Memorandum

Date: March 4, 2019

To: Wausau Water Works Commission

Copy: Eric Lindman
Dave Erickson

From: Mike Gerbitz
Elaina Plinke

Response to Public Comments from February 5, 2019 Wausau Water Works Commission Meeting and February 27, 2019 Email from Jim Force

A Wausau Water Works Commission Meeting was held on February 5, 2019. During the public comment segment of the meeting, comments and questions were received by the public regarding the 2040 Wastewater Facilities Plan. Following the meeting, Mr. Jim Force provided additional comments and questions for discussion at the upcoming March 5, 2019 Wausau Water Works Commission Meeting. The following "statements" were extracted from the Meeting Minutes of February 5, 2019 in which public comments and questions were documented and a February 27, 2019 email from Mr. Force. The purpose of this memorandum is to address these comments and questions. Donohue responses follow each statement.

Preamble

This is an important project: one of the largest capital expenditures in the history of Wausau Waterworks. Donohue understands the significance of this project, the long-term financial implications for the rate paying community, and our professional obligation to help Wausau define the "right" project and the "right" project execution strategy. We are confident we have done that; however, further discussion may be warranted to either confirm that or develop a more favorable project and project execution strategy.

A thorough review of project cost opinions, bidding strategies, funding strategies, and other important project details is beyond the scope of a memorandum like this one. Donohue would welcome and be glad to conduct a series of workshops or working sessions with any and all interested Commissioners or Council members to provide these reviews. Please know that Commissioners and Council members are invited to all future working sessions with City staff.

Statement 1

Regarding the Donohue study draft A of the wastewater facilities plan, [Mr. Urbanek] sees the Village of Maine and Brokaw are included in the population base. He doesn't believe that there is enough people there to spend a huge amount of money and suggests that be deleted.

Donohue Response

The City and Donohue firmly believe that Wausau and Schofield rate payers should not subsidize regionalization with Maine, Brokaw, or any other neighboring community. The cost to add Maine and Brokaw, if any, is small and well justified.

Maine and Brokaw were added to the design-year (2040) service area population. Together, these communities represent 2.4% of the design population (1,046 of 44,251). None of the proposed improvements were prompted by this small additional population. Including Maine and Brokaw did not "trigger" any of the improvements. The project would be remarkably similar, if not identical, without Maine and Brokaw. It seems likely that these two small communities will join the service area before the end of the 20-year planning period.

For illustration purposes, if one were to assume that the additional 2.4% population attributed to Maine and Brokaw added 2.4% to the *capacity*-related cost of the project, then the cost of adding Maine and Brokaw would be 2.4% of $14.1M. This equates to $340k or 0.425% of the total project cost. The value of the additional users, which would increase the residential rate-payer population by 2.4%, exceeds the associated cost share (0.425%). This illustration, which ignores real economies of scale and presents an inflated cost to add Maine and Brokaw, shows there is a net financial benefit to adding these small communities.

The Wisconsin Department of Natural Resources (WDNR) and the Clean Water Fund have recently created a Regionalization Priority Principal Forgiveness program. For qualifying communities, Regionalization Priority Principal Forgiveness will be awarded in the amount of $2,000,000 for the elimination of the first Wastewater Treatment Facility discharge, with an additional $1,000,000 awarded for each additional eliminated discharge. The potential Principal Forgiveness to add Maine and Brokaw far exceeds the inflated cost presented in the previous illustration.

Including Maine and Brokaw in the design-year service area population appears to be wise planning and use of limited public funds.

Statement 2

Regarding the present permit. [Mr. Urbanek] believes the DNR has not followed the methodology that they utilized in the 1979-1980 Wisconsin River study where waste load allocation numbers were generated and permitting levels were provided to the point sources along the river. Since that study, many paper mills have shut down and his sense is that the upstream capacity of the river is substantially higher and we should be able to take advantage of that. He thinks we should not remodel but rebalance what we already know.

Donohue Response

The WPDES Permit for the Wausau Wastewater Treatment Facility has effluent limit frameworks for two parameters that consider the assimilative capacity of the Wisconsin River: phosphorus and biochemical oxygen demand (BOD).

Phosphorus – The effluent phosphorus limit will be defined by a Total Maximum Daily Limit (TMDL) that the WDNR has developed and the United States Environmental Protection Agency (USEPA) is reviewing. The TMDL was submitted to USEPA in 2018 and considers only present-day dischargers. The USEPA is expected to approve the TMDL, which recognizes the fact that the Brokaw pulp and paper mill is no longer discharging to the Wisconsin River upstream of Wausau. In effect, all dischargers to the Wisconsin River, including the City of Wausau, will benefit from the elimination of the Brokaw pulp and paper mill.

