Municipal Clerk's Office
Approved
Date: April 16, 2025

Submitted by: Chair of the Assembly at the Request of the Mayor
Prepared by: Solid Waste Services
For reading: April 16, 2025

ANCHORAGE, ALASKA
AR No. 2025-126

A RESOLUTION OF THE MUNICIPALITY OF ANCHORAGE SUPPORTING ESTABLISHING A NEW WASTE TO ENERGY PROJECT LED BY SOLID WASTE SERVICES AND SUPPORTED BY THE ANCHORAGE WATER & WASTEWATER UTILITY, BOTH ENTERPRISE UTILITIES OF THE MUNICIPALITY OF ANCHORAGE.

WHEREAS, the Anchorage Regional Landfill (ARL) was opened in 1987 and to date has placed approximately 19-million (M)-cubic yards of Municipal Solid Waste (MSW) within it; and

WHEREAS, establishing a Waste to Energy (WTE) facility aligns with recommendations from the Anchorage Climate Action Plan, Integrated Solid Waste Master Plan, and Solid Waste Services (SWS) Strategic Plan, all of which recommended evaluating different waste to energy technologies to extend the useful life of ARL as well as generate additional renewable energy from MSW[1]; and

WHEREAS, A WTE facility will produce between 20-30 megawatts of renewable, firm and reliable power and help to offset the need for Southcentral Alaska to import liquid natural gas for heating and electrical production purposes; and

WHEREAS, A WTE facility will lengthen the useful life of ARL by approximately 100-years, is a preferred method for the disposal of MSW versus the landfilling of it from an environmental standpoint, keeps MSW disposal costs low for Municipality of Anchorage (MOA) residents over the long-term, and generates additional revenue for the MOA through power sales; and

WHEREAS, A WTE facility is designed for maximum burn efficiency of MSW, transforming MSW into a large amount of renewable energy that is consistent and reliable, results in higher diversion rates of ferrous and non-ferrous metals which creates additional recycling, reuse and revenue creation opportunities for the MOA, and has the potential of utilizing produced ash as an aggregate in concrete and roadway construction materials which further diverts waste from ARL; and

WHEREAS, WTE has proven to be a reliable, safe, effective, efficient, and mature technology worldwide for treating MSW and creating energy, with thousands of these facilities currently operating worldwide, with 75 currently operating in the United States, and

WHEREAS, WTE effectively treats wastewater biosolids, and will offset an approximate $100-million (M) capital investment required by the Anchorage Water & Wastewater Utility (AWWU) to decommission the existing wastewater biosolids

[1] Climate Action Plan 2019, Integrated Solid Waste Master Plan 2019, Solid Waste Services Strategic Plan 2019

incinerator, offset over $3M in annual operation and maintenance which includes a large amount of natural gas usage and fees for the existing incinerator, which will help keep rates lower long-term for wastewater utility rate payers; and

WHEREAS, WTE has the capability of destroying PFAS/PFOA, an emerging contaminant of concern for drinking water, wastewater and solid waste, through high temperature thermal treatment and could help solve PFAS/PFOA disposal issues for the entire state of Alaska as well as generate additional revenue for the MOA; and

WHEREAS, as part of the first quarter budget revision, both SWS and AWWU will contribute to a new WTE capital line item, $5M from SWS and $3M from AWWU both from equity which will not displace any existing projects; and

WHEREAS, WTE is part of an overall landfill life extension program with several phases, of which the first phase includes: site selection, economic analysis; permitting; public outreach; design; and, other preliminary efforts, that will be used for development of a WTE facility, with the results from each of these tasks being shared with the Anchorage Assembly through regular updates that will have opportunities for input and go/no-go decision making by the body, and; now, therefore

THE ANCHORAGE ASSEMBLY RESOLVES:

Section 1. The Anchorage Assembly supports SWS and AWWU in proceeding with implementing the next set of recommend steps from the WTE feasibility study completed in 2020[2] which includes: site selection analysis; economic analysis; permitting; public outreach; design; and, other preliminary efforts to establish a WTE facility within the MOA, with each step providing opportunities for go/no-go decision points for the Anchorage Assembly to evaluate and consider for moving the project forward.

Section 2. This resolution shall be effective immediately upon passage and approval by the Assembly.

PASSED AND APPROVED by the Anchorage Assembly this 16th day of April, 2025.

ATTEST: Chair

Municipal Clerk

[2] Feasibility of a Waste to Energy Facility for the Municipality of Anchorage, Alaska April 2020

MUNICIPALITY OF ANCHORAGE

Assembly Memorandum

No. AM 364 - 2025

Meeting Date: April 16, 2025

From: **MAYOR**

Subject: **A RESOLUTION OF THE MUNICIPALITY OF ANCHORAGE SUPPORTING ESTABLISHING A WASTE TO ENERGY PROJECT LED BY THE DEPARTMENT OF SOLID WASTE SERVICES AND SUPPORTED BY THE ANCHORAGE WATER & WASTEWATER UTILITY, BOTH ENTERPRISE UTILITIES OF THE MUNICIPALITY OF ANCHORAGE.**

The Department of Solid Waste Services (SWS) began a landfill life extension plan in 2019 driven by the recommendations contained within the Integrated Solid Waste Master Plan, SWS Strategic Plan, and the Municipality of Anchorage's (MOA) Climate Action Plan.

