

Appendix A - Capital Profile Details

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Understanding Capital Profiles

CAPITAL PROFILE REPORT GUIDE

RECOMMENDED: This is a new capital profile that has a budget request to be approved by City Council.

New Profile with Budget Request

Profile Page 1

RECOMMENDED

PROFILE STAGE:	Council Review
PROFILE TYPE:	Standalone
LEAD MANAGER:	DIC Brian Simpson
PARTNER MANAGER:	DIC Brian Simpson
ESTIMATED START:	January, 2021
ESTIMATED COMPLETION:	December, 2022

Major Initiative:

PREVIOUSLY APPROVED:	-
BUDGET REQUEST:	1,099
TOTAL PROFILE BUDGET:	1,099

This is the budget amount that is requested in this budget cycle.

RECOMMEND FUNDED: This is a profile that is previously approved by City Council which has a budget request.

Previously Approved Profile with Budget Request

Profile Page 1

RECOMMEND FUNDED

PROFILE STAGE:	Approved
PROFILE TYPE:	Composite
LEAD MANAGER:	Pilar Martinez
PARTNER MANAGER:	Pilar Martinez
ESTIMATED START:	January, 2015
ESTIMATED COMPLETION:	December, 2018

Major Initiative:

PREVIOUSLY APPROVED:	1,965
BUDGET REQUEST:	1,800
TOTAL PROFILE BUDGET:	3,765

This amount is approved by City Council in the prior year/budget cycle.

This is the budget amount that is requested in this budget cycle.

This is total profile budget if the budget request is approved by City Council.

FUNDED: This is a profile that is previously approved by City Council which does not have a budget request. However the profile has budget in the forecast years of the proposed capital budget cycle. This stage is also known as "Approved."

Previously Approved Profile with No Budget Request

Profile Page 1

FUNDED

PROFILE STAGE:	Approved
PROFILE TYPE:	Standalone
LEAD MANAGER:	DIC Danielle Campbell
PARTNER MANAGER:	Brock Kahanyshyn
ESTIMATED START:	January, 2015
ESTIMATED COMPLETION:	December, 2017

Major Initiative:

PREVIOUSLY APPROVED:	12,376
BUDGET REQUEST:	-
TOTAL PROFILE BUDGET:	12,376

This amount is approved by City Council in the prior year/budget cycle.

No budget request in this budget cycle.

UNFUNDED: This is a profile that has not been approved by City Council and is not recommended in the proposed budget cycle. This stage is also known as "Unapproved."

Unfunded Profile with Budget Request (Not Recommended)

UNFUNDED

PROFILE STAGE:	Entry - CIO CapBud Analysis
PROFILE TYPE:	Standalone
LEAD MANAGER:	Lead Branch Manager
PARTNER MANAGER:	Partner Branch Manager
ESTIMATED START:	Estimated Start Date
ESTIMATED COMPLETION:	Estimated End Date

Major Initiative:

PREVIOUSLY APPROVED:	-
BUDGET REQUEST:	86,734
TOTAL PROFILE BUDGET:	86,734

CAPITAL PROFILE REPORT GUIDE

Other Definitions

CAPITAL BUDGET AND FUNDING SOURCES (000's): This table consists of three pieces of information. The **APPROVED BUDGET** line identifies the Capital Budget as approved by City Council previously (if applicable), adjusted for any subsequently approved budget adjustments. The **BUDGET REQUEST** line reflects any requested changes to the existing budget approval. This would include requests for increases or reductions in budget approval of the annual expenditures. The **REVISED BUDGET (IF APPROVED)** is the sum of the first two lines and will reflect the amount and timing of capital expenditures as proposed by the department\branch for each profile.

GROWTH: Investment in new infrastructure that increases the size of the infrastructure portfolio.

Note: Any upgrade of infrastructure asset before the end of its expected useful life is considered growth. Moving from a leased building to a new City-owned building, it is also considered growth.

RENEWAL: Investment in existing infrastructure to restore to its former condition, thereby extending its service life. This may include replacement or rehabilitation of individual components as they age or become obsolete. Capital investment in renewal extends the period of service potential and does not increase the size of the infrastructure asset portfolio.

LEAD BRANCH/LEAD BRANCH MANAGER: This is the branch and the branch manager that is responsible for the construction/project management of until the completion of the profile. This field will be populated if the Profile Manager is different than the Project Manager. For example, the Community & Recreation Facilities branch may "own" the budget to build a recreation centre, however, when the capital budget is approved, Integrated Infrastructure Services may "project-manage" the construction of the new recreation centre.

OPERATING IMPACT OF CAPITAL: This section identifies the operating budget impacts of this capital profile and must be consistent with the information in the operating budget. Where applicable, it includes an estimate of Full-Time Equivalent human resources.

PROFILE NAME: The unique descriptive name given to each profile.

PROFILE NUMBER: A unique profile number is assigned to each profile and remains with that profile until project completion. The profile number consists of three components as follows; the approximate year in which the project begins, the asset category and an individual four-digit number. For example:

<u>Year</u>	<u>Asset Category</u>	<u>No.</u>
19	30	9999

Note: If the "year" shows a "CM" instead of a number, it signifies that the profile is a composite, as opposed to a stand-alone.

PROFILE TYPE - Stand Alone: Includes both renewal (> \$5 million) and/or growth (> \$2 million) profiles that are completed over two or more years and have potential access to external funding. Stand Alone Profile budget approval is for the duration of the project even if the budget goes beyond the current Budget Cycle.

PROFILE TYPE - Composite: A Composite profile is a collection of individual projects that fit within a common theme, typically within a larger program initiative such as the Neighbourhood Renewal Program, Arterial Overlay Program, etc. Within the composite profile are individual projects representing different locations where the work will take place, and are less than \$5 million in value individually (if a renewal composite), or \$2 million in value (if a growth composite). Each individual project within a composite is expected to be completed over a 2-year construction window. Composite Profile budget approval is for the Budget Cycle only (i.e. a maximum of 4 years).

CAPITAL PROFILE REPORT

PROFILE NAME:	SAMPLE BASIC PROFILE	UNFUNDED
PROFILE NUMBER:	12-34-5678	PROFILE STAGE: Entry - CIO CapBud Analysis
DEPARTMENT:	Department the Branch belongs to	PROFILE TYPE: Standalone
LEAD BRANCH:	Branch that managers the profile	LEAD MANAGER: Lead Branch Manager
PROGRAM NAME:	(future use)	PARTNER MANAGER: Partner Branch Manager
PARTNER:	Branch that partners with the Lead Branch	ESTIMATED START: Estimated Start Date
BUDGET CYCLE:	2019-2022	ESTIMATED COMPLETION: Estimated End Date

Service Category: Protection		Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	-
89	11	BUDGET REQUEST:	86,734
		TOTAL PROFILE BUDGET:	86,734

PROFILE DESCRIPTION

This section describes the history leading up to the current state of affairs giving rise to or relating to the general business problem or opportunity that is the subject of the business case. It provides a brief description of the business problem or opportunity that the initiative is trying to address.

PROFILE BACKGROUND

Provides a summarized description and context for the initiative. This section briefly describes the initiative and defines parameters of the initiative. Specifically, it describes the timeframes, department/organization, function and technology (if applicable). Explains items that are specifically excluded from the initiative.

PROFILE JUSTIFICATION

Provides a summarized rationale for the initiative. This section briefly describes the justification of the initiative. It outlines what the initiative will accomplish, in clear and measurable terms within a specified time frame. These objectives can be used in a post-implementation review to assess the success of the initiative. The objectives should be formulated broadly enough so that meaningful alternatives are not ruled out and narrowly enough so that only relevant alternatives are considered and that costs and benefits can be formulated.

STRATEGIC ALIGNMENT

This section describes how the initiative aligns with and contributes to the Council Goals and strategic alignment/outcomes, and to corporate and/or departmental business plans.

ALTERNATIVES CONSIDERED

The section provides the reader with an outline of the realm of possibilities that are available to address the problem or opportunity. It provides the reader with rationale to why some have been eliminated as viable alternatives.

COST BENEFITS

This section identifies overall value contribution and costs incurred to realize the proposed initiative. Provides a summary of tangible/intangible benefits; summarized listing of costs to achieve the desired benefits. States assumptions and provides a degree of accuracy for the cost estimates

KEY RISKS & MITIGATING STRATEGY

Some initiatives will have risks that will significantly limit or prevent the business owner from achieving their objectives. Note significant risks, for each viable alternative, with an identified mitigating strategy.

RESOURCES

Outlines the resourcing options for each alternative (internal and/or external) and provides justification. This is subject to approved corporate standards outlined in Administrative Directive A1439B Purchasing Goods Services & Construction.

CONCLUSIONS AND RECOMMENDATIONS

This section will recap the key elements of the business case and identify the proposed solution from the identified alternatives, and will make a specific recommendation on proceeding with the initiative.

CHANGES TO APPROVED PROFILE

(BUDGET OFFICE USE) This section only appears is there is a change request to an approved budget and is used to explain any project changes, other than project scope, which have occurred since the project was last approved. Changes to be covered include description of any budget increase/decrease which occur as a result of a change in project scope (i.e. tender price lower or higher, material cost fluctuation, transfers of funds to or from one project to another, etc.), or any shift in the mix of the funding sources originally identified. Changes may also be due to receipt of unanticipated alternative funding sources, a change in eligibility for grant funding, or the maximization of grants eligibility.

CAPITAL PROFILE REPORT

PROFILE NAME: **Sample Basic Profile**
 PROFILE NUMBER: **12-34-5678**
 BRANCH: **Uncategorized**

UNFUNDED
 PROFILE TYPE: **Standalone**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-
BUDGET REQUEST	Budget Request	-	8,019	315	78,400	-	-	-	-	-	-	-	86,734
	Revised Funding Sources (if approved)												
	Basic Grants	-	8,000	-	78,400	-	-	-	-	-	-	-	86,400
	Other	-	19	-	-	-	-	-	-	-	-	-	19
	Pay-As-You-Go	-	1	315	-	-	-	-	-	-	-	-	316
	Requested Funding Source	-	8,019	315	78,400	-	-	-	-	-	-	-	86,734
REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	8,019	315	78,400	-	-	-	-	-	-	-	86,734
	Requested Funding Source												
	Basic Grants	-	8,000	-	78,400	-	-	-	-	-	-	-	86,400
	Other	-	19	-	-	-	-	-	-	-	-	-	19
	Pay-As-You-Go	-	1	315	-	-	-	-	-	-	-	-	316
	Requested Funding Source	-	8,019	315	78,400	-	-	-	-	-	-	-	86,734

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Construction		-	8,000	-	78,400	-	-	-	-	-	-	-
Follow Up Warranty		-	-	315	-	-	-	-	-	-	-	-	315
Percent for Art		-	1	-	-	-	-	-	-	-	-	-	1
Technology		-	19	-	-	-	-	-	-	-	-	-	19
	Total	-	8,019	315	78,400	-	-	-	-	-	-	-	86,734

OPERATING IMPACT OF CAPITAL

Type of Impact: Material & Equipment, Personnel

Branch:	2018				2019				2020				2021			
	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE	Rev	Exp	Net	FTE
Facilities & Landscape Infrastructure	-	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Uncategorized	-	-	-	-	-	120	120	2.0	-	-	-	-	-	-	-	-
Total Operating Impact	-	4	4	-	-	120	120	2.0	-	-	-	-	-	-	-	-

Capital Profile Reports:

CAPITAL PROFILE REPORT

PROFILE NAME:	WASTE SERVICES FACILITIES & INFRASTRUCTURE PLANNING & DESIGN	RECOMMENDED
PROFILE NUMBER:	CM-81-2046	PROFILE STAGE: Council Review
DEPARTMENT:	Utilities	PROFILE TYPE: Composite
LEAD BRANCH:	Waste Management Services	LEAD MANAGER: Michael Labrecque
PROGRAM NAME:		PARTNER MANAGER:
PARTNER:		ESTIMATED START: January, 2019
BUDGET CYCLE:	2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category: Utilities	Major Initiative:
GROWTH 50	RENEWAL 50
PREVIOUSLY APPROVED:	
BUDGET REQUEST:	2,051
TOTAL PROFILE BUDGET:	2,051

PROFILE DESCRIPTION

Waste Services assets include a number of facilities such as Eco Stations, employee workspaces, equipment facilities, administration buildings, waste processing facilities, and research and development facilities. These facilities contain heating, ventilation, air conditioning equipment, fire protection systems, plumbing, electrical distribution, and other building systems. In addition to these facilities, Waste Services owns and operates a series of specialized assets required to meet the branch mandate of efficient and environmentally sound waste management operations, such as those found at the Edmonton Waste Management Centre and Kennedale sites. Waste Services is responsible for a variety of infrastructure including roads, buildings, material processing equipment, buried utilities and mobile equipment.

