Call to Order

Roll Call

1. Introductions and Objectives
2. Phase II Project Packaging
3. Overview of Delivery Model Alternatives
4. Summary of Design Review Committee Survey Results
5. Understanding and Allocating Risk
6. Progressive Design-Build Deep Dive
7. Recommended Delivery Method
8. Next Steps

Adjourn

Next Meeting

Regular Council at 6:00 PM – Monday, May 6, 2019 - City Council Chambers

♦ Individuals, who require language interpretation or special assistance to accommodate physical, vision, hearing impairments, please contact the City Clerk’s Office at Nampa City Hall, (208) 468-5426. Requests should be made at least five (5) days prior to the meeting to allow time to arrange accommodations
The Issue

Selecting the correct delivery approach(es) for the Phase II/III Upgrades to the Nampa Wastewater Treatment Plant (WWTP) is a key decision in the overall success of the Wastewater Program. Procurement methods and their resulting delivery models take numerous forms, ranging from standard design-bid-build (DBB) techniques, through construction manager/general contractor (CM/GC), to several variations of design-build (DB). Each of the traditional and collaborative project delivery methods has its own attributes that generally differ in terms of allocation of risks and responsibilities, scheduling and schedule certainty, ownership, performance guarantees, and procurement complexity. The City may opt for a combination of delivery methods across various project packages within the Phase II/III Upgrades.

The intent of this City Council briefing is to provide background information ahead of the May 6th City Council presentation. This briefing summarizes the recommendation for project packaging, delivery model options, survey results from the Design Review Committee (DRC), and proposed delivery approach for the Phase II Upgrades.

Background and Analysis

The Phase II Upgrades at the Nampa WWTP represent a significant capital investment for the City. Determining the preferred project packaging approach and selecting an appropriate delivery model for each project is a key step in the successful delivery of the Phase II Upgrades. The following sections summarize the background and analysis for each stage of the delivery model and project packaging development process.

Project Packaging Background

The City’s approach to project packaging is critical to implementing Phase II Upgrades at the Nampa WWTP given the scope, complexity, and regulatory schedule requirements. Project packages divide the overall Phase II Upgrades into discrete projects of varying scope and contract size. The structure of the contract packages directly impacts the organizational commitments, project schedule, and the market acceptance for the Phase II Upgrades.

Nampa’s Wastewater Preliminary Design Team prepared options for contract packaging that sought to balance schedule, site conflicts, state revolving fund loan payback terms, organizational commitments and market acceptance. This analysis paired with feedback from the DRC resulted in the recommendation of five projects as part of the Phase II Upgrades. Figure 1, attached, shows the proposed project packages. The DRC-approved project packaging approach to Phase II Upgrades comes with the following considerations:

- **Schedule:** The size and complexity of the contract packages dictates the time needed for design and construction. Larger contract packages, such as Project Group F, will require multiple years to design and construct. In contrast, smaller contract packages, such as Project Group E will have a much shorter schedule with design and construction complete in approximately two years. The recommended approach allows for expedited completion of Project Groups D and E concurrent with the design of the more complex facilities in Project Group F.

- **Site Conflicts:** Multiple contractors working simultaneously on the site increases the risk of site conflicts and associated increased costs. The recommended approach limits the number of contractors onsite...
City Council Briefing: Nampa WWTP Phase II Upgrades Project Packaging and Delivery

during the periods of most intense construction activity (i.e. Project Group F). This reduces the potential for site conflict risks.

- **Organizational Commitments:** The amount of management and coordination required by the owner increases with every additional project being done. To the extent possible, the recommended packaging and delivery approach establishes manageable organizational commitments to execute the Phase II Upgrades by limiting the number of simultaneously executed project groups.

**Project Delivery Approaches Overview**

Project delivery and procurement methods have generally evolved from the traditional DBB approach as the “baseline” most commonly used by public entities. In recent decades, the various collaborative delivery methodologies have emerged as viable alternatives to traditional delivery. These alternatives to DBB seek to better allocate risk and responsibility, save time, and support a selection methodology beyond low-bid capital price. Four delivery methods for municipal wastewater projects were considered for the Phase II Upgrades: traditional DBB, CM/GC, Progressive Design-Build (PDB), and Fixed Price Design-Build (FPDB). These delivery models are discussed in more detail below.

- **Design-Bid-Build:** DBB has historically been the most common approach to developing public infrastructure projects. A typical DBB project involves the owner engaging one or more engineering firms to develop a detailed design and specifications. The owner then uses the detailed design and specifications package as part of a contract package to obtain bids from contractors. The contractor selected through the competitive bidding process is subsequently engaged to construct the facility in accordance with the bid price and schedule.

  Roles in a DBB project are normally very clearly defined. Design and project performance risks lie with the design team. Construction and scheduling risks lie with the contractor. Operations risk rests with the owner. However, contractors and operators may not have significant input into the design, which can contribute to change orders. Claims during construction are common, and the requirement for some redesign during construction exists, typically at the owner’s cost. In addition, design performance or lifecycle responsibility and risk is not typically transferable using DBB delivery.

- **Construction Manager/General Contractor:** CM/GC is also considered a traditional delivery model, albeit an improved approach where an intentional overlap is created between the engineer and the contractor, allowing the contractor to bring construction insight to bear as early as practical in the design process. This methodology maintains two separate contracts between the owner and the design and CM/GC firms, similar to DBB, but encourages collaboration during design to reduce risk once the contractor proceeds to construction in the field.

