

**WASTE MANAGEMENT DISPOSAL SERVICES OF MAINE, INC.
CROSSROADS FACILITY
PHASE 14 SECURE LANDFILL
DETERMINATION OF PUBLIC BENEFIT APPLICATION
JULY 3, 2018**



TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1.0 INTRODUCTION AND CROSSROADS FACILITY BACKGROUND	1
1.1 Introduction	1
1.2 History of Stewardship at the Crossroads Facility	4
1.3 Municipalities and Businesses Served by the Crossroads Facility	6
1.4 Materials Managed at the Crossroads Facility	10
1.5 Project Description.....	13
1.6 Project Benefit to Host Community and Region.....	13
2.0 THE PROJECT PURPOSE AND CAPACITY NEEDS	15
2.1 Landfills Play an Essential Role in Management of the State’s Solid Waste	15
2.2 Phase 14 is Necessary For Maine’s Long-Term Capacity Needs.....	17
2.2.1 Long-Term Need for Landfill Capacity in Maine.....	18
2.2.2 Current and Future Landfill Disposal Capacity in Maine	18
2.2.3 Regional Considerations.....	20
2.3 The Importance of Competitive Markets.....	21
3.0 THE PROJECT’S PROMOTION OF THE STATE’S SOLID WASTE MANAGEMENT HIERARCHY	23
3.1 State Solid Waste Management Hierarchy	23
3.2 The Project’s Promotion of the Waste Hierarchy.....	24
3.2.1 Waste Reduction Programs	24
3.2.1(a) Organics Diversion and Reuse Program	24
3.2.1(b) Textile Diversion and Reuse Program	25
3.2.1(c) Household Hazardous Materials Collection and Reuse Program	26
3.2.1(d) Battery Diversion Program	26
3.2.1(e) Electronic Waste Diversion Program	27
3.2.1(f) Waste Evaluation and Sustainability Consulting.....	29
3.2.2 Beneficial Reuse and Recycling Programs	29
3.2.2(a) Beneficial Tire Reuse Program	29
3.2.2(b) Single-Sort Recycling Program.....	30
3.2.2(c) Cardboard Recycling Program	33
3.2.2(d) Woodwaste Recycling Program.....	34
3.2.3 Organics Diversion and Reuse Program	34
3.2.4 Gas-To-Energy Infrastructure	35

3.2.5 Landfilling	35
3.3 National Recognition.....	35
3.4 Promotion of Hierarchy – Conclusion.....	37
4.0 THE PHASE 14 PROJECT IS CONSISTENT WITH THE STATE WASTE MANAGEMENT AND RECYCLING PLAN.....	38
5.0 THE PHASE 14 PROJECT IS CONSISTENT WITH LOCAL, REGIONAL OR STATE WASTE COLLECTION, STORAGE, TRANSPORTATION, PROCESSING OR DISPOSAL	40
6.0 TITLE, RIGHT OR INTEREST	41
7.0 PUBLIC NOTICE	42
LIST OF APPENDICES	43
Appendix A: Figures.....	43
Appendix B: Tables.....	43
Appendix C: Property Deeds	43
Appendix D: Public Notice and Documents	43
Appendix E: References	43

EXECUTIVE SUMMARY

The Crossroads Facility (“Crossroads” or the “Facility”), owned and operated by Waste Management Disposal Services of Maine, Inc. (“WMDSM”), currently provides disposal capacity for municipalities and businesses throughout the State of Maine. The vast majority of waste accepted at the Facility is special waste, construction and demolition debris and materials or waste used as alternative daily cover. These wastes cannot be incinerated and have been processed, recycled or reduced to the maximum extent practicable. The Crossroads Facility provides a critical outlet for these wastes, which would otherwise have to be transported at significant economic and environmental cost to more distant locations.

The Crossroads Facility also complements other disposal options on the State’s Waste Management Hierarchy, including incinerators and processing facilities. For example, WMDSM has worked collaboratively with the Mid-Maine Waste Action Corp. (“MMWAC”) to provide waste material to that facility when it experiences downturns in volume and to accept waste material from MMWAC during its periods of limited capacity. WMDSM has also partnered with the Fiberright Facility, which will serve the needs of more than 115 municipalities. The Fiberright Facility will process municipal solid waste (“MSW”) into renewable fuels or material for recycling and generate a by-product that requires landfilling. WMDSM will take all of the facility’s residuals and bypass, which is critical to the viability of the Fiberright Facility and the many communities it will serve.

Although it constitutes less than 25% by volume, Crossroads also provides essential and cost-effective MSW disposal capacity for approximately 55 communities in western and central Maine. Crossroads is critical to providing needed capacity for a portion of the MSW generated in Maine and, importantly, many of the communities that utilize Crossroads for MSW disposal are distant from alternative sites and existing incinerators. For these communities, Crossroads provides a critical and cost-effective disposal option not provided by other facilities in the State.

Existing capacity provided by the previously permitted Phase 8 expansion will be fully utilized by 2024. To ensure that the Facility can continue to serve the needs of Maine communities and businesses, WMDSM is proposing development of an additional 7 million cubic yards of capacity (the “Phase 14 Project” or “Project”). Like Phase 8 before it, the Phase 14 Project will provide a substantial public benefit to the State of Maine by providing disposal capacity and ancillary waste management services through 2040. Without the Project, there will be a significant shortage of landfill capacity in the State.

The Crossroads Facility is also critical to ensuring solid waste disposal services remain competitive within Maine. By 2026, more than 80% of the landfill capacity will be limited to three landfills, two of which are located in Aroostook County and none of which provide practicable options for the vast majority of customers served by the Crossroads Facility. Phase 14 will ensure competitive landfill disposal options exist within the State beyond 2024. The Phase 14 Project will benefit customers serviced by the Crossroads Facility along with consumers of all disposal services such as waste collection and transportation throughout the State.

The Phase 14 Project is also consistent with the State's Solid Waste Management Plan and Recycling Plan and promotes the State's Waste Management Hierarchy. WMDSM's parent company is also North America's largest residential recycler. WMDSM has the resources, expertise and commitment to assist the State in its recycling efforts. The Crossroads Facility provides recycling services to 23 communities and in 2010 instituted a single-sort recycling program that has increased overall recycling in these communities. WMDSM collects recyclables and manages and consolidates the materials into bulk containers at the Crossroads Facility for shipment south to recycling brokers or purchasers. WMDSM's ability to manage recyclables at a regional level and transport these material to facilities such as ecomaine, is critical to the ability of these communities to recycle waste that would otherwise have to be landfilled.

WMDSM also implements a number of additional programs to reduce or recycle waste. These programs include a waste evaluation and consulting program to reduce waste generation at its source, a battery and e-waste diversion program, a partnership with BDS Waste Disposal to beneficially reuse tires, removing 33,611 tons of whole tires in 2017 alone, a corrugated cardboard recycling program, and a landfill gas renewable energy plant at the Facility that generates approximately 21,685,000 kilowatt hours of electricity per year. As part of the Phase 14 Project, WMDSM proposes to significantly upgrade its existing transfer station at the Facility, expand education and outreach to customers to improve recycling and waste reduction efforts, and implement a new textile diversion and reuse program, an organics diversion and reuse program, and a hazardous waste collection and reuse program. WMDSM will also work with its customers and all stakeholders to address the ongoing recycling crisis and explore options for continuing and expanding existing recycling efforts.

WMDSM has operated the Crossroads Facility since 1990. It has and continues to provide necessary and cost-effective disposal options to its many Maine customers and contributes to its host community, the region, and the State. It looks forward to the opportunity to continue to do so beyond 2024, when current capacity at the Facility will be fully utilized. This application demonstrates that the proposed Project will meet the long-term needs of the State, is consistent with the State's Solid Waste Management and Recycling Plan and promotes the State's Waste Management Hierarchy, and is not inconsistent with local, regional, or state waste collection, storage, transportation, processing or disposal.

1.0 **INTRODUCTION AND CROSSROADS FACILITY BACKGROUND**

1.1 **Introduction**

Waste Management, Inc. (“Waste Management”), the world’s largest environmental services provider, has a strong presence in New England. Waste Management provides integrated waste management services, including recycling, collection, waste-to-energy, transfer station management, landfilling and sustainability consulting to municipalities and businesses throughout the region. Waste Management’s comprehensive environmental services are provided to Maine municipalities and businesses by way of the Crossroads Facility (“Crossroads” or the “Facility”).

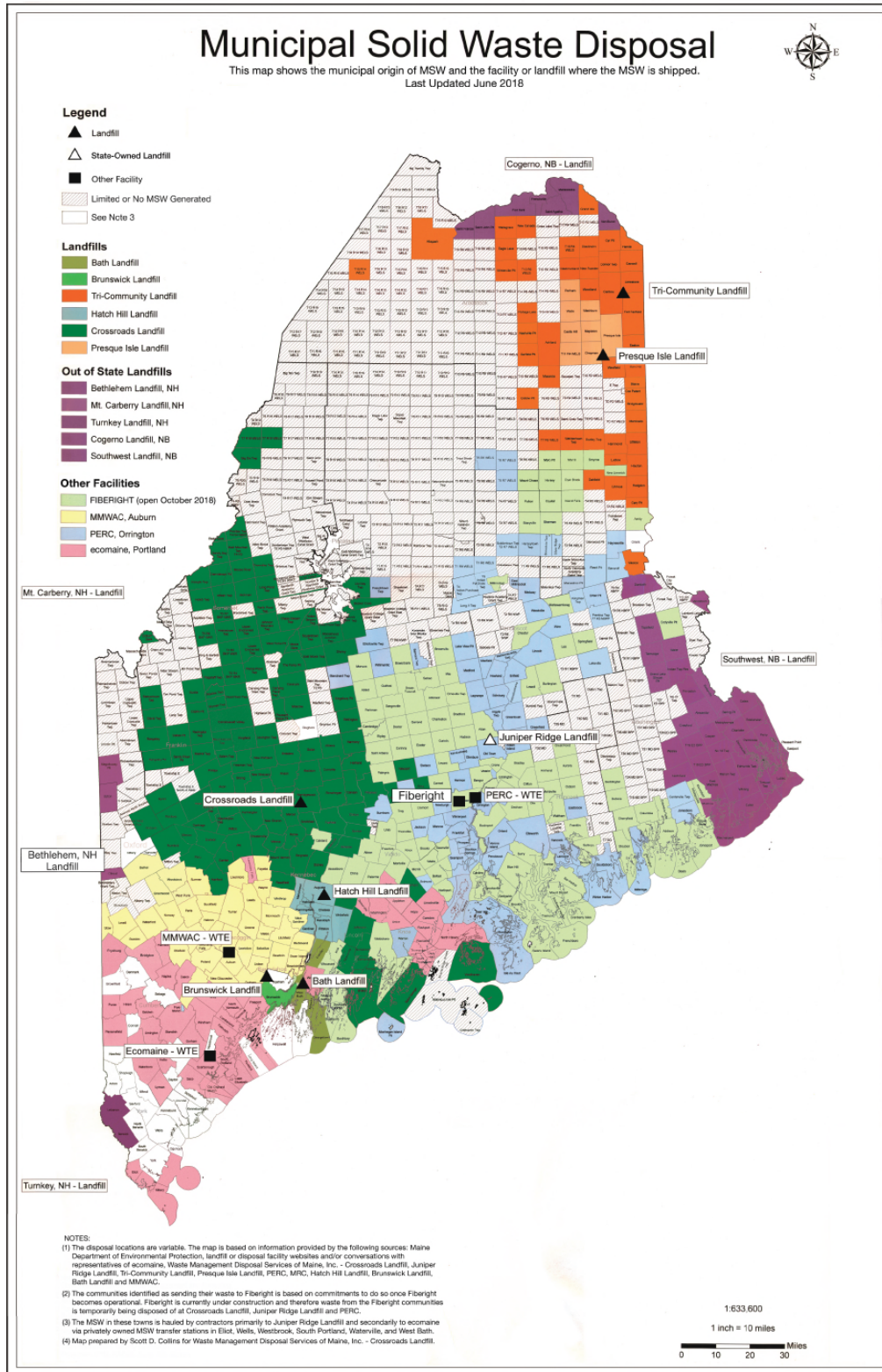
Waste Management Disposal Services of Maine, Inc. (“WMDSM”) owns and operates the Crossroads Facility located in Norridgewock, Maine, as shown on the map provided as Figure 1 of Appendix A. Together, the components of the Facility promote an integrated approach to waste management. The 933 acre site includes a recycling transport center, a community transfer station, a tire beneficial reuse processing facility, a woodwaste recycling program, a renewable energy power plant and a landfill licensed by the Maine Department of Environmental Protection (“DEP” or the “Department”) to dispose of non-hazardous wastes.¹ A site map depicting the Facility is provided in Figure 2 of Appendix A. WMDSM’s local expertise and commitment, combined with the strength of its parent company, the nation’s largest environmental services provider, ensures that the Crossroads Facility is environmentally sound, technically strong, and financially stable, both today and into the future.

For the state of Maine, the Crossroads Facility serves an essential role in the management of waste materials for municipalities and businesses. For the municipalities and businesses in the northwestern and central region of Maine, the Crossroads Facility is an important cost-effective disposal option and for many, the only real viable option. Due to the region’s geographic location and size, numerous municipalities and businesses transport materials significant distances to reach the Facility. Crossroads also promotes facilities higher up on the State’s Waste Management Hierarchy, such as Mid-Maine Waste Action Corp. (or “MMWAC”) and Fiberright, where a long-term disposal contract is in place to support that operation and help ensure the facility’s viability. Figure 3 below depicts the region served by the Crossroads Facility and other landfills and facilities in the State.