In order to deliver sustainable waste management services, maintain optimal service levels, and have an asset management program in place as recommended by the Office of the City Auditor, capital funds are required to carry out capital maintenance, renewal, and upgrade of Waste Services assets. This will result in safer and more reliable facilities and infrastructure while maintaining high levels of customer service. Without this funding in place, facilities and infrastructure will be at increased risk of failure as the waste collection and processing systems age. Emergency situations caused by unforeseen facilities and infrastructure failures will result in expensive unplanned repairs and interruption to operations.

This profile requires funding for the capital maintenance, renewal, and upgrade of these assets due to new or increased waste streams, safety concerns, and design improvements that increase efficiency of Waste Services' operations. As the assets age, their performance declines, thus replacing, rehabilitating and upgrading them is necessary to continue managing waste effectively and efficiently. In addition, carrying out operational improvements will further enhance operational efficiencies within the facilities and infrastructure

In order to ensure adequate levels of funding are available for the capital maintenance, renewal, and upgrade of these assets, Waste Services is adopting a new budgeting approach. For the 2019 - 2022 capital budget cycle, Waste Services will allocate capital budget to these activities as a targeted percentage of the asset replacement value, on an annual basis

PROJECT LIST

The following table shows example projects anticipated to be undertaken for this budget cycle:

- Project: GORE Rebuild and Improvement
Scope: Engineering assessment and report. As-built drawings. Refinished Gore pad with pony walls.
- Project: Transformer Drainage Improvement
Scope: Engineering assessment of drainage post-ADF
- Project: Paving and Site Improvement
Scope: Operational efficiency
- Project: EWMC Site Fire Protection
Scope: address issues identified by consultant in their review of Waste Services operations with respect to fire risks

PROFILE BACKGROUND

Waste Services (WS) has an extensive infrastructure inventory which include facilities such as Eco Stations, admin buildings, facilities for waste processing, equipment, and research & development. These facilities are equipped with mechanical, electrical, fire protection & other systems. Infrastructure includes the EWMC and Kennedale site utilities, roadways, drainage, communications, hardware, software & specialized systems.

This profile requests funding of approximately \$20.5 million for the maintenance, renewal, and upgrade of these assets due to new or increased waste streams, safety concerns, and design improvements that increase efficiency of Waste Services' operations.

CAPITAL PROFILE REPORT

Profile Page 2

PROFILE JUSTIFICATION

This initiative will provide funding for maintenance, renewal, upgrades, and efficiency improvements for Waste Services facilities and infrastructure. The main factors are the age of the infrastructure and facilities, existing safety issues, increasing demand and needed improvements to increase operational efficiency and effectiveness.

Urgency of Need

The need to effectively manage Waste Services' assets is of high priority to achieve its commitment of providing sustainable waste management services. This is also to address the issues raised in the auditor's report calling for Waste Services to manage its assets, including a sound maintenance program, in a more effective way. To carry out its commitment, assets must be managed for their entire life cycle including the provision of funds to acquire, maintain, operate, rehabilitate and replace them. The proper management of assets is fundamental to Waste Services operations, and will help to ensure continued delivery of uninterrupted services, and the optimal level of capital investment required to sustain reliable assets. Spending on this profile will be spread out over the four-year period based on priority, cost savings, safety factors, legislation compliance and other branch requirements.

Anticipated Outcomes

Better information to make capital investment decisions: Through a structured and integrated process, administration will ensure that projects identified as priorities by Waste Services receive robust evaluation of alternatives and scope identification.
Improved project schedule and budget estimates: Following industry best practices, a control budget and schedule is established on the basis of a completed design to ensure realistic expectations are aligned with Asset Management Plan prior to tendering and construction.
Reliable facilities and infrastructure that enable sustainable waste management in a cost effective manner.
High levels of customer service delivered in both an efficient and effective way through leading-edge waste processing facilities that use current and emergent technology to enable high rates of diversion of waste from landfill.

Scope

The scope of this profile encompasses capital maintenance, renewal, and upgrade work for Waste Services facilities and infrastructure. This is including but not limited to site improvements, new process equipment, changes in existing facilities and infrastructure, upgrades to building systems, and upgrades to the current transaction data collection systems..

Out of Scope

Renewal projects exceeding \$5 million are out of scope for this capital funding request. For any renewal project with a total budget that meets this threshold, a separate capital funding request will be prepared.

Operational maintenance activities.

Vehicles and equipment. These are included in the Waste Services Vehicles and Equipment Business Case (Profile Number CM-81-2048 Composite).

Projects to be managed by Integrated Infrastructure Services. These are included in the Waste Services Planning and Design-Composite (Profile Number CM-81-0005) and Waste Services Project Delivery (IIS Managed) Composite (Profile Number CM-81-2045).

Critical Success Factors

Adherence to asset management framework and plan

Proper design and programming of space to meet the needs

Timely execution of projects

Regular check-ins with the Waste Services Leadership team to ensure alignment with the strategic direction and branch goals

Accurate and sufficient data and cost analyses to support high level budget estimate and informed decision makings for the projects

STRATEGIC ALIGNMENT

Waste Services aligns with the following strategic goals of City of Edmonton:

Healthy City/Urban Places/Regional Prosperity/Climate Resilience

City of Edmonton's Waste Management Policy C527 and Waste Management Utility Fiscal Policy C558A as well as the Capital Project Governance Policy C591. This profile also aligns with Waste Services integrated 25-year strategic outlook that will help to ensure Edmontonians receive maximum economic and environmental benefits while minimizing the cost increases of managing solid waste..

ALTERNATIVES CONSIDERED

This is a capital funding request and does not present any alternatives for consideration.

COST BENEFITS**Tangible:**

Improved operational efficiency

Reduction in safety-related incidents

Long term savings due to reduction in repair costs

Improved productivity due to better access to facilities and equipment, and increased availability due to reduced down time.

Intangible

Increased employee morale due to better working conditions

Safer working environment for staff and customers

Increased or maintained customer satisfaction.

CAPITAL PROFILE REPORT

Profile Page 3

KEY RISKS & MITIGATING STRATEGY

Risks : Higher project costs due to imposition of higher US tariff

Mitigation Strategy : lock in prices prior to effectivity of new imposition; source required parts and equipment outside US

Risks : Procurement delay for specialized equipment

Mitigation : start early looking for vendors to supply the specialized equipment

Risks : Health issues if numerous small value projects are not implemented on time

Mitigation Strategy : Prioritize projects and ensure timely implementation

Risks : Changes in processing equipment brought about by future waste initiatives to increase diversion rate

Mitigation Strategy : Develop asset management strategic plan incorporating required process equipment to address future waste initiatives

RESOURCES

The projects will be led internally by Waste Services project managers. Once designs and equipment specifications have been finalized, these will be issued for public tender, and the authorized project managers will manage and administer the contractors during the construction/installation phase.

CONCLUSIONS AND RECOMMENDATIONS**Conclusion**

This profile will provide capital funding for maintenance, renewal, upgrade, and improvement projects for the Waste Services valued at less than \$5 million. This funding will ensure assets provide overall improvement in operating efficiency, effectiveness, and safe working conditions.

Recommendations

It is recommended that this profile be approved to assist Waste Services to meet its commitment of delivering sustainable waste management services. This would ensure capital maintenance, renewal, and upgrade of the assets due to new or increased waste streams, safety concerns, and design improvements that increase efficiency of Waste Services' operations.

CAPITAL PROFILE REPORT

PROFILE NAME: **Waste Services Facilities & Infrastructure Planning & Design**
 PROFILE NUMBER: **CM-81-2046**
 BRANCH: **Waste Management Services**

RECOMMENDED
 PROFILE TYPE: **Composite**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget											
Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	623	467	484	477	-	-	-	-	-	2,051
	Revised Funding Sources (if approved)												
	Waste Mgt Retained Earnings	-	-	623	467	484	477	-	-	-	-	-	2,051
Requested Funding Source	-	-	623	467	484	477	-	-	-	-	-	2,051	

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	623	467	484	477	-	-	-	-	-	2,051
	Requested Funding Source												
	Waste Mgt Retained Earnings	-	-	623	467	484	477	-	-	-	-	-	2,051
Requested Funding Source	-	-	623	467	484	477	-	-	-	-	-	2,051	

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Design	-	-	623	467	484	477	-	-	-	-	-	-
Total	-	-	623	467	484	477	-	-	-	-	-	-	2,051

OPERATING IMPACT OF CAPITAL

Type of Impact:

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

CAPITAL PROFILE REPORT

PROFILE NAME:	WASTE SERVICES FACILITIES & INFRASTRUCTURE PROJECT DELIVERY	RECOMMENDED
PROFILE NUMBER:	CM-81-2047	PROFILE STAGE: Council Review
DEPARTMENT:	Utilities	PROFILE TYPE: Composite
LEAD BRANCH:	Waste Management Services	LEAD MANAGER: Michael Labrecque
PROGRAM NAME:		PARTNER MANAGER:
PARTNER:		ESTIMATED START: January, 2019
BUDGET CYCLE:	2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category: Utilities	Major Initiative:
GROWTH 50	RENEWAL 50
PREVIOUSLY APPROVED:	-
BUDGET REQUEST:	18,448
TOTAL PROFILE BUDGET:	18,448

PROFILE DESCRIPTION

Waste Services assets include a number of facilities such as Eco Stations, employee workspaces, equipment facilities, administration buildings, waste processing facilities, and research and development facilities. These facilities contain heating, ventilation, air conditioning equipment, fire protection systems, plumbing, electrical distribution, and other building systems. In addition to these facilities, Waste Services owns and operates a series of specialized assets required to meet the branch mandate of efficient and environmentally sound waste management operations, such as those found at the Edmonton Waste Management Centre and Kennedale sites., Waste Services is responsible for a variety of infrastructure including roads, buildings, material processing equipment, buried utilities and mobile equipment.

In order to deliver sustainable waste management services, maintain optimal service levels, and have an asset management program in place as recommended by the Office of the City Auditor, capital funds are required to carry out capital maintenance, renewal, and upgrade of Waste Services assets. This will result in safer and more reliable facilities and infrastructure while maintaining high levels of customer service. Without this funding in place, facilities and infrastructure will be at increased risk of failure as the waste collection and processing systems age. Emergency situations caused by unforeseen facilities and infrastructure failures will result in expensive unplanned repairs and interruption to operations.

This profile requires funding for the capital maintenance, renewal, and upgrade of these assets due to new or increased waste streams, safety concerns, and design improvements that increase efficiency of Waste Services' operations. As the assets age, their performance declines, thus replacing, rehabilitating and upgrading them is necessary to continue managing waste effectively and efficiently. In addition, carrying out operational improvements will further enhance operational efficiencies within the facilities and infrastructure

In order to ensure adequate levels of funding are available for the capital maintenance, renewal, and upgrade of these assets, Waste Services is adopting a new budgeting approach. For the 2019 - 2022 capital budget cycle, Waste Services will allocate capital budget to these activities as a targeted percentage of the asset replacement value, on an annual basis

PROJECT LIST

The following table shows example projects anticipated to be undertaken for this budget cycle:

- Project: GORE Rebuild and Improvement
Scope: Engineering assessment and report. As-built drawings. Refinished Gore pad with pony walls.
- Project: Transformer Drainage Improvement
Scope: Engineering assessment of drainage post-ADF
- Project: Paving and Site Improvement
Scope: Operational efficiency
- Project: EWMC Site Fire Protection
Scope: address issues identified by consultant in their review of Waste Services operations with respect to fire risks

PROFILE BACKGROUND

Waste Services (WS) has an extensive infrastructure inventory which include facilities such as Eco Stations, admin buildings, facilities for waste processing, equipment; and research & development. These facilities are equipped with mechanical, electrical, fire protection & other systems. Infrastructure includes the EWMC and Kennedale site utilities, roadways, drainage, communications, hardware, software & specialized systems.

This profile requests funding of approximately \$20.5 million for the maintenance, renewal, and upgrade of these assets due to new or increased waste streams, safety concerns, and design improvements that increase efficiency of Waste Services' operations.

CAPITAL PROFILE REPORT

Profile Page 2

PROFILE JUSTIFICATION

This initiative will provide funding for maintenance, renewal, upgrades, and efficiency improvements for Waste Services facilities and infrastructure. The main factors are the age of the infrastructure and facilities, existing safety issues, increasing demand and needed improvements to increase operational efficiency and effectiveness.

Urgency of Need

The need to effectively manage Waste Services' assets is of high priority to achieve its commitment of providing sustainable waste management services. This is also to address the issues raised in the auditor's report calling for Waste Services to manage its assets, including a sound maintenance program, in a more effective way. To carry out its commitment, assets must be managed for their entire life cycle including the provision of funds to acquire, maintain, operate, rehabilitate and replace them. The proper management of assets is fundamental to Waste Services operations, and will help to ensure continued delivery of uninterrupted services, and the optimal level of capital investment required to sustain reliable assets. Spending on this profile will be spread out over the four-year period based on priority, cost savings, safety factors, legislation compliance and other branch requirements.

