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August 7, 2026

VIA ELECTRONIC MAIL AND HAND DELIVERY

Melanie Bachman, Esq.
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: SMART Technology Systems, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §§ 4-176 and §16-50k, for the proposed construction, maintenance and operation of a 45-megawatt electric generation and municipal waste recycling management facility and associated interconnection located between Norwich and Black Hill Roads in Plainfield, Connecticut

Dear Ms. Bachman:

I am writing on behalf of my client, SMART Technology Systems, LLC, which is pleased to submit the enclosed petition for first totally integrated municipal solid waste recycling and recovery complex proposed in the United States to be located at the above-referenced location in Plainfield, Connecticut. With this letter, I am enclosing the original and fifteen copies of the Petition, including Appendices A-N. I am also enclosing a check for \$625.00, made payable to the Connecticut Siting Council.

Electronic copies of the filing are available for download at the following link:
<https://pullcom.sharefile.com/d-se4733a3f47934455a062447427b1dcf0>.

Should you have any questions concerning this submittal, please contact me or Kate Boucher of this office at your convenience.

Sincerely,

A handwritten signature in black ink that reads "Lee D. Hoffman".

Lee D. Hoffman

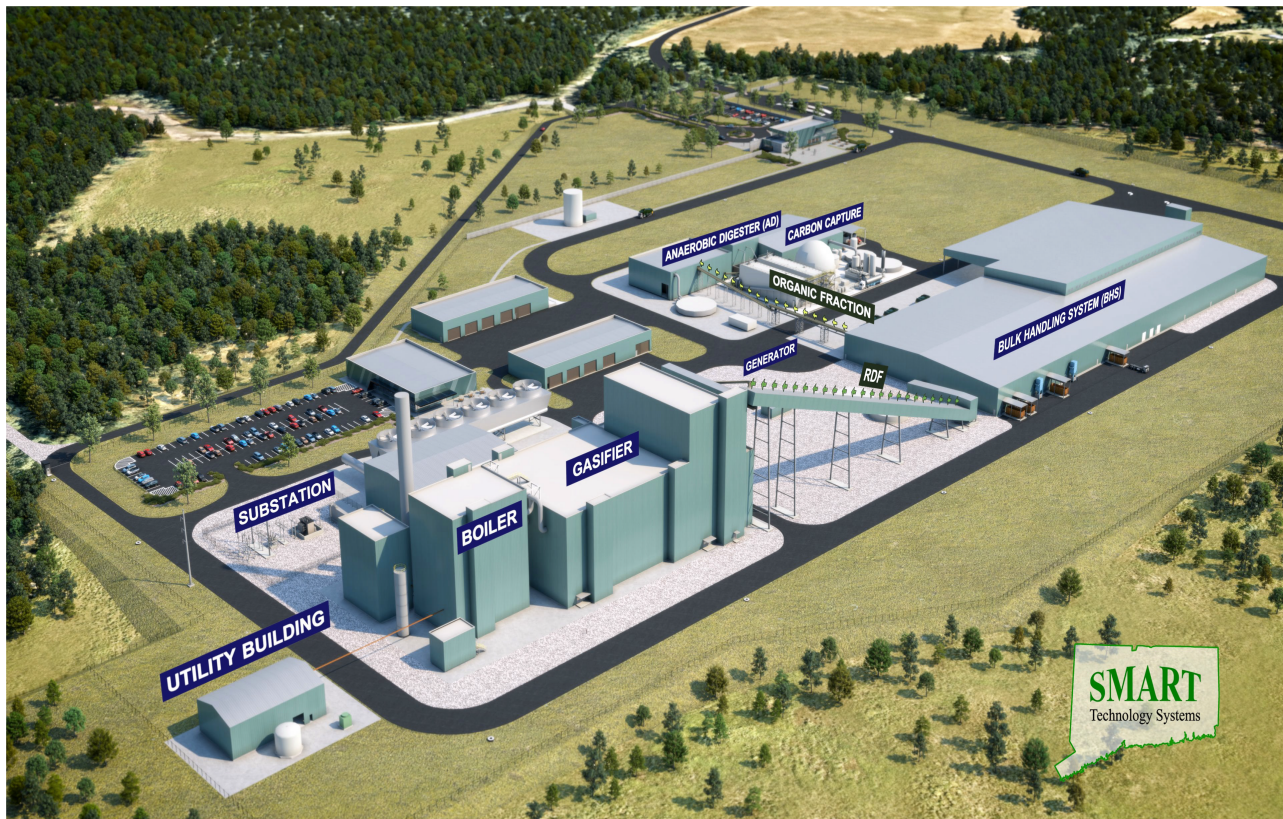
Enclosures

cc: Town Clerk, Town of Plainfield, dtalbot@plainfieldct.org

ACTIVE/81669.25/KEBOUCHER/21208015v1

SMART

Technology Systems



SMART Technology Systems, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §§ 4-176 and §16-50k, for the proposed construction, maintenance and operation of a 45-megawatt electric generation and municipal waste recycling management facility and associated interconnection located between Norwich and Black Hill Roads in Plainfield, Connecticut

**Prepared for
The Connecticut Siting Council**

August 2026

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EXHIBIT O – Electrical Interconnect Information

EXHIBIT P – Spill Prevention, Control, and Countermeasure Plan

EXHIBIT Q – Environmental Justice Public Participation Plan as Approved by DEEP

List of Acronyms

ACI – Activated Carbon Injection
ADC – Alternate Daily Cover
ANSI – American National Standards Institute
AWTI – Advanced Waste Technologies International, LLC
BHS – Bulk Handling System
BMPs – Best Management Practices
BUD – Beneficial Use Determination
CFB – Circulating Fluidized Bed
CGS – Connecticut General Statutes
CMMS – Comprehensive Materials Management Strategy
CO₂ – Carbon Dioxide
CT DEEP – Connecticut Department of Energy and Environment Protection
CWC – Connecticut Water Company
DSI – Dry Sorbent Injection
EPC – Engineering, Procurement, Construction
FEMA – Federal Emergency Management Agency
GIS – Geographic Information System
GW – Genesee & Wyoming
HAP – Hazardous Air Pollutants
HDPE – High-Density Polyethylene
HVAC – Heating, Ventilation, and Air Conditioning
KOP – Key Observation Points
LSZ – Landscape Similarity Zones
MIRA – Materials Innovation and Recycling Authority
MSW – Municipal Solid Waste
NAAQS – National Ambient Air Quality Standards
NDDB – Natural Diversity Database
NO₂ – Nitrogen Dioxide
NO_x – Nitrogen Oxides
NSA – Noise Sensitive Area
NSPS – New Source Performance Standards
OSHA – Occupational Health and Safety Administration
PAL – Public Archaeology Laboratory
PM₁₀ – Particulate Matter Less than 10 Microns
PM_{2.5} – Particulate Matter Less than 2.5 Microns

PPE – Personal Protective Equipment
PSD – Prevention of Significant Deterioration
RCSA – Regulations of Connecticut State Agencies
RDF – Refuse Derived Fuel
RNG – Renewable Natural Gas
RO – Reverse Osmosis
S&E – Sediment and Erosion
SCR – Selective Catalytic Reduction
SLR – SLR International Corporation
SO₂ – Sulfur Dioxide
ST – Stack
USEPA – United States Environmental Protection Agency
VIA – Visual Impact Assessment
VOCs – Volatile Organic Compounds
VSA – Visual Study Area
WPCF – Water Pollution Control Facility
WQV – Water Quality Volume

List of Units

AMSL – Above Mean Sea Level
dBA – A-Weighted Decibel
F – Degree Fahrenheit
ft – Feet
gal – Gallon
HP – Horsepower
hr – Hour
klb – Kilopound
kV – Kilovolt
kW – Kilowatt
MMBtu – Million British Thermal Units
MPH – Miles per Hour
MW – Megawatt
psia – Pounds per Square Inch Absolute
tpd – Tons per Day

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

PETITION OF SMART TECHNOLOGY SYSTEMS,	:	
LLC FOR A DECLARATORY RULING	:	Petition No. _____
THAT NO CERTIFICATE OF ENVIRONMENTAL	:	
COMPATIBILITY AND PUBLIC NEED IS	:	
REQUIRED FOR THE CONSTRUCTION,	:	
OPERATION, AND MAINTENANCE OF AN	:	AUGUST 7, 2026
ELECTIC GENERATION AND MUNICIPAL WASTE	:	
RECYCLING MANAGEMENT FACILITY AND	:	
ASSOCIATED INTERCONNECTION BETWEEN	:	
NORWICH AND BLACK HILL ROADS IN	:	
PLAINFIELD, CONNECTICUT	:	

PETITION OF SMART TECHNOLOGY SYSTEMS, LLC

1.0 INTRODUCTION, PETITIONER, PROJECT DESCRIPTION & HISTORY

1.1 Introduction and Statutory Authority

Pursuant to Section 16-50k(a) and Section 4-176(a) of the Connecticut General Statutes (CGS) and Section 16-50j-38 *et seq.* of the Regulations of Connecticut State Agencies (RCSA), SMART Technology Systems, LLC (SMART or the Petitioner) requests that the Connecticut Siting Council (Council) issue a declaratory ruling for SMART's proposed location, construction, operation and maintenance of a 45-megawatt (MW) municipal waste recycling, separation, waste to renewable natural gas and renewable energy facility and associated ground equipment and a 115-kV electrical interconnection (together, the Project) located on approximately 81.2 acres of an approximately 506-acre sand and gravel mine between Norwich Road and Black Hill Road, in Plainfield, Connecticut (together, the Property) (Figure 1 and Exhibit A).

CGS § 16-50k(a) provides in relevant part:

Notwithstanding the provisions of this chapter or title 16a, the council shall, in the exercise of its jurisdiction over the siting of generating facilities, approve by declaratory ruling . . . (B) the construction or location of any . . . grid-side distributed resources project or facility with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Energy and Environmental Protection.

The construction, operation and maintenance of the Project satisfy the statutory elements of CGS § 16-50k(a). The Project is a waste-to-energy development project under 65 MW and will meet the air and water quality standards of the Connecticut Department of Energy and Environmental Protection (CT DEEP). The Project has minimal air pollution emission rates, and minimal to no impacts to water quality. The Project will not have a substantial adverse environmental effect. Accordingly, this Petition for a Declaratory Ruling should be approved by the Council.

Further, the Project is necessary to further Connecticut's renewable energy goals and to contribute to grid reliability. Previous waste-to-energy facilities, also known as resource recovery facilities, were required to apply for Certificates of Environmental Compatibility and Public Need. However, the SMART facility is both a Class I renewable energy source pursuant to CGS §16-1(a)(20), and a Class II renewable energy source pursuant to CGS § 16-1(a)(21). This means the Project supports Connecticut's renewable energy policy (as stated in CGS §16a-35k), while also contributing to the reliability of Connecticut's electric supply and the competitiveness of Connecticut's electric market (as stated in CGS § 16-50p(c)(1)), and supporting Connecticut's Comprehensive Materials Management Strategy (CMMS). Accordingly, if approved, the Project will present these public benefits as well as economic benefits such as jobs for Connecticut companies and tax revenue for Connecticut and Plainfield.

1.2 Petitioner

SMART is a Limited Liability Company organized under the laws of the State of Connecticut and has a principal place of business at 112 Wall Street in Torrington, Connecticut 06790. SMART is owned in part by O&G Industries, Inc., (O&G) a corporation formed under the laws of the State of Connecticut also with a principal place of business at 112 Wall Street, Torrington, CT 06790. SMART will lead the Project development and has engaged skilled and competent contractors to develop the Project.

Please address all correspondence and/or communications regarding this Petition to:

William J. Corvo, Manager
SMART Technology Systems, LLC
112 Wall Street
Torrington, CT 06790
860.833.7394
manager@smartmswprocessing.com

Please also provide a copy of all such correspondence and/or communications to the Company's counsel:

Lee D. Hoffman, Esq.
Kathryn E. Boucher, Esq.
Liana Feinn, Esq.
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1.3 Project Description

SMART has proposed constructing the Project, which includes a waste processing facility (Facility) that will convert MSW to energy in the Town of Plainfield. The Project will occupy approximately 81.2 acres of a 506-acre site currently owned by O&G and located between Norwich Road and Black Hill Road (Figure 1). More specifically, the Property is located on the western side of Norwich Road (State Route 12) (Figure 2 and Exhibit B). The site currently exists as an industrial surface mining facility producing crushed stone, gravel, sand, and topsoil. The Project will utilize approximately 81.2 acres of the site area where mining has been completed. Approximately 115 acres of the site will be preserved as a conservation buffer.

The proposed Project will recycle and convert municipal solid waste (MSW) into renewable fuels to produce renewable (pipeline grade) natural gas, food-grade liquid carbon dioxide (CO₂), and cleaned, low-Btu gaseous fuel (synthesis gas, or syngas) to produce renewable electricity in a gas-fired boiler to both power the Facility and to export to the ISO New England grid. The Facility will be designed to have an average daily acceptance rate of 1,800 tons (typically 5-days per week), with an expected maximum acceptance rate of 2,500 tons per single day of mixed MSW from Connecticut. The non-recyclable solids will be utilized via beneficial-use-determinations as landfill daily cover, roadway asphalt additives, or similar uses.

To Petitioner's knowledge, this is the first totally integrated MSW recycling and recovery complex proposed in the United States and is being sited in Connecticut as a replacement for and significant improvement upon the former Materials Innovation and Recycling Authority (MIRA) mass burn incinerator. Connecticut-generated MSW that formerly was processed by MIRA is now

being landfilled out of state, a temporary diversion that is in the planning stage of being phased out. The State of Connecticut is seeking a new solution to handling its own MSW in-state, and the proposed SMART Project is part of that solution.

The proposed Facility will incorporate a bulk MSW receipt and separation/recycling system, an anaerobic digestion plant to produce renewable pipeline quality natural gas and food grade liquid CO₂, and fluidized bed gasifiers to reduce complex organic hydrocarbon chains to simpler gaseous molecules to produce syngas which will fuel a low-Btu gas-fired boiler/steam turbine to produce renewable electricity. The MSW will not be incinerated. No portion of the MSW received will remain behind – no on-site ash landfill is being proposed or needed. An overview video of the Project is available on the SMART website.¹

1.4 Project History and Parties

SMART Technology Systems, LLC is the entity proposing, permitting and developing the Project. SMART consists of a group of primarily CT-based partners and investors, with the knowledge and financial capacity to own, permit, construct and operate (together with contracted partners) the proposed next generation CT mixed municipal waste processing facility.

One of the principals of SMART is Advanced Waste Technologies International, LLC (AWTI). AWTI is a CT-based renewable energy developer dedicated to addressing domestic and international needs for better waste management, recycling, and recovery. AWTI focuses on reducing waste and recycling, while converting the remaining biogenic and non-biogenic materials into clean synthesis gas and renewable natural gas to produce cleaner renewable energy from MSW.

SMART has been working on this concept for over six years, seeking to locate a suitable site. The criteria for site selection included a 50-mile (or less) distance to Greater Hartford, designation of multi-lane highway and state roads for efficient waste hauling, a site that is empty and construction-ready, that is not encumbered by apparent historical or archeological resources, site contamination, existing structures needing to be demolished, wetlands or water resource areas, endangered species / habitat that could not be mitigated, or other environmental criteria. The site

¹ <https://www.smartmswprocessing.com/>

search disclosed great difficulty in locating a potential site meeting all of these (as well as other) selection criteria in the State of Connecticut.

While seeking a feasible potential site, AWTI approached O&G Industries to assist in developing a waste processing project. O&G proposed siting the Project on 81.2 acres of a 506-acre site in Plainfield, CT. O&G is among the largest construction firms in Connecticut, and has in-house capacity to develop, permit, construct, and operate (under contract) the Project that AWTI was seeking to develop using a new combination of existing technologies. O&G became the lead partner within SMART, which was formed between AWTI, O&G and other entities. SMART was formed to provide a new solution for Connecticut's current waste needs that aligns with the goals outlined in the State's CMMS.

O&G has agreed to make its Plainfield property available to site the SMART Project and support the Project with its professional engineering and consulting firms (including TRC Environmental Companies (TRC) of Windsor, CT), to design, develop, and obtain necessary permits for the proposed SMART Facility. O&G will serve as the principal "Engineering-Procurement-Construction" (EPC) contractor for the SMART Project.

The SMART gasification technology was developed by Valmet Industries, Inc., and SMART has contracted to exclusively use the proposed refuse-derived fuel (RDF) gasification-to-renewable energy technology upon which the proposed Project is based. While new to the US, the Valmet MSW gasification technology currently operates commercially at a facility in Lahti, Finland. Valmet was required by SMART to achieve and guarantee New Source Performance Standards (NSPS) emissions limits under the federal Clean Air Act that would apply to new, large municipal waste combustors proposed by the United States Environmental Protection Agency (USEPA) in April 2024 (40 CFR 60, Subpart Eb). On March 5, 2026, the USEPA replaced the requirements of the referenced 40 CFR 60, Subpart Eb and its proposed early 2024 emission standards, as referenced herein, with replacement requirements of 40 CFR 60, Subpart VVVV. SMART has already, and will continue to, commit to meeting the more stringent proposed Subpart Eb emission limitations referenced herein. If any of the Subpart VVVV emission limits are more stringent than those contained herein, the Project will commit to meeting those limits as well. Valmet is now contracted to SMART as their gasification/waste heat recovery/air pollution controls equipment supplier.

SMART has also contracted with Bulk Handling Systems to provide waste separation and recycling at the facility. Bulk Handling Systems has designed, engineered and operated recycling facilities throughout the US. Bulk Handling Systems technology is proposed for both the SMART waste separation and recycling plant as well as the proposed SMART anaerobic digestion plant.

AECOM, an engineering firm, prepared conceptual plans for permitting the Facility. Other specialty engineering and equipment supply firms have likewise been contracted by SMART to integrate numerous features and equipment into the total waste conversion and management Facility being proposed as a solution for in-state management of Connecticut MSW.

1.5 Site Selection

The proposed site consisted of unoccupied and undeveloped land, in addition to current and former sand and gravel excavation operations. The active gravel quarry and associated roadways occupy approximately 58.6 acres throughout proposed Facility site. There are no permanent structures, or other improvements, other than access roads on the Property that are exclusively used as part of the removal of sand and gravel from the active areas of the site.

The site was selected as an undeveloped parcel in Connecticut that was both available and meeting all the criteria set out prior to the site search. Such opportunities are exceedingly rare in Connecticut and no alternative undeveloped site meeting the size, proximity, access, and environmental impact criteria was identified.

SMART/O&G selected the site for the proposed Project based on a detailed evaluation of the following criteria:

- Site availability and site control (ability to acquire the land/site control);
- Site suitability (location, size, topography and geology of the site);
- Proximity to critical infrastructure (proximity to natural gas pipelines, water and sewer, rail, highway truck access, and suitable grid access);
- A site with initial studies reporting little to no anticipated adverse impacts to the environment.

The location of the site is ideally suitable for a waste processing facility. The site is currently configured for truck access to Interstate 395. This site conforms to the desired lot size

and dimensional requirements, as well as to all setbacks, height, and coverage requirements. The site is consistent with the Conservation and Development Policies Plan for Connecticut, 2025-2030, which calls for increasing capacity and sustainability of in-state management of MSW.²

The Project site will encompass 81.2 acres of the 506-acre Property. SMART has agreed to donate 115.15 additional acres of conservation land buffer to the CT DEEP Land Acquisition and Management Division to protect wildlife habitat and wetlands resources, while separating the Project from the surrounding agricultural community. Trees and vegetation will provide visual and sound buffers. Because the geology of the site is one of deep sand and gravel, there will be no net change in the discharge of stormwater from the site from the existing conditions.

The site was further selected for benefits the Project will bring to Plainfield, its host community. While the Project is being designed to have a low impact, low visibility and sound profile, the development of the Project will have a large-scale, substantial and positive economic and employment benefits to the Town of Plainfield over the life of the Project.

1.6 Project Timeline

A complete project timeline and schedule is available in Exhibit C.

1.7 Necessary Project Permits

The SMART Facility will be designed, constructed, and operated in accordance with applicable federal and state regulations, approvals, codes, and ordinances. The following table provides a summary of key state and federal permits and approvals, and the status or schedule for each permit and approval.

