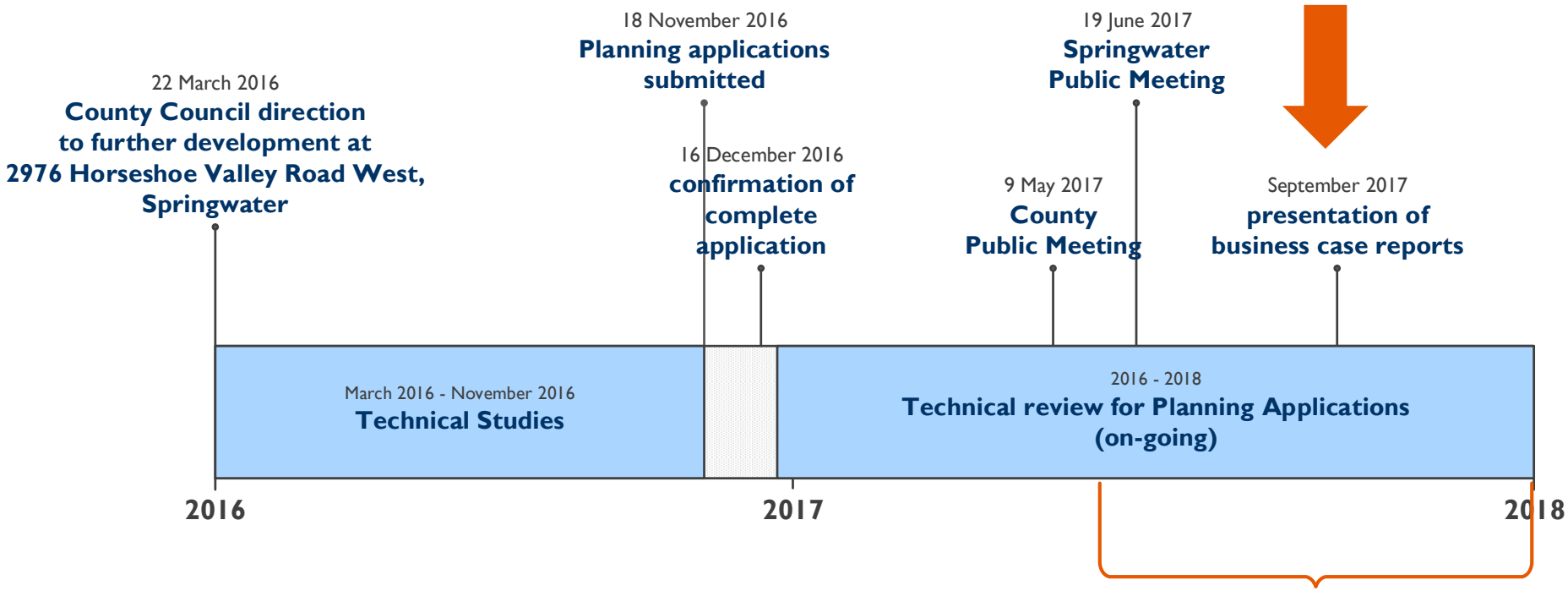
Environmental Resource Recovery Centre

Item CCW 17-222 – OPF Preliminary Business Case
Item CCW 17-223 – MMF Updated Business Case

September 26, 2017

simcoe.ca

ERRC Update – Where are we?



response to agency and public comments

additional work on some technical studies

determine requirements, if any, of Growth Plan 2017

ERRC Update – Waste-Free Ontario Act

impact on MMF

- transition of blue box
- future County involvement in recycling?
- potential loss of CIF funding

impact on OPF

- Food and Organic Waste Action Plan
- potential impacts from landfill ban, IC&I waste

