COUNTY OF SIMCOE

To:	**COMMITTEE OF THE WHOLE**
Section:	Corporate Services – Solid Waste Management
Item Number:	CCW 16-165
Meeting Date:	May 24, 2016
Subject:	Solid Waste Management Infrastructure Projects – Development Strategy

Recommendation:

THAT the process for obtaining Planning and Ministry of the Environment and Climate Change approvals for the Materials Management Facility (MMF) and Organics Processing Facility (OPF) at 2976 Horseshoe Valley Road West, Springwater, proceed in accordance with the Development Strategy presented within Item CCW 16-165, dated May 24, 2016; and

That the procurement of design and construction of the Materials Management Facility proceed in accordance with the Development Strategy presented within Item CCW 16-165; and

That the procurement of technology, design, and construction of the Organics Processing Facility proceed in accordance with the Development Strategy – Option 2 (expanding procurement to consider all processing technologies, revising timeline) presented within Item CCW 16-165.

Executive Summary:

Following direction from County Council on March 22, 2016 to further the development of the Materials Management Facility and Organics Processing Facility at 2976 Horseshoe Valley Road West, Springwater, this Item presents an updated project work plan and timeline for development of the co-located facilities. A Development Strategy was prepared to consider four key paths – Planning approvals, Environmental Compliance Approval, procurement of design and construction of the MMF, and procurement of processing technology and construction of the OPF. This plan considers the following:

- that this site will require amendments to the County Official Plan as well as the Township of Springwater Official Plan and Zoning By-law;
- additional studies are required to confirm site conditions and support Planning applications; and
- the MMF and OPF, although co-located, will have different project delivery methods and procurement processes. The MMF project will be advanced first due to its relative lack of complexity and straightforward design requirements.

The Planning approvals process is the critical development path – noting that approvals will be required from the Ministry of Municipal Affairs and Housing (MMAH), the County, and the Township of Springwater. Advancing work associated with submission of the Environmental Compliance Approval (ECA) application to the Ministry of the Environment and Climate Change (MOECC) and procurement, design, and construction of both the MMF and OPF must consider the timing of obtaining Official Plan and zoning amendments. Further to this, the Development Strategy considers submission of Planning applications this fall and allowing 180 days from the date of submission (as per the Planning Act) for approvals (this timing does not provide additional contingency should the approvals not be received immediately following this period). In preparation for these submissions, an initial series of studies have currently been initiated to confirm the property's suitability for the infrastructure. If these studies confirm positive site conditions, additional Planning and Engineering studies will follow. This phased approach will be undertaken as a measure to ensure prudent spending on consulting services.

In consideration of varying methods of processing organics and proprietary technology, the OPF procurement process will be longer and more complex than procuring the MMF, a simple building. It is recommended that the MMF be advanced following a traditional Design-Bid-Build (DBB) procurement process. Further discussion on project delivery methods and potential contractual arrangements for the OPF, however, will be presented to County Council for their consideration later this summer. In preparation for this, direction is now being sought on organics processing technology and two potential timelines for advancing the OPF are outlined herein. Option 1, as was originally presented to County Council in early 2014, would seek the procurement of aerobic composting technology only. This would be in keeping with the approved project plan. Alternatively, Option 2 would open procurement to all organic processing technologies, such as anaerobic digestion, at this time. Should this be the direction of County Council, subsequent amendments to the procurement process and a revised timeline will be necessary.

Background/Analysis/Options:

The purpose of this item is to provide an overview of the process and updated project work plan for development of a co-located Materials Management Facility (MMF) and Organics Processing Facility (OPF) at 2976 Horseshoe Valley Road West, Springwater. With County Council's direction on March 22, 2016 to proceed with development at this location, the County's consultant, GHD Limited has prepared a detailed, site-specific Development Strategy and timeline. This plan considers synergies between the two projects, opportunities for cost savings, and timing of progressing their development concurrently.

Development of these two projects was recommended in the County's Solid Waste Management Strategy, approved in 2010. The MMF will provide a location for consolidation and transfer of waste and recycling from multiple collection vehicles for more economical shipment to other disposal or processing locations, the potential to co-locate a fleet servicing facility, and future potential for recycling processing. The OPF will provide a location where organics (green bin material, potentially materials such as leaf and yard waste, pet waste, and diapers) are processed and converted into other valuable products, such as compost or fertilizer.

A comprehensive siting process for both the MMF and OPF was undertaken in 2015/early 2016 which included the evaluation of 502 potential sites. A short list of sites was presented for public, Aboriginal, and stakeholder consultation in fall 2015, followed by a detailed comparative evaluation completed by the County's consultant. This evaluation was also extended to consider the option of co-locating both facilities on a single site. On March 22, 2016, County Council approved furthering development of a co-located MMF and OPF at 2976 Horseshoe Valley Road West, Springwater.

For reference, previous staff reports, communication material from public information and consultation sessions held in June 2014, December 2014, October 2015, and April 2016, and minutes of Community Engagement Committee meetings can be found at www.simcoe.ca/opf and www.simcoe.ca/mmf.

Advancing a Co-located Facility

With direction to co-locate the two facilities at 2976 Horseshoe Valley Road West, Springwater, GHD Limited (GHD) was retained to provide an updated work plan that considered the more complex project delivery of two facilities at one location. The resulting Development Strategy and conceptual timeline was based on GHD's experience in development of similar facilities. It was noted that this timeline is expected to be a living document and will likely evolve over time as various milestones are completed. For reference, the document entitled *Development Strategy for Co-Located OPF and MMF* (GHD Limited, May 11, 2016) is provided for reference as Schedule 1.

As outlined, the project plan was updated to consider the following:

- developing infrastructure at this location will require amendments to the County Official Plan as well as the Township of Springwater Official Plan and Zoning By-law not anticipated in the original timeline endorsed by County Council in January 2014;
- additional studies are required to confirm site conditions and support Planning applications. These studies will be undertaken in a conservative and prudent manner – that is, a series of preliminary studies will be completed prior to investment on more advanced design-related Planning and Engineering studies; and
- the MMF and OPF will be advanced with different delivery methods. Co-location must consider the timing of both procurement processes, timing of the business case for the OPF, obtaining an Environmental Compliance Approval (ECA), and construction of two facilities on the same footprint.

To summarize, development of the co-located facilities will incorporate four key paths which, although interconnected, will have distinct milestones and timing:

- Planning approvals process
- Environmental Compliance Approval process
- MMF – procurement of design (with updated costing), design, and construction
- OPF – procurement of technology (with business case), design, and construction

The two proposed timelines outlined in the Development Strategy – Option 1 and Option 2 – are presented graphically in Schedules 2 and 3, respectively. Again, these timelines are approximate and meant as guideline for moving forward. As will be discussed further below, the two options relate to the procurement process for the OPF and differ based on the type of technology sought for organics processing.

Planning Approvals

Development of the OPF and MMF at 2976 Horseshoe Valley Road West, Springwater, will require amendments to the County Official Plan as well as the Township of Springwater Official Plan and Zoning By-law. Consideration must be placed on the timing of obtaining these approvals, as advancing work on procurement or submission of the ECA application must follow. GHD has noted that the Planning approvals process will be the critical path to developing the project.

As such, the Development Strategy has outlined that four initial studies – an Environmental Impact Study (EIS), Traffic Impact Study, Geotechnical/Hydrogeological Study, and Archeological Assessment – will be undertaken immediately to determine if the site is viable to host the facilities (noting that field work for the EIS has already been initiated to consider winter and spring conditions). Following the initial findings and with confirmation of positive site conditions for development, a second series of Planning studies (outlined by GHD in Schedule 1) will be furthered later this summer and included with the Planning applications, to be submitted by the end of September (assuming no additional field work is required in the fall).

Advanced alongside the Planning work will be a series of Engineering studies that will allow for definition of the projects on the site, determine how the two facilities will interrelate, and define the conceptual and detailed design (and subsequent costing) for both the MMF and OPF. Proceeding with these studies prior to the Planning approvals does introduce some risk to the County (noting that only a portion of this work could be translated to an alternate site should that be required). Again, risk will be minimized by advancing studies in a phased approach – confirming positive site conditions first. As outlined by GHD in the Development Strategy, following the initial Planning studies, there will be a good indication of the likelihood of receiving the Planning approvals for 2976 Horseshoe Valley Road West, Springwater. It is only after this has been assessed that additional funds be spent on furthering engineering work.

Following submission of the Planning applications, the approvals process will follow the established path set out in the Planning Act. It is noted that the Development Strategy has been based on the assumption that direction on the Planning applications will be received within 180 days from the date of a complete submission (as mandated by the Planning Act). The timeline does not consider that decisions may be deferred to the Ontario Municipal Board (OMB). Should this occur, or approvals be otherwise delayed, staff will seek County Council direction on how to move forward and provide additional details on the impact to the timeline and budget and, in addition, how the County will secure contracted services for transfer of garbage and recycling and organics processing in the interim.

Environmental Compliance Approval

Although no approvals are required under the Environmental Assessment (EA) Act, operations at the MMF and OPF will be regulated by the MOECC under the Environmental Protection Act (EPA). The licence to operate the site, issued by the MOECC, is called an Environmental Compliance Approval (ECA). The ECA for the site will outline specific operational requirements (such as the amount of materials permitted on-site, hours of operation, environmental monitoring and reporting, etc.) and encompass how waste is managed at the MMF and OPF and regulate air (odour), noise, and the management of process water and stormwater. Studies to support this application will include a Design and Operations Report, Stormwater Management Report, Hydrogeological Study, Waste Analysis Plan, and odour and noise-related studies. Work undertaken this summer/fall to support the Planning applications will be applied to ECA application process, with more detailed work occurring following the Planning approvals in spring 2017.

