

A Case Study in Progressive Design-Build: NMRFA Headquarters Fire Station 21

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Since its construction in 1971, the North Mason Regional Fire Authority's (NMRFA) headquarters fire station has gone from providing emergency response services over an area of 36 square miles to 132 square miles, and the number of annual calls has grown tenfold. To better serve the expanding community and the Authority's operations for the next half century, the NMRFA undertook a progressive design-build (PDB) project to deliver a new headquarters fire station, supported by a \$10 million bond measure.

The project team constructed the new Headquarters Fire Station 21 on 3.5 acres of land adjacent to the former fire station in Belfair, WA, on Old Belfair Highway. The new facility is approximately 21,000 SF and accommodates both daytime and overnight staff with a kitchen/dining area, fitness room, day room, sleeping quarters, administrative spaces, and indoor training facilities. An attached apparatus bay houses fire engines, command vehicles, and ambulances. In addition to the new building, the project also involved utility connections, landscaping, and other site improvements.

Through the efforts of the entire project team, the facility was delivered on time and within budget in early 2022. The project's success demonstrates the effectiveness and flexibility of PDB delivery on projects with tight schedule and budget constraints. The project also offers examples of how derive exceptional value from PDB delivery.



GETTING APPROVALS & PROJECT KICK-OFF

While PDB offers many advantages, including thorough risk evaluation and distribution and reductions in overall project price and schedule, it is still an alternative delivery method. Public owners often have to pursue state approvals to use PDB or other alternative delivery methods for their projects. This approval process can delay time-sensitive work.

The NMRFA's primary goal for their fire station project was delivering the work in the shortest timeframe possible to provide broader and more efficient emergency and life-safety services to the surrounding community with the least possible burden on the taxpayer. To reduce risk related to design and construction, save time, and save money, the NMRFA wanted to use PDB delivery. However, the NMRFA first had to attain State of Washington Capital Projects Advisory Review Board Project Review Committee approval. Additionally, as this was the NMRFA's first PDB project, the Authority was faced with novel procurement and pre-project planning challenges.

To help, the NMRFA hired Hill International, Inc. as owner's project manager. Hill provided project management and PDB

advisory services, helping attain State approval to use PDB and facilitating PDB procurement. Experienced management support at this early stage helped the NMRFA refine their decisions about delivery method and initiate a PDB project with more confidence. Since the Hill team was familiar with state approval procedures for alternative delivery methods, as well as with the local construction market and PDB procurement best practices, the NMRFA was able to save time and launch the project as efficiently as possible.

PDB ADVANTAGES REALIZED

Design

After NMRFA finalized procurement, the PDB team - including contractor TRICO Construction, designer Architects West, specialty architects Perlman Architects of Arizona, and other specialty consultants - began refining the scope and working out the design. The \$10 million budget was identified at the project's outset, and the design was developed using a Target Value Design process. Despite significant post-pandemic market volatility, the team was able to prioritize critical scope items and identify areas of flexibility to keep the design within the established budget.

One of the primary goals of the project was delivering a facility that enabled quicker response times to the Authority's 132 square mile service area in Mason County. Plus, the NMRFA required space to house enough personnel to match County growth over the next 50 years. The PDB team worked closely with the NMRFA during design to shave seconds off response times and build big while meeting NMRFA requirements and without breaking the budget.

Using their experience with similar rural fire stations and through collaboration with the rest of the PDB team, Architects West and Perlman Architects achieved a design that reduced the fire station's response time by leveraging the latest in fire station design, including quick-release apparatus bay doors for rapid egress of emergency vehicles and a floorplan that facilitates crew movement. The new station is also much larger than the former building, at approximately 21,000 SF. Its communal and administrative spaces are ample and comfortable, allowing for ease of circulation.

Construction

The integrated nature of PDB delivery allowed the whole team to collaborate and promote top-quality performance during construction. From the outset, TRICO and Hill worked closely


with the design team to confirm constructability and organize efficient logistics. This helped ensure there were no snags during construction. Hill also worked with TRICO to prepare early construction packages to advance the project while design was still underway.

As project manager, Hill provided project management, construction management oversight, inspections and testing, risk management, external reviews, and other additional services as needed. In this way, Hill helped identify, manage, and mitigate project risks and verified technical and contract requirements, including focusing on key PDB metrics for safety, cost, and schedule performance.

In addition, the whole team collaborated to establish a safety program for construction. As the project was adjacent to the existing, active fire station, and the new building shares a parcel with a home, all work, deliveries, and traffic had to be coordinated to ensure safety for construction workers, fire station employees, homeowners, and the public. During construction, TRICO and Hill conducted walkthroughs to verify adherence to the safety program. In addition, Hill's safety professional reviewed the PDB team's safety program and helped keep the team abreast of changing COVID-19 guidance during the pandemic.

Together, the whole team's efforts contributed to on-time and on-budget construction, in accordance with the NMRFA's vision.

THE POWER OF PDB

By successfully acquiring State of Washington Capital Projects Advisory Review Board Project Review Committee approval to use PDB delivery and then by leveraging the unique advantages of PDB, the team was able to deliver an outstanding and highly functional fire headquarters facility with a tight budget and in a rapid timeframe. The project helps ensure the community of North Mason County has a state-of-the-art fire station designed to handle the challenges of fire emergency and rescue services for years to come. More, the project demonstrates the power of PDB and alternative delivery methods at the level of local government. 



About the Article

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For more information about PDB and other alternative delivery methods, reach out to Hill First Vice President Rebecca Blankenship, DBIA, at beckyblankenship@hillintl.com.

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