The Crossroads Facility is also the only licensed commercial disposal facility within the state of Maine. The presence of the Facility ensures that the costs to municipalities and businesses for collection, transportation and disposal of wastes remain competitive. Natural competition within the State’s waste disposal market significantly decreases the risk that overconsolidation will produce unnaturally high or supracompetitive waste prices.

¹ The Crossroads Facility accepts three primary waste materials: special wastes, municipal solid wastes (“MSW”) and construction and demolition debris (“CDD”). For the purpose of this Application, CDD is treated separately from MSW unless otherwise indicated.

FIGURE 3: MAINE MUNICIPAL SOLID WASTE DISPOSAL MAP – MAY 2018



**An enlarged version of Figure 3 is provided in Appendix A*

The Crossroads Facility receives waste materials through three primary sources: (1) a commercial transportation and hauling network; (2) a regional network of transfer stations with materials transported by municipalities, private contractors and WMDSM; and (3) a small curbside collection program serving two nearby communities. While the Facility operates multiple programs to divert waste materials from the landfill, the majority of wastes arriving at the Facility have no other disposal option.

In addition to being an essential component of the State's waste management infrastructure, the Facility provides both the town of Norridgewock and the surrounding region with significant economic benefits. The Maine Chamber of Commerce estimates that WMDSM's investments in the Crossroads Facility have a six-fold benefit to the regional economy in terms of employment and construction contracts. Based upon this information, the \$94.9 million expended by WMDSM in costs associated with the existing permitted units at the Facility has had a \$569.4 million benefit to the region to date. Crossroads also contributes nearly one-third of Norridgewock's annual operating budget through payment of host fees and property taxes, and no-cost waste disposal and recycling services.

Based on WMDSM's most recent data, the Crossroads Facility is projected to exhaust available disposal capacity at the Facility by the end of 2024.² For the Facility to continue providing a cost-effective and environmentally sound disposal option for Maine municipalities and businesses, it will need to develop an additional secure disposal unit. Thus, WMDSM is proposing the development of its Phase 14 Project ("Phase 14" or the "Project") for the Crossroads Facility.

Prior to requesting a license from the DEP to construct an additional secure disposal unit, an applicant must demonstrate that the project provides a substantial public benefit to the state of Maine.³ The standards for a positive Public Benefit Determination are set forth below:

- The proposed facility meets immediate, short-term, or long-term capacity needs of the State;
- The proposed facility is consistent with the State Solid Waste Management and Recycling Plan; and
- The proposed facility is not inconsistent with local, regional, or state waste collection, storage, transportation, processing or disposal.⁴

The subsequent sections of this Application demonstrate that WMDSM's Phase 14 Project satisfies these standards and provides Maine municipalities and businesses with a substantial public benefit now and into the future.

² Careful stewardship of airspace at the Crossroads Facility extended the original life expectancy for Phase 8 by 12 years, from 2012 to 2024.

³ 38 M.R.S.A. § 1310-AA (2013); *see also* 06-096 C.M.R. ch. 400 § 5.

⁴ *Id.*

1.2 History of Stewardship at the Crossroads Facility

The Crossroads Facility has a strong history of environmental stewardship. Beginning in October of 1990, Waste Management, the parent company of WMDSM, acquired the Facility and its assets from Consolidated Waste Services. WMDSM sought and received DEP approval for the transfer of all facility-related licenses. Since then, DEP has issued licenses for other secure disposal units at the Crossroads Facility, including Phase 7 in July 1992; Phase 10 in May 1995; Phases 9, 11, and 12 in October 1997; and Phase 8 in August 2002.

WMDSM has emphasized careful and prudent engineering and operational procedures at the Crossroads Facility. This approach has maximized disposal capacity, improved environmental conditions, and conserved critical air space. WMDSM's emphasis on stewardship has achieved results: Phases 8, 9, 11 and 12 have all significantly exceeded initial site life projections. Perhaps the most notable example is Phase 8, which was originally designed in 2000-2001 to provide additional disposal capacity without requiring lateral expansion of the Facility. The Phase 8 permit application was submitted in 2001 for a 45-acre lined landfill to be constructed partly as an overfill in newly lined areas, partly over undisturbed areas, and partly over an area where existing unlined waste (deposited by the previous owners) would be voluntarily removed by WMDSM. In order to improve the environmental conditions at the site while maximizing the disposal capacity, several innovative engineering features and operational procedures were developed and utilized, including: (1) excavation and relocation of the unlined waste; (2) wick drains; (3) mechanically stabilized earth ("MSE") perimeter berms; (4) extensive construction and post-construction geotechnical monitoring and slope modifications; and (5) high in-place waste density. Details of these innovative engineering and operational initiatives are provided below.

- Waste Excavation. A significant portion of the Phase 8 expansion was built over the area occupied by an existing unlined MSW Landfill unit. This required excavation of approximately one million cubic yards of old waste and relocation into newly lined areas, thereby significantly enhancing long-term protection of the environment at the Facility and in the surrounding areas. WMDSM accomplished this by often working 24-hours a day during winter months and utilizing extensive controls to prevent odors or other nuisance issues for the community.
- Wick Drains. The Phase 8 area is underlain by a very soft glaciomarine foundation clay deposit, the Presumpscot Formation, which is ubiquitous throughout much of Maine. Phase 8 was one of the first landfill designs in the United States that included wick drains to accelerate drainage and pore pressure dissipation of the glaciomarine clays, thereby increasing the strength of the foundation under Phase 8. Since then, wick drains have been employed at other facilities in Maine to provide similar results.
- MSE Berms. The disposal capacity provided by Phase 8 was further increased by construction of a MSE perimeter berm around much of the lined perimeter. The internally reinforced berm has an average height of about 20 feet, with a total length of nearly 5,000 feet. By effectively increasing the loading (and therefore the strength) of the foundational clays under the landfill toe and by optimizing the positioning of the berm

allowed by the steepened exterior MSE face, an additional 20% disposal capacity was provided in Phase 8 compared to the same footprint that would have been provided by an unreinforced berm. Since then, Waste Management has constructed MSE berms at more than a dozen landfills, and the use of MSE berms at landfills in New England has seen considerable growth including the Turnkey Landfill in New Hampshire.

- *Geotechnical Monitoring and Slope Modifications.* Since the Phase 8 landfill was first conceived, extensive stability monitoring has been performed using slope inclinometers and vibrating-wire piezometers. The locations of the instrumentation were selected to correspond to critical cross sections identified during the stability design analyses as being the most important for monitoring during excavation/relocation of the unlined waste and subsequent waste filling of the lined unit. WMDSM’s engineering consultants contributed considerably to advancing the state-of-practice in designing civil engineering structures over the Presumpscot Formation. This work has been published in technical journals and was featured in presentations at the 2015 University of Maine Second *Symposium on the Presumpscot Formation*.
- *Waste Compaction.* Since Phase 8 became operational, WMDSM has achieved an average in-place waste density of 0.9 tons per cubic yard.⁵ The density of in-place waste (also referred to as the Airspace Utilization Factor (“AUF”)) is an indicator of how efficiently the disposal capacity in a landfill is used. The AUF is a function of the types of waste, the manner in which the waste is blended during placement in the landfill, the amount of compaction effort exerted by the site operations personnel, and how well the waste is being decomposed in the landfill. A higher AUF correlates to better efficiency in consuming airspace; the Crossroads landfill has a very high AUF compared to other landfills in Maine, further exemplifying the importance WMDSM places on good stewardship of landfill airspace.

Table 1 below provides an itemized summary of the modifications and resulting changes in disposal capacity which WMDSM has achieved with DEP approval since initial permitting of Phase 8. As shown, through careful engineering analyses, the capacity has been increased by nearly 1.3 million cubic yards, representing a 30% increase in the overall capacity of Phase 8. More importantly, Phase 8 was originally projected to reach capacity in 2012, but is now currently projected to remain available for waste disposal through 2024 due to filling rates and WMDSM’s diligence in these engineering and operational initiatives.

⁵ Maine 2009 Solid Waste Generation and Disposal Capacity Report indicates commercial landfills optimize available capacity by achieving a one-to-one ratio of tons-to-cubic yards. Maine State Planning Office, *Solid Waste Generation & Disposal Capacity Report for Calendar Year 2009*, 19 (January 2011), <http://www.maine.gov/dep/sustainability/publications/documents/waste-gen-disp-capacity2009.pdf>. We are not aware of any landfills in Maine with a higher AUF than the 0.9 tons per cubic yard achieved at Crossroads.

**TABLE 1: SUMMARY OF PHASE 8 DISPOSAL CAPACITY MODIFICATIONS –
CROSSROADS LANDFILL, NORRIDGEWOCK, MAINE**

Modification Number	Reference Document or Drawing	Date	Change in Disposal Capacity [cyd]
1	<i>Modification to Temporary Waste Grades in Phase 9</i>	24-Oct-2002	38,470
2	Sheet 17 - Phase 8A Constr. Dwgs.	May-2003	-29,170
3	<i>Phase 8B Leachate Collection System Construction</i>	9-Jun-2003	1,180
4	Sheet 12 - Phase 8B Constr. Dwgs.	Aug-2003	7,450
5	RFI 04-04	18-Feb-2004	31,120
6	<i>Phase 8C' Waste Excav/Relo. Plan</i>	6-Jul-2004	51,000
7	Sheet 14 - Phase 8C' Constr. Dwgs.	Sept-2004	-12,480
8	RFI 04-02	22-Nov-2004	175,480
9	<i>Stage 0 Ph8C' Waste-Fill Sequence</i>	1-Nov-2005	48,370
10	<i>Phase 8C' Waste-Fill Sequence Plans (Stages 1, 2, 2A & 3)</i>	16-Dec-2005	68,090
11	Sheet 16 - Phase 8C" Constr. Dwgs.	Dec-2006	-40,200
12	<i>Phase 8A Sideslope Modification</i>	16-Jan-2009	228,356
13	<i>Proposed Waste Placement Submittal #1, Phases 7&9, Proposed Waste Placement Submittal #2, Phases 7&9 (F-13 Terrace) Proposed Waste Placement Submittal #3 - Phase 7&9 and Phase 8B</i>	8-Dec-2010	207,933
14	<i>Revised Final Cover System Engineering Report (Revision 1)</i>	1-Jun-2012	94,541
15	<i>Proposed Waste Placement Submittal No. 1, Phase 1 and 8C' East Sideslope Modification Proposed Waste Placement Submittal #2 - Phase 1 and 8C' East Sideslope Modification</i>	13 Jul 2012 25 Sept 2012	298,500
16	<i>Phase 8C" Permit Modification</i>	29-May-2014	-249,537
17	<i>Phase 8 Upper Sideslope and Topdeck Modification – Submittal #1 Phase 8 Upper Sideslope and Topdeck Modification – Submittal #2 Phase 8 Upper Sideslope and Topdeck Modification – Submittal #3</i>	17 June 2016 24 Aug 2016 11 Nov 2016	441,000
		TOTAL	1,360,103

The history of stewardship at the Crossroads Facility goes beyond efforts related directly to waste disposal. WMDSM supports many additional initiatives, some of which are discussed below, including a Single-Sort Recycling Program, a Beneficial Tire Reuse Program, a Woodwaste Recycling Program, a gas-to-energy collection system, and electronic waste recycling, in addition to others. Phase 14 provides the Crossroads Facility with the opportunity to grow its environmental stewardship efforts by launching new initiatives, such as an Organics Diversion Program, Hazardous Waste Collection events, a transfer station upgrade, and a Textile Diversion Program. Careful stewardship of Maine’s natural resources has always been a priority at the Crossroads Facility and will continue to be with the successful implementation of the Phase 14 Project.

1.3 Municipalities and Businesses Served by the Crossroads Facility

The Crossroads Facility serves municipalities and businesses throughout the entire state of Maine. The primary disposal network extends as far north as Jackman, as far south as Bath, as far east as Vinalhaven and to the State’s western border, as illustrated by Figure 3. As further discussed in Section 2.3.3, the Phase 14 Project is of particular importance to western and

northern portions of the Crossroads disposal network given their geographic location. The Crossroads’ disposal network is listed below in Tables 2 through 4.

TABLE 2: MAINE MUNICIPALITIES CURRENTLY SERVED BY THE CROSSROADS FACILITY⁶

Somerset	Franklin	Kennebec	Oxford
Anson	Carrabassett Valley	Belgrade	Andover
Athens	Carthage	China	Bethel
Canaan	Chesterville	Clinton	Byron
Cornville	Eustis	Fayette	Dixfield
Detroit	Farmington	Mount Vernon	Hebron
Embden	Industry	Readfield	Mexico
Fairfield	Jay	Rome	Peru
Hartland	Kingfield	Sidney	Roxbury
Jackman	Madrid	Vassalboro	Rumford
Madison	New Sharon	Vienna	
Mercer	New Vineyard	Waterville	
Palmyra	Phillips	Windsor	
Pittsfield	Rangeley Plantation	Winslow	
Norridgewock	Rangeley		
Skowhegan	Stratton		
Smithfield	Strong		
Solon	Temple		
Somerset County Commissioners	Wilton		

Lincoln	Knox	Penobscot	Androscoggin
Boothbay	Saint George	Etna	MMWAC*
Boothbay Harbor	Vinalhaven	Newport	
Bristol/South Bristol Transfer Station		Municipal Review Committee/Fiberight*	
Edgecomb			
Monhegan			
Nobleboro/Jefferson Transfer Station			
Southport			

**Municipalities within consortiums are listed below in Table 3.*

⁶ Bolding indicates the communities in close proximity to the Crossroads Facility that utilize the transfer station on Airport Road in Norridgewock.

