario for the Proposed Site is outlined below:

Control Device	Future Permitted Combustion (cfm)
8-Caterpillar 3516 Engines	2,506
Existing Zink Enclosed Flare	3,500
Proposed Enclosed Flare <sup>6</sup>	1,311
<b>Total</b>	<b>7,317</b>

#### Greenhouse Gases

In accordance with the NYSDEC Policy Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements, emissions from vehicle trips associated with operation of the Proposed Action were evaluated. The policy also requires an evaluation of energy consumed from off-site sources. From an energy consumption perspective, there is not expected to be an increase in energy use since the Proposed Action is a continuation of existing activities. Further, energy produced from the electricity generated from the renewable use of LFG reduces the amount of off-site power required to be produced from fossil fuel sources.

It is estimated that 5,711 tons of carbon dioxide equivalents are currently emitted from the following Permitted Site sources:

- Work at on-site soil borrow area
- Transport of off-site construction materials to on-site sources
- Landfill operations
- Landfill construction

<sup>6</sup> Depending on actual LFG production and other control technology options that may arise in the future, the proposed enclosed flare may not be necessary.

- Indirect emissions from mobile sources

The Proposed Action will no longer solely utilize soils from the on-site soil borrow area. Instead, soils will be obtained as needed from off-site sources. The net impact of this change is an estimated reduction in greenhouse gas emissions of approximately 76 tons of carbon dioxide equivalents (from 5,711 to 5,635 tons). These estimated greenhouse gas emission changes are mainly due to traffic changes and material handling operations. Increases in trucking of soils are off-set by a reduction in borrow area material handling activities, thereby resulting in this slight net reduction of greenhouse gases. Table 4 in Attachment F presents the estimated greenhouse gas emissions from construction and operational activities after commencement of the Proposed Action.

#### Air Quality Impact Analysis

An air impact analysis addresses the concentration of air emissions as they leave a facility and assesses the potential for such emissions to come into contact with off-site receptors. The air impact analysis undertaken for the Proposed Action was conducted to satisfy the following requirements:

1. Fugitive emissions of LFG and combustion source emissions were compared to Short Term Guideline Concentrations and Annual Guideline Concentrations provided in the NYSDEC's document "DAR-1, Guidelines for the Control of Toxic Ambient Air Contaminants". This analysis included the Permitted Site and the Proposed Landfill Expansion and combustion sources at the peak year of predicted emissions.
2. The results of the air impact analysis were reviewed to ensure that applicable National Ambient Air Quality Standards will not be contravened as a result of the Proposed Action. This was performed by confirming that the modeled Criteria Pollutant (carbon monoxide and nitrogen oxide) concentrations for the Proposed Action are below the respective Significant Impact Levels. If the Significant Impact Level value is not exceeded, no further modeling is necessary. Although the Proposed Action and the proposed LFGTE Plant II are separate projects, the modeling was conducted simultaneously as a conservative measure and to demonstrate that the potential impact was below the Significant Impact Level value for both projects

combined. A report that provides details of the Significant Impact Level modeling is included in the application for a Title V Air Facility Permit Modification for the Proposed Action, which has been submitted to the NYSDEC.

Modeling was conducted assuming that collected LFG will be directed to engines first, followed by enclosed flares. As described above, alternate projects that would utilize the LFG as a renewable energy source are of interest. Each of the potential future LFG utilization projects currently being considered would result in reduced emissions compared to flaring.

All modeling was conducted using USEPA's AERMOD dispersion modeling software. Model results indicate that:

1. All LFG constituents modeled from both fugitive and point sources were below the respective Annual Guideline Concentrations and Short-term Guideline Concentration levels presented in DAR-1. Modeled results are presented in Table 5 in Attachment F.
2. All criteria pollutants are below the respective Significant Impact Level thresholds. Modeled results are presented in Table 6 in Attachment F.

### 3.8.3 Proposed Mitigation Measures

Based on the modeling results and implementation of the mitigation measures delineated below, no significant adverse air quality impacts have been identified.

- Installation and operation of an active LFG collection system (vertical and horizontal collectors), as waste is placed, will maximize the amount of LFG collected.
- Routine monitoring and balancing of LFG collection system components.
- All LFG collected will be combusted in engines or a flare, or may be beneficially utilized in some other manner in the future.
- Minimizing the size of the working face and other operational areas to reduce dust and odor. Beneficial use of collected LFG to produce electricity, off-setting fossil fuel combustion.

- Control of dusts by road watering, maintaining vehicle speed limits, and the establishment of vegetative cover on exposed soils.
- Cover integrity checks and repairs to reduce surface emissions.
- If incremental impacts are identified, mitigation will be pursued to reduce or offset the incremental impacts.

### 3.9 Visual and Aesthetic Resources

#### 3.9.1 Existing Environmental Setting

The Permitted Site and surrounding areas are generally flat with gently rolling topography and a few small drumlins to the south and east of the Proposed Site. Prior to any site development, natural elevations on the Permitted Site ranged from 644 feet AMSL in the wetlands to the northeast to roughly 730 feet AMSL (from 1989 DEIS). The Mill Seat Landfill and other developed areas have altered the existing topography on the Permitted Site; the Mill Seat Landfill will have a maximum elevation of 875 feet AMSL upon completion. The Permitted Footprint is visible from isolated areas generally within the five (5) mile radius study area, typically from cleared areas of higher elevation. Although the Mill Seat Landfill has not yet reached this final elevation, it is part of the existing viewshed, and will be used as the baseline condition to assess potential visual impacts of the Proposed Landfill Expansion.

Land use adjacent to the Proposed Site is generally agricultural and rural residential. Although the Mill Seat Landfill has much steeper slopes than is typical of farm fields and residential areas, land surrounding the Mill Seat Landfill is lightly forested which provides visual cover from surrounding low-lying areas. The temporally-variable cover on adjacent farm fields, fallow or vegetated, allows the Mill Seat Landfill to somewhat blend into its surroundings, even active areas without a vegetated cover.

Although the Proposed Landfill Expansion will not exceed the currently permitted elevation, some concerns surrounding its visibility, especially for historically or culturally significant or sensitive areas, exist.

The SHPO web database and National Register of Historic Places were consulted for information regarding the presence of state and nationally recognized historic or cultural sites, structures, or archaeologically sensitive areas within or adjacent to the Proposed Site. Together with review of this information and consultation with the Citizens Advisory Board, two (2) features in the surrounding area were identified: the Lake Street Historic District in the Village of Bergen, located in neighboring Genesee County, and Riga Academy, located in the Town of Riga, Monroe County. The Lake Street Historic District is located one and one-quarter (1.25) miles northwest of the Proposed Site. Riga Academy is located two and six-tenths (2.6) miles northeast of the Proposed Site.

### 3.9.2 Potential Significant Environmental Impacts

Due to the location of the Proposed Landfill Expansion in a somewhat flat area with rolling topography, all aspects of operations will not be effectively screened from all surrounding viewpoints.

Final grades for the Proposed Landfill Expansion include developing the side slopes at 33% [three (3) horizontal to one (1) vertical] per 6 NYCRR Part 360 to an elevation ranging from approximately 852 feet AMSL to 874 feet AMSL. Top slopes will be developed at the regulatory minimum of four percent (4%) to an elevation of approximately 875 feet AMSL to promote proper surface water drainage and collection in accordance with 6 NYCRR Part 360. Ultimately, the Proposed Landfill Expansion will have a maximum permitted elevation of 875 feet AMSL, the same as the existing maximum permitted elevation of the operational Mill Seat Landfill.

To evaluate the potential visibility of the Proposed Landfill Expansion from ground level vantage points, a *Visual Impact Assessment* was completed within a five (5) mile study area. The Proposed Landfill Expansion was the focus of the analysis, as other portions of the Proposed Action are expected to have little to no visual impacts. The visual impact assessment procedures utilized for the Proposed Landfill Expansion are consistent with methodologies developed by the NYSDEC.

The field evaluation was conducted using a balloon-fly technique. Three (3) helium-filled balloons were floated and used to determine the visibility of the Proposed Landfill Expansion from the surrounding area. Once the three (3) balloons were elevated, a field crew traveled along adjacent roadways to eight (8) specific vantage points within the five (5) mile radius study area. At each vantage point, documentation was collected to determine whether or not the Proposed Landfill Expansion will be seen from these locations. Photographs and GPS coordinates were taken at every vantage point location. The photographs were used to create visual simulations of the view of the Proposed Landfill Expansion from each vantage point. The simulations were adjusted based on the known diameter of the inflated balloons and existing known land elevations to subsequently reflect the maximum design elevation and/or breakpoints in slope. These visual simulations can be found in the *Visual Impact Assessment*, included as Attachment G. As indicated in

Attachment G, portions of the Proposed Landfill Expansion will likely be visible from six (6) of the eight (8) vantage point locations examined. These vantage points also have visual impacts from the Mill Seat Landfill. See Figure 1 of the *Visual Impact Assessment* (Attachment G) for the viewshed map.

Due to the location of the Proposed Site and adjacent buildings next to I-490 and the adjacent gently rolling topography, all aspects of operations could not be effectively screened from all surrounding viewpoints. Viewshed mapping and field evaluations indicate that the Proposed Landfill Expansion will be visible from various locations within the five (5) mile study area, depending on the field conditions, but particularly in areas of open agricultural or fallow fields adjacent to the Proposed Site. Areas generally screened by vegetation and/or topography minimize the visibility of the Proposed Landfill Expansion in much of the study area. While the Proposed Landfill Expansion will likely result in views of additional landfill area to locations from which the Mill Seat Landfill is already visible, the model shows that it will not be visible from a large number of additional locations since no vertical increase is proposed. The potential impact is expected to be less for viewers who currently view the Mill Seat Landfill, as they currently experience a similar view.

No historically significant sites are expected to be visually impacted by the Proposed Landfill Expansion. The existing Mill Seat Landfill is not visible from Riga Academy or the Lake Street Historic District. The balloons used in the visual analysis to simulate the Proposed Landfill Expansion were not visible either, so the Proposed Action is not expected to impact these historic sites. The proposed condition will be visually similar to current conditions. None of the affected sites are considered to be aesthetically significant.

### 3.9.3 Proposed Mitigation Measures

Mitigation measures will be employed at the Proposed Site to reduce visual impacts. These mitigation measures will include keeping the size of the working face and the area of exposed soils to the smallest practicable area, strategically locating soil stockpiles, and revegetating areas of exposed soils as soon as practicable and whenever feasible to help screen the working face. Where possible, during construction, trees



and vegetated berms will be maintained. Natural vegetation and topographic features on and surrounding the Proposed Site help buffer the Mill Seat Landfill and Proposed Landfill Expansion from the surrounding viewshed.

Due to the elevation of the Proposed Landfill Expansion, screening with earthen berms, fences, or planted vegetation will generally not be 100% effective in eliminating landfill visibility or visual impact. The effectiveness is dependent upon proximity and geographic location to the Proposed Action. Any of the techniques will work to a certain extent, particularly along the roadways immediately adjacent to the Proposed Site.