As the delivery method and timing will be different for the MMF and OPF, it is anticipated that the application will be submitted to the MOECC to first consider the MMF and transfer operations – noting again that the design and operation of the MMF will be much simpler than that of the OPF. As the process for obtaining ECAs is lengthy, this allows for advancement of the approvals while procurement of organics processing technology is being undertaken. The initial ECA application for the MMF would be submitted with the understanding that the facility could potentially house an OPF in a second stage of development (pursuant to County Council's direction). It is anticipated that further discussions with the MOECC will include this concept of staging the ECA process.

Formal pre-consultation with the MOECC is set to continue this fall (2016), with formal submission of the first application to occur following the Planning approvals process currently, estimated for June 2017. In regard to timing, the Development Strategy has allowed for this two-stage application process and almost a full year for the MOECC to review each application (initially for the MMF, then as an amendment for the OPF) and provide approvals. This timing will be contingent on the Ministry – noting that the County will receive further direction from them on advancing the ECA process and their anticipated timing for approvals during upcoming pre-consultation.

MMF – Procurement of Design and Construction

Although both the MMF and OPF will manage waste at the new facility, development of the OPF will be a more complex process, requiring additional time and resources to deliver. Processing involves some form of specialized equipment whereas the MMF is quite simply a building for temporary storage and consolidation of garbage and recycling. Design work for the MMF will primarily consider management of material on-site, whereas design of the OPF will consider many variables such as feedstock, end products, odour control, expansion ability and other design features. As such, the delivery method and timing for the MMF and OPF, although undertaken concurrently at the same location, will be considered separately.

The Development Strategy for the MMF and OPF differ from the outset as furthering the procurement of organics processing technology is necessary for County Council to be provided a comprehensive and accurate business case for the OPF (as will be discussed further in this item). Given the basic function of the MMF and the County's experience in developing other similar infrastructure projects, estimated costs (not site-specific) have already been determined for this facility. In 2014, County Council was presented with a financial analysis in regard to development of transfer infrastructure (*Item CCW 14-253 – Transfer Facility Assessment*, August 12, 2014), with a discounted cash flow analysis completed for a 20-year period. It compared the current system of contracting transfer services against costs associated with development of a County facility and considered changes in tonnages from growth, consideration of increased export of garbage with closure of County landfills, capital costs of the building and equipment, and estimated annual operating expenses. Based on this initial analysis, the payback period for a County facility was estimated to be approximately 5.5 years (with funding).

County Council has provided direction to commence necessary work to develop this infrastructure and funds were allocated accordingly in the Capital budget and set aside in the Environmental Reserve. The amount in Reserve for this project has considered that approximately $1.15 M (based on a percentage of the Blue Box-related costs) has been secured for this project from the Continuous Improvement Fund (CIF). With secured funding, the siting process now complete, and Council direction, the process and timing to deliver the MMF at 2976 Horseshoe Valley Road West, Springwater, is outlined in GHD's Development Strategy. Again, development of the MMF considers that positive site conditions are to be confirmed with initial Planning studies to be undertaken this summer and the timing of key milestones is contingent on obtaining both the Planning and ECA approvals within the timeframe outlined.

Project Delivery Method (MMF)

As with other similar County projects, it is recommended that work be initiated to deliver the MMF through a simple Design-Bid-Build (DBB) procurement method. This has historically been the most common method for developing municipal infrastructure projects and will involve the County retaining an engineering firm to develop detailed design and specifications for the MMF (including the tipping floor, fleet servicing portion, and administration/education space) and prepare the ECA application. The detailed design and specifications will form part of a tender package to obtain bids from

contractors, with the contractor selected through the tender process and subsequently retained to construct the facility in accordance with the bid specifications, price, and schedule. Following commissioning, it is anticipated that given the straightforward and routine nature of waste transfer operations, that operation and maintenance of the MMF would be undertaken by the County.

The Development Strategy outlines that procurement of an engineering firm to design the MMF and further the ECA process would be undertaken this fall (2016), with the actual design work undertaken upon receipt of the Planning approvals (spring/summer 2017) for release of the construction tender in fall 2017. Given this timing for receipt of the Planning approvals, construction would be initiated in 2018, with commissioning of the facility mid-2019. Again, this timeline has considered conservative advancement of consulting and design work and securing a contractor only after receipt of the site-specific Planning approvals. There will be opportunity at key milestones to update County Council on the revised capital costs for the MMF once site-specific studies and design are undertaken and the costs for supporting site works (such as road improvements) are known.

OPF – Procurement of Technology, Design, and Construction

Procurement of the OPF will be a detailed, multi-staged process led by GHD who have experience with this type of process. The process will determine the organics processing technology best suited for the County and associated costing. From this, site-specific development costs and a detailed business case will be prepared for County Council's consideration and direction. This business case will consider environmental full cost accounting methodologies – commonly referred to as the "triple bottom line" approach. Beyond analysis of forecasted capital and operating expenditures, the social, environmental, and financial aspects of the project will be considered for a more comprehensive study on the net benefits of this infrastructure.

Procurement Considerations (OPF)

How best to advance procurement of the OPF in consideration of co-location with the MMF and site-specific considerations for 2976 Horseshoe Valley Road West was a key component of the Development Strategy and discussed at length with GHD and the Project Team. Of note are two major considerations for the OPF:

i. During the consultation process for siting, discussion on the type of technology for this facility has indicated some interest to revisit and explore the potential of anaerobic digestion. County Council's current direction is a phased development approach, initiated by construction of a 20,000 tonne/year aerobic composting facility to process green bin material and potentially pet waste (*Item CCW 14-025 – Central Composting Facility Update*, January 28, 2014). It is recommended by our current consultant, in consideration of changing market conditions and feedback received from both County Council and the public, that the procurement process be open at this time to consider more advanced technological solutions, such as anaerobic digestion, which may offer the ability to recover energy in some form and the potential to process diapers and sanitary products.
ii. Procurement of the OPF has been complicated by uncertainties with timing of the Planning approvals required for development at 2976 Horseshoe Valley Road West. Stability in regard to utilization of the preferred site will be crucial to ensure that the County's investment in time and funds will not be wasted with little or no response to a Request for Proposal (RFP) for processing technology. Advancing the procurement process must consider that technology vendors will be investing great time and resources into their full proposals (our project consultants indicate the vendors would conservatively spend over $400,000 in preparing full RFPs for this type of facility). A good response to this complex procurement opportunity will be contingent on perceived certainties that this project will come to fruition. That is, as a measure to minimize risk, vendors

will be more apt to respond with solid costing to an opportunity that has comprehensive site information, secured project details and timing, and Planning approvals in place.

Given the above, GHD has provided the County two options – presented as Option 1 and Option 2 – for furthering development of the OPF at this location. For reference, Table 1 below provides an overview of each:

Table 1: Procurement Options – Organics Processing Technology

Option	Technology Considered	Key Milestones in Procurement Process	Advantages	Disadvantages
1	*aerobic composting* • current direction • 20,000 tonnes/year SSO • phased approach to development	• RFPQ released – summer 2016 • RFP released – fall 2016 • business case – early 2017	• maintains approved project plan • simpler procurement process	• no Planning approvals prior to commencing procurement of technology • limits technology to aerobic composting • potential requirement for honorariums to potential vendors
2	*aerobic composting* *anaerobic digestion* • technology neutral • 20,000 tonnes/year SSO anticipated (will be finalized through procurement process)	• three-stage procurement process (RFI, RFPQ, RFP) • RFP released following securing Planning approvals • preliminary business case – early 2017 • business case – with RFP results in early 2018	• opens procurement to all technology • potential to include materials such as diapers and sanitary products • considers potential to recover energy • 180 day Planning period considered • would secure Planning approvals for procurement process • preliminary market sounding business case presented to County Council in early 2017	• lengthens the OPF procurement process • defers full business case until 2018

Option 1 would limit technology to aerobic composting and keep with the original direction from County Council. The OPF would be delivered in accordance with the original project plan, with the business case presented in early 2017 (noting that the timeline was amended slightly to avoid public consultation during the summer months as was discussed in *Item CCW 15-055 – Organics Processing Facility – Siting Methodology and Evaluation Criteria*, February 26, 2015). Given simpler, known technology which has already been developed in Ontario, the cost for vendors to prepare a response to the RFP could be minimized by adding engineering specifications completed pre-RFP. This would minimize the

cost to potential vendors, limit risk, and allow for the procurement process to proceed during the Planning approvals process.

As a measure of security, it should be noted that honorariums (up to $150,000/vendor) may be required to ensure some response to the RFP and demonstrate the County's commitment to this project. A pre-qualification step (RFPQ – Request for Pre-Qualification) is recommended to identify a select group of vendors who would be chosen, following an evaluation process for the RFPQ, to prepare a response to the full RFP. In consideration of a staged ECA application for the co-located facilities and phased advancement of construction (based on GHD's Development Strategy), Option 1 would have commissioning of the OPF in spring 2021.

Option 2 would be "technology neutral" and open the process to aerobic composting and anaerobic digestion. As outlined in Schedule 3, additional time would be required as procurement would follow receipt of Planning approvals. In this scenario, procurement of technology could consider energy recovery and potentially the addition of materials such as diapers and sanitary products at this time. Given the varied technologies and construction requirements, it would, however, limit the pre-RFP engineering work that could be completed upfront. Increased costs to potential vendors to do this individually will necessitate receipt of Planning approvals to provide some measure of security and reduce the risk to vendors as discussed above. It is proposed that Option 2 have an added procurement step in addition to a pre-qualification RFPQ and RFP. In order to obtain additional information and preliminary cost estimates, a market sounding Request for Information (RFI) would be undertaken this fall and the results presented to County Council in the form of a preliminary business case in early 2017. In consideration of delaying the RFPQ/RFP step until the Planning approvals are secured, staging the ECA application, and phased construction of the MMF and OPF, Option 2 would have commissioning of the OPF in spring 2021.