**TABLE 3: MAINE SOLID WASTE CONSORTIUMS AND THEIR MEMBER COMMUNITIES
CURRENTLY SERVED BY THE CROSSROADS FACILITY⁷**

Mid-Maine Waste Action Corp. or MMWAC	
Members	Non-Members
Auburn	Bath
Bowdoin	Bowdoinham
Buckfield	Brunswick
Lovell	Dresden
Minot	Gray
Monmouth	Greene
New Gloucester	Hebron
Poland	Leeds
Raymond	Lewiston
Sumner	Lisbon
Sweden	Lisbon Falls
Wales	Litchfield
	Mechanic Falls
	Norway
	Oxford
	Richmond
	Sabattus
	South Paris
	Topsham
	Turner
	Wiscasset
	Woolwich

Municipal Review Committee (“MRC”)/Fiberight		
Abbot	Addison	Albion
Alexander	Alton	Amherst
Atkinson	Aurora	Baileyville
Bangor	Bar Harbor	Baring
Beals	Belfast	Benton
Blue Hill	Boothbay	Boothbay Harbor
Bowerbank	Bradford	Bradley
Bancroft	Brewer	Brooklin
Brooks	Brooksville	Brownville
Bucksport	Burnham	Camden
Carmel	Castine	Centerville
Central Penobscot	Charleston	Cherryfield
Chester	China	Clifton

⁷ As discussed in Section 2.1, the Crossroads Facility supports operations at MMWAC and the proposed Fiberight Facility, and as a result the many communities served by those two facilities.

Clinton	Columbia	Columbia Falls
Corinna	Corinth	Cranberry Isles
Crawford	Cushing	Dedham
Dexter	Dixmont	Dover-Foxcroft
Drew Plt.	East Millinocket	Eddington
Edgecomb	Edinburg	Enfield
Etna	Exeter	Fairfield
Franklin	Freedom	Friendship
Garland	Glenburn	Gouldsboro
Grand Lake Stream	Great Pond	Greenbush
Guilford	Hampden	Hancock
Harrington	Haynesville	Hermon
Holden	Hope	Howland
Hudson	Jackson	Jonesport
Kenduskeag	Knox	LaGrange
Lamoine	Lee	Levant
Lincoln	Lincolntonville	Luceme
Machias	Mariaville	Mars Hill
Mattawamkeag	Maxfield	Medford
Medway	Midcoast	Mid-Maine
Milbridge	Milford	Millinocket
Milo	Monson	Montville
Mt. Desert	N Katahdin	Newburg
Oakfield	Oakland	Old Town
Orland	Orono	Osborn
Otis	Owls Head	Palmyra
Parkman	Passadumkeag	Penobscot Co.
Piscataquis Co.	Pleasant River SWD	Plymouth
Reed Plt.	Rockland	Rockport
Sangerville	Searsmont	Searsport
Sebec	Sedgewick	Sherman
Sorrento	South Thomaston	Southport
Southwest Harbor	Springfield	St. Albans
Stetson	Steuben	Stockton Springs
Stonington	Sullivan	Surry
Swans Island	Talmadge	Thomaston
Thorndike	Topsfield	Tremont
Trenton	Tri-County	Troy
Union River SWD	Unity	Vassalboro
Veazie	Verona	Waite
Waldoboro	Waltham	Waterville
West Gardiner	Winn	Winslow
Winter Harbor	Winthrop	Wiscasset

**TABLE 4: SELECTED MAINE BUSINESSES AND INSTITUTIONS SERVED
BY THE CROSSROADS FACILITY**

Abatement Professionals
Backyard Farms
Bath Iron Works
BDS Waste
Central Maine Power
Cianbro
Clean Harbors
Colby College
Envirovantage
Fiberight/CRM
Fisher Engineering
Global Construction
Huhtamaki
Irving Forrest Products
Keystone Management
Nichols Portland
Pioneer Plastics
Portland Water District
ReEnergy
Sappi
Sargent Corp.
Sheridan Corp.
Sugarloaf Mountain Corp.
Tasman Leathers
Unity College
University of Maine at Farmington
Wright-Ryan

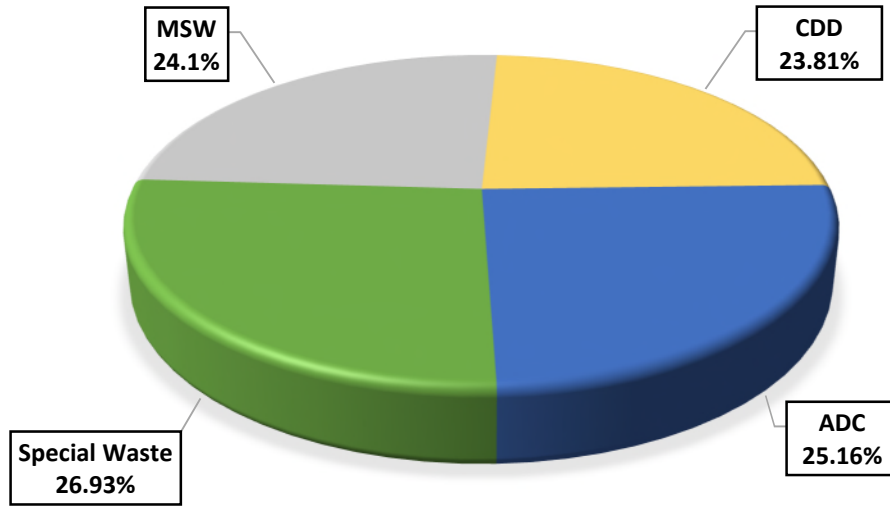
1.4 Materials Managed at the Crossroads Facility

To meet the needs of Maine residents and businesses, WMDSM manages a variety of non-hazardous waste materials at the Crossroads Facility. Materials generally include, residential, commercial, and institutional MSW, front-end process residues (“FEPR”), CDD and a range of special wastes including, municipal incinerator ash, wastewater treatment plant sludge, contaminated media, and light industrial solid waste. On average, since 2004, 26.93% of the wastes managed at the Crossroads Facility from Phases 8 and 11 have constituted special waste, 24.1% have constituted MSW, 25.16% have consisted Alternative Daily Cover (“ADC”) and 23.81% have constituted CDD, as seen in Figure 4. WMDSM projects these percentages to generally continue during its Phase 14 Project.^{8,9}

⁸ 2004 corresponds to the commencement of the Phase 8 secure disposal unit at the Crossroads Facility.

⁹ For the purposes of this Application, special waste includes asbestos-containing waste, unless otherwise specified.

FIGURE 4: PERCENTAGE OF MATERIALS MANAGED AT CROSSROADS: 2004 - 2017



Special Waste:

The Crossroads Facility provides special waste disposal services to municipalities and commercial waste generators throughout the state of Maine. The primary generators of special waste managed throughout Phase 8 are as follows.

- Maine Energy Recovery Company – Ash
- ReEnergy – Ash
- Grimm Industries – Auto Shredder Residue
- Pioneer Plastics – Plastic Pellet Dust
- City of Portland, Maine – Municipal Wastewater Sludge

During the past five years, the average annual amount of special waste managed within Phase 8 of the Crossroads Facility, excluding asbestos-containing waste, was 47,733.6 tons.

Construction and Demolition Debris:

Commercial waste generators and municipalities throughout the State utilized the Crossroads Facility for disposal of CDD. The primary Maine generators utilizing the Crossroads Facility for disposal of CDD during Phase 8 are as follows.

- Commercial Haulers
- Commercial Transfer Stations
- Municipal Transfer Stations
- MMWAC Member Communities

During the past five years, the average annual amount of CDD managed within Phase 8 of the Crossroads Facility was 55,709.6 tons.

Alternative Daily Cover:

The Crossroads Facility also manages waste for use as ADC from commercial waste generators and municipalities throughout the State. The most significant generators of ADC that utilized the Crossroads Facility during Phase 8 are as follows.

- ReEnergy – Wood Ash
- Gimmel Industries – Auto Shredder Residue
- Pioneer Plastics – Pellet Dust
- Global – Utility Pole Chips
- Municipal Wood Waste – Chips

During the past five years, the average annual amount of ADC managed within Phase 8 of the Crossroads Facility was 76,134.2 tons.

Municipal Solid Waste:

Municipalities and businesses within Maine also utilize the Crossroads Facility for disposal of MSW. The primary Maine generators of MSW managed at the Crossroads Facility during Phase 8 are as follows.

- Commercial Haulers
- Waste Management
- Northern Oxford Regional Transfer Station
- Skowhegan Transfer Station
- Madison Transfer Station
- Newport Transfer Station

During the past five years, the average annual amount of MSW managed within Phase 8 of the Crossroads Facility was 82,153.2 tons. Consistent with Maine’s preference to utilize incineration over landfilling, WMDSM has not sought to expand its MSW customer base beyond the region it has traditionally served. Additionally, the Crossroads Facility is a vital broker of MSW for incinerators and for production of biofuels. Crossroads supports the MMWAC Facility by providing it with additional MSW during downturns in volume that would otherwise curtail its operations. Crossroads also recently entered into an agreement with Fiberright to send MSW bridge capacity waste to Penobscot Energy Recovery Company (“PERC”).

All MSW managed by the Crossroads Facility is generated by municipalities and communities within the state of Maine. The vast majority of all material sent to the Crossroads Facility also comes from within the state of Maine. Since April 2001, when WMDSM initiated reporting gate receipts in compliance with the Phase 8 public benefit determination, less than 25% of the total volume of waste received at the Facility has come from out-of-state. This is substantially below the 35% reporting threshold set forth in the Phase 8 public benefit determination. All of the out-of-state waste has been special waste, primarily ADC, municipal wastewater sludge and contaminated soils. The percentage of non-remediation special waste has been less than 15%, substantially below the 25% reporting threshold in the public benefit determination for Phase 8. A significant percentage of the out-of-state waste is used as ADC, which does not reduce airspace that would otherwise be available for Maine generated waste.

Daily cover is required by the solid waste regulations and absent revenue generating sources of cover, WMDSM would have to obtain fill from on-site or purchase it from third parties. Additionally, the State has recognized that use of waste as shaping, grading or ADC at landfills is a form of recycling.¹⁰

To remain viable, it is critical that WMDSM continue to accept out-of-state special waste. Annual percentages will likely continue to fluctuate based on market conditions including economic growth, which increases generation of special waste, as well as changes in the regional disposal landscape. Overall, WMDSM expects that Phase 14, like Phase 8, will serve predominantly Maine customers and businesses, and WMDSM will ensure that it provides an ongoing benefit to Maine businesses and communities by providing cost-effective and competitive waste management options.

1.5 **Project Description**

For the Crossroads Facility to be able to continue serving the residents and businesses of Maine, it requires additional disposal capacity which will be provided by Phase 14. Phase 14 will be located east of the existing main access road into the Facility, as seen in Figure 5 of Appendix A. Development of Phase 14 is anticipated to include the following: (1) excavation of topsoil and designated amounts of underlying soils; (2) construction of a liner and leachate collection system; (3) construction of perimeter berms and an access road; (4) construction of landfill gas and leachate transfer pipes to the existing on-site landfill gas and leachate management facilities; and (5) construction of stormwater management features including stormwater detention basins.

Based on the current preliminary design, the calculated waste capacity of Phase 14 is approximately 7 million cubic yards¹¹ within a lined footprint of about 51 acres. Based on WMDSM's projected rate of 450,000 tons of waste per year to be accepted at the Crossroads Facility, Phase 14 will provide municipalities and businesses in Maine with disposal capacity for approximately 15 years beyond the currently projected closure of Phase 8. The Phase 14 Project is expected to extend Facility life until the year 2040.

1.6 **Project Benefit to Host Community and Region**

The Crossroads Facility and the town of Norridgewock (the "Town") have a strong working relationship. WMDSM is committed to Norridgewock's wellbeing and support of the local community. As evidence of this commitment, Crossroads currently employs approximately 30 local individuals at the Facility and has done so annually for the past 15 years. WMDSM also assists the Town financially through payment of property taxes and host community fees. Norridgewock also receives waste and recycling services at no cost. In 2017, the monetary value of this service totaled approximately \$350,000. A summary of taxes and fees provided to Norridgewock and to the State of Maine through Phase 8 are detailed below in Table 5. WMDSM has also assisted the Town with tangible benefits, such as construction of its sand and

¹⁰ 38 M.R.S.A. § 1310-N(5-A)(B)(2) (2015).

¹¹ Waste density of 1 ton per cubic yard is assumed for capacity citations in this Application.

salt shed, procurement of a thermal imaging camera, and ongoing road maintenance at no cost to the Town.

**TABLE 5: CROSSROADS LANDFILL COMMUNITY BENEFITS AND
STATE DISPOSAL FEES
2004 - 2018**

	Norridgewock		Disposal Fees paid to State of Maine
	Host Fees	Property Taxes	
2018 YTD	\$191,720.84	TBD	\$818,231.35
2017	\$600,696.50	\$253,328.54	\$1,488,635.92
2016	\$412,337.41	\$263,486.32	\$639,029.65
2015	\$307,316.93	\$286,734.32	\$662,037.64
2014	\$438,209.63	\$296,775.43	\$939,143.23
2013	\$352,325.94	\$266,524.60	\$726,068.74
2012	\$262,870.06	\$250,921.23	\$572,274.36
2011	\$289,684.15	\$248,644.50	\$552,988.87
2010	\$308,086.82	\$262,432.80	\$700,887.88
2009	\$282,117.84	\$299,680.35	\$609,984.26
2008	\$311,096.77	\$258,059.47	\$558,975.89
2007	\$414,190.87	\$217,994.06	\$851,148.58
2006	\$463,262.74	\$198,363.20	\$753,404.72
2005	\$383,787.69	\$218,935.73	\$669,514.88
2004	\$269,880.25	\$235,213.14	\$452,937.56
Total	\$5,287,584.44	\$3,557,093.69	\$10,995,263.53

In addition to the benefits provided to Norridgewock, the region surrounding Crossroads also receives important benefits from the Facility. As discussed above, the Maine Chamber of Commerce estimates that WMDSM’s financial investments in the Crossroads Facility have a six-fold benefit to the regional economy in terms of employment and construction contracts. Based on this information, it is estimated that the \$49.7 million costs associated with Phase 14, will contribute \$298.2 million to the region over the life of the Project. Finally, on an annual basis, the State of Maine also receives significant licensing and operating fees from the Crossroads Facility as demonstrated in Table 5. The disposal fees paid to the State of Maine over the 14.5-year period detailed above have averaged over \$750,000 per year. The benefits described above will continue with the successful development of the Phase 14 Project.