BOD – The WDNR recognized that assimilative capacity increased after the Brokaw pulp and paper mill was closed. In 2013, nearly all (90%) of the BOD-wasteload allocation (WLA) for the Brokaw mill was reassigned to the wastewater treatment facility serving the Mosinee mill. According to the Department, the opportunity to claim the remaining 10% of this capacity has passed. The Department does, however, plan to revisit the BOD-WLA in the next several years. Nevertheless, if the WDNR revises the BOD-WLA and/or gives Wausau the small remaining fraction of the Brokaw mill wasteload (10%), the BOD effluent limits might increase slightly. Considering the impending phosphorus TMDL, the filtration technology necessary to comply with that phosphorus TMDL, and how BOD compliance is achieved at a wastewater treatment facility, the proposed technologies, improvements, and project would be largely unchanged. Slightly revised BOD effluent limits would be a welcomed change because less stringent limits carry less risk of violation; however, they would not reduce operating or capital costs.

Summary – The project will allow the Wausau wastewater treatment facility to consistently and reliably comply with two effluent limits that are defined directly by the assimilative capacity of the Wisconsin River: phosphorus and BOD. The phosphorus limit will be defined only by present-day dischargers, ignoring the contributions of upstream dischargers that no longer exist. The remaining BOD-WLA of the Brokaw mill is small. Relative to the BOD limit, the impending phosphorus limit is the larger cost driver. A revisiting or "rebalancing" of the Wisconsin River offers no practical financial relief.

Statement 3

Part of the scope [Mr. Urbanek] feels is very unclear is when we talk about BOD. What is the plant design? Is it at maximum flow, maximum BOD, maximum waste load allocation or is it at average or minimum? This should be identified for all of the parameters and it should be easy to do a piping and instrument diagram showing the 3 levels. This would assure that the design is understood and agreed to by the operating and engineering personnel of the city. Some of the alternatives can be very capital expensive and the decision should be made ahead of time for that design point.

Donohue Response

The Facility Plan is not a design document and is not meant to be used for any sort of design review. This document outlines a wastewater treatment facility improvement project that provides the City with a safe, reliable, cost-effective, and Permit-compliant wastewater treatment system for the nominal 20-year planning period; the project upgrades will last well beyond the planning period. The City must discharge Permit-compliant effluent in the face of all design flows and loadings listed in the Facility Plan. The final design of the facility will be based on the flows and loadings outlined in the Facilities Plan once approved by the City Council. City staff and operating personnel are well informed of the proposed design parameters and have had extensive workshop discussions with the design engineers over the past year. These workshops have gone over every existing process and each process upgrade or addition that is being proposed.

With respect to BOD, the Facility improvements are aimed at achieving compliance with the monthly BOD limit when receiving the maximum month BOD loading, the weekly BOD limit when receiving the maximum-week BOD loading, and the daily BOD limit when receiving the maximum-day BOD loading.

The effluent requirements, design flows, and design loadings presented in the Facility Plan are repeated below.

Table 3-8 Effluent Limits in WPDES Permit WI-0025739-09

Parameter	Limit Type	Limit	Units	
BOD	Monthly Average	30	mg/L	
BOD	Weekly Average	45	mg/L	
WLA BOD	Daily Maximum	Variable May – Oct	ppd	
TSS	Monthly Average	30	mg/L	
TSS	Weekly Average	45	mg/L	
TP	Monthly Average	1.0	mg/L	Interim Limit
pH Field	Daily Maximum	9.0	su	
pH Field	Daily Minimum	6.0	su	
Fecal Coliform	Geometric Mean – Monthly May – Sep	400	#/100 mL	
Fecal Coliform	Geometric Mean – Weekly May – Sep	656	#/100 mL	
Mercury	Daily Maximum	3.8	ug/L	

Table 4-2 Design Basis Flows

Flow	Flow (mgd)	Peaking Factor
Average	5.4	
Maximum Month	9.2	1.69
Maximum Week	11.6	2.14
Maximum Day	16.8	3.10
Peak Hour	22.0	4.06
Peak Instantaneous	35.8	

Table 4-3 Design Basis Loadings

Parameter	AA (ppd)	MM (ppd)	MW (ppd)	MD (ppd)	Per Capita Load [ppcd][(2)]
BOD	11,190	14,438	17,458	24,108	0.25
TSS	11,763	16,361	19,005	31,445	0.26
TKN	2,004	2,586	3,130	4,193	0.045
TP	545	703	850	1,258	0.012

Statement 4

Regarding the scope of the study and the fact that there have been a number of exceedances at the wastewater plant, the root causes have not been addressed in the report. This is something that should be considered in the design going forward. All sort of things happen but [Mr. Urbanek] thinks we should make sure we engineer around any root causes of those exceedances.