  While in conformance to most traditional procurement processes (where the engineer is selected using traditional professional services criteria), this method introduces the concept of contractor selection without a hard bid of the construction cost. Instead, contractors are generally selected based on their qualifications in combination with their proposed scope of services and fee for service prior to construction as well as their fee and overhead costs for construction services. The ultimate construction cost is developed during the design period, typically in an open-book fashion, and ultimately agreed upon as a “guaranteed maximum price” (GMP) or lump sum prior to authorizing the start of construction.

  While promoting collaboration early in the design process, the formal contract vehicles with separate agreements between the Owner and Engineer, and the Owner and Contractors are essentially unchanged compared to traditional DBB delivery. During construction delivery, traditional practices for managing contractor change orders, requests for information from the designer, and verification of construction performance remain unchanged.

- **Progressive Design-Build:** Progressive design build is a version of design-build, which is authorized by Idaho Code Ann. § 67-2309. In a progressive design-build procurement, a design-builder is selected based primarily on qualifications and, where local practice dictates, limited pricing information generally
similar to the CM/GC model with an added component of cost for design and preconstruction services (either in a lump-sum or on a not-to-exceed basis for this early work). As the design-builder develops the design, a construction cost estimate is progressively developed, often in conjunction with the 30- and 60-percent levels of design detail. Once the design is well advanced (beyond 60 percent and often up to 90 percent), a GMP is defined for approval by the owner. If the design-builder and the owner cannot reach agreement on an acceptable GMP or lump sum, the owner can use the completed design as the basis for a hard construction bid procurement. In this case, an “off-ramp” occurs and the project becomes more like a contract DBB, which may impact design ownership.

Progressive procurements are often preferred when a project lacks definition or final permitting or when an owner prefers to remain involved in the design process while leveraging the schedule, collaboration, and contractual advantages provided by a DB approach. This model is also valuable when regulatory permitting requires well-developed design solutions, or when an owner believes that it can lower cost by participating in design decisions and in managing risk progressively through the project definition phase. It is the owner’s responsibility (or its designee’s responsibility) to provide clear and consistent direction to the design-builder (or designer and contractor).

• **Fixed Price Design-Build:** Fixed price design-build is another version of design-build. In a fixed price design-build procurement, the procurement documents generally includes a conceptual design as a minimum and a 30 percent design (sometimes referred to as a “bridging” design) as a maximum. Requirements for a performance-based approach are stated as measurable performance objectives of the completed project rather than the specific approaches or processes the design-builder should follow to achieve those objectives. Requirements for a prescriptive approach rely on the pre-design documents as required templates for the design-builder.

A performance-based procurement gives a design-builder the flexibility to propose how they will meet the owner’s objectives, while requiring proposers to provide a lump sum, fixed price for completion of the project. Alternatively, owners may ask for a “target price” for construction that establishes a not-to-exceed construction price basis, while allowing the owner to collaborate on and adjust scope during detailed design definition. In this case, the “target” lump sum can be adjusted after award but only as directed via owner-approved scope changes. Except for these explicitly approved owner changes, the design-builder must conform to their originally proposed price. Thus, this option provides some confirmation of a set price for the project. This model is used to prompt industry’s most innovative and cost-effective solutions through what is essentially a design competition, typically in combination with a need to accelerate schedule.

**Design Review Committee Survey Results**

The DRC participated in a survey during DRC Meeting #4 designed to solicit feedback on specific aspects of project delivery to inform a delivery method determination. The same survey was administered to the City staff participating in the preliminary design process in December 2018.

The survey administered to the DRC and City staff is an objective method for evaluating delivery methods. Brown and Caldwell (BC) used an anonymous, interactive polling methodology to force-rank priorities relative to each other. This prioritization process is based on the premise that all identified issues are fundamentally important but that there is a degree of relative importance among them. Internal to each primary issue, the questions within each group were also all considered to be critical, important issues. Similarly, each of these issues is assumed to have a relative importance. Responses were also used to create a relative weighting for the primary issue groups as well as for the questions/issues contained within each group. Based on the responses to the survey, the following list indicates the priorities for the Phase II Upgrades delivery options. The numbers in the parentheses following the category indicate the relative weighting of the group on a scale from 0 to 100.
1. Getting the “best” value (71.1)
2. Clearly defining scope and configuration (67.0)
3. Establishing accountability for performance (59.9)
4. Retaining Nampa control and decision-making (57.9)
5. Getting the “best” price (56.9)

Within these priorities the following aspects of the delivery method carried the most weight within the overall evaluation and recommendation.

1. Considering the entire lifecycle versus just the capital cost
2. Seeing real cost versus just the price
3. Achieving quality and performance
4. Accommodating project complexity during design/construction
5. Focusing on operations to increase lifecycle efficiency
6. Requiring proven solutions to reduce risk
7. Coordinating among other projects and systems
8. Controlling and making design decisions
9. Integrating O&M expertise into the design process*

*Applicable to new construction projects.

Based on the identified priorities BC developed an assessment of the effectiveness of each delivery model in addressing each identified concern or objective. This assessment accounted for the relative importance of each issue in respect to the favorability (or unfavorability) of each potential delivery model. The output of the assessment ranked each delivery model relative to the others.

The results of the delivery method analysis indicate a preference towards the PDB delivery model for both new construction and rehabilitation projects. This preference is a result of several factors. First, there is an interest in cost transparency and the consideration of life-cycle costs within design and construction decisions. This lends itself towards the CM/GC and PDB delivery models. Second, there is an interest in maintaining input in the design process. This makes the FPDB approach less favorable. Finally, there is also an interest in assigning performance requirements to the designer, which lends itself to a PDB approach. This preference in delivery model applies primarily to larger, more complex project groups within the Phase II Upgrades. More traditional methods, such as DBB, are still considered viable approaches to delivering smaller, less technically complex projects.

