Outline - WSP/Narrowband project

A Mandate for Change

The decision to migrate the legacy Washington State Patrol (WSP or Patrol) wide-band analog system to a newer technology was prompted by the Federal Communications Commission (FCC) mandate to migrate such systems to a more spectrally-efficient technology. As stated in the provided reference:

"The purpose of mandatory narrowbanding is to promote more efficient use of the VHF and UHF land mobile bands."

What is not often discussed is the narrowbanding methodology for analog technology – like the Patrol was using at the time - results in a coverage/performance loss compared to their existing system at that time. As there was no funding source tied to the mandate, the Patrol was faced with a significant challenge to be compliant with the mandate, secure the budget within the allowed FCC time-frame, and determine a system strategy to minimize coverage loss.

The Patrol consulted with multiple industry vendors, other neighboring systems, and numerous publications and consultants – including the FCC to confirm their options for compliance and how this coverage/performance loss could be mitigated. In addition the WSP utilized some of these same technical resources to estimate that the coverage/performance loss would require at minimum, 13 additional sites to their existing system to maintain their current level of coverage. These sites needed to be built from scratch and were estimated at nearly $1 million dollars per site to build (this included construction of roads, power line installations, etc.).

WSP Budget Request History

Some radio system operators around the country used the federal mandate as an opportunity to build a completely new radio system in order to meet the mandate. One such example is the state of Oregon system (known as OWIN at the time, and now managed by the Oregon State Police), which was approved and budgeted for approximately $230 million dollars. Given the significant budget shortfall Washington State faced at the time, this approach was not an option available to WSP. The initial, best-cost estimate WSP shared with the Governor's Office and Office of Financial Management (OFM) was between $60 and $80 million. WSP was directed by OFM to scale back its budget request to the bare minimum and defer some of its request to the following budget cycle (2013–2015). This meant WSP would have to reuse as much equipment as possible and only replace equipment that could not be narrowbanded. Ultimately, WSP received $40.1 million in the 2011–2013 budget, with the understanding that an additional $13.0 million would be received in 2013–2015.

A Solution is Found

Given funding available to WSP and no indication that the FCC was going to relax its migration deadline, WSP was asked by Washington's U.S. representatives to explore expanding our federal partnership with the U.S. Department of Justice's Integrated Wireless Network (IWN) system, in order to meet the mandate and achieve cost savings. The IWN system had many portions of the state already covered with narrowband compliant infrastructure and the remaining areas in could be filled at a greatly reduced cost. This gave the WSP access to well over 70 RF sites while significantly reducing capital investment costs. With this greatly reduced funding request, the WSP was able to successfully obtain funding from the Legislature.

Time Is the Enemy - Procurement

While the decision to join the IWN system represented the most technically sound and cost-effective approach, it also created a challenge for the Patrol in terms of procurement strategies. Washington State has laws in place to ensure competitive procurements, however given the WSP was joining an existing Motorola system, Motorola was the only vendor that could provide all of the features and functionality that the Patrol required. Many questions have been raised over the decision to purchase the hardware from Motorola, but in fact, there were few options available to the WSP if compliance with the FCC mandate and the Patrol's interoperability requirements were to be achieved. Therefore a decision to purchase from Motorola via sole-source procurement was approved by the Department of Enterprise Services (DES) and OFM.

Motorola offered the WSP better pricing than that which was awarded to the county of Spokane via their RFP process, and so the Patrol felt that the best decision was being made as they could now:

1. Meet the FCC mandate.
2. Save money by leveraging the existing IWN network.
3. Know that they received competitive pricing even though a sole-source procurement process was used.
4. Avoid conflicts between different vendors if WSP had chosen a system other than Motorola.

Time Is the Enemy – Implementation

Motorola's initial system proposal to WSP was based on the approach that WSP would simply move its operations onto IWN rather than maintain their own system. WSP's vision was that IWN would provide additional resources and capabilities to augment the WSP system. After reviewing the initial Motorola proposal during detailed design review, WSP ruled the proposed approach out as not meeting the agency's needs. WSP's solution was to use the IWN system to augment coverage where possible, add capacity to the trunking system where needed, and

upgrade all of the WSP's primary conventional channels to a narrowband-compliant technology (P-25).

This design met WSP's operational and interoperability requirements. However, it more than doubled the complexity of the project for the Patrol as the Patrol was responsible for the majority of the work to implement this change. Limited funding prohibited hiring of resources, and the Patrol was now even further constrained to do twice the work in the same amount of time and budget. At this time, the FCC mandate deadline was approximately 12 months away. This was a significant amount of change to absorb as the new radio system would impact the WSP on many levels – Trooper training, operations, procedures, etc. – and 12 months was historically aggressive for any project of this magnitude.

Meeting the Mandate

From the beginning the goal of the WSP was clear; meet the FCC Mandate. However, in order to meet that mandate, timely decisions had to be made based on engineering projections, industry publications, vendor input, and experience in radio systems. Based on these inputs and some educated assumptions, the Patrol tried to meet the requirements and expectations of the system users.

The challenges with the system are well-documented in other materials but they can be simply summarized as follows:

- Managing the performance changes from analog to digital technology (coverage)
- Vendor hardware issues
- Operational changes (personnel training and expectations management)

The WSP worked very hard to balance all of these issues and meet the mandate which was ultimately extensded by the FCC.

Managing the Misconceptions

The WSP has had to constantly defend its decisions from multiple parties both within and outside of the state. While we respect the opinions of these parties, they simply do not understand nor appreciate the entire situation that the Patrol was placed in by a variety of factors. In addition, they do not understand the technology that the WSP is using and greatly over-simplify the operational constraints of the organization. Some of the major misconceptions are:

1. The WSP got a "brand new system"

   No, the intent was always to meet the mandate with modifications to the existing system, not to build a new system. WSP opted to join an existing system that was already designed as the best strategy to meet the mandate while achieving cost savings and improved interoperability with other law enforcement agencies.

2. The WSP chose to sole source this to Motorola and therefore Motorola over-charged us

   The decision to purchase from Motorola was a function of the use of IWN, which was essential to meet the FCC mandate while mitigating coverage losses caused by narrowbanding. Motorola provided competitive pricing based on a recent competitive procurement, and therefore the state did not pay more, rather in fact, paid less.

Focusing on Phase II

The WSP is now focusing on closing the gap between meeting the FCC mandate, and the expectations Troopers have. As stated above, the belief that a system was custom-designed based on the desires of the WSP is a major misconception, and ultimately creates dissatisfaction within the ranks of the WSP. The WSP radio system is a mission-critical, life-safety system. WSP takes their mission very seriously both in protecting the citizens in the state as well as it's own personnel.

In order to address internal concerns, WSP needs to focus on capturing their requirements and focusing on expanding and modifying their system to meet and/or exceed those expectations. The expectations of the current system are far beyond what it was designed to do, and there is no other existing system that will meet the needs of the WSP today – or planned in the future. We are calling this effort simply "Phase II", and we are asking your support to help us get it off the ground.

The WSP plans to accomplish Phase II through careful requirement gathering, expectation setting, and a realistic quality-driven schedule. Our first step began this year with the request for funds to complete an engineering study. The goal of this study is to determine the requirements of the system to meet our immediate needs, prepare for the second phase of federal narrowbanding, and prepare a design and cost estimate . We appreciate your continued involvement and support. We will continue to update you on the plans for Phase II of the narrowbanding system.