2.0 **THE PROJECT PURPOSE AND CAPACITY NEEDS**

The Crossroads Facility plays an essential role in management of the State's solid waste, and Phase 14 will ensure that it can continue to do so beyond 2024, when remaining capacity at the Facility will be exhausted.¹²

2.1 **Landfills Play an Essential Role in Management of the State's Solid Waste**

Maine law recognizes the need for and public benefit provided by landfills, which complement the remaining waste management strategies in the State's Solid Waste Management Hierarchy (the "Waste Hierarchy" or the "Hierarchy"). Reduction of waste is at the top of the Hierarchy, and 2010 regional data indicated that Mainers generated approximately 0.566 tons of MSW per person on an annual basis; less than any other New England state.¹³ Additionally, total MSW disposal (excluding CDD and waste-to-energy ash) decreased 5.5% in the four-year period from 2008 to 2012.¹⁴ Although Maine's per capital disposal rate has increased slightly since then to 0.571 tons,¹⁵ it generally remains lower than national rates.¹⁶

Even as society moves toward more efficient use of material and seeks to reduce the total volume of waste generated,¹⁷ there will always be a need to manage solid waste, which typically increases in volume with economic growth.¹⁸ There are also limitations on how much solid waste can be recycled and reused. As discussed in greater detail in Section 3.0, Waste Management is the nation's largest residential recycler, and WMDSM has made a substantial investment in improving recycling programs in the municipalities it serves. This has continued at a time when recycling costs have increased and markets have seen an upturn in volatility. Recently, the waste industry has been facing market volatility and multiple challenges associated with the export of processed materials. This has impacted the ability to increase recycling volumes with commercial and municipal customers in Maine and elsewhere. The most recent recycling figures for Maine indicate a recycling rate in 2016 of 36.79% for MSW (excluding CDD), and a recycling/beneficial reuse rate of 11.38% for CDD.¹⁹

The majority of MSW in Maine is recycled or incinerated in one of Maine's three operating waste-to-energy plants.²⁰ Maine currently has three licensed and operating waste-to-

¹² This Application utilizes the most current data available from the DEP and the former Maine State Planning Office. In some instances, data for the most recent calendar years is limited and includes gaps.

¹³ Maine Dep't of Env'tl. Prot., *Maine Materials Mgmt. Plan: 2014 State Waste Mgmt. and Recycling Plan Update and 2012 Waste Generation and Disposal Capacity Report*, 7 (January 2014), http://digitalmaine.com/cgi/viewcontent.cgi?article=1022&context=dep_docs.

¹⁴ *Id.*

¹⁵ Maine Dep't of Env'tl. Prot., *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, 4 (Jan. 2018), <http://www.maine.gov/tools/whatsnew/attach.php?id=775003&an=1>.

¹⁶ States of a rural nature tend to generate less MSW and CDD per capita.

¹⁷ As discussed further in Section 3.3, WMDSM is also proposing to develop a program to help divert organics from the landfill, thereby advancing what the DEP has identified as the "largest opportunity to reduce Maine's waste stream."

¹⁸ See *Maine Materials Mgmt. Plan: 2014 State Waste Mgmt. and Recycling Plan Update and 2012 Waste Generation and Disposal Capacity Report*, at 6-7.

¹⁹ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 5.

²⁰ *Id.* at 3.

energy facilities. These facilities collectively are licensed to process 544,000 tons of MSW annually.²¹ Specifically, the MMWAC operates a waste-to-energy facility located in Auburn, Maine, and is licensed to process 70,000 tons of waste annually.²² The ecomaine facility in Portland is licensed to process 170,000 tons of waste annually.²³ The PERC facility in Orrington has traditionally served the MRC, which include 187 municipalities and inter-municipal entities located in central, eastern, and northern Maine. It is licensed to process 304,000 tons of waste annually.²⁴ In 2015, these three facilities combusted 470,510 tons of waste, generated 112,183 tons of ash and produced 57,920 tons of FEPR.²⁵ The 112,183 tons of ash and the 57,920 tons of FEPR subsequently required landfilling.

Landfills complement incineration by providing disposal capacity for (1) incinerator ash and other byproducts of incineration, (2) FEPR, which is material that is not suitable for incineration and is therefore removed prior to incineration, and (3) bypass, which is material that cannot be handled by an incinerator due to outages or other operational constraints. The Crossroads Facility facilitates incineration of solid waste by providing a cost effective option for disposal of all three categories of waste. An important example of the Crossroads Facility facilitating incineration is its contractual arrangement with the MMWAC facility. Crossroads accepts MSW during times of limited capacity at MMWAC (i.e., summer months) and provides additional MSW to MMWAC during downturns in volume (i.e., winter months) that would significantly limit operating capacity. Crossroads also accepts CDD from MMWAC that cannot be incinerated and solid waste bypass. Crossroads has provided these services to MMWAC for a decade.

The MRC has recently partnered with Fiberight, LLC, a private entity, to construct and operate a regional solid waste processing facility in Hampden, Maine (the “Fiberight Facility”). The Fiberight Facility is currently under construction and is expected to begin accepting waste later in 2018. It is designed to accept and process 650 tons of MSW daily, with an annual projected capacity of 145,000 tons. MSW will be processed and/or converted into renewable fuels and residues for potential recycling or disposal. Fiberight estimates that between 70 to 80% of the waste by volume will be converted to renewable fuels or recycled, and the remaining 20 to 30% will be process residues that require off-site disposal in a secure landfill.²⁶ Process residues include bulky waste, textiles, dissolved air floatation system residues and combined boiler ash.²⁷ WMDSM has contracted with Fiberight to take its residuals and bypass waste. As noted in its license, “the availability of secure landfill disposal capacity is an integral part of the development of an interpreted system for solid waste management in accordance with the [State hierarchy].”²⁸ The Phase 14 project provides that critical landfill capacity.

²¹ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 7.

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ Maine Dep’t of Env’tl. Prot., *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2015*, 17, (Jan. 2017), https://www.maine.gov/decd/meocd/landfills/docs/Waste_CapacityReport%202017.pdf.

²⁶ Municipal Review Committee, Inc. and Fiberight, LLC Hampden, Penobscot County, Maine Solid Waste Processing Facility, *Solid Waste License*, #S-022458-WK-A-N, 1-6, (July 14, 2016).

²⁷ *Id.* at 29.

²⁸ Municipal Review Committee, Inc. and Fiberight, *Solid Waste License*, at 29.

Landfills also provide disposal options for waste types that cannot be incinerated, recycled or beneficially reused. For example, bulky waste, CDD and other special wastes may require specialized handling. For these wastes, landfills are the only viable disposal option. The majority of the waste disposed of in the Phase 8 portion of the Crossroads Facility has been special waste and CDD, which is material not suitable for incineration. This is expected to remain consistent during the operation of the Phase 14 Project.

Landfills, while not at the top of Maine's Waste Hierarchy, are a critical component of the Hierarchy. They facilitate incineration or processing of MSW and provide disposal options for wastes that cannot be further recycled, reused, incinerated or processed.

2.2 Phase 14 is Necessary For Maine's Long-Term Capacity Needs

As discussed above, the Crossroads Facility serves an existing need for essential and cost-effective disposal of MSW for approximately 55 communities and special waste from various commercial and institutional generators. Through sustained careful utilization of currently permitted airspace, WMDSM estimates that it can continue to serve Maine communities and businesses through 2024, thereby helping the State to meet its immediate (three year) and short-term (five year) land disposal needs.²⁹ Existing capacity at Crossroads is projected to be fully utilized by the end of 2024, however, and therefore Phase 14 is needed to meet the State's long-term (defined as in the next ten years) land disposal needs beyond 2024.³⁰ WMDSM's goal for Phase 14 is not to compete with other presently available solid waste disposal facilities, but to continue to provide necessary and cost-effective disposal services for the communities, businesses and institutions currently served by the Crossroads Facility. Without Phase 14, there will be a capacity shortfall that will have an adverse impact on Maine residents, municipalities and businesses, particularly in the region currently served by the Crossroads Facility.

To ensure that the State's long-term disposal capacity needs are met without interruption of service to its customers, WMDSM has begun the planning and permitting process for Phase 14 well in advance of when existing capacity will be exhausted. The construction process for Phase 14 will be phased over a period of several years to minimize disruption to active landfill operations. To ensure that capacity is fully operational by the end of 2024, and to allow for contingencies in the construction process, WMDSM is intending to commence initial clearing and grubbing of the Project area in 2021. Land clearing is expected to be followed by initial construction of stormwater controls, berms, and access roads in 2022, and cell and liner construction in 2023 and transitioning operations to Phase 14 in 2024. Because of the time required to obtain necessary approvals and the uncertainty inherent in the permitting process, to meet the 2021 construction start-date, WMDSM is intending to file its State solid waste application on or about mid-2019.

Consistent with the above time-line, WMDSM has already taken significant steps to advance the Phase 14 Project. In 2017, WMDSM acquired the land needed to accommodate the project and submitted the required Preliminary Investigation Report to the DEP. Before it can

²⁹ 38 M.R.S.A. § 1310-AA(3)(A) (2013).

³⁰ *Id.*

submit a solid waste application to DEP, WMDSM must obtain a positive Public Benefit Determination pursuant to 38 M.R.S.A. § 1310-AA and negotiate a Host Community Agreement with the Town of Norridgewock in accordance with 38 M.R.S.A. § 1310-X(3). Thus, although the State's immediate and short term capacity needs may be currently being met, to meet the State's long-term needs, the substantial time required for permitting and landfill construction requires WMDSM to begin the solid waste permitting process now.

2.2.1 Long-Term Need for Landfill Capacity in Maine

Based on the data from calendar year 2016, the most recent data available, there is an ongoing need to manage approximately 1,556,711 tons of Maine-generated MSW including CDD annually.³¹ Of that amount, 772,758 tons of MSW and 40,205 tons of CDD were recycled or incinerated, and 429,098 tons of MSW and 314,649 tons of CDD were landfilled.³² While the amount of MSW and CDD generated annually will likely fluctuate based on changes in population and economic activity, as well as advances in minimizing waste generation, it is reasonable to assume a similar or potentially higher amount of MSW and CDD will be generated beyond 2024.

In 2015, Maine generated 738,913 tons of special waste.³³ The majority of special waste generated in Maine in 2015 required disposal in landfills (511,090 tons out of the total 738,913).^{34,35} The largest volumes of special waste generated included ash from coal, oil and multi-fuel boilers as well as from incinerators, which in 2015 accounted for 298,222 tons or 40% of the total, and wastewater treatment plant sludge from industrial and municipal sources, which accounted for 189,282 tons or 26% of the total.³⁶

Most special wastes, by virtue of the physical, chemical or biological properties or by the overall quantity of the waste, require disposal in landfills. While some fluctuation may occur, it is reasonable to assume that the current volumes of special waste generated within the State will likely continue into the future. To ensure Maine's municipalities and businesses can properly dispose of special wastes in both environmentally and economically responsible manners, it will be critical for special waste disposal capacity to exist within Maine beyond 2024.

2.2.2 Current and Future Landfill Disposal Capacity in Maine

The Crossroads Facility is the only commercial landfill operating in Maine. Moreover, due to a statutory ban on new commercial landfills, no new commercial landfills may be licensed absent a legislative change.³⁷ The last secure landfill unit permitted at the Crossroads Facility

³¹ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, Table 1 at 3.

³² *Id.*

³³ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2015*, Table 3 at 12. The State report for calendar year 2016 did not include special waste generated in Maine and therefore the most recent data on special waste appears to be for calendar year 2015.

³⁴ *Id.*

³⁵ For example, the MRC website includes a list of materials that the PERC facility will not accept for incineration. <http://mrcmaine.org/municipalities/>

³⁶ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2015*, Table 3 at 12

³⁷ 38 M.R.S.A. § 1310-X(1) (2012).

was Phase 8 in 2002 which was expected to provide 4 million cubic yards of air space. As discussed in Section 1.2, through careful engineering and design, WMDSM has increased that original capacity of the Phase 8 expansion by an additional 1.8 million cubic yards and extended its site life through 2024.

The Juniper Ridge Landfill (“JRL”) is owned by the State and operated by NEWSME Landfill Operations, LLC, a wholly owned indirect subsidiary of Casella Waste Systems, Inc. In 2017, the DEP approved an additional 9.35 million cubic yards of capacity, extending the facility’s site life an additional 10 to 12 years or until 2030-2031³⁸. The facility is licensed to accept a range of non-hazardous wastes, including by-pass MSW from in-state incinerators, and up to 81,800 tons of non-bypass in-state MSW for the one-year period ending March 31, 2019.³⁹

There are also five municipal MSW landfills that serve the needs of the immediate area in which they are located, and two public landfills used for the disposal of ash and other residues from the ecomaine and MMWAC incinerators. These landfills generally provide disposal options for the host and proximate communities and businesses.⁴⁰

Data collected by the DEP indicates that landfill capacity, taking into account all landfills, will drop significantly after 2021 and, absent expansion of the Crossroads Facility or further expansion of the Juniper Ridge Landfill,⁴¹ landfill capacity will drop from a high of 13,884,263 cubic yards in 2021, to 8,156,495 cubic yards in 2026, and only 2,387,839 cubic yards in 2036.⁴² More than 80% of the capacity available in 2026 will be from the Juniper Ridge, Presque Isle and Tri-Community landfills,⁴³ which, due to their geographic location north of Bangor and other license restrictions, are not feasible options for the communities served by the Crossroads Facility. The remaining projected landfill capacity consists of municipal landfills and the two waste-to-energy ash landfills, which likewise do not provide disposal options for the MSW or special waste that is currently sent to the Crossroads Facility. The following table identifies the available licensed and projected capacity of landfills in Maine through 2036:

³⁸ Juniper Ridge Landfill, *Solid Waste Landfill Expansion*, #S-020700-WD-BI-N and #L-19015-TG-D-N, 6 (June 1, 2017); see *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 8.