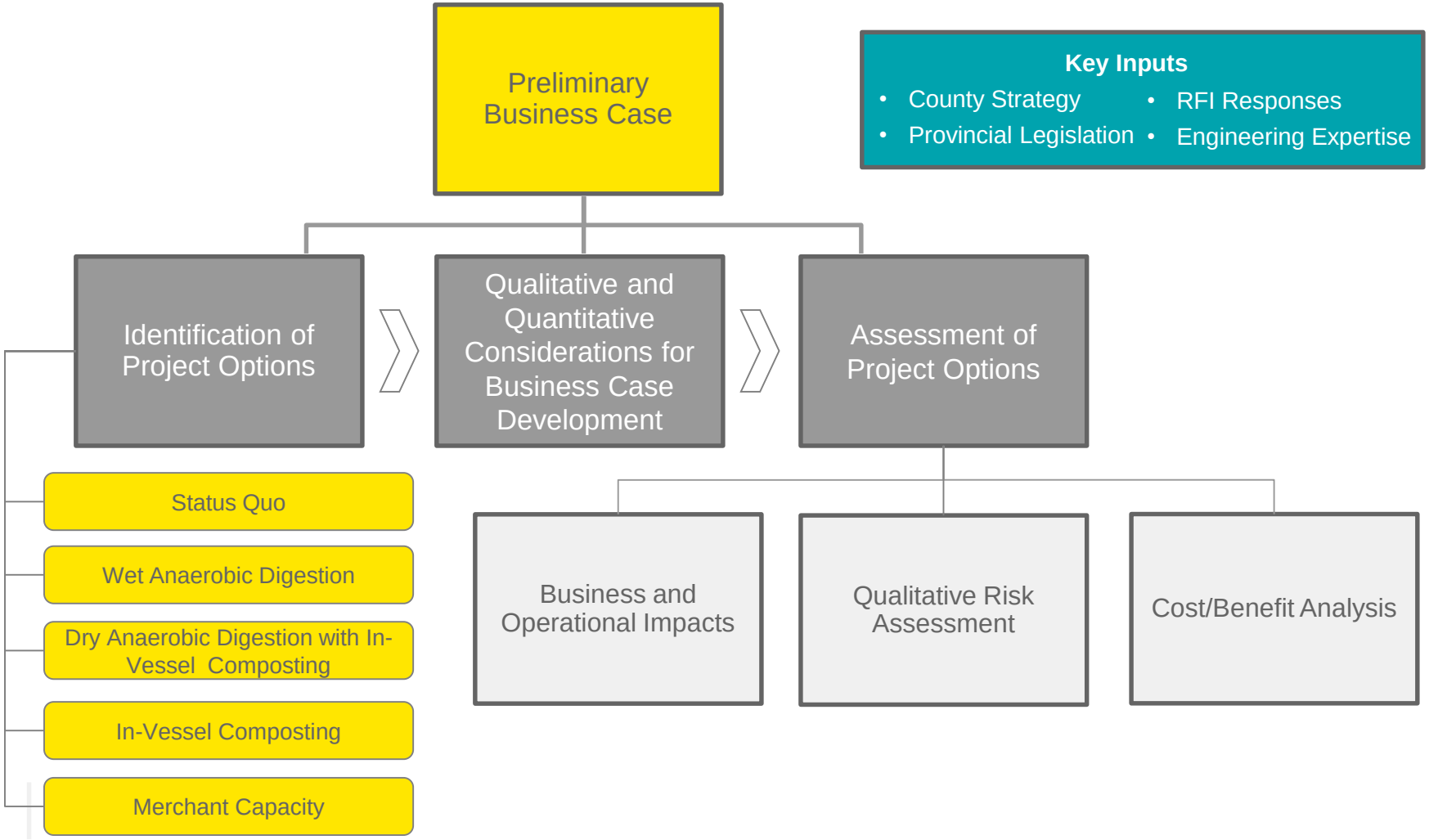
Organics Processing Facility

Preliminary Business Case

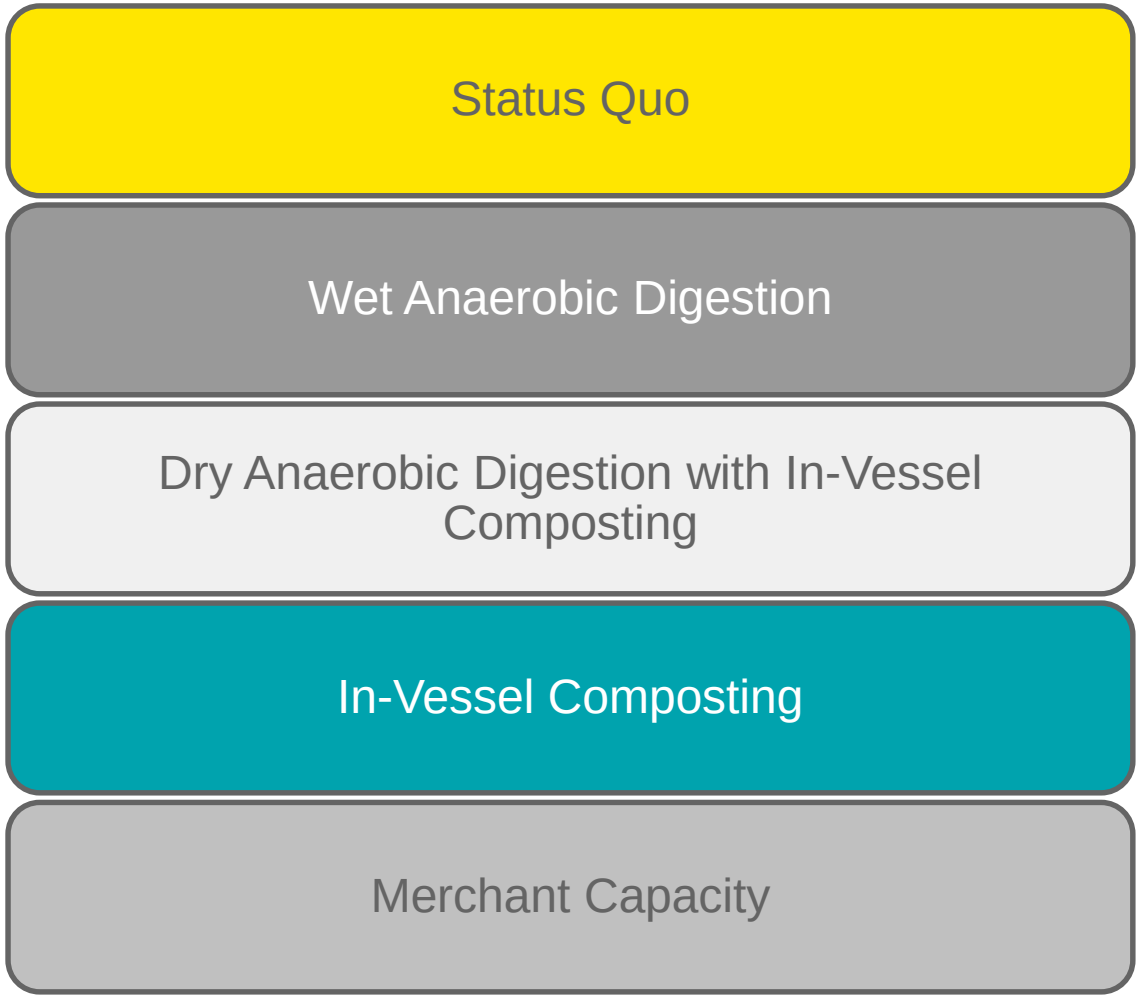
September 2017

Building a better working world

Introduction & Overview



Project Options



Qualitative and Quantitative Analyses

Business and Operational Impacts

- Assessed Project Options based on qualitative business and operational objectives

Qualitative Risk Assessment

- Qualify the risk inherent in the identified Project Options

Cost/Benefit Analysis

- A 20-year financial model was developed to assess the costs and expected benefits