Anticipated Outcomes

Better information to make capital investment decisions: Through a structured and integrated process, administration will ensure that projects identified as priorities by Waste Services receive robust evaluation of alternatives and scope identification.
Improved project schedule and budget estimates: Following industry best practices, a control budget and schedule is established on the basis of a completed design to ensure realistic expectations are aligned with Asset Management Plan prior to tendering and construction.
Reliable facilities and infrastructure that enable sustainable waste management in a cost effective manner.
High levels of customer service delivered in both an efficient and effective way through leading-edge waste processing facilities that use current and emergent technology to enable high rates of diversion of waste from landfill.

Scope

The scope of this profile encompasses capital maintenance, renewal, and upgrade work for Waste Services facilities and infrastructure. This is including but not limited to site improvements, new process equipment, changes in existing facilities and infrastructure, upgrades to building systems, and upgrades to the current transaction data collection systems..

Out of Scope

Renewal projects exceeding \$5 million are out of scope for this capital funding request. For any renewal project with a total budget that meets this threshold, a separate capital funding request will be prepared.
Operational maintenance activities.
Vehicles and equipment. These are included in the Waste Services Vehicles and Equipment Business Case (Profile Number CM-81-2048 Composite).
Projects to be managed by Integrated Infrastructure Services. These are included in the Waste Services Planning and Design-Composite (Profile Number CM-81-0005) and Waste Services Project Delivery (IIS Managed) Composite (Profile Number CM-81-2045).

Critical Success Factors

Adherence to asset management framework and plan
Proper design and programming of space to meet the needs
Timely execution of projects
Regular check-ins with the Waste Services Leadership team to ensure alignment with the strategic direction and branch goals
Accurate and sufficient data and cost analyses to support high level budget estimate and informed decision makings for the projects

STRATEGIC ALIGNMENT

Waste Services aligns with the following strategic goals of City of Edmonton:

Healthy City/Urban Places/Regional Prosperity/Climate Resilience

City of Edmonton's Waste Management Policy C527 and Waste Management Utility Fiscal Policy C558A as well as the Capital Project Governance Policy C591. This profile also aligns with Waste Services integrated 25-year strategic outlook that will help to ensure Edmontonians receive maximum economic and environmental benefits while minimizing the cost increases of managing solid waste..

ALTERNATIVES CONSIDERED

This is a capital funding request and does not present any alternatives for consideration.

COST BENEFITS**Tangible:**

Improved operational efficiency
Reduction in safety-related incidents
Long term savings due to reduction in repair costs
Improved productivity due to better access to facilities and equipment, and increased availability due to reduced down time.

Intangible

Increased employee morale due to better working conditions
Safer working environment for staff and customers
Increased or maintained customer satisfaction.

CAPITAL PROFILE REPORT

Profile Page 3

KEY RISKS & MITIGATING STRATEGY

Risks : Higher project costs due to imposition of higher US tariff

Mitigation Strategy : lock in prices prior to effectivity of new imposition; source required parts and equipment outside US

Risks : Procurement delay for specialized equipment

Mitigation : start early looking for vendors to supply the specialized equipment

Risks : Health issues if numerous small value projects are not implemented on time

Mitigation Strategy : Prioritize projects and ensure timely implementation

Risks : Changes in processing equipment brought about by future waste initiatives to increase diversion rate

Mitigation Strategy : Develop asset management strategic plan incorporating required process equipment to address future waste initiatives

RESOURCES

The projects will be led internally by Waste Services project managers. Once designs and equipment specifications have been finalized, these will be issued for public tender, and the authorized project managers will manage and administer the contractors during the construction/installation phase.

CONCLUSIONS AND RECOMMENDATIONS**Conclusion**

This profile will provide capital funding for maintenance, renewal, upgrade, and improvement projects for the Waste Services valued at less than \$5 million. This funding will ensure assets provide overall improvement in operating efficiency, effectiveness, and safe working conditions.

Recommendations

It is recommended that this profile be approved to assist Waste Services to meet its commitment of delivering sustainable waste management services. This would ensure capital maintenance, renewal, and upgrade of the assets due to new or increased waste streams, safety concerns, and design improvements that increase efficiency of Waste Services' operations.

CAPITAL PROFILE REPORT

Profile Page 4

PROFILE NAME: **Waste Services Facilities & Infrastructure Project Delivery**
 PROFILE NUMBER: **CM-81-2047**
 BRANCH: **Waste Management Services**

RECOMMENDED
 PROFILE TYPE: **Composite**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Approved Budget											
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-	18,448
	Revised Funding Sources (if approved)												
	Self-Liquidating Debentures	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-	18,448
	Requested Funding Source	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-	18,448

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-	18,448
	Requested Funding Source												
	Self-Liquidating Debentures	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-	18,448
	Requested Funding Source	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-	18,448

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Construction	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-
	Total	-	-	5,603	4,201	4,352	4,290	-	-	-	-	-	18,448

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

Profile Page 1

PROFILE NAME:	WASTE SERVICES IIS INFRASTRUCTURE PLANNING AND DESIGN	RECOMMENDED
PROFILE NUMBER:	CM-81-0005	PROFILE STAGE: Council Review
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Composite
LEAD BRANCH:	Infrastructure Planning & Design	LEAD MANAGER: Jason Meliefste
PROGRAM NAME:		PARTNER MANAGER: Michael Labrecque
PARTNER:	Waste Management Services	ESTIMATED START: January, 2019
BUDGET CYCLE:	2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category:	Utilities	Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	-
100		BUDGET REQUEST:	9,283
		TOTAL PROFILE BUDGET:	9,283

PROFILE DESCRIPTION

This composite program supports preliminary planning and design work on Utility infrastructure capital projects prior to budget approval. This approach is consistent with Administration's implementation of the Project Development & Delivery Model (PDDM), as well as the Capital Governance Policy C591 that was adopted by Council in April 2017. The outcome of this profile is to provide Council with better information regarding the scope, schedule and budget of the proposed capital projects prior to full funding of the project.

Adherence to both the PDDM process as well as Policy C591 will ensure that sufficient information is prepared in advance of the Capital budget process to support informed investment decisions, provide adequate resources for planning and design to ensure appropriate level of planning and design is incorporated into budget submissions and provide an overall framework to guide the management of the Waste Services' capital projects.

As PDDM has previously been adopted by Council, this capital funding request establishes funding prioritization for Waste Services projects anticipated to enter the project planning stage within a checkpoint system with strategic controls on budget and schedule. The PDDM approach is a gated process for capital projects to ensure that projects are properly developed before they are funded for delivery.

While approval for funding in this profile is required to establish the initial 2019 - 2022 capital budget and projected utility rate increases over the 4 year period, approved funding for this profile does not indicate final budget or funding for any specific capital project.

PROJECT LIST

Funding in the profile will be used to support preliminary planning and design work for Waste Services capital initiatives planned for delivery between 2019 and 2026. These projects include, but not limited to:

Edmonton Compost Facility (ECF) mid and long term renewal (organics processing)
 Material Recovery Facility (MRF) renewal - interim solutions
 Edmonton Waste Management Centre (EWMC) site security audit upgrades,
 EWMC site civil servicing, and,
 other Waste Services planning and design projects considered for the 2023-2026 budget cycle

The projects listed above were identified by a Project Intake Request Form (PIRF), which was submitted by the project managers to Waste Services, indicating the project scope, justifications, schedules, risks and estimates. Appendix A provides further detail on the Waste Services PIRF process and outlines key criteria. Projects were then evaluated, ranked and prioritized based on the strategic and operational criteria set by the Waste Services. As the project costs used for requesting and evaluating the projects are estimates, they will be reviewed and validated in the early part of the budget period to assess the alignment with the long term asset strategic framework and plan that are being developed by Waste Services.

PROFILE BACKGROUND

In 2016, the Integrated Infrastructure Services (IIS) Transformation program developed the PDDM which was endorsed by Council in 2017. The PDDM is a framework to manage all capital infrastructure projects and represents the best practices in project management from the industry and comparable municipalities. It aims to achieve the following outcomes:

- Better information to make capital investment decisions
- Improved project schedule and budget estimates through increased level of design to ensure realistic expectations are set prior to project tendering and construction
- Systematic evaluation of projects against the initial project business case and scope.

PROFILE JUSTIFICATION

The current council directed approach will assist Waste Services in the management of capital projects in alignment with the PDDM process. The PDDM process offers a gated system where budget for comprehensive planning and design can be released in advance and once complete, decisions can be made regarding investments pertaining to the delivery of the projects rather than releasing the project budget as a whole upfront, as was prior practice. Without the additional details from a comprehensive planning and design process, the project estimates contained high value contingencies and the accuracy of the schedule and budget estimates varied significantly. Following the PDDM process will mitigate this risk and improve project and budget management practices for Waste Services. Projects included in this composite profile will address a number of Waste Services business needs such as the renewal of assets that have reached the end of their useful life, mitigation and elimination of safety and environmental risks and the need and opportunity for growth and continuous improvement.

City of Edmonton

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CAPITAL PROFILE REPORT

Profile Page 2

STRATEGIC ALIGNMENT

Projects following the PDDM approach for Waste Services align with the following strategic goals of City of Edmonton:

Healthy City/Urban Places/Regional Prosperity/Climate Resilience

In addition to this overarching corporate alignment structure, individual projects approved within this composite profile will align with the City of Edmonton's Waste Management Policy C527 and Waste Management Utility Fiscal Policy C558A as well as the Capital Project Governance Policy C591. This profile also aligns with Waste Services integrated 25-year strategic outlook

ALTERNATIVES CONSIDERED

This is a capital funding request and does not present any alternatives for consideration

COST BENEFITS

Tangible:

Accurate information to make better capital decisions
Accurate project budget and schedule estimate
Improved efficiency in project management

Intangible:

Allows early investment in design to support detailed business cases
Structured process to evaluate project readiness, scope and prioritization
Increase opportunities to make major changes in project during planning and design
Increased project accountability

KEY RISKS & MITIGATING STRATEGY

RISK: Extended project planning time required due to additional inter-departmental coordination

MITIGATION: Clarify and implement mutual expectations between IIS and Waste Services and work with IIS to fast track projects requiring Alberta Environment and Parks approval to meet the regulatory timelines

RISK: Projects scope may change and a revised preliminary planning and design plan is required to ensure project deliverables are met

MITIGATION: Rework the scope and design to fit the intended outcome; Enhanced project communication between IIS and Waste Services

RISK: Scope is not fully developed during Planning & Design or Delivery phases

MITIGATION: Scope is revisited during Planning & Design phase to ensure that all requirements are understood and documented.

RESOURCES

Projects will be delivered using a combination of internal and external resources. Where possible, internal forces will be used to manage and undertake the work. All procurement of external resources will follow relevant corporate procurement directives & policies.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion: Funds are required for planning and design to adhere with the Project Development and Delivery Model, improve project schedule adherence and improve budget estimates through increased level of design. A capital budget of approximately \$9.3 million is required for the preliminary planning and design for various projects in Waste Services composite profile in the next 4 years.

Recommendation: Waste Services is recommending to continue following the PDDM proposed by IIS and release funds for project planning and design phase for all capital projects managed by IIS. This will lead to better information to make capital investment decisions, and improved project schedule and budget estimates before full budget approval is received.

CAPITAL PROFILE REPORT

PROFILE NAME: **Waste Services IIS Infrastructure Planning and Design**
 PROFILE NUMBER: **CM-81-0005**
 BRANCH: **Infrastructure Planning & Design**

RECOMMENDED
 PROFILE TYPE: **Composite**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget											
Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	5,473	1,610	1,800	400	-	-	-	-	-	9,283
	Revised Funding Sources (if approved)												
	Waste Mgt Retained Earnings	-	-	5,473	1,610	1,800	400	-	-	-	-	-	9,283
Requested Funding Source	-	-	5,473	1,610	1,800	400	-	-	-	-	-	9,283	

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	5,473	1,610	1,800	400	-	-	-	-	-	9,283
	Requested Funding Source												
	Waste Mgt Retained Earnings	-	-	5,473	1,610	1,800	400	-	-	-	-	-	9,283
Requested Funding Source	-	-	5,473	1,610	1,800	400	-	-	-	-	-	9,283	

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Design	-	-	5,473	1,610	1,800	400	-	-	-	-	-
	Total	-	-	5,473	1,610	1,800	400	-	-	-	-	-	9,283

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

Profile Page 1

PROFILE NAME:	WASTE SERVICES IIS INFRASTRUCTURE DELIVERY	RECOMMENDED
PROFILE NUMBER:	CM-81-2045	PROFILE STAGE: Council Review
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Composite
LEAD BRANCH:	Infrastructure Delivery	LEAD MANAGER: Jason Meliefste
PROGRAM NAME:		PARTNER MANAGER: Michael Labrecque
PARTNER:	Waste Management Services	ESTIMATED START: January, 2019
BUDGET CYCLE:	2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category: Utilities	Major Initiative:
GROWTH 50	RENEWAL 50
PREVIOUSLY APPROVED:	-
BUDGET REQUEST:	96,029
TOTAL PROFILE BUDGET:	96,029

PROFILE DESCRIPTION

The composite profile CM-81-2045 provides a level of funding for Waste Services capital projects that are intended to be delivered by Integrated Infrastructure Services - Infrastructure Delivery Branch in the 2019 - 2022 capital budget cycle. The approach is consistent with Administration's implementation of the Project Development & Delivery Model (PDDM) as well as the Capital Project Governance Policy C591 that was adopted by Council in April 2017.