³⁹ Juniper Ridge Landfill, *Solid Waste Landfill Expansion*; Juniper Ridge Landfill, *Solid Waste License Amendment*, #S-020700-WD-BL-A (March 31, 2018).

⁴⁰ See Figure 3 provided in Appendix A.

⁴¹ The capacity estimates reflect recent approval of 9,380,000 cubic yards of capacity at the Juniper Ridge Landfill.

⁴² *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, Table 4 at 8. Note, this figure includes permitted, but not yet constructed capacity at JRL.

⁴³ *Id.*

**TABLE 6: AVAILABLE LICENSED MSW DISPOSAL CAPACITY AND
PROJECTED LANDFILL LIFE AS OF DECEMBER 31, 2016⁴⁴**

Landfills	2016 Fill rate (yd ³)	2016 available (yd ³)	2021 available (yd ³)	2026 available (yd ³)	2036 available (yd ³)	Years of licensed capacity remaining at current fill rate
State-owned landfills						
Carpenter Ridge – T2 R8	N/A	not constructed	not constructed	not constructed	not constructed	N/A
Juniper Ridge – Old Town	744,393	764,104	8,072,439	4,350,474	0	15.8
Municipal MSW landfills						
Hatch Hill (Augusta)	54,945	759,500	484,775	210,050	0	13.8
Bath	9,939	432,100	382,405	332,710	233,320	43.5
Brunswick	8,570	191,070	0 (closed)	0 (closed)	0 (closed)	4.0
Presque Isle	13,551	1,402,650	1,334,895	1,267,140	1,131,630	103.5
Tri-Community (Fort Fairfield)	35,561	1,566,047	1,388,242	1,210,437	854,827	44.0
W-T-E ash landfills						
ecomaine	17,764	622,422	533,602	444,782	0	35.0
Lewiston	17,284	513,742	427,322	340,902	168,062	29.7
Commercial landfill						
Waste Management Crossroads – Norridgewock	333,585	2,928,509	1,260,584	0	0	8.8
Total remaining licensed landfill capacity (yds³)	-	9,180,144	13,884,264	8,156,495	2,387,839	N/A

2.2.3 Regional Considerations

Although it is informative to evaluate state-wide data on waste generation and disposal, cost-effective and sustainable disposal options are very much driven by regional considerations. Indeed, when evaluating whether a facility meets the capacity needs of the State the DEP is directed to:

[C]onsider relevant local and regional needs as appropriate and the regional nature of the development and use of disposal capacity due to transportation distances and other factors.⁴⁵

⁴⁴ See *Id.*

⁴⁵ 38 M.R.S.A. § 1310-AA(3) (2013).

In the region served by Crossroads, for many municipalities and businesses, the Facility is the only economically-feasible disposal option. Crossroads' primary disposal network extends as far north as Jackman, as far south as Bath, as far east as Vinalhaven and to the State's western border. Municipalities such as Rumford, Rangeley and Carrabassett Valley already transport wastes roughly 50 miles to reach the Crossroads Facility. Costs associated with transporting wastes this distance already consume valuable economic resources. Without the Crossroads Facility, these municipalities and the businesses located within their borders would be forced to transport wastes nearly twice the current distance to reach the nearest disposal options, such as Juniper Ridge,⁴⁶ if it were licensed to take such waste, or PERC. As the cost of transportation fuels continue to rise, these long-distance disposal routes—an increase in trucking distance of roughly 50 miles to over 100 miles—could become economically unjustifiable.

In addition to increased costs, long-distance disposal routes also have a significant impact on the environment. Doubling haul distances also doubles the amount of greenhouse gasses and air pollution emitted during transportation of wastes. These environmental impacts contradict well-established priorities of the DEP and many Maine residents.⁴⁷

The Crossroads Landfill provides a cost-effective and environmentally sustainable disposal option for a multitude of reasons. First, the majority of wastes disposed of at the Facility are special wastes and have no higher disposal option. Further, without Crossroads, the distance many communities within the Crossroads disposal network would be required to transport wastes would be cost-prohibitive. In addition, the Crossroads Facility accepts MSW that exceeds the combined capacity of the States' waste-to-energy and processing facilities, including Fiberight.⁴⁸ Finally, the Crossroads Facility accepts residuals and bypass from operating MMWAC and the Fiberight Facility and is critical to their long-term success.

2.3 **The Importance of Competitive Markets**

The Crossroads Facility also plays a critical role in advancing competitive markets for solid waste services in Maine. The competitive benefits extend not only to users of landfill capacity, but all disposal options, as well as waste collection and transportation.

Phase 14 is important to ensuring disposal costs within the State remain competitive beyond 2024. State law requires the DEP to warn the Governor and Legislature when a decline

⁴⁶ As noted above, JRL has limited ability to accept MSW and therefore the only other options would be one of the existing incinerators or the under-construction Fiberight facility.

⁴⁷ See, i.e., 38 M.R.S.A. ch. 3-A et seq.

⁴⁸ Putting aside transportation costs, Maine's three waste-to-energy plants and the Fiberight Facility do not have the capacity to meet Maine's annual MSW disposal needs. For example, the DEP has calculated that the three waste-to-energy plants and Fiberight Facility, once operational, will have a combined capacity of 595,000 tons per year, but there is a projected need in 2018 to manage 757,014 tons of MSW through incineration and landfilling. Juniper Ridge Landfill, *Solid Waste License – Partial Approval with Conditions*, #S-020700-WD-BL-A, 20, (March 31, 2018). Because the Fiberight Facility will serve the MRC communities previously served by the PERC facility, and because of changes in the market for energy output, it is not clear what capacity the PERC facility will provide once the Fiberight Facility becomes fully operational. DEP assumed in its calculation that PERC would achieve a stable operating annual capacity of 210,000 tons. *Id.* The waste-to-energy plants and Fiberight Facility also cannot handle special waste and CDD, which represents 75% of the material handled at Crossroads.

in available landfill capacity is likely to generate supracompetitive prices.⁴⁹ Supracompetitive prices are generated when disposal capacity is overconcentrated within one or a few dominant facilities and the threat of new facilities entering the market fails to exist.⁵⁰ Although there are a number of landfills in Maine, many of them serve designated groups of municipalities or a waste-to-energy facility. Only two landfills currently provide disposal options for central, western and southern Maine: one is operated by Casella and the other is the Crossroads Facility.

Without Phase 14, by 2026, more than 50% of landfill capacity within the State will be concentrated at one facility, the Juniper Ridge Landfill, as depicted in Table 6.⁵¹ Moreover, of the five municipal MSW landfills, an additional 30% of landfill capacity at that time will be concentrated in the Tri-Community and Presque Isle landfills, neither of which provide significant competitive benefits to western, central or southern Maine. The remaining three MSW landfills serve only the needs of the immediate area in which they are located and have limited competitive benefits and the two waste-to-energy landfills accept incinerator ash and residuals from the ecomaine and MMWAC incinerators. The Phase 14 Project is therefore critical to ensuring competitive disposal options remain in western, central and southern Maine, particularly for disposal of special waste, and will avoid a scenario where there is essentially one de facto landfill available to serve the needs of communities and businesses for nearly the entire State.

Although the majority of waste accepted at the Facility is waste that cannot be incinerated, see Section 2.1, the Facility also provides an important disposal option for MSW from communities in central and western Maine. Without this option, such communities would incur substantial costs to transport waste to an incinerator, assuming one were available and had the capacity to accept such waste,⁵² or even further to another landfill in Maine or to an out-of-state option. By providing a cost-effective alternative, the Project will help to ensure available disposal options for a great number of Maine cities and towns and that the overall cost for disposal at incinerators and landfills remain competitive.

Finally, the Crossroads Landfill also supports Waste Management's other operations in Maine, including its transportation networks. Ensuring there are multiple providers in these ancillary but critical areas provides additional and important competitive benefits.⁵³

⁴⁹ 38 M.R.S.A. § 2124-A (2013).

⁵⁰ See *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 14.

⁵¹ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, Table 4 at 8.

⁵² As noted above, the existing and planned incinerators, assuming they are all operating in 2024, do not have the capacity to handle all the MSW generated in the State.

⁵³ The importance of competition in these other areas is heightened by the fact that the operator of JRL, Casella Waste Systems, Inc., is also a vertically integrated company with a substantial footprint in the collection and transportation sectors in Maine.

3.0 **THE PROJECT'S PROMOTION OF THE STATE'S SOLID WASTE MANAGEMENT HIERARCHY**

The Crossroads Facility currently supports numerous initiatives that promote the State's Waste Management Hierarchy. WMDSM's Phase 14 Project will ensure that the current initiatives continue and that the Facility has the opportunity to promote new initiatives in furtherance of the State's Waste Hierarchy.

3.1 **State Solid Waste Management Hierarchy**

The State of Maine has developed and adopted an integrated approach to solid waste management. Central to this approach is the State's Solid Waste Management Hierarchy.⁵⁴ The Waste Hierarchy sets forth a tiered list of priorities for the processing of solid waste as stated below:

- A. Reduction of waste generated at the source, including both amount and toxicity of the waste;
- B. Reuse of waste;
- C. Recycling of waste;
- D. Composting of biodegradable waste;
- E. Waste processing that reduces the volume of waste needing land disposal, including incineration; and
- F. Land disposal of waste.⁵⁵

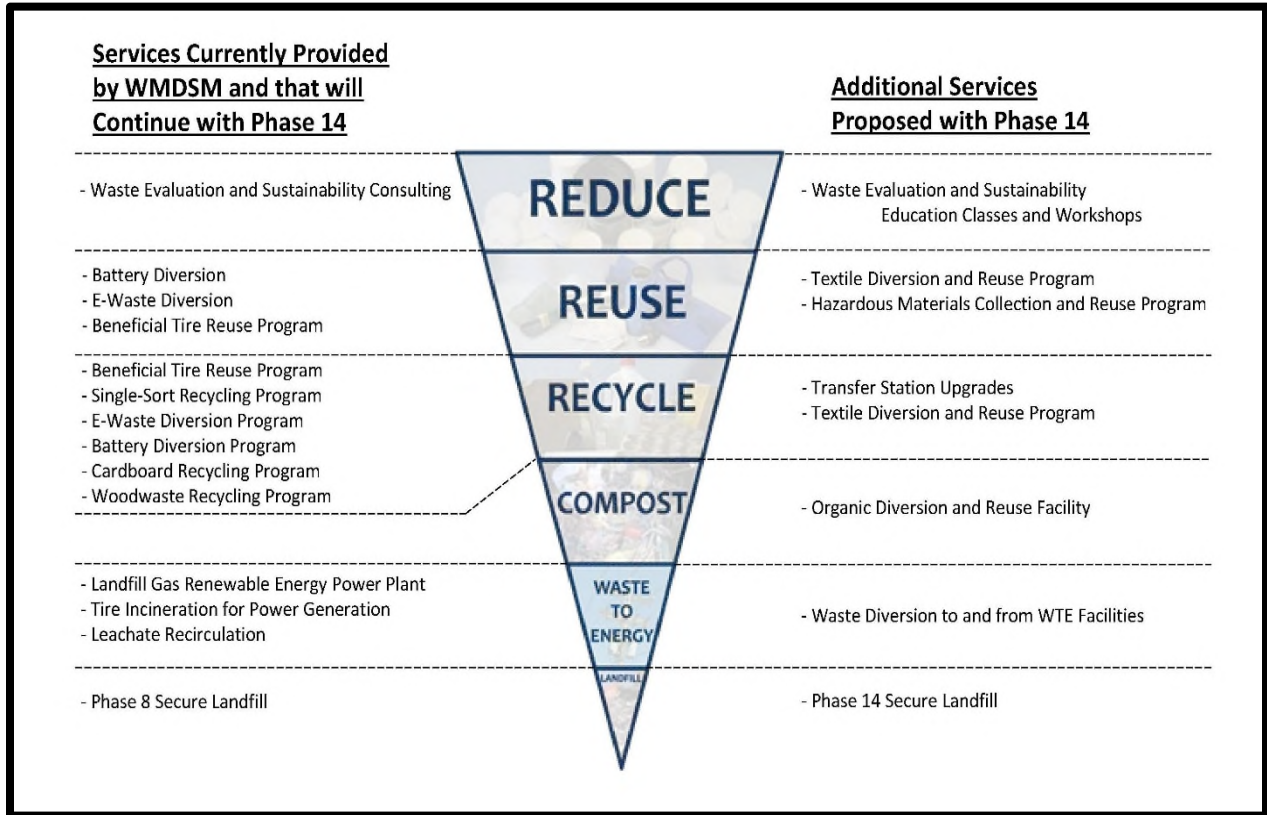
The State uses the priorities within the Waste Hierarchy as guiding principles when making decisions related to solid waste management.