Donohue Response

Mr. Urbanek correctly points out that the Facility Plan summarizes effluent violations. During the historical record included in the Facility Plan (2012 – 2016), the Facility violated effluent BOD, phosphorus, fecal coliform, and pH limits. The project includes improvements aimed directly at eliminating each of these violations. The table below summarizes the violations and the improvement compartments aimed at preventing future violations. The City and Donohue have considered and understand the root cause of these violations and, armed with that understanding, developed specific strategies to address and prevent future violations.

Violations	Improvement Compartments to Remedy Violations
BOD	Activated Sludge, Secondary Settling, Phosphorus and Filtration
Phosphorus	Activated Sludge, Secondary Settling, Phosphorus and Filtration
Fecal Coliform	Disinfection
pH	Activated Sludge

Statement 5

A comment on the pass/fail approach. [Mr. Urbanek] finds it unusual that everything is a pass/fail at the plant. Everything can't be a fail and there are some things that are operating quite well. We seem to have a good track record at meeting the compliance requirements.

Donohue Response

The Pass/Fail designations reveal to a broad audience, including members of the public that are not wastewater professionals, where the issues and concerns lie. The table on the next page shows the Pass/Fail designations, illustrating shortcomings or issues that need to be addressed for the 20-year planning period are pervasive. The specific issues are documented in Chapter 3. An example Unit Process description from Chapter 3 is provided on the subsequent page.

Table 1-4 Summary of Existing Unit Process Issues and Concerns

Unit Process	Safety, Reliability, Performance	Capacity	Regulations
Raw Wastewater Screening	■	■	
Raw Wastewater Pumping	■		
Grit Removal and Influent Flow Measurement	■	■	
Primary Settling	■		
Activated Sludge System	■	■	
Secondary Settling	■		
Effluent Filtration	■	■	■
Disinfection	■	■	
Chemical Phosphorus Removal	■	■	■
Pre-Digestion Thickening	■	■	
Anaerobic Digestion	■		
Post-Digestion Dewatering	■	■	
Biosolids Cake Storage	■	■	

1.1.1 ANAEROBIC DIGESTION

Condition Categories	Pass	Fail
Safety, Reliability, Performance		■
Capacity	■	
Regulations	■	

Capacity

- Firm Capacity = 74,501 gpd

Configuration

Primary Digesters

- Number = 2
- Diameter = 65 ft
- Side Water Depth = 22.5 ft
- Unit Volume = 74.7 kcf
- Loading Rate = 65 ppd-VSS/kcf
- Detention Time = 24 to 27 days
- Mixing = Draft tube/heated

Secondary Digesters

- Number = 2
- Diameter = 80 ft
- Side Water Depth = 20 ft
- Unit Volume = 100.5 kcf
- Detention Time = 30 days
- Mixing = JetMix

Total Digester Volume = 2.62 mgal

Description

Primary sludge and waste activated sludge are stabilized by mesophilic anaerobic digestion. There are two primary digesters and two secondary digesters. External draft-tube mixers heat and mix both primary digesters. Digested sludge flows by gravity from the primary digesters to the secondary digesters. The secondary digesters are not heated but are mixed by a pump-nozzle mix system. Capacity is adequate when both primary digesters are in service; however, converting one or more secondary digesters to primary digesters will enhance performance, capacity, and maintainability. Large secondary digesters provide minimal value, serving only to equalize flow upstream of dewatering.

Issues

- The biogas compressors are nearing the end of their reliable service lives and are unable to maintain adequate pressure in the biogas-storage sphere. The sphere is rated for 30 psi. The compressors maintain between 12-20 psi. This reduced pressure reduces storage biogas volume or stored biogas capacity.
- The biogas piping is undersized and has an interior coating that has reduced its capacity. Piping needs to be replaced with stainless steel piping.
- The two secondary digesters provide minimal value as such. One or both should be converted to primary digesters, enhancing biogas production, capacity to produce biogas, and enhancing digester complex flexibility to better accommodate digester cleaning and maintenance.
- Digester complex piping limits operating flexibility.
- The secondary digester covers are in poor condition and need to be replaced. The digester complex roof needs to be replaced.
- Digesters overheat during the warm-weather months when the microturbines are running.
- The digester complex does not comply with NFPA 820. This is a safety concern. See the NFPA 820 discussion (Section 3.10).