The natural colors of the Mill Seat Landfill and Proposed Landfill Expansion were demonstrated by the visual simulation in the *Visual Impact Assessment* to generally minimize contrast with the surroundings and background under most conditions. As such, the use of typical final cover system on the Proposed Landfill Expansion will continue to minimize potential visual contrasts.

In addition to the mitigative measures discussed above, other measures incorporated into the project design include uniform design grades, colors, and elevation for the Proposed Landfill Expansion.

See Attachment G for the results of the *Visual Impact Assessment*, including simulations.

### 3.10 Historic and Cultural Resources

#### 3.10.1 Existing Environmental Setting

Lands within the Proposed Site have been the subject of archaeological investigations subsequent to the original siting of the Mill Seat Landfill in 1989. A *Phase 1A/B Cultural Resource Investigation* was performed during environmental review and permitting for the existing soil borrow areas in 2010. Some historic and prehistoric sites were identified in the eastern and western soil borrow areas, but were deemed to have no significant cultural value.

For the Proposed Action, additional records were reviewed to determine whether historical or culturally significant places could be on or near the Proposed Site. A site file records check within a one (1) mile radius of the Proposed Site was completed at the SHPO and at the New York State Museum and revealed the existence of 20 previously known sites adjacent to or within one (1) mile of the Proposed Site. According to the website for the National Register of Historic Places, and SHPO project review files, there are no historic structures surrounding the general vicinity of the Proposed Site that are listed on the State and National Registers of Historic Places ([www.nps.gov/nr](http://www.nps.gov/nr)). Consultation of the National Register of Historic Places revealed two (2) National Register Listed places within five (5) miles of the Proposed Site: Riga Academy in the Town of Riga, Monroe County and the Lake Street Historic District in the Village of Bergen, Genesee County.

A *Phase 1A/B Cultural Resource Investigation* was completed in 2013 by Powers & Teremy, LLC for the Area of Potential Effect defined by proposed areas of disturbance on the Proposed Site. These areas are depicted on the project maps included in Appendix I of the Powers & Teremy, LLC report in Attachment H of this *DSEIS*. A portion of the Area of Potential Effect was covered in the previous soil borrow investigation. This *Phase 1A/B Cultural Resource Investigation* included background research, field reconnaissance, and archaeological testing. Walkover reconnaissance and shovel testing was performed over 324-acres of the Proposed Site. The investigation encountered potentially significant in situ prehistoric and historic cultural deposits; a total of 291 artifacts from five (5) sites within the area examined were recovered. One (1) site, identified as the Mill Seat Landfill Site #2, consisted of four (4) individual sub-sites, or loci. Locus 4 of Mill Seat Landfill #2 Precontact Site (A05515.000058),

however, is located outside the Limits of Disturbance. An avoidance plan for Mill Seat Landfill #2 Precontact Site, Locus 4, will be developed utilizing standards proffered by SHPO, as presented in the *Phase 1A/B Cultural Resource Investigation* for the Proposed Action.

The remaining four (4) sites with potentially significant archaeological findings are located within the Proposed Wetland Mitigation Area and were identified as the Campbell/Menzie Site, the Jones Site, the Menzie Site, and the Menzie/Mahar Site. The artifacts found were typical of previously recorded sites in the area. The area is within known subsistence and settlement patterns of the Erie, Seneca, and Neutral Native Americans. The detailed *Phase 1A/B Cultural Resource Investigation* is included as Attachment H to this *DSEIS*.

The review of the Proposed Site by Powers & Teremy, LLC and SHPO revealed the potential for significant in situ prehistoric and historic cultural deposits on the Proposed Site and the potential for significant archaeological findings within the Proposed Wetland Mitigation Property; consequently, a *Phase II Cultural Resources Study* was conducted in October 2014. A letter from SHPO is provided in Attachment H. This correspondence recommends avoidance of certain archaeological sites or the completion a *Phase II Cultural Resources Study*. SHPO also suggested initiating Tribal consultation, which Powers & Teremy did in September 2014. Letters describing the Proposed Action and the *Phase 1A/B Cultural Resource Investigation* findings were sent to the Tonawanda Band of Seneca Indians and the Seneca Nation of Indians. As of the date of this document, no responses have been received.

The *Phase II Cultural Resources Study* included a walkover reconnaissance, test units and shovel tests within the Mill Seat Landfill #2 Precontact Site (A05515.000058), Loci 1-3, to determine site integrity and National Register eligibility. Very few artifacts were recovered during the walkover reconnaissance and subsequent test unit and shovel test excavation. As a result, Powers & Teremy, LLC recommended no further archaeological work for the Mill Seat Landfill #2 Precontact Site, Loci 1-3.

A *Phase II Cultural Resources Study* of the Menzie Historic Site (A05515.000059) and the Campbell/Menzie Historic Site (A05515.000060) was completed. Few additional artifacts were recovered from the Menzie Historic Site, consequently, Powers & Teremy, LLC recommended no additional work. The area comprising the Campbell/Menzie Historic Site

was subjected to walkover reconnaissance, as well as shovel testing. A significant amount of artifacts were recovered, though no structural remains such as foundations were located. As a result, Powers & Teremy, LLC recommended that archaeological monitoring for the Campbell/Menzie Historic Site be completed during construction activities that may occur within the Campbell/Menzie Historic Site boundaries. This is not expected to be necessary, however, because the Campbell/Menzie Historic Site and the adjacent residence are proposed to be subdivided from its larger parcel and thus will remain as a rural residential parcel with no construction proposed on this portion of the property. This subdivision will be completed by WMNY through a separate action with the Town of Riga. The *Phase II Cultural Resources Study* is provided in Attachment H. Consultation with the SHPO will continue, starting with submission of the recently completed *Phase II Cultural Resources Study*.

### 3.10.2 Potential Significant Environmental Impacts

The National Register Listed sites in the vicinity of the Mill Seat Landfill are located outside of the Proposed Site and will not be impacted. This is confirmed by SHPO in correspondence included in Attachment H. The Proposed Action is not visible from the Riga Academy and the Lake Street Historic District and therefore no impacts to these areas are anticipated as discussed in Section 3.9.

The Campbell/Menzie Historic Site identified in the *Phase II Cultural Resources Study* is proposed to be avoided during construction activities related to the Proposed Action. This proposed mitigation measure, along with other findings from the *Phase II Cultural Resources Study*, will be reviewed further with SHPO to seek concurrence with a determination that the Proposed Action will not adversely impact significant cultural resources.

### 3.10.3 Proposed Mitigation Measures

The avoidance plan will be submitted to the SHPO in conjunction with the *Phase II Cultural Resources Study*. The *Phase II Cultural Resources Study* is available for review in Attachment H. This document will be submitted to the SHPO to initiate further coordination on the project and to seek concurrence with a determination that the Proposed Action will not adversely impact significant cultural resources.

Proposed mitigation measures to minimize the visual impact of the Proposed Landfill Expansion on surrounding historic and cultural resources are detailed in Section 3.9. No other impacts to known historical or archaeological resources are anticipated.

### 3.11 Transportation (Traffic)

#### 3.11.1 Existing Environmental Setting

The haul route to the Proposed Site includes use of I-490, NYS Route 33A, and the northern portion of Brew Road. I-490 and NYS Route 33A are owned and maintained by the NYSDOT. Brew Road is a local road. The intersections of Brew Road with Route 33A and of Route 33A and the I-490 Westbound and Eastbound Off-ramps are included in the traffic analysis to determine if the Proposed Action will result in any negative impacts to traffic along the haul route. The full traffic analysis is included as Attachment I to this report.

The traffic analysis performed on these roads at the indicated intersections includes analysis of the weekday rush hour traffic to determine the impact to background traffic during peak travel periods. Existing turning movement volumes for these intersections were determined by performing traffic counts during peak rush hour traffic in both the morning and afternoon. During traffic counts, vehicle classification data was collected, identifying waste vehicles entering and exiting the Permitted Site in addition to the background traffic.

Traffic counts performed at the Mill Seat Landfill were used to project out background traffic volumes to the opening of the Proposed Action. Typical waste hauler and cover soil truck volumes for everyday operations were analyzed as well as temporary construction traffic. The maximum daily traffic volume for 2012 was found to be 251 trucks delivering 3,893 tons of material (waste and alternate cover materials) to the Mill Seat Landfill. The actual daily traffic volume counted at the Permitted Site during traffic counts was 162 trucks.

Temporary construction traffic was analyzed during Stage IV-C construction to further develop a worst case scenario for traffic conditions to and from the Proposed Site. The highest daily traffic volume during construction was 58 trucks during the week of the traffic counts. The typical daily construction traffic counted at the Proposed Site during traffic counts was, however, only 38 trucks. For purposes of this analysis, the 58

trucks per day included daily soil hauling traffic, estimated at 16 trucks per day to haul sufficient soils for daily operations.

The capacity of a highway system is based on the capacity of the included roadway sections and the capacity of the affected intersections along the route. Efficiency at intersections is the critical constraint for capacity. The standard method to analyze this capacity is a LOS analysis. LOS is defined as a qualitative measure describing operating conditions within a traffic stream, and their perception by motorists and/or passengers. It is given a rating (A through F) for best (A) to worst (F) conditions.

LOS analysis was performed on the key intersections adjacent to the Proposed Site along the haul route. This analysis conservatively utilized peak hour landfill data and corresponding morning peak hourly volumes for the haul route. Initial analysis included the calculation of the LOS based on the existing traffic volumes and the future traffic volumes.

### 3.11.2 Potential Significant Environmental Impacts

#### Traffic Quantities and Impacts to Roadways

The highest recorded truck volume for 2012 was 251 trucks per day. As this volume may not represent the theoretical highest daily volume that can be expected for the Proposed Action, the annual tonnage accepted for 2012 was compared to the Permitted Waste Acceptance Rate to extrapolate a theoretical maximum volume of 286 trucks per day. As the Proposed Action will not modify the Permitted Waste Acceptance Rate, the maximum daily truck volume will be valid for the life of the Proposed Action. This theoretical maximum is 124 trucks per day higher than the 162 trucks per day recorded during the traffic counts.

A growth rate of one and a half percent (1.5%) per year was applied to background (non-landfill) traffic volume to account for potential growth in the area that can be expected from the time the turning movement counts were performed to the opening of the Proposed Action. This growth rate is considered a conservative estimate for short duration growth that can be expected for the area. Background traffic is not projected to the life of the Proposed Action as it is growth that may or may not be realized and is unrelated to the Proposed Action or the existing landfill operations.

The projected traffic volumes quantified previously represent the basis for the LOS Analysis. These projections were applied to the existing condition turning movement patterns noted during traffic counts to determine any impact to the LOS at each of the intersections analyzed. The only change in LOS is the Route 33A/I-490 Eastbound off ramp intersection, which due to the projected traffic volume, including background growth, is changed from an LOS "A" to an LOS "B." The other intersections analyzed remain at the same LOS as under existing conditions, all of which are LOS "B" or higher. LOS "B" indicates "reasonably free flow" of traffic, or a delay of ten (10) to 15 seconds for unsignalized intersections. The change in LOS is due largely to background traffic projection and represents a change in average delay of three-tenths (0.3) seconds for a movement which is already at the A/B threshold.