The Phase 14 Project proposed for the Crossroads Facility is fully consistent with and supportive of the State's Waste Hierarchy. The Crossroads Facility currently operates multiple programs that effectively promote waste reduction, beneficial reuse and recycling. The Phase 14 Project will provide an opportunity for these programs to continue into the future and in many cases, grow in size and effectiveness. Phase 14 will also provide new opportunities for the Crossroads Facility to promote the Maine State Waste Hierarchy. Figure 6 below illustrates current and Phase 14 initiatives that promote the State's Waste Hierarchy. Additional details regarding each of these programs are provided below. The following sections demonstrate that the Phase 14 Project fully promotes the State's Waste Hierarchy.

⁵⁴ See 38 M.R.S.A. § 2101(1)(A)-(F) (2008).

⁵⁵ 38 M.R.S.A. § 2101(1)(A)-(F) (2008).

FIGURE 6. CONSISTENCY OF PHASE 14 WITH MAINE STATE SOLID-WASTE HIERARCHY



3.2 The Project’s Promotion of the Waste Hierarchy

3.2.1 Waste Reduction Programs

3.2.1(a) Organics Diversion and Reuse Program

The 2014 Maine Materials Management Plan estimates that compostable material comprise 38.41% of the State’s disposed MSW.⁵⁶ While the plan concludes that diverting organics from the States’ MSW stream presents the single largest opportunity to reduce the overall volume of waste generated in Maine, the State also experienced a decrease in the amount of organic material diverted from disposal in 2016 as compared to 2015.^{57,58}

WMDSM recognizes and appreciates the opportunity that the diversion of organic and other biodegradable materials presents for waste reduction within Maine. WMDSM also appreciates that it is uniquely situated to assist the State with organics diversion. WMDSM’s

⁵⁶ *Maine Materials Mgmt. Plan: 2014 State Waste Mgmt. and Recycling Plan Update and 2012 Waste Generation and Disposal Capacity Report*, at 6.

⁵⁷ *Id.*

⁵⁸ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 1.

efforts can help slow the trend of decreased organics diversion and assist the State with achieving its waste reduction goal by diverting organics from the MSW waste stream.

To further the State’s MSW reduction goal and to promote its Waste Hierarchy, WMDSM plans to launch an Organics Diversion and Reuse Program (“Organics Diversion Program”) at the Crossroads Facility. The Organics Diversion Program will assist in diverting organic material from the MSW stream and target large-volume commercial entities (i.e., restaurants, schools, etc.). The Organics Diversion Program will be developed in conjunction with the development of Phase 14. While the Organics Diversion Program promotes the Waste Hierarchy’s first and second tiers (waste reduction and reuse respectively), the details of WMDSM’s Organics Diversion Program are discussed below in Section 3.2.3 which addresses promotion of the Waste Hierarchy’s fourth tier: Composting of Biodegradable Waste.⁵⁹

3.2.1(b) Textile Diversion and Reuse Program

The 2011 Maine Residential Waste Characterization Study identified textiles as making up 4.26% of Maine’s annual residential waste stream.⁶⁰ Nationally, the percentage of textiles within the national waste stream has nearly doubled in the past twenty years, now accounting for 16.2 million tons annually.⁶¹ It is likely that this trend will continue given the rise in popularity of inexpensive and low quality garments known as “fast fashion.”⁶²

To address this growing need, WMDSM plans to develop and implement a Textile Diversion and Reuse Program (“Textile Diversion Program”) as part of the Phase 14 Project. The program will reduce the amount of textiles sent to the landfill, thereby conserving airspace and advancing the State’s Waste Hierarchy.

WMDSM’s Textile Diversion Program will provide the communities in proximity to the Crossroads Facility with a central textile diversion location. The communities participating in the program will include those listed in Table 7.

TABLE 7: TEXTILE DIVERSION AND REUSE COMMUNITIES

Anson	Norridgewock
Embden	Rome
Fairfield	Smithfield
Madison	Vienna
New Sharon	

⁵⁹ See 38 M.R.S.A. § 2101(1)(D) (2008).

⁶⁰ George K. Criner, Travis L. Blackmer, *2011 Maine Residential Waste Characterization Study*, The University of Maine, 10-11, (2011), <https://umaine.edu/wp-content/uploads/sites/2/2017/04/2011-Maine-Residential-Waste-Characterization-Study.pdf> http.

⁶¹ Arlene Karidis, *Early Efforts to Tackle Mounting Textile Waste*, *Waste 360*, 2, (May 30, 2018), <http://www.waste360.com/waste-reduction/early-efforts-tackle-mounting-textile-waste-part-one>

⁶² *Id.*

Each community participating in the program will be contacted through targeted outreach and education at the municipal level. Textiles collected through the program will be donated to local charitable organizations, such as Goodwill and the Salvation Army. Textiles that cannot be reused will be transported to a recycling facility. WMDSM will receive data quantifying the volume of textiles collected. This data will assist WMDSM in evaluating the effectiveness of its Textile Diversion Program and help generate an aggregate volume of textiles diverted from the Crossroads Facility on an annual basis. Subsequent phases of the Textile Diversion Program may be implemented by WMDSM, most likely in partnership with the Maine Resource Recovery Association (“MRRA”), based on the success of the initial phase.

3.2.1(c) Household Hazardous Materials Collection and Reuse Program

The State’s 2009 Waste Management and Recycling Plan identifies the removal of toxics from the MSW waste stream as a key priority.⁶³ To further this priority and to promote the State’s Waste Hierarchy, WMDSM proposes to include a Household Hazardous Materials Collection and Reuse Program as part of the Phase 14 Project.

Starting in 2019, a one-day Household Hazardous Waste collection event (“HHWC Day”) will be organized in Norridgewock on an annual basis. Typical household hazardous materials include: unwanted and expired cleaners, solvents, paints, pool/hot tub chemicals, cements/ adhesives, and pesticides and herbicides. Paints, stains, varnishes, etc. will be collected separately from the other hazardous materials, and recycled by PaintCare Maine.

This event will be offered to serve the nine member communities. To help ensure the success of the events, WMDSM will engage a licensed hazardous materials management company, with experience in planning and implementing HHWC Days. WMDSM will ensure the company selected has strong environmental credentials and makes reuse of waste materials a priority where possible. WMDSM will also collect and tabulate data derived from each event. This data will assist WMDSM in evaluating the effectiveness of its Hazardous Materials Collection and Reuse events.

3.2.1(d) Battery Diversion Program

Single-use batteries account for the third largest percentage of Household Hazardous waste within the State of Maine.⁶⁴ While these batteries make up a small percentage of the State’s overall waste stream, batteries’ potential to contribute hazardous and toxic substances to landfills warrants the development of an affirmative diversion program.

WMDSM has developed a program to encourage the diversion of rechargeable, button, and single-use mercury batteries from disposal within the Crossroads Landfill. The communities participating in the Battery Diversion Program include those listed in Table 8.

⁶³ Maine State Planning Office, *Waste or Resource? Rethinking Solid Waste Policy*, 36, (January 2009), <https://www1.maine.gov/decd/meocd/landfills/docs/2009%20State%20SWM%20Plan.pdf>.

⁶⁴ 2011 Maine Residential Waste Characterization Study, at 14.

TABLE 8: BATTERY DIVERSION COMMUNITIES

Anson	Norridgewock
Embden	Rome
Fairfield	Smithfield
Madison	Vienna
New Sharon	

WMDSM’s Battery Diversion Program provides residents of the communities listed in Table 8 with a free recycling program for rechargeable, button and single-use batteries. Residents are encouraged to collect and leave used batteries in a central receptacle located at the Airport Road Transfer Station operated by WMDSM. Data from the Battery Diversion Program is collected and quantified. This information assists WMDSM in evaluating the effectiveness of the program and calculating the volume of hazardous wastes diverted from the Crossroads Facility over time.

In addition to the Battery Diversion Program, WMDSM’s parent company, Waste Management, currently provides customers with a service dedicated to proper collection and recycling of used dry-cell batteries known as BatteryTracker®. BatteryTracker® allows batteries to be collected and shipped from any location to a certified recycling facility. BatteryTracker® encourages the reuse of valuable natural resources such as zinc and manganese while also diverting batteries from the Crossroads Facility and others that may contain potentially hazardous metals such as cadmium, nickel and lead. Both the Crossroads Battery Diversion Program and BatteryTracker® serve as examples of WMDSM’s dedication to developing programs that promote the principals of Sustainable Materials Management as well as the State’s Waste Hierarchy.

3.2.1(e) Electronic Waste Diversion Program

In 2014, 3.36 million tons of electronic waste or “E-Waste” was generated within the United States.⁶⁵ E-Waste includes cathode ray tubes, computer equipment, fluorescent light bulbs, smoke detectors, and other mixed electronics devices such as cell phones. Given the rapid evolution of electronic devices, the EPA estimates that “E-Waste” is currently and will continue to be the fastest growing category of solid waste nationwide.⁶⁶ Electronic devices also contain precious and rare earth metals. Diversion of electronic devices provides an important opportunity to reuse these valuable metals that would otherwise be lost when devices are disposed of in a landfill or incinerated.

⁶⁵ U.S. Evtl. Prot. Agency, *Advancing Sustainable Materials Management: 2014 Tables and Figures*, 16 (Dec. 2016), https://19january2017snapshot.epa.gov/sites/production/files/2016/https://www.epa.gov/sites/production/files/2016-11/documents/2014_smm_tablesfigures_508.pdf

⁶⁶ U.S. Evtl. Prot. Agency, *Improved Information Could Better Enable EPA to Manage Electronic Waste and Enforce Regulations*, 1 (June 2013), <https://www.epa.gov/sites/production/files/2015-09/documents/20130621-13-p-0298.pdf>.

To address these growing reuse and disposal concerns, WMDSM has developed a comprehensive electronics diversion program for the municipalities in proximity to the Crossroads Facility listed in Table 9.

TABLE 9: ELECTRONIC WASTE COMMUNITIES

Anson	Norridgewock
Embden	Rome
Fairfield	Smithfield
Madison	Vienna
New Sharon	

WMDSM’s Electronic Waste Diversion Program allows residents to deliver an extensive list of electronic items to the Crossroads Facility for recycling. By providing this no-cost option, WMDSM has collected more than 168 tons of E-Waste since the program’s inception five years ago. This has allowed recycling and reuse of the precious and rare earth metals and diversion of the materials from landfilling at Crossroads or elsewhere.

WMDSM partners with local recyclers, such as Electronics End in Brewer, Maine, to ensure that products collected are reused where possible and recycled in an environmentally sustainable manner when necessary. To evaluate the effectiveness of its Electronic Waste Diversion Program, WMDSM has implemented a data collection system to quantify and capture the volume of E-Waste diverted from the Crossroads Landfill through the program. This data assists WMDSM in evaluating and monitoring volumes of Electronic Waste diverted from the Crossroads Landfill over time.

WMDSM’s parent company, Waste Management, also provides numerous services dedicated to the proper reuse and diversion of E-Waste. Some of the more prominent programs are listed below.

- eScrapTracker® allows electronic waste to be collected and shipped from any location to a certified recycling facility. eScrapTracker® only utilizes recyclers that comply with one or both of the following certification standards: e-Stewards®, R2 (Responsible Recycling) and/or RIOS (Recycling Industry Operating Standards).
- LampTracker® provides secure storage, handling, transportation and recycling of fluorescent lamp blubs. In addition to providing a certified recycling outlet, LampTracker® minimizes the single greatest risk of mercury exposure within workplaces.
- BallastTracker® provides a similar service for collection and shipment of non-PCB ballasts and capacitors.

WMDSM’s Electronic Waste Diversion Program and the additional programs provided by Waste Management support the State’s toxic waste reduction initiatives.

3.2.1(f) Waste Evaluation and Sustainability Consulting

Waste evaluations have proven to be an effective tool for reducing the volume of waste generated by a host of entities, including businesses, institutions and local governments. Waste evaluations analyze inputs, raw materials, individual waste streams and provide recommendations for reducing the amount of waste generated and increasing the amount of materials reused or recycled.

WMDSM, along with its parent company Waste Management, actively performs waste evaluations for its customers within the Crossroads disposal network. Evaluations can often lead to the development and implementation of waste reduction and recycling programs. Successful waste evaluations have been performed for a variety of customers, including Bath Iron Works, Fisher Engineering, Sappi and Colby College.

Another sustainability tool provided by Waste Management to improve waste reduction and diversion rates for municipalities is the implementation of Pay-As-You-Throw programs. Pay-As-You-Throw programs have been shown to reduce the amount of waste generated and increase the amount of material recycled by communities. Support for such programs includes consultation with municipal planners and staff considering the implementation of Pay-As-You-Throw programs as well as preparation and management support of such programs within local communities.

Waste evaluations and sustainability programs provide an important service that diverts material from the Crossroads Facility. Both services help identify opportunities for the implementation of long-term waste management strategies that promote the States' Waste Hierarchy.

3.2.2 **Beneficial Reuse and Recycling Programs**

3.2.2(a) Beneficial Tire Reuse Program

WMDSM has partnered with BDS Waste Disposal, which operates the only successful tire beneficial reuse facility within the state of Maine. WMDSM has invested both significant time and resources to this beneficial reuse program. Used tires from throughout the state are transported to the Crossroads Facility for beneficial reuse. Many of these tires would otherwise be disposed of in statewide landfills, stockpiled or disposed of illegally. In 2017 alone, approximately 33,611.41 tons of whole tires and 28,176.66 tons of tire shreds were managed through the Beneficial Tire Reuse Program. In addition, 9.46 tons of aluminum rims, 327.03 tons of steel rims, 49.2 tons of scrap steel and 187 tons of Off-the-Road tire segments were shipped from the Facility for reuse or recycling.

The primary use of the scrap tires processed by BDS at Crossroads is for generation of power at Maine paper mills. In 2017 alone, the Beneficial Tire Reuse Program contributed 52,947.42 tons of tire fuel chips to two Maine paper mills.