We agree with Mr. Urbanek: “some things are operating quite well” and the Facility “has a good track record at meeting the compliance requirements.” The project includes very little new infrastructure because of that.

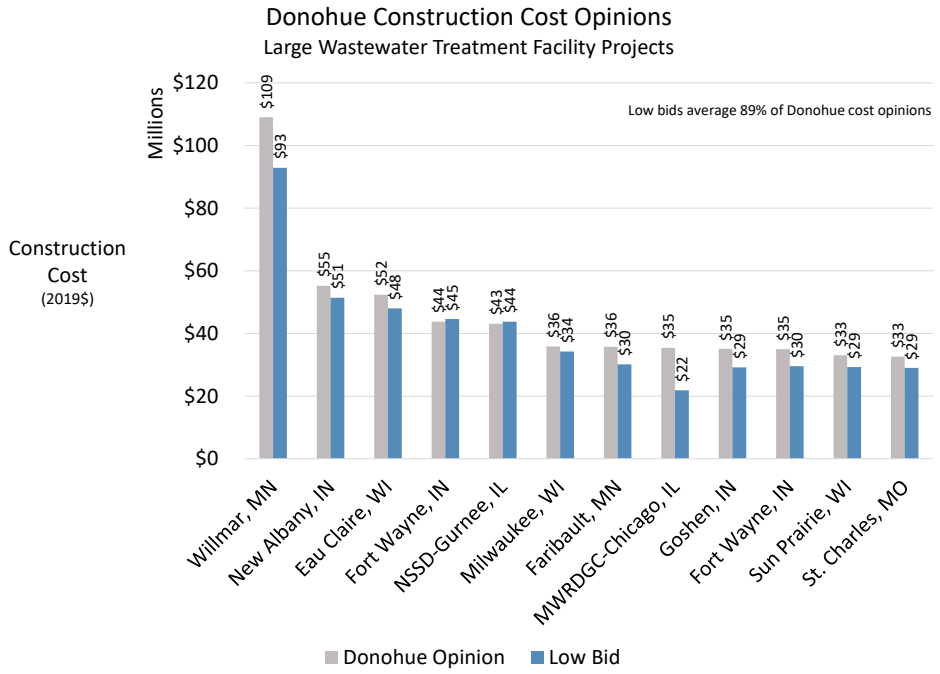
Statement 6

[Mr. Urbanek] feels the capital cost discussion is very brief. The exclusions aren't defined and the probability for completing the project for $80 million is not defined. If this goes forward he suggests getting an $80 million guarantee from Donohue. When you look at the estimate, 30% of the cost is for unidentified items. There could be errors, omissions, contingencies and training. Is it in the estimate or isn't it. He believes the operating and maintenance costs will also increase due to more equipment, more systems and more processes. His suggestion is to update the scope. It is important to have a meaningful and valid cost estimate.