Based on the recommendations included within these plans, pre-feasibility and feasibility studies for the development of a Waste-to-Energy (WTE) project for the MOA were completed. The WTE pre-feasibility study included a detailed technology analysis and review with a recommendation of advancing the analysis and determining next steps for the mass-burn WTE alternative. The subsequent feasibility study completed, further evaluated the recommended mass-burn WTE technology and provided next steps for permitting and design activities that included estimated timelines and costs. Attached to this memorandum is the executive summary from the WTE Feasibility Study.

The WTE facility envisioned for the MOA is estimated to produce between 20-30 megawatts of firm, reliable power and extend the life of the Anchorage Regional Landfill by over 100-years. Additionally, the WTE facility will help to offset the need for importing liquid natural gas for the purposes of providing heating and power demands for the residents of the MOA and provide for the diversification of the power generation portfolio in the region. The WTE facility will also be designed to accept biosolids generated by the wastewater treatment process from the Anchorage Water & Wastewater Utility (AWWU) saving wastewater ratepayers from incurring a $100-millon (M) capital investment to replace an existing wastewater biosolids incinerator. SWS and AWWU will invest a portion of their equity of $5M and $3M, respectively, to fund the design and permitting activities for the WTE facility.

THE ADMINISTRATION RECOMMENDS APPROVAL.

Prepared by: Kelli Toth, Director

Approved by:	Mark Spafford, P.E., Deputy Municipal Manager
Concur:	Rebecca A. Windt Pearson, Municipal Manager
Respectfully submitted:	Suzanne LaFrance, Mayor

FINAL REPORT

Feasibility of a Waste-to-Energy Project for the Municipality of Anchorage, Alaska

Geosyntec Project Number: ME1846
April 2020

Prepared by:

Geosyntec consultants

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Prepared for:

Municipality of Anchorage Solid Waste Services

streamlineAM

1. EXECUTIVE SUMMARY

1.1 Integrated Solid Waste Plan

In 2018, the Municipality of Anchorage (MOA) and the Department of Solid Waste Services (SWS) authorized development of an integrated solid waste master plan (ISWMP) in order to optimize its system and assets through improved operational efficiencies, capital improvements and new practices/programs that increase landfill life, improve safety and customer service, protect the environment and increase waste reduction, and improve reuse and recycling of materials that are currently disposed of as waste.

As a community of almost 300,000 people, Anchorage generates a large quantity of waste each year (approximately 330,000 tons in 2016). SWS provides refuse collection services within its certificated service area, which services approximately 20% of the population of the MOA, and the remainder is serviced by the private sector. SWS services also include the disposal of solid waste, collection of household hazardous waste, drop off recycling at the Anchorage Regional Landfill (ARL), curbside organics collection within its service area and seasonal food scraps collection programs at both the ARL and the Central Transfer Station (CTS). ARL is the only operating landfill within the MOA and accepts more tonnage than any other landfill in the state.

1.2 Pre-Feasibility Report and Climate Action Plan

In September 2019, a pre-feasibility study was prepared and presented to the Assembly. The purpose of this study was to implement the recommendations of the ISWMP and the MOA's *Climate Action Plan* (CAP) to evaluate alternative technologies to landfill disposal in order to address SWS and potentially Anchorage Water Wastewater Utility (AWWU) and neighboring solid waste utility's needs. The pre-feasibility study focused on the appropriate capacity of the Waste-to-Energy (WTE) plant, the reliability and composition of the available waste stream, an expert analysis of commercially-proven WTE technologies under MOA conditions, the scope and type of energy and materials use agreements and other fee structures that would be required, and other risks to the financial sustainability of the facility's operation.

In the pre-feasibility study, Geosyntec presented the criteria and assumptions for recommending the most appropriate biological or thermochemical technology to be considered by the MOA for this project. Mass-burn incineration is recommended as it is the most well-established and reliable WTE technology in the marketplace today. The review presented in the pre-feasibility study assumed the development of a 1,000 to 1,200 ton per day WTE facility with associated advanced air emission controls, plus the development of a controlled landfill cell for management of generated ash. It is further assumed that pre- and post-incineration recovery of non-ferrous and ferrous metals, as well as co-incineration of biosolids, will take place, from which additional revenues from sale of secondary materials and tipping fees can be earned.

A Microsoft Excel™-based, pro forma model (Model) was constructed to help guide the MOA with the implementation steps of the proposed WTE facility project. Various scenarios (36) were constructed using Excel's Scenario Manager, which will enable the MOA to understand the projected financial impacts of accepting additional tonnage from the neighboring Boroughs,

inclusion of biosolids in the incoming waste tonnage to the WTE plant, and potential feed-in tariffs from energy sales to the local electric power utilities.