Traffic associated with the Proposed Action is anticipated to utilize the same routes as under existing conditions. Based on the current LOS of the roads analyzed, the maximum projected traffic volumes and worst case scenario conditions, the roads included in the haul route can accommodate the projected volumes with very little impact to through traffic.

#### Traffic Pattern Impacts

Traffic patterns may be impacted in the area surrounding the Proposed Site due to the proposed abandonment of portions of Brew Road and O'Brien Road. The western end of O'Brien Road intersects Brew Road within the limits of the Proposed Action. A portion of Brew Road intersects the permitted eastern borrow area, in which soil borrow activities have already begun. There is currently one (1) driveway access off of this southern portion of Brew Road and seven (7) driveway accesses on O'Brien Road. The abandonment of approximately seven-tenths (0.7) of a mile of the southern portion of Brew Road from O'Brien Road to Bovee Road will include providing a new driveway access off of Bovee Road for the Brew Road residence owned by WMNY. Approximately four-tenths (0.4) of a mile of O'Brien Road will also be abandoned, which includes the O'Brien Road Wetland Restoration.

#### Construction Related Traffic Impacts

When a new Subcell of the Proposed Landfill Expansion is being constructed, construction materials will be brought on site such as various

types of clay, sand and stone. Additional traffic associated with these construction activities will not be a year round occurrence; only on an as needed basis when a new Subcell is being constructed. Construction material will primarily be transported to the Proposed Site via ten (10) wheeled dump trucks.

The frequency and duration of construction related truck traffic to and from the Proposed Site is dependent on when a Subcell is being built. Subcell construction within the Proposed Footprint will be phased and will occur as Disposal Capacity is needed. Previous Subcells within a Stage constructed in the Permitted Footprint have occurred over a number of years. The three (3) most recent Subcells, including the final Subcell of the Permitted Footprint, were constructed in 2006, 2008, and 2013, respectively.

During the years that have scheduled Stage construction, the construction related traffic typically begins on approximately April 1st and is generally completed by October 1st of the same year. There is generally no construction related traffic from October through the winter and into April of the following year.

The first month of construction related traffic is typically the busiest, as clay materials are stockpiled on site for construction activities. It is during this time period that the maximum amount of construction related traffic will occur. Although the Mill Seat Landfill is open to construction related traffic from 6:00 AM to 6:30 PM, the trucks usually only run from 7:00 AM to 4:00 PM. The first week of the first month of construction related traffic is when the most trucks per hour deliver clay materials.

After the first month, construction related traffic typically decreases significantly; deliveries are made only to supplement construction activities. The slower period of construction related traffic typically lasts until the end of August of the construction year, and then delivery of stone and tire chips increase for the last month of the construction period.

Currently, there are two (2) primary sources for construction material purchased and delivered to the Permitted Site. Most of the stone comes from a source in Geneva, New York and most of the clay comes from a source in Bloomfield, New York. Dump trucks from Geneva usually take the NYS Thruway I-90 to Route 490 to Route 33A and to the Mill Seat Landfill from the west, similar to most solid waste haulers. The dump



trucks coming from Bloomfield usually enter Brew Road from the east on Route 33A.

In addition to daily waste traffic, traffic associated with hauling soil on site for operations was analyzed since cover soils from off-site sources will be needed during operation of the Proposed Footprint. Based on estimated daily soil needs and truck hauling capacities, approximately 16 dump trucks per day could be required to haul daily and intermediate cover soils. This number was included in the construction traffic estimate.

Although construction-related traffic was counted at a maximum of 58 trucks, a conservative estimate of 75 construction trucks was applied to the analysis for temporary construction due to the variable nature of construction operations. Construction-related traffic will be temporary in nature as fill progression commences, and is included in daily traffic volumes as a worst case projection over the life of the Proposed Footprint.

The results of the traffic analysis indicate minimal to no change in the LOS rating as a result of permitted and construction related traffic. See Attachment I for more information. A LOS summary is provided in Table 9 below.

**Table 9 - Traffic Level of Service Analysis During Construction**

Traffic Level of Service Analysis During Construction						
Description	Existing Conditions		Background Conditions		Projected Conditions	
	AM Peak LOS	PM Peak LOS	AM Peak LOS	PM Peak LOS	AM Peak LOS	PM Peak LOS
<b>Route 33A/WB Off Ramp</b> Southbound	B	B	B	B	B	B
<b>Route 33A/EB Off Ramp</b> Northbound	A	A	A	B	A	B
<b>Route 33A/Brew Road</b> Northbound Westbound Left	B A	B A	B A	B A	B A	B A

### 3.11.3 Proposed Mitigation Measures

Transportation and traffic related impacts identified in this analysis are minor and do not warrant the implementation of any new transportation mitigative measures. The LOS analysis indicates that there will be minimal to no change in the LOS ratings for key intersections.

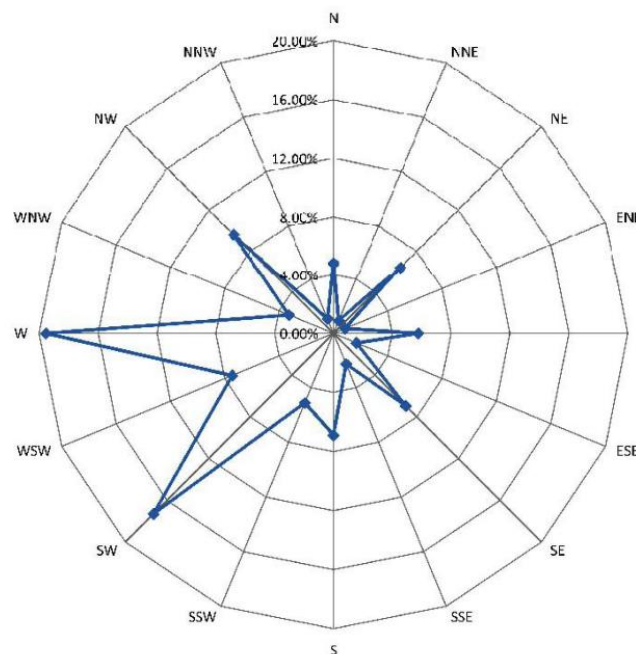
With regard to the proposed abandonment of portions of Brew Road and O'Brien Road, both are low volume rural roadways and the proposed traffic changes will have negligible impact on the surrounding roadway network.

### 3.12 Odor

#### 3.12.1 Existing Environmental Setting

The Proposed Site is located in a rural and primarily agricultural area. While the location is ideal for minimizing potential nearby odor receptors, the presence of numerous farm fields in the vicinity can result in compounded odor issues or misdirected odor complaints. Adjacent fertilized farm fields may emit an unpleasant methane odor, similar to LFG or waste odors, impacting the same receptors as the Mill Seat Landfill. Prevalent winds are generally mild and blow from the southwest. Due to the close proximity of farm fields to the south and west of the Mill Seat Landfill, these prevailing winds can make it difficult at times to determine the source of odors in the area.

**Graph 1 – Wind Rose, Rochester Airport**



Source: Data from National Climatic Data Center, 1930-2012

A number of potential receptors are located near the Permitted and Proposed Footprints. The majority are residents, although some businesses and industries are located nearby, as well as the aforementioned farms.

### 3.12.2 Potential Significant Environmental Impacts

LFG is a naturally occurring byproduct resulting from the anaerobic decomposition of organic material contained in wastes placed in landfills. The generation of LFG is an incremental process, whereby increasing quantities of LFG will be generated with subsequent placement of solid waste. Approximately 50% of the LFG produced is methane. The remaining half of LFG is primarily carbon dioxide. Traces of other gases such as hydrogen sulfide are also produced. Oxygen and nitrogen are usually present in LFG because some air is contained within the waste mass.

The odor associated with LFG is due to the trace compounds in the gas. Some of the most significant classes of odor causing trace constituents include esters, phenols, organic acids, and sulfur compounds (including mercaptans). Methane and carbon dioxide, the main constituents of LFG, are odorless and do not contribute to off-site odor issues.

The potential for odor generation related to LFG is the highest during the summer months when temperatures are optimal for microbial activity and the rate of decomposition is at its greatest. Other possible instances could include construction activities such as LFG well installations and liner tie-ins or during extreme temperatures that impact the operation of the flares or dewatering lines. During this time, odors may also be more noticeable to potential receptors because the level of outdoor activity generally increases and residences' windows are more likely to be open than other times of the year. During the winter months, the rate of anaerobic decomposition slows considerably, and the upward movement of LFG is impeded by frozen soil and waste. Both of these factors tend to reduce the level of odor generation during the colder months.

Potential odor sources and levels associated with the Mill Seat Landfill are anticipated to be the same during operation of the Proposed Landfill Expansion. Odors generally emanate from the working face as waste is placed and from fugitive LFG emissions generated from the waste mass. The Permitted Waste Acceptance Rate is not proposed to increase and, correspondingly, the size of the working face will not change. Fugitive LFG emissions, however, may increase because as more waste is placed and decomposes, more LFG will be generated from

the Permitted Footprint and Proposed Footprint, with the potential to escape into the atmosphere. The impact to the surrounding area, however, is not expected to be significant due to the mitigation measures proposed and those currently in place.

### 3.12.3 Proposed Mitigation Measures

Mill Seat Landfill odors have been effectively managed through proper landfill operations and progressive installation of an active LFG collection system.

There are several measures utilized at the Mill Seat Landfill that will continue to control odor at the Proposed Landfill Expansion:

- covering the waste with six (6) inches of soil or an approved ADC material at the end of each working day;
- installing interim or final cover systems; and
- installing an active LFG collection system.

Should odors become a problem off-site, WMNY will commence an investigation to locate the source of the odors (e.g., working face, trucks) and initiate reasonable actions to eliminate or mitigate the problem.

Potential actions to mitigate odors include:

- reducing the size of the working face;
- using increased thicknesses of daily cover;
- installing final cover over areas that have been filled to final grade; and
- installing vertical LFG extraction wells or other collection components that are tied into the LFG collection system.

An *Odor Control Plan* is also part of the *Operations & Maintenance Manual* for the Proposed Landfill Expansion and has been submitted to NYSDEC as part of the 6 NYCRR Part 360 Permit Application.

### 3.13 Noise

#### 3.13.1 Existing Environmental Setting

Land uses adjacent to the Permitted Site include agricultural fields, residential and vacant lots, and a recreational area. The Permitted Site is surrounded by, but not included in, the South Western Agricultural District as designated by the Monroe County Department of Planning. The Permitted Site is, however, zoned RA, or rural/agricultural, by the Town of Riga. Surrounding parcels are also zoned RA, with the exception of some northern adjacent parcels which are zoned GI, or general industrial.

The predominant source of noise at the Permitted Site is generated by working face operations. Working face operations include waste vehicles entering the active waste disposal area, dumping waste, heavy equipment pushing and compacting the waste, and trucks exiting the area. Working face activities are often shielded from direct line of sight to off-site receptors by waste berms, soil stockpiles, and surrounding topography, all of which reduce off-site noise impacts. Noise sources and levels associated with the Mill Seat Landfill are anticipated to be the same during operation of the Proposed Action.

