



Minnesota Budget Planning and Analysis System (BPAS)

State of Minnesota – Minnesota IT Services

CATEGORY:

Data Management Analytics and Visualization

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Executive Summary

State government budgets are complex enough without the added difficulties of an outdated, manual legacy process. Minnesota IT Services (MNIT) staff collaborated with the Minnesota Management and Budget agency to create a **modernized system** for the state of Minnesota's Budget Planning and Analysis System (BPAS 2.0). BPAS 2.0 is a web-based system that produces the Governor's proposed biennial budget, and the proposed supplemental budget changes. The system manages historical, current and projected budget data in addition to proposed state agency operating budget changes.

The old budget system no longer met the needs of Minnesota's government. The system was cumbersome and unfriendly, relied on manual processes, and took far too long to generate the data needed to run a twenty-first century state government. On the technical side, the system was difficult and costly to maintain. The outdated multidimensional database required users to navigate complex lists of funds and accounts, resulting in considerable unintentional errors.

MNIT and our partners at Minnesota Management and Budget worked closely with key agency stakeholders to understand how they used the system, and the kind of information they needed the system to provide. By fully understanding the current issues, MNIT staff were able to develop and design a modern system that met business requirements and was user-friendly. Stakeholders agreed about what they wanted: easy data entry, high availability, and enhanced reporting capabilities.

The new BPAS 2.0 features a relational database and specially built business logic. It personalizes the user experience based on their agency. By automatically narrowing the data entry points to the specific accounts that belong to that agency, the system eliminates opportunities for error.

Now agencies have access to all standard reports and data aggregation in **real-time** – no more waiting for a central team to produce and deliver information. MNIT also designed and constructed the BPAS 2.0 system so it would require significantly less maintenance and overhead. That means minimal downtime, considerable cost savings, and operational efficiencies. The project has eliminated the need for approximately \$100,000 in annual licensing costs as well as over \$60,000 in annual hardware costs associated with the original BPAS system plus dedicated IT staff for maintenance.

The design and dynamic reporting tools have become a model for other system builds and upgrades because they resulted in such immense operational efficiencies and improvements for users. Anecdotally, users have been effusive with praise.

The project began in September 2017 with a **budget of \$1.1M**. The BPAS 2.0 system went live on schedule and under budget just 11 months later in August 2018, just a few months before an administration change. Data migration was seamless, there were no system issues from either technical or user perspectives, and user adoption efforts were significantly successful.

BPAS 2.0 helped our stakeholders' staff facilitate an **extremely smooth budget process** in the midst of an administration change. Producing the Governor's Proposed Biennial Budget is now **nimbler and more modern**, and users were able to meet statutory deadlines.

Exemplar

Minnesota Management and Budget is the agency responsible for overseeing and coordinating the creation of the Governors Proposed Biennial Budget. MNIT is the state's IT agency responsible for providing technical services, expertise, and resources to all agencies.

The BPAS 2.0 project utilized **.NET architecture** to ensure **long term sustainability**, since the technology is used heavily within the state. Resources are readily available at the state and the marketplace to maintain and improve the system well into the future.

This project is a successful example of taking **direct user feedback** and using **readily available technology** in an efficient, cost-effective way to solve a complex problem. The creation of a state level budget requires many varied approaches to data collection, reporting, display, and final book compilation due to the different lines of business and regulatory natures of government agencies. This comes with unique challenges in creating a software that handles all those needs, yet is still easy to navigate and use.

This project took a very **collaborative, end user focused approach** to accomplish the goals in innovative ways while very significantly reducing the overall operating budget necessary to manage the overall system. All while many of the technology approaches developed in the project are owned by the state and are being implemented in other systems to improve those as well. This is a fantastic example of a successful IT project from beginning to end.

Cybersecurity was a key focus in the development process, and is a priority in operational management. Multiple cybersecurity tests were performed throughout the development process. The system is evaluated regularly for vulnerabilities. As vulnerabilities are found in-house staff are continually available to address and implement fixes without reliance on external vendors.

Concept

Robust, detailed, and business-specific reporting was one of the primary requirements that stakeholders clearly wanted. The original BPAS system was inherently limited and did not line up with the flexible needs required for the creation of a complex and varied series of reports that include both detail and summary data elements.

The old budget system had **limited reporting capabilities** due to the multidimensional nature of the system. Various critical reports required third party solutions and processes. Other reports were periodically unavailable because they required database aggregations to create high level data summaries. Large or complex agency budget books often took up to 4-8 hours each to compile and publish. Some critical reports were not available at all to end users, so requests were delivered manually by a central team of administrators resulting in further delays in budget development or decision making.

The project was managed in-house as a **waterfall project** and utilized both state employee and consultant developers to design, build, test, and implement the new system. This was a complete rebuild from the bottom up, with a different technology, and a **focus on end user experience, accessibility, and system performance**.

The project had a **budget of \$1.1 million** and was authorized **11 months** to complete the system to align with the start of the Governor's Biennial Budget process that started in August 2018. The project had specific deliverables to greatly improve the user experience by **reducing the complexity** of screens and data entry options, making all reports real-time and available to users without third party involvement, and to improve the budget book compilation process so it was more streamlined and efficient for everyone.

We **communicated regularly and often** to stakeholders throughout the project per a detailed communications plan. Users were trained and well prepared for the final rollout prior to its release on August 21.

Significance

The Governor's Operating budget is a coordinated effort that involves agency users and leadership from over 100 agencies, boards, and commissions. This process happens every two years and takes an average of six months to complete, excluding preparation and post process tasks. The process includes:

- Historical organization of budget and expenditure data.
- Collection of proposed changes to existing budgets.
- Agency narratives to articulate agency functions and budget nuances.
- Governor's decisions to determine initiatives that the administration will support and include in the budget proposal.
- Creation and delivery of individual budget books for all agencies, boards, and commissions in both hard copy and publicly available on the internet for media and public consumption.

Stakeholders are varied and wide reaching. Many stakeholders were also active participants in requirements gathering, and in testing for user experience and user adoption, including staff from: the Departments of Administration, Commerce, Labor & Industry, Human Services, Natural Resources, Transportation, Minnesota Pollution Control Agency, Minnesota IT Services, Minnesota Management and Budget Executive Budget Officers, and Legislative Fiscal Analysts.

Stakeholders included: the Governor of Minnesota and their staff, Legislators and Legislative fiscal staff, state agency chief financial officers and other staff, members of the Legislature, the Budget Operations Director, Steering Committee, Minnesota IT Services, Minnesota Management and Budget, BPAS system users, the public media, and Minnesotans.

Impact

The obvious impacts are that deliverables are much easier and faster to produce.

- Budget books now compile for even the most complex agencies in 15 minutes, instead of the previous 4-8 hours. That is a significant time savings.
- Data reports are available in real-time, on-demand to all users at all levels.

Other impacts fall on the technical and cost-savings side:

- The new system is less expensive to run. The project has eliminated approximately \$100,000 in annual licensing costs. We've saved more than \$60,000 in annual hardware costs plus dedicated IT staff for maintenance of the old system.
- We now have minimal infrastructure operating at full capacity, more efficiently.
- Fewer staff are required to manage and maintain it.
- We have long-term sustainability, and compliance with cybersecurity standards.

A most rewarding benefit was that Immediately after the BPAS 2.0 system went live, we noticed our help desks were quiet and the system was operating without issue. In fact, there were no issues logged by users or technical staff at all in the first few weeks after release. This seamless rollout was a testament to solid business requirements, expert project management, intensive stakeholder engagement, a commitment to user experience, user adoption and training, and consistent, clear communications.