**Progressive Design-Build Delivery Model**

The City has not used the PDB delivery model for any of the projects at the Nampa WWTP. Therefore, this section describes this delivery model in detail.

**Overview**

PDB delivery is a two-phase, collaborative delivery method where the project’s design, cost-estimating, construction schedule and final guaranteed maximum price (GMP) or fixed price are developed in phase one. Phase two encompasses the final design, construction and commissioning of the project. Phase two begins only if the City and the design-builder reach agreement on the schedule and GMP or fixed price.

The PDB model uses a collaborative relationship between the City and the design-builder. The PDB procurement stage uses the familiar two-step RFQ and RFP process to select a design-builder based primarily on qualifications. There is little project price definition and additional pre-construction services. The PDB delivery facilitates greater City input into the design process than other design-build approaches. This model uses
concurrent design development and construction cost estimation, with iterative cost estimates prepared that help “design to budget.” Once the City and design-builder agree upon a GMP or fixed price the project would advance to construction. If the design-builder and the owner cannot reach agreement on an acceptable GMP or fixed price, the owner can use the completed design as the basis for a hard construction bid procurement (i.e. the traditional DBB approach). In this case, an “off-ramp” occurs, and the project becomes more like a contract DBB, which may impact design ownership.

At the conclusion of construction, the design-builder is responsible for demonstrating the facility’s performance through an acceptance-testing procedure that is agreed upon with the City and included in the contract. Performance risk is borne by the design-builder until the City accepts the project, which represents the transfer of operation, maintenance, and performance risk to the City.

The PDB delivery model has some defining characteristics as compared to other, more traditional delivery models such as DBB and CM/GC as well as the FPDB model. The following sections describe these characteristics in more detail.

**City’s Role in Project Delivery Process**

The PDB model allows for greater owner involvement in project delivery compared to traditional design-build delivery methods. The City would follow an RFQ process to generate a short list of candidate design-build firms. The City next conducts interviews and selects the design-build firm based on qualifications, past performance, and limited pricing information. The design-builder and City would develop the project scope and detailed design together. This allows for continued input from the Nampa WWTP staff throughout the design process, similar to the traditional DBB delivery model. The design-builder also prepares the construction cost estimate progressively and in parallel to the detailed design development. The City would negotiate the price with the design-builder, manage the design-build contact, verify that performance guarantees have been met, and transition operations after the constructed project is accepted.

**Risk Transfer**

Project design risk is shared by the design-builder and the City because they work together during the design phase, with the City providing input to the design at specific milestones. This collaboration reduces risk of design decisions impacting constructability. Because of the single-point responsibility for the design-builder, design coordination risks are shifted to the design-builder, which distinguished PDB from DBB and CM/GC delivery methods. These risks often result in project changes in the DBB and CM/GC delivery methods because the designer’s liability is limited to the “standard of care” and the contractor’s liability is restricted to the as-bid construction documents.

The design-builder retains construction schedule risks, assuming the design reviews and other City responsibilities are met. The cost of the constructed project up to the GMP is the responsibility of the City, such as price escalation not explicitly addressed by the contract, owner-requested changes in scope, and changed conditions. Beyond the GMP limit, the design-builder is responsible for budget overages. The design-builder is responsible for project performance/acceptance. The quantity and quality of the facility effluent, which can be specified in the contract standards, is the responsibility of the design-builder to achieve.

The design-builder is responsible for demonstrating the facility’s performance through an acceptance-testing procedure that is agreed upon with the City during the contract negotiation or GMP/fixed price negotiation stages. The contract explicitly states these performance standards required for project acceptance. Performance risk is borne by the design-builder until the City accepts the project, which represents the transfer of operation, maintenance, and performance risk to the City.

The table below shows the risk transfer profile for the PDB delivery model as it relates to the Phase II Upgrades. The risk transfer profile for the DBB delivery approach is also shown for comparison. The risks with differing risk profiles between the delivery models are highlighted for convenience.
Table 1. Risk Transfer Profiles for PDB and DBB Delivery Models

<table>
<thead>
<tr>
<th>Risk</th>
<th>Progressive Design-Build</th>
<th>Design-Bid-Build</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Design-Builder</td>
<td>Owner</td>
</tr>
<tr>
<td>Project Design</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td>Coordination with Existing Facilities</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td>Quantity and Quality of Influent</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Quantity and Quality of Effluent</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Project Performance / Acceptance</td>
<td>X</td>
<td>Shared</td>
</tr>
<tr>
<td>Proprietary Processes or Equipment</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td>Schedule</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td>Cost of Constructed Project beyond GMP</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Site Conditions</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Construction Warranty</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Materials Cost Escalation</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

1 Adapted from the Water Design Build Council’s Water and Wastewater Design-Build Handbook (Fourth Edition)

Determining Project Price and Project Value

At the point when the City procures a design-builder firm there is little price definition. The selected design-builder prepares a fixed price or GMP for the project. The City can help select key subcontractors and equipment suppliers proposed by the design-builder and used in their cost estimation. The City and design-builder would collaborate to determine the team that will provide the most value.

During the design development, the construction cost is progressively developed by the design-builder often in conjunction with the 30- and 60-percent levels of design detail. The iterative, “design to budget” approach to cost estimates from the design-builder help ensure the project budget is not exceeded. As compared to the often single, value engineering step within a DBB or CM/GC model, this continuous price feedback allows the City to constantly evaluate decisions and adjust as needed to deliver the best overall project value.