Business and Operational Impacts

	Project Option 1: Status Quo	Project Option 2: Wet AD	Project Option 3: Dry AD	Project Option 4: In-vessel composting	Project Option 5: Merchant Capacity
Alignment with policies	Disadvantage	Major Advantage	Major Advantage	Advantage	Disadvantage
Public ownership/control	Disadvantage	Major Advantage	Major Advantage	Major Advantage	Disadvantage
Availability and applicability of technology solution	Major Advantage	Advantage	Neutral	Major Advantage	Neutral
Long-term viability of technological solution	Neutral	Advantage	Advantage	Disadvantage	Neutral
Timeliness of implementation	Major Advantage	Neutral	Disadvantage	Neutral	Major Advantage
Permitting	Major Advantage	Advantage	Neutral	Disadvantage	Major Advantage
Input volume capacity	Disadvantage	Disadvantage	Advantage	Major Advantage	Disadvantage
Input composition	Disadvantage	Neutral	Neutral	Neutral	Disadvantage
Process Flexibility	Advantage	Disadvantage	Major Advantage	Major Advantage	Major Advantage
Potential for downtime	Neutral	Disadvantage	Advantage	Advantage	Neutral
End products	Disadvantage	Advantage	Major Advantage	Neutral	Disadvantage
Residuals	Neutral	Disadvantage	Advantage	Advantage	Neutral
Potential for revenue generation	Disadvantage	Advantage	Advantage	Neutral	Disadvantage
Potential environmental impacts	Disadvantage	Advantage	Advantage	Advantage	Neutral
Long-term operation	Neutral	Neutral	Neutral	Advantage	Neutral
Diversion	Disadvantage	Neutral	Advantage	Advantage	Disadvantage

Qualitative Risk Assessment

Qualitative Risk Matrix	Project Option 1 Status Quo		Project Option 2 Wet AD		Project Option 3 Dry AD with in-vessel composting		Project Option 4 In-Vessel composting		Project Option 5 Merchant Capacity	
Risk	Prob	Impact	Prob	Impact	Prob	Impact	Prob	Impact	Prob	Impact
Policy and Strategic Risks										
County Strategic Direction	High	High	Low	High	Low	High	Med	High	High	High
Legislative/Regulatory Changes related to Waste-Free Ontario Act	Med	High	Low	High	Low	High	Low	High	Med	High
Legislative/Regulatory Changes related to Climate Change	High	High	Low	High	Low	High	Med	High	High	High
Owner management/control over operations	High	High	Med	**Med**	Med	Med	Low	Low	High	High
Permitting and Approvals										
Site Approvals and Permitting	Low	Low	Med	Med	Med	Med	Med	Med	Low	Low
Design and Construction Risks										
Failure to design in accordance to the County's requirements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scope changes initiated by the County during design and construction	Low	Low	Low	High	Low	High	Low	Med	Low	Low
Construction Costs not as estimated	Low	Low	Med	Med	Med	Med	Med	Med	Low	Low
Stakeholder Acceptance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Operational Risks										
Net operating costs are not as estimated	Low	Low	Med	Med	Med	Low	Med	Low	Med	Low
Failure to meet operating performance standards/targets	Low	Low	Low	Med	Low	Low	Low	Low	Low	Low
Failure to meet process output/recovery requirements	Low	Low	Low	Med	Med	Med	Med	Med	Low	Low
Short-term availability of facility/services	Low	Med	Med	Med	Low	Med	Low	Med	Low	Med
Long-term availability of facility/services	Med	High	Med	High	Low	Med	Low	Med	Med	High
Transfer Station Operation/Availability	Low	Med	N/A	N/A	N/A	N/A	N/A	N/A	Low	Med
Haulage and Transportation	Low	Med	N/A	N/A	N/A	N/A	N/A	N/A	Low	Med
Diversion Targets	High	Med	Low	Med	Low	Med	Med	Med	Med	Med
Technology related risks										
Asset obsolescence	Low	Low	Low	High	Low	Med	Med	Med	Low	Low
Changes in general waste composition	Low	Low	Low	High	Low	Med	Low	Med	Low	Low
Changes in input volume	Low	Med	Low	Med	Low	Low	Low	Low	Low	Med
External environmental impacts	Med	Low	Med	Med	Med	Med	Med	Med	Med	Low