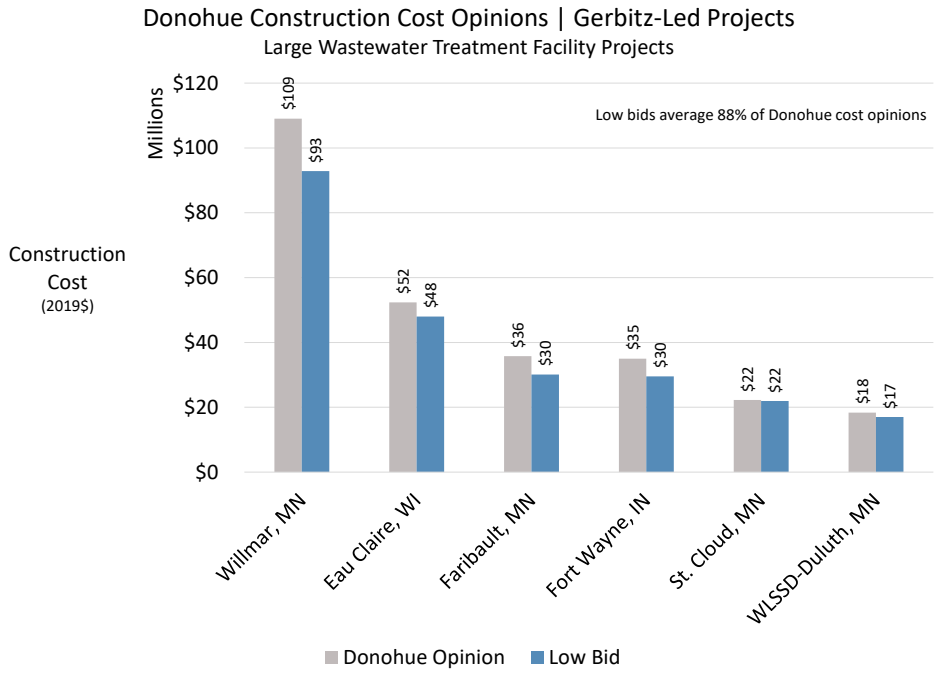
Additionally, Mr. Force followed up with a related question: Should we more closely analyze the estimated costs of both wastewater and water treatment plant capital projects, to gain a better understanding of estimates for engineering and design costs, capital equipment costs, operating costs, spare parts and operator training costs, costs for on-the-fly changeover from existing processes to new processes, and costs for city engineering and project management functions. Are there contingencies in the costs and what are these?

Donohue Response

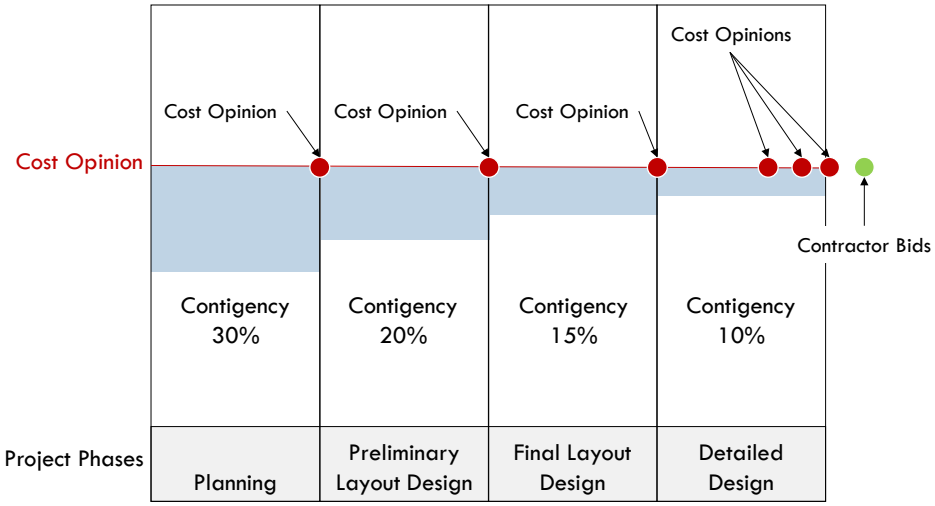
This Statement includes multiple concerns. We attempt to address each below. First, however, reviewing Donohue's track record estimating the cost of large wastewater treatment facility improvement projects might alleviate the concerns of some. The figure below shows Donohue construction cost opinions and low bids for *all* Donohue projects that exceeded $30M in construction.



The figure below shows Donohue construction cost opinions and low bids for large wastewater treatment facility projects led by Mike Gerbitz (Donohue Project Manager for the Wausau Project).



The previous figures reveal an exceptional track record of estimating construction costs and avoiding bid-day cost surprises. This is a reflection of our rigorous adherence to a design process that requires multiple, detailed construction cost opinions. Donohue produces five Design Phase construction cost opinions: the Preliminary Layout Design Phase (1), Final Layout Design Phase (1), and Final Design Phase (3). After the planning phase, construction cost opinions are produced in the same manner contractors use to generate their bids: using quantity take-offs from the drawings, major equipment quotes, and material quotes or costs from recent projects.



Donohue has completed the Preliminary Layout Design Phase and produced a detailed construction cost opinion using quantity take-offs, equipment quotes, and material costs. The quantity take-offs were extracted from Preliminary Layout Design drawings for the Site and each Structure. The table on the next page shows the detail and resolution included in the Preliminary Layout Design Phase cost opinion: Material, Equipment, and Labor costs were estimated for the Work required throughout the Site and at each Structure for each of the 16 Specification Divisions.