Adherence to both the PDDM process and Policy C591 will ensure that sufficient information is prepared in advance of the capital budget process to support informed investment decisions, provide adequate resources for planning and design to ensure appropriate level of planning and design is incorporated into budget submissions and provide an overall framework to guide the management of Waste Services' capital projects.

As PDDM has previously been adopted by Council, this capital funding request establishes funding prioritization for Waste Services projects anticipated to enter the project delivery stage within a checkpoint system with strategic controls on budget and schedule. The PDDM approach is a gated process for capital projects to ensure that projects are properly developed before they are funded for delivery.

While approval for funding in this profile is required to establish the initial 2019 - 2022 capital budget and projected utility rate increases over the 4 year period, approved funding for this profile does not indicate final budget or funding for any specific capital project.

This capital funding request provides information at a concept level that pertains to the budget for projects that are anticipated to be delivered during the 2019-2022 budget cycle. Details of the individual projects listed in this profile, including budget and scheduling will be further disclosed once the project has reached checkpoint 3 and a detailed business case has been developed for approval from Utility Committee and Council.

This profile requires funding for Waste Services capital projects that are intended to be delivered by Integrated Infrastructure Services - Infrastructure Delivery Branch in the 2019 - 2022 capital budget cycle. The four year capital projection for this profile is approximately \$96 million. A high level list of projects and estimated budget allocations is listed in Appendix A.

PROJECT LIST

Funding in the profile will be used to support project delivery work for the capital initiatives of Waste Services anticipated to be delivered in the 2019-2022 budget cycle, including but not limited to:

- Organics processing
- EWMC site civil servicing
- Materials Recovery Facility (MRF) renewal
- Anaerobic Digester process to further reduce pathogens

PROFILE BACKGROUND

The PDDM is a framework to manage all capital infrastructure projects and represents the best practices in project management from the industry and comparable municipalities. It aims to achieve the following outcomes:

- (1) Better information to make capital investment decisions
- (2) Improved project schedule and budget estimates through increased level of design to ensure realistic expectations are set prior to project tendering and construction
- (3) Systematic evaluation of projects against the initial project business case and scope.

This profile sets the 2019-2022 budget for Waste Services for projects that are anticipated to reach checkpoint 3 in the PDDM process. Once a project reaches this stage, a detailed standalone business case will be developed and brought to Utility Committee and Council for approval.

This approval will result in a capital budget adjustment that transfers budget from this profile to the newly created standalone profile. Until this transaction occurs, no funds are authorized to be spent on the delivery of a capital project.

CAPITAL PROFILE REPORT

Profile Page 2

PROFILE JUSTIFICATION**Urgency of Need**

The need to effectively deliver capital projects is essential for Waste Services to achieve its commitment to deliver quality sustainable waste management services to the City of Edmonton as well as effectively meet the changing needs of its customers. Projects that are anticipated to reach the third checkpoint in the PDDM process within this budget cycle have been identified and prioritized based on strategic criteria such as environmental impact, health and safety and alignment with Branch and Corporate goals. Delivery of these concept level projects within this profile will be fundamental to Branch operations and will help to ensure continued delivery of sustainable waste collection and processing services.

As Waste Services capital budget is supported by the utility rate, business cases for both planning and delivery phases of approved capital projects within the PDDM approach are required in order to have funds allocated to the composite profile and determine the utility rates required to support the capital budget. While approval for funding in this profile is necessary to determine capital budget and utility rates, approved funding for this profile does not indicate final budget or funding for any specific capital project.

Anticipated Outcomes

In alignment with the PDDM approach, Waste Services will realize the achievement of branch goals through working with Integrated Infrastructure Services to effectively manage the delivery of capital projects. Effective asset management will ensure that Waste Services has the resources to achieve its objectives by aligning its vision, mission and strategic plan with daily activities to achieve its goals. Waste Services envisions the following outcomes::

Better information to make capital investment decisions: Through a structured and integrated process, administration will ensure that projects identified as priorities by Waste Services receive robust evaluation of alternatives and scope identification. Through the PDDM process, project maturity is regularly assessed to ensure that projects are ready to advance to the next stage of development
Improved project schedule and budget estimates: Following industry best practices, a control budget and schedule is established on the basis of a completed design to ensure realistic expectations are set with IIS prior to tendering and construction
Reliable facilities and infrastructure that enable sustainable waste management in a cost effective manner.
High levels of customer service delivered in both an efficient and effective way through leading-edge waste processing facilities that use current and emergent technology to enable high rates of diversion of waste from landfill
Facilities that can be operated in a safe manner, protecting employees, customers and contractors
Capitalize on opportunities to reduce cost to operate and process waste in an environmentally and fiscally responsible way

Scope

The scope of this business case includes the detailed design, construction and project closeout stages, which subsumes work after completing Checkpoint 3 through Checkpoint 4 (Authorization for Construction expenditure) and Checkpoint 5 (Authorization for closeout) for all authorized Capital projects being led by IIS on behalf of Waste Services.

Checkpoint 4: Final check before the project goes to tender, to verify the project is ready to be tendered and develop a refined control budget. This will include an assessment of readiness and a final scope review. If the project is within the approved scope, schedule, and budget, an Internal Control Budget, Control Schedule and Authorization for Expenditure will result. If it is not, it will either be forwarded for a Change Request or will be sent back for revision. Approved projects are authorized to spend up to their control budget levels.

Checkpoint 5: This checkpoint is to verify that the project is ready for the final closeout within Integrated Infrastructure Services. Closeout will ensure that the scope has been met satisfactorily and that all closeout activities have been completed.

Out of Scope

Project planning and design phase of the PDDM approach is out of scope for this business case. (This includes Checkpoint 1 (Project initiation), Checkpoint 2 (Authorization for Design Expenditure) and Checkpoint 3 (Approval for Capital Budget) of the PDDM approach.
Critical Success Factors

Critical success factors include:

Efficient, consistent and accurate communication between Waste Services and IIS
Regular check-ins with the Waste Services Branch Leadership team to align with the strategic direction and branch goals
Accurate and sufficient data and cost analyses to support high level budget estimate and informed decision makings for the projects
On time, on budget delivery of capital projects within the PDDM approach.

STRATEGIC ALIGNMENT

Projects following the PDDM approach for Waste Services align with the following strategic goals of City of Edmonton:

Healthy City/Urban Places/Regional Prosperity/Climate Resilience

City of Edmonton's Waste Management Policy C527 and Waste Management Utility Fiscal Policy C558A as well as the Capital Project Governance Policy C591. This profile also aligns with Waste Services integrated 25-year strategic outlook that will help to ensure Edmontonians receive maximum economic and environmental benefits while minimizing the cost increases of managing solid waste.

CAPITAL PROFILE REPORT

Profile Page 3

ALTERNATIVES CONSIDERED

This is a capital funding request and does not present any alternatives for consideration.

In this process, multiple checkpoints occur prior to the budget approval for the delivery of a single project, including a detailed business case, ensuring that budget and schedule adjustments may be made prior to the tender process.

COST BENEFITS

Tangible:

Improved efficiency in project mgt
Increased adherence to budget and schedule estimates
Improved ability to forecast capital expenditure thus allowing for more certainty in utility rates

Intangible:

Structured process to evaluate readiness, scope and prioritization
Increased project accountability
Increased project awareness and controls
Closer integration of City departments
More efficient and consistent procurement process

KEY RISKS & MITIGATING STRATEGY

RISK- PDDM is a gated process and the additional steps required in this new process may increase timelines or compromise scheduled completion dates

MITIGATION- Waste Services will work closely on the project team with IIS and other parties to ensure project planning process is started in advance, timely review and approval is occurring and schedules are adhered to

RISK-Emerging priorities may cause delay

MITIGATION-The conceptual project list can be changed. Regular project team meetings will ensure integration & implementation of planned projects & respond to emergent projects..

RESOURCES

Projects will be managed by the Infrastructure Delivery Branch. Where outside resources are required the tender process will be managed by IIS. Subject matter expertise will be contributed by Waste Services from current staff complement. There will be no addition to the current approved FTE required

CONCLUSIONS AND RECOMMENDATIONS

The capital funding request outlines the overall budget requirement for projects anticipated to move into the Project Delivery phase for the 2019 -2022 budget cycle for a total of approximately \$896M. Projects moving into the delivery phase will have detailed business cases and budget adjustment will be requested from Utility Committee and Council. Waste Services recommends continuing to follow the PDDM approach and release funds for project delivery phase for all capital projects handled by IIS. This will lead to higher control on the scope, schedule, budget and delivery.

CAPITAL PROFILE REPORT

PROFILE NAME: **Waste Services IIS Infrastructure Delivery**
 PROFILE NUMBER: **CM-81-2045**
 BRANCH: **Infrastructure Delivery**

RECOMMENDED
 PROFILE TYPE: **Composite**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget												
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-	96,029
	Revised Funding Sources (if approved)												
	Self-Liquidating Debentures	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-	96,029
	Requested Funding Source	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-	96,029

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-	96,029
	Requested Funding Source												
	Self-Liquidating Debentures	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-	96,029
	Requested Funding Source	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-	96,029

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Construction	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-
	Total	-	-	3,250	14,909	35,680	42,190	-	-	-	-	-	96,029

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

PROFILE NAME:	COLLECTION FACILITIES AND INFRASTRUCTURE	FUNDED
PROFILE NUMBER:	CM-33-2028	PROFILE STAGE: Approved
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Composite
LEAD BRANCH:	Infrastructure Planning & Design	LEAD MANAGER: Jason Meliefste
PROGRAM NAME:		PARTNER MANAGER: Leo Girard
PARTNER:	Waste Management Services	ESTIMATED START: January, 2015
BUDGET CYCLE:	2015-2018	ESTIMATED COMPLETION: January, 2018

Service Category: Utilities		Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	3,325
50	50	BUDGET REQUEST:	-
		TOTAL PROFILE BUDGET:	3,325

PROFILE DESCRIPTION

Provide funding for upgrades & capital replacements for facilities & infrastructure of the Waste Management Utility. These upgrades or replacements may be required due to age of the infrastructure, using the equipment or infrastructure for different purposes than original design, safety improvements, or other improvements to increase efficiency and/or effectiveness. Scope: Includes all upgrades & capital replacements for facilities & infrastructure at EWMC, Eco Stations, & Kennedale sites. May include new equipment, changes in existing equipment, access platforms, and upgrades to ventilation/other building systems. New facility is a Central Warehouse @ EWMC. Currently spare parts are stored in individual facilities in uncontrolled areas. Out of Scope: Maintenance & replacements in kind are excluded, as not considered capital. Larger projects (over \$2M) are excluded. They have been split out into separate profiles for consideration. Corporate Properties assets are also out of scope.

PROFILE BACKGROUND

The WMU assets include solid waste processing; research facilities; collections staff; equipment facilities, & Eco Stations, which require sustaining or enhancement projects to continue to process waste effectively and efficiently.

Sustaining projects are those that replace or renew existing systems that may be near end of life and equip. that may have reduced efficiency due to age or new application.

Improvement projects are improvements that relate to safety, operator effort, capacity, or efficiency.

Previously, composite profiles for EWMC Facilities, EWMC Infrastructure, and Collections Facilities and Infrastructure were entered into the WMU capital budget and approved. This request for approval seeks to continue this practice.

Safety concerns, improvement ideas, and efficiency issues are reviewed by Engineering, they are prioritized in terms of resolving or improving safety issues, showing the best improvement to waste diversion, or providing the best payback.

PROFILE JUSTIFICATION

The non-uniform nature of solid waste makes it difficult to consider all possibilities in design of new facilities and processing systems. This profile will allow for the planned and timely renewal & upgrade to key facilities and operating infrastructure. Improvement of working conditions, increase efficiency & effectiveness, & reduction of maintenance costs for all waste processing facilities. The anticipated outcome of this profile is facilities, infrastructure, & processes that are safe, efficient, effective, & sustainable. Critical success factors will be close observation & measurement of operating results & identification of causes for not meeting operating objectives. Cooperation with Building Maintenance is critical for timely & efficient completion of work. Buildings that are owned/maintained by Corporate Properties, it is beneficial to coordinate changes/upgrades with scheduled maintenance work.

STRATEGIC ALIGNMENT

This profile supports the business goal of reaching 90% residential waste diversion. It also supports the business goals of continuous improvement and reduction of costs for existing programs.

ALTERNATIVES CONSIDERED

Alternatives to the capital profile are outlined on page 14 of attached Business Case document and identify potential options to manage existing facility and infrastructure renewal, upgrade or expansion.

COST BENEFITS

Keeping the equipment & infrastructure up to date reduces down time (leads to overtime), ensures waste collection & processing is effective as possible. When facilities, equipment, or infrastructure require refurbishment/replacement, an economic analysis will be conducted to determine best course of action from a life-cycle perspective.

See detail analysis & cost breakdown on Page 16 & 17 of the attached Business Case document.

