

# DISTRICT OF MISSION

## Networking Made Easy Through Single Pane of Glass



### CASE STUDY



#### OVERVIEW

District of Mission in British Columbia is known for its colorful history and scenic vistas. The wireless and wired networks in the municipal buildings were not quite as delightful. Equipment management was labor-intensive, and security was difficult to administer. It was a static environment that couldn't keep up with increasing Wi-Fi demands. With Ruckus, IS not only has an easier to manage and more secure network, but a platform to explore smart city initiatives going forward.

#### CHALLENGES

- Managing the wired and wireless infrastructure was extremely labor-intensive
- The network was too expensive, from operational overhead to maintenance agreements
- Security was difficult to administer, whether onboarding or deleting users
- IS felt stuck with static technology that wouldn't support growing Wi-Fi needs

#### SOLUTION

- 15 Ruckus access points (APs)
- 13 ICX Switches
- Deployed the Ruckus SmartZone controller
- Ruckus Cloudpath

#### BENEFITS

- SmartZone provides a single pane-of-glass view of the wired and wireless network
- Ruckus was more affordable and requires substantially less IS involvement in day-to-day operations
- Security using DPSKs is integrated with the central Active Directory database for self-service onboarding and automated revocation of security privileges
- IS and the Economic Development Office are now discussing using the infrastructure for smart community initiatives

District of Mission, located in Canada's British Columbia (BC), is known for its colorful history and breathtaking vistas. The town is scenically situated in a pristine forest on a mountain slope. It overlooks the lush valley of the Fraser River. But there's a busy group of dedicated municipal managers, administrators and employees that tend to the natural resources, recreation and commerce of this idyllic town.

The second largest employer is the municipality itself. Just under 500 employees work in about 10 departments, including Fire Rescue, Forestry, Parks, Recreation and Culture, and Engineering & Public Works.

Another vendor's products formerly provided both wireless and wired equipment in the four primary municipal buildings. "We had a single vendor solution, but it felt more like managing two different vendors—the wired and wireless sides," says Shaun Greene, Technical Services Supervisor.

"We're all experienced network administrators in Information Services (IS) and we appreciate having efficient and secure methods of managing our switches and access points," says Chris Knowles, Manager of Information Services. "On the wireless side, we were struggling with having multiple SSID's with pre-shared passwords. We had no visibility on who had access to the network or for how long. On top of that, we were paying a premium for maintenance agreements."

How do you keep up with accelerated demands when everything takes too long and costs too much? The answer is you don't.

The District started by migrating to Ruckus switches a few years ago. "We only had experience with one manufacturer previously, so it was a leap of faith to go with a new vendor. As it turned out, it was a seamless transition. We learned that Ruckus is leading the charge in engineering with the best products," says Knowles. "They've got performance and scalability at a great price. And they have a lot of management features that we didn't have before. Even better, the warranty is baked into the cost—it doesn't keep going up year after year."

The District of Mission recently replaced the wireless network with Ruckus Wi-Fi as well. Today, District of Mission has a Ruckus wireless and wired infrastructure in the four buildings (with a fifth under construction) connected by a fiber-optic backbone. "The Ruckus wired and wireless networks really work together. It's incredible to see both networks through a single pane of glass, and Ruckus is pushing out more unified management capabilities with SmartZone. Even now, the management feels almost effortless, especially compared to how hands-on it was before. We have more flexibility to do things remotely, even using our smartphones when we're traveling around the District. It feels great to be more responsive to our users."



“We’ve never felt so confident that we have the platform we need to go a long way. There are plans underway for a new city hall and city center. We have the headroom to handle all of that with Ruckus. Before, we used to feel that we were static, not making much headway. Now we feel agile and ready for the future. In fact, the view from here is pretty exciting.”