Project Delivery Method (OPF)

Common project delivery methods for developing organic processing facilities are consistent with other municipal infrastructure development models. This includes conventional Design-Bid-Build (DBB) as outlined previously for the MMF, as well as a range of alternative delivery and public-private partnership (PPP or P3) options. A common arrangement (as is the case for the City of Toronto's Disco Road facility and the Cities of Guelph and Hamilton's composting facilities), is a Design-Build-Operate (DBO) model – a turnkey project delivery method in which the owner contracts with a single vendor to design, construct, operate, and maintain capital infrastructure. As each project and municipality are unique, there is no set method for delivery.

Given the above and the potentially complex nature of the OPF, advantages and disadvantages of various options will be outlined further by GHD in an upcoming memorandum to the County. It will examine the range of delivery methods, various ownership and financing options, and risks associated with each for County Council's consideration and direction. Following this, there will be an opportunity for public engagement as more information will be known on the Development Strategy and delivery methods for both the OPF and MMF.

Consideration of Bill 151 – Waste-Free Ontario Act

On November 26, 2015, the Minister of the Environment and Climate Change introduced Bill 151 – Waste-Free Ontario Act (the Act). The Act includes provisions to transition from the current waste system (in which municipalities collect, process, and seek funding) to the new EPR system (in which responsibility and cost is shifted to producers). An accompanying Strategy was also introduced with the Act that establishes the goals to achieve zero waste and zero greenhouse gas emissions from the

waste sector in Ontario. Although specific details will be outlined in forthcoming regulations, it is expected that this legislation will have impacts most notably on two facets of the County's system – collection of Blue Box recyclables and increasing the volume of organics.

As such, the implications of Bill 151 on development of this infrastructure have been considered. It is expected that the necessity, projections, and timing for developing the MMF will be impacted very little as this facility will provide a location for the transfer of curbside and facilities garbage with the closure of County landfills (anticipated to occur between 2023 and 2025). Management of garbage will still be the responsibility of the municipality. In regard to Blue Box recyclables, funding for this portion of the facility (up to $2,187,840) has been secured through CIF – regardless of the status of the legislation. As the Province's Blue Box program is quite complex, it is anticipated that any changes to it will take years and that the County will be responsible for the collection and transfer of these materials beyond the anticipated payback period of the MMF (approximately 5.5 years with funding).

In regard to organics, the Province has been quite clear that this Act will focus on diversion of more waste from disposal and this will be accomplished, in part, by developing an Organics Action Plan to reduce the volume of organic material going to landfill, implementation of disposal bans, and additional plans for landfill use and management. The MOECC has a definitive mandate to reduce greenhouse gas emissions and a local OPF would reduce the need for trucking of this material outside the County and provide local processing capacity. Development of this infrastructure, set to secure capacity for the County's material and allow for future expansion of the program should the Province mandate disposal bans, is seen to align with the intentions of Bill 151.

Staff are continuing to watch the progression of this important legislation and will report back to County Council the nature of its impact to our programs and infrastructure as this becomes clearer with the evolution of the proposed Act.

Financial and Resource Implications:

Over the next year, consulting work for developing these projects will be undertaken in a phased approach as outlined above (confirm site conditions → submit Planning applications → receipt of Planning approvals → undertake procurement and design). A summary of the estimated costs (consultants have not been retained for all studies at this time) associated with this preliminary consulting work is outlined below in Table 2.

Table 2: Estimated Preliminary Consulting Costs

Phase I – initial studies for Planning approvals (to confirm site conditions)	
Environmental Impact Study	
Geotechnical/Hydrogeological Study	
Traffic Impact Study	
Archeological Assessment	
	$200,000

Phase II – secondary studies for Planning approvals, preliminary Engineering studies
Additional Planning studies required for OPA application (Noise Assessment, Odour Impact Assessment, etc.)
Site-specific design and engineering 2976 Horseshoe Valley Road West, Springwater
Pre-engineering studies for organics processing technology
$550,000 (75% MMF, 25% OPF)
Consulting services – Planning Approvals
Planning Justification Report
Preparation of Planning applications
$100,000
Consulting services – Procurement of Organics Processing Technology
Consultant report – project delivery method
RFP/RFPQ process (includes consideration for RFI)
Business case and review of final report
$300,000

Costs associated with the above work will to be expended over 2016-2017 and the funds are included in 2016 & prior Solid Waste Management Capital Budgets and the Long Term Financial Plan. As the projects progress and site-specific costs are known, County Council will be presented with an updated financial analysis for the MMF and a business case for the OPF (noting that should Option 2 be furthered, a preliminary business case would be submitted in early 2017). Costs related to the design work for the MMF will be provided to County Council following the procurement of these services in 2017.

Relationship to Corporate Strategies:

In regards to long-term processing of organics, the Solid Waste Management Strategy (Strategy) recommended development of a centralized composting facility within the County. Public input indicated support for in-County processing as well as for the addition of pet waste and diapers to the program. This item also supports the Strategy recommendation to develop transfer capacity infrastructure to manage garbage and recyclables generated within the County.

Reference Documents:

Organics Processing Facility project webpage
www.simcoe.ca/opf

Materials Management Facility project webpage
www.simcoe.ca/mmf

Attachments:


for CCW 16-165 Schedule 1.pdf


for CCW 16-165 Schedule 2.pdf


for CCW 16-165 Schedule 3.pdf

Schedule 1: *Development Strategy for Co-Located OPF and MMF* (GHD Limited, May 11, 2016)
Schedule 2: Development Strategy – Option 1
Schedule 3: Development Strategy – Option 2

Prepared By: Stephanie Mack, P.Eng., Special Projects Supervisor

Approvals:	**Date**
Rob McCullough, Director, Solid Waste Management	May 12, 2016
Debbie Korolnek, General Manager, Engineering, Planning and Environment	May 12, 2016
Trevor Wilcox, General Manager, Corporate Performance	May 17, 2016
Mark Aitken, Chief Administrative Officer	May 17, 2016

Memorandum

To:	Stephanie Mack	Ref. No.:	086822
From:	Brian Dermody/mg/4	Date:	May 11, 2016
cc:	Debbie Korolnek Rob McCullough Tej Gidda		
Re:	**Development Strategy for Co-Located OPF and MMF**		

1. Background

The County of Simcoe (County) is currently in the process of developing an Organics Processing Facility (OPF) and a Materials Management Facility (MMF). Recent siting work undertaken by GHD identified a property located at 2976 Horseshoe Valley Road West in the Township of Springwater as the preferred site for both facilities, in a co-located configuration that would optimize logistics. Siting approval was received from County Council on March 22, 2016, allowing work to continue on the development of co-located facilities on the preferred site.

While both facilities will be situated on the same site, they differ in terms of technology, procurement method, approvals, and development timelines. That said there are also many synergies that can be realized during the development of the facilities in terms of potential cost savings and means of aligning the overall development schedule. It is important to understand the various dimensions of permitting and approvals, procurement, design and construction, and how they inter-relate between the two projects and the overall schedule.

GHD met with County staff on April 1, 2016 to discuss the scope of work and to lay out a potential framework for the development of these facilities, with the following key aspects being identified:

- Planning studies required in support of Official Plan Amendments (OPAs) at the County and municipal (Township of Springwater) level, and a Zoning By-Law Amendment (ZBA) at the municipal level.
- Engineering studies required in support of facility design.
- Different procurement delivery methods for the MMF and OPF.
- Permits and approvals, including supporting information and application process.
- Development of a business case for the OPF and providing updated, site-specific costing analysis for the MMF.

- Development timeline including detailed design, construction and commissioning.

This memorandum incorporates all of these aspects and presents an overall strategy for the development of both the MMF and the OPF. Proposed development timelines including the scheduling and duration of various aspects, key milestones, and predecessors is presented as Figure 1 and 2, while further details are discussed in the sections that follow. It is understood that this memorandum will be included as part of a Staff Report presented to County Council for approval in May 2016.

GHD notes that these are conceptual timelines built on our experience in development of similar facilities. In the County's case, the overall timeline must respect the development of two separate but related facilities. This schedule for development is expected to be a living document, and will likely evolve over time as various milestones are passed along the critical path trajectory. We recommend that the timeline be updated over time to reflect this.

With respect to the OPF, we have presented two alternate timelines. Largely, these are centralized around the previously-held timeline for the deployment of the OPF using a conventional technology platform, and an alternate timeline that would allow for consideration of different technologies for organics processing. Each approach presents its own conclusions with respect to developing a business case for the OPF, consideration of limited or expanded technologies, and risks related to expenditure of resources related to the permitting and approvals necessary for the preferred site. These options are presented for consideration by the County.

2. Planning and Engineering Studies

There are various studies required for the development of both facilities. Planning studies refer to those that are required to amend the usage on the site to a level appropriate for the intended developments. Engineering studies refer to those that are required to allow for definition of the projects on the site; how they will inter-relate and define drivers that affect conceptual and detailed design, and how they will begin to isolate factors that affect the overall cost of the facilities. Additionally, there are elements of the planning and engineering studies that overlap, and it would be beneficial to undertake them concurrently in order to make the study program more efficient from a cost and timeline standpoint.

Information related to the planning and engineering studies is presented across considerations of the MMF and options for the OPF, as these considerations are common. The impact of planning and engineering studies on timelines for the development of the MMF and OPF will be discussed in subsequent sections.

2.1 Planning Studies

Various Planning studies are required in support of amendments to the Township of Springwater (Springwater) Official Plan and Zoning By-Law, and to the County Official Plan. Following a pre-consultation meeting with Springwater Planning staff in December 2015, the following list of required studies was identified in a letter from the Township of Springwater to the County dated January 11, 2016:

1. Planning Justification Report.
2. Soil Quality Test.
3. Agricultural Potential Assessment.

4. Traffic Impact Study.
5. Environmental Impact Study.
6. Noise Assessment.
7. Odor Impact Assessment.
8. Site Plan.
9. Landscape Plan/Tree Preservation Plan.
10. Stormwater Management Report.
11. Functional Servicing (Water & Sanitary).
12. Hydrogeological Study.
13. Archeological Study.
14. Hazard Land Assessment (to NVCA satisfaction).

