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City of Winnipeg – North End Sewage Treatment Plant

Detailed P3 Delivery Options Analysis

Market Soundings Summary

August 2021

Contents

Section 1. Market Soundings 2

Section 1.1. Approach 2

Section 1.2. Participants 3

Section 1.3. Discussion Topics 4

Section 1.4. Responses and Key Findings 5

Section 1.5. Summary 9

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Section 1. Market Soundings

Market sounding exercises were conducted by Deloitte on behalf of the City to gain further insights from a range of potential industry participants into the various components of the Projects ("**Market Sounding**"). The purpose of the Market Sounding was to engage in a confidential interactive session(s) with potential private partners to hear their perspectives on the planned procurement process, experiences with similar projects, potential interest in the Projects and key Projects' issues. The Market Sounding sought input on key topics such as Project scope, transaction structures and risk allocation. The results from the Market Sounding have been utilized to support the assessment of the P3 Delivery Options for the Projects.

Section 1.1. Approach

The Market Sounding exercise was conducted on a confidential, non-attributable basis and participation in the Market Sounding by the market participants does not preclude participation in any future or other P3 procurement process. The market participants were provided with a Market Sounding guide that provided background information on the Projects. The Market Sounding interviews were scheduled for 1.25 hour periods (0.5 hour for engineering firms) and all interviews were conducted via teleconference / videoconference over the June to July 2021 period. In addition to Deloitte members, staff from the City participated in the Market Sounding interviews.

For the purposes of the Market Sounding, certain key parameters such as capital cost, average loading tons per day, and deal structure, as summarized in Table 1, were provided to the participants to aid in developing an understanding of the Projects in preparation of the Market Sounding.

Table 1: Market Sounding Information

Item	Details
Biosolids Facilities	
Capital Cost	Approximately $500M
Average Loading (Current Estimate)	46.8 tons/day
Key Scope Elements	Centrifuges, Anaerobic Digesters , Thermal Hydrolysis Plant, Hauled Raw Sludge Receiving, WAS Thickeners, Fermenters, Phosphorous Release and Recovery, Sludge Screens, Biosolids Storage & Loading, Intermediate and Final Dewatering, Digester Conversion.
Potential Deal Structure	DBF
Nutrient Removal Facilities	
Capital Cost	Approximately $800M
Average Loading (Current Estimate)	550 ML/day
Key Scope Elements	• Excess Wet Weather Treatment System, and Intermediate Pumping Station. • Nutrient Removal Reactors, Nutrient Removal Clarifiers.
Potential Deal Structure	DBF
Key Anticipated Project Timelines	
Biosolids Facilities	• RFQ Issuance: Mid-to-late 2022 • RFP Issuance: Early 2023 • Target Financial Close / Construction Start: Late 2023 • Construction Period: Approximately 5.5 to 6 years

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Item	Details
	• Target Substantial Completion / Operations Start: Mid-to-late 2029
Nutrient Removal Facilities	• RFQ Issuance: Late 2024 • RFP Issuance: Early-to-mid 2025 • Target Financial Close / Construction Start: Mid-2026 • Construction Period: Approximately 6 years • Target Substantial Completion / Operations Start: Mid-2032
Key Considerations	
Current Operations	Maintaining current operations during design, construction and commissioning of the Biosolids Facilities and Nutrient Removal Facilities is both critical and required.
Future Operations & Maintenance	The City is not considering the transfer of O&M responsibilities (i.e. O&M will remain with the City).
Construction Timelines	A number of seasonal factors contribute to the construction timelines for Nutrient Removal Facilities, including high groundwater and that some works must be performed during the winter season due to lower flows in the system.
DBF Deal Structure	• All design and construction work would be undertaken under a single integrated contract. • City would hold back 50% of the monthly progress payments / milestone payments, with the remainder to be paid back at substantial completion to incentivize cost and schedule certainty. • The DB contractor would be required to obtain construction financing, to finance the 50% holdback. • The City would continue to have full O&M responsibility over the entirety of the NEWPCC. • Post construction warranty O&M risk is retained by City.

Section 1.2. Participants

In consultation with the City staff, a list of potential Market Sounding participants was prepared comprising of firms that would be expected to bid on the Projects with strong expertise as well as experience on past projects with similar size and scope. The Market Sounding participants selected consisted of various DB / general contractors, engineering firms, and lenders / debt arrangers to ensure a balanced pool of interviewees and ensure that feedback on all key aspects of the Projects is obtained. Of the 18 private sector firms contacted for the Market Soundings, 12 firms agreed to participate in the Market Soundings. Overall, the interviewees indicated a significant level of interest in the Projects. Table 2 provides the list of firms which participated in the Market Soundings ("**Participants**").