Reused tires have also been utilized by WMDSM extensively for on-site construction projects. For example, nearly 7 million used tires have been shredded/chipped for use as components of the landfill liner (leachate collection) system and the gas collection/control system.

Since the Beneficial Tire Reuse Program's inception, WMDSM has gathered data regarding the volume of tires beneficially reused and diverted from disposal. WMDSM will continue to assemble data concerning this program and utilize this information to evaluate its effectiveness over time.

Recently, WMDSM identified a material being disposed of within its landfill that could be diverted by the Beneficial Tire Reuse Program. Blasting mats, due to their rugged nature, were disposed of in the landfill at the Crossroads Facility. WMDSM recognized that the steel cables weaving the rubber panels together could be clipped, allowing the mats to be pulled apart, leaving the rubber panels to be beneficially reused and the cables to be recycled. In 2016 and 2017, WMDSM's initiative diverted 1934.43 tons of material from the landfill at the Crossroads Facility. This initiative exemplifies WMDSM's dedication to continually identifying opportunities for waste diversion and ensuring ongoing promotion of the State's Waste Hierarchy.

3.2.2(b) Single-Sort Recycling Program

WMDSM's parent company, Waste Management, is the North America's largest residential recycler. On an annual basis, it manages nearly 15,000,000 tons of recyclable material and operates 120 recycling facilities throughout the nation.

At the Crossroads Facility, WMDSM is actively committed to assisting the State of Maine achieve its goal of increased recycling.⁶⁷ To achieve this goal, WMDSM continues to be committed to the implementation and expansion of recycling programs for municipalities and business within the Crossroads disposal network that maximize the amount of material recycled and reused, while minimizing contamination and disposal. Table 10 below provides a list of the communities and commercial entities where WMDSM currently provides recycling services.

⁶⁷ 38 M.R.S.A. § 2132.1 (2016)

TABLE 10: COMMUNITIES/INSTITUTIONS AND COMMERCIAL ENTITIES SERVED BY WMDSM RECYCLING SERVICES⁶⁸

Communities	Businesses and Institutions
Anson	Colby College
Carrabassett Valley	Sappi
Embden	Sugarloaf Mountain Corp.
Eustis	Unity College
Fairfield	
Jackman	
Kingfield	
Madison	
Mercer	
Mohegan	
Mount Vernon	
New Sharon	
New Vineyard	
Norridgewock	
Phillips	
Rangeley	
Rangeley Plantation	
Rome	
Smithfield	
Somerset County Commissioners	
Vienna	
Waterville	
Winslow	

To increase recycling rates, WMDSM introduced its Single-Sort Recycling program in 2010. Participants in the program could collect glass, metal, cans, plastics, office paper, newspaper, boxboard and corrugated cardboard in one convenient bin. To ensure the program’s success, WMDSM developed and implemented a targeted outreach and education campaign throughout its recycling locations. WMDSM works directly with municipalities, schools and businesses to ensure Single-Sort participants are educated about how to identify the appropriate materials for recycling and how those materials should be prepared for proper collection.

To date, WMDSM Single-Sort Program has been highly successful. Following introduction of the program, WMDSM saw an increase in the volume of recyclable materials collected.⁶⁹ Once collected, most materials are transported to the Crossroads Material Recovery Facility where they are loaded into bulk containers for shipment south to recycling brokers or purchasers. As provided in Table 11, in the past three years, WMDSM’s Single-Sort Recycling Program has diverted, 17,516.07 tons of recycled material from disposal at Crossroads.⁷⁰

⁶⁸ Bolding indicates the communities in close proximity to the Crossroads Facility that utilize the transfer station on Airport Road in Norridgewock.

⁶⁹ WMDSM has sought data on the recycling rates of the communities it serves, but there is only limited and incomplete data currently available.

⁷⁰ This figure includes Single-Sort recycling materials, which include corrugated cardboard (“OCC”).

**TABLE 11: SINGLE-STREAM MATERIALS DIVERTED FROM CROSSROADS LANDFILL:
2015-2017**

Tons	Single-Stream Program	Corrugated Cardboard	Annual Total
2017	2,369.65	4,047.24	6,416.89
2016	2,407.70	3,829.60	6,237.30
2015	2,132.53	2,729.35	4,861.88
			17,516.07

This figure is even more impressive when considering that the materials are collected from a region that is distant from processing and recycling facilities. Without WMDSM’s recycling services, these materials would be geographically stranded; transportation to other facilities would be cost-prohibitive. The Department has recognized that capturing recyclables on a regional level at a central processing facility increases overall recycling.⁷¹

Operation of such a large collection and transportation network for recyclable materials comes at considerable cost to WMDSM. WMDSM, has however, absorbed many of these costs out of a commitment to preserving capacity at the Crossroads Facility and managing the greatest amount of waste as high up on the State’s Waste Hierarchy as possible.

As discussed above, the Crossroads Facility operates a transfer station located on Airport Road. This transfer station manages materials for the nine municipalities in close proximity to the Facility.⁷² To capitalize on many of the Phase 14 initiatives, WMDSM plans to significantly enhance the capabilities of this facility.

The primary focus of the facility’s enhancement will be to maximize waste diversion efforts. First and foremost, the facility will emphasize recycling and do so in a manner that strives to minimize recycling contamination. Clear and strategically-placed education materials will remind facility users of what can and cannot be recycled. Especially problematic items, such as plastic bags, will have dedicated disposal containers adjacent to the primary recycling containers along with educational materials instructing users that plastic bags, whether being used to collect and transport recyclable materials or on their own, cannot be recycled with single-stream materials.

The enhanced facility will also provide dedicated collection bins for organic materials placed in a location to maximize use. Collected organic materials will be fed into the Phase 14 Organics Diversion Program also located at the Crossroads Facility. Dedicated collection locations will also be established for household hazardous wastes, textiles, electronic wastes, single-use batteries, waste oil, unwanted or expired medicines and clean woodwastes. Materials currently managed at the existing transfer station on Airport Road, such as scrap metals, used tires, demolition materials and yard wastes will continue to be collected at the enhanced facility. As part of the facility’s upgrade, a new traffic circulation pattern will be established. Reuse

⁷¹ Municipal Review Committee, Inc. and Fiberight, *Solid Waste License*, Figure 20.D at 28.

⁷² Anson, Embden, Fairfield, Madison, New Sharon, Norridgewock, Rome, Smithfield and Vienna.

locations, recycling containers and composting bins will all be positioned before trash containers to further emphasize and promote the disposal priorities identified within of the State's Waste Hierarchy.

To maximize the enhancements made at the Airport Road transfer station, WMDSM will develop "best practice" materials for transfer stations seeking to maximize recycling and reuse while minimizing contamination. These resources will be made available to municipalities within the Crossroads disposal network. If further interest exists, WMDSM could convene a dialogue of key stakeholders, including experts from Waste Management and ecomaine, to discuss and develop strategies for municipalities within its network to increase recycling and waste diversion rates while minimizing contamination in furtherance of the State's recycling goals.⁷³

In addition to its Single-Sort Recycling Program, WMDSM undertakes specific measures at the Crossroads Facility to divert materials that can be recycled from entering the landfill. Crossroads staff monitor wastes entering the landfill for high volumes of recyclable materials. Recently, Crossroads staff became aware of large volumes of glass being sent to the landfill by one of the State's largest glass distributors. WMDSM staff worked with the customer to develop a process at its facility for diverting the glass from its waste and located a recycler that could accept the composition of glass which had previously been difficult to recycle. WMDSM estimates that over the past 18 months, nearly 6,000 tons of glass has been diverted from the landfill and recycled.

Diversion efforts at the Crossroads Facility extend beyond the Single-Sort Recycling Program and active monitoring of wastes for recyclable materials. The Crossroads Facility also promotes and encourages the diversion of a variety of additional materials from the landfill including, metals, concrete, brush and sawdust. WMDSM plans to continue both its Single-Sort Recycling Program, its active monitoring of waste for recyclable materials and diversion initiatives with implementation of the Phase 14 Project.

3.2.2(c) Cardboard Recycling Program

In conjunction with its Single-Sort Recycling Program, the Crossroads Facility also operates a Cardboard Recycling Program. Cardboard is either brought to the Facility sorted or staff at Crossroads manually remove large volumes of cardboard from the Single-Sort Recycling Program. Removing cardboard from Single-Sort recycling makes sorting at facilities such as ecomaine less time-consuming and allows recyclable materials to be shipped more efficiently. Separated cardboard is then bailed at the Crossroads Facility and shipped to end users or recyclers. As illustrated by Table 11 above, over the last three years, 10,606.19 tons of cardboard has been diverted from the Crossroads Landfill. The Crossroads Cardboard Recycling program will continue with the Phase 14 Project.

⁷³ See 38 M.R.S.A. § 2132(1) (2016)

3.2.2(d) Woodwaste Recycling Program

The Crossroads Facility also operates a Woodwaste Recycling Program. This program diverts or reuses clean woodwaste, preserving valuable air space within the disposal unit.⁷⁴ Clean woodwaste entering the facility is stored and ultimately ground into chips that can be utilized on-site for daily cover or shipped off-site for a variety of end uses. Over the life of Phase 8, 13,717 cubic yards of clean woodwaste have been reused at the Crossroads Facility as cover. This program will continue to operate during the proposed Phase 14 Project.

3.2.3 Organics Diversion and Reuse Program

As introduced in Section 3.2.1(a), WMDSM proposes to launch an Organics Diversion Program at the Crossroads Facility as part of Phase 14. WMDSM's Organics Diversion Program will promote the Waste Hierarchy and assists the State in achieving its goal of recycling or composting 50% of the State's solid waste on an annual basis.⁷⁵ WMDSM's Organics Diversion Program also directly promotes the State's recently enacted Food Recovery Hierarchy.⁷⁶

WMDSM will develop a composting operation to convert organic and other biodegradable materials into a reusable compost product. WMDSM's compost facility operators will attend the Maine Compost School. It is WMDSM's intention to begin the compost operation upon the startup of Phase 14.

Communities within proximity to Crossroads and commercial entities will be educated by WMDSM in cooperation with the DEP prior to being provided the opportunity to participate in the Organics Diversion Program. Participants will be encouraged to bring collected food scraps and other biodegradable waste (i.e., unbleached paper plates, napkins and food-soiled paper products, etc.) in 5 to 30 gallon containers (provided by WMDSM at no charge) to the Airport Road Transfer Station. There will be no disposal fee for organic materials. WMDSM will transport the material to the compost operation location at the Crossroads Facility where the material will be handled, composted and stored in accordance with DEP regulations for compost facilities.

Targeted outreach to select large volume commercial and educational institutions will also take place. Participants of the program will be entitled to receive finished compost on designated days throughout the year.

Education will also play a critical role in the Organics Diversion Program. WMDSM plans to work closely with local municipalities and large volume stakeholders to promote the benefits of composting. Tours of the composting operation can be provided to local students, citizens, DEP and municipal officials. Tours will focus both on the biological processes at work

⁷⁴ Creosote and pressure-treated wood is not accepted at the Woodwaste Recycling Facility and must be managed and disposed of in the secure landfill.

⁷⁵ 38 M.R.S.A. § 2132(1) (2016).

⁷⁶ See 38 M.R.S.A. § 2101-B(1) (2016).

within the composting facility but also on the concept of compositing as a Sustainable Materials Management practice.

As with all WMDSM programs, the volume of organic and other biodegradable materials contributed to the program will be collected and quantified. This data will assist WMDSM in evaluating the effectiveness of its Organics Diversion Program. The data will also provide WMDSM with the opportunity to monitor the volumes of organics being diverted from disposal.

3.2.4 Gas-To-Energy Infrastructure

In its 2018 report to the state legislature, the Maine DEP discussed the tiers within the States' Waste Hierarchy.⁷⁷ The report highlights the environmental benefit associated with landfills utilizing gas recovery systems as a source of fuel.⁷⁸ This view is consistent with the U.S. Environmental Protection Agency's updated Solid Waste Management Hierarchy which includes landfills equipped with gas recovery systems in its "Energy Recovery" tier, its third of four tiers, along with waste-to-energy facilities.⁷⁹

The Crossroads Landfill Gas Renewable Energy Power Plant ("Renewable Energy Plant" or "Plant") has been operational since March 9, 2009. The Renewable Energy Plant collects gas that is produced through a natural process of bacterial decomposition of the waste disposed within the landfill. The decomposition process creates an anaerobic environment producing methane gas that is captured and burned by the engines at the Plant and converted into electricity.

On an annual basis, the Renewable Energy Plant at Crossroads collects and combusts on average 470,000 million standard cubic feet of landfill gas, which creates approximately 21,684,958 kilowatt hours per year. This is the heat equivalent to the Plant generating 13,300 barrels of oil annually. The Renewable Energy Plant has operated at a runtime greater than 99% since conception. WMDSM will continue to operate and potentially expand the Renewable Energy Plant to recover landfill gas and create electricity from Phase 14.

3.2.5 Landfilling

As shown in Section 2.0, landfills are a necessary component of the State's Waste Hierarchy and Phase 14 will fill a need for continued landfill capacity beyond 2024.

3.3 National Recognition

WMDSM is a subsidiary of Waste Management, Inc. This relationship provides WMDSM with a multitude of resources that directly benefit the local Crossroads Facility, its

⁷⁷ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 2.

⁷⁸ *Id.*

⁷⁹ See U.S. Env'tl. Prot. Agency, *Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy*, <https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy>.

disposal network and the State of Maine. Such benefits include technical expertise from some of the world's foremost landfill design experts.