### CHRIS KNOWLES

Manager of Information Systems

“We can support so many more client devices with a single Ruckus AP,” says Shawn Mullay, Network Analyst. “Most of these buildings are over 40 years old. Even in hostile Wi-Fi environments like these older buildings and our open area recreation center, Ruckus mitigates interference like there are no obstacles at all. We were able to boost coverage in some buildings where there was spotty Wi-Fi, like the public works building. We haven’t had any issues with people connecting to the Ruckus network. We’re not pushing up against the threshold of what we can support. Not even close.”

### SECURE CONNECTIVITY FOR EMPLOYEE, GUEST AND DISTRICT-OWNED DEVICES

Security is one area where staying on top of changes is especially urgent. Unfortunately, the IS team struggled with providing secure network access for both employees and guest users. “We only had a handful of district-owned laptops a few years ago. Now there are 50 laptops and 80 smartphones and 150 personal devices—and the number of mobile-enabled devices is growing like crazy. We had to manually assign pre-shared keys to every new device—every laptop, phone and tablet,” says Greene. “It was time-consuming and still not very secure because of the pre-shared keys.”

The IS team had to touch every device to enter the pre-shared key for Wi-Fi access—for security reasons they did not want users to know the password. That was the network onboarding part. It was worse when someone changed departments or left. “There was no way to revoke a password. So we’d have to redo everyone’s else’s passwords, which required touching every device,” says Greene. “That was so disruptive that we usually had to compromise and let the non-existent account stay active.” That meant that individuals who no longer had a legitimate reason to access the network retained access.

In a bit of desperation, they set up multiple SSIDs as a way of segmenting employees and managing security. But proliferation of SSID as a workaround created a lot of needless complexity, and still didn’t solve all the problems.

All of this ended when the team chose Ruckus Cloudpath Enrollment System for secure onboarding. Cloudpath has eliminated these security vulnerabilities—and stripped away the needless complexity, too. First, Cloudpath is integrated with the District’s central Active Directory (AD) database. Employees use a self-service portal and their existing AD credentials to set up accounts on the Wi-Fi network and register their devices. Cloudpath generates dynamic pre-shared keys (DPSKs) for each person. If an employee’s account is deleted from the AD, the employee’s password is deactivated instantly. Unlike conventional PSKs, DPSKs are unique to each user, and the IS team can associate every device with a user.

IS can create VLANs with different levels of access depending on the type of user. The duration of access also varies by user. For example: 1) District staff can onboard themselves for one year; 2) District-owned laptops are issued certificates for up to five years; 3) guests can be assigned access by an internal sponsor for up to 30 days; 4) a sponsor can request a single-day DPSK for a guest that cannot be reused.

All of these workflows are set up by IS. But, after that, they’re executed without IS involvement. “Before, the security was so difficult to implement and change that we had to compromise in order to avoid disruption,” says Greene. “With Cloudpath Enrollment System, we have the best of all worlds: more granular



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### SHAUN GREENE

Technical Services Supervisor

security without the complexity and burden on IS. Employees and guests get the access they need, when and where they need it, on the devices they want to use. Ruckus understands that simplifying the administration of security is how you strengthen it. This is something you probably don’t hear a lot from IS, but we love our security management.”

### THE DISTRICT’S MOTTO IS “FUTURE OUR MISSION”

Right now the Wi-Fi network is for municipal employees only. A fifth municipal building is currently under construction. One of the things that Knowles is most excited about is how far the new Ruckus network can take District of Mission. “This has been a really successful project deployment. We’re delivering more secure services. We have a more flexible, powerful network that requires less manual intervention. It gives us confidence to consider taking that next step to push services out to the community.”

The District’s Economic Development Office and IS are starting to look at some smart community initiatives to improve security, increase energy efficiency and save money leveraging IoT connectivity, such as intelligent door locks and smart LED lighting. “The strength and flexibility of the Ruckus systems has given us confidence to move forward with some pilot programs. We’ve never felt so confident that we have the platform we need to go a long way. A new facilities master plan has been developed, including provisions for a new city hall, civic center, a fourth fire hall and a new recreation center. We have the headroom to handle all of that with Ruckus. Before, we used to feel that we were static, not making much headway. Now we feel agile and ready for the future. In fact, the view from here is pretty exciting.”

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