Community background sound levels surrounding the Proposed Site are predominantly influenced by noise generated from traffic on surrounding local roadways as well as I-490 traffic noise, which is prominent at several locations surrounding the Proposed Site.

In order to assess operational noise and community background sound levels, acoustical measurements were made with calibrated sound level meters at locations surrounding the Proposed Site, as well as at the working face of the Permitted Footprint to determine operational equipment and waste truck noise. The background monitoring locations correspond to the NYSDEC approved noise monitoring locations that are monitored in accordance with the Mill Seat Landfill's *Environmental Monitoring Plan*. These locations provide a representation of sound levels around the Proposed Site near off-site properties.

The measured community sound levels ranged from a low of 43 dBA east of the Mill Seat Landfill along O'Brien Road, to a high of 55 dBA at the entrance to the Proposed Site. Data obtained from these measurements was compared to 6 NYCRR Part 360 noise standards for daytime, rural areas. The NYSDEC regulatory standard for landfill

operations is an hourly Leq of 57 dBA received beyond the Proposed Site property line at rural areas zoned or otherwise available for residential purposes. All background levels monitored were less than the 57 dBA. The Proposed Action will operate during daytime periods as defined by the 6 NYCRR Part 360 regulations.

Working face noise levels were measured with calibrated sound level meters at various locations on the working face to determine worst case operational noise levels. This data was considered representative of noise levels to be expected under proposed conditions and was used in the *Operating Noise Impact Assessment* to determine potential impacts from the operation of the Proposed Landfill Expansion. The noise levels were analyzed at the Proposed Site boundary for 6 NYCRR Part 360 compliance, as well as at nearby residential receptors for any potential increase in noise levels.

The complete *Operating Noise Impact Assessment* is included as Attachment J to this *DSEIS*.

### 3.13.2 Potential Significant Environmental Impacts

The *Operating Noise Impact Assessment* was performed in accordance with the procedures identified in NYSDEC's noise program policy document, "Assessing and Mitigating Noise Impacts" (NYSDEC, 2001), which consists of three (3) levels of impact evaluation. The first, or initial, assessment is generally a conservative method of determining impacts, and consists of using data obtained during a noise study and projecting the data off-site using the inverse square law (distance doubling) method. Distance doubling relies solely on noise attenuation over distance between the source and receptor of noise, excluding additional attenuation factors such as topography, atmospheric and ground cover which also further reduce noise levels between a source and a receptor. This noise law states that 50 feet from a noise source, the noise level decreases by six (6) dBA with the doubling of the distance from the source (NYSDEC, 2001).

When this evaluation indicates that noise levels from the project will not exceed any noise standards and will not be a significant increase to receptors (off-site residential properties/neighbors), no further analysis is necessary. If impacts are predicted in the first level, the second level consists of a refinement of the noise impact potential by factoring in any additional noise attenuation that will be provided by existing natural

topography, fabricated structures, or additional applicable attenuation factors. If, after taking into account these additional attenuating features, the potential still exists for adverse noise impact, other types of noise analyses or modeling may be used to characterize noise. The third level includes an analysis of mitigation measures to avoid or diminish significant noise effects to acceptable levels.

#### Initial Assessment

The Leq source sound levels were utilized as the reference sound level in the assessment per NYSDEC policy and regulations. The Leq is the average sound energy over time, and is utilized in sound level studies as it is considered to be directly related to the observable effects of sound on people.

The initial assessment consisted of conservative noise propagation assumptions to determine sound levels from the Proposed Site at off-site receptor locations (nearby residential, vacant, and agricultural lands). Worst case sound levels from noise sources were assumed to occur at the locations at each of these off-site receptors that were closest to the Proposed Site. Operating noise was projected to the Proposed Site boundary and nearby receptor locations using the inverse square law (distance doubling) calculation. Based on this initial assessment, a “buffer distance” of approximately 1,600 feet is required to attenuate working face noise levels to less than the 6 NYCRR Part 360 compliance level of 57 dBA when operating at locations closest to these off-site receptors.

Results of the initial assessment identified several properties located to the south and east of the Proposed Site for further refined analysis. The nearest Proposed Site property line is approximately 780 feet from the Proposed Footprint’s southernmost limits. It was determined that, based on sound levels and the inverse square law reduction alone, at these locations, which consist of property lines and residential receptors nearest to the Proposed Site boundary, the peak operational sound levels (assuming worst case conditions with all sources operating at the same time at maximum capacity, at positions nearest to each location), were slightly above the 57 dBA limit.



### Refined Assessment

In accordance with the NYSDEC program policy document, the analysis was refined for select property line and residential receptor locations where the initial assessment indicated potential impacts. The analysis was refined by factoring in additional noise attenuation that is provided by atmospheric effects, ground effects and screening from natural barriers and topography. The locations for the refined assessment were identified by one (1) of two (2) categories: the first were property line locations where the initial assessment resulted in an exceedance of 57 dBA (denoted as PL1 – PL4 on Figure 23 – Noise Assessment). The second were nearby off-site residential use receptor locations where the initial assessment resulted in an exceedance of 57 dBA (denoted as R1 – R4 on Figure 23). Based on this refined assessment, including the additional noise attenuation factor, a “buffer distance” of approximately 1,050 feet is required to attenuate working face noise levels to less than the 6 NYCRR Part 360 compliance level of 57 dBA when operating at locations closest to these off-site receptors.

### 6 NYCRR Part 360 Compliance

Based on the refined assessment calculations, all but two (2) locations are projected to be in compliance with the 6 NYCRR Part 360 regulatory limit of 57 dBA. The projected maximum Leq (one (1) hour) at the nearest southeastern property line (PL2) is 58.3 dBA and the projected maximum Leq [one (1) hour] at the nearest southwestern property line (PL4) is 59.0 dBA. The remaining locations are all less than the 57 dBA limit of 6 NYCRR Part 360-1.14(p).

It should be noted that these levels are at locations on the property line closest to Proposed Landfill Expansion operations. Currently, there is no residential receptor located on the property that borders the Proposed Site along its southwestern property line. A noise easement has been obtained for this property to ensure compliance with 6 NYCRR Part 360. There is no significant noise increase at the residential receptor located on the property that borders the Proposed Site along its southeastern property line. Despite this, a noise easement was also obtained for this property to ensure compliance with 6 NYCRR Part 360.

There are three (3) additional properties that are not currently owned by the County and have the potential to experience noise levels greater than 57 dBA. One (1) property is owned by the Town of Riga

located at the intersection of Bovee and Brew Road, for which a noise easement or purchase agreement will be obtained from the Town. This property is currently vacant. The other two (2) properties (650 Bovee Road and 834 Brew Road) are currently owned by WMNY. Noise easements for these two (2) properties have been executed between the County and WMNY. The locations of the off-site noise easement properties are identified in Attachment J.

### Receptor Impacts

With the exception of the closest receptor location to the Proposed Footprint (R4), predicted sound levels at off-site receptors are less than or equal to 55 dBA, the level deemed to be sufficient to protect health and welfare, and in most cases, not create an annoyance. The predicted sound level from landfill operations at R4 (56.7 dBA) is slightly above 55 dBA; however, the predicted sound levels at the receptors are all significantly less than 65 dBA, which is described by NYSDEC as a maximum threshold for increases of the ambient noise level. WMNY owns the R4 property (845 Bovee Road) and has provided a noise easement.

The predicted increase in the sound level at all receptor locations is between zero (0) to five (5) dBA. The NYSDEC program policy states that receptor sound level increases of up to 6 dBA “may have potential for adverse noise impact only in cases where the most sensitive of receptors are present.” Further, sound level increases of under five (5) dBA result in a human reaction of unnoticed to tolerable. The worst case nature of this noise analysis should be noted – this analysis assumes that the working face is operating closest to the off-site receptor, with the loudest side of operations directed towards the receptor, during the loudest hour of daily activity --and yet at virtually all locations it is still well below the 55 dBA EPA threshold specified to protect public health and welfare and not create an annoyance. In addition, the potential increase in ambient sound level is less than ten (10) dBA, so the Proposed Landfill Expansion does not require further consideration of avoidance or mitigation measures per NYSDEC guidelines. For these reasons, the Proposed Landfill Expansion will not be the cause of a significant increase in noise levels on properties adjacent to the Proposed Site.

These increases are considered maximum predicted increases that could potentially be caused by the Proposed Landfill Expansion. Most often, operations will occur farther from residential neighbors, and

operational sound levels are typically expected to be less than the conservative peak estimates. Also, operations will typically be conducted in areas where physical barriers (soil berms, soil stock piles, or waste lifts) will be present between the operations and the adjacent properties, providing additional sound attenuation of operation sources.

### Construction Noise

Noise generated from construction activities for the Proposed Action will be unavoidable, but limited in duration. Noise sources associated with construction will primarily consist of heavy construction equipment and vehicles, and associated noise during the construction of Stages. In addition, there will be unavoidable noise associated with construction of the Proposed Wetland Mitigation Area. Construction activities to be performed as part of the Proposed Landfill Expansion will be very similar in nature to those activities that are currently being performed at the Mill Seat Landfill, and are expected to use similar types of equipment as are currently being used. Equipment and operations are often times shielded by berms and existing landfill topography which reduces off-site noise propagation. Care will be taken to limit construction noise to daytime hours. Noise levels will be further reduced by preventing any unnecessary operation of equipment near landfill property lines.

#### 3.13.3 Proposed Mitigation Measures

In an effort to reduce noise generation and propagation, the Proposed Action will be designed and operated to minimize potential noise impacts to off-site receptors. Potential mitigation measures that may be used include, but are not limited to, the following:

- Effective exhaust mufflers in proper working condition will be maintained on engine-powered equipment, as required by 6 NYCRR Part 360. Mufflers will be examined during routine maintenance inspections and will promptly be replaced when found to be defective.
- Vehicles will drive within site speed limits when entering the Proposed Site, on the Proposed Site, and when leaving the Proposed Site.
- Reviewing sound level limits in the bidding and purchase documents for new mobile equipment, when needed for operations and construction.

- Physical noise barriers such as soil berms may be employed to provide shielding of operating equipment noise to limit off-site noise propagation.
- Working face operations and waste placement may be staged such that waste lifts provide additional shielding of the landfill working face equipment noise to limit off-site noise propagation.
- Continuation of quarterly noise monitoring to assist in the control of operations to limit noise levels from operations.
- Implementation of alternative backup alarms to reduce noise.

Noise easements have been obtained for some selected properties surrounding the Proposed Site including:

- 834 Brew Road
- 515 Bovee Road
- 620 Bovee Road
- 650 Bovee Road
- 771 Bovee Road
- 845 Bovee Road
- 850 Bovee Road
- 993 Bovee Road

Although the noise assessments previously described determined that WMNY properties at 771 Bovee Road and 515 Bovee Road do not require noise easements, noise easements were executed between the County and WMNY.