We note that further consultation with Springwater will isolate the specific requirements related to which studies apply and what the definition of the studies will be. We recommend undertaking this consultation as soon as possible to define specific requirements for the studies, and considerations and technical factors that are of interest to Springwater.

Completion of these studies as early as possible in the process is important since the zoning will be a pre-requisite to the design and procurement stage. GHD met with stakeholders including the County (Planning and Forestry Departments), Nottawasaga Valley Conservation Authority (NVCA), Ministry of Natural Resources and Forestry (MNRF), and Springwater (Planning Department) on April 1, 2016 to discuss the scope of the Environmental Impact Study (EIS). Initiating the EIS immediately was seen as critical since it requires multiple field visits (including this winter and spring), and has the potential to identify sensitive features (e.g., species at risk) that could affect the continued development of the site.

GHD recommends initiating the remaining Planning studies as early as possible since many of them have the potential to identify potential site conditions that would preclude the continued development of these facilities on the site. This could occur at any point in the planning study period, up to and including the anticipated completion of the studies at the end of the summer. Studies should be evaluated on an ongoing basis by providing updates on major findings such that any restrictive site conditions are identified during the work, and not simply at the conclusion of the final studies. GHD notes that advancing significant other activities related to procurement prior to completing this process, or at least having reasonable definition that the planning process will be completed successfully, introduces risk to the County.

GHD recommends undertaking the Planning studies and submitting the zoning application concurrently for *both* the MMF and the OPF. The land use application would need to be completed if one of the facilities were to be developed alone, so there is no downside in applying for both. Furthermore, having the facility zoned for the OPF at the same time as the MMF will support the procurement process for the OPF, significantly increasing credibility if the zoning for the intended activity is already in place. The importance of this element will be discussed in subsequent sections.

The OPA/ZBA applications should be ready for submission immediately following the completion of the Planning studies. For this reason, the supporting documents should be prepared as early as possible in the

process, potentially prior to the completion of the Planning studies in mid-summer barring the identification of any restrictive site conditions on the property or fall site work (if required).

Undertaking the Planning studies over the summer and having the OPA/ZBA applications ready for submission at the beginning of the fall is a benchmark assumption that has been made for the balance of the timeline. This will be critical given that a review period of 180 days will be likely be required by Springwater. This approach is intended to follow a straight-line process for the approvals, while expediting the overall processes along the critical path – where this introduces risk to the County, this will be identified and discussed.

2.2 Engineering Studies

In addition to the Planning studies noted above that have a technical component, the following engineering studies will also be required in support of the OPA/ZBA and the facility design:

- Topographic Survey.
- Geotechnical Investigations.
- Facility Siting (within the property) and Conceptual Design.
- Site Servicing.
- Code Compliance Review.
- Surface Water, Process Water, and Wastewater.
- On-Site Traffic Movements.
- Odour and Noise Attenuation Assessments.
- HVAC Requirements.
- Site Safety/Security.
- Process Control/Automation.

These studies can be initiated in the summer/ fall in conjunction with the Planning studies. Wherever possible, it is recommended that field elements be advanced to coincide with the Planning studies. Primarily, any hydrogeological or other wells contemplated should be analyzed by a competent geotechnical engineer for soil bearing properties and other categorization features that would aid in subsequent foundation design activities. The proposed hydrogeological program should be compared to the geotechnical program to identify boreholes/wells that could be installed during one mobilization event in the optimal summer months. It is also recommended that any engineering studies required for *both* the MMF and OPF be carried out at the same time. The engineering studies should incorporate the range of MMF and OPF options that may be available, although some supplemental work may be required downstream depending on the final designs. A further element that crosses over between the Planning and engineering studies is the issue of a site plan – the engineering studies would build on the site plan developed for the planning process, introducing additional details around staging of the two developments and traffic flows internal to the site.

It should be noted that proceeding with any of the engineering studies before having the required OPA/ZBA in place represents a significant potential risk point for the County. While some of the engineering studies are specific to the facility (i.e., technology, process, and building) and could be translated to any site, a

reasonable quantity of the work is site specific. The risk is that funds will be expended on engineering studies without being certain that the OPA/ZBA will be approved. Should the OPA/ZBA be declined, there is also the risk that an appeal to the Ontario Municipal Board (OMB) will be required, adding significant delays to the timeline. While this potential delay is not shown in the schedule, it is a clear critical path item, as environmental approvals through the MOECC and building permits at the municipal level depend on site plan approval. Despite this risk, the County should have a good indication of the likelihood of approval based on the results of the Planning studies over the summer of 2016, and thus a reasonable comfort level that the site is suitable. This is a basic assumption that has been made in the schedule. An alternate process that would involve little to no-risk on the engineering studies would be to commence them only after the OPA/ZBA process is concluded, but this would introduce a significant measure of delay into the overall schedule.

3. Design and Procurement

3.1 MMF

GHD recommends a Design/Bid/Spec (also referred to as a Design/Bid/Build) approach to the development of the MMF. There are no proprietary or technology-specific aspects to a transfer station, and thus there is no need to use a Design/Build approach for this development. Similarly, it is anticipated that the County will operate the facility, so there is no need to wrap development into a complex Design/Build/Operate approach wherein a private-sector operator that is part of the Design/Build team is identified at the onset. There are a number of firms that can provide relatively straight-forward civil design for an MMF, providing for a competitive and cost-effective procurement process. A Design/Bid/Spec process is a typical routine that is used for transfer stations in Ontario. A Design/Bid/Spec approach also reduces the design risk for proponents and more effectively controls cost in comparison to a Design/Build approach, where the risk associated with a fixed price generally leads to the inclusion of risk factors in the Design/Build pricing.

In terms of definition, Design/Bid/Spec essentially means that an engineer would be retained to undertake preliminary and detailed design, specifications, and tender documents for the MMF, in consultation with the County. Once this package is prepared and finalized, it would be released to the construction community to identify a general contractor through a conventional bidding process. This contractor would then complete the construction, with the engineer undertaking inspections of the construction work to assert that the development is per the design.

GHD recommends that certain site development considerations also be incorporated into this scope of work. This may include items such as site clearing, site grading, roads and general surfacing/asphalt around the site, site servicing, and stormwater management systems. This work will be needed for the MMF, but could account for elements of the OPF that may be incorporated at a later date. Alternatively, the County could retain other contractors to undertake this work during the 2017 period envisioned for site preparation.

With the MMF Design/Bid/Spec process expected to be undertaken in 2017, the County should start preparing the RFP for this work immediately following the submission of the OPA/ZBA in the fall of 2016. Preparation of the RFP will take place during the anticipated 180 day Planning approval window so that it is ready to be issued in early 2017. As noted earlier, the risk with this approach is that RFP preparation work will proceed on the preferred site prior to having the OBA/ZBA in place.

The MMF Design/Bid/Spec process will be very closely tied to the engineering studies work, which will functionally define the facility, its size and configuration, its orientation on the site, and its relationship to other on-site facilities such as weigh scales, the future OPF, administration areas, and the County's fleet servicing facility. One option is to tie the engineering studies into the same detailed designer for the MMF.

3.1.1 Construction Tender

The MMF Construction Tender would be assembled by the County with input from the Design/Bid/Spec consultant, and would include a cost estimate to compare against contractor pricing. The Construction Tender would not be issued until completion of the design in late 2017, with construction anticipated to start in early 2018 as soon as weather permits. It should be noted that initiating certain aspects of the design related to the site works noted above, some construction may be possible by late 2017. In this configuration, generally, the 2017 calendar year is reserved for site preparation and clearing, and design of the MMF.

In terms of risk factors for the County, we note that construction of the MMF (currently anticipated to begin earlier than construction of the OPF in the planning timeline provided) is predicated on conclusion of the OPA/ZBA process and conclusion of the Environmental Compliance Approval (ECA) process through the Ministry of the Environment and Climate Change. Further, the ECA process is largely predicated on having the OPA/ZBA process concluded. In the above approach, should design and tendering activities for the MMF be completed in time for construction in early 2018, and the approvals noted not be in-hand or forthcoming, this work may need to be delayed.

3.2 OPF

With respect to source-separated organics (SSO), the County's 2010 Solid Waste Management Strategy recommended that the County explore various technology options, including those that could handle the addition of other organic materials to the program (i.e., pet waste and diapers). In January 2014, Staff presented costing information for various processing facilities, a proposed project plan, and a timeline recommending a phased approach to the development of a County facility with a processing capacity of 20,000 tonnes per year. This would include development of aerobic composting (Phase I) with the opportunity for future expansion to include anaerobic digestion (Phase II) if and when the energy market is proven and overall costs are reduced.

It should be noted that the County currently only has direction to consider aerobic composting. With a steady increase in the scale and variety of anaerobic digestion technologies available, the County may wish to consider seeking Council direction to open up the procurement process to include anaerobic digestion technologies. This will ensure a comprehensive approach that allows the County to evaluate which option will best meet their present and future needs.

3.2.1 Technology Options and Timing

An OPF is very technology-specific and requires integration of the operator in order to ensure that the constructed facility is operable. In addition, technologies are often proprietary and require specialized teams to operate; generally, these types of facilities are difficult to develop on a Design/Bid/Spec basis, as the necessary process-related details are generally known only to the individual technology providers, and operations must be closely linked to that process.

How the County undertakes the procurement process for the OPF going forward will require direction from Council on two key reports:

1. Development Strategy outlining technology options, timing, and key milestones (this memorandum).
2. Procurement Strategy outlining risk, project funding models, and the nature of the contract (forthcoming memorandum).