² Conservation and Development Policies Plan for Connecticut, 2025-2030, Page 24, available at <https://portal.ct.gov/opm/igpp/org/conservation-and-development-policies-plan/conservation-and-development-policies-plan>.

Permit	Review Agency	Status
Air		
CT DEEP - NSR Air Permits to Construct and Operate a WTE Plant	CT DEEP	Submitted March 2025
EPA		
Material Separation Plan	EPA	Submitted February 2026
Siting Analysis	EPA	
Building		
Building Permit		Prior to construction commencement
Department of Transportation		
Encroachment Permit	Conn DOT	Anticipated 2028
OSTA Major Traffic Generator	Conn DOT (OSTA)	Anticipated 2028
Connecticut Siting Council		
Petition for Declaratory Ruling	Connecticut Siting Council	Submitted August 2026
Local - Plainfield		
Sewer Permit	WPCA	Prior to construction commencement
Stormwater		
Natural Diversity Database Final Determination	CT DEEP	Anticipated late 2027
General Permit for Stormwater Construction Activities	CT DEEP	Anticipated early 2028
General Permit for Stormwater Associated with Industrial Activities	CT DEEP	Anticipated early 2028
Wastewater		
Comprehensive (infiltration) General Permit	CT DEEP	
Significant Industrial User General Permit	CT DEEP	
SOLID WASTE		
CT DEEP Solid Waste Permit	CT DEEP	Submitted April 2026
Environmental Justice Public Participation Plan and DEEP Approval - Attachment G	CT DEEP	Submitted as part of waste permit submittal
ISO-NE Interconnect		
Queue Position Application	ISO-NE	Anticipated Fall 2026
Electrical Interconnect	ISO-NE	Anticipated Fall 2026
OTHER PERMITS/APPROVALS		
Notice of Proposed Construction	FAA	
SHPO	SHPO	
License Agreement	Genesee & Wyoming RR / DOT Rails	
Right of Entry	Genesee & Wyoming RR / DOT Rails	

2.0 **PROJECT DESCRIPTION**

2.1 **Established Technology in Europe**

As discussed herein, the SMART facility proposes utilizing Valmet's advanced gasification technology to convert prepared RDF from the bulk handling system (BHS) into a clean refined synthetic gas. While this technology is new to the United States, it is well-established in Europe. The same Valmet technology has been used at the Kymijärvi II plant in Lahti, Finland, since it began commercial operations in 2012. It is operated by Lahti Energy, an energy production and distribution company owned by the city of Lahti in southern Finland. This waste gasification project received significant funding from both the European Union and Finnish government.



The Lahti plant (pictured above) is a full-scale commercial plant fueled by sorted household waste, classified industrial waste, demolition wood and industrial waste wood that is not otherwise suitable for recycling. The plant consists of two 80 MW fuel gasification trains which feed a common gas boiler. Each gasification train consists of a fuel feeding system, gasifier, gas cooler and hot gas filter. After the boiler, flue gases are cleaned in a conventional bag house filter with upstream injection of sodium bicarbonate and activated carbon for control of acid gases and heavy metals. NO_x is controlled with injection of ammonia into the boiler and downstream selective catalytic reduction system. The Kymijärvi II plant processes 250,000 tons of RDF per

year and produces 50 MW/hr of electricity and 90 MW/hr of district heat from 160 MW/hr of solid waste fuel power.³ It is the fourth biggest biomass power plant in the world.⁴

In 2012, the Forum for Sustainable Development selected Kymijärvi II as the “Climate Deed of the Year”, praising its innovativeness and replicability.⁵ Energy solutions have an important role in the strategy of the city of Lahti, which has adopted climate goals, including a goal of halving the carbon dioxide emission levels of 1990 by 2025.⁶ Kymijärvi II also reduced the use of older adjacent combustion plant, which eventually became obsolete, and ceased operations in 2019 at the end of its technical life.⁷

2.2 Technical Description of the SMART Project

The proposed facility consists of three major “plants” working together, including 1) the MSW receipt and sortation building (MSW separation to recyclables, clean RDF, and organics), 2) an anaerobic digester to produce renewable natural gas (RNG) and food grade CO₂ from separated organics and 3) fluidized bed gasifiers to convert RDF to syngas, syngas cleaning, and a high-pressure boiler/steam turbine generator island to produce 45 nominal gross MW of power.

At this Facility, mixed MSW becomes the feedstock to the waste recycling and gaseous fuels recovery process, rather than simply being burned as in conventional MSW-to-energy plants or dumped in out-of-state landfills. MSW consists of mixed residuals of food waste, packaging, and purchased goods including ferrous and non-ferrous metals, glass, electronics, plastics, paper and cardboard, and organic matter, all more commonly referred to as household trash.

The SMART process can be thought of as a household trash disassembly sequence, whereby recyclables (such as glass, metals, and electronics) are extracted from raw MSW, and the

³ Lahti Energia – About Us – Energy, available at <https://www.lahtienergia.fi/en/about-us/energy/>.

⁴ GlobalData, Power from waste – the world’s biggest biomass power plants, available at <https://finance.yahoo.com/news/power-waste-world-biggest-biomass-115308604.html>.

⁵ NORDREGIO, Nordic Center for Spatial Development, Green Growth in Nordic Regions: 50 ways to make it happen (2016), Kymijärvi II: The World’s First SRF Gasification Power Plant, Pages 82-83, available at <https://archive.nordregio.se/en/Publications/Publications-2016/GREEN-GROWTH-IN-NORDIC-REGIONS-50-ways-to-make-/Clean-tech-and-renewable-energy--/Kymij/index.html>.

⁶ World Economic Forum, This Finnish town will be carbon neutral by 2025. Here’s how (May 17, 2021), available at <https://www.weforum.org/stories/2021/05/finland-carbon-neutral-2025/>.

⁷ *Id.*; see also Global Energy Monitor, Kymijarvi power station, available at https://www.gem.wiki/Kymijarvi_power_station (indicating Unit 1 which ran on coal and diesel retired in 2019).

remaining waste is separated into organics and RDF which is thereafter reduced to clean gaseous fuels to produce renewable energy.

The separated recyclables (that would otherwise be landfilled as “ash”) will instead be recovered and recycled for remanufacturing, avoiding extraction of new raw materials and fossil fuel typically needed to produce new raw materials.

The remaining mixed waste feedstock will be sorted into organics and RDF for conversion to clean gaseous fuel. The RDF derived syngas will be oxidized on-site for renewable energy production, while the organics will be digested and refined to pipeline quality renewable natural gas. Even the organic solids left behind (the digestate) will be recycled as landfill daily cover offsite.

The RDF processed within the gasification and gas cleanup system will produce a continuous feed of clean, low Btu syngas. Within the circulating fluidized bed gasifiers, complex hydrocarbon chains present in solid RDF will be chemically reduced to a simpler, cleaned gaseous fuel, which at that point is no longer similar to mixed solid waste. This clean renewable gas will be combusted in specially designed thermal oxidizer and ducted to a heat recovery boiler to produce renewable electricity to run the Facility as well as for export to the electrical grid.

The organic fraction will be diverted to a dry anaerobic digestion plant to produce a higher Btu biogas, which is then refined to methane as RNG. At this stage, biogas produced during anaerobic digestion will be separated into RNG and food grade liquified CO₂ for sale as valuable byproducts. No residuals from the recycling and transformation of residential MSW will remain on site – instead, SMART intends to beneficially reuse or recycle all constituents of the MSW streams being processed.

2.2.1 MSW Receipt and Separation

The proposed Facility is designed to have an average daily acceptance rate of 1,800 tons (typically 5 days per week), with an expected maximum acceptance rate of 2,500 tons per single day. The proposed Facility will receive raw residential MSW collected from various municipalities, delivered by contracted waste haulers, to supplement Connecticut’s existing in-state MSW management capacity. These municipal waste contracts will clearly limit waste to acceptable residential or small commercial generators who set out preapproved containers for scheduled pickup.

MSW will be delivered, according to the contracts with approved waste haulers, in typical waste haul vehicles (rear-loaders, side-loaders, or semi-trailers). These delivery trucks will be directed by contract to follow specific delivery routes (primarily on main (or state) access roadways), and to incorporate current best management practices to enclose and compress the MSW to avoid fugitive spills or odors. A draft Spill Prevention, Control, and Countermeasure Plan is provided as Exhibit P. These contracts will prescribe acceptable times for deliveries to avoid long queues, congestion, or adverse traffic impacts (such as arrivals before the facility gates are open or unplanned arrivals).

Waste haul vehicle types will vary based on individual agreements between SMART and each municipality. The municipalities and independent waste haulers will utilize MSW haul trucks, which may differ in configuration, such as residential front or rear load trucks, roll-off boxes, dump trailers, and walking floor (i.e., live floor) trailers. SMART will also be able to accept self-unloading 40-foot trailers and 40 ft dump bodies originating at off-site transfer stations. All loads entering the Facility will be required to be enclosed, tarped, or otherwise covered to minimize leachate production, litter, and off-site odors. After being weighed at the scales located just inside the gate at the northeast corner of the Facility, trucks will be directed to a staging area for queueing.

Trucks will then be instructed to enter the unloading area within the MSW sorting building. They will be directed to a covered maneuvering area where they will be assigned to back up to one of approximately thirteen (13) door bays to the tipping room and then de-tarp. Once de-tarped, the truck will activate a fast-acting garage door with an opening time of approximately 5 seconds. Once open, the truck will back in, and the door will close behind it within approximately 10 seconds. The truck will dump its load into the tipping area (or onto the floor for those loads designated randomly for inspection). When the truck is empty, inspected and cleaned of clinging MSW, it will exit forward through the fast-acting garage door and be weighed again prior to exiting the facility.

MSW will be unloaded onto the recessed tipping floor for processing. The tipping area room will be maintained under negative pressure to contain odors. One or more cranes will be used to manage, sort, remove reject items, and feed accepted MSW to one of two feed hoppers to the separation process. This separation process is called the BHS sortation system. The sortation plant consists of two parallel “waste” disassembly lines. This system will incorporate both manual and mechanical sorting to separate out recyclable materials from the deliveries of raw MSW.

Mechanical waste separation may include the use of robotics with optical identification to automatically sort materials based on their physical characteristics including color, shape and composition improving the efficiency and purity of recycling and processing streams. The use of optical identification allows for future refinement of the sorting process to include additional recyclable materials including plastics and plastic films as markets for these raw materials become more favorable. Using robotics and optical identification is both more efficient and considerably safer than using manual sortation methods.

The materials currently proposed to be separated for recycling and/or further processing include metals (ferrous, aluminum, copper) and glass (for offsite recycling), electronics, and organic wastes – including bagged food waste. Separated recyclables will be forwarded to dedicated conveyor systems leading to covered roll-offs to be periodically picked up by licensed materials recyclers.

The remaining material will be sorted into RDF and organics. The organics will be diverted to the anaerobic digestion plant for conversion to renewable natural gas. The RDF will be diverted to the two circulating fluidized bed gasifiers, where gasification will convert RDF feedstock to synthetic gas (syngas) and inert material. The produced syngas will then be thermally oxidized in a heat recovery boiler to produce steam and electricity.

2.2.2 Anaerobic Digestion

The SMART Facility will incorporate anaerobic digestion of MSW-derived organics (expected to constitute as much as 1/3 (short-term) of the received processed MSW) in two sealed anaerobic digesters. With the help of two natural gas hot water heaters (2.5 MMBtu/hr each), the two digesters will be maintained under proper temperature and humidity to enable microbes to digest the organic fraction of the MSW to generate digester gas.

The anaerobic digestion unit is designed to handle eight short tons per hour (based on 24 hours per day/7 days per week operation) of digestible organic waste. The end products are digestate, proposed to be used as a landfill alternate daily cover (ADC), RNG, and food grade CO₂.

The system is comprised of two continuous plug flow semi-dry digesters, with recirculation of liquid, and a series of in-vessel aerators which reduce the water footprint of the process relative to traditional digestion lagoons. Additional steps and required equipment within the anaerobic

digestion process include mixing, conveyance, dewatering, biogas refinement for RNG suitable applications, storage, product screening, and odor management.

Organic waste will be transported from the waste sorting facility by conveyor and distributed by screw conveyor into a storage bunker. This organic waste is conveyed continuously into one of two 79,458 cubic foot digesters, where a large paddle shaft agitator promotes mixing and plug flow of material, and a heated floor promotes fermentation. The retention time is 21-30 days. Recycled liquid leachate and some balance waters are added if necessary to accelerate fermentation. The wet solids are conveyed out of the bottom of the digesters to two pairs of screw presses that separate the solids from the liquids, the solids being conveyed further to in vessel aeration. Liquid in the tank beneath the screw presses is continuously processed further by a decanter centrifuge, the solids conveyed for further drying and the liquid leachate recycled to the digesters or stored for future use. The bulk of renewable natural gas production takes place in the digesters. The gas is conveyed to a large gas bladder and is piped to the gas refinement system. If a surplus of liquid leachate is produced and not used, it will be transported offsite for disposal at an appropriate facility.

The post-digested separated solids are combined with a woody buffer/bulking material in the conveyor leading to the digestate aeration area and are distributed amongst four lanes. This batch process uses aeration to allow further drying and odor removal to produce an anaerobic digestate suitable for use as alternative daily cover. The retention period is approximately four days. A biofilter system treats the exhaust air from the digestate dewatering enclosure and aeration area. The finished digestate is passed through a 2-inch roll screen before loading onto trucks for distribution. Oversized material (greater than 2 inches) is collected in a residue roll-off for reuse as an aeration matrix.

The RNG produced by the digesters will be collected in a low-pressure bladder, which buffers the gas refinement inlet flow from inconsistencies and upsets in the fermentative digester process. The gas refinement skid removes corrosive sulfides and CO₂ to produce RNG suitable for grid injection. The expected loss of RNG in the refinement process is approximately 2% by mass. An emergency flare is located nearby in the event of power failure or pipeline shut in. The anaerobic digester will also include its own electric generator for emergency power purposes.

2.2.3 High-Pressure Boiler / Steam Turbine Generator Island

The RDF generated from the separation process will be thermally reduced to fuel gas in two circulating fluidized bed gasifiers. Each gasifier consists of a circulating fluidized bed (CFB) reactor, hot cyclone, and an insulated return duct from the cyclone back to the circulating reactor. Importantly, no incineration occurs anywhere in the process.

In these gasifiers, RDF will be heated (initially with a natural gas start up burner, discontinued once the heat of gasification is self-sustained) to reduce the chemical structure of RDF solids to lighter weight (gaseous) molecules. Gases from CFB gasifiers utilize a mixture of sand and limestone to maintain precise temperature control, to fully contact the solids being gasified, and to reduce acid gases such as chlorine or sulfur. The gasification reaction mixture includes raw syngas, residual solid carbon, and inert ash. This mixture is circulated from each CFB reactor to its hot cyclone, where coarse material is separated from gases as fine dust. The raw syngas and solid fines exit the gasifier, while coarse material re-captured in the hot cyclone is recycled back to the reactor bottom. This coarse “bottom ash” is removed as necessary from the reactor bottom through ash chutes for various end uses such as alternative daily cover for landfills. Once the gasifiers are self-sustaining, each gasifier will continuously produce low Btu gaseous fuel at an average temperature of approximately 1,650°F. The syngas will be cooled and cleaned of residual solids in hot gas ceramic filters to remove fine particulate and HAP metals.

The gasifiers will be equipped with a safety pressure relief vent and an elevated flare. The safety relief vent is only designed to operate for a matter of minutes to relieve pressure in the gasifier(s) in an emergency scenario, and this vent will also be equipped with an emergency safety flare to oxidize organics and combustibles so as not to release unreacted syngas during a multi-factor emergency failure.

Cleaned syngas will then enter the long-residence time thermal oxidizer (boiler), and once the gas is fully oxidized, it will be ducted to the heat recovery section of the power boiler. The thermal oxidizer will be equipped with four burners, each capable of firing low Btu Syngas and natural gas. The heat recovery boiler section will be of standard high-pressure, water tube, natural circulation design, including superheat, radiant, convection, economizer and air heater sections.

The power boiler will generate high-pressure steam for the steam turbine / generator (provided by Siemens). Baseline boiler output will be 306.6 klb/hr at 1,004°F and 1,755 psia (121 bar) after the superheaters. The feedwater temperature will be 285°F.

After the completed oxidation of syngas/natural gas and products of incomplete combustion in the boiler passes, the cooled flue (exhaust) gases will be sent to an extensive air pollution control train for further cleaning. Controls include selective catalytic reduction (SCR) for NO_x control via 19% ammonia solution in water (aqueous ammonia) injection, and a final polishing membrane filter baghouse, with dry sorbent injection (DSI) for neutralization of acid gases (utilizing sodium bicarbonate) and activated carbon injection (ACI) for control of mercury and dioxins/furans (utilizing powdered activated carbon). These controls will allow the Facility to meet the most stringent emission limits in the country using proven technology capable of meeting these standards.

The steam turbine / generator will take high pressure steam from the boiler and produce power for distribution to the electrical grid. The steam turbine will be a horizontal multistage axial flow condensing / extraction system with a normal operating capacity of 306.6 klb/hr of steam at 1,755 psia and 1,004°F and is coupled with a generator rated for 45,000 kW gross output. At this steam flow rate, extraction steam is taken off the turbine ahead of the low-pressure blades at a rate of 40,119 lb/hr at 170.7 psia and 385°F. This steam is available for low pressure use in the plant, for feedwater heating, and for the vacuum steam jet ejector.

The exhaust low grade steam exhausted from the turbine will be condensed back to water in an air-cooled condenser before it is recirculated back to the feedwater system. The air-cooled condenser is designed for a capacity of 267.7 klb/hr, with six (6) bays of 250 HP fans each.

A horizontal feedwater tank and deaerator will be provided to condition condensate to feedwater. The tank is designed for 10 minutes total holdup (low-low to high-high) at design condensation rates, for a nominal volume of 5,000 gallons. The deaerating dome is designed to handle a normal boiler makeup flow of 2% of the design condensate flow.

2.2.4 Miscellaneous – Dry Materials Loading and Unloading from Silos and Fugitive Road Dust

The SMART Facility will receive and use various solid materials within its processes, to be delivered in enclosed trucks via sealed pneumatic unloading systems. During delivery, dry granular materials such as sand, limestone, sodium bicarbonate, and powdered activated carbon will be loaded into storage silos, where these materials will then be dispensed via various enclosed metering conveyors as needed to achieve system operations and emissions control requirements.

Similarly, bottom ash from the two gasifiers, carbon and ash fines from the syngas cleanup candle filters, fly-ash from the oxidizer/boiler, and fines from the polishing baghouse will be pneumatically (or otherwise fully enclosed) conveyed to intermediate silos or receivers, enclosed transfer, and/or placed in enclosed trucks for offsite beneficial reuse or for licensed disposal.

To minimize fugitive road dust from the Facility, roads will be paved and rinsed with water if needed. Internal speed limits will be regulated to 22 miles per hour (MPH), waste and delivery truck routes will be controlled, and diesel trucks will not be allowed to idle for more than three (3) consecutive minutes per air emission regulations.

2.2.5 Summary

This Facility is believed to be among the first in the nation being permitted to fully meet the most stringent proposed USEPA NSPS emission requirements (proposed in early 2024, promulgated in early 2026 for new, large MSW facilities). These requirements allow only a fraction of air emissions per ton of MSW processed as compared with existing MSW plants in CT. Solid waste incineration via traditional mass burn technology cannot achieve these more restrictive proposed emission standards for new waste-to-energy plants.

2.3 Public Need

In 2016, CT DEEP promulgated the state's first CMMS, which is a roadmap to achieving the state's goal of 60 percent diversion of materials from disposal by 2024. Following extensive public outreach and a formal notice and comment process, the CMMS was adopted by the CT DEEP Commissioner in July 2016.

