



SUCCESS PROFILE INNOVATIONS IN FLOOD MAPPING

Situation

DHS (FEMA) is responsible for determining and mapping flood prone areas for the entire United States. Underpinning this mapping is a body of engineering work that calculates flood potential; data which can change frequently in developing communities. FEMA's then-current process for creating Digital Flood Insurance Rate Maps (DFIRMs) was both expensive and slow. Tied to the engineering and with multiple layers of reviews, mapping was taking 90+ days (per USGS quad sheet area) and costs were approximately \$2,000 for each.

Core Assessment

Given funding limitations, FEMA was falling significantly behind. It was impossible to create DFIRMs quickly or cost-effectively enough within the established process regimen to ever complete a total US-wide coverage or to keep data current for communities experiencing rapid change. A new and innovative process was needed that would support the exploding nationwide use of geospatial data. At the time, two contractors were responsible for this nationwide coverage, Dewberry and Michael Baker Engineers. Through independent quality reviews, Dewberry was producing products with the fewest errors and was given the steering role in designing the new production process.

Solution

With Dewberry leading, FEMA challenged both companies to innovate an alternative product, one that might sacrifice some engineering specificity but that could be created and completed quickly to meet the demands for digital map coverage. Under EIPCI's leadership, Dewberry created a new derivative map product, known as Q-3. This product could be created and delivered for independent QA/QC in just three days and for only \$150. To achieve this, however, Dewberry's mapping infrastructure and staffing needed to expand very rapidly.

Results

With a pilot effort validating results and FEMA's approval, Dewberry's geospatial processing department expanded from 35 people to over 100 in under 90 days, including supporting technology acquisition and facility modifications. Most of the labor came from internal transfers, from departments that were facing staff reductions due to market downturns. My department created and implemented a "crash course" in process and technology training to support the influx of personnel. The department quickly moved from one work shift to two and then three, maximizing the value delivered from capital investments in technology and facilities.

In nine months, Dewberry completed Q-3 mapping for every US community east of the Mississippi River. Schedule performance and validated product quality were unequalled by the Michael Baker team. Moreover, this work supported Dewberry in retaining a workforce that would otherwise have been released.

The technology infrastructure was sized to support a three shift operation with the knowledge that the peak of work volume was not a sustainable business. Once peak workload was accomplished, the organization moved from three daily shifts back to two and to steady-state staffing of 85 employees. This still represented 140% growth in sustained production capacity which was used to capture new and varied contract types. For Dewberry, the lasting beneficial effects of controlled growth within managed infrastructure costs catapulted the company's geospatial services group into expanded services, new customers and greater market-wide recognition. Furthermore, the quality of delivered products solidified Dewberry's status with FEMA as the go-to geospatial data provider for years going forward.