Generally in the field of organics processing, there are two separate technology platforms that are used. These are described below:

Composting: this technology involves the exposure of organics to airflow, where the oxygen in the airflow is used to support bacteria that will consume the nutrients in the organics until the material is stabilized. Composting involves energy input and process control, and does not generate an energy stream. In Canada and Ontario specifically, composting of organics has been ongoing for many years, using a variety of technologies, from in-channel (open concrete vessels with turning during aeration), in-tunnel (completely enclosed high-airflow vessels), covered windrows, and variations of the above. This is an established technology for organics and is highly regulated by the Province and requires significant treatment, retention times, and footprint. This technology is good at managing SSO but requires large quantities of amendment (carbon source) to allow the process to proceed according to the MOECC composting standards. This technology can manage pet waste and diapers with appropriate pre- and post- treatment but generally requires significant investment in equipment to do so, and movement in the industry is toward anaerobic digestion technology for this type of material.

Anaerobic digestion: this technology involves processing of organics in the absence of air, where anaerobic bacteria consume organics to generate biogas, which is mostly comprised of methane. This methane can in turn be used to generate energy, such as renewable electricity, vehicle fuel for waste fleets and other vehicles, or renewable natural gas. Anaerobic digestion has rapidly become an established technology for organics over the last few years, and offers the advantage of energy production as well as potential for smaller space requirement and, depending on deployment, reduced potential for odour emission. The production of renewable energy further has additional greenhouse gas emission reduction benefits, in that renewable energy displaces the use of fossil fuel-derived energy. Further, organic effluent from anaerobic digestion has a number of potential uses and possibilities, including production of compost or liquid fertilizers; for pure composting platforms, production of liquid fertilizers that could be land-applied using conventional technology would not be generally possible.

With respect to the Development Strategy, Council direction will be sought on the two different technology options presented below prior to the development of the Procurement Strategy.

Option 1 – Following County Council's Current Direction on Aerobic Composting

For either option, GHD recommends that the County issue a RFPQ to pre-qualify proponents based on items such as: specific technology, number and location of previous installations, scale of these installations, mass balances, references, suitability for the County's organics stream, etc. The RFPQ would be prepared by GHD based on the results of the engineering studies, taking into account what is feasible on the site. The intent of the RFPQ would be to pre-qualify technologies so that only those proponents with pre-qualified technologies that have a demonstrated track record and applicability at the required scale with reasonable performance can be utilized by contractors during the RFP stage. A further variation of this would be to

include the entire team in the pre-qualification. There are further pros and cons to this approach that should be discussed with the County and their Procurement, Fleet and Property Department.

Development of the RFP for Option 1 would be relatively straightforward given the results of the RFPQ process and the limited complexity of aerobic composting technologies. Similar to the MMF, the RFP for the OPF could be developed during the 180 day Planning approval window so that it is ready to be issued in early 2017.

As noted previously, there is risk in proceeding with the OPF procurement process prior to having the OPA/ZBA in place, potentially raising issues surrounding the credibility of the process. In an optimal process, the OPA/ZBA would be complete and the ECAs in progress, in order to reassure potential bidders that the project has no permitting risk. In GHD's opinion, a lack of approvals or progression in approvals on the site may mitigate interest in the project, especially given the time and effort required to prepare proposals, which would be at-risk to the private sector proponents should approvals not be forthcoming.

Overall, this pathway assumes that a business case can be delivered to County Council in early 2017. In order to undertake this, technology spectrum would need to be limited to composting technologies rather than the full suite of organics processing technologies currently available. Given that the RFPQ/RFP process would all be undertaken and concluded prior to the OPA/ZBA process, this introduces significant potential risks into the process, including:

Limited interest in the RFPQ/RFP from the contracting community. Early initiation of the OPF RFPQ/RFP process without advancing the zoning process will result in carrying a site through the procurement process that is not zoned appropriately. In GHD’s experience, this significantly diminishes the interest from the contracting community in a project of this nature, as the lack of approvals creates uncertainty around the potential for the project to move ahead. While honorariums can be assembled to motivate interest, these honorariums typically only cover basic costs for contractors, so they are not generally productive activities for contractors to undertake on the basis of honorariums alone. The County should be aware that having limited forward progression on the permitting and approvals for the site may result in a scenario wherein the County receives no bids on the OPF RFP.

Increased permitting risk at the MOECC level. In the Option 1 scenario, the procurement process for the OPF will have been concluded significantly in advance of receiving Environmental Compliance Approvals from the MOECC. Similar to the risk related to not having the OPA/ZBA process concluded, this diminishes the credibility in the process and potentially reduces the participation of qualified, quality proponents to the RFPQ/RFP process, reducing overall competitiveness and potentially escalating price offerings to account for unknowns related to MOECC permitting. A further risk is introduced in that the MOECC process can alter the design of the facility after the procurement process concludes, during the MOECC technical review; this can introduce design alterations and performance expectations that were not included in the DBO RFP and that may subsequently alter design and pricing, and potentially the business case.

Limits to innovation. As noted, this process and timeline is limited to composting technologies, in order to meet the timelines. The field of organics processing is established in Ontario and has been for at least 20 years; however, there have been advancements in technologies in the last ten years that have increased the environmental sustainability and performance of the industry. For example, anaerobic digestion systems are now common, and offer the ability to create value-added products that are not offered by composting, such as renewable electricity, renewable natural gas, compressed natural gas for vehicle fuel, etc. However, in order to maintain the timeline, there is not sufficient duration to query the various new technology

providers to adequately understand their offerings, to procure technical and cost information around them, and to effectively deliver an RFPQ that appropriately recognizes these technologies. This is a significant barrier to the County realizing the potential technical and cost benefits of newer approaches to organics processing.

Increased costs from the DBO contractors. Given the uncertainties raised above regarding permitting, there is a risk to the County that contractors will increase design-build and operating pricing to account for the lack of clarity on municipal and environmental permitting. Especially under design-build frameworks, DBO contractors will shift uncertainties into risk pricing elements that will adversely affect the business case. Further, the inability of DBO contractors to propose technologies such as anaerobic digestion, which includes revenues from renewable energy to offset operating costs, impairs the County's ability to procure the best-value technology platform.

Aggressive schedule. The schedule as laid out for Option 1 is extremely aggressive and would require ideal levels of coordination and management, and no issues with respect to the preferred site. While the schedule is possible, it is likely that schedule slippage will be realized along this pathway given the complexity of the technical issues involved. Further, GHD would expect significant questions from the RFPQ and RFP respondents regarding the process, given that the OPA/ZBA process will not be concluded, and MOECC permitting will not have been initiated.

Lost efforts. Given that an honorarium structure is likely required to motivate DBO respondent interest in the process to mitigate concerns around the credibility of the process stemming from the noted permitting issues, any honorariums established at the RFP stage may be at jeopardy to the County if an issue is discovered on the preferred site during the permitting process. This would presumably cancel the RFP process, capitalize the honorariums to the account of the DBO contractors, and require that the County re-initiate the process on another site. Lost efforts also include those exerted to complete engineering studies to support the RFPQ and RFP process, which are almost entirely site-specific, and pre-design would that would be supported by the engineering studies and included in the RFP to help respondents provide pricing.

Option 2 – Expanding Technology Options to include Anaerobic Digestion

Option 2 is a variant of the above wherein different technological options for the OPF are considered in the process, and the business case for the OPF is presented in a two-step process wherein the inputs are refined over time. In this scenario, a Request for Information (RFI) is prepared and released in conjunction with submission of the OPA/ZBA process, requesting that respondents provide information related to their technology options from a performance, cost and technical standpoint. This is a non-binding process that essentially sounds the market for the suite of technologies that exist for organics processing, and that includes composting, anaerobic digestion, and other platforms that have measurable presence in the field at commercial scale.

The results of the RFI are used to structure the RFPQ process, as part of a prequalification process that targets technology types that are acceptable to the County. This process allows for consideration and inclusion of newer technologies that have entered the field and have demonstrated commercial success and potential for greater value for the County. The DBO RFP is built for successful respondents to the RFPQ. In this option, the RFP follows a sequential process, wherein the RFP is released after the OPA/ZBA process is concluded, allowing for any technical, performance or cost factors stemming from that process to be included in DBO contractor pricing. The results of the DBO RFP, which will include design information regarding the

various options proposed, are then used to formulate the submission packages for the MOECC permitting process.

The process noted above would be considered a more typical procurement for an organics processing facility.

Under this scenario, the business case is divided into a preliminary and final process. The preliminary business case would be presented in early 2017 based on the results of the RFI, and the final business case would be presented in late 2017 based on the firm pricing provided in the DBO proposals related to the RFP.

The Option 2 pathway includes the following potential risks:

Increased overall timeframe. While this process pursues a longer overall timeframe for development of the OPF, it does reduce many of the risks noted under Option 1 for early release of the RFPQ/RFP during the permitting process. Further, the benefits of this approach include the ability to include consideration for newer technologies that may demonstrate greater performance and cost metrics.

Segmented business case. In this scenario, the business case is divided into two parts. In the preliminary business case, which would be presented in early 2017 per the original timelines for that process, information from the RFI would be used to populate the financial analysis in addition to engineering estimates. These inputs would carry greater variability than would be achieved after receiving proposals to the RFP, where in the latter case these would be binding figures. A measure of judgement and accommodation for allowances would need to be included in the preliminary business case to ensure that it is representative, and that the final business case procured at the conclusion of the DBO RFP is a confirmatory step in the process.

4. Environmental Compliance Approval (ECA) Application

4.1 MMF

The ECA application for the MMF would be predicated on the completion of the engineering studies and the preparation of a conceptual design for the facility based on discussions with the County. Pre-consultation with the MOECC would thus occur in the fall of 2016, when there is some certainty surrounding the approvability of the OPA/ZBA and suitability of the site for both the MMF and the OPF. A placeholder in the ECA application should be included for "Future OPF", and the intended staging and start-up of both facilities should be presented during pre-consultation. Pre-consultation would cover both facilities and the site as whole, but the initial application would be for the MMF only.