In January 2023, CT DEEP issued a draft CMMS Amendment to address reduced in-state solid waste disposal capacity, to promote greater source reduction, and to return Connecticut to self-sufficiency.⁸ The 2023 CMMS Amendment identifies strategies “for restoring ‘self-sufficiency’ in Connecticut’s municipal solid waste (MSW) management, in light of the Material Innovation and Recycling Authority’s (MIRA’s) decision to cease waste-to-energy (WTE)

⁸ <https://portal.ct.gov/DEEP/Waste-Management-and-Disposal/Solid-Waste-Management-Plan/Comprehensive-Materials-Management-Strategy>

operations at their Hartford Resources Recovery Facility (RRF) in July 2022.”⁹ The proposed strategies include “implementing organics reuse and diversion strategies, including pursuing more opportunities for source reduction and food recovery, adding authorized transfer stations as triggers for the Commercial Organics Recycling Law, expanding the Commercial Organics Recycling Law to cover institutions, and providing universal access to source separated food scrap collection to all residents and businesses. DEEP estimates that by implementing these organics strategies, MSW disposal can be reduced by 185,000 tons per year.”¹⁰

The 2023 CMMS Amendment highlights the need to address Connecticut’s aging WTE fleet. With the cessation of WTE activities at the MIRA, the Amendment notes that Connecticut has four WTE facilities remaining in-state, with a combined permitted disposal capacity of 1,539,497 tons per year— approximately 71% of the 2.2 million tons per year of MSW disposed of in Connecticut. Like MIRA’s facility, these remaining facilities are also aging – construction dates range from the late 1980s to the mid-1990s, and remaining facilities are already operating at or near “practical” capacity of 85% of permitted design capacity.¹¹ The 2023 CMMS Amendment specifically concludes that the remainder of MSW that was previously managed at the MIRA facility or exported “now has no viable disposal location in Connecticut, without displacing MSW already being managed at one of the remaining” facilities.¹² The SMART facility addresses this emergent need by “co-locating” three distinct recycling technologies. The proposed facility will meet the CMMS Amendment’s call for a “comprehensive approach to diversion” as SMART diverts waste from incinerators or landfills to this next-generation waste conversion technology facility.

In addition to the public need to find a solution to Connecticut’s waste stream, the Project will also generate 45 MW of renewable energy. The SMART facility would be considered both a Class I renewable energy source related to anaerobic digestion and a Class II renewable energy source related to the electricity derived from a trash-to-energy facility.¹³ The current Connecticut

⁹ 2023 CMMS Amendment at 2, available at https://portal.ct.gov/-/media/deep/waste_management_and_disposal/solid_waste_management_plan/january2023/cmms-amendment-2023-draft.pdf.

¹⁰ *Id.*

¹¹ 2023 CMMS Amendment at 9-10.

¹² 2023 CMMS Amendment at 10.

¹³ CGS § 16-1(a)(20) and (21).

Renewable Portfolio Standard requires that the state reach a target of twenty-nine percent Class I renewable energy sources and an additional four percent of Class II renewable energy sources by 2030, with an aim to reduce the carbon intensity of the portfolio to achieve the State’s decarbonization goals.¹⁴

CGS § 16a-35k identifies legislative findings related to Connecticut being disadvantaged by its lack of primary energy resources. The General Assembly specifically found:

that energy use has a profound impact on the society, economy and environment of the state, particularly in its impact on low and moderate-income households and interrelationship with population growth, high density urbanization, industrial well-being, resource utilization, technological development and social advancement, and that energy is critically important to the overall welfare and development of our society. (CGS § 16a-35k)

It is the stated policy of the State of Connecticut to “develop and utilize renewable energy resources . . . to the maximum practicable extent,” “diversify the state’s energy supply mix,” and “where practicable, replace energy resources vulnerable to interruption due to circumstances beyond the state’s control with those less vulnerable.”¹⁵ Importantly, the proposed Project will provide a rare reliable source of renewable, baseload electricity that will help stabilize the grid during peak hours when there is high demand. If approved, the SMART Facility will fully support the state’s stated waste and energy policies.

2.4 Project Benefits

As illustrated in the 2023 CMMS Amendment, Connecticut is facing major concerns of inadequate processing capacity to take care of its municipal solid waste. The decision to close the MIRA facility in Hartford after several attempts to upgrade or replace the facility failed has resulted in the current situation of inadequate processing capacity in Connecticut. This has forced many Connecticut municipalities to transport their MSW out of state to landfills located in Pennsylvania and Ohio. The remaining four resource recovery facilities located in Bridgeport,

¹⁴ CGS § 16-245a.

¹⁵ CGS § 16a-35k.

Bristol, Lisbon, and Preston are operating at maximum capacity and are near the end of their useful lives. Moreover, these facilities have emissions profiles that exceed the new USEPA emissions standards.

The SMART Facility further differentiates itself from the existing resource recovery plants in Connecticut by integrating anaerobic digestion and CO₂ liquefaction. The RNG output from the digester will be reformed and compressed (via electric-driven compressors) to natural gas distribution pressures and is proposed to be reinjected into the local distribution company pipeline system if such an agreement with the utility is executed. Liquefaction separates the remaining gas in the anaerobic digester from the biogas upgrader and captures food grade quality CO₂. This process significantly reduces air emissions by capturing the CO₂ instead of venting it to the atmosphere, producing a renewable product in the process.

Overall, SMART has designed an advanced, next generation waste management solution to return Connecticut to self-sufficiency while dramatically reducing the adverse environmental impacts of traditional solid waste management. The SMART Facility incorporates several processes and many individual pieces of equipment that, when integrated, work cohesively to manage MSW in a way that reduces the volume of waste requiring disposal within a landfill, reduces emissions, and maximizes recycling and reuse throughout the process.

The SMART Technology Waste Processing Facility is expected to become a new standard for any new MSW solution permitted in the US (and beyond). This first-of-its-kind MSW separation, waste-to-renewable-natural-gas, and renewable energy recovery facility will be operated to maximize benefits of the circular economy and dramatically reduce environmental and community impacts compared to present solid waste management practices. The waste handling operations of this recycling and renewable energy center will be buffered from its host community and surrounded by conservation areas on an existing 506-acre property in Plainfield, CT. It will nearly replace the MSW incineration capacity of the former MIRA facility in a much cleaner and environmentally sound manner, enabling the State of Connecticut to once again begin substantial management of its own MSW processing.

The SMART Project also provides clear public benefits by generating and providing a constant and reliable source of renewable, baseload electricity that will help stabilize the grid during peak hours when there is high demand. Further, as a source of renewable energy, the Project will contribute to Connecticut's renewable energy portfolio standards and will advance the state's

renewable energy goals by providing constant and reliable generation of electricity with minimal emissions.

The Project also provides a clear economic benefit to the economies of the Town of Plainfield and the State of Connecticut. The Project fully intends to employ local labor and Connecticut companies whenever possible and practicable. O&G is a Connecticut-based construction company specializing in large-scale construction projects, including energy generating facilities. O&G employs approximately 1,200 people in Connecticut. Both Connecticut companies and their employees will benefit from the Project in terms of jobs.

By developing the current land, the Project will also have a mutually beneficial relationship with the Town of Plainfield. Given the town's 2025 Grand List, and the cost of the Facility, the Project would anticipate the town's Mill Rate would be reduced by 20-25% assuming the Project remains in private ownership.

Given the value of the Facility, there will be a substantial positive economic impact on the town of Plainfield over the life of the SMART Project. Similarly, the State of Connecticut will benefit not only from jobs, enhanced renewable energy capacity, grid reliability, and in-state waste processing capacity, but also from tax revenue generated by the Facility.

3.0 LOCAL INPUT & NOTICE

Outreach to the Town of Plainfield about the proposed Project began in July 2023. The first meeting with Town officials took place on Thursday August 24, 2023. In attendance were First Selectman Kevin Cunningham and the Town Planner, the head of Zoning, the Building Inspector and Tax Assessor. Representatives from SMART answered questions from the town throughout 2023 and 2024. In 2024, SMART participated in a presentation before the Plainfield Planning & Zoning Commission. At that meeting, O&G requested consideration of a change of the zone to allow for the development of an environmental-industrial park on the 506-acre property. This would have included the SMART Project as one of several different developments. That request was turned down. The SMART Project as proposed herein has a significantly smaller footprint and is less ambitious, recognizing and responding to the comments that we received at that meeting in April 2024.

On March 14, 2025, SMART submitted its draft Environmental Justice Participation Plan to CT DEEP. It was reviewed and preliminarily approved on March 28, 2025. In accordance with

that Plan, notices were sent, a sign was posted on the property, and a legal notice was published in the Norwich Bulletin. A Public Informational Meeting was held on May 7, 2025 at the Plainfield Town Hall. Approximately several hundred attendees attended that meeting, which began at 7:00pm and concluded at approximately 11:00pm. The meeting began with a short technical and informational presentation from SMART, followed by a question and answer session. A recording of that public meeting can be found on SMART's website at: <https://us.planengage.com/smartmswprocessing/page/News>. Additional information on the Public Informational Meeting can be found in the materials in Exhibit D and Exhibit Q.

Approximately fifty residents commented and asked questions regarding the proposed facility. Many of the residents who attended the meeting voiced their opposition to siting the proposed facility in Plainfield. SMART made a reasonable and good faith effort to provide clear, accurate and complete information about the proposed affecting facility and the potential environmental and health impacts of such affecting facility or such expansion. SMART addressed many misconceptions about the technology, but attendees were generally frustrated and angry about the project.

On March 31, 2025, SMART filed an application for a permit to construct and operate a stationary source of air pollution with CT DEEP. CT DEEP listed that application as Application No. 202505879. The Town of Plainfield has intervened in the permit application process with CT DEEP, seeking to oppose the issuance of a permit. CT DEEP has granted intervention to the Town. Similarly, on April 17, 2026, SMART filed three applications (Application Nos. 202606906, 202606911, and 202606912) with CT DEEP for the construction and operation of solid waste facilities in connection with the project. As with the air permit application, the Town of Plainfield has intervened in the solid waste permit process, and CT DEEP has granted the Town's intervention. CT DEEP is currently evaluating both the air permit application and the solid waste permit applications.

As required by CGS § 16-50k and 16-50l, in advance of filing this Petition, SMART provided notice of its intent to file to abutting property owners and the municipal officials and government agencies listed in Exhibit D. SMART initially mailed notices to these individuals on May 1 and 4, 2026 and again on July 27, 2026.

4.0 PUBLIC HEALTH AND SAFETY EFFECTS

The SMART Facility is the first new MSW-to-energy facility proposed in CT in many years and if approved, will be the cleanest and safest WTE plant ever built in Connecticut. The Facility will operate in a manner that is consistent with state and federal policy to protect public health, both to protect its Plainfield neighbors and its employees. In terms of safety and security, the SMART Project will comply with all Occupational Health and Safety Administration (OSHA) requirements during construction and, in the future, during operation and maintenance of the Facility. Specific elements of the public health, safety, and security systems are described below.

4.1 Public Health

The Project is committed to protecting the health, safety, and environment of the on-site workers, as well as the surrounding community where the Facility will operate. The Project represents a significant improvement in air emissions as compared to the existing, aging CT mass burn fleet. To protect public health, it is anticipated that the Project will have the lowest air emission rates of any MSW-to-Energy facility in the nation, due to the benefits of source separation, gasification, and a multi-staged filtering process unlike traditional mass burn plants that simply incinerate MSW.

The Facility will also employ strict waste separation procedures that will isolate unauthorized waste from entering into the process. As described below, incoming waste will be inspected for materials that are not safe or appropriate for the Facility. Materials that are not permitted for acceptance will be rejected. These materials will be segregated and properly disposed of according to regulations.

The Facility will also be subject to strict security measures to prevent trespassers or members of the public from entering the Property.

4.2 Site Control and Protection during Construction

SMART Project Managers will be responsible for ensuring that construction employees and subcontractors have been provided with the procedures established for construction safety prior to work being initiated in the field. Site Safety Managers will be identified for the Project and will be responsible for understanding the scopes of work being completed and that a safe work environment is being maintained.

During the execution of the field work, SMART will conduct periodic observations and assessments of the employees' and subcontractor's safety performance, including adherence to the site-specific Health and Safety Plan and the consistent and proper use of Personal Protective Equipment (PPE), as applicable.

O&G's full safety program is located in Exhibit E. It covers safety objectives, incident procedures, general safety procedures, safety awareness, subcontractor management, and vehicle and driver safety. The program also addresses specific safety procedures for many construction tasks including, but not limited to, electrical safety, excavations, cranes, confined spaces, earth moving and lockout/tagout.

As falls are identified as one of the most significant risks during building construction, particular emphasis will be taken to prevent such incidents. Barricades, walkways, lighting, and postings will be provided as necessary for the protection of the on-site personnel prior to the start of excavation operations. Guardrails, fences, or barricades will be provided on excavations adjacent to walkways, driveways, and other pedestrian or vehicular thoroughfares. Warning lights or other illuminating devices will be maintained as necessary for the safety of the public and employees.

Holes, pits, and all similar hazardous excavations will be barricaded or covered and posted as necessary to prevent unauthorized access. Temporary excavations will be backfilled as soon as possible.

Walkways or bridges protected by standard guardrails will be provided where employees and the public are permitted to cross over excavations. Where employees in an excavation may pass under these walkways or bridges, a standard guardrail and toe board shall be used.

4.3 Operational Process and Equipment Safety

4.3.1 Safety Objectives

The following safety objectives are paramount to the safe operation of the Facility:

- Plan and conduct work in a manner which will avoid personal injury and property damage and achieve and maintain a zero-injury safety culture.
- Involve employees and subcontractors in the O&G Industries, Inc. safety program.
- Hold managers and employees accountable for safe work practices.

- Identify and correct any unsafe conditions, acts, and behaviors.
- Train new and existing employees in the contents of the Health & Safety Manual.
- Maintain compliance with applicable OSHA regulations, including jobsite postings and injury/illness reporting.
- Conduct routine safety meetings with employees to discuss safety.
- Prepare for foreseeable workplace emergencies including fires, medical response needs, adverse weather conditions, and civil disturbances.

Potential hazards that may exist at the Facility, once operating, include confined spaces, rotating equipment, high pressure and high temperature equipment, hazardous and toxic fluids, high voltage equipment, fall hazards, and heavy equipment.

4.3.2 Truck Traffic

MSW will be delivered, according to the contracts with approved waste haulers, in typical waste haul vehicles (rear-loaders, side-loaders, or semi-trailers). These contracts will prescribe acceptable times for deliveries to avoid long queues, congestion, or adverse community impacts (such as arrivals before the gates are open or unplanned arrivals). Additional safety measures include Facility personnel directing each truck delivery to a receiving bay, posting traffic speed limits, and abiding by the State of Connecticut's idling requirements.

4.3.3 MSW Sorting Building and Tipping Floor

The MSW will be unloaded into a totally enclosed building and tipping floor pit which will act as a buffer to feed the sortation equipment. The MSW Sorting Building will feature approximately 13 overhead doors, and there will be two (2) overhead cranes and grapples at the tipping floor to feed sortation hoppers.

The first step in waste processing is load inspection on the tipping floor where bulky items (carpet, furniture, mattresses, fixtures, appliances, etc.) and unacceptable waste (regulated or hazardous waste such as batteries, engine blocks, pressurized containers, chemicals, etc.) are removed. These wastes are removed and isolated from processing, when it can be safely done, and stored in designated "unauthorized waste" isolation area(s) for removal by a licensed waste hauler.

The tipping floor pit is not intended for extended human occupancy, but under emergency conditions or accidents, personnel may be required to enter the area in rare circumstances. The

tipping floor and MSW storage pit will be designed with an emergency escape ladder, and the area where liquids are removed also includes an access ladder. These areas are confined spaces and proper PPE and procedures need to be followed when accessing these areas for maintenance. A 24/7 remotely monitored fire protection system with infrared heat detection sensors will be integrated with the building design to protect employees and the Facility.

The MSW Sorting Building will have both natural and artificial lighting inside the building to reduce contrast from outside to inside and shorten optical adjustment time for truck delivery drivers. There will also be colored floor coating (bright red or yellow) in special hazard zones (including next to the pit) for personnel safety and to minimize fall hazards. Industry best practices will be evaluated to mitigate hazards associated with the pit, such as removable curbs, safety ropes for personnel and the like. Should personnel need it, an eyewash and shower unit will be available in the operating area.

Bird-deterrent measures will be installed, such as suspended or hanging wires, to keep birds out of the MSW Sorting Building. Horizontal surfaces where birds can congregate will also be minimized. The MSW Sorting Building and tipping floor will be routinely checked and baited to deter vermin.

4.3.4 Anaerobic Digester

The anaerobic digester facility will incorporate a multi-layered gas detection and safety system. Fixed gas detectors will be installed at all critical process locations — including the digester, gas buffer vessels, and the biogas upgrading skid — continuously monitoring for combustible gas (%LEL), hydrogen sulfide (H₂S), and oxygen levels. These detectors will be integrated into the plant's control system, triggering staged alarms, automatic ventilation, and emergency shutdown interlocks at pre-set thresholds. Hazardous areas will be classified and equipment rated per NFPA 30, NFPA 69, and NEC requirements as applicable to biogas service.

The anaerobic digester area will also maintain an emergency flare in the event of an unplanned release of digester gas or renewable natural gas. The anaerobic digester will additionally include its own electric generator for emergency power purposes. Fire protection will be provided for the buildings and surrounding equipment, and the anaerobic digester building will have dedicated walk paths to meet fire code designated access path requirements.

4.3.5 Gasifiers

The gasifiers will be equipped with a safety pressure relief vent including an elevated flare with pilot to ensure use of the safety relief vent will destroy any flammable gas released. The flare is not normally used but rather controls possible emissions from the safety vent.

Additional safety measures include:

- *Inertization* - When the gasifier is stopped, the contents of the gasification line are flushed by nitrogen to the boiler or to a flare. The remaining gas in the line is mainly nitrogen and is not combustible.
- *Gasifier structure* - The structure walls are semi-closed. That way, ventilation is secured in the gasifier and filter structure. Access to the hot surfaces is prevented with metal net or alternatively hot surface is insulated.
- *Gas detectors* - The gasification plant has two different types of gas related safety risks. Product gas is combustible and possibly explosive. Product gas is also toxic. Nitrogen in high concentration is suffocating. Product gas leaks will be monitored with carbon monoxide analyzers, which will be situated in places where gas leaks are most probable. Nitrogen content will be monitored with oxygen analyzers. With these analyzers, the air quality is controlled before the repair and maintenance work. Personnel required to be in the higher risk areas will wear a personal gas detector.

4.3.6 Boiler

The boiler exhaust gases are forwarded to an extensive air pollution control train, including SCR and 19% ammonia solution in water (aqueous ammonia). Aqueous ammonia will be delivered and stored on site inside a building. The USEPA has determined that storage of aqueous ammonia in tanks does not represent a health and safety threat to offsite receptors. In the hypothetical scenario where the aqueous ammonia storage was to catastrophically fail, the liquid solution would be captured within a constructed secondary containment structure, resulting in no liquid release to soil or water resources.

4.3.7 General Equipment Safety Guards

Many areas of the plant include other hazards, such as rotating equipment. All rotating equipment and pinch points that are accessible by personnel will include guards and kill switches.

Many areas of the plant also include high operating temperature equipment and piping. The mechanical equipment that is accessible will include insulation and/or heat guards as necessary to prevent burns to personnel.

Equipment and piping operating at elevated pressures are protected from overpressure by pressure safety valves, emergency safety vents, and other instrumented controls for process safety. Most hydrocarbon vents for startup/shutdown and emergency operations are routed to emergency flares for oxidation of methane and other organics.

Some areas of the plant also utilize natural gas and other combustible gases, including ammonia, or other hazardous and toxic gases. Operations in these areas will require portable or fixed gas detection devices. Emergency exit routes from all buildings and process areas will be clearly defined on signs and placards. Some areas may include gases such as CO₂ or nitrogen where high enough concentrations could create life-threatening environments.

Most areas of the Facility include electrical equipment. This includes low voltage equipment through high voltage power lines and equipment. All equipment will be properly rated for the electrical area classification, and electrical equipment will include appropriate safeguards with arc flash stickers. All operations personnel working with electricity will be properly trained in electrical safety, and some areas will be limited to specific personnel.

Some areas of the Facility will include elevated platforms and equipment. Personnel working at heights will be properly trained in using the necessary PPE for the tasks being undertaken. Emissions testing ports will be provided with caged ladders and platforms.

Certain areas of the plant will require working around heavy trucks and equipment, which will require proper care and training.