Format of Preliminary Layout Design Phase Cost Opinion

Site or Structures		D1			D 2			D 3			D 4			D 5			D 6			D 7			D 8			D 9			D 10			D 11			D 12			D 13			D 14			D 15			D 16		
		M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L	M	E	L
002	Site																																																
100	Main Building																																																
120	Administration Building																																															
200	Grit Building																																															
310	Primary 1																																															
320	Primary 2																																															
330	Primary 3																																															
340	Primary 4																																															
350	PE Channel																																															
400	Activated Sludge Building																																															
404	Junction Structure																																															
404	Anoxic Selector																																															
406	Mixing Tank																																															
410	Activated Sludge Basins																																															
420	ML Channel																																																
500	Secondary Splitter																																															
510	Secondary 1																																															
515	Electrical MH																																															
520	Secondary 3																																															
530	Secondary 3																																															
535	Electrical MH																																															
540	Secondary 4 [Alternate]																																															
550	SE Channel																																															
600	Effluent Building																																															
610	P-Chem Storage Building																																															
695	Outfall Structure																																															
700	Digestion Building																																															
710	Digester 1																																															
720	Digester 2																																															
730	Digester 3																																															
740	Digester 4																																															
750	Gas Sphere																																															
755	Waste Gas Burner																																															
760	Cake Building																																															
770	Solids Building																																															
771	Silo																																															
772	Nitrogen System																																															
775	PSD Thickener																																															
900	Tunnel A																																															
910	Tunnel B																																															
Totals																																															

Legend	
M	Material
E	Equipment
L	Labor
D1	General Requirements
D2	Site Construction
D3	Concrete
D4	Masonry
D5	Metals
D6	Wood and Plastics
D7	Thermal and Moisture Protection
D8	Doors and Windows
D9	Finishes
D10	Specialties
D11	Equipment
D12	Furnishings
D13	Special Construction (Controls)
D14	Conveying Systems
D15	Process-Mechanical, Plumbing, HVAC
D16	Electrical

The table that follows shows a summary of the Preliminary Layout Design Phase cost opinion. This summary presents costs by Unit Process or Facility Function, and compares Planning and Preliminary Layout Design Phase costs opinions.

Table 6-2 Comparison of Planning Phase and Preliminary Layout Design Cost Opinions

Unit Process or Function	Planning	Preliminary Layout Design	Difference: Preliminary Layout Design - Planning
Preliminary Treatment	$8,850,000	$9,261,000	$411,000
Primary Settling	$1,671,000	$1,515,000	($156,000)
Activated Sludge System	$8,299,000	$8,025,000	($274,000)
Secondary Settling	$974,000	$1,371,000	$397,000
Phosphorus and Filtration	$8,671,000	$7,153,000	($1,518,000)
Disinfection	$1,623,000	$1,610,000	($13,000)
Anaerobic Digestion	$9,480,000	$7,235,000	($2,245,000)
Solids Processing	$22,528,000	$19,569,000	($2,959,000)
Site Features	$10,711,000	$16,893,000	$6,182,000
Administration-Maintenance-Storage	$7,193,000	$7,297,000	$104,000
Total	**$80,000,000**	**$79,930,000**	**($71,000)**

The allowance for undefined or poorly-defined design detail (contingency) is 20% in the Preliminary Layout Design Cost Opinion. This value was 30% during the Planning Phase. This is deliberate and justified, knowing that our understanding and the definition of design detail increases throughout the life of the Design Phase. The allowance for undefined or poorly-defined design detail is reduced from 30% during the Planning Phase to 10% at the time of bidding. The 10% allowance is to accommodate the bidding climate, bidder interpretation of the plans and specifications, and potential variability of material, labor, and equipment costs.

The cost comparison in the table at the top of the page shows that the Preliminary Layout Design costs were lower for some Unit Processes and Facility Functions and higher for others. These differences were expected and are, in many instances, a product of the inherently different methods used to produce Planning Phase cost opinions and Preliminary Layout Design Phase cost opinions. The Site Features line item has the most significant difference between the two cost opinions. This is largely attributed to the fact that many Site Feature costs are included or grouped in the individual line items in the Planning Phase Cost Opinion and accounted for separately in the Preliminary Layout Design Phase cost opinion. For this particular project, some of the differences are attributed to several project-specific scope items. The Planning Phase Cost Opinion did not include or anticipate the need for a nearly $0.75M groundwater recharge system that is required because of off-site groundwater contamination. The Site Features line item includes site-wide electrical distribution and site piping costs. The Preliminary Layout Design Phase effort identified additional Work and costs that were not anticipated during the Planning Phase: roughly $1.5M for additional electrical Work and $1M for additional site piping Work. The allowance for undefined or poorly-defined design detail covered the costs of these previously unidentified costs.