4.2 OPF

The OPF would be added later as an amendment to the previously approved ECA for the MMF. However, given the risk of not having approval in place prior to construction, County Council may wish to have the ECA in place prior to the award of the DBO Contract. There are generally two options here: wait until the DBO is on-board to submit the amendment application using specific details, or pre-supply the amendment application based on information culled from RFPQ submissions. In the latter scenario, an amendment application would be submitted prior to award of the DBO Contract, and would be based on an envelope approach that would allow for consideration of multiple technologies in the ECA process. GHD has utilized

this process in the past, and notes that it would be predicated on effective pre-consultation with the MOECC. We further believe that this approach is generally more possible when the applicant is a municipality, as is the case with the County.

5. OPF Business Case

As noted above, the OPF business case progression differs between Options 1 and 2. In Option 1, the business case would be built on the information from an RFP released early in the municipal permitting process, and that would support an aerobic composting technology platform only. This business case would be delivered in early 2017. In Option 2, a preliminary business case built on the results of an RFI process would be prepared for early 2017 considering a suite of different technologies; this business case would then be refined during calendar 2017 and concluded in late 2017 based on the results of the OPF DBO RFP.

GHD recognizes the need to undertake a business case. Our recommendation would be to generally follow a process where permits and approvals and contractor procurement for the OPF is as advanced as possible, so that cost factors are known. With respect to Option 2, an RFI would be supported by information procured from the planning studies conducted over summer 2016, which would lead to an approximate basis for design of the OPF. Contractors and technology respondents would take relevant information from the RFI and provide estimated capital and operating costs to support the business case. These estimates would be further substantiated at the close of the DBO RFP. This process would further allow the County to conclude its preliminary business case and seek Council approval for the OPF prior to release of the RFPQ/RFP for the OPF, further demonstrating the County's commitment to the project to prospective respondents to that process.

The final business case will be dependent on inputs developed over time which would not be fully available until after responses to the OPF DBO Contractor RFP are received. GHD's recommendation under either Option considered is to have the framework for the analysis developed early such that it is ready to be populated by information from the successful DBO RFP respondent.

While we understand the importance of developing the business case, it is not reasonable to develop this business case until cost factors related to the preferred site are understood via Planning and engineering studies, the technology platforms are understood via a RFPQ process, and fixed contractor pricing is provided via the DBO RFP. Pre-supposing the business case at this point would lead to significant possible variances in capital and operating costs feeding into the cost model, resulting in a high level of inaccuracy.

6. Supporting Site Works

As noted in Section 3.1, there is a number of supporting site works that could be completed in advance of the construction contracts for the MMF or OPF. This may include items such as clearing the proposed construction area (which could, in part, be completed by the County's Forestry Department through tree harvesting activities), site grading, paving access roads and other areas of the site, establishing site servicing (i.e., hydro, groundwater well), and the construction of stormwater management infrastructure (e.g., ponds, ditches, culverts). Preliminary work surrounding these items, as well as securing a Building Permit and Site Plan Approval, could be initiated in early 2017 so that construction could proceed during the summer months. The County may wish to issue separate contracts for these individual elements, which are fairly simple to procure.

7. Public Consultation

Public, Aboriginal, and stakeholder engagement will continue as the project develops. At a minimum, this will include consultation with Springwater, NVCA, MOECC, First Nations, and the general public. The next public consultation event is expected to occur in the fall of 2016, and will provide a general project update surrounding technology and design and the proposed procurement methods for the OPF.

8. Contract

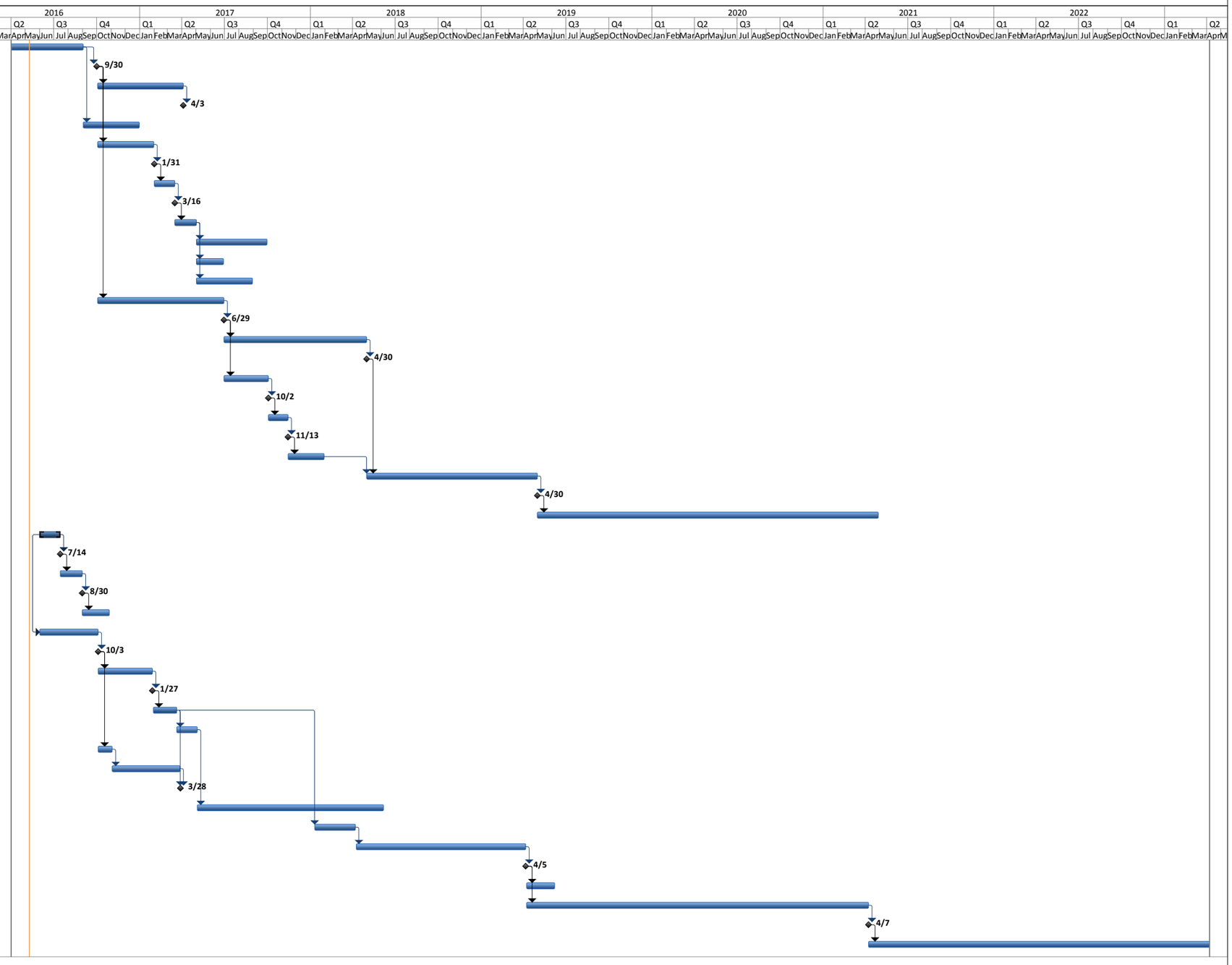
The County's current waste transfer contract with BFI in Barrie expires in April 2017. Generally, the timeline provided suggests that operation of the MMF in early 2019 would require some alternate transfer capacity until that time. As of 2019, garbage, recyclables and organics could be transferred at the MMF, with the organics requiring off-site processing for a period of approximately 2 years.

The County's current organics processing contract with AIM in Hamilton expires on October 1, 2018. When the OPF is in operations in 2021, organics would then directly enter the OPF. As the MMF will need to be designed for the inclusion of organics, applicable abatement measures should be in place to accommodate internal building liquids (sumps and storage) and the potential for odour.

Figures

OPTION 1 - Following County Council's Current Direction on Aerobic Composting
Figure 1 - Simcoe OPF/MMF Development Strategy Timeline