KEY RISKS & MITIGATING STRATEGY

Key risks are equipment pricing and installation labour pricing.

A Table listing risks and alternatives can be found on page 19 of attached Business Case document.

CAPITAL PROFILE REPORT

Profile Page 2

RESOURCES

It will be led by WM Proj. Engineers, or in collaboration with Bldgs Services. Once designs and equip. spec. have been finalized, these will be issued for tender. The Engineer will manage and administer the Contractors during the construction phase.

CONCLUSIONS AND RECOMMENDATIONS

Alternative 2, status quo is recommended.

It will continue the practice of ensuring continuous improvement in efficiency, effectiveness, safety, and working conditions occur.

CAPITAL PROFILE REPORT

PROFILE NAME: Collection Facilities and Infrastructure
 PROFILE NUMBER: CM-33-2028
 BRANCH: Infrastructure Planning & Design

FUNDED
 PROFILE TYPE: Composite

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget												
	Original Budget Approved	1,975	1,350	-	-	-	-	-	-	-	-	-	3,325
	2015 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2016 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2017 Cap Carry Forward	-1,507	1,507	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	468	2,857	-	-	-	-	-	-	-	-	-	3,325
	Approved Funding Sources												
	Self-Liquidating Debentures	468	2,857	-	-	-	-	-	-	-	-	-	3,325
	Current Approved Funding Sources	468	2,857	-	-	-	-	-	-	-	-	-	3,325

BUDGET REQUEST	Budget Request	-	-2,369	2,369	-	-	-	-	-	-	-	-	-
	Revised Funding Sources (If approved)												
	Self-Liquidating Debentures	-	-2,369	2,369	-	-	-	-	-	-	-	-	-
	Requested Funding Source	-	-2,369	2,369	-	-	-	-	-	-	-	-	-

REVISED BUDGET (IF APPROVED)	Revised Budget (If Approved)	468	488	2,369	-	-	-	-	-	-	-	-	3,325
	Requested Funding Source												
	Self-Liquidating Debentures	468	488	2,369	-	-	-	-	-	-	-	-	3,325
	Requested Funding Source	468	488	2,369	-	-	-	-	-	-	-	-	3,325

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Construction	468	488	2,369	-	-	-	-	-	-	-	-
	Total	468	488	2,369	-	-	-	-	-	-	-	-	3,325

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

Profile Page 1

PROFILE NAME:	MAYFIELD ECO STATION (NW ECO STATION)	FUNDED
PROFILE NUMBER:	15-33-2011	PROFILE STAGE: Approved
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Standalone
LEAD BRANCH:	Infrastructure Delivery	LEAD MANAGER: Jason Meliefste
PROGRAM NAME:		PARTNER MANAGER: Leo Girard
PARTNER:	Waste Management Services	ESTIMATED START: January, 2015
BUDGET CYCLE:	2015-2018	ESTIMATED COMPLETION: January, 2020

Service Category:	Utilities	Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	19,800
100		BUDGET REQUEST:	-
		TOTAL PROFILE BUDGET:	19,800

PROFILE DESCRIPTION

The construction of an Eco Station in northwest Edmonton to replace the existing Coronation Eco Station will meet the demand for drop-off services for HHW, recycling and bulky waste in the expanding north and northwest areas of the City. This business case establishes the need to expand the current Coronation Eco Station and/or relocate the facility. This preliminary report contains rough estimates for the project based on experience gained through the Ambleside and Kennedale Eco Stations, with funding request in the current 2015-2018 capital budget to secure the land acquisition and provide for detailed design of the facility.

PROFILE BACKGROUND

Operations at the Coronation Eco Station are congested, leading to long wait times and traffic lineups. With increasing population and service demands, redevelopment on a larger site, along with the relocation to the northwest quadrant of the City on a site currently held by Land Enterprise, would offer enhanced services to north and northwest residents. This capital profile seeks to secure the land for Waste Management and funding to facilitate detailed design and further analysis of the program at Coronation.

PROFILE JUSTIFICATION

An expanded NW Eco Station will improve service delivery to residents, reduce wait times, enhance worker safety and provide additional services not available at the current Coronation location. The City of Edmonton currently has a property that appears to meet all current requirements and is projected to be surplus. Securing this property for the Waste Management Utility allows the Utility to time the actual construction with customer demand over the next few years. In accordance with the City's policy regarding land transfer pricing between the City and Utilities, it is apparent that purchase of the land at this time would limit the risk of future price escalation for the Utility. Approval in principle for this project will facilitate the land requirement (payment for the land at fair market value over a four-year period) pending further planning and construction. The City of Edmonton Land Enterprises would have to agree to this payment structure as identified.

STRATEGIC ALIGNMENT

Aligns with certain goals/objectives of the City of Edmonton Waste Management Policy C527, the Utility's 2015-2018 Business Plan, Utility Fiscal Policy C558, City of Edmonton Environmental Policy C512 and "The Way We Green and Live".

ALTERNATIVES CONSIDERED

1. Approve NW Eco Station relocation.
2. Renovate existing Coronation site
3. Increase operating hours to accommodate user demand
4. Do nothing
5. Increase Big Bin Events to manage materials
6. Open additional NW location

COST BENEFITS

Alternative 1 has the highest net cost of annual operations but also the highest number of potential customers served so the incremental cost per customer is actually the lowest among the three alternatives. Alternative 3 has the lowest financial impact and may be implemented as customer demand increases but does not provide the benefits of additional working area, material separation, safety and reuse options a larger site can provide.

KEY RISKS & MITIGATING STRATEGY

Key risks include land and development/construction cost escalations and Alberta Environment declining Industrial Approval Application. Probability and impact in most cases are low to medium.

RESOURCES

Waste Management staff, project management and maintenance, financial services and procurement staff resources impacts are medium to high for Alternatives 1 and 2 and low or none for Alternative 3.

CONCLUSIONS AND RECOMMENDATIONS

Alternative 1 is recommended. While the construction of the NW Eco Station could be delayed, the acquisition of an operating site should be completed within the current planning period.

City of Edmonton

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CAPITAL PROFILE REPORT

CHANGES TO APPROVED PROFILE

2017 Fall SCBA (CA#40): 2.5-04 To amend funding source from Waste Services Retained Earnings to Self-Liquidating Debentures for 2017-2018 to support the positive cash balance and achieve cash targets as proposed in 2018 Rate File.

CAPITAL PROFILE REPORT

PROFILE NAME: Mayfield Eco Station (NW Eco Station)

FUNDED

PROFILE NUMBER: 15-33-2011

PROFILE TYPE: Standalone

BRANCH: Infrastructure Delivery

CAPITAL BUDGET AND FUNDING SOURCES (000's)

	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
APPROVED BUDGET												
Approved Budget												
Original Budget Approved	4,500	1,510	5,000	8,800	-	-	-	-	-	-	-	19,810
2015 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
2016 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
2017 Cap Council	-	-1,293	-	-	-	-	-	-	-	-	-	-1,293
2017 Cap Carry Forward	1,283	-	-	-	-	-	-	-	-	-	-	1,283
Current Approved Budget	5,783	217	5,000	8,800	-	-	-	-	-	-	-	19,800
Approved Funding Sources												
Self-Liquidating Debentures	5,783	217	-	3,520	-	-	-	-	-	-	-	9,520
Waste Mgt Retained Earnings	-	-	5,000	5,280	-	-	-	-	-	-	-	10,280
Current Approved Funding Sources	5,783	217	5,000	8,800	-	-	-	-	-	-	-	19,800

BUDGET REQUEST	Budget Request	-	23	-5,000	-8,800	-	777	6,075	6,925	-	-	-
	Revised Funding Sources (if approved)											
	Self-Liquidating Debentures	-	-	-	-3,520	-	-	3,520	-	-	-	-
	Waste Mgt Retained Earnings	-	23	-5,000	-5,280	-	777	2,555	6,925	-	-	-
	Requested Funding Source	-	23	-5,000	-8,800	-	777	6,075	6,925	-	-	-

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	5,783	240	-	-	-	777	6,075	6,925	-	-	19,800
	Requested Funding Source											
	Self-Liquidating Debentures	5,783	217	-	-	-	-	3,520	-	-	-	9,520
	Waste Mgt Retained Earnings	-	23	-	-	-	777	2,555	6,925	-	-	10,280
	Requested Funding Source	5,783	240	-	-	-	777	6,075	6,925	-	-	19,800

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
REVISED BUDGET (IF APPROVED)	Construction	-	23	-	-	-	777	6,075	6,925	-	-	-	13,800
	Land	5,783	217	-	-	-	-	-	-	-	-	-	6,000
	Total	5,783	240	-	-	-	777	6,075	6,925	-	-	-	19,800

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

PROFILE NAME:	CURE SITE LAND USE & DEVELOPMENT	FUNDED
PROFILE NUMBER:	15-33-2025	PROFILE STAGE: Approved
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Standalone
LEAD BRANCH:	Infrastructure Planning & Design	LEAD MANAGER: Jason Meliefste
PROGRAM NAME:		PARTNER MANAGER: Leo Girard
PARTNER:	Waste Management Services	ESTIMATED START: January, 2015
BUDGET CYCLE:	2015-2018	ESTIMATED COMPLETION: January, 2017

Service Category:	Utilities	Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	7,017
100		BUDGET REQUEST:	-
		TOTAL PROFILE BUDGET:	7,017

PROFILE DESCRIPTION

This initiative consists of the identification of a suitable cure site external to the EWMC, the procurement of land, potential rezoning and subsequent development of the land to meet provincial regulatory standards.

Projected activities:

2015: Identify & screen external sites for size, accessibility, hydrogeologic suitability, zoning, cost, etc., which also include the possibility of partnering with regional jurisdictions interested in using the City's organics processing services in exchange for partnering in the development of a cure site. The evaluation of potential sites will be a follow up to initial discussions with Strathcona County and the Leduc Regional Waste Management Authority.

2016/17: site procurement, any required rezoning, site design and receipt of regulatory approval from Alberta Environment and Sustainable Resource Development. Obtain support from Corporate Properties Branch for site procurement as required.

2017: site construction and development.

PROFILE BACKGROUND

When the Edm Composting Facility (ECF) was purchased in 2001, the outdoor space was developed to provide an attendant cure site. The existing cure site's operation has been maximized by using larger size turning equip and stockpiling unscreened compost atop Clover Bar Landfill for final capping and revegetation. With that process scheduled to be completed, that option will no longer exist.

Additional cure site capacity is required to alleviate the problem of the back-end throughput of not matching the front-end processing capacity of the ECF. Without a larger land base, this situation will be exacerbated further when the planned Anaerobic Digestion Facility (ADF) is commissioned in 2017. There is no option to a curing and finishing operation to produce a compost that is both safe & capable of supporting plant growth. Compost must cure for 2 to 6 months at cooler process temperatures to be fully transformed into mature compost as required.

PROFILE JUSTIFICATION

The procurement and development of an external cure site for composting activities (curing, screening, stockpiling and marketing) is required so that the full processing capacity of the City's organics processing facilities (ECF and ADF) can be realized.

Additional curing capacity will:

- ensure that more residential and non-residential organic waste is diverted from landfill;
- manage projected increases in both residential and non-residential organic waste produced by a growing population;
- allow the Waste Management Utility to partner with interested municipal jurisdictions in the Edmonton region to process organic material.

STRATEGIC ALIGNMENT

It aligns with the goals and objectives of The Way We Green, specifically the increase in diversion of waste from landfill (Objectives 8.1 & 8.2) & through composting, the reduction in greenhouse gas emissions (Objectives 6.10 and 6.11).

ALTERNATIVES CONSIDERED

- Alternatives are:
1. Develop remote cure site.
 2. Landfill more of the organic waste received by the City.
 3. Direct organic waste to biofuels production.

See Pg 9 -11 of the attached Business Case for detail analysis.

COST BENEFITS

- The development & operation of a remote curing site represents the lowest lifecycle cost option consistent with achieving the City's goals in organics and waste diversion.
- Potential to sell the add'l organics processing capacity to business sector & other jurisdictions which could generate up to \$650K/year.
- Reduced Greenhouse Gas emissions related to composting versus landfill disposal.

CAPITAL PROFILE REPORT

KEY RISKS & MITIGATING STRATEGY

Key Risk

- (1) Inability to negotiate agreement with another jurisdiction
- (2) Preferred site too costly to procure
- (3) Timeline risks: inability to fully complete cure site initiative

Mitigation & detail - see pg 14 of attached Business Case

RESOURCES

An internal team consisting of a proj. eng with input from staff for managing the organics processing operation. If needed, support from other depts carrying out their normal function. External consulting and contracting services will be tendered.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that an external cure site be approved. In addition, before proceeding with any property acquisition or agreement for land use in an adjacent jurisdiction, Utility Committee will receive a report describing the proposed solution.

CHANGES TO APPROVED PROFILE

#17-4 Admin (CM): During the detailed design phase, additional cost impacts were discovered which were not initially identified by the Contractor. As a result, the total project estimate has increased to \$38,977K and the capital budget requirement has increased by \$1,983K, in order to maintain the current project schedule to complete the project.

