



**AirPremier**

**DWL-7700AP**

Wireless AG  
Outdoor AP/Bridge

### Customer Profile:

**City of Seattle  
Seattle, WA**

Founded in 1869, the City of Seattle is located in the State of Washington on Puget Sound, 113 miles (182 km) from the U.S.-Canadian border. Seattle is a commercial, cultural and advanced technology hub of the U.S. Pacific Northwest. Seattle has been ranked as one of the best U.S. cities in which to locate a business, according to several recent surveys. Key factors are Seattle's skilled work force, manufacturing capability, education and research, quality transportation and infrastructure, access to international and domestic markets, and government accessibility and support for local businesses.

*"Mayor Nickels believes that thriving businesses strengthen the city's neighborhoods. The city views technology as a tool to help businesses attract more customers."*

- Greg Skinner, President  
ACJ Technology Solutions

## The City of Seattle Attracts more Visitors and Customers to Municipal Parks and Local Businesses by Offering Free Wi-Fi Access Through D-Link Business Class Wireless Solution

### The Challenge

The City of Seattle Mayor Greg Nickels initiated the creation of a pilot project that would offer free wireless access to the Internet. The intent was to revitalize portions of the community by teaming with local businesses and other community organizations to attract more customers to local business districts, support small businesses, encourage the use of public parks and facilities, and enable more citizens to access City services online. "Mayor Nickels believes that thriving businesses strengthen the city's neighborhoods. The city views technology as a tool to help businesses attract more customers," said Greg Skinner, president of ACJ Wireless Networking Solutions, the City of Seattle's partner in the project and a D-Link solutions integrator.

The City's Department of Information Technology headed up the project and acted as the designer, integrator, and installer of the wireless network infrastructure. Doug King, IT Project Manager, and his dedicated team set out to design and install a robust and reliable WiFi infrastructure that would provide convenient and easy-to-use wireless Internet access to visitors and patrons of the Columbia City and University District business areas and surrounding public parks.

The IT team approached the wireless design from two perspectives. The first was the wireless coverage needed to allow patron and visitor access. For this connectivity the City required standards-based 802.11b and 802.11g WiFi access to match the type of wireless signal most prevalent among potential users. The second and more critical portion of the design would be the "backhaul" or the network infrastructure required to provide the connectivity path to the Internet for the wireless users. The cabling for a wired solution to the

backhaul design was found to be impractical and cost prohibitive, so the team decided to also use a wireless solution for the backhaul portion of the network. To eliminate the potential for interference, the wireless network for the backhaul would require the use of 802.11a signals.



*One of the Rooftop Installations of D-Link Access Points used in the City of Seattle Wi-Fi Project.*

The initial search for wireless vendor products for the project would also follow this same dual path of finding a wireless user access solution and integrating it with an additional and separate wireless backhaul solution. After pricing out just the wireless backhaul solution, the team was concerned about meeting the project budget. As is the case with any municipal project, the cost constraint would be a critical factor in the overall design for the project.

### The Solution

After reviewing several wireless access and backhaul solutions, the team came across the D-Link DWL-7700AP Wireless AG Outdoor Access Point/Bridge. The team was initially intrigued by the access point's dual radio and multi-mode functionality. By offering simultaneous support for both 2.4GHz and 5GHz radios, the access and backhaul requirements could be satisfied by a single wireless device. In addition, the multi-mode options allowed for the point-to-point and point-to-multipoint bridging configurations that would be necessary to build the wireless backhaul network.



*The official logo of the City of Seattle Wi-Fi Project.*



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### PRODUCT FEATURES:

**DWL-7700AP**  
Wireless AG Outdoor AP/Bridge

- Simultaneous 802.11a/g Connectivity
- Supports Integrated 802.3af Power over Ethernet
- Supports Multiple Operation Modes: Access Point (AP), Wireless Distribution System (WDS), and WDS with AP

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The DWL-7700AP also featured a die-cast watertight housing with a built-in heater and temperature sensor allowing it to sustain any outdoor weather conditions that Seattle had to offer. As most of the wireless equipment would be installed on streetlights, buildings, and rooftops, both construction durability and powering options would be critical elements to the project. The D-Link DWL-7700AP offered solutions for both. With its additional support for 802.3af Power over Ethernet, the City of Seattle team was able to position the equipment in the most optimal locations.

The D-Link DWL-7700AP Wireless AG Outdoor AP/Bridge also contained another critical feature whose value turned out to be key. King and his team knew that their challenge would be providing acceptable wireless coverage for the unique service area they chose. The uncertainty was whether the signal from the outdoor-positioned wireless equipment would effectively penetrate into the buildings of the surrounding local businesses with minimal interference. "The city had some concerns about the 'outside looking in' wireless design," explained ACJ's Greg Skinner. "The removable antenna option of the D-Link access point proved to be a key element to the success of the project." The IT team was able to experiment with several of the D-Link antenna options to optimize the wireless signal for the coverage area and backhaul requirements at hand. While the product features really discriminated the D-Link solution from other competitors, it was the reasonable costs that were the real clincher. The City of Seattle found that the cost of the D-Link DWL-7700 Wireless AG Outdoor AP/Bridge to satisfy both the access and backhaul requirements simultaneously was less than half the costs of other vendor solutions that covered only the backhaul requirements. The team was immediately relieved from their budget concerns and was thrilled to discover the value of an ideal technical solution at a very reasonable cost point.

### Conclusion

On May 18 at the Wellington Restaurant in Columbia City, Mayor Greg Nickels was the first to officially log in to the new Wi-Fi service. The event was a significant milestone for the community and

generated a renewed excitement and buzz for the business districts. Restaurant owners, coffee shops, and other small businesses are excited about the addition of the free Wi-Fi service and see it as a tremendous value add to their clients and customers. They look forward to the possibility of attracting more visitors and patrons who may visit the neighborhood and surrounding businesses.

The interest in the project since then has grown tremendously and all signals thus far point to a very successful pilot program. The pilot program will continue to be evaluated over the coming months and the possibility of further expansion is already being discussed and considered. Knowing that they have the entire D-Link team behind them is reassuring. "D-Link's support during the project has been tremendous," commented Skinner. "Christopher Rose, Chris White and the additional resources they were able to bring in at a moment's notice were big elements in our success. We welcomed and appreciated D-Link's expertise, dedication and guidance during the project."



*Signs Displayed in the Coverage Areas of the Business Districts Advertising Free WiFi-based Internet Access powered by a D-Link Business Wireless Solution.*