Table 2: Market Sounding Participants

#	Participant	Category
1.	Maple Reinders	Design-Builder / General Contractor
2.	PCL	Design-Builder / General Contractor
3.	Graham	Design-Builder / General Contractor
4.	Bird	Design-Builder / General Contractor

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#	Participant	Category
5.	Aecon	Design-Builder / General Contractor
6.	SNC-Lavalin	Design-Builder / General Contractor
7.	Ledcor	Design-Builder / General Contractor
8.	Alberici Western Constructors Ltd.	Design-Builder / General Contractor
9.	Sacyr	Design-Builder / General Contractor
10.	RBC Capital Markets	Financier
11.	WSP	Engineering
12.	Tetra Tech	Engineering

Section 1.3. Discussion Topics

The Market Sounding was based around the key questions and discussion topics provided in Table 3. The discussion, as shown in the below table, covered various topics of the Projects such as the deal structure, Projects schedule, market interests, and Projects' potential risks.

Table 3: Market Sounding Discussion Questions

#	Category	Question
1.	Design-Builder / General Contractor Questions	
1.1.	Deal Structure	Does the size or schedule of either the Biosolids Facilities and/or the Nutrient Removal Facilities prohibit the application of separate DBF procurements, or a bundling together under a single Deal Structure?
1.2.	Deal Structure	Are there issues with a DBF deal structure that could limit overall market interest?
1.3.	Deal Structure	Should the City be considering other deal structures for either of the Biosolids Facilities and/or the Nutrient Removal Facilities, or to facilitate bundling?
1.4.	Schedule	Specific to a DBF for the Nutrient Removal Facilities, what provisions could the City establish regarding existing plant operations to enable you to consider assuming schedule completion risk?
1.5.	Schedule	Are the timelines outlined workable for a DBF for each of the Biosolids Facilities and Nutrient Removal Facilities? • How long of an RFP open period would be appropriate for each? • Are there any innovative approaches that could be considered to speed up the Project timelines?
1.6.	Schedule	Could bundling the Biosolids Facilities and Nutrient Removal Facilities into a single deal structure / project condense the overall timeline or bring other benefits? Is bundling viable?
1.7.	Debt Market Capacity	Is there capacity in the Canadian construction debt market to fund DBFs for the Biosolids Facilities and/or the Nutrient Removal Facilities, or as a bundled procurement?
1.8.	Debt Market Capacity	Is there any concern on capacity in the Canadian market on obtaining standard performance security for DBFs for the Biosolids and the Nutrient Removal Facilities, or as a bundled procurement?

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#	Category	Question
1.9.	Payment Approach	What construction period payment approaches are most acceptable to you under a DBF deal structure – i.e. monthly progress payments or milestone payments, both with significant holdback to be repaid at substantial completion?
1.10.	Risk	Do you have any concerns with risk allocation that may cause challenges in bidding the Biosolids Facilities and/or the Nutrient Removal Facilities? Are they specific to DBF?
1.11.	Risk	What type of information, released to proponents during the RFP open period, would enable you to complete suitable due diligence?
1.12.	Honorarium	What is the appropriate size for a Design and Bid Fee / Honorarium?
1.13.	Market Interest	Are there scope elements in either of the Biosolids Facilities and/or the Nutrient Removal Facilities that limit your interest? If so, what mitigants would create interest?
1.14.	Market Interest	If the City prescribes specific processes (e.g., thermal hydrolysis) or vendors/suppliers for some of the Project components, how would that affect your interest in the Project or value for the City?
1.15.	Market Interest	What role would your company assume?
1.16.	Market Interest	Are you interested in participating in the Biosolids Facilities and/or the Nutrient Removal Facilities? What are the key factors that will influence your decision to participate?
1.17.	Other	Is there any other information you would like to share with us in relation to the Biosolids Facilities and/or the Nutrient Removal Facilities?
2.	**Engineering Firm Questions**	
2.1.	Market Interest / Capacity	Does your firm have the expertise and capacity to develop a design for: • The Biosolids Facilities; and/or • The Nutrient Removal Facilities?
2.2.	Market Interest / Capacity	Does your firm have interest in taking a design role on a Design-Build or Design-Build-Finance team for the Biosolids Facilities and/or the Nutrient Removal Facilities? • If not, what barriers or constraints exist that limit your interest?
2.3.	Deal Structure	If not for currently proposed delivery models, then what delivery models would you suggest that would be more attractive for your firm?

Section 1.4. Responses and Key Findings

Upon completing the Market Sounding, the feedback from all Participants was divided across the key segments listed in Table 4 and detailed in Table 5.

Table 4: Market Sounding Topics

Market Sounding Topics		
• Market Interest and Capacity	• Procurement Process	• Financing Capacity
• Project Scope and Delivery Model	• Construction Term and Scope	• Honorarium
• Procurement Risks	• Construction Period Payments	

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Key findings applicable to both Projects are summarized in Table 5.