4.4 General Facility Safety

All vendors shall deliver equipment and systems compatible with civil/structural, architectural, fire protection, mechanical, electrical, instrumentation, substation, and transmission line US Codes and Standards. The Facility will operate and provide a work environment in such a way that it will not cause additional safety risks to other parties at the Facility or vicinity of the site. A Facility-specific *Health and Safety Manual* will be prepared that illustrates how the SMART Project will operate and be maintained. The Manual will be designed for the welfare and safety of all employees, subcontractors, and the community to protect life, health, and property.

Employees and subcontractors will be trained before performing hazardous duties or working with hazardous chemicals.

4.4.1 Fire

The MSW sorting building tipping floor pit and RDF bulk storage area will be protected with an automatic fire infrared flame detection system and water monitor system controlled by an individual utilizing cameras which are monitored 24 hours/day. If fire is remotely detected, a local alarm will be activated to notify trained fire personnel on site. The IR flame detection system is strongly recommended for monitoring all types of hydrocarbon fires and lithium-ion battery fires.

Two firewater pumps (one primary, one backup) will provide water to the project's firewater loop. The firewater pumps will be electrically driven, connected to the emergency generator for backup power, and housed in an enclosed building that is climate controlled per National Fire Protection Association requirements. The firewater pumps will draw suction from a 300,000-gallon firewater supply tank. This tank volume provides 2.5 hours of firewater to the system at the design flow rate. Backup firewater supply will be provided by The Connecticut Water Company (CWC). Firewater will be supplied to a series of hydrants and monitors strategically located throughout the Facility. There are also two hydrants located on Route 12 on either side of the main entrance drive to the site. The nearest hydrant is approximately 450 feet north of the site entrance near the intersection of Route 12 and Pickett Road. The hydrant to the south is approximately 1,425 feet from the entrance. Additionally, specific buildings will be provided with fire sprinkler protection in accordance with the International Building Code requirements.

4.4.2 Lighting

The Facility's lighting system will be designed to ensure adequate visibility, safety, and operational efficiency across all areas, including emergency lighting for safe evacuation and essential operations during power interruptions. Receptacles will be installed throughout the Facility to provide flexible access to power for tools, equipment, and personnel. All lighting fixtures will be selected based on the area classification and environmental requirements. All electrical systems will be properly grounded. External lighting will be designed per Dark Sky requirements.

4.4.3 Emergency Power

Critical power will be supplied by a 925 kW natural gas emergency generator. The generator will operate in standby mode and automatically start upon a loss of primary power, delivering power to essential loads with minimal delay. The Facility will also have uninterruptible power supply to systems that are critical to maintaining power for essential equipment during momentary power losses or until the backup generator is fully operational. In addition, the anaerobic digester also has a 150-kW natural gas emergency generator.

4.4.4 Noise

Based on the completed predictive modeling, sounds due to Facility operation are expected to create offsite sound levels below the State of Connecticut limits in both the daytime and the nighttime. The predicted increases to ambient sound levels are expected to be low or imperceptible. Noise from truck traffic will be mitigated on-site using facility design and traffic speed limit/idling requirements. A full noise evaluation can be found in Section 5.5 of this petition.

4.4.5 Odor and Ventilation

The Facility is designed to independently capture and neutralize potential odors from MSW tipping, processing, and anaerobic digestion spaces *in situ*. These unique enclosed spaces require a new and better approach to continuous, independent and 24/7 active odor control. Specifically, the Facility has engineered stand-alone, dedicated, odor control systems designed to capture and eliminate detectable odors from these spaces prior to any release to ambient air using variable speed negative draft fans to continuously maintain buildings under negative pressure. The Facility is not expected to have an impact on the community from waste odors. A full odor evaluation can be found in Section 5.3 of this petition.

4.4.6 Operation and Maintenance Plan

A draft Conceptual Facility Operation and Maintenance Plan has been developed and can be found in Attachment K of the previously submitted Air Permit Application. A copy of the Air Permit Application can be found at: <https://us.planengage.com/smartmswprocessing/page/News>.

4.5 Security

To protect both the site and the public, the SMART Project proposes implementing security measures and plans. Lighting will be installed for security purposes, and the proposed lighting will be selected to minimize light impacts to the surrounding community at night. Security cameras will be installed around the site and within the Facility to help monitor the Facility's conditions. Access to the Property will be restricted by the installation of a motorized entry gate at the new access road and installation of security fencing around the perimeter of the site.

4.6 Potential Impacts

Based on the discussion above, the Facility will be designed with public and personnel health and safety as the top priority. Potential hazards will be mitigated starting with MSW receipt and ending with the final products of the process. The Facility will operate and provide a work environment in such a way that it will not cause additional safety risks to other parties at the Facility or vicinity of the site.

5.0 **ENVIRONMENTAL AND ECOLOGICAL EFFECTS**

5.1 Air Quality Effects

A summary of air quality effects is provided below, and the full air quality report can be found in Exhibit F. In addition, the two-volume New Source Review Air Permit Application that was filed with CT DEEP on March 31, 2025 can be found at: <https://us.planengage.com/smartmswprocessing/page/News>.

Due to the relative complexity of the proposed technologies, physical descriptions have been divided into three major “plants” working together; 1) the MSW receipt and separation building (through integral MSW separation to clean RDF), 2) an anaerobic digester to produce RNG and CO₂ from certain organics separated from the MSW and 3) gasifiers to convert RDF into syngas, cooling and cleaning of the syngas, and a high-pressure boiler/steam turbine generator island to produce 45 nominal gross MW of power. The boiler stack represents the bulk of air emissions from the Facility, with the exception of limited-use emergency safety systems expected to operate for minutes or hours at a time during a rare, unplanned emergency shutdown, and generally when the main stack is not also emitting. The Facility stacks and allowable air emissions

have been modeled using the USEPA Regulatory Model (AERMOD) to comply with all CT and USEPA National Ambient Air Quality Standards (NAAQS).

5.1.1 The MSW Receipt and Separation Building

The Separation Building (ST-10, ST-11, and ST-12) is designed to efficiently handle MSW while minimizing environmental impacts. Trucks delivering MSW enter the Facility through a controlled access gate, are weighed, and are directed to either staging or one of several unloading bays. The unloading bays will be maintained under negative pressure to minimize odor emissions during unloading. MSW will be unloaded into the tipping floor pit where rejects will be separated and raw MSW will be loaded onto indoor conveyor hoppers. These hoppers lead to the two separation-process, recyclables recovery (“MSW disassembly”) lines to recover materials such as glass, metals, and electronics. Remaining MSW will be separated into organics and RDF. The RDF will be fed directly to the circulating fluidized bed gasifier’s fuel storage silos. During this process, odor emissions are mitigated by operating under slightly negative pressure and treating captured odors through ductwork to a ground-mounted biofilter system and/or through roof-mounted filtration and treatment systems exhausted through stacks. Dust emissions are not expected, but any visible haze will be controlled via wetting and/or local vacuum dust collectors. The organics will be fed into the anaerobic digester.

5.1.2 The Anaerobic Digester

Once separated, up to 1/3 of the processed MSW will be diverted to two sealed anaerobic digesters. These two digesters will be maintained under proper humidity and temperature to enable microbes to digest the organic fraction of the MSW to generate digester gas. The digester gas will be further upgraded to RNG, to be reformed and compressed (via electric-driven compressors) to natural gas distribution pressures and is proposed to be reinjected into the local gas distribution company pipeline system if such an agreement with the utility is executed. There are no air emission points or stack emissions associated with RNG production.

The re-formation of raw digester gas to RNG specifications requires the removal of non-flammable CO₂ from the digester gas. This separation stage is common to any anaerobic digestion process seeking to produce pipeline quality gas. The SMART anaerobic digestion process will not

emit the separated greenhouse gas CO₂ back to the atmosphere but rather captures it via liquefaction as food-grade CO₂ byproduct.

Occasionally, during startup, shutdown or malfunction, it will be necessary to vent the anaerobic digester gas or RNG, if it is not of sufficient quality to co-mingle with pipeline natural gas, or to evacuate a portion of the system. Venting is limited to 500 hours per rolling 12-month period to ensure compliance with Federal regulations. To control volatile organic compounds (VOCs), odor, and methane during these events, emissions are routed to and from the relief vent (ST-3) to a John Zink enclosed ground flare. The anaerobic digestion buildings will be under negative pressure and captured odorous VOC emissions will be ducted to two dedicated biofiltration units.

There are three smaller support units for the anaerobic digestion process: one (1) nominal natural gas 150 kW emergency generator (ST-7) to ensure safe operation and controlled shutdown in the event of a grid power failure and two (2) nominal natural gas 2.5 MMBtu/hr hot water heaters to keep the anaerobic digesters at temperature. The generator will be limited to 300 hours/year of non-emergency operation for testing and maintenance, and each heater will be limited to 3,960 hours/year.

5.1.3 High-Pressure Boiler / Steam Turbine Generator Island

Each of the two gasifiers is designed to process RDF into syngas at an average temperature of approximately 1,650°F. The gasification process begins with a natural gas startup burner which will be discontinued once the heat of gasification is self-sustained. During startup and shutdown, air emissions from natural gas combustion will be routed through the boiler and its air pollution control systems. The gasifiers do not have direct air emission stacks.

Each gasifier consists of a CFB reactor, hot cyclone, and an insulated return duct from the cyclone back to the circulating reactor. The CFB uses a mixture of sand and limestone to equalize short-term variations in fuel quality. The gasification reaction mixture includes raw syngas, residual solid carbon, and ash. This mixture is circulated from each CFB reactor to a hot cyclone, where coarse material is separated from gaseous substances and fine dust. The raw syngas and carbon fines exit the gasifier, while coarse material re-captured in the hot cyclone is recycled back to the reactor bottom. This coarse “bottom ash” is removed as necessary from the reactor bottom

through ash chutes and will be landfilled as alternative daily cover or recycled offsite for beneficial reuse.

The raw syngas is cooled and cleaned using ceramic filter candles designed to remove residual fine particulate (particulate matter less than 2.5 microns ($PM_{2.5}$), particulate matter less than 10 microns (PM_{10}), and hazardous air pollutant (HAP) metals) not captured in the hot cyclones. Carbon and other residual fines are collected for disposal or recycling.

The gasifiers will be equipped with a safety pressure relief vent and an elevated flare. The safety relief vent is only designed to operate for a matter of minutes to relieve pressure in the gasifier(s) in an emergency scenario, and this vent will be equipped with an emergency flare to oxidize organics and combustibles so as not to release unreacted syngas during a multi-factor emergency failure. The purpose of the flare “safety relief vent” is to render any non-combusted syngas contained in the system non-flammable by combusting it to CO_2 and water to ensure a safe shutdown. The flare itself will discharge for minutes at a time from an elevated open flare above the gasifiers/boiler building roof. SMART intends to promptly notify CT DEEP and the Town of Plainfield within 24 hours after a safety emergency flare release.

Cleaned syngas will then enter the oxidation section of the power boiler (ST-1). The boiler configuration optimizes time, temperature, and turbulence to fully oxidize syngas fuel and minimize CO, VOC, condensable $PM_{2.5}$, and HAP emissions prior to entering the boiler’s air pollution control system. After the completed oxidation of syngas/natural gas and PICs in the boiler passes, the cooled flue gases will be sent to an extensive air pollution control train including SCR and 19% ammonia solution in water (aqueous ammonia), a final polishing membrane filter baghouse, DSI for neutralization of acid gases (utilizing sodium bicarbonate), and ACI for control of mercury and dioxins/furans (utilizing powdered activated carbon) before in-stack compliance emissions monitoring (via continuous emissions monitoring) for real-time compliance with stringent permit limits for nitrogen oxides (NO_x), ammonia, CO, and sulfur dioxide (SO_2) exhausted from the main stack (ST-1). This represents the top level of control for $PM_{2.5}$, mercury, dioxins/furans, acid gases, and HAP metals.

Both gasifiers will be equipped with a gas pressure relief vent (ST-2) to reduce gas pressure during an emergency scenario. Since it will only be used in emergency malfunction scenarios, SMART is proposing two limits on its operation: 8 hours per rolling 12-month period venting syngas and 40 hours per rolling 12-month period venting natural gas. To reduce the hazards of

venting combustible gases to the air, an automatic flare will combust the gas prior to being emitted up and away from the operating Facility.

There is one smaller support unit for the high-pressure boiler/steam turbine generator island process: one (1) nominal natural gas 925 kW emergency generator (ST-6) to maintain critical systems and service such as controls, plant safety systems, lighting, and freeze protection, which will enable safe planned shutdown of the gasification, oxidation and emissions control systems in the event of a grid power failure. The generator will be limited to 300 hours/year of non-emergency operation for testing and maintenance.

5.1.4 Miscellaneous Sources

Smaller sources throughout the Site include dry materials loading and unloading from silos (ST-BVF 13-18) and vehicle fugitive road dust.

The Facility will receive and use various consumable materials for plant processes which will be delivered in enclosed trucks and unloaded pneumatically. Some examples include sand, limestone, sodium bicarbonate, and powdered activated carbon. While a silo is being filled or emptied, the carrier air will discharge through a small stack at the top of the enclosed silo. These stacks will be equipped with a bin vent filter to mitigate particulate emissions.

To minimize fugitive road dust from the Facility, roads will be paved and rinsed with water periodically, the truck routes will be controlled, and trucks will not be allowed to idle for more than three (3) consecutive minutes per CT regulations.

5.1.5 Preliminary Modeling Analysis

As part of the air permitting process, CT DEEP air regulations require demonstrations of compliance with Connecticut and NAAQS and Prevention of Significant Deterioration (PSD) increments. Such analyses are performed following CT DEEP's Ambient Impact Analysis Guideline and current modeling policies. A preliminary modeling analysis was completed for the proposed project, and refined modeling will be completed upon CT DEEP request during the air permitting process.

Preliminary modeling runs were completed for PM₁₀/PM_{2.5}, CO, nitrogen dioxide (NO₂), and SO₂. These preliminary modeling runs are very conservative in nature and are not as in-depth of an analysis compared to refined modeling. The results of the preliminary modeling runs were

compared to each pollutant's respective Significant Impact Level, which are used as guidance to help permit applicants and permitting authorities.

The preliminary modeling runs passed the SIL for the following pollutants: annual NO₂, 1-hr CO, 8-hr CO, 24-hr PM_{2.5}, annual PM_{2.5}, 24-hr PM₁₀, and annual PM₁₀. The preliminary modeling runs did not pass the SIL for the following pollutants: 1-hr NO_x, 1-hr SO₂, 24-hr SO₂, and annual SO₂.

If the modeled impact for a given criteria pollutant does not exceed the SIL, it is assumed that compliance with the applicable NAAQS and PSD increments is demonstrated for that pollutant, and that no further modeling is required. If the modeled impact exceeds the SIL, it does not mean the NAAQS and PSD increments are exceeded, it suggests that further refined modeling may be required to investigate further. As mentioned above, refined modeling will be completed upon CT DEEP request during the air permitting process.

5.1.6 Potential Impacts

The proposed Facility is designed to minimize and control air pollution emissions in accordance with State and Federal air emissions standards. The Facility should not have a negative impact on regional air quality, because the Facility is proposing to meet the most stringent emission limits in the country using proven technology capable of meeting these standards.

This Facility is believed to be among the first in the nation to fully meet the new USEPA NSPS emission requirements as proposed in early 2024 and promulgated in early 2026 for new, large MSW facilities. These requirements allow only a fraction of air emissions per ton of MSW as compared with the existing MSW plants in CT (Table 3). SMART has proposed unique European technology proven capable of meeting these proposed new limits through the process of MSW-derived RDF gasification to fuel a new high-pressure boiler, including the state-of-the-art air pollution controls needed to achieve the proposed NSPS Subpart Eb air emission standards.

5.2 Water Resources

As articulated in greater detail in Exhibits G and M, the Stormwater report completed by SLR International Corporation (SLR) and the NDDb materials compiled by SLR and TRC, the Project is located within the Thames River major basin system and the Quinebaug River regional basin. The Quinebaug regional basin drains approximately 425 square miles in Connecticut. The

Property is located within three subregional basins, with drainage to the northwest to the Quinebaug subregional basin. Drainage to the northeast is within the Moosup River and drainage to the southeast is part of the Fry Brook Basin. The closest perennial watercourse to the Property is Sugar Brook, which is a local basin, draining an area around the Property of approximately 2.5 square miles. The wetlands on the eastern border of the site are associated with Horse Brook.

5.2.1 Flood Hazard Potential

The Project is located outside of flood hazard areas as delineated on the Flood Insurance Rate Map dated 2023 completed for Plainfield pursuant to the Federal Emergency Management Agency (FEMA). According to the FEMA resource mapping, the entire site is located in a Zone X Area of Minimal Flood Hazard. (Figure 4 and Exhibit G).

5.2.2 Surface Water Quality

Sugar Brook, which partially borders that site to the west and ponds on the site are designated as a Class A waterbody (Figure 5). Horse Brook, located on the eastern side of the site, is also Class A. Class A surface waters support the following designated uses: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural and industrial supply; and other legitimate uses, including navigation. The following discharges are permissible within this zone: discharges from public or private drinking water treatment systems, dredging and dewatering, emergency and clean water discharges.

The Quinebaug River is located approximately 6000 ft to the west of the Property and is classified as a B surface water resource. The Quinebaug River can presently support recreational use, fish and wildlife habitat, and agricultural and industrial supply, including navigation, but is not used as a drinking water supply.

5.2.3 Groundwater Quality

The Property is located within a GA groundwater area (Figure 6). GA areas support the following designated uses: existing private and potential public or private supplies of water suitable for drinking without treatment; baseflow for hydraulically connected surface water bodies.

While two areas of GAA groundwater quality (both areas of contribution to drinking water supplies) are located south of the Property, a review of the hydrogeology and drainage basin mapping indicates that neither are within area influenced by the Property.

5.2.4 Stormwater Quality

The project will be designed in accordance with CT DEEP's 2014 Stormwater Quality Manual and applicable CT DEEP guidance documents. In accordance with these documents, the fundamental storm drainage needs for this Project are to 1) minimize impacts to downstream areas and 2) treat stormwater prior to discharge. Specific concepts include controlling potential pollutants at their source(s), planning for both frequent and rare storm events, avoiding unnecessary impervious cover, and use of multiple treatment practices to reduce pollution loadings and concentrations are found in the Stormwater Report at Exhibit G.

SLR, who completed the stormwater design, was provided with AECOM's *Facility Preliminary Drainage Study* for the SMART Technology Waste Processing Plant, which was used as the basis of design for the proposed stormwater management. The AECOM Drainage Study provided watershed areas as well as impervious coverage within each of those watersheds. The storm drainage system on site has been designed by AECOM to safely convey the 25-year storm event.

The proposed stormwater basin will provide retention volume along its bottom, thus creating a water quality feature within it and providing stormwater renovation and first-flush retention. The vegetation will provide pollutant removal by filtering stormwater runoff and utilizing excess nutrients that may be present in the stormwater. CT DEEP's *2024 Stormwater Quality Manual* recommends methods for sizing stormwater treatment measures with water quality volume (WQV) computations. The WQV addresses the initial stormwater runoff, also commonly referred to as the "first-flush" runoff. The WQV provides adequate volume to store the runoff associated with the first 1.3 inches of rainfall, which tends to contain the highest concentration of potential pollutants.

The proposed stormwater basin was designed to provide retention storage for the 100-year storm (7.65 inches of rainfall in 24 hours) and therefore also provides the required WQV for the site.

The hydrologic analysis demonstrates that there will be no increase in peak flow rates from the site for the 2- through 100-year storm events due to the design of the stormwater management basin to retain the runoff volume from the 100-year storm. The box culvert from the site to the

stormwater basin has been designed to provide ample capacity to safely convey the 25-year storm event as determined by AECOM.

Stormwater discharge will be in accordance with a registration under the CT DEEP General Permit for the Discharge of Stormwater Associated with Industrial Activities (Permit No. CTR050000).

5.2.5 Wastewater Quality

The proposed SMART Technology System Project will generate various wastewaters intended for discharge under the Comprehensive General Permit for Discharges to Surface Water and Groundwater (DEEP-WPED-GP-028) and the General Pretreatment Permit for the Significant Industrial User, Dewatering, and Remediation Discharges (CTSIU0000), both issued by CT DEEP.