After sufficient design definition is achieved, often around the 60- to 90-percent range, a proposed GMP or fixed price is prepared by the design-builder for City approval. There is an “off-ramp” in the event the City and design-builder cannot reach an agreement on the GMP or fixed price. The City could either renegotiate with a different design-build firm or opt to take the partially-completed design and proceed with a DBB procurement.

Performance Guarantees

Compared to traditional DBB and CM/GC delivery, the PDB model shifts performance risk responsibility from the City to the design-builder through performance guarantees. The PDB model involves an “acceptance test” where the design-builder must demonstrate the project meets performance standards established in the contract. The performance standards may be set in the initial contract or can be negotiated as part of the GMP or fixed price negotiations process. Performance standards can include hydraulics, effluent quality, quantity (volume) of treatment, and/or regulatory requirements. The acceptance test is typically performed over a 30-day period to confirm the performance standards can be achieved. The achievement of these standards can be a pass/fail test. If the project doesn’t pass, the design builder has the opportunity to make adjustments and re-test. If the performance standards are still not met after multiple acceptance tests, the design-builder is liable for liquidated damages or may have to invest in capital fixes to remedy the issues.
The Nampa WWTP Phase II Upgrades are proposed to be delivered as five distinct project groups using a combination of DBB and PDB delivery methods. Survey results from the DRC and City staff presented a preference in delivery model characteristics that align with the PDB delivery approach. Therefore, this is recommended as the delivery method for Project Group F, the largest and most technically complex portion of the Phase II Upgrades. The other project groups are proposed to be delivered using the traditional DBB approach. Table 2, below, summarizes the recommended project packaging and project delivery methods for the Phase II Upgrades.

### Table 2. Overview of Recommended Project Packaging and Delivery Approach to Phase II Upgrades

<table>
<thead>
<tr>
<th>Project Group Name</th>
<th>Project Group Components</th>
<th>Approximate Package Value</th>
<th>Delivery Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Group D</td>
<td>• Primary Digester No.5</td>
<td>$9.9M</td>
<td>Design-Bid-Build</td>
</tr>
<tr>
<td></td>
<td>• Waste Gas Burner (Flare)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Group E</td>
<td>• Renovation of the Laboratory and Administration Building</td>
<td>$2.9M</td>
<td>Design-Bid-Build</td>
</tr>
<tr>
<td>Project Group F</td>
<td>• New Aeration Basin No.4</td>
<td></td>
<td>Progressive Design-Build</td>
</tr>
<tr>
<td></td>
<td>• New Blower Building and Blowers</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Demo Trickling Filters, Secondary Clarifier</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New Tertiary Filtration Pump Station</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• New Tertiary Filtration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New Final Clarifier No.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Replace WAS and RAS Pumps</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• New Class A UV Disinfection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New Irrigation Reuse Pump Station and Forcemain 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New Industrial Reuse Pump Station and Forcemain 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New Internal Mixed Liquor Recycle Pumps 4</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Replace Final Clarifier Mechanisms</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Replace Post Aeration Basin Structure and Blower</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• New Digested Sludge Storage Tank</td>
<td></td>
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<tr>
<td></td>
<td>• Solids Facility Expansion</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• MCC Replacements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$126.4M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Group G</td>
<td>• Primary Clarifier 1 Structure, Mechanism, and Sludge Pump Repair</td>
<td>$4.5M</td>
<td>Design-Bid-Build 5</td>
</tr>
<tr>
<td></td>
<td>• Repairs for Headworks Facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Group H</td>
<td>• New Sidestream Treatment Facility</td>
<td>$12.4M</td>
<td>Design-Bid-Build 5</td>
</tr>
</tbody>
</table>

1. All costs are presented in escalated dollars based on current program schedules.
2. Contract values are based on programmatic cost estimates and include design and construction related costs. These estimates have a range of -30% to +50%, which is not reflected.
3. Approximate Contract Values do not include Programmatic Contingency.
4. Inclusion of scope items depends on decision to accelerate Recycled Water Program.
5. Project delivery approach may be changed in the future as project is further defined.
**Nampa Wastewater Program**

**Recommended Phase II Packaging**

April 2019

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**LEGEND**

- **Base Phase II Upgrades**
- **Accelerated Recycled Water Program Upgrades**
- **Existing Assets**
- **Project Group D**
- **Project Group E**
- **Project Group F**
- **Project Group G**
- **Project Group H**
Nampa WWTP Phase II/III Preliminary Design: Project Delivery Approaches

May 6, 2019

Agenda

1. Introductions and Objectives
2. Phase II Project Packaging
3. Overview of Delivery Model Alternatives
4. Summary of Design Review Committee Survey Results
5. Understanding and Allocating Risk
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8. Next Steps
Introductions & Objectives

• Team introductions:
  • Design Review Committee
  • City Staff
  • Preliminary Design Technical Team

• Presentation Objectives:
  • Present proposed Phase II Upgrades project packaging
  • Provide background on potential project delivery objectives
  • Present results of the DRC and City staff feedback on project delivery
  • Describe risk transfer and maximizing project value for progressive design-build projects
  • Recommend Phase II Upgrades project delivery approach

Phase II Upgrades: Project Packaging
Key Project Packaging Considerations

- Multiple options for how to deliver the Phase II Upgrades
- Project packaging needs to balance multiple criteria