ID	Task Name	Facility	Duration	Start	Finish
1	Planning Studies	Both	107 days	4/1/16	9/1/16
2	Submit OPA/ZBA Applications	Both	0 days	9/30/16	9/30/16
3	OPA/ZBA Application Review Period	Both	126 days	10/3/16	4/3/17
4	OPA/ZBA Approval	Both	0 days	4/3/17	4/3/17
5	Engineering Studies	Both	82 days	9/2/16	12/30/16
6	Preparation of MMF Design/Bid/Spec RFP	MMF	82 days	10/3/16	1/30/17
7	Issue MMF Design/Bid/Spec RFP	MMF	0 days	1/31/17	1/31/17
8	MMF Design/Bid/Spec RFP Tender Period	MMF	31 days	2/1/17	3/16/17
9	Submission Deadline for MMF Design/Bid/Spec RFP	MMF	0 days	3/16/17	3/16/17
10	Review and Selection of Preferred MMF Design/Bid/Spec Proponent	MMF	31 days	3/17/17	5/1/17
11	MMF Design/Bid/Spec Development	MMF	105 days	5/2/17	9/29/17
12	MMF Site Plan and Building Permit	MMF	41 days	5/2/17	6/28/17
13	Procurement and Construction of Supporting Site Works	Both	83 days	5/2/17	8/29/17
14	Pre-Consultation and Preparation of Initial ECA Application (MMF)	MMF	187 days	10/3/16	6/29/17
15	Submit Initial ECA Application (MMF)	MMF	0 days	6/29/17	6/29/17
16	MOECC ECA Review Period (MMF)	MMF	208 days	6/30/17	4/30/18
17	ECA Approval (MMF)	MMF	0 days	4/30/18	4/30/18
18	Preparation of MMF Construction Tender	MMF	64 days	6/30/17	10/2/17
19	Issue MMF Construction Tender	MMF	0 days	10/2/17	10/2/17
20	MMF Construction Tender Period	MMF	29 days	10/3/17	11/13/17
21	Submission Deadline for MMF Construction Tender	MMF	0 days	11/13/17	11/13/17
22	Review and Selection of Preferred MMF Construction Contractor	MMF	52 days	11/14/17	1/29/18
23	MMF Construction	MMF	251 days	5/1/18	4/30/19
24	Commence MMF Operation	MMF	0 days	4/30/19	4/30/19
25	2 Year Warranty Period	MMF	519 days	5/1/19	4/28/21
26	Prepare OPF Pre-Qualification RFPQ	OPF	31 days	6/1/16	7/14/16
27	Issue OPF Pre-Qualification RFPQ	OPF	0 days	7/14/16	7/14/16
28	OPF Pre-Qulaification RFPQ Tender Period	OPF	32 days	7/15/16	8/30/16
29	Submission Deadline for OPF Pre-Qulaification RFPQ	OPF	0 days	8/30/16	8/30/16
30	Review and Identification of Pre-Qualified Firms for OPF RFP	OPF	40 days	8/31/16	10/27/16
31	Preparation of OPF RFP	OPF	86 days	6/1/16	10/3/16
32	Issue OPF RFP	OPF	0 days	10/3/16	10/3/16
33	OPF RFP Tender Period	OPF	80 days	10/4/16	1/27/17
34	Submission Deadline for OPF RFP	OPF	0 days	1/27/17	1/27/17
35	Review and Selection of Preferred OPF Firm	OPF	35 days	1/30/17	3/20/17
36	Finalization of OPF Contract	OPF	31 days	3/21/17	5/3/17
37	Retain Consultant for OPF Business Case Analysis	OPF	21 days	10/4/16	11/2/16
38	Prepare OPF Business Case Analysis	OPF	99 days	11/3/16	3/27/17
39	Submission of OPF Business Case Analysis	OPF	0 days	3/28/17	3/28/17
40	OPF Design and Equipment Procurement	OPF	273 days	5/4/17	6/5/18
41	Pre-Consultation and Preparation of ECA Amendment Application (OPF)	OPF	61 days	1/10/18	4/6/18
42	MOECC ECA Review Period (OPF)	OPF	251 days	4/9/18	4/5/19
43	ECA Approval (OPF)	OPF	0 days	4/5/19	4/5/19
44	OPF Site Plan Amendment and Building Permit	OPF	42 days	4/8/19	6/6/19
45	OPF Construction and Commissioning	OPF	520 days	4/8/19	4/7/21
46	Commence OPF Operation	OPF	0 days	4/7/21	4/7/21
47	2 Year OPF Warranty Period	OPF	521 days	4/8/21	4/6/23

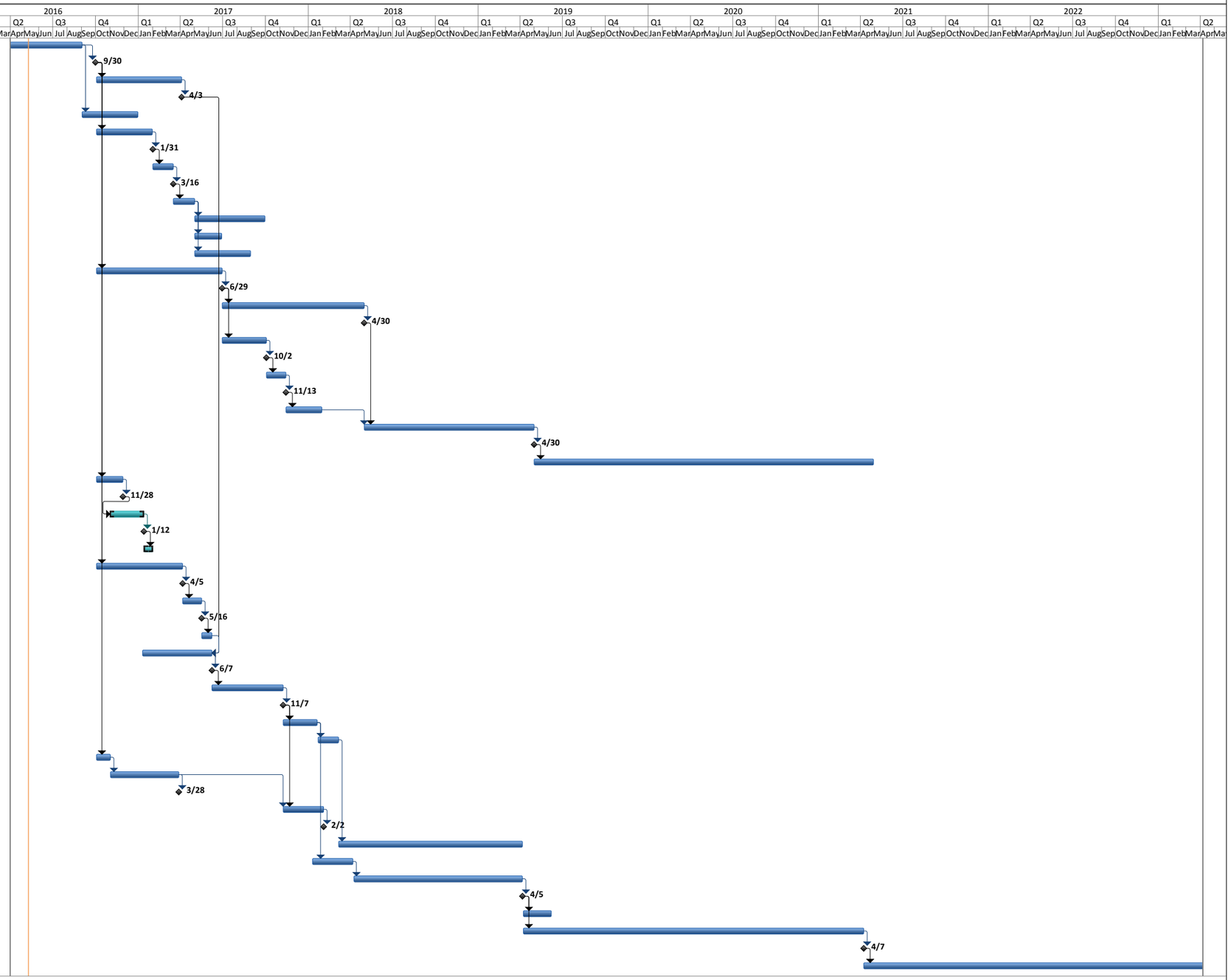


Project: 086822
Date: May 10, 2016

Task Milestone ◆

OPTION 2 - Expanding Technology Options to Include Anaerobic Digestion
Figure 2 - Simcoe OPF/MMF Development Strategy Timeline

ID	Task Name	Facility	Duration	Start	Finish
1	Planning Studies	Both	107 days	4/1/16	9/1/16
2	Submit OPA/ZBA Applications	Both	0 days	9/30/16	9/30/16
3	OPA/ZBA Application Review Period	Both	126 days	10/3/16	4/3/17
4	OPA/ZBA Approval	Both	0 days	4/3/17	4/3/17
5	Engineering Studies	Both	82 days	9/2/16	12/30/16
6	Preparation of MMF Design/Bid/Spec RFP	MMF	82 days	10/3/16	1/30/17
7	Issue MMF Design/Bid/Spec RFP	MMF	0 days	1/31/17	1/31/17
8	MMF Design/Bid/Spec RFP Tender Period	MMF	31 days	2/1/17	3/16/17
9	Submission Deadline for MMF Design/Bid/Spec RFP	MMF	0 days	3/16/17	3/16/17
10	Review and Selection of Preferred MMF Design/Bid/Spec Proponent	MMF	31 days	3/17/17	5/1/17
11	MMF Design/Bid/Spec Development	MMF	105 days	5/2/17	9/29/17
12	MMF Site Plan and Building Permit	MMF	41 days	5/2/17	6/28/17
13	Procurement and Construction of Supporting Site Works	Both	83 days	5/2/17	8/29/17
14	Pre-Consultation and Preparation of Initial ECA Application (MMF)	MMF	187 days	10/3/16	6/29/17
15	Submit Initial ECA Application (MMF)	MMF	0 days	6/29/17	6/29/17
16	MOECC ECA Review Period (MMF)	MMF	208 days	6/30/17	4/30/18
17	ECA Approval (MMF)	MMF	0 days	4/30/18	4/30/18
18	Preparation of MMF Construction Tender	MMF	64 days	6/30/17	10/2/17
19	Issue MMF Construction Tender	MMF	0 days	10/2/17	10/2/17
20	MMF Construction Tender Period	MMF	29 days	10/3/17	11/13/17
21	Submission Deadline for MMF Construction Tender	MMF	0 days	11/13/17	11/13/17
22	Review and Selection of Preferred MMF Construction Contractor	MMF	52 days	11/14/17	1/29/18
23	MMF Construction	MMF	251 days	5/1/18	4/30/19
24	Commence MMF Operation	MMF	0 days	4/30/19	4/30/19
25	2 Year Warranty Period	MMF	519 days	5/1/19	4/28/21
26	Prepare OPF RFI	OPF	40 days	10/3/16	11/28/16
27	Issue OPF RFI	OPF	0 days	11/28/16	11/28/16
28	OPF RFI Tender Period	OPF	50 days	11/1/16	1/12/17
29	Submission Deadline for OPF RFI	OPF	0 days	1/12/17	1/12/17
30	OPF RFI Review Period	OPF	13 days	1/13/17	1/31/17
31	Prepare OPF Pre-Qualification RFPQ	OPF	128 days	10/3/16	4/5/17
32	Issue OPF Pre-Qualification RFPQ	OPF	0 days	4/5/17	4/5/17
33	OPF Pre-Qulaification RFPQ Tender Period	OPF	28 days	4/6/17	5/16/17
34	Submission Deadline for OPF Pre-Qulaification RFPQ	OPF	0 days	5/16/17	5/16/17
35	Review and Identification of Pre-Qualified Firms for OPF RFP	OPF	15 days	5/17/17	6/7/17
36	Preparation of OPF RFP	OPF	104 days	1/10/17	6/7/17
37	Issue OPF RFP	OPF	0 days	6/7/17	6/7/17
38	OPF RFP Tender Period	OPF	105 days	6/8/17	11/7/17
39	Submission Deadline for OPF RFP	OPF	0 days	11/7/17	11/7/17
40	Review and Selection of Preferred OPF Firm	OPF	50 days	11/8/17	1/19/18
41	Finalization of OPF Contract	OPF	31 days	1/22/18	3/6/18
42	Retain Consultant for OPF Business Case Analysis	OPF	21 days	10/3/16	11/1/16
43	Prepare Preliminary OPF Business Case Analysis	OPF	101 days	11/2/16	3/28/17
44	Submission of Preliminary OPF Business Case Analysis	OPF	0 days	3/28/17	3/28/17
45	Prepare Final OPF Business Case Analysis	OPF	60 days	11/8/17	2/2/18
46	Submission of Final OPF Business Case Analysis	OPF	0 days	2/2/18	2/2/18
47	OPF Design and Equipment Procurement	OPF	273 days	3/7/18	4/5/19
48	Pre-Consultation and Preparation of ECA Amendment Application (OPF)	OPF	61 days	1/10/18	4/6/18
49	MOECC ECA Review Period (OPF)	OPF	251 days	4/9/18	4/5/19
50	ECA Approval (OPF)	OPF	0 days	4/5/19	4/5/19
51	OPF Site Plan Amendment and Building Permit	OPF	42 days	4/8/19	6/6/19
52	OPF Construction and Commissioning	OPF	520 days	4/8/19	4/7/21
53	Commence OPF Operation	OPF	0 days	4/7/21	4/7/21
54	2 Year OPF Warranty Period	OPF	521 days	4/8/21	4/6/23