5.2.6 Water Treatment Wastewater

The Project will utilize water supplied by the Connecticut Water Company, which will require further purification for use as process water. This purification will be achieved using a Reverse Osmosis (RO) system. RO systems generate water treatment wastewater, commonly referred to as “RO reject water.”

The system is expected to produce between 1,850 and 3,300 gallons of RO reject water per day. This wastewater will be discharged to the ground via a dedicated infiltration basin located on the south side of the site. During rare events requiring higher RO system output—such as filling the demineralized water storage tank—the reject volume may temporarily reach 15,500 gal/day. The infiltration basin will be constructed to accommodate this maximum volume, with an additional reserve capacity to ensure no discharge to surface water occurs.

This discharge will be permitted under the CT DEEP Comprehensive General Permit for Discharges to Surface Water and Groundwater (DEEP-WPED-GP-028). Since the RO system uses potable water as feedwater, the water quality limitations specified in the permit can be readily met.

5.2.7 Other Process and Non-Process Wastewater

The gas produced during the gasification process will be used to heat a boiler unit that generates steam. The purified feedwater will be recirculated in the boilers, but approximately

13,000 to 24,500 gal/day of mixed “boiler blowdown” and blowdown cooling water will need to be discharged. This discharge will be continuously monitored for pH and if necessary, the pH will be automatically adjusted using a chemical feed system.

The boiler blowdown will be combined with:

- Approximately 1,000 gal/day of building maintenance wastewater (“washdown water”)
- Approximately 500 gal/day of condensate from air compressors, dehumidifiers, and/or heating, ventilation, and air conditioning (HVAC) systems

These process and non-process wastewaters will be collected in an on-site pump station and conveyed via force main to the Plainfield North Water Pollution Control Facility (WPCF). The WPCF is authorized by CT DEEP to treat and discharge 1,080,000 gal/day of wastewater from the Town of Plainfield (Permit No. CT0100447). The SMART Facility will contribute less than 3% of the WPCF’s permitted flow. These discharges, excluding domestic sewage, will be permitted under the CT DEEP General Pretreatment Permit for the Significant Industrial User, Dewatering, and Remediation Discharges.

The Facility will also generate wastewater from the digestate press, biogas bladder condensate, and other sources that may come into direct contact with municipal solid waste. These wastewaters are expected to contain nutrient levels beyond the treatment capacity of the Plainfield North WPCF. They will be temporarily stored in a holding tank and hauled to a licensed/permitted facility outside of Plainfield. Several larger WPCFs in Connecticut are permitted to accept such over-the-road transfers. These discharges will also be permitted under the General Permit for the Discharge of Wastewaters from Significant Industrial Users.

5.2.8 Domestic Wastewater

As the Facility will be fully staffed, it will generate domestic wastewater (i.e., sewage), estimated at approximately 4,000 gal/day based on staffing levels. This wastewater will be pumped to the Plainfield North WPCF.

5.2.9 Beneficially Reused Wastewater

The Facility will include a biofilter system for odor controls, which will generate water containing ammonium sulfate. This water will be temporarily stored and transported off-site for

beneficial reuse as fertilizer. This reuse is expected to require a Beneficial Use Determination (BUD) issued by CT DEEP. Until a BUD is issued—or if beneficial reuse is deemed impractical—the wastewater will be hauled to a licensed/permitted facility outside of Plainfield.

5.2.10 Potential Impacts

The Project is located outside of any Flood Hazard areas resulting in no impacts to Flood Hazard areas.

With sediment and erosion controls during construction and stormwater management (as described below), no impacts are expected to the surface water quality. With best management practices during construction and operation and considering the groundwater flow of the area, no impacts to public or private drinking water supplies are expected.

As the Project is underlain by deposits of sand and gravel of glacial origin, the underlying unconsolidated materials have a high permeability rate. Stormwater and water treatment wastewaters, kept separate from each other, will be collected and directed into dedicated infiltration basins. Other process and non-process wastewaters will be directed to the Plainfield North WPCF. Water unsuitable for the WPCF will be stored temporarily with proper treatment/disposal offsite.

The implementation of stormwater controls for managing non-point source pollution and implementation of best management practices (BMPs) are proposed. It is anticipated that the Project will have no significant impact on the quality or availability of surface water, as no direct discharge of stormwater or wastewater to existing surface water bodies is planned. Furthermore, since no withdrawal of groundwater and only infiltration of permit-compliant stormwater and wastewater is proposed, negative impacts to the quality and availability of groundwater uses are not anticipated.

5.3 Odor

SMART is developing a proposed Facility that is designed to preclude detectable odors from Facility operation and proposes that the odor control design is the Best Available Control Technology for potential objectionable offsite odors.

A summary of odor effects is provided below, and the full odor report can be found in Exhibit H.

5.3.1 Control of Odors from Haul Trucks Arriving at the Facility

MSW will be delivered to the site primarily in enclosed packer trucks or enclosed trailers, as is current practice in CT. By tightly packing MSW within enclosed transport trucks, these trucks are designed to prevent the escape of detectable odors. Trucks will unload only inside an odor-controlled tipping building under negative pressure; therefore, not significantly causing or contributing to MSW odors while staging on site.

Other mitigation measures include scheduling deliveries, so individual loads do not remain on site for more than 30 minutes waiting to be unloaded as well as cleaning waste haul roads to prevent MSW litter from accumulating on site.

5.3.2 Control of Odors from Unloading and the Tipping Floor

The tipping area is a potential source of MSW odor. It will be walled off from the rest of the building. SMART and its engineers have selected biofiltration technology adjacent to the tipping building and/or roof mounted odor filtration and treatment equipment connected to an exhaust stack. This technology will be utilized to mitigate odor from the waste tipping area before the negative draft ventilation air is discharged outdoors.

5.3.3 Control of Odors from the Separation Building

The separation building is also a potential source of MSW odor, albeit more dilute. The separation building overhead doors will normally remain closed to facilitate maintaining a negative draft to minimize odor impacts to the ambient air. Like the tipping floor, biofiltration and/or rooftop filtration and treatment equipment will destroy odors captured in the negative draft ventilation air, mitigating odor emissions before the ventilation air is discharged outdoors.

5.3.4 Control of Odors from the Anaerobic Digester

The handling of the residual digestate from the anaerobic digestion process is the greatest source of potential odor from the Facility. Odor emissions will be mitigated by routing exhaust air from the organic storage bunker through a biofilter. Exhaust air from the water press building and the digestate aeration building will be routed through a sulfuric acid bath to remove ammonia odors before being sent through biofilters.

5.3.5 Control of Odors from RDF Conversion and Stockpiling

The RDF handling areas are not expected to be a significant source of odor. However, these areas will also be managed under negative draft, and any odors will be handled via biofiltration and/or rooftop filtration and treatment equipment since these areas are connected to the separation building ventilation odor control system.

5.3.6 Point Source Combustion Stacks

Odor emissions are not expected from the point sources at the Facility, namely the boiler stack, the two emergency flare stacks, and any other combustion equipment on site. The odorous organic compounds and/or unreacted sulfur compounds (i.e., detectable odors) will be oxidized and eliminated during the oxidation process prior to being emitted to ambient air.

5.3.7 SMART Engineered Odor Capture and Control

Unlike any of the existing mass burn resource recovery plants in CT where odors have become problematic, the SMART Facility is being designed to independently capture and neutralize potential odors from MSW tipping, processing, and anaerobic digestion spaces in situ.

The SMART Facility design includes separate areas for tipping of raw MSW (the large BHS MSW separation and recycling building), an anaerobic digestion plant for organics, and RDF processing areas that have no equivalent at CT's existing mass burn facilities. These unique enclosed spaces require a new and better approach to continuous, independent and 24/7 active odor control. Specifically, SMART has engineered stand-alone, dedicated, odor control systems designed to capture and eliminate detectable odors from these spaces prior to any release to ambient air. The design philosophy is that if odors are captured and neutralized before they are released from these areas, odor emissions will be undetectable at the property line.

The first element of active odor control is to maintain a slight negative pressure on the various enclosures where MSW is being handled. Existing mass burn facilities try to maintain inflow of fresh air into the tipping area, but this negative draft is too feeble and variable to maintain sufficient negative draft at all times. Conversely, the SMART spaces will be equipped with variable speed negative draft fans controlled to continuously maintain constant negative pressure, and therefore to not allow emitted odors to escape through building openings.

The SMART project engineers are not aware of any similarly elaborate waste-to-energy facility odor control systems that function as reliably or to the equivalent level of what is proposed for the SMART Facility. Existing mass burn facilities have been documented to emit odor events in CT. SMART is of a completely different design – one that is designed to eliminate community odor impacts.

5.3.8 Potential Impacts

Based on the discussion above, the SMART Facility is being engineered to have no impact on the community from waste odors because the proposed active odor control systems will achieve the equivalent of Lowest Achievable Emissions Rate for the dilute trace organics and reduced sulfur compounds occasionally released from CT mass burn plants.

5.4 Natural Resources

5.4.1 Soils

The Natural Resources Conservation Service Web Soil survey was reviewed to determine the existing soil types on this parcel (Figure 7). The predominant soil types identified as Merrimac fine sandy loam, Windsor loamy sand, and Hinckley loamy sand at various percent slopes. Wetlands-type soils (Timakwa and Natchaug, as well as Catden and Freetown) are also present. Sudbury has also been mapped as present. The majority of the soil types present on the Property are soils that have a high infiltration rate and low runoff potential. They are mainly deep, well drained sands and gravelly sands with high transmissivity. This coincides with the use of the site as a gravel and sand mining operation.

The resource mapping shows that the unconsolidated materials on site consist of glaciofluvial deposits consisting of stratified sand and gravel.

5.4.2 Inland Wetlands and Watercourses

The Inland Wetlands and Watercourses Report can be found in Exhibit I. Inland wetlands on the Site were originally delineated in 2005, by Ed Pawlak of Connecticut Ecosystems, LLC, and field verified by SLR in 2023 and 2024. In 2024 and 2025, SLR delineated wetlands on additional properties that were acquired after 2005 and were added to the overall Project footprint. These included a 30-plus-acre parcel located to the north known as the northern former quarry,

and a 15-acre site formerly known as the FCR Realty property. Wetlands within the overall host parcel consist of palustrine forested, scrub shrub, and emergent wetlands as well as several vernal pools. The host parcel is bounded to the west by wetlands associated with Sugar Brook and to the east by Horse Brook, both of which are located within the Quinebaug River watershed. Vernal pools exist throughout the host parcel north of the proposed development; however, no vernal pool habitat exists within the project study area.

Wetlands located within the project study area include a palustrine emergent wetland associated with Sugar Brook, which flows north across the proposed electrical transmission corridor, and a palustrine forested wetland to the southeast. Wetland vegetation within the forested wetland consists of a canopy of red maple (*Acer rubrum*) and eastern hemlock (*Tsuga canadensis*) with black tupelo (*Nyssa sylvatica*) above a shrub layer of winterberry (*Ilex verticillata*) and spicebush (*Lindera benzoin*). The emergent wetland is vegetated with a mix of broad-leaved cattail (*Typha latifolia*), soft-stem bulrush (*Schoenoplectus tabernaemontani*), and American bur-reed (*Sparganium americanum*).

It should be noted that two wetlands located just off the Project site and host parcel are mapped as critical habitats by the NDDDB. Offsite to the south is an Atlantic White Cedar swamp, and offsite to the east is a scrub-shrub poor fen. The presence and limits of these wetlands were field verified by SLR, and protections were incorporated into the Project design.

5.4.3 Mitigation of Potential Impacts

Potential wetland and watercourse impacts have been minimized to the maximum extent possible. Critical wetland habitats located offsite, as well as on-site wetlands associated with Sugar Brook and isolated vernal pools, will be protected by a 115-acre conservation easement. The conservation easement will protect these wetland resources, as well as a mosaic of early successional and forested uplands within the host parcel, in perpetuity. The Petitioner anticipates that this conservation easement will be granted in favor of the State of Connecticut as shown on the map in Figure 23 as part of mitigation measures that have been agreed upon with CT DEEP.

Proposed Project activities in the vicinity of wetlands are limited to installation and maintenance of an overhead transmission line extending to the proposed Eversource switchyard west of the Sugar Brook wetland complex; while some clearing of vegetation within the 100-foot

easement for the powerline infrastructure will be required, direct wetland impacts are not anticipated from the proposed Project. The transmission poles will be placed only within uplands.

Water quality of adjacent wetlands will be protected by the construction of a robust on-site stormwater system that includes a pretreatment (i.e., settling) basin and one large stormwater infiltration basin. The site is underlain with stratified drift (sand and gravel) and provides opportunities to infiltrate all stormwater into the underlying soils. No direct stormwater discharges to wetlands and/or watercourses are required. The infiltration and setting basins, which will cumulatively be approximately 20,000 square feet, will be seeded with a native wetland seed mix (New England Wetmix). Areas around the basin and along the southern and eastern limits of disturbance will be seeded with a native upland seed mix (New England Conservation/Wildlife Mix) and planted with a variety of large native trees.

Additional safeguards have been developed to avoid indirect impacts to these resources during construction, including sediment and erosion (S&E) controls in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control* (effective March 30, 2024), including perimeter protection (silt fencing bordered by compost filter tubes) surrounding the limits of the development area and all proposed stockpiles, placement of temporary vegetative cover and erosion control blankets on all exposed slopes and sediment-producing areas, and use of an antitracking construction entrance pad. All temporary non-biodegradable S&E controls will be removed once full site stabilization has been achieved. By implementing these construction BMPs and maintaining a wide buffer of existing vegetation, any potential water quality impacts to the Atlantic White Cedar Swamp, Poor Fen, Sugar Brook and any other on-site wetlands, and as a result impacts to the surrounding watershed are not anticipated.

5.5 Noise

A summary of noise effects is provided below, and the full noise report can be found in Exhibit J.

5.5.1 Operations

Noise emissions from any CT industrial facility (such as the proposed SMART Facility) are regulated for “excessive noise” impacts under Connecticut state noise regulations.¹⁶ The

¹⁶ CGS § 22a-69 and RCSA §§ 22a-69-1.1 through 1.4.

applicable statute requires that “No person shall cause or allow the emission of excessive noise beyond the boundaries of his/her Noise Zone so as to violate any provisions of these Regulations.”

SMART is required to meet all requirements of any applicable Class A-C source of noise under RCSA § 22a-69-1.1 through 1.4 at every location along its property lines (referred to as ambient protected noise level boundaries). Upon full operation of the Facility, with CT DEEP’s oversight, SMART will conduct noise measurements at its closest property lines to publicly verify compliance.

In planning for noise compliance with applicable regulations, TRC has already measured existing background noise levels around the 506-acre parcel, including noise generated through current gravel extraction activities, at property lines most proximate to the proposed new noise sources. Of note is the mechanical materials handling, recyclables separation processes, conversion to refuse derived fuel and diversion to either the anaerobic digester plant or RDF for chemical conversion to syngas for energy recovery. The forced draft fan and induced draft fan of the energy recovery system include large electric motors which will each be enclosed at the boiler building including engineered acoustic enclosures. TRC has been contracted to model sound pressure levels and acoustic mitigation technology to ensure that the requirements of CGS § 22a-69 noise impacts to residential property, including the combination of noise sources operating together during daytime and nighttime conditions, in addition to ambient baseline noise, will satisfy CT DEEP requirements. SMART fully expects this to become an enforceable requirement of the requested Air Permit, including verification during and after commissioning overseen by CT DEEP. TRC is aware that there is a range of acoustic mitigation alternatives, including building envelope acoustic treatments, available. TRC has been provided with an inventory of noise sources, enclosures, buildings, and a site layout, and was able to set up a computerized noise model to verify predicted noise compliance at each property line. Once commissioning is completed, verification measurements of total noise impacts at each property line will be verified before SMART will receive its CT DEEP Permit to Operate. The Facility is proposed on an 81.2 acre site, buffered by 506 acres, including 115 acres of conservation easements and vegetation, and that these features will also serve to mitigate noise.

O&G and OSHA limit noise from all purchased equipment noise sources to 85 dBA within 3 feet to protect workers from unacceptable ambient noise levels for intermittent worker exposure. This federal requirement and standard applies to every stationary noise source associated with the

SMART Facility and becomes the modeled sound level for each identified noise source, which will then be evaluated via modeling for acoustic enclosure (building envelope, for example) and direction and distance to property line receptors. These include rotating equipment, such as:

- All fans and blowers
- All large (> 10 HP) electric motors driving mechanical equipment
- Electric cranes, fork trucks, grapples, and conveyors within the Facility to move bulk materials for processing
- HVAC systems and ventilation fans
- Fast-acting overhead doors
- Separation equipment, grinders, screeners, mills, and recycling systems rotary conveyors
- Hammermills, rotary airlocks and material feeders and rotary ash conveyors
- Pulse jet filtration collectors, plant air compressors, bin-vent filters, etc.
- Emergency electric generators and natural gas-fired boilers and heaters
- Any other noise source subject to OSHA Noise Requirements.

TRC has already measured existing background noise levels at the 506-acre parcel property lines on December 23, 2023. The Petitioner's engineers are specifying the individual pieces of equipment, enclosures and other mitigation, if necessary, to contribute no generation of noise to any residential area (Class A areas) in excess of applicable noise statutes and regulations.

The long-term and short-term background sound level measurements were taken using sound level meters that meet the requirements of the American National Standards Institute (ANSI) Standards for Type I instruments. Ambient sound level measurements were conducted on a weekday on a non-holiday week at five measurement points and for a minimum of ten continuous minutes for each criterion.

The proposed Project site layout, showing the location of the measurement points, is shown on Figure 9 and the background sound survey results are summarized in Tables 4 and 5.

Two sound level meters were set up for unattended long-term background monitoring at a fixed location within the subject property to evaluate changes in sound levels over time. Sound

level measurements were taken continuously for a full week from December 13-20, 2023. Results from this monitoring are in Figures 10 and 11.

5.5.2 Mitigation of Potential Sound Impacts during Operation

This section describes the methods, assumptions, and results of the Cadna-A® noise modeling used to predict future sound levels resulting from the operation of the proposed Project at the property line and at the nearest noise-sensitive areas.

Inputs to the noise model include the equipment listed in Table 6, based on sound level estimates and dimensional specifications provided by equipment manufacturers. Since the sound-producing equipment was assumed to be continuously operating, the LA₉₀ (background level) and LA_{EQ} (equivalent constant level) of the proposed equipment are the same for the purposes of this assessment.

Equipment not in use during regular operation including flares, startup and safety valves, and shock pulse generators were not included in the operational model. These intermittent sound sources will not be in steady-state operation and would not contribute to the overall sound level used for comparison with the State of Connecticut noise limits.

Table 7 presents the predicted sound levels at the closest potential NSA locations resulting solely from the operation of the proposed Project equipment. The existing sound levels at the NSA groups were estimated based on the results from the background sound survey at the nearest monitoring locations. The model also calculated sound levels for the surrounding area, using a 2-meter receptor grid, with a receptor height of 1.55 meters. This data is displayed in the isopleths on Figure 12, which shows lines of equal sound level at the Project site and in the surrounding area.

As shown in Table 7, the results of the noise modeling predict the unmitigated operation of the Facility would create a maximum sound level of 44.5 dBA at NSA Group 7, and sound levels below 43 dBA at the remaining receptors.

5.5.3 Noise from Truck Traffic

On-road vehicle noise is regulated by the Connecticut Department of Transportation, including inspection and maintenance of fleet truck systems required of the contracted operators. SMART will not own or operate the MSW delivery trucks. SMART will include provisions within

its third-party hauling contracts that all waste haul vehicles be inspected and maintained regularly by the selected fleet operators to comply with all applicable on-road noise requirements in the State of Connecticut.