Recommended Phase II Packaging

<table>
<thead>
<tr>
<th>Project Group Name</th>
<th>Project Group Components</th>
<th>Approximate Package Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Group D</td>
<td>Primary Digester No.5, Waste Gas Burner (Flare), Renovated Laboratory and Administration Building</td>
<td>$9.9M</td>
</tr>
<tr>
<td>Project Group E</td>
<td>New Aeration Basin No.4, New Blower Building and Blowers, New Tertiary Filtration Pump Station, New Tertiary Filtration, New Final Clarifier No.4, Replace WAS and RAS Pumps, New Class A UV Disinfection</td>
<td>$126.4M</td>
</tr>
<tr>
<td>Project Group F</td>
<td>New Irrigation Reuse Pump Station and Forcemain, New Industrial Reuse Pump Station and Forcemain, New Internal Mixed Liquor Recycle Pumps, Replace Final Clarifier Mechanisms, Replace Post Aeration Basin Structure and Blower, New Digested Sludge Storage Tank, Solids Facility Expansion, MCC Replacements</td>
<td>$126.4M</td>
</tr>
<tr>
<td>Project Group G</td>
<td>Primary Clarifier 1 Structure, Mechanism, and Sludge Pump Repair, Repairs for Headworks Facility</td>
<td>$4.5M</td>
</tr>
<tr>
<td>Project Group H</td>
<td>New Sidestream Treatment Facility</td>
<td>$12.4M</td>
</tr>
</tbody>
</table>
Spectrum of Collaborative Project Delivery Options

- Design-Build-Operate and P3 generally not appropriate at an existing, operating facility with current O&M staff in place.

Construction Management/General Contractor (CM/GC)

- Similar to traditional delivery, but can be faster.
- Allows traditional selection of Consulting Engineer.
- Design-build “lite” – with an “arranged marriage”
- Two contracts with Owner.
- Design and construction pricing in parallel.
- Familiar “cast” of participants.

The design is performed in parallel with the construction planning and estimating.

Construction can start after mutual agreement on price.
Progressive Design-Build (PDB)

- Concurrent activities reduce schedule - construction can start before design is complete
- Selection based on quals and fee, not a fixed price
- "Design to budget" via design and estimate iteration
- GMP, Lump Sum, and Shared Savings options
- Hard-bid "off-ramp" if construction pricing not acceptable

A single entity or purpose-built team to deliver both Design and Construction via a single contract.

Design detail and construction estimate is developed progressively.

Construction starts after mutual agreement on price.

Open Book, Fully Transparent Estimate and Spend

- Best when Owner wants design input and "design to budget"
- Design-build model that supports owner control of design, yet shifts performance guarantee to others
- Provides price certainty at mid- to late stage of design
- GMP determined at 60+% design; "off-ramp" provided if GMP agreement not reached
**Fixed Price Design-Build (FPDB)**

- Multiple variations - two-phase selection is common
- Lengthy procurement process, reduced delivery time
- The Proposal is essentially a “Design Competition”
- May use performance-based criteria or prescriptive criteria - or usually a balance of both
- Construction price fixed at selection

A single entity or purpose-built team to deliver both Design and Construction via a single contract.

Design detail and construction estimate provided as part of a fixed-price proposal.

Construction can start quickly after selection.

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**Fixed Price Design-Build**

Fixed, lump sum price and performance guarantee, but limited post-award flexibility and owner input.

- Best when Owner is looking for innovative, turn-key solution
- Design-competition model that rewards performance-based solution
- Proprietary, Closed-Book Estimate and Spend
- Development, Closed-Book Estimate and Spend
- Contingency
- Bid
- Proposal
- Award
- Complete the Design
- Construction

Lump sum bid can limit owner input and flexibility

Owner-changes open the door for re-pricing or diluting guarantees

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**Performance-based and Prescriptive Criteria**

- Implementation Plan
- RFP Process
- RFP Process
- Short List
- Review
- Select Design-Build
- Manage Design-Build Contract
- Transition Operations
- Operations

**Selection based on “best value” (technical + price)**

Short list based on capability, capacity, experience, references

**Proprietary, Closed-Book Estimate and Spend**

- Develop Design and Lump Sum Bid
- Internal Design-Change Tracking = Scope Management
- Owner Changes = Price Adjustment
- Lump Sum Price = Underrun/Overrun goes to Design-Builder
- No Change Orders (Except by Owner)

- 30% Design (typical)
- 60%-90% Design

Owner’s Budget

---

**Owner Changes = Price Adjustment**

- Contingency
- Bid
- Proposal
- Award
- Complete the Design
- Construction
What’s the Best Option for Nampa?
Objective-Based Delivery Method Selection Approach

1. Program-Wide PRIORITIES
   - Identify
   - Rank
   - Assess

2. Program-Specific RISKS
   - Define
   - Quantify
   - Assign

3. Market-Focused VALIDATION
   - Communicate
   - Listen
   - Refine

Program/Project NEXT STEPS
- Procurement Plan(s)
- Scope Definition
- Selection Criteria

Identify Priorities: Design Review Committee and Staff Survey Results
Identify Priorities

Program-Wide PRIORITIES
- Identify
- Rank
- Assess

Key Deliverables
- Terminology Definition
- Delivery Priorities Workshop
- Delivery Model Weighting

Identify Five Key Wastewater Program Priorities

Group 1: Clearly defining scope and configuration
Group 2: Establishing accountability for performance
Group 3: Retaining Nampa control and decision-making
Group 4: Getting the “best” price
Group 5: Getting the “best” value
Survey of Design Review Committee