## 4.0 Unavoidable Adverse Impacts

Impacts of the Proposed Action will be mitigated to the greatest extent practicable, as outlined in Section 3.0. The engineering design will minimize impacts of the Proposed Landfill Expansion and best management practices will minimize significant adverse impacts during operation. With the implementation of the mitigation measures described previously, no impacts of the Proposed Action are considered significantly adverse, although some are unavoidable. The unavoidable adverse impacts relating to the Proposed Action are described below.

### 4.1 Geologic Resources

Development of the Proposed Action will unavoidably alter the topography of the Proposed Site, both within the Proposed Footprint and the area immediately adjacent within the Limits of Disturbance. The vertical elevation of the Proposed Landfill Expansion will remain the same as the maximum permitted elevation of the Mill Seat Landfill. The lateral extent of the double composite liner system will increase and alter the existing topography on the Proposed Site. Upon final cover system installation and closure, however, the Proposed Footprint will be vegetated with herbaceous vegetation and resemble the surrounding terrain.

### 4.2 Surface Water Resources

The Proposed Footprint is located in areas that are already partially disturbed as part of current operations, soil borrow areas, and access roads. This area also includes Wetland RG-6, which will be permanently impacted by the Proposed Action. The loss of Wetland RG-6's approximately 13.5 acres of wetlands will be replaced by the restoration and creation of approximately 42 acres of mitigation wetlands on the Proposed Wetland Mitigation Property.

The removal of the RG-6 Tail is unavoidable. Impacts to the 1,500 linear feet of the RG-6 Tail will be mitigated by implementing the *Proposed Stream Mitigation Plan* which includes 1,965 linear feet of riparian buffer enhancement along the Churchville Park Tributary and culvert removal along O'Brien Road (i.e., the O'Brien Road Culvert Removal and Stream Improvements).

The Proposed Action will incorporate stormwater management features which will protect both water quality and quantity, so that wetlands and streams adjacent to the Proposed Footprint will not be adversely impacted. Continued implementation of operational practices to prevent the excessive release of sediment and other materials to Hotel Creek will also help to mitigate potential

water quality (turbidity) impacts. In addition, surface water monitoring of Hotel Creek and Tributary b will continue, as specified in the *Environmental Monitoring Plan*.

#### 4.3 Air Resources

Construction and operation of the Proposed Action will involve excavating and relocating soils, spreading and compacting soil cover, and the travel of vehicles over unpaved roads. All of these activities have the potential to create dust. The proposed mitigation measures, which include limiting the working face areas to the minimum practicable sizes, re-vegetating exposed areas as soon as possible, and watering down haul roads, will minimize potentially significant adverse impacts to local air quality, but will not entirely eliminate the creation of fugitive dust. The minor amounts of fugitive dust created by the Proposed Action will be temporary in nature, and confined mainly to the Proposed Site.

Construction and operation of the Proposed Action will result in a continuation of vehicle emissions from waste vehicles and landfill equipment. While these emissions are greater over the long term than if there were to be no future development of the Proposed Site, they are not expected to have any significant adverse effects on air quality due to the emissions control devices installed on vehicles. There will be no change in the Permitted Waste Acceptance Rate, and therefore daily waste vehicle trips are not expected to increase. Some soil for construction and daily operations, however, will be hauled from off-site as needed which could increase traffic to and from the site by up to 16 trucks per day.

The Proposed Landfill Expansion will also result in at least 31 more years of LFG production as the waste decomposes. Even with operation and maintenance of the LFG collection system, some fugitive emissions will escape into the atmosphere rather than enter the LFG collection system to be harnessed for energy or destroyed in the on-site flare. With an estimated LFG collection efficiency ranging from 85% to 95% or greater, however, it is likely that the impacts of fugitive emissions will be minimized by the aforementioned control devices. The LFG collection system will be operated in accordance with federal regulations (40 CFR Subpart WWW), which were designed to protect public health and welfare. Although these control devices will limit emissions associated with the Permitted Footprint and Proposed Footprint, both the LFGTE Facility and the flares will have emissions (primarily carbon dioxide) associated with combustion of LFG.

#### 4.4 Visual Setting

Construction and operation of the Proposed Action will create additional land areas from which portions of the Mill Seat Landfill, both existing and proposed, are visible. Since the Proposed Landfill Expansion will be constructed immediately adjacent to the Mill Seat Landfill, only a slight visual contrast will result for that area. This unavoidable impact is minimized due to the lack of vertical increase in the Permitted Footprint and Proposed Footprint elevation from the currently permitted elevation, as well as berming and the use of vegetative screening similar to that of the Permitted Site. Although the maximum permitted elevation of the Mill Seat Landfill has not yet been reached, the Proposed Landfill Expansion will not exacerbate this impact. Additional mitigation measures to reduce visual impacts include keeping the area of exposed soils to the smallest practicable area, strategically placing soil stockpiles, and revegetating areas of exposed soils as soon as possible to minimize the visibility of the Proposed Landfill Expansion.

## **5.0 Irreversible and Irretrievable Commitment of Resources**

This section describes the irreversible and irretrievable commitment of resources expected to result from the Proposed Action, which generally includes the consumption of finite resources, such as land, that cannot be replaced or easily restored.

### **5.1 Land Use and Agricultural Resources**

The dedication of the Proposed Footprint for solid waste disposal purposes is considered an irreversible commitment of land use due to the length of time the Proposed Action is proposed to be in operation and the limitations with which the presence of the Proposed Footprint will impose on future use of the area due to long-term monitoring requirements.

### **5.2 Geologic Resources**

Excavation, filling, and stockpiling will be integral to the Proposed Action. Soil removal and relocation for subgrade construction and reuse in daily operations will be a permanent and irretrievable use of geologic resources both on- and off-site. The use of these soils in construction and operation preclude their use for other purposes for environmental protection purposes. Such resources will, however, be used sparingly and conserved when possible during operations by stripping and reusing daily and intermediate cover soils, and by using ADC when possible instead of soil materials. These uses of these overburden geologic resources will be an irreversible and irretrievable commitment of resources associated with the Proposed Action.

### **5.3 Surface Water Resources**

Although it will be offset through mitigation measures that will provide more than three (3) times the lost wetland acreage, the 13.5 acres of wetland currently part of Wetland RG-6 will be an irreversible and irretrievable commitment of resources associated with the Proposed Action.

Although it will be offset through mitigation measures that will provide an improvement and enhancement to 1,965 linear feet of the riparian buffer of the Churchville Park Tributary, impacts to the 1,500 linear feet of stream channel referred to as the RG-6 Tail will be an irreversible and irretrievable commitment of resources associated with the Proposed Action.



## 6.0 Cumulative Impacts

When the Mill Seat Landfill location was selected as the preferred site for a new landfill, the SEQRA and permitting processes commenced. These processes included extensive opportunities for public review and comment, and took place over the course of several years. In 1990, a DSEIS and FSEIS were prepared for the reduction of the landfill footprint from 104.5-acres to approximately 98.6-acres. At the conclusion of the SEQRA and permitting processes, the NYSDEC issued the Mill Seat Landfill a 6 NYCRR Part 360 construction permit on August 1, 1991 and an operations permit on April 15, 1993. Since that time, several modifications to the operating permit have been approved by the NYSDEC including:

- Permit modification for approval of petroleum contaminated soil for use as ADC and addition of whole tires as unauthorized waste, May 2, 1994.
- Permit modification to allow direct haul of acceptable wastes to landfill and bypass the MCRRF transfer station, July 1, 1994.
- Leachate recirculation demonstration project, prepared by Clark, Patterson, Mossien September 9, 1994.
- New permit condition to include recyclables recovered by the County in the annual report, June 19, 1995.
- Permit modification to allow for leachate recirculation prepared by Clark Patterson Associates, July 17, 1995.
- Permit renewal dated May 5, 2001.
- Permit modification for WMNY to take over operations of the Mill Seat Landfill from the Owner prepared by Clark Patterson Associates and Earth Tech, Inc., August 2002.
- Revisions to engineering documentation including: Operations and Maintenance Manual (January 2003), Contingency Plan (January 2003), Final Cover Design Modifications (October 2002), Design Modifications for Stages III-B, IIIB-1, and IV (March 2004), and Construction Quality Assurance/Quality Control Plan (April 2004).
- Environmental Monitoring Plan modifications (May 2011) and Site Analytical Plan modifications (September 2003).
- Wetlands Delineation Report – Mill Seat Landfill dated September 1990, updated May 2002, July 2002 and August 2009.
- Habitat Management Plan, dated February 2005, updated in May 2011.

- 6 NYCRR Part 360 Permit renewal prepared by Barton & Loguidice, P.C. and modification for On-site Borrow Areas prepared by McMahon & Mann Consulting Engineers, P.C., issued July 22, 2011.

The environmental analyses addressed in this document include the cumulative impacts of the Proposed Action. Although initial construction will include only a portion of the Proposed Footprint, over time the entirety of the Proposed Landfill Expansion will be constructed. Potential environmental impacts over the life of the Proposed Action have been analyzed in previous sections of this *DSEIS*. The cumulative impacts have, therefore, already been analyzed in this *DSEIS* over the estimated duration of the Proposed Action.

No future development or site uses are currently planned for the Proposed Site, so no other cumulative impacts are expected. Any future proposed development will undergo an environmental review at the time any such development plans are formulated for consideration.

## **7.0 Growth-Inducing Impacts**

The Proposed Action is not expected to directly induce population growth within the Town of Riga or the County. However, the development of the Proposed Action will continue to ensure the availability of environmentally and economically sound long-term waste Disposal Capacity within the County. The Proposed Action will ensure that the Mill Seat Landfill continues to be a vital long-term component of the County's environmental infrastructure that can help provide general support for future economic development within the County.

The Proposed Action will also help to extend the economic benefits derived from the Mill Seat Landfill, including the host community benefits delineated in Section 1.6.2 and the lengthier production (for at least an additional 31 years) of renewable energy.

The Proposed Action does not require additional permanent work force, and therefore will not lead to significant permanent growth in local population or housing. Construction activities will provide short-term economic benefits to local contractors, vendors, and suppliers.

## **8.0 Energy Use and Conservation**

### **8.1 Fuel Use and Conservation**

The development of the Proposed Action will not result in a change in the Permitted Waste Acceptance Rate. Accordingly, there will not be any significant changes in daily activities at the Proposed Site in comparison to the ongoing operations at the Mill Seat Landfill, except for the additional importation of soils as needed for future landfill construction and operations. With the exception of up to 16 daily truck trips to haul cover soils, there will be no significant change in the amount of fuel consumed by trucks delivering waste to the Proposed Footprint or the daily amount of fuel consumed by operating equipment. The estimated increase in fuel use associated with up to a 16 truck trips per day increase is approximately 45,000 gallons of diesel fuel per year. The greenhouse gas emissions associated with this fuel consumption will be directly proportional to this increase.

The Proposed Action results in less fuel consumption compared to waste exportation, which will be required if the Proposed Action is not implemented. Since the only other MSW landfill in the County, the High Acres Landfill & Recycling Center, does not have sufficient disposal capacity to add all of the County's Mill Seat Landfill waste quantities to its existing customer base, waste will have to be transported out of the County. The development of the Proposed Action will continue to provide a publicly-owned local waste disposal facility for the County without excess fuel use required for waste exportation.