SMART has also included in its Facility design:

1. The on-site speed limit will be limited to 22 MPH, on specific marked, paved and maintained routes that include vegetated buffer spaces between the 81.2-acre developed parcel of the 506-acre site and offsite Community Receptors, which will mitigate impact compared with general traffic noise from a wide range of vehicles travelling at higher speeds on existing State Roads.
2. Trucks will only unload once inside an acoustically controlled tipping building area. Noise from discharging the trucks to the tipping floor will be mitigated by doing so within the designed indoor enclosure.
3. Connecticut air emission regulations require strict provisions to eliminate stationary idling of trucks on site. These requirements will be posted via signage as a requirement of waste delivery contracts as described in the facility's Solid Waste Permit Application.
4. Backup alarms are required by OSHA. Backup Alarms, considering the reverse movement of trucks save lives, and are not optional. SMART has designed a partial enclosure to screen and mitigate backup alarm noise (together with the vegetated buffer areas) to residential receptors beyond outside the property limits. Such noise (which generally travels in straight lines) may also reflect off of smooth, hard surfaces. SMART is evaluating acoustic treatment of the tipping semi-enclosure to further mitigate reflected noise from back up alarms.

5.5.4 Mitigation of Potential Impacts

Based on the predictive modeling detailed above, sounds due to Project operation are expected to create offsite sound levels between 19.9 and 43.7 dBA at nearby NSA locations. This range is below the State of Connecticut limits of 61 dBA in the daytime and 51 dBA in the nighttime. Based on the results of the background sound survey, the Project is predicted to increase ambient sound levels at nearby NSAs by less than 10 dBA over existing sound levels. The predicted sound level increases are expected to be imperceptible at most nearby NSAs. Increases

at NSA Groups 6 through 9 may be perceptible depending on ambient conditions but sound levels will remain below recommended exposure thresholds.

Noise from truck traffic will be mitigated on-site using Facility design and traffic speed limit/idling requirements.

5.6 Scenic Values and Visual Renderings

A Visual Impact Assessment (VIA) was prepared to assess the potential visual impacts of the proposed Facility on the surrounding landscape and community. The complete VIA report is available in Exhibit K. The Facility is located on a large parcel of land and is designed to minimize visual impacts through its siting, design, and mitigation measures. The Visual Study Area (VSA) to conduct the assessment is defined as a 2-mile radius from the Facility and was selected based on the Facility's scale and the potential for visibility within the surrounding environment. The VIA report evaluates the quality of the existing landscape, the visibility of the Facility, and its potential impact within the VSA. The following is a summary of the full VIA report.

5.6.1 Quality of Existing Landscape

5.6.1.1 Landscape Similarity Zones and Distance Zones

Identifying land-use patterns within the existing landscape provides a framework for determining the scarcity, uniqueness, or prevalence of land-use in the VSA. The VSA is characterized by a mix of agricultural, forested, residential, and industrial land-uses. Landscape Similarity Zones (LSZ) are presented in Figure 14. The agricultural LSZ often provides open views that may allow for visibility of the Facility, depending on seasonal conditions and crop growth. The forested and developed residential/commercial LSZs frequently contain visual obstructions due to the nature of dense vegetation and structures (concentrated communities), however, rural residences typically have fewer. The open and water LSZs provide limited visibility due to their small footprint within the VSA. Table 8 as presented in the viewshed analysis section below provides a breakdown of the total square miles of each LSZ within the VSA, offering a quantitative understanding of the landscape characteristics and their influence on visibility.

Distance Zones are established within the VSA for assessing and determining the Facility's visual effect over discrete viewing distances:

- **Foreground (0–0.5 miles):** The Facility is more discernible, but screening by existing vegetation and topography typically reduces visibility.
- **Middle ground to background (0.5–2 miles):** Facility visibility generally diminishes over distance due to atmospheric haze and the blending of distant objects into the existing landscape.

5.6.1.2 Physiography

The Facility is located within the Southern New England Coastal Plains and Hills ecoregion, characterized by irregular plains and low hills, with some open and elevated areas.

Elevations in the VSA range from 104 feet Above Mean Sea Level (AMSL) near the Quinebaug River at the southwest and northwest periphery to 521 feet AMSL at the eastern edge of the VSA, near Interstate 395 in forested terrain. The average elevation across the VSA is approximately 230 feet AMSL. The undulating terrain creates variable visibility conditions, where higher elevations may promote outward views, while lower elevations and obstructions may limit visibility.

5.6.1.3 Communities

Population data derived from the United States Census Bureau (2020 Decennial Census) is provided in Table 9, which indicates that the Village of Plainfield contains the largest population in the VSA (2,580). For perspective and context of the total population in the VSA (6,720), the City of Norwich is approximately 12 miles southwest of the VSA and contains a population of 39,993.

5.6.1.4 Travel Corridors

In the VSA, prominently traveled roadways are identified as Interstate 395 (I-395), Route 12 (Norwich Road), Route 14 (Black Hill Road), Route 14A (Academy Hill Road), and Canterbury Road. Several local roads and routes are available in the VSA but accommodate a smaller number of travelers (viewers) while also connecting and filtering traffic to highways that support more accelerated means of travel. Table 10 shows Annual Average Daily Traffic to estimate the average volume of daily travelers within the VSA.

5.6.1.5 Inventory of Visual Resources

A thorough investigation of visual resources in the VSA was completed by obtaining digital information sources consulted from national, state, and local online websites, databases, and local planning documents. The investigatory process of identifying resources in the 2-mile VSA rendered the following results (Tables 11A and 11B).

5.6.2 Viewer Characteristics

Viewer characteristics are essential for understanding how potential changes to the landscape may be perceived. Viewing conditions vary based on whether individuals are in motion (e.g., traveling by vehicle or bicycle) or stationary (e.g., standing or sitting). Visual sensitivity is generally higher in residential areas or near public amenities like parks and scenic views, while industrial or commercial areas typically exhibit lower sensitivity due to their functional nature.

5.6.3 Viewer Types in the VSA

1. **Local Residents:** Spend significant time in the area and experience both transient views (while traveling) and static views (from homes or public spaces).
2. **Commuters/Workers/Area Travelers:** Primarily use travel corridors for work or other destinations. Commuters and travelers experience transient views, while outdoor workers may have more static views of the environment.
3. **Visitors/Recreational Users:** Visit the area for its natural, cultural, or recreational qualities. They may experience transient views while traveling or static views when stationary.

5.6.4 Additional Viewer Characteristics

- **Viewer Sensitivity:** Sensitivity to visual changes varies by individual and is influenced by proximity, location, and expectations. Sensitivity is higher near residential or recreational areas and lower in industrial or commercial zones.
- **Number of Viewers:** Sensitivity increases with the number of viewers in an area. High public-use areas, such as villages or cities, typically have more viewers than rural or less accessible areas like wooded wetlands or agricultural fields.

- **Duration of View:** The time a viewer spends observing a feature depends on their activity. Moving viewers (e.g., in vehicles) have fleeting views, while stationary viewers (e.g., sitting in a park) experience longer durations.
- **Viewer Activities:** Activities influence viewing time. For example, travelers may have brief views, while those engaged in stationary activities, such as fishing or resting, may observe the landscape for longer periods.
- **Context of Viewer:** The existing scenic integrity of the environment affects how visual changes are perceived. Changes that harmonize with the existing landscape are less noticeable, while human-made alterations may distract or absorb attention.

5.6.5 Visual Mitigation

The Facility's design incorporates several mitigation measures to minimize visual impacts:

- **Earth-Tone Colors:** The Facility's exterior will feature subdued colors to reduce visual contrast with the surrounding landscape.
- **Reduced Height Profile:** The Facility's height has been minimized to reduce its prominence in the landscape.
- **On-Site Landscaping:** While vegetation or fencing cannot fully screen the Facility due to its height, landscaping will improve the visual aesthetics of the site for workers and visitors.

5.6.6 Viewshed Analysis Methodology

A viewshed analysis was conducted within the VSA to assess the Facility's potential visibility. Using ESRI Spatial and 3D Analyst GIS tools and 2016 Connecticut Statewide LiDAR data, updated with 2024 aerial imagery, the analysis identified areas where the Facility might be visible. The high-resolution LiDAR provided accurate ground, building, and tree heights to model realistic visual obstructions. An observer height of 6 feet was used, assuming no visibility for viewers within forested areas. The analysis produced a realistic representation of the Facility's visibility within the VSA. For detailed results, see the full VIA report.

5.6.7 Viewshed Analysis

The viewshed analysis for the Facility used Project-specific specifications, site plans, a grading plan, and LiDAR data to quantify the predicted visibility of the Facility. The analysis revealed that only **3.31%** of the VSA would have visibility of the Facility, with **96.7%** of the area shielded by topography, vegetation, and structures. Visibility is highest in agricultural and industrial lands (**2.34%**) and minimal in sensitive areas such as water, open spaces, forests, and residential/commercial zones (**less than 1%**).

- **Table 12 (Visibility of Proposed Facility in VSA):** This table shows visibility by community, with the Town of Plainfield having the highest visibility (**3.29%, 324.3 acres**), while the Villages of Central Village and Moosup, and the Town of Canterbury, have no visibility.
- **Table 8 (LSZ Visibility in VSA):** This table quantifies visibility by LSZ, with LSZ 6 (Developed Industrial) having the highest visibility (1.23%, 0.19 square miles visible), followed by LSZ 1 (Agricultural) at 1.11% visibility. Other LSZs, such as Forested (0.69%) and Residential/Commercial (0.24%), have significantly lower visibility.

5.6.8 Photo-Simulation Methodology

Photo-simulations were created from six Key Observation Points (KOPs) within Distance Zone 2 (0.5–2 miles). These KOPs were selected based on their proximity to the Facility, predicted visibility, and relevance to viewer types and sensitive locations. Using Autodesk 3ds Max software, the Facility was modeled with accurate dimensions, materials, and lighting conditions based on field photography and LiDAR data.

5.6.9 Photo-Simulation Results

The photo-simulations provide a visual representation of the Facility's potential impact on the existing landscape from six KOP locations. These locations were selected based upon several factors, such as presence of predicted visibility, distance to Facility (Distance Zones), compass direction, clarity of view, frequency of view, viewer types, LSZs, and as applicable, sensitive locations. Figure 15 presents complete photo-simulations under existing and proposed conditions for each KOP. The simulations were prepared under leaf-off conditions to provide a conservative assessment of visibility.

The following summarizes the results for each simulated KOP:

1. **KOP 14 (Norwich Road, 0.85 miles):** This location demonstrates the most noticeable change. The Facility is partially visible above woodland in the background. The earth-tone colors of the Facility reduce visual contrast, but blocky, geometric shapes and lines, along with shadows on the structures increase contrast within the interior of the Facility. While the Facility comprises a small portion of the view, a majority of the 360-degree field of view available to a viewer will not be affected by the Facility, which will be subtly visible at a distance due to area topography.
2. **KOP 9A (March Route of Rochambeau's Army: Old Canterbury Road):** The simulation shows negligible change in the background that is not clearly perceived. Upon magnification, the proposed stack is visible, juxtaposed behind leaf-off vegetation. The Facility is unlikely to be perceived at this location. The predominately forested landscape and utility land use remain the dominant features in the view.
3. **KOP 3 and 8 (Bedard Road & Exley Road):** These locations demonstrate negligible impact because the Facility is either obscured by vegetation and/or blends into the background due to its subdued colors and distance. **KOP 8** generally depicts changes associated with the Facility's vegetative clearing, and **KOP 3** illustrates a minor view of the Facility's stack, both resulting in a visual effect that will not be readily noticed by viewers. The rural agricultural and forested landscape remains the dominant features in both views.
4. **KOP 13A (Norwich Road):** The Facility is faintly visible in the far midground, which is partially attributed to the Facility's earth-tone colors against the greys of the forest, though a single exhaust stack and some building tops slightly interrupt the horizon. Due to the Facility's small scale relative to the broader landscape, only a few nearby dwellings may notice subtle visual changes. The viewshed analysis (Figure 16) indicates that not all residents along Norwich Road will have views of the Facility, as lower elevations and dense vegetation diminish visibility. However, fleeting views may occur in brief intervals for local residents and travelers due to punctuated gaps between forested areas along Norwich Road. Overall, the landscape will retain its predominantly forested and open character.

5. **KOP 16A (Norwich Road):** Due to the Facility's small scale relative to the broader landscape, only a few dwellings may notice change. Further, the viewshed analysis (Figure 16) indicates that not all dwellings in the area will discern the Facility, as lower elevations and vegetation, such as on Terrace Drive, diminish visibility. Local residents and commuters traveling on Norwich Road may experience brief glimpses of the Facility, but no views are expected from the Plainfield Recreation and Senior Center due to an existing tree hedgerow that will remain.

5.6.10 Visibility Analysis

The Facility is predicted to be visible within **3.31%** of the VSA, mostly occurring within agricultural lands west of the Facility and industrials lands encompassing the Facility site (2.34% of 3.31%). KOP 8 was prepared as a photo-simulation to represent views from agricultural lands located west of the Facility. The results of the simulation indicate a negligible change due to the minimal extent of the Facility and its low contrast with the surrounding forest.

Less than 1% of visibility falls within forested lands (0.69%), with minor amounts found within developed residential/commercial lands (0.24%), open (0.02%) and water areas (0.02%). Residential dwellings within Distance Zone 1 (0 to 0.5 miles from the Facility) did not receive predicted visibility, signifying that most visually prominent foreground views of the Facility are shielded from residences within the VSA. Consequentially, six photo-simulations were prepared from Distance Zone 2 (0.5 to 2 miles) to cover a range of publicly available viewing conditions that were absent from Distance Zone 1. The results of the six KOP simulations (KOPs 3, 8, 9A, 13A, 14, and 16) demonstrate that the Facility's visual effect is low to negligible from Distance Zone 2, with most low impact occurring near a section of State Route 12 at a subset of residential properties. However, as mentioned, residences within Distance Zone 1 (most impactful zone) will not discern the Facility, as well as a substantial portion of the VSA (96.7%).

5.6.11 Potential Visual Impacts to Area Resources

Out of 45 identified resources, only five will have some visibility of the Facility:

1. **March Route of Rochambeau's Army (Old Canterbury Road):** This is the only historic resource receiving predicted visibility. As shown in the **KOP 9A** simulation, a

change in the background occurs, but it is not clearly perceived and will unlikely be seen by passing motorists.

2. **Oates Cedar Swamp Preserve:** Facility visibility is described as minimal and likely limited to a small, seldom seen area on the exterior of the preserve.
3. **Horse Brook:** A negligible amount of predicted visibility occurs near the proposed Facility access road, which connects to an existing mine access road.
4. **Sugar Brook:** This particular area is ponded and more open, with less visually obstructive vegetation near the potential vantage point. Like the Horse Brook, due to an absence in amenities (e.g., docks, boat launch sites, trails, etc.), it is unknown whether viewers will be present in this span of the river. Due to the proximity of the Facility, if viewers are within this small section of the Sugar Brook, views of the Project would be evident and, in a brief manner, would likely influence this minor section of the river.
5. **The Last Green Valley National Heritage Corridor:** The Last Green Valley National Heritage Corridor encompasses and extends beyond the VSA into 35 townships. To determine the potential effect of Facility visibility that occurs within this corridor, please refer to Figures 15 and 16 to review the results of the photo-simulations and viewshed analysis, as well as Section 6.4 of the full VIA for the conclusionary discussion of Facility visibility within the VSA.

5.6.12 Mitigation of Potential Visual Impacts

Across all KOP photo-simulations, the Facility's visibility is generally low to minimal, as most public vantage points are limited to Distance Zone 2, where subdued colors and distance reduce the visual footprint. Overall, the existing landscape character was not degraded or diminished in the photo-simulations, which implies that the changes are insignificant. While fleeting views may occur for travelers, a small number of residents may experience longer static views at a distance. As mentioned, the dominant character of the existing landscape—whether agricultural, forested, residential, open, water, or industrial—remains largely intact.

Landscaping will be proposed within and around the Facility to improve visual aesthetics as seen by workers or visitors to the site and will contribute to additional screening around the site's periphery. Additionally, the Facility's design represents the most optimal placement of

components that minimize ground impacts to the maximum extent practicable, adhering to local regulations such as setback requirements, local zoning, and environmental protections (avoidance or mitigation of wetlands, cultural resources, visual resources, and protected habitats, etc.). The Facility site utilizes the site of an existing gravel mine, thereby avoiding substantial alteration to the ground surface and existing vegetation. The reduction of the Facility profile was completed by implementing a design that safely accommodates the smallest profile, by protecting air quality and environmental wildlife and habitats, while also satisfying OSHA safety standards.

5.7 Land Use / Cultural Resources Effects

5.7.1 Land Use

The Project site is currently undeveloped except for sand and gravel excavation operations. There are no permanent structures, or other improvements, other than access roads on the Property. These are solely used as part of the removal of sand and gravel from the active areas of the site. The land use is presented in Figure 17.

The current uses of the adjoining properties include residential, agricultural, industrial, and undeveloped land. As described earlier, a portion of the Property is to the west of the Genesee & Wyoming (GW) Railroad.

The following land use considerations were reviewed:

- *Statewide Land Use Conservation and Development* - According to the Draft 2025-2030 Locational Guide Map contained in the Conservation and Development Policies Plan for Connecticut, the majority of the Property is not classified. Habitat areas, wetlands, and other environmentally sensitive areas are present as described in Sections 5.4 and 5.8.
- *Local Plan of Conservation and Development* - According to the 2018-2028 Plainfield Plan of Conservation and Development, the Property is unclassified.
- *Zoning* - The Plainfield zoning maps indicate that the Project is located within the Residential RA-60 zone (Figure 18). The current sand and gravel operations are allowed according to the regulations with a special use permit.

5.7.2 Cultural Resources

O&G retained Heritage Consultants, LLC, to perform a Phase IB cultural resources reconnaissance survey (Exhibit L). Previous cultural and archeological surveys were performed by the Public Archaeology Laboratory (PAL) in 2007, indicating the need for further studies. A Phase IB archaeological survey was conducted in September and November 2025 along the proposed 1,480-meter emergency access/utility corridor only, as the remainder of project areas have either been disturbed or did not require Phase IB survey due to steep slopes or wet soils. The survey recovered a few post-European Contact ceramic sherds and one isolated precontact quartzite flake, all from disturbed or non-significant contexts and not eligible for National Register listing. November 2025 testing of the access/utility corridor also produced a single whiteware sherd with no research potential. Three dry-laid stone walls were mapped, with recommendations to avoid impacts where possible, but they require no archaeological investigation. The only area that was found to warrant further investigation is the portion of previously recorded PAL Site 109-27 where intact precontact lithics were found (Exhibit L).

5.7.3 Potential Impacts

Upon completion of the Phase IB cultural resources reconnaissance survey, it was recommended that PAL Site 109-27 should be evaluated through a Phase II survey, which will be completed, along with additional coordination with the State Historic Preservation Office.

5.8 Wildlife and Habitat Effects

The Wildlife and Habitat Supporting Documentation can be found in Exhibit I. The proposed Facility will be sited within an area currently comprised of an Active Sand and Gravel Quarry, with lesser portions of proposed development related to the Project to occur within Early Successional/Recovering Sand Barren habitat, Mixed Hardwood/Conifer Upland Forest, and Farm Field. These habitat types are depicted on the ecological community map (Figure 19) and summarized in Table 13 by their existing aerial coverage within the proposed Limits of Disturbance.

5.8.1 Habitat Types

5.8.1.1 Active Gravel Quarry/Access Road and Sand Mound

The active gravel quarry and associated roadways occupy approximately 58.6 acres throughout proposed Facility site. The sand pile is a large (2.1-acre), roughly round, elevated pile of sand at the northern edge of the actively mined area. At the time of SLR's surveys, the active quarry was covered by exposed mineral soil/sand, with a network of roads, mined areas, sand retaining walls, and a drainage retention pond. Vegetation was totally absent in most of the area, or extremely minimal and limited to ruderal annual species.

5.8.1.2 Early Successional/Recovering Sand Barren Habitat

This habitat occupies approximately 36.9 acres, primarily in the west-central portion of the proposed Facility area. The majority of this early successional habitat within the Project area is comprised of recently abandoned sand/gravel mine sites with very low vegetative diversity limited to aggressive annuals, chiefly annual smartweed.