Table 5: Market Sounding Key Findings

#	Topic	Key Findings
1.	**Market Interest and Capacity**	• Participants communicated a significant level of interest in the Projects'[1] scope with size being a potential constraint. • A bundled approach was generally not preferred for delivering the Biosolids Facilities and Nutrient Removal Facilities. Participants noted that their interest could significantly decrease if the Projects were delivered in a bundled approach, due to the following key factors: – Overall size of the combined Projects (combined approx. $1.3B) would significantly limit market capacity (would require a joint venture of over three large contractors); – Lengthy construction timelines for each Project would create additional complexity; and – Significant increase in construction period and completion risks. • Generally, Participants noted that the market's current appetite for risks is lower as compared to previous two to three years. • Participants stated they would participate through a joint venture with at least one or two other contractors, given the size of each Project. • Participants also noted comfort with the City's successful track record with implementing recent P3 projects which would aide market interest in the Projects.
2.	**Project Scope and Delivery Model**	• Based on the information provided, no significant concerns were noted with respect to the proposed scope of the Projects, with the key assumption that the City would retain operations and maintenance responsibility for both Projects. – Participants noted that the City should allow some level of flexibility in design to encourage innovation from the market. – There were some suggestions that the City should look to provide output specifications to the market (e.g. biogas yield at the Biosolids Facilities) and let the market determine the best technology and process (e.g. thermal hydrolysis or other) to provide the best value to the City. If the process is prescribed, it could limit the technology options and suppliers (e.g. there are only two to three proven suppliers of thermal hydrolysis). • Overall, the DBF model was acceptable to the Participants. However, some concerns raised with the level of potential risks with a DBF model which may limit interest from potential contractors. – A key risk noted was the completion/process prove-out risk when the contractor is not in control of operations and is under financial pressure from the lenders (repayment of short-term private financing through the Substantial Completion Payment). • Participants suggested some alternative delivery models, with a more collaborative approach to consider for both Projects, given the size and complexity of each. – There was strong advocacy for early contractor involvement models for both Projects, such as a Progressive Design-Build ("PDB") (with or without private financing). – Other early contractor involvement models discussed included Construction Management ("CM"), alliance, and design assist models.

[1] "Projects" means collectively the Biosolids Facilities Project and Nutrient Removal Facilities Project.

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#	Topic	Key Findings
		• Further, a few Participants expressed support for a DBFOM delivery model (for Biosolids particularly), which could be of greater interest to market than DBF due to the larger scope of contract (i.e. teams may be private operator-led) and addresses some of the completion risk associated with DBF. – Note: the City's current collective agreements and the complexities associated with the integration of NEWPCC into overall City wastewater collection and treatment were not discussed with the Participants.
3.	**Project Risks**	• Most Participants noted that the City should retain the risk for prescribed processes or vendors/suppliers, and that the City should also ensure these are tried and tested technologies, especially in consideration of the Winnipeg climate. • Participants indicated that one of the largest risk factors they anticipate can result from any passed down and unknown risks from the existing facilities and how the two Projects would link into the existing NEWPCC operations. • All Participants identified risks around process guarantees and performance expectations to be another key factor. – The performance expectations must be reasonable from the City as the operator to ensure market interest. – Further, a process guarantee should be required from the pre-selected technology supplier, as applicable, which should be passed on to the City. – Some Participants noted that they would be unwilling to wrap the pre-selected technology (e.g. Cambi) within their contract and take risk on that due to the relatively small balance sheets of such technology suppliers. Hence, this risk would have to be taken by the City. • Participants also stated that if the operational handover is not defined properly, it could create excess risk allocation to the contractor beyond its control and would be a major concern. • Some of the other key risks noted by Participants for the City's consideration included: – Geotechnical / environmental risks (e.g. groundwater conditions, geotechnical aspects); – Existing facilities conditions; – Permitting risks; and – Unknown utilities.
4.	**Procurement Process**	• Participants strongly agreed that procuring these Projects separately would promote the most competition, stating that bundling would be a challenge regardless of the delivery model. Some Participants mentioned they could still bid on bundled Projects, though the competition would be greatly reduced. • The RFP open period timelines provided for the Projects were generally considered to be reasonable, with general expectation of a range of 6 to 9 month RFP open period. Some key considerations impacting timelines may include the following: – Participants may look for a lot more technical information in the RFQ stage (e.g. mass balance information) to provide greater background for their pursuit decision(s). – Extent of completion of procurement documents (i.e. RFP and Project Agreement) at first issuance and ensuring alignment between output based performance specifications and reference concept designs. – Clear communication of the evaluation criteria to the proponents and whether (and how) innovations would be considered. – Considerable relevant background information / documentation (e.g. geotechnical studies) provided to the proponents in the RFP open period.