- Top Five Program Priorities Related to Procurement Types
- For each key priority: five survey questions to identify key issues
- Surveys also ranked importance of the five Key Priority groups...and ranked the importance of the five issues within each Key Priority Group

5 Groups * 5 Questions Each = 25 Questions
5 Potential Responses to Each Question = 125 Data points

Alignment of Survey Questions to Delivery Methods

- Each Priority Group and each question assigned rankings against:
  - Design-Bid-Build (DBB)
  - Construction Management At-Risk (CMAR)
  - Progressive Design-Build (PDB)
  - Fixed-Price Design-build (Performance-based and Prescriptive)
- Delivery Method rankings are subjective, but informed by industry experience
- Rankings applied according to the survey weighting of each Priority Group and associated questions
## Five Key Wastewater Program Priorities...*ranked*

1. **71.1** Group 5: Getting the “best” value
2. **67.0** Group 1: Clearly defining scope and configuration
3. **59.9** Group 2: Establishing accountability for performance
4. **57.9** Group 3: Retaining Nampa control and decision-making
5. **56.9** Group 4: Getting the “best” price

### Delivery Model Rankings Graph

![Delivery Model Rankings Graph](image-url)
Summary Recommendations

- Design-Bid-Build does not align with Nampa priorities for larger, more complex projects
- Fixed-Price Design-Build does align with Nampa priorities for:
  - Input to the design
  - Insight to pricing detail
- CMAR is workable, but doesn’t address some complexities and performance requirements as well as PDB
- PDB is preferred from the outset, and surveys amplified preference
- There is minimal difference in survey results between rehabilitation scope and new construction scope

Risk: Define, Quantify, and Assign
Objective-Based Procurement Approach

Program-Wide PRIORITIES
- Identify
- Rank
- Assess

Program-Specific RISKS
- Define
- Quantify
- Assign

Key Deliverables
- Risk Register
- Risk Workshops
- Look-Back Exercise
- Risk Assignment Matrix

Objective-Based Procurement Approach

Design-Build Fundamental Shift in Risk Allocation

Traditional Risk Allocation

Scope
- Planning, consulting, design, engineering, design, services during construction.

Typically billed as billable hours.

Risk
- Standard of care, competence is assumed, but responsibility for total installed cost and performance ultimately transferred to the owner.

Performance-Based Risk Allocation

Scope
- Equipment, materials, construction, startup, and construction warranty.

Typically bid as a fixed price.

Risk
- Conformance with as-bid documents, verified by a third-party, independently tested where appropriate, and managed through a quality compliance mechanism.

Single Entity or Consortium

Scope
- A turnkey project, inclusive of all scope from design through construction, and sometimes short- or long-term O&M.

Projected fee on actual cost (Progressive) delivered on a GMP or lump sum basis, or a fixed price.

Risk
- Commitment to performance within a contractually defined set of input and output parameters.

Defined Deliverables

Defined Project Performance
Risk Allocation

**Traditional Design-Bid-Build**
- Engineer designs to “standard of care”
- Contractor responsible for building the project according to the as-bid documents
- Performance risk belongs to City

**Progressive Design-Build**
- Performance guarantees shift risk from the City
- Project design risk shared by design-builder and City
- Design-builder liable for performance risk
- Acceptance test performance standards agreed upon between the Design-Builder and City prior to construction
- Design-builder responsible for budget overages beyond GMP

### Risk Transfer Profile

<table>
<thead>
<tr>
<th>Risk</th>
<th>Progressive Design-Build</th>
<th>Design-Bid-Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination with Existing Facilities</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td></td>
<td>Owner</td>
<td>Contractor</td>
</tr>
<tr>
<td></td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td></td>
<td>Owner</td>
<td>Owner</td>
</tr>
<tr>
<td>Influent Quantity &amp; Quality</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Owner</td>
<td>Owner</td>
</tr>
<tr>
<td>Proprietary Processes or Equipment</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td></td>
<td>Owner</td>
<td>Owner</td>
</tr>
<tr>
<td>Schedule</td>
<td>Shared</td>
<td>Shared</td>
</tr>
<tr>
<td>Site Conditions</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Construction Warranty</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
### What changes?

<table>
<thead>
<tr>
<th>Risk</th>
<th>Progressive Design-Build</th>
<th>Design-Bid-Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Design</td>
<td>Shared</td>
<td>X</td>
</tr>
<tr>
<td>Effluent Quantity &amp; Quality</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Project Performance/Acceptance</td>
<td>X</td>
<td>Shared</td>
</tr>
<tr>
<td>Cost of Constructed Project beyond GMP</td>
<td>X</td>
<td>Shared</td>
</tr>
<tr>
<td>Materials Cost Escalation</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

**Highlights:**
- Project design risk is shared because design-builder and City work together during design phase.
- City provides input at specific design milestones.
- Collaboration reduces design decisions impacting constructability.
- DBB and CM/GC methods limit designer’s liability to “Standard of Care”
### What changes: Effluent Quantity and Quality Risk

<table>
<thead>
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<th>Design-Bid-Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effluent Quantity &amp; Quality</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Highlights:**
- Performance risk for system is shifted to Design-Builder
- Beneficial for meeting stringent effluent limits

### What changes: Project Performance Risk

<table>
<thead>
<tr>
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<th>Design-Bid-Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Performance/ Acceptance</td>
<td>X</td>
<td>Shared</td>
</tr>
</tbody>
</table>