CAPITAL PROFILE REPORT

PROFILE NAME: Cure Site Land Use & Development
 PROFILE NUMBER: 15-33-2025
 BRANCH: Infrastructure Planning & Design

FUNDED
 PROFILE TYPE: Standalone

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Approved Budget											
	Original Budget Approved	9,000	-	-	-	-	-	-	-	-	-	-	9,000
	2015 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2016 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2017 Cap Capital Budget Adj (one-off)	-1,983	-	-	-	-	-	-	-	-	-	-	-1,983
	2017 Cap Carry Forward	-6,795	6,795	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	222	6,795	-	-	-	-	-	-	-	-	-	7,017
	Approved Funding Sources												
	Self-Liquidating Debentures	222	6,795	-	-	-	-	-	-	-	-	-	7,017
	Current Approved Funding Sources	222	6,795	-	-	-	-	-	-	-	-	-	7,017

BUDGET REQUEST	Budget Request	-	-6,600	250	500	2,925	2,925	-	-	-	-	-	-
	Revised Funding Sources (if approved)												
	Self-Liquidating Debentures	-	-6,600	250	500	2,925	2,925	-	-	-	-	-	-
	Requested Funding Source	-	-6,600	250	500	2,925	2,925	-	-	-	-	-	-

REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	222	195	250	500	2,925	2,925	-	-	-	-	-	7,017
	Requested Funding Source												
	Self-Liquidating Debentures	222	195	250	500	2,925	2,925	-	-	-	-	-	7,017
	Requested Funding Source	222	195	250	500	2,925	2,925	-	-	-	-	-	7,017

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Construction	222	195	250	500	2,925	2,925	-	-	-	-	-	7,017
	Total	222	195	250	500	2,925	2,925	-	-	-	-	-	7,017

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

Profile Page 1

PROFILE NAME:	GROUNDWATER DIVERSION SYSTEM REPLACEMENT	FUNDED
PROFILE NUMBER:	18-33-2033	PROFILE STAGE: Approved
DEPARTMENT:	City Operations	PROFILE TYPE: Standalone
LEAD BRANCH:	Waste Management Services	LEAD MANAGER: Michael Labrecque
PROGRAM NAME:		PARTNER MANAGER: Michael Labrecque
PARTNER:	Waste Management Services	ESTIMATED START: April, 2018
BUDGET CYCLE:	2015-2018	ESTIMATED COMPLETION: December, 2019

Service Category:	Utilities	Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	13,250
	100	BUDGET REQUEST:	-
		TOTAL PROFILE BUDGET:	13,250

PROFILE DESCRIPTION

This capital profile supports the construction phase activities for installing a functioning groundwater diversion system at an approximate cost of \$13.25M at Clover Bar Landfill. The tentative cost of \$0.5M for developing the system design is not included in this budget request, as it is budgeted in profiles CM-33-1933 and CM-99-0005. The projected \$0.5M in abandonment costs will be an operating expense and therefore also not included in this budget request. Please see the full business case attached for the cost table.

Budget reallocations and savings realized in other Waste Services capital profiles (CM-33-2005 Waste Containers and 18-33-2017 Integrated Processing & Transfer Facility Expansion) will be released to the Utility pool and are sufficient to cover this \$13.25M cost for Groundwater Diversion. As such, this profile will not require an additional new budget request for the overall Utility.

The purpose of the groundwater diversion system is to collect the groundwater and divert it around the the landfill, to be discharged to the North Saskatchewan River. If the groundwater was not diverted in this way, it would put pressure on the landfill liner, which could result in infiltration and contamination.

The capital profile aims to achieve the following outcomes:

- to be able to operate the landfill safely while being in compliance with the City's operating approvals issued by the province; and
- to protect the North Saskatchewan River from any undue contamination from the Clover Bar Landfill.

The Waste Services Branch has engaged a consultant to assess risks, develop multiple solutions and a conceptual design in 2017. The estimated funding requirement requested in this profile is based on this initial conceptual design. The consultant is scheduled to complete preliminary engineering designs by the September of 2017, including an updated estimate. Once this report has been received by Administration, a detailed design of the selected solution will commence. Once the detailed design has been completed in Q4 of 2017, Administration will tender for construction services. At this time the Administration will be able to update the budget estimates with more accurate information and will bring forward any required Supplemental Capital Budget Adjustment. Construction is anticipated to begin in 2018 and will be completed in 2019.

PROFILE BACKGROUND

The existing groundwater diversion system is no longer functioning as designed. Over the past few years, issues including the followings have been identified:

- Leachate has been breaking through the system and released to the North Saskatchewan River. This has occurred twice in 2017 with no feasible solution to prevent it from happening again.
- The system is comprised of east and west sections. There are three known blockages in the west & one known blockage in the east section. Attempts to flush & clean the system have been unsuccessful.
- Multiple system failures have occurred, including failures of pumphouse equipment and within the structure of some of the manholes.
- The system is constructed with corrugated steel pipe. An inspection of the pipe indicated significant deterioration.
- There are no accurate as-builts and/or records for the system which is making repairs very difficult.
- Emergency repair work is costly & has not proven effective as a long term solution.

The deterioration results in higher than normal groundwater and surface water levels, and potentially introduces contaminants into the groundwater, surface water, and North Saskatchewan River.

PROFILE JUSTIFICATION

Justification for a new groundwater diversion system:

- Regulatory: The Clover Bar Landfill requires a functioning groundwater diversion system as part of the City's approval to operate;
- Environmental: Reduce the environmental impact of the Clover Bar Landfill on the North Saskatchewan River, the impacts may include discharge of impacted water due to groundwater contamination;
- Operational: Some operational areas at the EWMC, such as the compost cure site, wood chip bunker, and parking lots, have been affected by the high groundwater levels resulting from the deficiencies of the groundwater diversion system;
- Operating and maintenance costs: The existing groundwater diversion system will continue to deteriorate, and requires ongoing maintenance, such as above ground pumping, resealing of leaking joints, and spot repairs. The costs of additional ongoing preventative maintenance due to the deterioration of the system is estimated to be between \$300,000 and \$500,000 per year.

City of Edmonton

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CAPITAL PROFILE REPORT

Profile Page 2

STRATEGIC ALIGNMENT

The Way We Grow: Transform Edmonton's Urban Form; The Way We Live: Improve Edmonton's Livability; The Way We Green: Preserve & Sustain Edmonton's Environment.

ALTERNATIVES CONSIDERED

Status quo: The existing system has 3 reportable Leachate releases to the North Saskatchewan River & multiple known blockages. Ongoing inspections, spot repairs, & operational changes are not sustainable & contains a high risk of environmental releases. Not addressing this urgently & sustainably may have regulatory & legal implications from Alberta Environment and Parks. After the second release, Waste Services has committed to start replacing this system in 2018.

Repair the system: The corrugated steel pipe is 40-45 years old. No accurate as-builts and/or records for the system & the east half of the system is built within the Clover Bar Landfill, making the repair work difficult. The pump stations are constantly under repair, requiring new pumps, level sensors, reprogramming, and lighting.

Installation of a new system: Install a functioning system will ensure that EWMC meets the regulatory requirements and avoid any legal complications arising from the deteriorating system.

COST BENEFITS

- A new system will avoid higher cost caused by the failure of the deteriorating system;
- Failure to comply with landfill conditions may result in regulatory, legal and/or punitive monetary consequences;
- To protect the river & public health;
- Avoid any negative publications resulting from inadvertent releases;
- Designed to current standards resulting in lower operating costs & reduce the effects of high groundwater levels

KEY RISKS & MITIGATING STRATEGY

New system is near the bottom of landfill slope making repairs difficult & expensive-mitigated by identifying technology to minimize disruption, include using trenchless construction.

Old system abandonment-mitigated by ensuring the new system is fully operational before abandon the old.

Budget adjustment might be needed when design & technology are identified.

Urgent response required for existing system-undertaking initiatives, e.g. over land water pumping, inspections & minor repairs.

RESOURCES

It requires reallocation of funding from other capital profiles. Infrastructure Planning & Design Team from Integrated Infrastructure Services (IIS) will support Waste Services through the planning, design & delivery stages for this capital profile.

CONCLUSIONS AND RECOMMENDATIONS

- The groundwater diversion system at Clover Bar Landfill needs to be replaced in order to comply with its operating approval. At this time Administration has concept level project cost estimates as proposed in this capital profile. Once preliminary engineering can be completed, and more accurate funding estimates have been obtained, budget estimates will be updated accordingly.
- It is recommended that this project be funded for the detailed design and construction phase activities in order to replace the current groundwater diversion system at Clover Bar Landfill in a timely manner.

CAPITAL PROFILE REPORT

PROFILE NAME: Groundwater Diversion System Replacement
 PROFILE NUMBER: 18-33-2033
 BRANCH: Waste Management Services

FUNDED
 PROFILE TYPE: Standalone

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget												
Original Budget Approved		-	-	-	-	-	-	-	-	-	-	-	-
2017 Cap. Council		-	13,250	-	-	-	-	-	-	-	-	-	13,250
Current Approved Budget		-	13,250	-	-	-	-	-	-	-	-	-	13,250
Approved Funding Sources													
Self-Liquidating Debentures		-	13,250	-	-	-	-	-	-	-	-	-	13,250
Current Approved Funding Sources		-	13,250	-	-	-	-	-	-	-	-	-	13,250

BUDGET REQUEST	Budget Request	-	-5,000	5,000	-	-	-	-	-	-	-	-	-
	Revised Funding Sources (If approved)												
	Self-Liquidating Debentures	-	-5,000	5,000	-	-	-	-	-	-	-	-	-
	Requested Funding Source	-	-5,000	5,000	-	-	-	-	-	-	-	-	-

REVISED BUDGET (IF APPROVED)	Revised Budget (If Approved)	-	8,250	5,000	-	-	-	-	-	-	-	-	13,250
	Requested Funding Source												
	Self-Liquidating Debentures	-	8,250	5,000	-	-	-	-	-	-	-	-	13,250
	Requested Funding Source	-	8,250	5,000	-	-	-	-	-	-	-	-	13,250

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Construction		-	8,250	5,000	-	-	-	-	-	-	-	-
Total		-	8,250	5,000	-	-	-	-	-	-	-	-	13,250

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

PROFILE NAME:	MATERIAL RECOVERY FACILITY RENEWAL (MRF)	FUNDED
PROFILE NUMBER:	13-33-2020	PROFILE STAGE: Approved
DEPARTMENT:	Integrated Infrastructure Services	PROFILE TYPE: Standalone
LEAD BRANCH:	Infrastructure Planning & Design	LEAD MANAGER: Neehall R.G.
PROGRAM NAME:		PARTNER MANAGER:
PARTNER:		ESTIMATED START: January, 2013
BUDGET CYCLE:	2009-2011	ESTIMATED COMPLETION: December, 2016

Service Category: Utilities		Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	1,980
	100	BUDGET REQUEST:	-
		TOTAL PROFILE BUDGET:	1,980

PROFILE DESCRIPTION

This project will increase the throughput of the MRF facility by focusing on the rigid plastics line and providing a baler to handle external materials. An engineering study will be started in 2012 to fully define the required scope. It is expected that throughput can be raised from the current 18 tonne per hour average to 25 tonne per hour.

As the operation and maintenance contract for the MRF expires in 2013, the project has been split between 2013 and 2014 to allow the (potentially new) contractor time to get some experience with the facility before the design is finalized.

PROFILE BACKGROUND

Located at the Edmonton Waste Management Centre, the Materials Recovery Facility (MRF) is a nearly 6,000 square metre (64,000 square feet) facility that processes approximately 40,000 to 45,000 tonnes per year of mixed recycling material. Collected by the City's Blue Bags program, Blue Bins system and Recycling Depots, this material is processed into marketable product commodities such as cardboard, newsprint, metal, and various types of plastic, which are then sold to market as raw recycled materials for producing various recycled goods.

PROFILE JUSTIFICATION

The MRF facility currently has trouble keeping up with the amount of incoming material. The rigid plastics line equipment is at its end of useful life. The rigid line also presents a bottleneck for the whole process. This project will increase the overall production rate through the facility by replacing the rigid line equipment with newer equipment that can process more material with more efficiency. The baler will allow more materials (including those from other facilities) to be baled, while providing a back-up to ensure that a failure in the current MRF baler will not affect MRF production capacity.

STRATEGIC ALIGNMENT

This capital profile is aligned with the goals and objectives of "The Way We Green" in which it directly impacts the City's strategic goal of 90% residential waste diversion from landfill.

CHANGES TO APPROVED PROFILE

2017 Fall (#17-40) 2.2-24: Savings from 13-33-2020, 16-33-2017, CM-33-2005 and CM-33-2019 totaling \$20,275,500 will be released. These savings will be used to cover additional budget requirement for the Landfill Capping and Revegetation, Planning & Design and Groundwater Diversion initiatives. As a result, the re-costing of the Landfill Capping and the new profiles for the Planning & Design and Groundwater Diversion will not require additional overall Waste Utility budget funding.