Cost/Benefit Analysis

Dry AD with In-vessel Composting – Lowest NPV Cost Option

Project Option 3 - Dry AD with in-vessel composting (Average)			Planning and Construction	Operations			
	NPV	Nominal	Years 1-3	Years 1-5	Years 6-10	Years 11-15	Years 16-20
Capital							
Annual capital costs (including HST)	(30,770)	(35,431)	(35,431)				
Expenses							
Operating & maintenance costs (including HST)	(35,168)	(63,130)	(1,203)	(12,681)	(14,631)	(16,923)	(17,692)
Lifecycle costs (including HST)	(4,212)	(7,479)			(4,201)	(3,278)	
Total Expenses	**(39,380)**	**(70,609)**	**(1,203)**	**(12,681)**	**(18,832)**	**(20,201)**	**(17,692)**
Revenues							
Excess capacity	3,567	5,341	278	2,404	1,763	860	36
Project net costs	**(66,582)**	**(100,699)**	**(36,355)**	**(10,277)**	**(17,070)**	**(19,341)**	**(17,656)**
Terminal value	5,144	13,500					13,500
Project cash flow (including terminal value)	**(61,438)**	**(87,199)**	**(36,355)**	**(10,277)**	**(17,070)**	**(19,341)**	**(4,156)**
Development charges offset	6,803	7,834	7,834				
Project cash flow (including terminal value & development charges offset)	**(54,635)**	**(79,365)**	**(28,521)**	**(10,277)**	**(17,070)**	**(19,341)**	**(4,156)**

Outcomes of Assessment

Business and Operational Impacts

- The **Dry AD with in-vessel composting option and in-vessel composting option (both delivered under a DBO model)** were found to be the most advantageous.

Qualitative Risk Assessment

- The Status Quo, Wet AD and Merchant Capacity Project Options were determined to have a higher risk profile (as per the outcomes of the risk workshop) as compared to the **Dry AD with in-vessel composting and in-vessel composting Project Options.**

Cost/Benefit Analysis

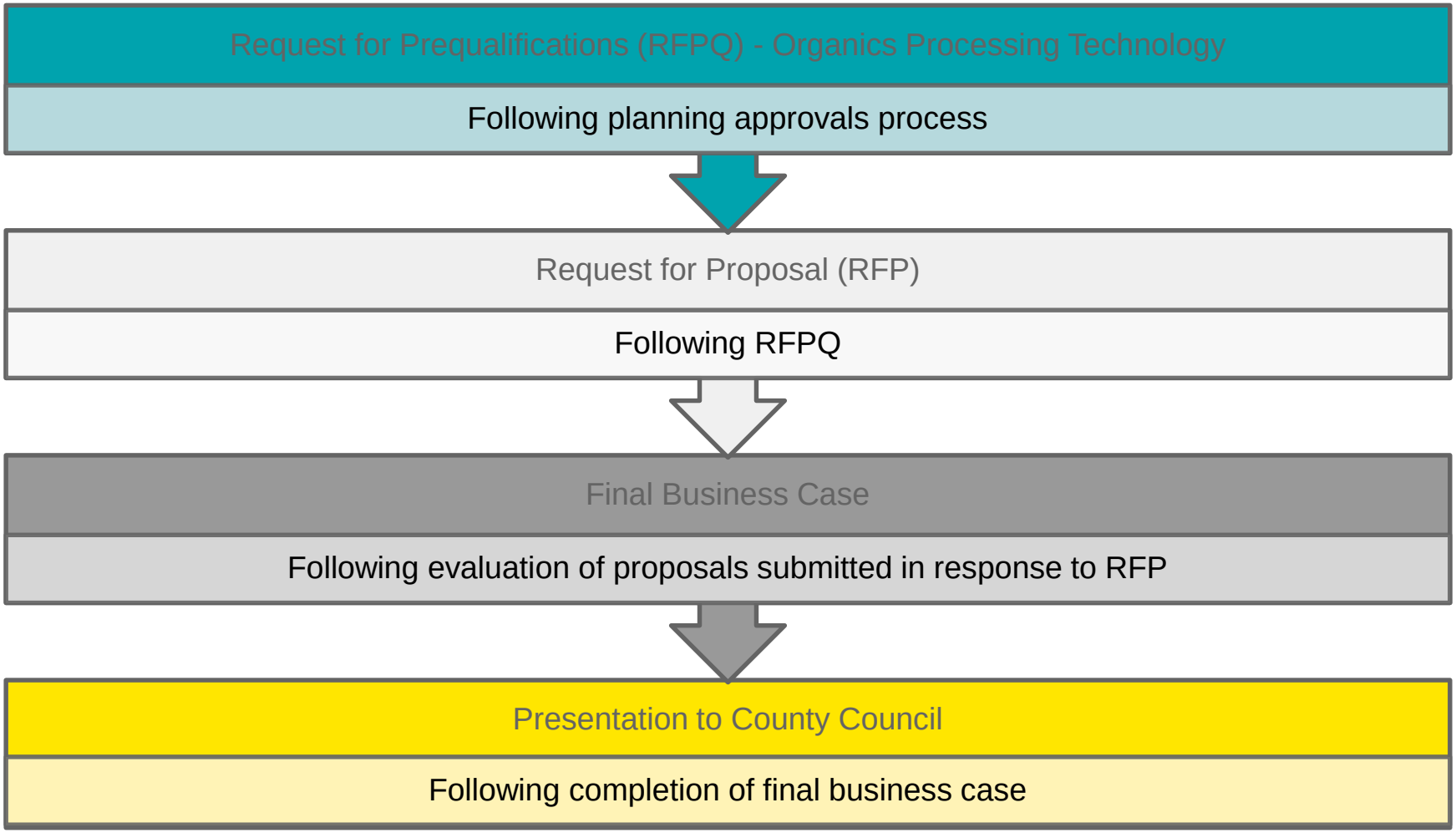
- The Dry AD project option resulted in a NPV project cost of -$54.6M making the **Dry AD** option the most beneficial option to the County.