**Highlights:**
- Design-builder responsible for demonstrating facility's performance
- Often demonstrated via 30-day acceptance test
- Procedure for acceptance-testing is agreed upon by City and design-builder during contract negotiations
- Failure to pass test → Design-builder liable for capital repairs
What changes: Cost Risk

<table>
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<th>Design-Bid-Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Constructed Project beyond GMP</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Highlights:**
- Collaborative delivery achieves cost risk transfer that DBB delivery cannot
- Constructed project cost, up to Guaranteed Price $\rightarrow$ City responsibility
  - E.g. owner-requested changes in scope, price escalation not accounted for in contract
- Constructed project cost, beyond Guaranteed Price $\rightarrow$ Design-Builder responsibility
- Pre-construction services aim to limit Guaranteed Price exceedances

Progressive Design-Build Deep Dive
Progressive Design-Build Procurement Process

- Two-step procurement process
  - Request for Qualifications: Shortlist qualified teams
  - Request for Proposals: Technical approach to work
- Procurement focused on finding team to provide best value
- Selection criteria
  - Qualifications
  - Approach
  - Price
- City procurement effort reduced compared to traditional design-bid-build
  - One contractual relationship vs. two contractual relationships

Progressive Design-Build Delivery Phases

**Phase 1**
- Project Design (60-90%)
- Cost Estimating
- Construction Schedule
- Guaranteed maximum price (GMP) or lump sum

**Phase 2**
- Begins only if agreement on schedule and GMP/lump sum is reached
- Final Design completion
- Construction
- Commissioning
Performance-based and Prescriptive Criteria

### Performance

**“This is how it must perform”**

**The Owner Defines:**
- Treatment process inputs/outputs
- Site boundaries and constraints
- Facility functional standards
- Equipment performance schedule
- Acceptable materials standards

**Procurement Emphasizes:**
- Clarification of Owner’s intent
- Confirmation that required standards will be reliably met

**Evaluation Promotes:**
- Innovation to increase value
- Balance between price and robustness of design approach

**Design-Builder Commits to:**
- Applicability and feasibility of required standards

**“This how it must perform, with some specific preferences”**

**The Owner Specifies:**
- Process parameters and specific constraints or requirements
- Site boundaries minimum functional restrictions
- Required equipment and materials by exception only

**Procurement Emphasizes:**
- Understanding of Owner’s intent and basis of specific requirements
- Confirmation of overall approach and validation of conformance where applicable

**Evaluation Promotes:**
- Innovation to increase value
- Balance between price and robustness and conformance of design approach

**Design-Builder Commits to:**
- Applicability and effectiveness of the Owner’s requirements

### Prescriptive

**“This is exactly what I want”**

**The Owner Requires:**
- Specific treatment process
- Acceptable site layout
- Detailed facility configuration
- Specific types of equipment
- Schedule of acceptable materials

**Procurement Emphasizes:**
- Documentation of Owner’s requirements
- Validation of conformance

**Evaluation Promotes:**
- Lowest conforming price
- Incremental improvements to owner’s required design

**Design-Builder Commits to:**
- Applicability and effectiveness of the Owner’s requirements

### Hybrid

**“This is how it must perform, with some specific preferences”**

**The Owner Specifies:**
- Specific treatment process
- Acceptable site layout
- Detailed facility configuration
- Specific types of equipment
- Schedule of acceptable materials

**Procurement Emphasizes:**
- Documentation of Owner’s requirements
- Validation of conformance

**Evaluation Promotes:**
- Lowest conforming price
- Incremental improvements to owner’s required design

**Design-Builder Commits to:**
- Applicability and effectiveness of the Owner’s requirements
Performance-based and Prescriptive Criteria

**Performance**

“This is how it must perform”

**Best Practice:**
Constrain potential solutions only as necessary to maintain required standardization or to eliminate risky, totally unproven technologies.

**Design-Builder Commits to:**
- Applicability and feasibility of required standards

**Hybrid**

“This how it must perform, with some specific preferences”

**The RFP Defines:**
- Process parameters and specific constraints or requirements
- Use feasibility and functional restrictions
- Required equipment and materials by exception only

**Proposed Process Emphasizes:**
- Understanding of Owner’s intent for focus of specific requirements
- Communication of overall approach
- Validation of conformance to requirements

**Evaluation Method Promotes:**
- Innovation to increase value
- Balance between price and robustness and conformance of design approach

**Prescriptive**

“This exactly what I want”

**Best Practice:**
Define prescriptive requirements by exception only when clearly needed to maintain compatibility, integrate with existing systems, or avoid known, documented risks.

**Design-Builder Commits to:**
- Applicability and effectiveness of the Owner’s requirements

Establishing Project Performance Parameters

City establishes influent criteria for secondary treatment system

Progressive Design-Builder allowed to optimize to meet performance criteria

City establishes performance criteria for Recycled Water to Phyllis Canal
Comparison of Competitive Project Pricing Approaches

**Traditional DBB Model**
- Engineer-prepared capital cost estimates at design milestones
- True project price established at bid (plus future change orders)
- Value engineering used during design to control costs, but costs are still unknown

*Bid to Design*

**Progressive Design-Build**
- Multiple opportunities for project pricing refinement
- Value engineering embedded in all steps of design process
  - Continuous cost estimating
  - Early contractor involvements
- City engaged with Design-Builder in price development

*Design to Budget*

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**Progressive Design-Build “Design to Budget” Approach**

- Concurrent design development and construction cost estimation
- Iterative approach – “the squiggly line” to GMP

- Construction cost progressively developed at design milestones
- Continuous price feedback
GMP or Lump Sum

