

CASE STUDY

9-1-1 and Beyond

The New Washington, D.C., Unified Communications Center Deploys Avaya Solutions for Efficient Routing, Rapid Response Capabilities, an Optimized Work Environment, and State-of-the-art Emergency Preparedness

Challenge	Solution
<p>9-1-1, 3-1-1, the Mayor's Call Center, and other agencies in the District of Columbia operated on separate and disparate communications platforms. By 2004 the existing structures and technologies needed to be upgraded and consolidated in a way that could support best practices for responding to both emergency and non-emergency citizen needs.</p>	<p>The District developed a plan for consolidating all public safety and non-public safety communications with a common technology. IBM received the commission and partnered with Avaya for the call center ACD/PBX and telephony systems. The Avaya telecommunication solution includes: automatic call distribution and intelligent work-stations, computer-aided dispatch, and digital voice logging.</p>
Value Created	
<ul style="list-style-type: none"> • Enhanced security, emergency preparedness, and reliability • Improved access and handling of calls • Faster, more effective response • Increased accountability for timely delivery of services • Efficiency and economy achieved through consolidation and sharing of resources • Better coordination among agencies during emergencies • Redundant systems • Improved staff training • Optimized work experience for supervisors and staff 	

WASHINGTON, D.C. —The men and women who work for the Office of Unified Communications, Washington D.C.'s 9-1-1 emergency response system, have some of the toughest jobs on earth. That's because they not only provide emergency services for citizens and visitors to the District, they also take feeds from several Federal government organizations, support the District's non-emergency 3-1-1 call taking, and provide Dispatching services for District Fire and Emergency Medical Service (FEMS) and Metropolitan Police Department (MPD).

The 9-1-1 operator's job is so demanding it requires nine months of training before an agent is allowed to work solo. Stress runs high, and it virtually never lets up, because lives are at stake, along with the security of the local and national governments.

Until recently, like many mid-sized and large urban areas, the District had a 9-1-1 call system that was developed organically over time, with communications split between police and fire facilities. Other city agencies that responded to both emergency and non-emergency citizens' needs, including the 3-1-1 line and the Mayor's Call Center, also functioned separately. The disparate telephony, dispatch,

and radio infrastructures had inherent limitations that were beginning to hinder the agencies from achieving state-of-the-art best practices. 9-1-1 in particular suffered from an overly complex routing system that sometimes caused delays in answering. There were also differentials in responsiveness from one time of day to another based on staffing levels, and dispatching was not computer-aided.

Addressing the Challenges of Disparate Communications Systems

In October 2004, the District established the Office of Unified Communications with the mission of providing professional, state-of-the-art public safety services and first-class customer service, in collaboration with supporting agencies. A vision evolved of consolidating emergency 9-1-1, non-emergency 3-1-1, and the Mayor's Call Center activities in one multifunctional facility. This facility would seamlessly connect Administration, Call Center Operations, Radio Network Operation and Technology, Telecommunications and Technology, Computer Aided Dispatch (CAD), the Telephone Reporting Unit (TRU), Transcribing, Training, and Customer Service Operations.

In terms of telecommunications, the challenge involved the handling a total of nearly 2.5 million 9-1-1/3-1-1 emergency and non-emergency calls annually. A major goal was to shorten response time on all calls significantly. Other important priorities were to equip the facility for self-sustaining power and other services, and to provide a fully redundant system to ensure continuity in times of crisis.

In 2006 the District issued an RFP to create a complete new architecture and deployment for a state-of-the-art Unified Communications Center (UCC) that would ultimately become a flagship and model for the nation. Through a competitive bid process, IBM received the commission and was awarded the Telephony and Timing systems contracts. They partnered with Avaya, who designed and delivered the call center ACD/PBX and building communications telephony systems. The District possessed a high level of confidence in Avaya for the Unified Communication Center because of their proven success in the development of an earlier converged communication solution for the District's 30,000 local employees.

Other suppliers who partnered on the project were PlantCML®, which provided 9-1-1 specific CTI Sentinel workstation engineering and software; Lenovo for workstations; and Spectracom for NENA compliant timing systems.

Opened in September 2006, the District's new Unified Communications Center serves all public safety and non-public safety communications functions, including 9-1-1 and 3-1-1 call taking (Emergency/Non-Emergency/City-Wide Call Center) plus FEMS and MPD dispatch. The UCC also houses the Homeland Security and Emergency Management Agency, the Regional Incident Command and Control Center, and the Mayor's Command Center. From the telephony perspective, the UCC solution includes: automatic call distribution and intelligent workstations; computer aided dispatch that utilizes a complex call processing application to assist call takers in identifying calling parties and determining the optimal dispatch of public safety personnel; and digital voice logging. There are also public safety and EMA radio systems, audio visual systems, a timing system, Integrated Network Monitoring, and a LAN/WAN Security infrastructure.

Consolidation of Staffing in a High-security Location

The efficient communications infrastructure of the new UCC is designed to enable a consolidation of staffing through the co-location of the 9-1-1/3-1-1 call center. Many agents receive cross-training, giving managers the flexibility to

deploy staff as situations demand, with particular emphasis on providing resiliency in the event of a disaster. This cross-training within the facility is key to both effectiveness and efficiency.

The District's new Unified Communications Center was designed to be totally redundant. An ultra high-security building with a virtually inviolable shell was constructed as the main center, with a completely redundant system being installed at the building previously occupied. This assures that in the event of emergency or catastrophe at one site, the other would remain fully functioning.

The main UCC building is self-sustaining with respect to power and food/water/air supplies so that it could be used as the center of city operations and regional coordination in a time of crisis.