Conclusion and Recommendation

- The results of the analyses were consistently in favour of the **DBO Project Options**. Although there may be some indication that pursuing **Dry AD with in-vessel composting** could be a viable and advantageous technology option for the County OPF, this will be confirmed through the RFPQ/RFP process.

- A “technology-neutral” procurement process may result in innovative and valuable input from bidders, providing the County with relevant and recent information to select the optimal technology for the facility to be delivered under a DBO model.

Next Steps


Request for Prequalifications (RFPQ) - Organics Processing Technology
Following planning approvals process
Request for Proposal (RFP)
Following RFPQ
Final Business Case
Following evaluation of proposals submitted in response to RFP
Presentation to County Council
Following completion of final business case

Item CCW 17-223
MMF – Updated Business Case

- purpose – to refine the 2014 financial analysis to consider development of the MMF at 2976 Horseshoe Valley Road West, Springwater
- more information from technical studies, preparing for changes to the blue box program under the Waste-Free Ontario Act
- report includes assessment of business and operational impacts, a cost/benefit analysis, discussion of risk
- considers three Project Options for transfer

Item CCW 17-223
MMF Project Options

Option	Description	Materials Considered
Project Option 1	continue to contract transfer service for garbage, organics, and blue box recycling	• garbage • organics until 2022 • blue box recycling until 2023
Project Option 2	develop MMF with long-term capacity for garbage	• garbage • organics until 2022
Project Option 3	develop MMF with long-term capacity for garbage, blue box capacity until 2023	• garbage • organics until 2022 • blue box recycling until 2023

Item CCW 17-223
MMF Refined Capital

- updated conceptual design for MMF and costing undertaken by GHD Limited

- two design options:
  - → sized for only long-term garbage (Project Option 2)
  - → modified design with additional floor space for recycling (Project Option 3)

- increased capital from the 2014 analysis:
  - → site-specific costs – access road paving, site servicing, and CR22 improvements
  - → larger building – considers how materials will be managed (indoor loading/unloading, drive-through design, etc.)