Waste Management's operational excellence and its commitment to environmental stewardship has been consistently recognized by a multitude of forums. Some of Waste Management's recent achievements include:

- Overarching
 - World's Most Ethical Companies, 9 consecutive years as recognized by the Ethisphere Institute
 - Dow Jones Sustainability Index, 13 of the past 14 years as recognized by the Ethisphere Institute
 - S&P 500 Climate Disclosure Leadership Index, GHG Reporting since 2004 as recognized by the CDP (formerly Carbon Disclosure Project)

- Sustainability
 - Change the World, Fortune Magazine 2015
 - FTSE4Good Index Series 2011-2016
 - Euronext Vigeo World 120 Index 2012-2015
 - 100 Best Corporate Citizens, Corporate Social Responsibility Magazine 2015

- Environmental
 - 50 Hottest Companies in Bioenergy, Biofuels Digest 2014-2015
 - Champions of the Environment Award, New York City College of Technology 2015
 - Sports for the Environment Winner, Beyond Sport 2024

- Community
 - Community Partner of the Year, Wildlife Habitat Council 2015
 - Corporate Lands for Learning of the Year, Wildlife Habitat Council 2015
 - Best Community Partner, Neighborhood Alliance of Central Oklahoma 2015
 - Gold Award for Educational Program Excellence, SWANA 2015

- Business Recognition
 - Supplier of the Year Services Award, BASF 2015
 - Recycler of the Year Business Category, MassRecycle 2015
 - Supplier Leadership Award, Sustainable Purchasing Leadership Council 2016

- Workplace Recognition
 - "Best for Vets" Employer, Military Times 2010-2016
 - Corporate Equality Index Score 90+, human Right Campaign 2011-2016
 - Top Military Friendly® Employer, G.I. Jobs 2010-2015

- 50 Best Companies to Sell For, Selling Power Magazine 2015-2016
- Employer of Excellence Award, Texas Workforce Commission 2015
- Top 50 Employers, Equal Opportunity Publications 2015

3.4 **Promotion of Hierarchy – Conclusion**

WMDSM has a strong track record of working closely with DEP, local community members, and stakeholders across the State of Maine to promote and provide services that are aligned with and support the State Waste Hierarchy. These programs and services will continue for many years into the future with implementation of the Phase 14 Project.

4.0 **THE PHASE 14 PROJECT IS CONSISTENT WITH THE STATE WASTE MANAGEMENT AND RECYCLING PLAN**

In January of 2014, the DEP published its most current version of the Maine Materials Management Plan (the “Plan”).⁸⁰ The Plan provides information, guidance and direction for implementing integrated approaches to solid waste management within the State. The centerpiece of the Plan is the State’s Waste Management Hierarchy. The Hierarchy ranks management strategies in a specific order of priority. Two additional components central to the Plan are the States’ goal of recycling or composting 50% of in-state MSW tonnage and reducing the generation of MSW by 5% every two years. The Plan also includes four initiatives selected by the DEP as having the greatest impact on improving waste reduction and disposal within the State.

As demonstrated in Sections 1.0, 2.0 and 3.0 above, the proposed Phase 14 Project is consistent with each element of the State’s Plan. The Crossroads Facility subjects the vast majority of wastes to reduction, recycling or processing or disposes of wastes that have no higher management options. CDD is processed for reuse and recycling, multiple initiatives minimizing MSW volume through materials diversion, and Phase 14 ensures that a critical component of the State’s infrastructure for wastes with no alternative disposal option remains viable into the future. Thus, the Phase 14 Project directly assists the State with achieving its recycling/composting goal and its goal of reducing MSW, while affirmatively promoting the State’s Waste Hierarchy.

The Crossroads Facility also specifically furthers each of the four initiatives identified within the Plan. The Phase 14 Organics Diversion Program directly furthers the strategies and actions outlined in Section V.A. The Crossroads’ Battery Diversion Program advances a collection strategy specifically identified as a priority in Section V.B. The Phase 14 Hazardous Waste Collection Program also supports an area of need within the State’s collection and recycling network as identified in Section V.C. Finally, all initiatives proposed within Phase 14 will collect and analyze data to develop reliable diversion figures and evaluate program effectiveness, satisfying the largest component of Section V.D.

In January of 2018, the Department identified in its annual report to the Maine Legislature, that global recycling markets were facing grave uncertainty and volatility.⁸¹ Six months later, the global recycling market has entered into or is very near a crisis point.⁸² China’s actions to limit and ban certain types of plastic and paper over the course of two years, while also imposing limits on contamination, has had a major impact on recycling markets across the United States. With Chinese markets closing and other South Asian markets quickly following suit,⁸³ it is unclear where domestic materials can be sent to be recycled.

⁸⁰ The Plan’s full title is, “Maine Materials Management Plan: 2014 State Waste Management and Recycling Plan Update and 2012 Waste Generation and Disposal Capacity Report.”

⁸¹ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 5.

⁸² Livia Albeck-Ripka, *Your Recycling Gets Recycled, Right? Maybe, or Maybe Not*, The N.Y. Times, (May 28, 2018), <https://www.nytimes.com/2018/05/29/climate/recycling-landfills-plastic-papers.html>.

⁸³ Albeck-Ripka, *Your Recycling Gets Recycled, Right? Maybe, or Maybe Not*, at 4.

As DEP predicted, Maine recycling markets have not been insulated from this crisis.⁸⁴ Recently, at one of the State's largest recyclers, prices for some loads of materials have tripled. Municipalities and businesses faced with such a sharp increase in recycling costs may be forced to make difficult decisions about the viability of their recycling programs. These tough decisions may require a temporary greater reliance on disposal locations in Maine until alternative markets can be secured, putting increased pressure on the State's overall projected disposal capacity.

While the recycling crisis is a global issue, WMDSM is dedicated to the success of its Single-Sort Recycling Program in Maine. As discussed above in Section 3.3.3(b), as part of the Phase 14 Project, WMDSM plans to enhance its Airport Road Transfer Station to maximize the amount of materials reused and recycled at the facility and to minimize contamination and disposal. WMDSM also plans to provide municipalities within its disposal network with access to educational materials and technical expertise to further promote an increase in reuse and recycling rates. Finally, WMDSM stands ready to offer insights and expertise from its parent company, the nation's largest residential recycler, to assist the state of Maine and specifically, the DEP, navigate the challenges presented by the impending recycling crisis.

The initiatives presented in this Application demonstrate that wastes managed by the Crossroads Facility are reduced, reused, recycled, composted, and/or processed to the maximum extent practicable prior to landfilling. WMDSM employs multiple initiatives to promote and encourage diversion efforts at the Crossroads Facility. In 2017 alone, the Facility diverted over 15,000 tons of waste from disposal within the landfill through the combined efforts of its Single-Sort Recycling Program, active monitoring of wastes and targeted diversion programs. In addition, the Facility further reduced the amount of MSW disposed of in the landfill by diverting materials to other disposal operations higher up on the State's Waste Hierarchy, such as waste-to-energy facilities. WMDSM will continue to employ diversion initiatives such as these to increase overall diversion rate at the Crossroads Facility.

This Application demonstrates that the Crossroads Facility is consistent with the State's Waste Management and Recycling Plan and the Phase 14 Project ensures that the Facility will remain consistent with the Plan, furthering the State's waste disposal objectives for years to come.

⁸⁴ *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, at 5.

5.0 **THE PHASE 14 PROJECT IS CONSISTENT WITH LOCAL, REGIONAL OR STATE WASTE COLLECTION, STORAGE, TRANSPORTATION, PROCESSING OR DISPOSAL**

The Crossroads Facility is the only commercial landfill within the State of Maine. Its disposal network provides vital long-term waste capacity for municipalities and businesses throughout the state, primarily in a region that is distant from other waste management options. The Facility is consistent with State's Waste Management Hierarchy and the proposed Phase 14 Project will create new opportunities for the Facility to actively promote the Hierarchy into the future. The Phase 14 Project also provides critical outlets for disposal of waste from and/or waste volumes for incinerators and processing facilities that is essential to their success.

Extending the life of the Crossroads Facility with Phase 14 ensures that the State's solid waste market continues to remain competitive, cost-effective and naturally functioning. Without the Facility, one large, vertically integrated waste disposal company would own the majority of collection, transportation and disposal services within the State. This overconsolidation would significantly increase the risk that Maine communities and businesses would be subjected to unnaturally high, or supracompetitive waste prices.

Without the Crossroads Facility, communities and businesses currently serviced by its disposal network would face significant logistical and financial impediments in finding a viable disposal alternative. Transporting wastes double and triple the current disposal distances would significantly increase Maine's greenhouse gas emissions. The departure of the nation's largest environmental services company would also eliminate invaluable technical and financial resources currently dedicated to the management of Maine's waste, recyclable and reuse materials.

The Phase 14 Project fulfils the State's long-term disposal needs, guards against overconsolidation and supracompetitive prices, is consistent with the State's Waste Management and Recycling Plan, and promotes Maine's Solid Waste Hierarchy. Thus, WMDSM's Phase 14 Project is consistent with local, regional and state waste collection, storage, transportation, processing and disposal priorities.

6.0 **TITLE, RIGHT OR INTEREST**

Pursuant to state regulation, an applicant must demonstrate that it has sufficient title, right or interest in all of the property that is proposed for development or use.⁸⁵ WMDSM owns the land that constitutes the existing permitted facility, as well as an adjacent parcel where a portion of the Phase 14 Project will be located.⁸⁶ WMDSM's ownership of the land is evidenced by a series of deeds and documents included in Appendix C.

⁸⁵ 06-096 C.M.R. ch. 2 § 11.D.

⁸⁶ *Id.*

7.0 **PUBLIC NOTICE**

WMDSM published its corrected Notice of Intent to File (“Notice”) with DEP in the Morning Sentinel on June 30, 2018, and sent a copy of the Notice to the abutters and the Town by certified mail. A copy of the published notification can be found in Appendix D. Appendix D also contains a copy of the DEP application form for a determination of public benefit for an expanded solid waste facility, a list of abutters, a tax map showing the Facility and abutting properties, and the certification of mailings to each abutter and the Town.

LIST OF APPENDICES

Appendix A: Figures

- Figure 1: WMDSM Crossroads Facility Location Map
- Figure 2: WMDSM Crossroads Facility Site Map
- Figure 3: Maine Municipal Solid Waste Disposal Map – May 2018
- Figure 4: Materials Managed at the Crossroads Facility: 2004-2017
- Figure 5: WMDSM Crossroads Facility Phase 14 Site Plan
- Figure 6: Demonstrated Consistency of Phase 14 with Maine Waste Hierarchy

Appendix B: Tables

- Table 1: Crossroads Facility Phase 8 - Summary of Disposal Capacity Modifications
- Table 2: Maine Municipalities Currently Served by the Crossroads Facility
- Table 3: Maine Solid Waste Consortiums and Member Communities Currently Served by the Crossroads Facility
- Table 4: Selected Maine Businesses and Institutions Served by the Crossroads Facility
- Table 5: Crossroads Landfill Community Benefits and State Disposal Fees: 2004-2018
- Table 6: Available Licensed Maine MSW Disposal Capacity and Projected Landfill Life: December 31, 2016
- Table 7: Crossroads Facility: Textile Diversion and Reuse Communities
- Table 8: Crossroads Facility: Battery Diversion Communities
- Table 9: Crossroads Facility: Electronic Waste Communities
- Table 10: Crossroads Facility: Entities Served by WMDSM Recycling Services
- Table 11: Crossroads Facility: Single-Stream Materials Diverted from Landfill: 2015-2017

Appendix C: Property Deeds

Appendix D: Public Notice and Documents

- 1. Application for Determination of Public Benefit for Expanded Solid Waste Facility
- 2. Notice published in the Morning Sentinel on June 30, 2018
- 3. Abutters List
- 4. Abutters Tax Map
- 5. Copies of Certified Mailing

Appendix E: References

Fn 5: Maine State Planning Office, *Solid Waste Generation & Disposal Capacity Report for Calendar Year 2009*, (January 2011).

Fn 13: Maine Dep't of Env'tl. Prot., *Maine Materials Management Plan: 2014 State Waste Management and Recycling Plan Update and 2012 Waste Generation and Disposal Capacity Report*, (January 2014).

Fn 15: Maine Dep't of Env'tl. Prot., *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2016*, (Jan. 2018).

Fn 25: Maine Dep't of Env'tl. Prot., *Maine Solid Waste Generation and Disposal Capacity Report for Calendar Year 2015*, (Jan. 2017).

Fn 26: Municipal Review Committee, Inc. and Fiberight, LLC Hampden, Penobscot County, Maine Solid Waste Processing Facility, Solid Waste License, #S-022458-WK-A-N (July 14, 2016).

Fn 35: Materials accepted at the PERC facility for incineration as indicated by the MRL website.

Fn 39: Juniper Ridge Landfill, Solid Waste Landfill Expansion, #S-020700-WD-BI-N and #L-19015-TG-D-N (June 1, 2017); Juniper Ridge Landfill, Solid Waste License Amendment, #S-020700-WD-BL-A (March 31, 2018).

Fn 60: George K. Criner, Travis L. Blackmer, *2011 Maine Residential Waste Characterization Study*, The University of Maine (2011).

Fn 61: Arlene Karidis, *Early Efforts to Tackle Mounting Textile Waste*, Waste 360 (May 30, 2018).

Fn 63: Maine State Planning Office, *Waste or Resource? Rethinking Solid Waste Policy*, (January 2009).

Fn 65: U.S. Env'tl. Prot. Agency, *Advancing Sustainable Materials Management: 2014 Tables and Figures*, (Dec. 2016).

Fn 66: U.S. Env'tl. Prot. Agency, *Improved Information Could Better Enable EPA to Manage Electronic Waste and Enforce Regulations*, (June 2013).

Fn 79: U.S. Env'tl. Prot. Agency, *Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy*.

Fn 82: Livia Albeck-Ripka, *Your Recycling Gets Recycled, Right? Maybe, or Maybe Not*, The N.Y. Times, (May 28, 2018).