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#	Topic	Key Findings
		– All seasonal and operational constraints must be clearly communicated in the Projects' procurement documents for planning on the construction schedules. • The importance of having a "project champion" from the City leadership for the Projects to provide certainty to the bidders on completion of the procurement process(es) to justify participation. • Information and clarity about Veolia's contract with the City and their potential role should be provided in the procurement documents. Concerns included disclosing of proprietary nature of proponents' information (especially if proponents are bringing in competing technology) and Veolia's access to it and whether Veolia would be precluded from bidding on the Projects. Such potential conflict of interest issues would have to be worked through by the City prior to the procurement process.
5.	**Construction Term and Scope**	• Although the construction periods for both Projects (over 5 years) were considered by the Participants to be long, overall they seemed reasonable given the size and complexity of the Projects. – Biosolids Facilities: Participants noted that there could be opportunities to reduce the construction period for Biosolids Facilities and shorten the schedule. – Nutrient Removal Facilities: Given the constraints of the project, workarounds and tie-ins with existing NEWPCC operations, etc. a relatively long construction period is logical. • Participants cited that collaborative approaches, such as the PDB, CM and other alternative project delivery models proposed could shorten the construction period with more time spent upfront with involvement of the City as the operator to design the facilities and de-risk the Projects for the contractors.
6.	**Construction Period Payments**	• The construction period payments structure proposed was generally acceptable with some Proponents indicating preference for milestone payments structure whereas others preferred the monthly construction period payments, both with proposed 50% holdback to be paid through a substantial completion payment. • Some concerns were highlighted around milestone payment structures including: – Milestone definitions often presume a specific sequence of construction which may not be applicable to all proposals or may not reflect actual construction in the field, which can create funding/financing problems during construction; and – From a financing / funding perspective, if milestone payments are not made per schedule and the private financing facility has been drawn already, then funding for construction costs could become an issue – contractors may not be willing to absorb the risk due to timing differences. In essence, each milestone payment creates a risk incident during the construction period. • 100% Substantial Completion Payment was also proposed which would make it clean and easy to administer.
7.	**Financing Capacity**	• There is sufficient capacity and interest in the Canadian debt market to provide financing for the two Projects and lenders would look for customary risk profile for a DBF delivery model. – Established contractual arrangements are very important for lenders. The City should look to avoid new processes and changes to contractual agreements should be avoided where possible. – Although most lenders typically go for a maximum of 5 years of construction financing, the bank market currently has a strong appetite. • No concerns were noted on the ability and capacity of the contractors to meet the standard performance security requirements for the Projects.

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#	Topic	Key Findings
		• Note that under a DBF, lenders would determine the right level of performance security to presume for the Projects.
8.	**Honorarium**	• Participants noted that pursuit costs are sizable and hence would prefer an honorarium / design-bid fee of approximately 1% - 2% of the capital cost (to primarily cover external costs), stating that the larger the honorarium the better as it allows for meaningful effort and innovation in design, as well as more accurate pricing with lower built in contingencies.

Section 1.5. Summary

The Market Soundings indicated that there is a significant level of interest from potential market participants in the Projects. All Participants expressed a general interest in participating under a DBF delivery model but suggested consideration of certain alternate delivery models such as the PDB and design-assist models.

Further, the Market Soundings highlighted a number of important elements around the market interest such as; the need for extended commissioning period for the Projects, reducing construction schedules, a clear risk allocation outline with special consideration to potential risks that can result from existing operations, and an honorarium / design-bid fee of approximately 1% - 2% of the capital cost.

The feedback obtained through the Market Soundings was used to review the delivery models to assess for the Projects, with the delivery models listed in Table 6 considered for assessment.

Table 6: P3 Delivery Models Considered for Assessment

Initial P3 Delivery Options considered	Additional P3 Delivery Options based on market sounding feedback
Standalone Traditional DBB	Standalone Traditional DBB with Design-Assist
Standalone DB	Standalone Progressive DB (PDB)
Standalone DBF	Standalone Progressive DB (PDB) with private financing*

** Note that adding private financing to the PDB model would add costs to the City without significant benefit, given that the DB contractor cannot be allocated all design and construction risks.*

Some interest was expressed at a high-level by Participants during the Market Sounding in a DBFOM delivery model (more specifically for the Biosolids Facilities). However, as the focus and objective of the Market Sounding was to obtain feedback on the DBF delivery model, such interest was indicated based on limited information on key operational aspects of the Projects that would need to be considered to determine whether a DBFOM delivery model would be practical, including for example the City's existing collective agreements and the high degree of integration of NEWPCC into the City's overall wastewater collection and treatment operations.

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