Item CCW 17-223
MMF Business and Operational Impacts

Business and Operational Impact	Project Option 1	Project Option 2	Project Option 3
Alignment with County's Solid Waste Management Strategy – recommended development of County transfer capacity	Disadvantage	Major Advantage	Major Advantage
Public ownership and control	Disadvantage	Major Advantage	Major Advantage
Long term viability of Project Option	Neutral	Advantage	Advantage
Timeliness of implementation	Advantage	Disadvantage	Disadvantage
Permitting – resources required for Planning and Environmental approvals	Advantage	Disadvantage	Disadvantage
Impact on curbside collection operations – ability to adjust to collection changes and timing, inspect inbound materials, and manage operational data/recordkeeping	Disadvantage	Major Advantage	Major Advantage
Control of outbound material – loading and compaction, flow control, timing of outbound loads	Disadvantage	Major Advantage	Major Advantage
Ability to adjust to changes in material composition or tonnages	Neutral	Advantage	Major Advantage
Potential for service disruption	Neutral	Advantage	Advantage
Potential for revenue generation – considers utilizing excess capacity at a County facility for merchant capacity	Disadvantage	Advantage	Major Advantage
Allow for truck servicing, administration, and public education space	Disadvantage	Major Advantage	Major Advantage
Environmental impact	Neutral	Neutral	Neutral
Impact on diversion – ability to improve curbside performance	Neutral	Advantage	Advantage

Item CCW 17-223
MMF Cost/Benefit Analysis

		Planning and Construction			Operating			
	TOTAL	Year 1	Year 2	Year 3	Years 1 - 5	Years 6-10	Years 11-15	Years 16-20
Project Option 3 - design for garbage and short-term recycling transfer								
Capital								
Annual capital costs (including HST)	(15,957)	(428)	(3,138)	(11,440)		(951)		
CIF funding	2,188	91	667	1,430				
Total Capital	**(13,770)**	**(337)**	**(2,471)**	**(10,011)**		**(951)**		
Expenses								
Operating & maintenance costs (including HST)	(17,686)				(3,788)	(4,182)	(4,618)	(5,098)
Avoided costs - truck servicing space	2,831				606	670	739	816
Total Operating	**(14,855)**				**(3,182)**	**(3,513)**	**(3,878)**	**(4,282)**
Revenue								
Blue box funding (until 2022)	504				504			
Terminal Value	6,396							6,396
Project cash flow (including terminal value)	**(21,725)**	**(337)**	**(2,471)**	**(10,011)**	**(2,678)**	**(4,464)**	**(3,878)**	**2,114**

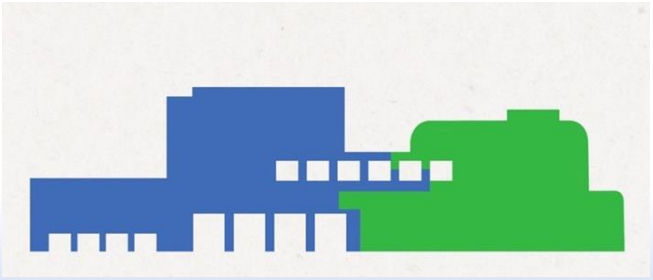
* values are in thousands of dollars

Item CCW 17-223
MMF Conclusions

- development of MMF to manage long-term transfer of garbage and blue box recycling until the transition would have the lowest total 20-year costs
- considerable annual savings as greater tonnages of garbage are managed and with closure of County landfills
- operationally, MMF offers secure, long-term control of our own waste
- sensitivity analysis indicates significant risk associated with assumptions on long-term pricing for contracted services
- with limited transfer options in this region, the County is vulnerable to market supply/demand

Moving Forward

- furthering development of County-owned organics processing and transfer capacity remains the recommended approach
- final design will remain flexible as the Planning process is furthered
- anticipate that over the coming months, there will be greater clarity on the Waste-Free Ontario Act and blue box transition
- will continue monitoring the transition and further dialogue with the Continuous Improvement Fund (CIF) regarding funding for the MMF



www.simcoe.ca/errc