

PROJECT JUSTIFICATION

Complex Schedule / Phasing

While the three fire stations are separate facilities, the City views them as one project due to the critical nature of the facilities and the emergency response times. Three of the four current fire stations (51, 52, and 54) are seismically deficient and need to be relocated within a couple of years to respond to community emergencies in a manner that meets the National Fire Protection Association standards. Meeting this schedule requires significant organization and planning from design through construction. A collaborative relationship between the City, Architect, and Contractor is essential to executing these complex scheduling and critical phasing efforts. The design-bid-build delivery method—with the potential for three separate general contractors—would pose significant risk to these efforts.

Complex and Consistent Systems

The complexity of these stations comes from both the nature of the program, and the desire to maximize the benefits to the City from building three new stations at one time. Fire stations involve mechanical, electrical, and communications systems that are unique and critical to the success of the operation of the facilities. Since the stations function 24-7 as first responder facilities, these systems need to be particularly robust and not require frequent or involved maintenance procedures. They also must be constructed with firefighter health and safety in mind, particularly cancer, MRSA and other disease prevention strategies that are incorporated into design, mechanical systems and other strategies. As is the case with many public agencies, Tukwila does not have an extensive maintenance staff available to quickly address any problem that may arise, so building systems need to be easy to maintain and consistent for them to quickly return the stations to full operations after any setback.

If three different design-bid-build contractors with three different mechanical subcontractors were to build the new fire stations with the exact same specifications, the City would end up with three different mechanical schemes—each installed with varying levels of familiarity and skill. By utilizing the GC/CM process, as well as bringing the electrical and mechanical subcontractors on board early, the design team and City maintenance staff have the opportunity to decide on one set of systems that the design team believes is the right fit, the contractor is confident they can install correctly, and the maintenance team can familiarize themselves with even before the buildings are completed. From a maintenance perspective, Tukwila will effectively have one new building, divided into three locations, making their operations run much more smoothly throughout the life of the three stations. Due to the complexities of the project type and building systems, the use of EC/CM and MC/CM might be a viable option for this project.

Real Time Cost Estimating / Escalation Awareness

Utilization of the GC/CM process will assist in completing the project in an expedited manner, reducing the impact of the current volatile cost escalation experienced throughout the state of Washington. We will be able to procure early bid packages and complete some of the early site construction work that can be concurrently executed while the design team is completing the construction documents phase of the project.

Site Evaluation

As mentioned previously, the City owns the site for the future Station 51 and is in the process of identifying potential sites for Stations 52 and 54. A GC/CM would be indispensable in helping determine the different development costs associated with the available sites. While the architect and estimating team will be assisting in that process as well, the GC/CM could bring real time pricing information and construction expertise that will identify the risks of unforeseen conditions, laydown area constraints, material delivery route strategies, etc., to be able to aid in selection of the optimal property with the least amount of associated risks and development complications.

The site selection and acquisition process is underway identifying potential sites. Station 51 will be constructed at a site on vacant land already secured by the City with the current station open and operating until the new station is complete. It is anticipated that the new location for Station 52 will be a site purchased by the City for the that purpose. Any occupants will be permanently relocated prior to beginning construction. The current Station 52 will remain operational until the new station is complete. Station 54 will be in the same vicinity as the current station. The current location is a strong option for the new Station 54. If this location is ultimately chosen as the best option, it may require temporary facilities for Station 54 during construction and significant logistical efforts to maintain adequate operations and a safe construction environment.

GC/CM Support During Design Phase

The GC/CM's involvement during the design phase is especially critical in our current regional construction market, where cost escalation is high, subcontractors and suppliers are at capacity, and bidding conditions are unpredictable. Involving the GC/CM and select subcontractors during the design process will allow the design team to vet their assumptions with the construction team, minimizing both potential constructability issues and eliminate unnecessarily costly solutions. Because Station 51 will be designed first, the design team can work out many of these issues and have real-time costs associated with them by means of early design estimates, calibrating the designs to both the contractor's strengths and the market conditions before applying those solutions to the two subsequent stations. The GC/CM's involvement during design will also provide value to the owner in the form of constructability reviews, value analysis, construction document quality control, and other design phase deliverables. This process will allow the entire design phase for the three stations to be compressed and reduce the need for lengthy and complicated value engineering exercises at the end of design, enabling an earlier start to construction and saving the City a significant amount of money in price escalation. GC/CM involvement during design is even more critical during this time of significant market escalation and will help the City achieve its budget and schedule goals.

Technical Work Environment

Each of the three new fire stations will have a unique set of site conditions that require early and consistent intervention on the part of the contractor to ensure project success.

The first phase, Station 51, will be built on a site with a particularly high-water table and dense soils, making de-watering during construction – currently scheduled to begin in the winter months – more critical and difficult. Although the precise sites for Stations 52 and 54 have not yet been secured, the list of target sites for each station share certain attributes. It has been determined that Station 52, the future headquarters and largest station, needs to be located on a parcel either directly adjacent to Southcenter Boulevard or on the northern edge of the existing City Hall campus, also located on Southcenter Boulevard. This area is very hilly, while fire stations require large areas of flat ground to accommodate the circulation of their apparatus. The construction of this station will therefore involve a great deal of re-grading and retaining wall construction, which is difficult in a developed and highly-trafficked area. Each of these sites will also require meticulous construction scheduling and traffic control planning in order not to negatively impact the main arterial into commercial Tukwila, the busy civic campus, or the adjoining dense residential areas. The potential sites for Station 54, on the other hand, are all flat parcels clustered in a lower density residential area in the vicinity of Foster High School. These sites will require just as much attention to and control over the schedule and traffic conditions around the site, as well as the management of the increased risk of noise and dust impacts on the nearby residents. It is highly likely that all sites will also need additional traffic control measures to be installed for fire station operations and public safety, which require a high degree of coordination to implement.

By utilizing the GC/CM delivery method, the City greatly increases its chances of hiring a sophisticated general contractor who will have the experience and organizational bandwidth to manage three complexes, yet very different, sets of site constraints, further ensuring successful and cost-efficient projects.