

Edmonds School District 2020 GC/CM Recertification Application Appendix 1. Lessons Learned as of May 28, 2020

1. **GC/CM requires significant Owner participation** – The GC/CM procurement method can produce major benefits, but requires significant Owner participation. The GC/CM process is very different from Design/Bid/Build and involves a steep learning curve for Owners. For example, Design/Bid/Build contracts are usually Lump-Sum cost basis, with monthly payments based on percentage complete of the Schedule of Values. Most GC/CM contracts also use the Schedule of Values to make monthly payments, but the underlying cost structure is Cost-Plus with a Maximum Limit. The Cost-Plus structure requires an understanding of the multiple cost categories and careful monitoring. (See the discussion of the Cost/Responsibility Matrix in item #7 below.) Even if the Owner has a qualified project management consultant, they need to stay involved to make informed decisions. If they do not stay close to the process they will miss opportunities to add value, and may delay critical decisions.
2. **Involving the GC/CM at the earliest stage maximizes value** – The best opportunities to control cost and schedule, and to maximize value occur in the early stages of design. The Edmonds School District engages the GC/CM at the same time as the Architect to form a collaborative team and approximate the Integrated Project Delivery (IPD) model. We begin the process with an open discussion of each team member's goals, opportunities and risks. The team creates a Target Cost Model and Master Schedule at the beginning of Conceptual Design. We update the Cost Model and Master Schedule at every design phase meeting. Using this continuous cost analysis approach allows to team to align the design with best construction practices and volatile market conditions. The cost estimate reconciliation at the end of each design phase has become a simple, quick validation exercise, rather than a painful scope reduction negotiation.

This GC/CM – IPD approach not only has kept the District's projects on schedule and under budget, but also directly supports all parties, Owner, Architect and Contractor, in meeting their goals. The School District has been able to maximize the qualitative features that enhance learning and also improve the durability and maintainability of its facilities. As described below, the District has been able to greatly expand the scope of several projects as a direct result of this delivery method. Our Architects have been able to implement their design visions within project constraints. Our Contractors have been able to better manage risk in keeping with the business objectives.

3. **Agency Status enhances both Project and Program Management** – The Edmonds School District has on-going facility needs that vastly exceed the capacity of any bond measure or other funding source. The District has nearly two dozen schools that are more than fifty years old and are obsolete for current educational practice. Our elementary grade enrollment is significantly over capacity. The District's Bond Committee recently identified \$1.7 Billion in high priority needs. This system-wide imbalance of needs and resources requires program-wide management of all construction projects. Agency status has enhanced our ability to implement Integrated Program/Project Delivery (IPPD).

The District's 2014 Bond program illustrates the benefits of IPPD. Most of the \$275 M. of the 2014 measure was needed to meet previous commitments to replace Alderwood Middle School, Lynndale Elementary, Madrona K-8, and our Maintenance and Transportation

Center. Although the District had many worn-out and overcrowded elementary schools, the funds remaining in the bond proposal were sufficient only to make small additions and renovations at three elementary schools and purchase relocatable classrooms. A schedule complication was a shortage of interim sites to house students while their school was being replaced.

The GC/CM-IPD approach allowed the District to complete its committed replacement projects without depleting the bond program reserve. This reserve, together with revenue from property sales, State Construction Assistance, and other difficult to predict sources (e.g. interest earnings) was almost enough to fund replacement of the three elementary schools slated for small additions/renovations. However, the schedules of all of the committed replacement and addition/renovation projects overlapped. Given that construction escalation from any delay would reduce the feasibility of converting addition/renovation projects to full replacements, it was critical to manage both budget and schedule at the program level. IPPD allowed the District to control time and cost for all these projects and deliver significantly more than original cost estimates suggested.

4. **There is a significant pool of Contractors, Architects/Engineers, CM consultants and Owners experienced in GC/CM** – In the decade that the Edmonds School District has been using GC/CM, the number of firms and individuals working in the K-12 Education Sector who have GC/CM experience has increased greatly. There has been a parallel growth in sophistication among the entities using this delivery method.
5. **There will be personnel changes over the life of the project** – On virtually every GC/CM project the Edmonds School District has conducted the GC/CM's Superintendent who handled the construction phase was different from the one who participated in the selection interview. Some other GC/CM and Architect staff have changed over the course of our projects. In most cases, individuals left the project because they left the involved firm. Firms have responded by providing other well-qualified staff. Our contract documents give us an approval role in such cases. We endorse a collaborative approach in such situations.
6. **Permitting is a major scheduling issue** – The Edmonds School District serves multiple jurisdictions, i.e. Edmonds, Lynnwood, Mountlake Terrace, Brier, Woodway, and portions of unincorporated Snohomish County. Each of them has different development regulations and procedures. Each of these jurisdictions found it challenging to staff-up after the 2008 recession. They now find it difficult to keep up with the current volume of work. Colleagues at other School Districts report similar circumstances. Even with their best efforts, permitting agencies often are unable to commit to review schedules that meet project needs. The GC/CM-IPD approach has helped mitigate the impact of such uncertainties.
7. **Project Management Tools Can Improve the Project** – The Edmonds School District uses a number of tools to manage its GC/CM projects. The Integrated Project Delivery (IPD) mindset described above is probably the most important. No delivery method can eliminate all risk for all parties. However, an open analysis and discussion of risks can reduce them, and focus team efforts on improving the project. We establish a collaborative tone from the beginning and carry it through all project phases.
One tool that helps create collaboration from the beginning of the project is the Cost/Responsibility Matrix which is a component of the GC/CM contract. The Matrix assigns

every type of project charge to one of the cost categories allowed in the contract, e.g. Fee, Specified General Conditions, Negotiated Support Services, GC/CM Contingency. (A sample Matrix is included as Appendix #2) During the selection process, the Matrix helps create a common understanding for pricing Specified General Conditions and Fee. For administering the project, the Edmonds School District uses a third-party auditor to review the cost categories with the GC/CM and School District personnel who process billings early in the project and periodically during construction. The Auditor audits the entire project at the end of construction. This approach has been valuable for cost control.

The Edmonds School District uses a number of tools during the Design Phase that carry over into the Construction Phase. We use a third-party cost estimator to create a cost model based on a site-specific 3-D conceptual design prior to the selection of the Architect and GC/CM. During design, our cost estimator works with the entire team to review and update on a continuous basis the project cost model prepared by the GC/CM. Our cost estimator works with the team through construction as needed. Similarly, the entire project team, including the District's third-party scheduling consultant, develops an overall master schedule, using pull-planning and other techniques. The team reviews and updates the schedule continuously throughout all phases. During construction, the team reviews the GC/CM's detailed CPM schedule, e.g. Primavera with the assistance of the District's scheduling consultant. During design the team uses Bluebeam Studio sessions for constructability review. During construction we use the same tool to handle changes and clarifications of the design. This technique has expedited reviews and vastly improved communications.

During Construction we use cloud based web application for 360 degree images shared with Owner, Architect and Contractor such as Materport, Earthcam, Oxblue or similar tools to augment as-builts. Our Maintenance Department receives great value from this documentation. We structure the training for systems and equipment to give users multiple sessions per subject. This approach creates a better understanding on the part of the individuals operating and maintaining the facilities.