Probability – Mr. Urbanek states “the probability for completing the project for $80M is not defined.” The historical Donohue performance estimating the cost of large wastewater treatment facility projects is evidence that the probability is high. Our rigorous adherence to a design process that produces and updates multiple cost opinions throughout the Design Phase, using the same estimating approach bidders employ, is one reason the probability is high. The fact that this design process produces well-defined Bidding Documents is another reason. Donohue has prepared costs for each unit process and also based their costs on actual vendor pricing for equipment. These equipment and processes were discussed with City staff through various workshops and discussions with the City operating personnel.

Guarantee – Mr. Urbanek suggests the City get "an $80M guarantee from Donohue." The City intends to fund this project using State Revolving Funds from the Clean Water Fund Program (CWFP) administered by the WDNR. The CWFP, which is subsidized by the Federal government and highly regulated, has a host of requirements. One of those requirements is the need to comply with applicable State bidding and contracting requirements. Wisconsin Statute 62.15 states all public construction, the estimated cost of which exceeds $25,000, shall be let by contract to the lowest responsible bidder. In general, the State, and therefore the CWFP, requires cities award contracts to the lowest responsible bidder using a competitive bidding process.

Engineering consultants must carry Professional Liability Insurance. These insurance providers and their policies strictly prohibit cost guarantees. Because of this, construction cost guarantees are generally provided by Contractors. Retaining a Contractor that provides a guaranteed price early in the design phase eliminates public bidding of a complete design. This approach is referred to as Design-Build. With the Design-Build approach, a municipality contracts with a single entity to provide both the design and construction. This is often done by a Contractor-Engineer team, with the Engineer serving as a subconsultant to the Contractor. The Wisconsin Court of Appeals determined that this approach is not consistent with the State requirement that cities and villages award public construction contracts to the lowest responsible bidder using a competitive bidding process. Therefore, funds provided by the CWFP cannot be used to fund a project that is implemented using the Design-Build approach and the associated guaranteed cost.

Although Engineers cannot provide cost guarantees, Donohue typically provides proven bid-day flexibilities that allow municipalities to limit the project cost to the amount the municipality establishes (e.g., $80M). The Design-Bid-Build approach with these flexibilities *maximizes* value and protects the municipality. The Wisconsin Statutes require public bidding for a reason: Contractors using well-defined Bidding Documents to produce competitive bids *minimizes* the cost of the Work. Stated differently, this approach guarantees that the Work is performed at the lowest cost by a responsible, qualified Bidder/Contractor. Donohue, working closely with the City, will produce a Bid Form and Bidding Documents that include multiple well-conceived deduct Alternates. In the unlikely event that the cost of all Work exceeds the construction budget, the City can accept some or all of the deduct Alternates so the total project cost is less than the established amount.

Summarizing, the State of Wisconsin and the CWFP requires a conventional Design-Bid-Build approach with public bidding. Engineers cannot guarantee construction costs. The City defines the project that is awarded to a Contractor, possessing the right to reject all the bids or select Alternates that eliminate a portion of the Work and associated cost. Donohue will work closely with the City to provide multiple well-conceived Alternate deducts that provide cost flexibility and enhance the probability that the awarded project will meet budget expectations.

The City follows state bidding requirements for all of our construction projects. The City does not require or request price guarantees from engineering firms for what they design. Engineering firms do not have control over many factors that affect a project's cost (i.e., material costs, time constraints, labor costs, etc.) These types of projects are typically bid using unit prices and Contractors bidding are required to abide by those unit prices. The City also requires contractors to be prequalified prior to their bid being considered.

Definition – Mr. Urbanek correctly states that the Planning Phase cost opinion includes an allowance of 30% for costs that are not identified or well defined. Using such an allowance is common practice for Donohue and other Engineers. Using a lower percentage increases the risk that subsequent cost opinions or bids exceed the cost expectation established during the Planning Phase. This important allowance acknowledges and accounts for the lack of cost definition inherent with Planning, particularly for a large, expansive improvement project like this one.

Understanding the limitations inherent in Planning Phase cost opinions, Donohue encouraged and the City elected to advance the project to the Preliminary Layout Design Phase. This Phase advanced the project understanding, definition, and cost resolution. Donohue produced a cost opinion at the end of this Preliminary Layout Design Phase using preliminary layout drawings for the Site and each Structure. This cost opinion included a 20% allowance, commensurate with understanding and detail at this early Design Phase. The allowance will decrease throughout the Design Phase as shown in a previous figure, decreasing to 10% at the time the project is bid.