This habitat type is comprised of areas that were previously actively mined where operators graded the soil surface, in some cases applying topsoil, and allowed revegetation to occur. These areas have a range of vegetation density and composition. There are some pockets of small trees or shrubs in the older sections, and the most recently abandoned areas are dominated by opportunistic, fast-growing annuals and/or mugwort. Forbs form a continuous cover 3+ feet high in some areas, while others have scattered individual plants and exposed mineral soil. The plant composition reflects the sandy substrate and recent intensive ground disturbance; the most common species are grey goldenrod, early goldenrod, wrinkle-leaved goldenrod, little bluestem, broomsedge bluestem, blunt-leaved rabbit-tobacco, mugwort, round-headed bush-clover, yellow wild indigo, arrow-head rattlebox, slender-leaved agalinis, flat-topped goldenrod, Queen Anne's lace, fall panicgrass, foxtail grasses, blackberries, and tree seedlings. In areas that have been undisturbed for longer, scattered saplings sized trees and large shrubs are present: sycamore, black locust, eastern red-cedar, autumn-olive, cottonwood, bigtooth aspen.

5.8.1.3 Mixed Hardwood/Conifer Upland Forest

Existing conditions within the vicinity of the proposed emergency access/utility corridor (approximately 6.6 acres) consist of a mature, white pine (*Pinus strobus*) and red oak (*Quercus rubra*) upper-canopy dominated forest with American beech (*Fagus americana*), black and white oaks (*Q. velutina* and *Q. alba*), red maple (*Acer rubrum*), black birch (*Betula lenta*), eastern hemlock (*Tsuga canadensis*), pitch pine (*Pinus rigida*) and American hornbeam (*Carpinus caroliniana*) found in the midstory canopy. The understory is sparse with few shrubs and groundcover consisting of pine duff and Pennsylvania sedge (*Carex pennsylvanica*), lowbush blueberry (*Vaccinium angustifolium*), hay scented fern (*Dennstaedtia punctilobula*), princess pine (*Lycopodium* sp.), spotted wintergreen (*Chimaphila maculata*), and bracken fern (*Pteridium aquilinum*).

5.8.1.4 Farm Field

A small 0.6-acre area to the east of the proposed Facility will be developed within an existing mowed hay field.

5.8.1.5 Wetlands

As described in the section above, a small (0.2-acre) portion of the Project area overlaps with a mixed-class palustrine forested and emergent wetland system associated with Sugar Brook to the west of the proposed Facility. Project activities in the vicinity of the wetland will be limited to installation and maintenance of an overhead transmission line extending to the proposed Eversource switchyard west of the Sugar Brook wetland complex; while there will be some clearing of vegetation within the 100-foot easement for the powerline infrastructure, direct wetland impacts are not anticipated from the proposed Project.

5.8.2 Core Forest

The CT DEEP defines core forests as forest features that are relatively far (>300 ft) from any forest-non-forest boundaries (i.e., “edges/edge effects”). Edge effects are present where abrupt changes in vegetative structure(s) are observed, which, for the subject site, include the margins of edges created by the existing active and early successional quarry areas, internal access roads, roadways, and abutting residential developments. Three core forest classes are defined in the 2020

Connecticut Forest Action Plan by CT DEEP: Small Core Forests (SCF – less than 250 acres), Medium Core Forests (MCF – between 250 and 500 acres), and Large Core Forests (LCF – greater than 500 acres). A core forest map can be found in Figure 20.

SLR evaluated the size and extent of the contiguous interior forest within the subject property and proposed Project Limits Of Disturbance using publicly available Geographic Information System (GIS)-based datasets designed to assess impacts to core forest habitat.¹⁷ In addition, an independent evaluation was performed (based on GIS analysis of 2025 leaf-off aerial photography, recent field observations, and professional experience) to provide enhanced resolution of site-specific information and assess impacts by the proposed Project (Exhibit I). The results of SLR's core forest interpolation found a total of 3.2 acres of existing core forest to be impacted (cleared) for the purposes of the proposed Project, limited to two linear areas within the proposed emergency access/utility corridor and electrical transmission corridor. The areas of proposed core forest loss consist of an approximately 660-ft-long section of the 100-foot-wide electric transmission corridor (1.6 acres), and a 1,600-ft-long section (1.6 acres) of the emergency access/utility corridor, which varies in width due to necessary grading along the existing slopes.

Existing conditions within the vicinity of the core forests sections consist of mature, white pine (*Pinus strobus*) and red oak (*Quercus rubra*) upper-canopy dominated forest with American beech (*Fagus americana*), black and white oaks (*Q. velutina* and *Q. alba*), red maple (*Acer rubrum*), black birch (*Betula lenta*), eastern hemlock (*Tsuga canadensis*), pitch pine (*Pinus rigida*) and American hornbeam (*Carpinus caroliniana*) found in the midstory canopy. The understory is sparse with few shrubs and groundcover consisting of pine duff and Pennsylvania sedge (*Carex pennsylvanica*), lowbush blueberry (*Vaccinium angustifolium*), hay scented fern (*Dennstaedtia punctilobula*), princess pine (*Lycopodium* sp.), spotted wintergreen (*Chimaphila maculata*), and bracken fern (*Pteridium aquilinum*). A portion of emergent wetland associated with Sugar Brook is located within the western (electrical transmission corridor) area of core forest.

Within the proposed transmission corridor, an overhead electric connection will be installed on utility poles, which will result in clearing of 1.6 acres of core forest. Utility poles will

¹⁷ CT DEEP *Forestland Habitat Impact Mapping* available at: <https://www.arcgis.com/home/webmap/viewer.html?webmap=f9175844f49b4385a6096bcd200ad931>, and University of Connecticut Center for Land Use Education and Research (CLEAR) Forest Fragmentation Analysis (FFA) 2015 Forest Fragmentation GIS layer available at: <https://cteco.uconn.edu/ctraster/rest/services/landcover/CTforestfrag2015/MapServer>.

be placed outside of the wetland within the western core forest segment, allowing the electrical connection to span the wetland without ground disturbance. The sewer/communication corridor will include trenching and installation of an underground sewer force-main pipe and communication conduit within 0.7 acres of core forest. Both utility corridors will be maintained for the lifetime of the Facility, which includes trimming, limbing, and felling of trees and tall shrubs, and occasional mowing of the corridor to maintain it as an early successional meadow. No buildings or pavement will be placed within either of the core forest utility segments of the Project area.

5.8.3 Wildlife

The proposed Facility will be located almost entirely within the footprint of the disturbed southern quarry. Due to the barren conditions and frequent disturbance including heavy vehicles and loud noises from active quarry activities, very little wildlife habitat is currently provided within the main proposed Facility location.

The north-south emergency access/utility corridor proposed in the western portion of the site between Route 14 and the proposed Facility will result in the conversion of a narrow, linear swath of upland forest to a meadow/old field habitat which will be intermittently mowed following the installation of underground utilities. The existing forested uplands onsite provide habitat for common wildlife species of eastern woodlands, including a variety of passerine birds, small and large mammals, reptiles, amphibians, and insects.

A proposed electrical transmission line will connect the Facility to a new Eversource switchyard to be sited to the west. The transmission poles carrying the lines will be at a height able to clear all existing vegetation.

5.8.4 Threatened and Endangered Species and Critical Habitats

The NDDB lists and maps the approximate locations of state listed endangered, threatened, and special concern species as well as critical habitats throughout Connecticut. The general locations of species and habitats are based on a number of information sources and are frequently revised to reflect new information. In the case of listed species, exact locations are not presented on maps for the protection of the species. Rather, cross-hatched polygons are used to depict general species locations. Based on information provided in the most up-to-date NDDB (revised June

2025) and visible on the Connecticut Environmental Conditions Online map viewer, the entire roughly 500-acre site is located entirely within a mapped polygon for state-listed species. Additionally, two areas of NDDDB Critical Habitats (Acidic Atlantic White Cedar Swamp and Poor Fen) are mapped adjacent to portions of the southern boundary of the site (Exhibit I). The NDDDB Map can be found in Figure 21.

SLR submitted a Request for NDDDB State Listed Species Review via the CT DEEP's ezFile portal and received a response from the agency in Preliminary Assessment letter No. 202409161, dated October 2, 2024 (Exhibit I). In this letter, the NDDDB Program identified thirteen state-listed species and three critical habitats mapped within or in close proximity to the subject property. These species and critical habitats are listed in Tables 14 and 15, respectively.

Four additional state-listed species were included in a previously received (and since expired) NDDDB Preliminary Assessment (No. 202304714, dated June 29, 2023) (Table 16). Although these four additional species of special concern were not carried over by NDDDB to the October 2024 Preliminary Assessment, SLR included them in listed species surveys and planning for the site to ensure a comprehensive review and to streamline the final determination process.

The NDDDB Preliminary Assessment letter from October 2024 stipulates that prior to approval of proposed site plans, NDDDB requires documentation of all relevant surveys and conservation/protection plans for the listed species and critical habitats potentially occurring onsite. Based on the listed species identified in NDDDB correspondence, the Petitioner retained qualified taxonomic experts to conduct listed species surveys onsite. Surveys were conducted (based on species' phenology) over many survey dates in 2023 and 2024 within the areas of proposed development to determine if habitats or species would be adversely impacted by proposed Project activities. Petitioner's discussions with CT DEEP NDDDB staff remain ongoing.

The resulting findings, maps, and proposed protection measures (including a proposed Conservation Easement on a portion of the site) are detailed in the State-Listed Species Report prepared by SLR and dated December 6, 2024 (Exhibit I). A summary of the listed species findings and proposed protection measures is provided in the sections below.

5.8.4.1 Herpetofauna

The Petitioner retained Dennis Quinn, qualified herpetologist and owner of Quinn Ecological, LLC, to conduct presence/absence and habitat suitability surveys across the proposed

Project area for state-listed amphibians and reptiles. The results of these surveys indicate that a total of 19 species of herpetofauna were observed onsite, including state special concern eastern ribbon snake (*Thamnophis saurita saurita*), Fowler's toad (*Bufo fowleri*), and eastern hognose snake (*Heterodon platirhinos*), and state-endangered eastern spadefoot toad (*Scaphiopus holbrookii*). These species were observed in upland and early successional habitats within the disturbed quarries and surrounding areas.

To mitigate potential impacts to these listed species, conservation measures will be implemented as recommended by Mr. Quinn in his report, titled *Black Hill Road Habitat Assessment and Impact Analysis: Eastern Spadefoot and other Listed Species* dated December 2024 (Exhibit I). All recommended conservation strategies in the Quinn report have been incorporated into the Project, including contractor education, reporting, habitat enhancement, conservation easement protections, exclusionary measures, and post-construction monitoring.

Herpetological surveys focused on the limits of the proposed development area (exclusive of the electrical connection corridor) which does not contain wetlands, watercourses, or vernal pools. Therefore, the Project area does not provide habitat for wetland-dependent species such as the pure diploid blue-spotted salamander (*Ambystoma laterale*), spotted turtle (*Clemmys guttata*), and wood turtle (*Glyptemys insculpta*). These species rely on specific wetland and riparian habitats, which are absent from the areas proposed for development.

While the eastern box turtle (*Terrapene c. carolina*) was not included in the most recent NDDDB determination and was not observed during Mr. Quinn's herpetological survey, as it was not a target species for this review, suitable habitat does exist within the early successional quarry areas onsite. Given this potential habitat, conservation measures will be proactively incorporated to protect this species, aligning with the comprehensive approach applied to other state-listed herpetofauna species and ensuring consistent habitat management and mitigation strategies across the Project area.

Additionally, SLR has reviewed prior survey reporting on herpetological surveys conducted by Connecticut Ecosystems, LLC between 2005 and 2018. In summary, pure diploid blue-spotted salamanders were observed in four wetlands onsite, as well as three additional wetlands offsite to the east. No wetlands or vernal pools identified in these surveys are located within the current Project footprint; the nearest wetland that was historically found to support the blue-spotted salamander is approximately 850 feet from the nearest proposed Project activity. An

existing road is currently situated approximately 400 feet from this wetland. No impacts to this species or any vernal pools are anticipated.

5.8.4.2 Plants

Two state-listed plant surveys were conducted within the Project area, based on the species identified within the 2023 and 2024 Preliminary Assessments, respectively.

Following the receipt of the 2023 Preliminary Assessment, the Petitioner retained Laura Green, Field Botanist and Forester, to conduct surveys for the three listed plant species identified in that letter:

- *Agalinis acuta* (sandplain agalinis)
- *Crocanthemum propinquum* (low frostweed)
- *Prunus alleghaniensis* (Allegheny plum)

Ms. Green conducted presence/absence and habitat suitability surveys for these species across the proposed Project area over the course of eleven survey days in August and September 2023. She characterized and mapped cover types, recorded a complete floristic inventory, and photographed habitat features. The results of her surveys indicate that “plausible habitat for all three targets does occur onsite, but no rare plant species were detected” over the course of eleven survey days in August and September 2023 (Exhibit I).

The 2024 Preliminary Assessment identified seven listed plants listed in Table 14, including the three listed above. On October 15 and 16, 2024, Matthew Sanford and Marlee Antill, qualified botanists with SLR with experience conducting botanical surveys across the state, conducted presence/absence and habitat suitability surveys within the Project area for all seven plant species. The target species for this survey included the three species listed above, as well as:

- *Aristida purpurascens* (arrowfeather)
- *Scleria triglomerata* (whip nutrush)
- *Lygodium palmatum* (climbing fern)
- *Rosa nitida* (shining rose)

SLR also characterized cover types, recorded a complete floristic inventory, and photographed habitat features. The results of this survey indicated that potential habitat for six of the seven species occurs in or adjacent to the Project area, but no rare plant species were detected. No plausible habitat for shining rose (*Rosa nitida*) was found within the Project area (Exhibit I).

5.8.4.3 Fish and Bivalves

One bivalve species, eastern pearlshell (*Margaritifera margaritifera*), and one finfish, banded sunfish (*Enneacanthus obesus*) were identified in the expired 2023 Preliminary Assessment. Both species inhabit permanent bodies of water, with the mussel typically found in fast-flowing, cold-water streams and rivers, particularly those with dense riparian canopies and stable channels composed of coarse sand, gravel, and cobble and the finfish found in large ponds, stream backwaters, brooks and small and large rivers. While Sugar Brook is mapped by CT DEEP as a cold-water stream with documented occurrences of brook trout (*Salvelinus fontinalis*), a host species for eastern pearlshell, neither the stream nor its associated riparian wetlands will be directly impacted by the Project. The Project area is largely located outside the direct vicinity of Sugar Brook, apart from an electrical overhead connection that will span a portion of the Sugar Brook wetlands. No direct impacts to the stream or riparian wetlands are anticipated. Water quality within Sugar Brook will be protected during and after construction through a combination of sediment and erosion control measures and a robust stormwater management plan (Section 5.2.4). Therefore, no adverse impacts to either eastern pearlshell or banded sunfish habitat are anticipated.

5.8.5 Potential Impacts

SLR site investigations have confirmed the presence of two critical habitats mapped by CT DEEP adjacent to the southern property boundary: the Atlantic white cedar swamp and the poor fen. These wetlands are recognized as critical habitats due to their unique ecological characteristics and the important role they play in supporting a variety of flora and fauna species. The southern boundary of the Project site lies in close proximity to these critical habitats, and any potential impacts to their function will be mitigated through the implementation of appropriate conservation measures. Buffer zones and protective measures were designed to offer additional protection to these habitats throughout and following construction (Figure 22).

Although not mapped within publicly available NDDB data, sand barren habitat was identified within the most recent Preliminary Determination, and the site was assessed for this critical habitat type. The sand barren habitat found on the site is located within areas disturbed by past mining activities, which have significantly altered the original ecosystem. These habitats are currently dominated by a mix of invasive, non-native species, particularly common mugwort (*Artemisia vulgaris*), which forms dense monocultures in many areas. This aggressive vegetation

has limited the diversity and habitat quality, making large portions unsuitable for state-listed sand barren plant species. Despite this, areas with lower vegetative cover, exposed sandy substrate, and better soil drainage were identified as having potential to support state-listed species, although none were observed during botanical surveys. The proposed Project will be sited within the general footprint of these disturbed areas. As such, it is anticipated that the sand barren habitat, as it exists in its current state, will be impacted by Project activities. However, given the heavily disturbed nature of the habitat and its current dominance by invasive species, the overall impact on this habitat is expected to be minimal. The northern quarry area, which will remain largely intact aside from emergency access/utility corridor installation and spadefoot toad habitat restoration, will be maintained and protected within a conservation easement to ensure the continued viability of sand barren habitat.

5.9 Solid Waste and Hazardous Materials

A solid waste summary is provided below, and the full solid waste report can be found in Exhibit M. In addition, links to the three solid waste permit applications that were filed with CT DEEP on April 17, 2026, Application Nos. 202606906, 202606911, and 202606912, are included in Exhibit M and can be found at <https://us.planengage.com/smartmswprocessing/page/News>.

As discussed above, the proposed SMART Facility is comprised of three major “plants” working together - the MSW receiving BHS, a separation, recycling and RDF and organics conversion plant, an adjacent Anaerobic Digestion Plant to produce RNG and food-grade CO₂, and an RDF Gasification Unit with gasifiers, syngas cooling and cleaning, and a boiler that produces steam which generates non-fossil fueled electrical energy for distribution by the local utility. The proposed Facility will receive raw residential MSW collected from various CT municipalities, delivered by contracted specialty waste haulers

5.9.1 Process

The MSW separation process involves waste deliveries by contracted haulers in covered trucks, which are weighed, documented, and directed to receiving doors. MSW is unloaded in an enclosed building onto a recessed tipping floor with an impermeable liner to prevent subsurface contamination. Cranes sort and feed waste into metering bins and then onto belts for separation processing. Recyclable materials are removed first, then organics are sent to an anaerobic digester,

and the remaining waste is sent as RDF to the gasifiers.

Organic waste separated during sorting will be processed at the Anaerobic Digester Plant, reducing its volume by 30-40% and converting it into renewable natural gas, food-grade CO₂, and digestate. The digestate will be reused as landfill ADC, pending approval from CT DEEP. The digester gas, containing methane and other natural gas components, will be purified to meet natural gas pipeline standards and the CO₂ will be captured, liquefied, and sold to the food industry.

After recyclable and organic materials are removed, the remaining RDF is processed in CFB gasifiers using gasification to produce cleaned syngas and three types of ash: bed bottom ash, candle filter ash, and bag house ash. Bed bottom ash is proposed for reuse as landfill ADC, while the other ash types may also be reused pending CT DEEP approval. The syngas is purified by cooling and using high-temperature candle filters and is then sent to a thermal oxidation and heat recovery system to generate high-pressure steam for electricity production via a steam turbine.

5.9.2 Environmental and Engineering Synopsis

The recessed waste collection area is designed to prevent harmful liquid leaks into groundwater using a reinforced concrete sump with a secondary high-density polyethylene (HDPE) liner. The concrete pit will meet ACI 350.2 standards for hazardous material containment, engineered to withstand hydrostatic, soil, waste, and equipment loads. It will feature dense, chemically resistant concrete with chamfered edges for easier cleaning. Chemical-resistant water stops will be installed at cold joints, and the HDPE liner will be securely anchored and welded for a watertight seal. Vacuum or air pressure testing will ensure the liner's integrity.

A 2024 geotechnical study provided foundation recommendations for the Facility based on 19 borings which were drilled up to 52 ft deep. The study established criteria for foundation types, allowable loading, structural fill materials, areas requiring structural fill, excavation, stormwater retention basin slopes, and pavement design.

A Draft Stormwater Pollution Prevention Plan was prepared to guide inspection and maintenance of the Facility's stormwater management system. It covers industrial activities, potential pollutants, waste management, inspection and reporting procedures, stormwater sampling, spill response, and document retention. A preliminary drainage study conducted in November 2024 assessed stormwater drainage for the Project area, which includes buildings, equipment, roads, and parking. The area will be graded flat and divided into three watersheds with

individual storm sewers directing stormwater to a main collector outside the fence, where it will integrate into a larger stormwater management system.

5.9.3 Hazardous Materials and Waste

Hazardous materials at the facility will be limited and present in small or *de minimis* amounts used for ancillary tasks operations such as regular maintenance. These will be kept in appropriate storage cabinets or in original packaging. Tanks located on site will contain water to be used for various processing including firewater and contact water. Aqueous ammonia will also be present in a tank but is not considered a hazardous material.