The Telephony Solution

Avaya Intelligent Communications solutions serve the needs of people on both ends of the phone

Avaya's communication solution for the center interoperates with Sentinel 911® for Avaya, which is an intelligent CTI workstation application for 9-1-1/3-1-1 call takers provided by PlantCML®. This graphical user interface integrates directly with Avaya's telephony software so that calls can be answered and managed efficiently at the desktop. Avaya digital phones on each desktop serve as a backup in the event a workstation fails. The solution provides important features and benefits, including:

- **Efficient routing**

This was a landmark installation because it was the first-ever deployment of Avaya Call Center and PlantCML® Sentinel 911® for Avaya software to analyze incoming calls and then to apply patented algorithms for routing them automatically to the most appropriate agent. The Avaya Call Management System and Operational Analyst software analyze how well the center is managing calls and indicate where administrators can take fast and effective action to improve performance.

The system automatically identifies callers and their location when they place a 9-1-1 call, even if they're calling from a wireless device, like a cell phone. This new capability makes it easier to quickly dispatch appropriate personnel to respond to an emergency.

- **An optimized work environment**

The desktop interface was custom-designed for each department by the supervisors themselves – people who knew exactly what every agent faced, day in and day out.

The UCC project encompasses a new way of doing business for the District of Columbia and a benchmark for excellence in the nation. It improves service delivery to District citizens, increases efficiency and economy through shared resources, leads to faster response from our public safety agencies, and results in better coordination among agencies during emergencies.

- Official Release from the District of Columbia Unified Communications Center

This has gone a long way in optimizing the speed and confidence that an agent can exercise in managing the workload.

There is also a real-time call board that is projected on a large screen at the front of the room, which enables everyone in the center to be aware of call volumes and the status of calls. Individual agents can recognize when they are in line to take the next call. Orders for service are placed electronically for virtually instantaneous notification to the appropriate police department, fire department, or other agency providing the response. Advanced tools are also at the disposal of center managers to balance workloads and diagnose problems. All of these features are beneficial in reducing stress and enabling quick reactions when events cause large numbers of calls to hit the center at one time.

- **Rapid response**

What the citizens of the District experience is responsiveness that takes place quickly and with a high level of accuracy in service deployment. The 9-1-1 lines are answered so rapidly, the caller rarely even hears a ring tone. While the national average for a 9-1-1 call to be answered is 10 seconds, the District now answers over 96% of emergency calls in under 5 seconds, with most calls being answered in less than a second.

- **Seamless audio bridge to responders**

The solution also provides for a seamless audio bridge to emergency management communications, which allows the 9-1-1 operator to bring emergency personnel on radio to communicate directly with the 9-1-1 caller. This capability enhances the ability of responders to understand and react appropriately to the caller's needs.

- **Accuracy in tracking and reporting**

All systems log events through a common time stamp provided by the NENA-compliant timing system, as well as being recorded digitally for archive purposes. This provides a new high level of reliability in reporting, which is essential for ongoing improvement in a critical citizen service environment. It also provides the District with a number of advanced options for reporting that can be used by managers to ensure top-notch responsiveness.

The system also has the ability to track information so the center can identify trends and patterns, which gives staff insight into the changing needs of the community. That is especially beneficial to an area like D.C. that services 580,000 residents and two million visitors each day.

- **Scalability**

The technology infrastructure, in combination with the facility design, allows for call center expansion.

Improved Business Processes Enabled by Avaya Intelligent Communications Benefit Staff, Citizenry, and Government

Washington, D.C.'s new Unified Communications Center currently handles over 2.5 million calls a year. It integrates emergency call centers for police, fire, rescue, and emergency responders, with most emergency calls being answered in less than one second.

Public safety is enhanced by a measurable improvement in response time, less likelihood of power and utility interruptions, and an emergency self-sustaining capacity in a secure facility for the Mayor's crisis operations and media management.

The UCC project has resulted in improved business processes that reflect public safety best practices, as well as the technology and building infrastructure that support these processes.

The new center was awarded the prestigious NASCIO Award for Business Continuity and Disaster Recovery in 2007.

For more information on how Avaya Intelligent Communications can take your enterprise from where it is to where it needs to be, contact your Avaya Client Executive or a member of the Avaya Authorized BusinessPartner program, or access other collaterals by clicking on **Resource Type** under **"Do Your Research"** at www.avaya.com.

ABOUT WASHINGTON, DISTRICT OF COLUMBIA

Washington, D.C. is the capital of the United States. It is coterminous with the District of Columbia (abbreviated as "D.C."). The city and the district are located on the banks of the Potomac River, bordered by the states of Virginia and Maryland. The centers of all three branches of the U.S. government are in the District. The District of Columbia and the city of Washington are governed by a single municipal government. The population is about 581,530 persons.

Washington is a center of American history and culture, with numerous national landmarks and monuments, the world's largest museum complex (the Smithsonian Institution), galleries, universities, cathedrals, performing arts centers, and other cultural institutions. It is also the headquarters for many businesses, trade associations, and international financial institutions.

ABOUT IBM

The mission statement: "At IBM, we strive to lead in the creation, development and manufacture of the industry's most advanced information technologies, including computer systems, software, networking systems, storage devices and microelectronics. We translate these advanced technologies into value for our customers through our professional solutions and services businesses worldwide." For more information, please see www.ibm.com.

ABOUT AVAYA

Avaya delivers Intelligent Communications solutions that help companies transform their businesses to achieve marketplace advantage. More than 1 million businesses worldwide, including more than 90 percent of the FORTUNE 500®, use Avaya solutions for IP Telephony, Unified Communications, Contact Centers and Communications Enabled Business Processes. Avaya Global Services provides comprehensive service and support for companies, small to large.

For more information visit the Avaya Web site: <http://www.avaya.com>.