CAPITAL PROFILE REPORT

PROFILE NAME: Material Recovery Facility Renewal (MRF)
 PROFILE NUMBER: 13-33-2020
 BRANCH: Infrastructure Planning & Design

FUNDED
 PROFILE TYPE: Standalone

CAPITAL BUDGET AND FUNDING SOURCES (000's)

		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
APPROVED BUDGET	Approved Budget												
	Original Budget Approved	2,680	-	-	-	-	-	-	-	-	-	-	2,680
	2013 CBS Budget Adjustment	-1,710	-	-	-	-	-	-	-	-	-	-	-1,710
	2014 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2014 CBS Budget Adjustment	1,710	-	-	-	-	-	-	-	-	-	-	1,710
	2015 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2016 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2017 Cap Council	-700	-	-	-	-	-	-	-	-	-	-	-
	2017 Cap Carry Forward	-754	754	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	1,226	754	-	-	-	-	-	-	-	-	-	-
Approved Funding Sources													
Self-Liquidating Debentures	1,226	754	-	-	-	-	-	-	-	-	-	-	1,980
Current Approved Funding Sources	1,226	754	-	-	-	-	-	-	-	-	-	-	1,980
BUDGET REQUEST	Budget Request	-	-411	411	-	-	-	-	-	-	-	-	-
	Revised Funding Sources (if approved)												
	Self-Liquidating Debentures	-	-411	411	-	-	-	-	-	-	-	-	-
Requested Funding Source	-	-411	411	-	-	-	-	-	-	-	-	-	-
REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	1,226	343	411	-	-	-	-	-	-	-	-	1,980
	Requested Funding Source												
	Self-Liquidating Debentures	1,226	343	411	-	-	-	-	-	-	-	-	1,980
	Requested Funding Source	1,226	343	411	-	-	-	-	-	-	-	-	1,980

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Other Costs	1,226	343	411	-	-	-	-	-	-	-	-	-
Total	1,226	343	411	-	-	-	-	-	-	-	-	-	1,980

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

PROFILE NAME: WASTE CONTAINERS	RECOMMENDED
PROFILE NUMBER: CM-81-2005	PROFILE STAGE: Council Review
DEPARTMENT: Utilities	PROFILE TYPE: Composite
LEAD BRANCH: Waste Management Services	LEAD MANAGER: Michael Labrecque
PROGRAM NAME:	PARTNER MANAGER:
PARTNER:	ESTIMATED START: January, 2019
BUDGET CYCLE: 2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category: Utilities	Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:
44	56	-
		BUDGET REQUEST: 9,072
		TOTAL PROFILE BUDGET: 9,072

PROFILE DESCRIPTION

The Waste Container Capital Profile supports the replacement of existing assets and growth to support the current market conditions and the changing needs of Waste Services customers. An outcome of this profile is to provide funding for the purchase of front load, side load, roll-off containers and litter baskets used in the Waste Services' residential and non-residential collection programs. This profile also provides funding for purchasing the carts required to support the residential Source Separated Organics (SSO) pilot program in 2019. The four-year total capital projection is approximately \$9.1 million. Out of this, approximately \$2.8 million is for growth, \$2.5 million is for replacement of containers and \$1.5 million for purchasing new plastic carts for the SSO pilot program. The remaining is for buying accessories for the containers and plastic carts. Front load containers, used primarily at multi-family sites, comprise the largest portion of the container capital profile by volume and asset value, and will be the main focus of this business case.

Alternatives identified and reviewed in this business case include:

Alternative 1: Continue funding through capital
 Alternative 2: Refurbishment of containers currently in Waste Services inventory

Taking full consideration of the effectiveness, efficiency, and risks, Alternative 1-Continue Funding Through Capital, is recommended. This alternative will continue to manage the inventory of containers to achieve maximum life while reducing the cost of service delivery and retaining the potential to earn a return on rate base for Waste Services.

PROFILE BACKGROUND

Waste Services provides waste collection services for the multi-unit residential sector in the City. Part of this service includes the provision of waste and recycling containers. A waste or recycling container, is defined as a metal or plastic container used to temporarily store both refuse and recycling waste at various locations such as multi-unit residences, Eco-Stations, the Edmonton Waste Management Centers (EWMC). Waste Services operates a container maintenance program that intakes containers for servicing, replacing parts and accessories along with pick up for painting and/or minor repairs when required. Containers that are still structurally sound may be repaired to extend their service life. However, some containers are damaged by fire or have other structural failures that require early replacement. The current weighted average age of Waste Services containers is nine years. etc.

CAPITAL PROFILE REPORT

Profile Page 2

PROFILE JUSTIFICATION

Waste Services has inventory of approximately 13,400 containers, each with an average life cycle of 15-years that require replacement at the end of their useful life. New containers are also required to match growing demands in residential and non-residential services due to conditions such as an increase in construction of new condos and multi-unit apartment buildings, new community commercial program partners, and an increase in number of litter basket locations across the City to better serve the public. Waste containers for both replacement and growth need to be purchased on a regular basis in order to maintain inventory levels and availability of stock on site to meet the demand requests.

The current weighted average age of Waste Services containers is nine years. If this profile is not approved for funding, at the end of 2022 the weighted average age of the containers is projected to be 13 years, which is very close to their end of asset life age of 15 years.

Waste Services has inventory of approximately 13,400 containers, each with an average life cycle of 15-years that require replacement at the end of their useful life. New containers are also required to match growing demands in residential and non-residential services due to conditions such as an increase in construction of new condos and multi-unit apartment buildings, new community commercial program partners, and an increase in number of litter basket locations across the City to better serve the public. Waste containers for both replacement and growth need to be purchased on a regular basis in order to maintain inventory levels and availability of stock on site to meet the demand requests.

The current weighted average age of Waste Services containers is nine years. If this profile is not approved for funding, at the end of 2022 the weighted average age of the containers is projected to be 13 years, which is very close to their end of asset life age of 15 years.

In August 2018, Administration submitted a report on the Source Separated Organics (SSO) Pilot which was approved by Utility Committee and Council for implementation in 2019. This pilot program will test multiple options for source separating kitchen organic waste from the regular curbside garbage collection stream. This implementation requires one time purchase of plastic carts for the program in 2019.

Anticipated Outcomes:

Outcome 1: Maintain high levels of customer service delivered in both an efficient and effective way through different waste collection services that use current and new equipment to deliver excellent service to Waste clients.

Estimated Timeline: 85 percent satisfaction with multi-unit services in 2017. Waste Services will continue to monitor the satisfaction in this sector on an ongoing basis.

Outcome 2: Maintain an effective infrastructure to meet the service demands for both growth and replacement

Estimated Timeline: Ongoing

Outcome 3: Ensure a competitive market for services provided to commercial customers

Estimated Timeline: Reviewed constantly and on an ongoing manner as contracts are tendered for various services with different timelines

Outcome 4: Provide carts for the SSO pilot project

Estimated Timeline: Spring 2019

Scope

Front load steel containers

Side load steel containers

Roll-off steel containers

Litter baskets

Plastic carts for the SSO pilot program

Out of Scope

Private sector containers

ETS waste containers/baskets

Parks and Recreational Services waste containers/baskets

Eco station containers provided by on-site contractor

Critical Success Factors:

Timely acquisition of required containers.

Timely tender process as majority of containers are fabricated metal products that are directly impacted by local labour rates, global metal prices and any tariffs affecting the Canadian market.

Adherence to container maintenance program plan

STRATEGIC ALIGNMENT

This profile aligns with the following new strategic goals of the City of Edmonton:

Healthy City; Urban Places; Regional Prosperity & Climate Resilience.

This profile aligns to the City of Edmonton's Waste Management Policy C527 which commits to delivering sustainable waste management service exceeding provincial waste diversion and processing standards. This profile also aligns with Waste Services integrated 25-year strategic outlook.

ALTERNATIVES CONSIDERED

Several options were reviewed, please refer to pages 13-15 of the attached business case for details.

COST BENEFITS**Benefits**

Increased accuracy of forecasting capital expenditure to make informed capital decisions

Increased adherence to budget and inventory schedules estimates

Structured process to evaluate readiness, scope and prioritization will improve project management practices within the organization

Please refer to pages 18-22 of the attached business case for detail financial analysis.

KEY RISKS & MITIGATING STRATEGY

The risks and mitigation strategies for the outlined alternatives are summarized in pages 22-24 of the attached business case.

CAPITAL PROFILE REPORT

RESOURCES

Alternative 1: Continue Funding through Capital: No additional resource costs incurred by WS.

Alternative 2: Refurbishment of Containers currently in inventory: No additional resourcing and equipment costs incurred by WS.

CONCLUSIONS AND RECOMMENDATIONS

Waste Services (WS) provides collection services to both residential & non-residential sectors. Financial analysis shows that Alternative 1 (funding through capital) has a lower financial impact of approximately \$9.1 million than Alternative 2 (refurbishment of containers in Waste Services inventory), where the capital impact is approximately \$13.5 million. This business case indicates that Alternative 1 has the least overall impact on Waste Services through comprehensive risk and impact analyses.

As such Alternative 1, Funding Through Capital is recommended. This alternative will continue to manage the inventory of containers to achieve maximum life while reducing the cost of service delivery and retaining the potential to earn a return on rate base for Waste Services

CAPITAL PROFILE REPORT

PROFILE NAME: Waste Containers
 PROFILE NUMBER: CM-81-2005
 BRANCH: Waste Management Services

RECOMMENDED
 PROFILE TYPE: Composite

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
	Approved Budget											
Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST	Budget Request	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-	9,072
	Revised Funding Sources (If approved)												
	Self-Liquidating Debentures	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-	9,072
	Requested Funding Source	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-	9,072

REVISED BUDGET (IF APPROVED)	Revised Budget (If Approved)	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-	9,072
	Requested Funding Source												
	Self-Liquidating Debentures	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-	9,072
	Requested Funding Source	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-	9,072

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Equip FumFixt	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-
	Total	-	-	3,074	1,930	1,998	2,070	-	-	-	-	-	9,072

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

PROFILE NAME: WASTE SERVICES VEHICLES & EQUIPMENT	RECOMMENDED
PROFILE NUMBER: CM-81-2048	PROFILE STAGE: Council Review
DEPARTMENT: Utilities	PROFILE TYPE: Composite
LEAD BRANCH: Waste Management Services	LEAD MANAGER: Michael Labrecque
PROGRAM NAME:	PARTNER MANAGER:
PARTNER:	ESTIMATED START: January, 2019
BUDGET CYCLE: 2019-2022	ESTIMATED COMPLETION: December, 2022

Service Category: Utilities	Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:
3	97	-
		BUDGET REQUEST:
		60,214
		TOTAL PROFILE BUDGET:
		60,214

PROFILE DESCRIPTION

This profile requests funding for Waste Services Vehicles and Equipment under the CM-81-2048 composite profile. The Waste Services has a fleet of over 400 units of vehicles and equipment used in the collection of waste and recyclables as well as processing these materials at the Edmonton Waste Management Centre. Some of the equipment are considered specialty equipment, such as shredders, compost turners, and tub grinders while other equipment are typically heavy duty vehicles such as waste collection vehicles, highway tractors and trailers.

Vehicles and equipment deteriorate as they age even with regular preventive maintenance and operating cost per kilometer increases over time. Replacing the vehicles and equipment, as scheduled, does not only improve availability but also results in lower operating cost per kilometer. Replacement can be done by purchasing new units or where possible, by refurbishment/rehabilitation to extend the useful life. These options were investigated to arrive at the best possible solution.

Waste Services requests approximately \$60.2 million replacement and growth funding over the next four-year capital plan for the replacement of equipment and vehicles as they reach the end of their useful life. This business case requests funds to replace and refurbish/rehabilitate equipment as they age and wear. With the replacement of equipment and vehicles as scheduled, additional customer needs can be met within the budget period.

- Alternatives shortlisted to address the funding requirements are as follows:
- Alternative 1: Replace vehicles and equipment as they reach the end of their expected useful life with new ones and purchase growth vehicles
 - Alternative 2: Replace vehicles and equipment as they reach the end of their expected useful life with new ones, rehabilitate some vehicles/equipment to extend their useful life and purchase growth vehicles
 - Alternative 3: Replace vehicles and equipment as they reach the end of their expected useful life with new ones, lease some vehicles and equipment, and purchase growth vehicles

Taking into full consideration the alternatives evaluated in this business case and their impact on the financial well being of the Waste Services, residential rates and public service, Alternative 2: Replace vehicles and equipment as they reach the end of their expected useful life with new ones, rehabilitate some vehicles/equipment to extend their useful life and purchase growth vehicles, is recommended for the acquisition of growth and replacement vehicles.