Certain chemicals will be used to treat water used in the steam cycle. These chemicals are sodium sulfite, amine, and phosphate. A small amount of the chemicals will be stored onsite. Injection into the steam cycle will be automated and onsite handling of the chemicals will be minimal. Calcium hydroxide (hydrated lime) will be used to aid in the capture of particulate and pollutants in the syngas candle filter system. This lime will be stored in a silo and will be automatically dispensed to the filter system. Diluted sulfuric acid will be used in the removal of ammonia from the exhaust air coming out of the anaerobic digester facility's water press building and in-vessel aeration building. Both buildings are maintained under negative pressure. The sulfuric acid will be stored in a tank and automatically dispensed to the exhaust air.

Hazardous waste is anticipated to be present only in the case of "unauthorized waste" being delivered to the Facility. These wastes will be stored in a location near the tipping floor where they can be isolated and immediately slated for proper disposal. Ash that is generated by the waste-to-energy process (hot gas filter ash and fly ash) will be tested and are anticipated to be beneficially reused at appropriate locations.

5.9.4 Potential Impacts

The proposed SMART Facility is designed with advanced mitigation systems to minimize environmental impacts, ensuring compliance with all Federal, State, and Local air emissions and stormwater regulations. The Facility is expected to become fully operational within 42 months of application approval, including a 36-month engineering and construction period and a 6-month commissioning phase. No impacts are expected from hazardous materials or hazardous waste.

5.10 Transportation, Infrastructure and Traffic

The proposed Facility will primarily be accessed from an existing entranceway off Norwich Road (State Route 12), which will be shared with the existing sand and gravel operation. There will be a new gravel emergency access-only roadway from the Facility north to Black Hill Road (State Route 14) (Figure 23). Limited access roadway Interstate Route 395 (I-395) is located east of Norwich Road with the nearest exit (Exit 29) located to the south intersecting Route 14A Academy Hill Road, south of the property.

Norwich Road is classified as a minor arterial route that is approximately 32 ft wide with 12-foot travel lanes in each direction with 3–4-ft shoulders. The posted speed limit is 40 MPH. Black Hill Road is classified as a major collector that is approximately 40 ft wide also with 12-ft travel lanes but with 8-ft shoulders in each direction. The posted speed limit is 45 MPH. Academy Hill Road is also classified as a major collector that connects to I-395 on and off-ramps to Norwich Road. Academy Hill Road is 40 ft wide with 13-ft travel lanes with 7-ft shoulders in each direction with a posted speed limit in this area of 30 MPH. Additionally, to the north, Route 14, known as East Main Street in this location, connects the next northern on and off-ramp from I-395 (Exit 30) to Norwich Road from the north. East Main Street is 24-30 ft wide with 11-ft travel lanes and shoulders ranging from 1-8 ft wide with a posted speed limit of 35 MPH.

An existing line of the GW Railroad traverses the eastern edge of the Facility property, and a signaled at-grade crossing is present along the access route from Route 12 between the sand and gravel operation and the Facility. An active GW spur line is present further to the east of the crossing within the sand and gravel operation property.

The supplemental use of railroad transport may be considered, and if utilized would reduce the number of truck trips on the roadways while also not likely notably increasing at-grade railroad crossing delays that already exist.

5.10.1 Construction Traffic

The construction of the Project is anticipated to take approximately 3 years beginning in July 2027. Substantial completion is set for June 2030 with commissioning finished by December 2030. Commercial operations are expected to commence in early 2031. During the first year of construction, the construction force will gradually increase to approximately 200 employees. In construction year 2, employee numbers will increase to approximately 700 with a gradual decrease

through the next year with approximately 125 employees present at the time of the final commissioning. Construction hours are anticipated to be from 7 a.m. to 5 p.m. year-round.

It is estimated that during the first year of construction there will be approximately five trucks per day on average entering and leaving the Property to deliver construction-related materials. For construction year 2, it is estimated that the number of delivery trucks entering and leaving the site will increase to approximately twenty per day and then is expected to decrease to less than ten per day in construction year 3. The heavy hauling of larger construction materials will occur over an estimated 9-month period from December 2028 through August 2029, gradually increasing from 3 trips per month in December 2028 up to 15 per month in April 2029. Heavy haul traffic will then decrease back down to 4 trips per month in August of 2029. The proposed site grading (cuts and fills) has been balanced so that hauling of sand and gravel off site will not be necessary.

All construction-related traffic will access the Facility from Norwich Road.

5.10.1.1 Potential Impacts – Construction Traffic

Changes to area traffic may occur from temporary construction-related impacts. Construction of the Facility will temporarily increase truck and heavy haul traffic above what may be expected during the operation of the Facility post-construction. The prescribed travel routes for construction traffic will minimize disruption to local roads by using I-395 and Norwich Road, a minor arterial route. The increase in traffic will be gradual through construction reaching a peak during the spring and summer of 2029, followed by a gradual decrease in truck traffic through the remainder of the construction phase.

5.10.2 Operations Traffic

The capacity of the proposed SMART Facility is rated at an annual average of 1,800 tons per weekday (9,000 tons per week) and less than 2,500 tons per single day. Various sized waste collection trucks will arrive from individual collection routes or offsite transfer stations, and as a practical matter loads may vary by truck size, waste density, and percent full. The average annual truck loads could average about 15 tons/delivery, resulting in an average of 1,800 tpd/15 tons per delivery, or around 120 loads per weekday (or 5 days per week if a holiday falls during the workweek).

Truck deliveries, times, and routes will be specified within waste hauling contracts to be established among contracted municipalities with licensed haulers. Sufficient queueing space and signage will be provided to prevent the backup of waiting trucks onto public roads. These waste hauling contracts will include commitments by truckers to comply with the CT 3-minute idling law, including clearly marked signage at the Facility gate and queueing areas. Facility operators (such as at the weigh-in station and within the delivery marshalling area) will observe operations for potential violations, including notifications of date and time observed for potential sanctions under the waste hauling contract.

SMART will instruct CT municipalities entering into contracts to deliver MSW that road use shall be limited by contract to areas which are being serviced for waste pickup by the MSW fleet trucks. MSW delivery trucks on route to the Facility from outside of Plainfield will be directed to utilize available interstate, freeway, principal arterial, minor arterial, major collector, and minor collector roads (as described above and below) to arrive at the Facility. MSW haul trucks will not utilize local roads for convenience purposes during delivery routes and will only be on local roads if they are picking up the local community's waste or if an unforeseen situation causes the need to divert off course (e.g., a detour due to construction activities or emergency vehicle presence, etc.).

As stated above, the SMART Facility will have one ingress/egress point located on Norwich Road (State Route 12) which will serve as the delivery truck acceptance entrance as well as the entrance for all other vehicles traveling to the Facility. There will also be an egress road which will travel northward away from the Facility that connects to CT-14 just north of the Facility that will be used for emergency purposes only.

Haul vehicles will primarily utilize I-395 N/S, as well as some major collector roads which will connect CT communities and larger roadways via a network of well-travelled roads. As the Facility is located off a minor arterial road with direct connection to I-395 N/S via a major collector, waste hauling trucks should not have any issue avoiding the use of local roads when delivering MSW to the Facility.

With anticipated increased MSW deliveries from communities, a preferred haul route from the Hartford, CT area has been established. Waste haulers using the preferred route will follow CT-2 E until given the option to merge onto I-395 N. After following I-395 N, the haulers will take the exit for 14 Alternate toward Plainfield briefly, and then turn right onto CT-12 N. The Facility entrance will be on the left.

5.10.3 Traffic Study

In 2024, SMART commissioned a detailed traffic study to assess potential increased traffic impacts to the town of Plainfield due to operation of the proposed Facility. This study was performed by SLR to assess potential traffic impacts. The study is located in Exhibit N along with a plan of the proposed driveway area. Exhibit N also includes graphs of manpower estimates and the heavy haul schedule. As described above, the primary access will be from the east via an existing access that will be improved and lead to Norwich Road (Route 12). An emergency-access-only driveway will be constructed and will provide northern access through the SMART Facility to Black Hill Road (Route 14). The site truck traffic and employees (both during construction and during operation) will utilize the existing driveway on Route 12.

According to SLR, the study was conducted to assess the traffic aspects of the proposed Facility. A study of traffic conditions was undertaken through a detailed field reconnaissance and data assembly effort. Traffic generated by the proposed development was estimated based on extensive data collection process at a similar facility, and the plant capacity estimate provided by O&G. Future roadway traffic volumes were estimated with and without the development in place, and capacity analyses of future conditions were performed. Collected traffic data is presented in the SLR report attached to this application.

5.10.4 Mitigation of Potential Impacts

The SLR traffic study concluded that no significant impacts to traffic are expected to be caused by the proposed development. Nonetheless, the study recommends that the driveway sightlines be cleared and maintained to enhance visibility. In addition, potential impacts from truck traffic on public road(s) (noise, vibration, odors, and diesel emissions of MSW collections) are not expected to change within the current residential areas of Plainfield due to the presence of proposed SMART Facility. Long haul trucks from other communities will be instructed to avoid town roads and primarily residential areas, opting instead to access the SMART entrance from Interstates and State Roads. All such deliveries shall be closed or covered and/or packed (compressed) MSW loads to minimize odor emissions, noise vibration, and diesel exhaust as is current practice in CT.

5.11 Transmission and Public Utility Services

The following analysis examines the potential for impact on public utilities and services, such as the provision of water, sewer, and storm sewers as well as electricity, communications, and gas.

5.11.1 Water

The water required by the Project will be provided by CWC. One new water main extension will come from Norwich Road along the main entrance roadway. The water service will be accessed by directional drilling below both Horse Brook and the GW Railroad track requiring coordination and obtainment of temporary rights of entry and license agreements with GW Railroad and CWC. The water will be used for processes, fire, staffing requirements, and general maintenance.

The plant will require operating process water from CWC primarily for boiler makeup water (equivalent to blowdown) and plant fire protection. The rest of the operating process water needs will be for the anaerobic digester and will either come from recirculation of digestate press water or from CWC (Section 5.2.7). Some water will be used for street sweeping (rinsing), dust control, and automatic sprinklers. Water will also be needed for domestic use. The overall estimated average water requirement from CWC is 21,000 gal/day, with a maximum water requirement during a fire condition being 260,000 gal/day.

5.11.2 Sanitary Sewer

As noted in Section 5.2.8, the Facility will be fully staffed and will generate domestic wastewater (i.e., sewage), estimated at approximately 4,000 gal/day based on staffing levels. This wastewater will be pumped to the Plainfield North WPCF.

There will be approximately 13,000 to 24,500 gal/day of “boiler blowdown” and blowdown cooling water discharged to sewer. The boiler blowdown will be combined with approximately 1,000 gal/day of washdown water and approximately 500 gal/day of condensate from air compressors, dehumidifiers, and/or HVAC systems with a total flow to the WPCF not to exceed 30,000 gal/day. These wastewaters will be collected in an on-site pump station and conveyed via force main to the Plainfield North WPCF.

The discharge will be through a 4-inch sanitary sewer force main from the on-site pump station. The force main will be located along the proposed utility corridor and emergency access route to Black Hill Road. A force main will be constructed along Black Hill Road as well, connecting to the existing sanitary sewer manhole to the northeast and closer to the WPCF.

5.11.3 Storm Sewer

There are no stormwater sewers currently located on the Property. Under existing conditions, stormwater on the Property infiltrates into the sandy soils, with no apparent surface water discharge from the site.

Stormwater runoff from areas within the Project boundary after Project construction will be collected in a drainage system and conveyed to the southern portions of the Project, where the water will then be discharged first into a sediment basin and then into an infiltration basin area. As described in Section 5.2.4, the proposed stormwater basin was designed to provide retention storage for the 100-year storm (7.65 inches of rainfall in 24 hours) and therefore also provides the required WQV for the site.

5.11.4 Electric Interconnection

The proposed Facility will require a new 13.8/115 kV substation rated to export most of the approximately 45 MW of power generated by the waste-to-energy process. The substation will be owned and operated by SMART. A full description of the interconnect from the Facility to the grid is located in Exhibit O. Discussions with ISO New England regarding necessary studies for project interconnection remain ongoing. The substation will be designed to interconnect with a to-be-built 115kV switchyard owned by Eversource using a transformer to convert the 13.8 kV plant distribution voltage to the required grid interconnection voltage at 115 kV. Discussions regarding proposed Eversource switchyard are also ongoing, and the Petitioner understands that Eversource will seek Council approval of its own switchyard in a separate filing.

The substation will contain the following equipment:

- GSU power transformer
- High voltage power circuit breaker
- Surge arrestors at the high and low voltage transformer terminals, as well as at the outgoing 115 kV transmission line

- Current transformers
- Coupling capacitor voltage transformers
- Disconnect switches
- Revenue metering
- Power Distribution Center housing the required panels, relays, switches and switchgear, battery banks, and telecommunications equipment
- Substation grounding system including grounding connectors and rods.

Drawing LA-4 in Exhibit O shows the general arrangement of the transmission corridor and easements from the Facility to the new switchyard. The proposed transmission corridor has been adjusted to avoid potential impacts in the wetlands area and to minimize necessary tree clearing for interconnection. An option to purchase the easements for this path has been executed. The new Eversource switchyard will be constructed near the existing 115 kV transmission system to interconnect the existing line to the power generated by the Facility. The proposed Point of Interconnection is shown on Drawing ES-101 in Exhibit O. The transmission poles are anticipated to be 80 ft high. The poles and foundations will be located to avoid wetlands as shown on LA-4. Eversource has informally indicated that the area allocated for the switchyard is adequate, that the three-breaker ring bus is the most likely configuration for the final design (as proposed by similarly sized Brookfield Husky Solar in Docket No. 550) and that emergency power may be provided by an emergency generator as opposed to being provided by distribution, eliminating the need to extend street power to the new switchyard.

5.11.5 Natural Gas Interconnection

Eversource currently owns a natural gas pipeline located under Norwich Road. SMART does not anticipate that any upgrades to this Eversource main line will be required to meet the needs of the SMART Facility. SMART intends to connect to this main pipeline and install an approximately 6-inch diameter service lateral pipeline one-mile long on property that SMART owns to service the Facility. The pipeline will run parallel to the driveway by which vehicles access the SMART Facility from Norwich Road. No easements will be needed to construct the pipeline. SMART will need to obtain an Underground Pipeline Crossing permit and potentially a Right-of-Entry permit from Genesee and Wyoming, Inc. (G&W) in order to directionally drill or

jack and bore the pipeline under the railroad tracks. The pipeline will also cross under Horse Brook and associated wetlands. G&W requirements will be followed during construction and construction of the service will be coordinated with Eversource. The installation will be in accordance with all codes and standards.

The Facility will utilize approximately 35,000 MMBTU (34 MMSCF) of natural gas per year which is comparable to a large warehouse facility. The gas line to support the project is anticipated to be 6-inch in diameter in this area with a maximum demand during cold start-up of the gasifier/boiler of approximately 480 MMBTU/hr (465 MCFH) for a short period (estimated to be less than 6 hours) annually. For reference, the Killingly Energy Center proposed a gas line of “at least 14 inches” in diameter.¹⁸ A cold start is anticipated to occur once per year. These figures include building heating loads. Average annual usage is expected to be less than 4 MMBTU/hr. Natural gas will be used to start the gasification process, estimated to be required approximately 10 days per year, including both cold and hot starts. The Facility’s anaerobic digester will produce pipeline RNG. The amount of RNG produced will exceed that consumed by the Facility. Other uses for natural gas will include hot water boilers for the anaerobic digester, space heating, pilots for emergency flares, and fuel for emergency generators.

The proposed service lateral pipeline starts at Norwich Road and extend 600 feet down a moderate slope parallel to the existing driveway, then crossing a State of Connecticut abandoned railroad right-of-way approximately 100 feet wide, continuing 1,900 feet parallel to the driveway to wetlands associated with Horse Brook through which the G&W railroad extends. Thereafter, the proposed pipeline would extend 500 feet under the wetlands and railroad, approximately 2,300 feet parallel to and crossing under the driveway to a proposed meter location. See Figure 24.

The soils are expected to be predominantly loamy sands suitable for excavation and/or horizontal directional drilling/jack and bore and no rock excavation or blasting is expected. During pipeline construction, as the pipeline is excavated, soils will be removed and stockpiled nearby. Soils will be managed by the construction contractor in accordance with an approved Erosion and Sedimentation Plan. Upon installation of the pipeline, the sandy soils will be recycled as backfill into the trench, and the areas will be re-graded to their original contours. Stormwater management, including the erosion and sediment control measures outlined in the Erosion and Sedimentation

¹⁸ See Council Docket 470, Application Filing, Volume 1, Part II at 166.

Plan, will be employed. No clearing will be required for the pipeline installation. The majority of the route occurs in previously surface-mined areas.

5.11.6 Telecommunications

The Project will be serviced by telecommunication lines located on Black Hill Road at the nearest utility pole. Four-line conduits will be constructed along the utility corridor from Black Hill Road, roughly along the emergency entrance roadway. The services will be coordinated with the respective telecommunications companies.

5.11.7 Mitigation of Potential Impacts on Existing Utilities

In discussions with CWC in January 2025, CWC confirmed that it possesses the required volume of water to service the Project and that the supply of water to the Project will have no significant impact on CWC's water supply system for its existing and/or future customer needs. A hydrant flow test was conducted on March 20, 2025 which confirmed that adequate water was available for the needs of the Facility. The test was conducted utilizing hydrants on Route 12 near the Facility entrance.

The Project does not require connection to any state and/or local stormwater drainage systems. All stormwater from the Project will be collected, treated, and infiltrated on site; therefore, there is no significant impact to local and/or state storm sewer systems.

The Project will generate clean electrical energy and help reduce strain on the existing electrical grid. The Project will be able to produce enough electricity to both run the Facility and provide excess power to the grid. Therefore, the Project will positively affect the power supply to the existing power system.

The Project will require the consumption of natural gas, and Eversource has the necessary natural gas volumes to support this Project without impacting existing and/or future customer needs.

6.0 DECOMMISSIONING/FACILITY CLOSURE

With proper maintenance, the useful life of the proposed Facility would be in the order of 50 years. At that time, the facility may be updated or closed and decommissioned. In accordance with RCSA § 22a-209-13, the CT DEEP Commissioner must be notified at least 60 days prior to

closure of a solid waste facility. At that time, a Closure Plan will be required that includes “any information deemed necessary to ensure the proper closure of the facility so as to preserve and protect the natural resources and environment of the State of Connecticut” and information related to the proposed reuse of the site. The Plan will include, at a minimum:

- A schedule for cessation of waste acceptance,
- A list of permitting needs (local, state, and federal),
- Discussion of potential Facility reuse options,
- Removal/demolition of Facility infrastructure not needed to support a potential reuse including a hazardous building materials survey,
- Removal and proper handling of all remaining waste materials,
- Disconnection of the Facility from all utilities including wastewater, electricity, natural gas, etc.,
- A site grading plan, including remaining stormwater controls, and
- Site restoration including erosion and sedimentation controls, seeding, etc.

Following closure, CT DEEP will also receive as-built plans for the area as an updated Facility Plan, and a detailed description of the facility area must be recorded in the appropriate municipal land records.

Additionally, RCSA § 22a-209-4(i) requires that the owner or operator of a new facility to post a closure “surety with the Commissioner no later than sixty (60) days before” the acceptance of solid waste. The surety is intended “to cover the cost of properly closing the area at any time required in accordance with these regulations and to cover the cost of thirty (30) year post-closure gas and water monitoring.”

7.0 CONCLUSION

Based on the information presented in this Petition, SMART respectfully submits that Project clearly meets the standards set forth in CGS § 16-50k(a). Specifically:

- There is a clear public need for the project to support Connecticut’s state waste and energy policy goals;
- The Project meets CT DEEP’s air and water quality standards, will apply for and receive all necessary environmental permits prior to operation, and water quality

standards associated with construction and industrial stormwater management are a primary focus of the Project's design;

- The Project has been configured to avoid any substantial adverse environmental impacts by utilizing land which has been pre-disturbed by quarrying operations; and
- The Project is designed to minimize visibility from public viewsheds or from surrounding properties, and there will be no impacts from noise.

Given the benefits this Project will provide to the Town of Plainfield and the State of Connecticut, SMART respectfully requests that the Council approve this Project as currently designed and issue a declaratory ruling that a Certificate of Environmental Compatibility and Public Need is not required.