### **8.2 Electricity Use**

Beyond the electricity that is already required on-site, the Proposed Action will require additional electricity to perform normal operating activities at the site; however, the electricity produced by the LFGTE Facility greatly outweighs electrical use at the Permitted Site. In 2013, the Mill Seat Landfill used only 728,400 kWh of electricity compared to the 55,921,100 kWh of electricity generated at the LFGTE Facility.

Additional leachate pumps installed over time as part of the Proposed Action will gradually increase power usage at the Proposed Site. These pumps are installed with the leachate collection and conveyance system and, due to the proposed design, existing topography, and existing infrastructure, are required for compliance with 6 NYCRR Part 360 to prevent leachate build-up in the double composite liner system and ensure its integrity. The increase in electricity use for environmental protection within the Proposed Landfill Expansion is more than

offset by the existing LFGTE Facility, especially with continued methane generation in the Permitted Footprint.

### 8.3 Solid Waste Production

The Mill Seat Landfill is first and foremost a solid waste disposal facility and although solid waste management issues form the basis of this *DSEIS*, explicit requirements added to the SEQRA statute by the 1990 Legislature require that an EIS include a discussion of the impacts of a proposed action on solid waste management, where applicable and significant. A number of alternatives to the Proposed Action have been pursued to ensure the Proposed Action is the soundest option for waste disposal in the County. These alternatives are discussed in Section 9.0.

While the Proposed Action will generate some solid waste, the Proposed Landfill Expansion deals primarily with waste disposal and no solid waste generated on-site will require off-site disposal. Leachate generated in the Proposed Footprint and waste liquids incidental to maintenance activities will, however, require off-site disposal. Leachate will be transported to the Mill Seat Pump Station and ultimately to the County's F.E. Van Lare WWTF for treatment. The biosolids residues from the treatment of the leachate and other municipal wastewaters will be returned to the Proposed Landfill Expansion for final disposal. Leachate management and its impact on the Proposed Landfill Expansion's solid waste management practices have been discussed previously in Section 2.0.

The provision of local, long-term, environmentally sound and cost effective solid waste disposal capacity is consistent with the County's recently prepared draft *Local Solid Waste Management Plan*, which calls for continued use of the Mill Seat Landfill and Proposed Landfill Expansion for non-recyclable, non-hazardous, non-divertable waste disposal. Continued waste disposal service will be required during implementation of other tasks in the draft *Local Solid Waste Management Plan*, which include increasing recycling, yard waste diversion, and organics diversion. Providing for long-term waste Disposal Capacity for non-recoverable wastes through use of the Mill Seat Landfill and Proposed Landfill Expansion is consistent with the draft *Local Solid Waste Management Plan's* objectives.

## 9.0 Alternatives Analysis

The following alternatives to the Proposed Action have been considered and are discussed in this section of the *DSEIS*:

- No Action/Waste Exportation
  - Consideration of the no action alternative and ultimately waste exportation
- Greenfield Site
  - The potential for siting a new landfill.
- Alternative Landfill Sites
  - The relevance of the previous landfill siting study completed in August 1988 by Clark Engineers and Associates, in association with Camp Dresser & McKee, Inc. and H&A of New York.
- Alternative Scale and Magnitude
  - Environmental effects of a larger or smaller expansion will be evaluated, including avoidance and/or minimization of wetland impacts.
  - Analysis of eight (8) on-site alternatives will be concisely compared on the basis of key environmental factors and whether they satisfy the Proposed Action's purpose and need.
- Alternative Waste Disposal Technologies
  - Potential alternative waste disposal technologies that could be developed.

A summary of these alternatives is presented below, in this section of the *DSEIS*. Additional information with regard to these alternatives is provided in Attachment B, the *Site Selection Report Summary and Evaluation of Alternatives* (B&L, 2014).

### 9.1 The No-Action Alternative

The Mill Seat Landfill has a Permitted Waste Acceptance Rate of 1,945 tons per day. At the Permitted Waste Acceptance Rate including BUD materials of 776,000 TPY, the Permitted Footprint will no longer have usable airspace for waste placement beyond 2018. If no action were to be taken with regard to pursuing additional Disposal Capacity, then no additional solid waste could be accepted at the Mill Seat Landfill at that time. County waste would have to be disposed of elsewhere. This alternative fails to meet crucial needs in the County including biosolids disposal, waste disposal for the City of Rochester, and local publicly-controlled solid waste Disposal Capacity.

This alternative is unacceptable and would likely only occur if the Permitted Footprint runs out of Disposal Capacity prior to completion of the design, permitting, and construction of the Proposed Landfill Expansion.

## 9.2 Waste Exportation

The waste exportation alternative, the likely result of the “No-Action” alternative, would require that wastes generated within the County be disposed of at a facility not controlled by the County. Use of this alternative would subject County residents and businesses to the inherent unreliability and unpredictability associated with reliance upon non-County-controlled waste disposal. Such disposal would be subject to fluctuations in the solid waste and fossil fuel markets which could negatively impact waste disposal costs. Although the High Acres Landfill & Recycling Center is local and could accept a portion of waste received at the Mill Seat Landfill, it is not publicly-controlled. This alternative fails to meet the need for local publicly-controlled solid waste Disposal Capacity, including capacity required by commitments that the County has made to provide Disposal Capacity for biosolids from the County’s WWTFs and for MSW from the City of Rochester.

## 9.3 Alternative Greenfield Site

It is very difficult to develop a new solid waste management facility on a Greenfield Site. Historically, the process of siting and permitting a new landfill site in the County has taken over 20 years. The Permitted Footprint will be out of Disposal Capacity before a new Greenfield Site disposal location could be ready to accept waste and waste exportation would need to be implemented in the interim. As demonstrated in the following section of this *DSEIS*, the original Greenfield Site selection process, which ultimately resulted in the development of the Mill Seat Landfill, is still valid.

Development of a Greenfield Site instead of the Proposed Landfill Expansion would bring the current host community benefits to an end, once the Permitted Footprint’s Disposal Capacity runs out. The environmental benefits associated with consolidating the monitoring and the environmental protection responsibilities to one (1) site and one (1) governing entity, as is the case at the Proposed Site, would also be lost if the Greenfield Site alternative were to be implemented.

This alternative fails to meet the need for an economical and community-accepted disposal location and would not meet local publicly-controlled waste

Disposal Capacity requirements in the short term, due to the lengthy siting and permitting process for another in-County landfill at a Greenfield Site.

#### 9.4 Previous Siting Studies

In 1988, Clark Associates performed an independent study of previous landfill siting data, including the 1979 study by the Committee to Evaluate Landfill Sites which ultimately resulted in the permitting and construction of the Mill Seat Landfill. Since the study was performed upon inception of 6 NYCRR Part 360 and utilized 6 NYCRR Part 360 criteria that are still applicable today, the study is still valid as a siting tool. However, barring any significant changes in physical characteristics, the elimination of sites based on 6 NYCRR Part 360 is also likely still valid and will not provide an alternative in-county site for landfill development.

The key steps and findings from the original siting study are described below, to determine if an alternative landfill site warrants further consideration.

The siting study utilized four (4) different screens to narrow potential sites based on 6 NYCRR Part 360 and compatibility with landfill operations. The first screen consisted of siting restrictions set forth in 6 NYCRR Part 360 which exclude croplands, wetlands, endangered species' habitats, floodplains, aquifers, and close proximity to airports and surface waters.

The second screen consisted of non-prohibitive constraints required in 6 NYCRR Part 360 but that would not be impossible to overcome, including steep topography, shallow depth to bedrocks, and potential to negatively impact traffic.

The third screen was a qualitative evaluation of sites based on 11 criteria to determine a site's potential for use as a landfill and a matrix to determine the relative importance of each criterion. The 11 criteria included compatibility with existing land uses, distance from waste source, potential to impact wetlands, potential to monitor and remediate, proximity to historic or archaeological sites, potential loss of agricultural lands, potential to impact surface water quality, potential of haul routes to negatively impact traffic, soil classification, slope and drainage constraints, and visual quality.

The fourth and final screen analyzed conceptualizations of the sites as landfills with seven (7) different criteria, which included compatibility with future land use/zoning, disposal cost per ton, project cost, environmental impacts, thickness and uniformity of overburden, potential for future use, site life, and bedrock characteristics.



The initial three (3) screens narrowed potential landfill sites in the County down to three (3) sites: the Permitted Site on Brew Road, a site south of the Mill Seat Landfill on Bovee Road, and a site between the Towns of Riga and Chili on Davis Road. Field inspections and basic design conceptualizations provided sufficient information for the last screen and final recommendation. The Bovee Road and Davis Road sites were eliminated due to the impossibility of completion of either site prior to the expiration of the County's waste disposal agreement with Modern Landfill in Niagara County, which was the basic impetus for the siting study. The Bovee Road and Davis Road sites also presented somewhat undesirable hydrogeologic characteristics and potential future zoning conflicts, respectively, which also contributed to their elimination.

The basic principles of the 1988 siting study are still applicable. 6 NYCRR Part 360 has the same fundamental requirements used to eliminate sites from consideration. Although the primary elimination criteria of non-completion prior to the 1991 waste disposal agreement expiration is no longer applicable, the final two (2) sites previously considered instead of the selected Permitted Site, the Bovee Road and Davis Road sites, remain impractical as landfill sites. Not only do these sites have additional undesirable characteristics, but their development would represent large expenditures of capital and time, and potential significant adverse environmental impacts, in comparison to a contiguous expansion at the Mill Seat Landfill.

This alternative fails to meet the need for an economical disposal location and would not meet local publicly-controlled waste Disposal Capacity requirements in the short term due to the lengthy permitting process for another in-County landfill.

## 9.5 Alternative Scale and Magnitude

Several on-site alternative layouts were developed and evaluated as part of the project development process. These alternatives were evaluated on a relative comparison basis. Environmental, cost and logistical considerations were analyzed for each alternative to determine practicability and ultimately to identify the least environmentally damaging practicable alternative that satisfies the project purpose and need. While some on-site expansion alternatives minimized impacts in one (1) area, they resulted in increased impact or conflicts in others.

Eight (8) conceptual footprint configurations were prepared for analysis as potential expansions of the Mill Seat Landfill. These alternatives are depicted as Figures ALT-1 through ALT-8 in Attachment B, the *Site Selection Report Summary and Evaluation of Alternatives* (B&L, 2014). Each footprint

configuration was analyzed for liner acreage, disturbance acreage, potential airspace, site life, and wetlands impacts. These criteria were used to determine which on-site alternative best satisfied the project's purpose and the County's need. Three (3) out of the eight (8) proposed alternatives, as outlined in Attachment B and in Table 10 below, met the 25-year Disposal Capacity requirement without inefficient use of resources (Alternative 8 met the baseline requirements but would represent extensive infrastructure development and cost as a non-contiguous expansion footprint – see Table 11 below). Of the three (3) potentially viable alternatives, Alternative 7 (i.e., the Proposed Footprint) impacts the smallest area of wetlands.