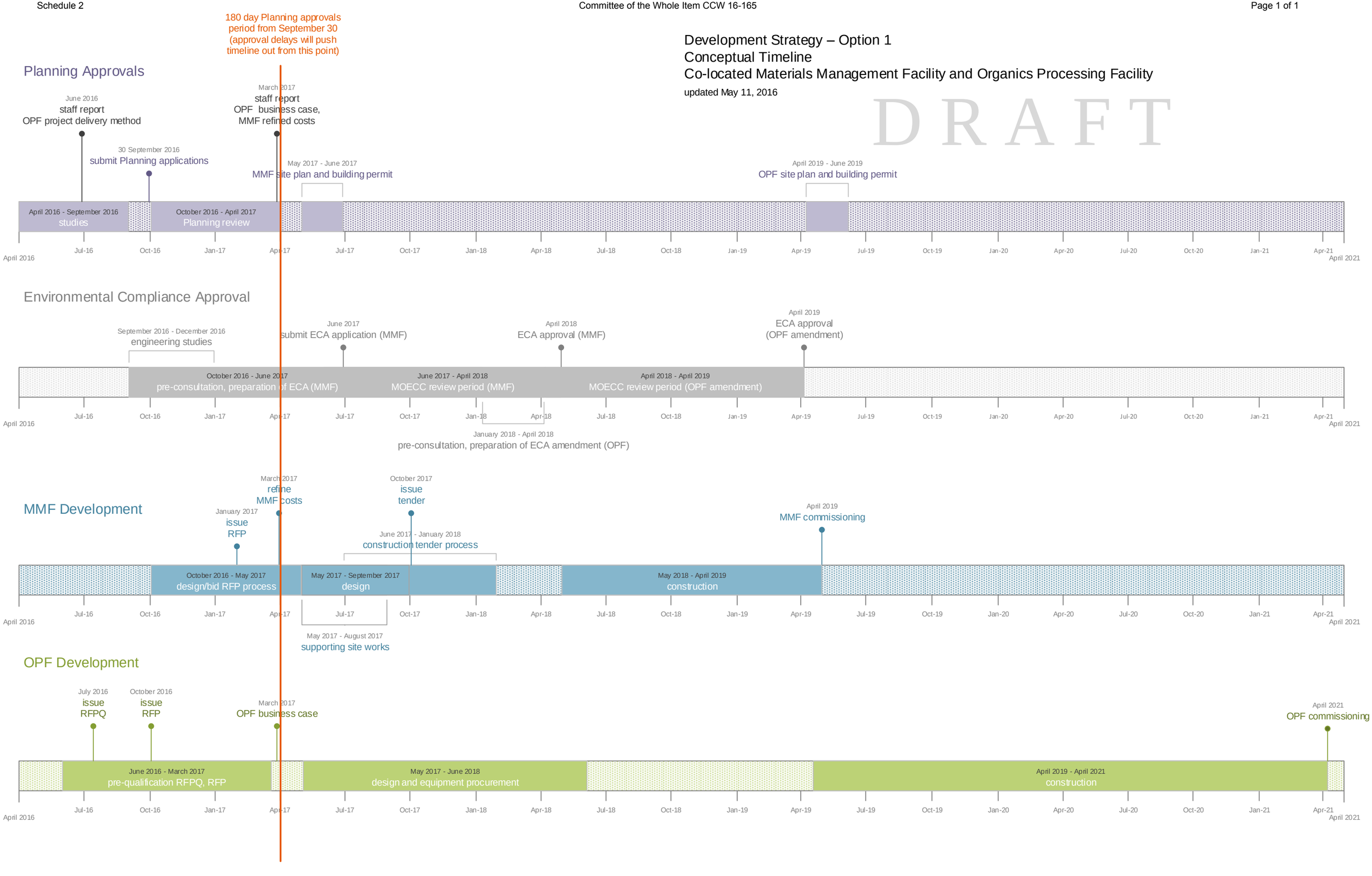


Project: 086822
Date: May 10, 2016

Task Milestone ◆

Development Strategy – Option 1
Conceptual Timeline
Co-located Materials Management Facility and Organics Processing Facility

updated May 11, 2016



Development Strategy – Option 2
Conceptual Timeline
Co-located Materials Management Facility and Organics Processing Facility

updated May 11, 2016

180 day Planning approvals period from September 30 (approval delays will push timeline out from this point)

Planning Approvals

- August 2016: staff report — OPF project delivery method
- March 2017: staff report — OPF preliminary business case, MMF refined costs
- March 2018: staff report — OPF business case
- 30 September 2016: submit Planning applications
- May 2017 - June 2017: MMF site plan and building permit
- April 2019 - June 2019: OPF site plan and building permit
- April 2016 - September 2016: studies
- September 2016 - April 2017: Planning review

April 2016 | Jul-16 | Oct-16 | Jan-17 | Apr-17 | Jul-17 | Oct-17 | Jan-18 | Apr-18 | Jul-18 | Oct-18 | Jan-19 | Apr-19 | Jul-19 | Oct-19 | Jan-20 | Apr-20 | Jul-20 | Oct-20 | Jan-21 | Apr-21 | April 2021

Environmental Compliance Approval

- September 2016 - December 2016: engineering studies
- June 2017: submit ECA application (MMF)
- April 2018: ECA approval (MMF)
- April 2019: ECA approval (OPF amendment)
- October 2016 - June 2017: pre-consultation, preparation of ECA (MMF)
- June 2017 - April 2018: MOECC review period (MMF)
- April 2018 - April 2019: MOECC review period (OPF amendment)
- January 2018 - April 2018: pre-consultation, preparation of ECA amendment (OPF)

April 2016 | Jul-16 | Oct-16 | Jan-17 | Apr-17 | Jul-17 | Oct-17 | Jan-18 | Apr-18 | Jul-18 | Oct-18 | Jan-19 | Apr-19 | Jul-19 | Oct-19 | Jan-20 | Apr-20 | Jul-20 | Oct-20 | Jan-21 | Apr-21 | April 2021

MMF Development

- January 2017: issue RFP
- March 2017: refine MMF costs
- October 2017: issue tender
- June 2017 - January 2018: construction tender process
- April 2019: MMF commissioning
- October 2016 - May 2017: design/bid RFP process
- May 2017 - September 2017: design
- May 2018 - April 2019: construction
- May 2017 - August 2017: supporting site works

April 2016 | Jul-16 | Oct-16 | Jan-17 | Apr-17 | Jul-17 | Oct-17 | Jan-18 | Apr-18 | Jul-18 | Oct-18 | Jan-19 | Apr-19 | Jul-19 | Oct-19 | Jan-20 | Apr-20 | Jul-20 | Oct-20 | Jan-21 | Apr-21 | April 2021

OPF Development

- March 2017: OPF preliminary business case
- November 2016: issue RFI
- April 2017: issue RFPQ
- June 2017: issue RFP
- March 2018: OPF final business case
- April 2021: OPF commissioning
- October 2016 - January 2017: RFI
- October 2016 - January 2018: pre-qualification RFPQ, RFP
- March 2018 - April 2019: design and equipment procurement
- April 2019 - April 2021: construction

April 2016 | Jul-16 | Oct-16 | Jan-17 | Apr-17 | Jul-17 | Oct-17 | Jan-18 | Apr-18 | Jul-18 | Oct-18 | Jan-19 | Apr-19 | Jul-19 | Oct-19 | Jan-20 | Apr-20 | Jul-20 | Oct-20 | Jan-21 | Apr-21 | April 2021