1.3 Feasibility Report

Overall, developing a WTE project in the MOA appeared to be a practical goal of the ISWMP and should be desirable by the MOA, and potentially neighboring Boroughs. The purpose of this Feasibility Report is to outline and guide the development of specific implementation steps to be conducted by the MOA should it be decided to implement a WTE project. As described in following sections, this Feasibility Report details the reasons for the specific tasks, the data that it will need to collect in order to proceed, an estimated schedule and milestones, and the costs to implement. The roadmap as detailed herein, draws upon lessons learned by other municipal WTE agencies and provides guidance for the Municipality.

1.4 Projected Schedule

Figure 1 shows the projected tasks and subtasks required for implementation of a MOA WTE project, including intermediate milestones and the interplay between many of the tasks. Assuming a project initiation of January 1, 2021, we are projecting an implementation phase of roughly three years with project closing in January 2024 with subsequent notice-to-proceed for construction. A more detailed Microsoft Project schedule is included in the Appendix A

1.5 Projected Budget Needs

Table 1 is a summary of projected budget needs by SWS to help implement the project over three fiscal years, 2020, 2021, and 2022.

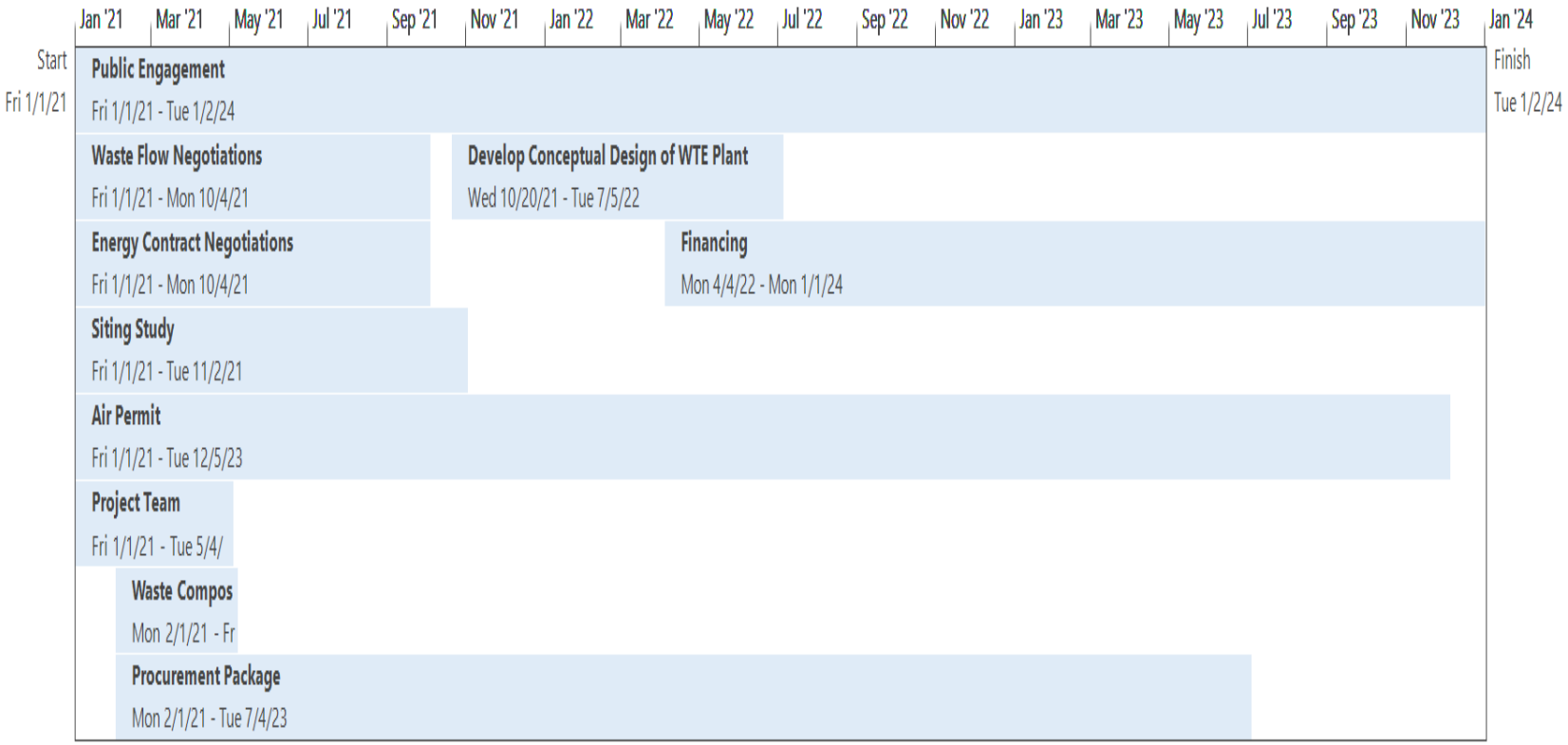

Figure 1: Projected Schedule for WTE Plant Implementation