

CAPITAL PROFILE REPORT

PROFILE NAME: REFUSE DERIVED FUEL FACILITY ENHANCEMENTS
 PROFILE NUMBER: 20-81-2052
 DEPARTMENT: Integrated Infrastructure Services
 LEAD BRANCH: Infrastructure Delivery
 PROGRAM NAME:
 PARTNER: Waste Management Services
 BUDGET CYCLE: 2019-2022

FUNDED

PROFILE STAGE: Approved
 PROFILE TYPE: Standalone
 LEAD MANAGER: Pascale Ladouceur
 PARTNER MANAGER: Michael Labrecque
 ESTIMATED START: April, 2020
 ESTIMATED COMPLETION: March, 2021

Service Category: Utilities Major Initiative:

GROWTH	RENEWAL	PREVIOUSLY APPROVED:	6,500
100		BUDGET REQUEST:	-
		TOTAL PROFILE BUDGET:	6,500

PROFILE DESCRIPTION

The Refuse Derived Fuel (RDF) process is part of the Integrated Processing and Transfer Facility (IPTF). Residential waste is tipped at the IPTF and processed to separate household hazardous waste, organics, and incompatible materials. The remaining items (mostly soiled paper, plastics, and composite items), are processed to produce refuse derived fuel.

This initiative includes adding an alternative offloading system to the RDF process, which will improve maintenance management by allowing planned maintenance during operational hours; and improve reliability of RDF material delivery to BioFuels facility and/or others.

Currently, all RDF production travels along a single tube belt conveyor to the BioFuels facility. If the BioFuels facility is unable to accept more RDF, or the tube belt conveyor has a mechanical problem, the RDF production must shut down. Due to limited storage space at the feed end of the RDF process, any shutdown results in RDF feedstock being transferred to the IPTF tip floor for transfer to landfill.

The alternative system will add conveyors and diverters to direct the RDF material to a new building where two sets of conveyors will be used to fill long-haul trailers. Drivers and truck/trailer units that are currently staged to load and transport material to landfill will be staged to be filled with RDF to be transported to the BioFuels facility or other locations.

Checkpoint #3 readiness approval is dependent on the Funding Approval. Target project completion is Q4 2020 with the assumption that all milestones of the project management will be achieved on time.

The RDF facility will be constantly under the risk of the single point of failure of the offloading by Vecobelt before the full completion of the project.

PROFILE BACKGROUND

Currently, the RDF process has a single off-loading tube belt conveyor that feeds the BioFuels facility only. When the tube belt conveyor has mechanical problems or the BioFuels facility cannot accept more material, the RDF process must be shut down.

This initiative includes adding an alternative offloading system to the RDF, which will improve maintenance management by allowing planned maintenance during operational hours; and improve reliability of RDF material delivery to the BioFuels facility and/or others.

PROFILE JUSTIFICATION

Having an alternative off-loading system will allow the City to provide more reliable delivery of RDF material to the BioFuels facility and will add the ability to deliver the material to other consumers.

Current excess RDF material could be diverted from landfill if contracts can be made with other potential RDF users.

STRATEGIC ALIGNMENT

This project aligns with Vision 2050, as well as with the Waste Services 2019 business plan in maximizing residential waste diversion from landfill. In addition, by adding more options for potential RDF use, this project could allow for commercial waste to also be diverted, assuming commercial processing contracts can be developed.

ALTERNATIVES CONSIDERED

The Edmonton Waste Management Centre site, particularly RDF Facility, has a limited space available for the addition of an off-loading building. With the overall consideration of the process requirements, the need of the operations, reduce the traffic impact to IPTF tipping floor, and the dust control activities to meet Alberta Environment and Parks Approval for Operation No. 383681-00-00, no other alternatives were proposed except for Status Quo and Deliver the project.

COST BENEFITS

There is a potential to save on hauling costs if local RDF users can take excess material that is currently going to the Ryley landfill, which is 85 kilometres away.

KEY RISKS & MITIGATING STRATEGY

Risk associated with requesting budget and schedule approval before process equipment (conveyor and diverters) are procured is considered high. This risk will be mitigated by specifying standard equipment which should reduce risk of unknown dimensions and weight, as well as delivery

The risk that management of combustible dust may add complexity to the project is considered medium. This risk will be mitigated by hazard identification (HAZID) and hazardous operation (HAZOP) reviews during detailed design.

The risk that the project construction may affect operations is considered medium. This risk will be mitigated by scheduling major construction activities during production down times. This constraint will also be made part of trade contracts developed by the construction manager.

RESOURCES

The project will be delivered by Facility Infrastructure Delivery, with support from Facility Planning and Design.

A design consultant firm and a construction management firm were engaged during the project development phase and will continue on the project team.

CONCLUSIONS AND RECOMMENDATIONS

The tube belt conveyor segment of the Refuse Derived Fuel Facility is vulnerable to unplanned maintenance resulting in lost time and reduced waste diversion. This project is to accomplish (1) addition of an offloading building (alternate outfeed system), including equipment procurement, construction, integration with the existing RDF system, and commissioning with a target completion date by 2020. (2) integrating the new constructed equipment and building associated with (1) with the existing RDF system. with a total capital investment of \$6.5M.

It is recommended that funding of \$6.5M be approved to progress this project through Delivery Phase for the Offloading Building scope, to the completion of the Checkpoint #5.

CHANGES TO APPROVED PROFILE

2020 Spring SCBA: 20.12: The RDF Enhancement project has met the PDDM checkpoint 3 readiness criteria. A capital budget adjustment is required to fund a stand alone capital profile by transferring approved funding from composite profile CM-81-2045 to progress this project through the delivery phase of PDDM. There is no resulting financial implication to the Utility as this will be funded by budget transfers from the approved composite profile CM-81-2045.

CAPITAL PROFILE REPORT

PROFILE NAME: **Refuse Derived Fuel Facility Enhancements**

FUNDED

PROFILE NUMBER: **20-81-2052**

PROFILE TYPE: **Standalone**

BRANCH: **Infrastructure Delivery**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2020	2021	2022	2023	2024	2025	2026	2027	2028	Beyond 2028	Total
	Approved Budget												
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	2020 Cap Council	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500
	Current Approved Budget	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500
Approved Funding Sources													
	Self-Liquidating Debentures	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500
	Current Approved Funding Sources	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500

BUDGET REQUEST		Prior Years	2020	2021	2022	2023	2024	2025	2026	2027	2028	Beyond 2028	Total
Budget Request		-	-	-	-	-	-	-	-	-	-	-	-

REVISED BUDGET (IF APPROVED)		Prior Years	2020	2021	2022	2023	2024	2025	2026	2027	2028	Beyond 2028	Total
Revised Budget (if Approved)		-	4,150	2,350	-	-	-	-	-	-	-	-	6,500
Requested Funding Source													
	Self-Liquidating Debentures	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500
	Requested Funding Source	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2020	2021	2022	2023	2024	2025	2026	2027	2028	Beyond 2028	Total
	Construction	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500
	Total	-	4,150	2,350	-	-	-	-	-	-	-	-	6,500

OPERATING IMPACT OF CAPITAL

Type of Impact:

Branch:																
	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE
Total Operating Impact	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-