Table 10 - Comparison of On-Site Alternatives

Footprint Alternatives <sup>(1)</sup>	Double Composite Liner Acreage <sup>(2)</sup>	Potential Disturbance Acreage <sup>(3)</sup>	Overlay Acreage <sup>(4)</sup>	Volume of Potential Disposal Capacity <sup>(5)</sup> (cubic yards)	Site Life <sup>(6)</sup> (years)	Pass/ Fail Criteria	Direct Impacts to Wetlands <sup>(9)</sup> (acres)
Alternative 1	82.0	119.6	28.9	24,350,000	25	Pass	26.4
Alternative 2	91.9	125.1	7.9	12,490,000	13	Fail <sup>(8)</sup>	0 <sup>(10)</sup>
Alternative 3	69.9	89.5	3.9	9,740,000	10	Fail <sup>(8)</sup>	0 <sup>(10)</sup>
Alternative 4	83.8	103.1	12.9	13,620,000	14	Fail <sup>(8)</sup>	3.9
Alternative 5	119.2	155.0	39.5	35,610,000	37	Pass	42.9
Alternative 6	103.0	135.7	14.4	21,650,000	22	Fail <sup>(8)(11)</sup>	59.3
Alternative 7 (Proposed Footprint)	118.1	143.3	27.2	29,900,000	31	Pass	13.5
Alternative 8	139.0	195.8	7.9	18,820,000	19	Fail <sup>(8)(12)</sup>	0 <sup>(10)(13)</sup>

1 - Locations of footprint alternatives are shown on Figures Alt. - 1 through Alt. - 8 of Attachment B.

2 - Liner acreage is the footprint area of the limits of waste; additional area will be disturbed for supporting facilities as outlined in Note 3.

3 - Potential disturbance acreage includes additional areas on-site for landfill supporting facilities (stormwater management structures, access roads, LFG collection and control infrastructure, and leachate conveyance infrastructure), but does not include any acreages that may be used to provide mitigation for potential wetland impacts.

4 - Overlay acreage for the expansion areas is for an overlay onto the Permitted Footprint.

5 - Volume calculations were performed with assumed vertical constraints of the Permitted Footprint's elevation and with a ten (10) foot depth into the existing ground.

6 - Site life was estimated from the Permitted Footprint's historical density of 0.8 tons per cubic yard and an acceptance rate of 776,000 tons per year or 970,000 cubic yards/year.

7 - 776,000 tons per year is based on 597,000 tons per year of MSW and 179,000 tons per year of BUD.

8 - Fails to satisfy need for a minimum useful life of twenty-five (25) years.

9 - All direct wetland impacts are based upon the potential on-site disturbance area for each alternative.

10 - Although no direct wetland impacts are noted, it is possible that indirect wetland impacts could occur.

11 - This Alternative impacts more wetland acreage than the other footprint alternatives. Furthermore, the twenty four (24) year site life falls just short of meeting the County's minimum site life requirement of 25 years; therefore it does not meet the selection criteria.

12 - Alternative #8 provides one of the least efficient uses of land for the site life obtained. Given that this Alternative includes a non-contiguous separate footprint, also considered a Greenfield Site, additional land disturbance would be required to construct and operate the support infrastructure associated with the landfill footprint, and a separate siting analysis in accordance with 6 NYCRR Part 360 might be required. The footprint is also partially non-contiguous, which is an expansion condition laid out in the Riga Host Community Agreement.

Together with the above stated reasons and the twenty one (21) year site life, which falls short of meeting the County's minimum site life requirement of twenty-five (25) years, Alternative #8 does not meet the selection criteria.

13 - Delineated wetlands B, C, and E were identified in B&L's December 2011 Wetland Delineation Report of the WMNY property that is included within the potential footprint of Alternative #8. These wetlands were determined in the field to be 'isolated' wetlands, meaning that these areas did not have a hydrologic connection to other Waters of the U.S. An Approved Jurisdictional Determination was received from the USACE confirming this determination in June 2014.

The Proposed Landfill Expansion (identified as Alternative 7 in Table 10) is located contiguous to the Mill Seat Landfill. This location provides an efficient use of the Permitted Footprint and associated support features, and consolidates landfill operations on the Proposed Site while providing sufficient Disposal Capacity to achieve long-term local publicly-controlled solid waste disposal. Site topography, drainage patterns, and road grades were also taken into consideration when determining the most appropriate location for the Proposed Landfill Expansion.

Siting the Proposed Footprint adjacent to the Permitted Footprint offers several benefits. The landfill support facilities, such as the leachate collection system, LFG collection system, and electric service, can be built at less cost if they are closer to the existing systems and can be connected to existing systems when possible. If a different portion of the Proposed Site were to be developed, longer and more costly connections for these systems would be required to service the Proposed Footprint.

Moreover, siting the Proposed Footprint adjacent to the Permitted Footprint allows for overlay onto the Permitted Footprint. This arrangement increases airspace without increasing the footprint of the Proposed Landfill Expansion. An overlay area takes advantage of the air space between the contiguous Permitted Footprint and Proposed Footprint for waste disposal. By utilizing this airspace, the available airspace per acre of liner constructed is greater than other alternatives.

Ancillary facility design inherently examines alternatives to optimize resource use. The layout of the on-site roads, stormwater detention basins, landfill containment berms, leachate management facilities, and other ancillary facilities are determined by evaluating factors such as existing facilities, drainage patterns and topography, cost, and operational considerations. To varying degrees, these factors limit the number of alternative locations for the landfill and support facilities listed.

The proposed Limits of Disturbance for the Proposed Landfill Expansion have been aligned to avoid and minimize impacts to Hotel Creek located south of the Proposed Footprint. The Proposed Footprint will maintain a minimum 100-foot offset from Hotel Creek to the south.

A comparison of the estimated development costs, including mitigation costs, was completed for each alternative option. This comparison is summarized in Table 11 below. Each alternative was analyzed to determine the estimated

cost per year of site life based on the need for new infrastructure or wetland/stream mitigation expenses.

Table 11 - Comparison of Costs for On-Site Alternatives

Footprint Option	New Double Composite Liner Acres	Potential Disposal Capacity (cubic yards)	New Double Composite Liner Construction Costs <sup>1</sup>	Costs Associated with Infrastructure <sup>2</sup>	Wetland Impacts (acres)	Wetland Mitigation Costs Average <sup>3,4</sup> \$	Stream Impacts (linear feet)	Stream Mitigation Costs Average <sup>5</sup> \$	Cost Sub-total <sup>6</sup> (2012 dollars) \$	Site Life (years)	Cost per Year of Site Life <sup>7</sup>
Alternative 1	82	24,350,000	\$49,200,000	\$14,300,000	26.4	\$2,059,200	0	N/A	\$65,559,200	25	\$2,611,599
	Installation of 2 Leachate Tanks and Load out			\$2,500,000							
	LFGTE Facility Relocation			\$5,200,000							
	Construct Maintenance Garage and Equipment Storage Area			\$1,600,000							
	Existing Leachate Conveyance System Re-Configuration			\$3,100,000							
	Construct New Paved Access Roads			\$800,000							
	Construct Scale House and Construct Weigh Scales			\$600,000							
Demolition of Existing Facilities in Proposed Footprint			\$500,000								
Alternative 2	91.9	12,490,000	\$55,140,000	\$650,000	0	N/A	0	N/A	\$55,790,000	12	\$4,322,770
	Construct Leachate Pump Station			\$650,000							
Alternative 3	69.9	9,740,000	\$41,940,000	N/A	0	N/A	0	N/A	\$41,940,000	10	\$4,176,776
Alternative 4	83.8	13,620,000	\$50,280,000	N/A	3.9	\$304,200	0	N/A	\$50,584,200	14	\$3,602,546
Alternative 5	119.2	35,610,000	\$71,520,000	\$650,000	42.9	\$3,346,200	600	\$210,000	\$75,726,200	37	\$2,062,747
	Construct Leachate Pump Station			\$650,000							
Alternative 6	103	21,650,000	\$61,800,000	\$3,150,000	59.3	\$4,625,400	0	N/A	\$69,575,400	22	\$3,117,235
	Existing Leachate Conveyance System Re-Configuration			\$2,500,000							
	Construct Leachate Pump Station			\$650,000							
Alternative 7 – Proposed Footprint	118.3	29,900,000	\$70,860,000	N/A	13.5	\$1,053,000	1500	\$525,000	\$72,513,000	31	\$2,349,995
Alternative 8	139	18,820,000	\$83,400,000	\$5,200,000	0	N/A	0	N/A	\$88,600,000	19	\$4,566,525
	Installation of 2 Leachate Tanks and Load out			\$2,500,000							
	Construct Maintenance Garage and Equipment Storage Area			\$1,600,000							
	Construct New Paved Access Roads			\$500,000							
	Construct Scale House and Construct Weigh Scales			\$600,000							

1 - New liner construction costs are based on new liner system acres @ \$600,000 per acre for construction of a double composite liner system including leachate system and perimeter road.

2 - Infrastructure costs are listed below:

- a.) Alternatives not utilizing the existing leachate conveyance system will require either a new leachate pumping station or a new leachate storage area.
- b.) Alternative 1 will require the relocation of all supporting facilities, due to the location of the proposed footprint.
- c.) Alternatives 1 and 6 will both require modifications to the existing leachate infrastructure prior to the overlay onto the existing landfill.

3 - The wetland mitigation cost estimates assume that substantial earthwork/re-grading will not be required (i.e., that tilling will be sufficient prior to the plantings).

4 - The impacted wetlands are assumed to be forested wetlands and therefore assume a replacement ratio of 3:1. Based upon the costs provided by AES, we have assumed an average per acre mitigation cost of \$78,000

5 - The impacted stream (RG-6 Tail) is anticipated to require stream mitigation. Based upon B&L assumptions, an average per linear foot of channel could cost \$350 per linear foot of mitigation.

6 - The estimated costs exclude permitting costs and construction costs and do not account for inflation.

7 - Cost per year of site life = cost sub-total divided by the estimated site life for each footprint option. Site life estimates are based on an average disposal rate of 776,000 tons per year (970,000 CY/year).

8 - Cost per cubic yard = cost sub-total divided by the potential Disposal Capacity (cubic yards) for each footprint.

The Proposed Action provides the most cost efficient practicable Disposal Capacity with the least amount of wetland impacts for long-term expansion of the Mill Seat Landfill, at an estimated cost of \$2.4 million per year for the 31 year site life.

The Proposed Action is in accordance with the Riga Host Community Agreement's request for any such expansion to be contiguous to the Permitted Footprint. The Proposed Footprint minimizes visibility and provides an extensive buffer zone between I-490, Bovee Road and operations to decrease potential impacts to neighboring properties.

Additionally, this Proposed Footprint will provide an opportunity for the host communities to receive monetary benefits from the County for 31 additional years, resulting in a total of approximately \$82 million in economic benefits over the site life. Alternative 7 (Proposed Footprint) meets the airspace and site life objectives, the financial cost factors, and the Riga Host Community Agreement terms while resulting in the second smallest wetland impacts – considerations which support its status as the preferred alternative.