PROFILE BACKGROUND

The economic and operating life of most of the Sustainable Waste Processing (SWP) heavy duty vehicles is between 5 and 15 years. The replacement of vehicles ensures higher fleet availability and newer technology to meet all new emission, fuel use and efficiency standards. SWP equipment is maintained on site, where possible. Some equipment is refurbished at least once based on its use, condition, and operating time. Another refurbishment may be performed in some circumstances before the equipment is replaced. Refurbish/replace decisions are made in collaboration with Fleet and Facility Services. As of September 2018, Waste Collection fleet availability is at 83.9% while the SWP fleet availability is at 89.8%. The four-year capital plan for vehicles and equipment, which must be funded through rates, identifies 216 vehicles required for replacement (including ten trailers that were deferred from 2018). The level of funding requested will enable WS to continue to meet its commitment to provide sustainable waste management services as set out in the Waste Management Policy C527 and align with Waste Services integrated 25-year strategic outlook.

CAPITAL PROFILE REPORT

Profile Page 2

PROFILE JUSTIFICATION

Urgency of Need

Fleet replacements are required on an ongoing basis to replace aging equipment (especially those still operating past their useful lives). Curbside collection requires one tandem truck per 4,800 households to collect waste and one tandem truck per 9,600 households to collect recyclables. Multi-unit bin collection requires one front loader per 9,350 households to collect waste and one front loader per 14,500 households to collect recyclables. Edmonton's population is expected to increase by about 2% annually during this budget period with an estimated 9,000 additional households per year. A review of the waste collection fleet indicated that while it is necessary to replace vehicles that have reached the end of their useful life, Waste Services is expected to be able to continue to provide full collection with the existing fleet.

Anticipated Outcomes

In addition to the fundamental outcome of optimizing existing capital assets while effectively delivering services to residents, Waste Services envisions the following outcomes:

- Maintain high level of customer service – 90% satisfaction rating
- Maintain an effective fleet – meet availability KPI targets in partnership with Fleet and Facility Services
- Maintain effective fleet lifecycle management - Achieved by maintaining equipment in serviceable and reliable condition without excessive repair costs or down times

Scope

The profile is required to provide the funding for replacement of vehicles and equipment required for the daily operations of the Waste Collections and Sustainable Waste Processing Services.

Out of Scope

- Light duty equipment leased by Corporate Procurement and Supply Services
- Fixed or non-mobile equipment
- Future initiatives to increase diversion rate (example: source separation and grass ban)

Critical Success Factors

- Timely acquisition of required vehicles and equipment
- Availability of Fleet Services engineering and procurement expertise
- Adherence to vehicles and equipment replacement and maintenance plan

Assumptions

- Equipment pricing may be significantly impacted by the market
- Inflation for the budget period is assumed at 1.9% as per the average Corporate assumption for 2019-2022
- 20% contingency is added to absorb minor scope changes and contract price adjustments, market volatility and tariff
- Vehicles/equipment useful life was assumed as between five to 15 years
- Costs to purchase, rehabilitate and lease as well as units to be rehabilitated (including their extended life) and leased, were provided by Waste Collections Services, Sustainable Waste Processing Services, and Fleet and Facility Services
- O&M costs for leased vehicles are not included in leasing costs
- Number of units to purchase were provided by Waste Collections Services and Sustainable Waste Processing Services and reviewed by Fleet and Facility Services
- Only incremental operating and maintenance costs were considered in the financial analysis
- Automated collection system, which is still being studied as part of future strategic initiatives is not considered in this business case.

STRATEGIC ALIGNMENT

WS will work collaboratively under Council's Strategic Plan and the Corporate Business Plan to ensure the strategic direction of the Branch is in alignment with that of the corporation, Council and citizens. In addition to the corporate alignment structure, this composite profile will align with the City of Edmonton's WM Policy C527 and Waste Management Utility Fiscal Policy C558A. This profile also aligns with WS Integrated 25-Year Strategic Outlook that will ensure citizens receive maximum economic and environmental benefits while minimizing the cost increases of managing solid waste.

ALTERNATIVES CONSIDERED

Alternatives shortlisted to address the funding requirements are as follows:

- Alternative 1: Replace vehicles and equipment as they reach the end of their expected useful life with new ones and purchase growth vehicles
- Alternative 2: Replace vehicles and equipment as they reach the end of their expected useful life with new ones, rehabilitate some vehicles/equipment to extend their useful life and purchase growth vehicles
- Alternative 3: Replace vehicles and equipment as they reach the end of their expected useful life with new ones, lease some vehicles and equipment, and purchase growth vehicles

Page of 14 to 21 of the attached business case listed the detailed financial and impact analysis of the alternatives

COST BENEFITS

Tangible Benefits:

- Increased efficiency and reliability with lesser manual labour
- Reduced maintenance costs and downtime due to newer vehicles
- Improved safety

Intangible Benefits

- Increased or maintained customer satisfaction
- Better vehicle conditions

Financial Costs

Please refer to pages 19 to 21 of the attached business case for the comparative capital costs for alternatives

CAPITAL PROFILE REPORT

KEY RISKS & MITIGATING STRATEGY

- Risk 1: Health and customer issues if waste are not collected in a timely manner. Mitigation: Timely procurement
- 2: Higher costs due to imposition of higher US tariff. Mitigation: Lock in prices prior to new imposition and source required parts and equipment outside of US
- 3: Some vehicles to be purchased may not be required anymore as new waste strategy is implemented. Mitigation: Update procurement strategy to reflect Council decisions
- 4: The vehicles and equipment are not replaced on time; Mitigation: Opt for s/t lease
- 5: Higher costs due to higher US tariff. Mitigation: Lock in prices prior to new imposition & source required parts and equipment outside US
- 6: Procurement delay for specialized equipment. Mitigation: Start early in looking for vendors to supply specialized equipment

RESOURCES

No additional resources are required for the implementation. This project will be led by the Equipment Supervisor. For new specialty equipment, a Project Engineer, in collaboration with the operating group, will develop equipment specifications and an RFP for purchase direct from vendors.

CONCLUSIONS AND RECOMMENDATIONS

Taking into full consideration the alternatives evaluated in this business case and their impacts on the financial well-being of the Waste Services, residential rates and public service, Alternative 2 (Replace new and Rehabilitate/Refurbish vehicles and equipment to extend useful life) is recommended for the acquisition of vehicles and equipment. Financial analysis shows that Alternative 2 yields the most optimal net present value of outflow of (\$53,556,885) at 5.4% discount rate. This profile will provide funding for replacement vehicles and equipment requirements of Waste Services. This funding is critical to meet Waste Services commitment of providing and delivering sustainable waste management services.

CAPITAL PROFILE REPORT

PROFILE NAME: Waste Services Vehicles & Equipment
 PROFILE NUMBER: CM-81-2048
 BRANCH: Waste Management Services

RECOMMENDED
 PROFILE TYPE: Composite

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Approved Budget											
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-
BUDGET REQUEST	Budget Request	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-	60,214
	Revised Funding Sources (if approved)												
	Waste Mgt Retained Earnings	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-	60,214
	Requested Funding Source	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-	60,214
REVISED BUDGET (IF APPROVED)	Revised Budget (if Approved)	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-	60,214
	Requested Funding Source												
	Waste Mgt Retained Earnings	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-	60,214
	Requested Funding Source	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-	60,214

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Fleet Equipment	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-
Total	-	-	19,272	14,086	12,951	13,905	-	-	-	-	-	60,214	

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAPITAL PROFILE REPORT

Profile Page 1

PROFILE NAME:	SOURCE SEPARATED ORGANICS PROGRAM	PROFILE STAGE:	UNFUNDED L2 - CapBud Review
PROFILE NUMBER:	20-81-2041	PROFILE TYPE:	Standalone
DEPARTMENT:	Utilities	LEAD MANAGER:	Michael Labrecque
LEAD BRANCH:	Waste Management Services	PARTNER MANAGER:	
PROGRAM NAME:		ESTIMATED START:	January, 2019
PARTNER:		ESTIMATED COMPLETION:	December, 2022
BUDGET CYCLE:	2019-2022		

Service Category:	Utilities	Major Initiative:	
GROWTH	RENEWAL	PREVIOUSLY APPROVED:	
20	80	BUDGET REQUEST:	54,350
		TOTAL PROFILE BUDGET:	54,350

PROFILE DESCRIPTION

Transition one-stream curbside refuse collection into source separated waste collection and split the refuse into organics and other waste streams. Source Separated Organics (SSO) or food waste are collected weekly with cart in the summer and bi-weekly in the winter. Leaf and yard waste Other waste is collected separately. Recyclables remains manual collection weekly, and other waste (refuse) will be collected bi-weekly all year round.

PROFILE BACKGROUND

The City manually collects two stream of waste (refuse and recyclables) weekly from approximately 225,000 homes on a fixed scheduled days

- On average, a City collector lifts 10 tonnes of waste or 21 tonnes per day during the summer
- The City is serviced by both City and Contractor crews on a 50/50 % basis
- The City aims to achieve the 90% diversion goal, and proposed changes to organics management program to City Council in August 2018. The changes included a Source Separated Organics Collection (SSO) program, a separated leaf and yard waste collection program, as well as the collection of recyclables and refuse. With Council approval, the City will conduct a SSO pilot in 2019 and start collecting leaf and yard waste separately in the spring of 2019.
- Automated collection system is being considered for the proposed SSO and refuse collection
- Automated collection system refers to refuse trucks equipped with hydraulically operated jointed arms with cart grabbing mechanisms and the operator uses in-cab controls to pickup and tips the cart

PROFILE JUSTIFICATION

- Introduce separate organic waste collection which can result in increased waste diversion rates;
- Increased collection productivity;
- Reduction in employee injuries and absences along with improved employee retention;
- Increased competitive interest from contract waste service providers;
- Automated refuse collection has become predominant in North America, manufacturers are defaulting to produce automated equipment. This has limited the availability of manual collection truck in the current market.

STRATEGIC ALIGNMENT

Aligns with the Way We Green, The Way We Live, the Utility Services Branch's 2019-2012 Business Plan.

ALTERNATIVES CONSIDERED

Four alternatives have been developed and are in the public engagement phase. All alternatives proposed for the four-stream collection, including weekly recycling collection, weekly (summer)/bi-weekly (winter) SSO or food waste collection with 110 L cart, and spring/fall leaf and yard waste collection. The differences among the four alternatives are the refuse collection, as follows:

1. Bi-weekly year round refuse collection with 110 L cart;
2. Bi-weekly year round refuse collection with 240 cart;
3. Bi-weekly year round refuse collection with a 4-bag limit;
4. Bi-weekly year round refuse collection with a 5-bag limit (4 clear bags and 1 privacy bag).

Further alternatives might be developed with the input from the public engagement (public engagement report is due Dec 15, 2018)

COST BENEFITS

All alternatives will have associated capital investments and may also increase the operational cost.

KEY RISKS & MITIGATING STRATEGY

1. Behaviour change from approximately 240,000 homes for source separation, storage/use/set-out of carts, and the use of the waste collection calendar. Public education will be conducted.
2. Training will be provided to all operators.
3. Automated collection may not work for some narrow back alleys. The City would consider using semi-automated trucks for these alleys or may convert some alley collection to front street collection. Semi-automated collection system refers to a simpler "cart tipper" mechanism which requires the operator to manually wheels the cart to the "cart tipper" to be lifted and tipped.
4. Capacity limit & Yard waste collection demand during the spring and fall pick-ups. The City will investigate the options available.

City of Edmonton

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CAPITAL PROFILE REPORT

RESOURCES

Additional resources will be needed for collecting the third and fourth streams, cart maintenance and ongoing public education. Additional resources may also be needed for waste processing.

CONCLUSIONS AND RECOMMENDATIONS

The changes to the organics waste management will increase the waste diversion from landfills. In addition, the transitioning to automated collection will reduce collector injuries and increase competitive interest from contract waste collection providers. An investigation is undertaken for the service model and alternatives, which will be included in a final business case for Council approval.

CAPITAL PROFILE REPORT

PROFILE NAME: **Source Separated Organics Program**
 PROFILE NUMBER: **20-81-2041**
 BRANCH: **Waste Management Services**

UNFUNDED
 PROFILE TYPE: **Standalone**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

APPROVED BUDGET		Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Approved Budget											
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	Current Approved Budget	-	-	-	-	-	-	-	-	-	-	-	-

BUDGET REQUEST		2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Budget Request	-	-	-	19,000	18,117	17,233	-	-	-	-
	Revised Funding Sources (if approved)											
	Self-Liquidating Debentures	-	-	-	19,000	18,117	17,233	-	-	-	-	54,350
	Requested Funding Source	-	-	-	19,000	18,117	17,233	-	-	-	-	54,350

REVISED BUDGET APPROVED (I)		2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Revised Budget (if Approved)	-	-	-	19,000	18,117	17,233	-	-	-	-
	Requested Funding Source	-	-	-	19,000	18,117	17,233	-	-	-	-	54,350
	Self-Liquidating Debentures	-	-	-	19,000	18,117	17,233	-	-	-	-	54,350
	Requested Funding Source	-	-	-	19,000	18,117	17,233	-	-	-	-	54,350

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET APPROVED (I)	Activity Type	Prior Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
		Fleet Equipment	-	-	-	19,000	18,117	17,233	-	-	-	-	-
	Total	-	-	-	19,000	18,117	17,233	-	-	-	-	-	54,350

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-