- Proposed Guaranteed Maximum Price (GMP) or Lump Sum prepared after sufficient design and cost definition achieved
  - Often 60% or 90% design stage
- Phase 2 does not begin without a Guaranteed Price agreement between City and Design-Builder
- The Guaranteed Price can be treated as a GMP or LS going forward (at the City’s option)
- There is a City-option “Off-ramp” in the event a Guaranteed Price agreement is not reached
Phase II Project Packaging and Delivery Method Recommendation

Nampa Wastewater Program
Recommended Phase II Packaging

LEGEND
- BASE PHASE II UPGRADES
- ACCELERATED RECYCLED WATER PROGRAM UPGRADES
- EXISTING ASSETS
- PROJECT GROUP A
- PROJECT GROUP B
- PROJECT GROUP C
- PROJECT GROUP D
- PROJECT GROUP E
<table>
<thead>
<tr>
<th>Project Group Name</th>
<th>Approximate Package Value¹,²,³</th>
<th>Delivery Model</th>
<th>Approximate Schedule</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Project Group D   | $9.9M                          | Design-Bid-Build | Design: May – Nov 2019  
Bid: Nov 2019 – Jan 2020  
Construction: Feb 2020 – April 2021 | The City has elected to use the PGC design team for the PGD design given the efficiency gains and project schedule. |
| Project Group E   | $2.9M                          | Design-Bid-Build | Procurement: Aug – Sep 2019  
Design: Oct 2019 – Mar 2020  
Bid: Mar – May 2020  
Construction: June 2020 – June 2021 | |
| Project Group F   | $126.4M                        | Progressive Design-Build | Procurement: Sep 2019 – March 2020  
Design-Build Execution: 2020 – 2025 | |
| Project Group G   | $4.5M                          | To Be Determined | Design: 2023  
Construction: 2024-2025 | Schedule is set by SRF loan repayment terms. |
| Project Group H   | $12.4M                         | To Be Determined | Design: 2023  
Construction: 2024-2025 | PGH could be accelerated or added to PGF. |

¹ All costs are presented in escalated dollars based on the current program schedules.
² Contract values are based on programmatic cost estimates and include design and construction related costs. These estimates have a range of -30% to +50%, which is not reflected.
³ Approximate Contract Values do not include Programmatic Contingency.

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**Phase II Upgrades: Projected Spend by Fiscal Year**

![Graph showing projected spend by fiscal year for Phase II upgrades](image-url)
Next Steps

Program Packaging and Delivery Decision

May 20th – Public Hearing on Proposed Program Packaging and Delivery
PGD and PGE Procurements

- Project Group D Procurement
  - Final Preliminary Engineering Report – May 24th
  - Final Design: June 2019 – Dec 2019
    - Sole-source final designer for services during construction (Stantec)
  - Contractor Procurement: January 2020 – February 2020
- Project Group E Procurement
  - Final Preliminary Engineering Report – June 28th
  - Final Design: October 2019 – April 2020
    - Select architect off City’s Architectural Roster
  - Contractor Procurement: April 2020 – June 2020

Objective-Based Delivery Method Selection Approach
Inform and Survey the Market

Market Sounding Questions – Topics for Discussion with Participants

The questions have been categorized into four broad areas:
- Interest and Market Capacity
- Project Considerations
- Financial Questions
- Other

Part 1 – Interest and Market Capacity

1. What’s your level of interest in the project? (for example: design, build, operation and maintenance, debt financing, equity investing, all of the above, etc.)
2. What issues will influence your decision to participate in the project? Do you consider the project a high or low priority for your organization?
3. What other projects in the market will you be considering at the same time that would be competing for resources with this project and what is the time horizon for your decision?
4. How do you think the project fits into your organization’s overall strategy for growth and development?
5. What’s the minimum return required, and to bid on this project, to be attractive for you? (Project construction costs approximately $200 million including engineering and construction costs)
6. Over the Project lifetime, the construction and operation of water, wastewater treatment facilities and water distribution systems, you see challenges in maintaining, if it ever happens, with contractors and subcontractors at selecting, do you think the project offers opportunities for large engineering and construction contracts?
7. Are you familiar with this infrastructure/development process? How did you gain your familiarity with this type of project?
8. Are there any other issues that are critical to your participation in this Project that you can foresee? What are you interested in bidding on the project?

Project Delivery Method

Q1: How would you separate design and construction procuring using a Construction Management at Risk (CMAR) impact your interest and funding strategy for the project?
(a single response to the question was required; results tied to $20M)

- 15% Decrease
- 40% About same
- 27% Increase
- 8% Significantly increase
- 4% “It depends” (via written response)

Summary: separate design and construction procurements are preferred by a small margin, but the most common response was “no preference.”

Q2: How would the inclusion of the design and construction scope in a single design-build procurement impact your interest and funding strategy for the project?
(a single response to the question was required; results tied to $20M)

- 12% Decrease
- 42% About same
- 19% Increase
- 28% Significantly increase
- 4% Not interested

Summary: for those expressing a preference, a combined design-build contract is preferable to separate design and construction contracts.

Q3: How would the inclusion of operations and maintenance scope in either a CMAR or design-build approach impact your interest and funding strategy for the project?
(a single response to the question was required; results tied to $20M due to rounding)

- 4% Significantly Decrease
- 27% Decrease
- 50% About same
- 12% Increase
- 4% Significantly increase
- 4% “It depends” (via written response)

Summary: Opinion around the inclusion of O&M scope is “about the same” for most respondents, but there is some decreased interest for those respondents who are expressing a preference.

Thank you!