Budget – The $80M budget is the total *project* cost. It concludes the cost of construction, engineering, survey, geotechnical investigations, and funding assistance. Engineering services include planning, design, bidding, construction administration, commissioning assistance, training, and post-startup assistance.

Operating and Maintenance Costs – Mr. Urbanek states he believes operating and maintenance costs will increase. He is correct. Donohue investigated the annual cost implications during the Planning and Preliminary Layout Design Phases. Anticipated operation cost changes are summarized below.

Anticipated Annual Operating Cost Increase

Category	Annual Cost
Biosolids Drying	$175,000
Activated Sludge	$52,000
Phosphorus Filtration	$24,000
HVAC/Safety Standard Compliance	$30,000
Biosolids Disposal	-$150,000
Biogas Compression	-$7,000
Total	**$124,000**

The anticipated total annual operating cost increase is $124,000. This is roughly 2% of *current* Sewer Utility revenues. The City will realize these additional costs several years after the construction contract is awarded and the project is commissioned. However, these added operating costs are not expected to have any significant near-term rate implications because annual equipment replacement costs will decrease significantly for several years. In the last several years, the Sewer Utility has spent between $165,000 to $195,000 on equipment maintenance and repairs annually.

Water and Wastewater Project Costs – As stated previously, the project budgets provided to the City for both the Water and Wastewater projects include all initial costs: construction; construction sequencing performed by the Contractor; Engineering for the Planning, Design, Bidding, and Construction Phases; commissioning services; training services; post-startup assistance; and spare parts the City needs or wants at the time of start-up.

Statement 7

Should we prioritize the items within the overall project costs; in other words, if we can't afford to do it all, what must be done first, second, and so forth, and what could be left for later? (I am not sure that we have seen specifications for each project regarding flow rate, population served, and regulatory limits).

Donohue Response

The collection of improvements that comprise the Recommended Plan were selected to address the following categories through and beyond Year 2040: Safety, Reliability, and Performance; Capacity; and

Regulations. The Recommended Plan is a large undertaking; however, completing all these improvements at once reduces staging efforts, disruption, facility outages, and, considering economies of scale and historically low interest rates, cost. We think the Recommended Plan is the most cost-effective and least-disruptive 20-year compliance strategy. Nevertheless, we will work with the City to develop a Bid Form and Bidding Documents that include Alternate items and, if the City wants, a prioritization for these Alternates.

Statement 8
As for equipment costs, what are the estimates and what are they based on?

Donohue Response
Major equipment costs are based on project-specific quotes from manufacturers. These quotes were requested and received during the Preliminary Layout Design Phase. Prices for large or price-volatile equipment (e.g., electrical equipment) will be requested a second time during the Detailed Design Phase. Typically, the major equipment quotes we receive during the Design Phase are "soft" budgetary quotes, not bid-day competitive quotes. Bid-day costs for major equipment items are often 10-20% less than the cost quoted during design.

Statement 9
Should we approve a "not to exceed" cost?

Donohue Response
Of course the City will answer this question, but Donohue understands the current not-to-exceed project cost to be $80M. We will continue to advance the design of the Wastewater project with a keen focus on this budget, looking for cost-saving strategies and collaboratively working with the City to identify cost-reduction Alternate bid items. If the City elects to revise the project scope and budget, we will work to meet that budget.

Statement 10
Is the city capable of managing both capital projects at the same time? Who will that involve among the city's engineering and public works staff? Do we have sufficient resources to handle both?

Donohue Response
This can best be answered by the City; however, we can offer the experience of others. The project budgets provided for both the Wastewater and Water projects include Engineer budget for Construction Phase Services. These Services include construction administration, relieving the City staff of the associated burden, as well as commissioning/start-up assistance, training, and post-startup assistance. Most municipalities find it unnecessary to add staff during projects like these.

Statement 11
Is it safe to assume that the projects will contain construction time and budgetary incentives, as well as penalties for time and/or cost misses.

Donohue Response
The Bidding Documents will include penalties (Liquidated Damages) that the City can impose on the Contractor if they do not comply with Milestone dates. The CWFP does not allow incentive payments for

accelerated performance. Good contractors realize time equates to money, providing some inherent motivation to meet or exceed reasonable schedule requirements.