As outlined in the comparison tables above, the Proposed Footprint (Alternative #7) represents the least environmentally damaging practicable alternative for expansion of the Mill Seat Landfill due to a number of factors including acceptance by the host community, avoidance of environmental risks associated with overlaying existing leachate monitoring structures, and overall cost efficiency. Most importantly, this option provides the Mill Seat Landfill with sufficient Disposal Capacity outlined in the evaluation criteria so that this process will not need to be undertaken again for over 30 years. Also, the positive community acceptance related to this option will result in a reasonable SEQRA and permitting process, helping to ensure continuous local Disposal Capacity availability to the County.

While this alternative results in impacts to wetlands at the Proposed Site, the execution of on-site protection measures will help to protect the ecological integrity of wetlands outside of the Proposed Footprint while providing one (1) of the highest ratios of site life per acre of wetland impact. The Proposed Action area avoids, and will ultimately result in the protection of, the remaining wetlands on the Proposed Site located outside of the Proposed Footprint. Protection of remaining aquatic resources along with restoration and enhancement activities on and off-site prior to impacts will ensure that there is no net loss of aquatic resource function as a result of the Proposed Action.

## 9.6 Alternative Waste Disposal Technologies

Many waste disposal technologies are available as alternatives to reduce the amount of material that requires landfilling. Some, such as plasma arc gasification, mechanical/biological treatment, and anaerobic digestion, have not been proven environmentally or economically feasible in the United States for MSW management. These alternative technologies are still in the experimental and developmental stage, while few have made it to the demonstration and commercial phase. Whether such technologies are feasible in a location depends on such factors as funding (availability of loans or grants), federal and local policies, the scale and infrastructure required, supply chain complexity, and local/macroeconomic factors. Others, such as waste-to-energy, MSW mixed composting, and ethanol production, are limited in applicability as described below. All would still require landfilling for the disposal of the byproducts or end products of the alternative technologies. For reasons explained further below, none of these alternative waste disposal technologies are suitable alternatives to the Proposed Action.

### 9.6.1 Waste-to-Energy (Combustion/Incineration)

A waste-to-energy facility is a solid waste management facility that combusts wastes to generate steam or electricity and reduce the volume of MSW requiring landfill disposal by 80-90%. These facilities are sometimes referred to as resource recovery facilities or Municipal Waste Combustors. Newer technology allows higher efficiency heat recovery from the combustors, increasing energy production potential.

Although the total volume of MSW requiring disposal is reduced, a secondary disposal method such as landfilling would be required for the ash. This, coupled with high construction, operation, and maintenance costs as well as uncertainty in energy sales revenues, results in higher disposal costs per ton than landfilling. In addition, landfilling has already been approved by the NYSDEC as a preferred disposal method for County-generated biosolids in lieu of incineration.

There are currently ten (10) active waste-to-energy facilities in the State; however, none have been permitted or constructed in the State in the past 20 years.



### 9.6.2 Mixed MSW Composting

Mixed MSW composting is typically an aerobic composting process that breaks down all organic portions of the waste into compost material. Waste is typically collected at the facility as a mixed stream. The process requires intense pre- and post-processing, treatment and sorting to remove inert materials such as plastic or glass, which if not removed can diminish the quality of compost products. Some MSW composting facilities also accept biosolids. Wastes are typically loaded into a rotating bioreactor drum for two (2) to four (4) days. Screening processes are used to separate unacceptable wastes, which are landfilled as process residue, from the raw compost which is stored in a maturation area for approximately one (1) month to allow biological decomposition to occur.

Facilities such as this do not have a well-established track record in the United States. There are currently 13 mixed MSW composting facilities in operation in the United States, including one (1) in Delaware County, New York that accepts biosolids in addition to mixed MSW. Typical issues associated with the reliable and cost effective operation of such facilities include quality of compost, retail/wholesale outlet for compost generated, disposal location for bypass material, and odors.

As mentioned above, Delaware County operates a mixed MSW and biosolids composting facility, which has been successful as it relates to their needs. Their facility met the need of extending the life of their current landfill facility due to declining capacity and difficulty in expanding or siting a new landfill within the New York City water supply's watershed. This facility allowed the landfill to be operational for another 50 years. The cost of this facility was approximately \$20 million, which includes a rather complex odor control component. The facility became operational in 2007, and serves a rural population of about 47,000 people. This facility handles approximately 100 tons per day of waste. The mixed MSW composting facility is one part of Delaware County's integrated solid waste management system, but MSW composting does not offer the County a technically reliable and economically viable alternative to the Proposed Action.

### 9.6.3 Pyrolysis/Gasification

Pyrolysis systems use a vessel which is heated to temperatures of 750°F to 1,650°F, in the absence or near absence of free oxygen. The temperature, pressure, reaction rates, and internal heat transfer rates are

used to control pyrolytic reactions in order to produce specific synthetic gas (syngas) products. These syngas products are composed primarily of hydrogen, carbon monoxide, carbon dioxide, and methane. The syngas can be utilized in boilers, gas turbines, or internal combustion engines to generate electricity, or alternatively can be used in the production of chemicals. Some of the volatile components of MSW form tar and oil, and can be removed for reuse as a fuel. The balance of the organic materials that are not volatile, or liquid that is left as a char material, can be further processed or used for its adsorption properties (activated carbon). Inorganic materials form a bottom ash that requires disposal, although it is reported that some pyrolysis ash can be used for manufacturing brick materials. Under typical operations, the ash is landfilled.

Gasification is a similar process to pyrolysis, but which requires the partial oxidation of a feedstock to generate syngas. Oxygen must be provided for the reaction, but at a quantity less than is required for complete combustion. The primary syngas products are hydrogen and carbon monoxide with smaller quantities of methane produced at lower temperatures. Similar to pyrolysis, the syngas product may be used for heating, electricity generation, fuel, fertilizers or chemical products, or in fuel cells. Byproduct residues such as slag and ash are produced and require disposal in a landfill.

Pyrolysis and gasification of mixed MSW are currently taking place at about 100 mixed MSW gasification plants in the world, primarily in Japan. The capital cost of developing this technology is estimated to be ten (10) percent higher than conventional waste-to-energy plants, based on the relatively short history of pyrolysis/gasification development for mixed MSW, a lack of established pyrolysis or gasification plants for MSW in the United States, and the greater complexity of the technology. According to a recent USEPA study of pyrolysis and gasification technologies, the cost to process mixed MSW is approximately \$90 per ton which is significantly higher than landfill operational costs in the State. There are no current full scale operational systems in the State for MSW treatment. One (1) plant for the pyrolysis of plastics, located in Niagara Falls, NY, is commercially operational and one (1) gasification plant that will use only portions of the MSW stream has been permitted in Montgomery, NY.

#### 9.6.4 Mechanical/Biological Treatment

Mechanical-biological treatment systems are similar to mixed MSW composting systems in that intense sorting is required as the first step in the waste treatment process. This is considered the mechanical phase of the treatment, where recyclable and non-organic materials are removed from the waste stream, prior to the biological treatment. The biological treatment phase involves bio-drying of the remaining organic materials for production of refuse derived fuel. Refuse derived fuel can be used in place of fossil fuel products, such as a replacement for coal in electricity production. There are currently over 70 active mechanical-biological treatment systems in operation across Europe, with a majority of these facilities operating as pilot scale projects (exact numbers are not available).

To date, this technology has not been proven to be economically feasible within the United States for MSW management due to the cost associated with pre-processing, capital investment for technology, and challenges with product end markets.

#### 9.6.5 Anaerobic Digestion

Anaerobic digestion is a biological process by which microorganisms digest organic material in the absence of oxygen, producing a solid byproduct (digestate) and a gas (biogas). In the past, anaerobic digestion has been used extensively to stabilize sewage biosolids, but is more recently under consideration as a method to process the organic fraction of MSW. In anaerobic digestion, biodegradable material is converted by a series of bacterial groups into methane and carbon dioxide. In a primary step called hydrolysis, a first bacterial group breaks down large organic molecules into small units like sugars. In the acidification process, another group of bacteria converts the resulting smaller molecules into volatile fatty acids, mainly acetate, but also hydrogen and carbon dioxide. A third group of bacteria, the methane producers or methanogens, produce a medium-BTU biogas consisting of 50-70 percent methane, as well as carbon dioxide. This biogas can be collected and used for a variety of purposes including electricity production or converted to high BTU natural gas. Anaerobic digestion facilities are primarily utilized for the treatment of wet waste materials such as agricultural wastes including manure, wastewater biosolids and other organic wastes such as food wastes. Mixed MSW anaerobic digestion

facilities are more common in foreign countries. There are currently over 200 MSW anaerobic digestion facilities operating across Europe. Many of these facilities are smaller scale projects, designed to provide treatment of wastes for small towns and villages. There are two (2) such facilities in operation in Canada, each in the Toronto, Ontario area.

Specific to the United States, few mixed MSW anaerobic digestion facilities exist, as the technology has not proven economically feasible. An USEPA study estimates that waste processing costs using anaerobic digestion are close to \$115 per ton of MSW, which is even higher than pyrolysis/gasification. At this time, only two (2) commercially operational MSW anaerobic digestion facilities exist, both in Ohio. Several more facilities exist but run off only a select portion of the MSW waste stream, such as source separated organics, food manufacturing industry waste, or a mixed agricultural/food waste. Many are still in a demonstration phase and are not fully operational. In the State, there are many anaerobic digesters in operation in the wastewater and agricultural markets, with some anaerobic facilities under consideration for conversion into mixed organic waste facilities. Two (2) anaerobic digesters have been permitted in Region 9 by Quasar Energy Group. These systems will manage regional biomass residuals (organic waste) to produce electricity that will be sold to New York State Electric and Gas. Under the regional biomass residual model, there is still the need to manage other portions of the waste stream that cannot be digested and recycled. These wastes are typically landfilled. In addition, digestate and liquids from the anaerobic digester process must also be managed, which may be recycled or landfilled depending on their constituents.

#### 9.6.6 Ethanol Production

Similar to MSW composting, ethanol production from a mixed MSW stream requires extensive screening and processing. All recyclable and inert materials must be removed to produce a solely organic waste stream. The organic material is processed and hydrolyzed to form a sugar solution, which is fermented to produce ethanol and carbon dioxide. The solution requires further processing and refining to bring the ethanol concentration up to 99%, or fuel grade ethanol. Ethanol production still produces solid byproducts which require disposal. A solid residue of unfermented solids and microbial biomass is recovered through the anaerobic digestion process, and can be marketed as a compost material depending on the purity of feedstock as well as its visual quality. Solid

residues can also be burned or gasified if alternative methods of reuse are not feasible. Although some pilot scale operations exist, many have reverted to a homogenous input stream such as wastewater treatment biosolids or food processing wastes for simplicity and economic feasibility.

In addition to the aforementioned limitations of these technologies, their use is limited by the time required to design, permit, and construct the necessary facilities, which would not meet short-term waste disposal needs, and the need for local publicly-controlled solid waste Disposal Capacity for the residual wastes from these processes.

## 10.0 References

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