Wireless Network Upgrade Details

Existing Network. The existing wireless network in Lied Library was designed in late 2005 and was installed and became operational in Spring, 2006, when the existing campus enterprise wireless network extended to only a few buildings on campus. In Spring, 2006, the iPhone, iPad, and a multitude of other wireless devices now commonplace had not even been introduced. Today, it's not uncommon for a single visitor to Lied Library to have multiple devices connecting to the wireless network. Since 2010, annual wireless network logins and session hours (time connected to the network) have both more than doubled. While Lied Library and the Student Union ranked as the best locations for WiFi in the Rebel Yell's "Best of UNLV 2013," library user surveys conducted in Fall 2012 also indicated some room for improvement. Minor tweaks in early 2013 provided some improvement.

![Table and graph showing wireless network usage]

Next Generation Network. Planning commenced in Summer 2013 to replace the Libraries' seven year old wireless network, a joint project involving Library staff, colleagues from the Office of Information Technology, and an outside contractor. This work will involve the installation of approximately 100 new wireless access points spread across all five floors of Lied Library. The next generation wireless standard, known as 802.11ac, is slated to be officially ratified by the IEEE in late 2013 / early 2014 (802.11ac will arrive in several waves, as dictated by the WiFi Alliance). Lied Library's next generation wireless network will support 802.11ac, and be backward compatible with 802.11 a, g, and n. Devices utilizing any of these standards should be able to utilize the new network. In addition to introducing two new standards never used in the Library (802.11ac and 802.11n), there have been improvements in antenna design and back end management hardware and utilities which should also contribute toward true introduction of a next generation wireless network to Lied Library.
Completed Steps

To help inform the design and development of the new network, the following steps were completed in Summer 2013:

- Review of existing traffic (session counts and session hours) recorded for ALL existing access points during the past year. While wireless coverage is not a precise science due to a variety of factors, review of these statistics by location helps provide some illustration where the existing wireless network is used.
- Review of the existing and planned seating densities and seating use for the Library. This helps illustrate where visitors to the library sit down and are likely to use the wireless network for extended periods of time.
- Review of existing visitor gate counts for the past year, illustrating just how many users visit the library each year.
- Review of existing best practices regarding modern wireless network, based on staff expertise, attendance at industry conferences, dialog with vendors, etc.
- Development of a comprehensive scope of work and supporting documentation, in support of the next steps.

Next Steps / Tentative Timeline

- Fall 2013: Identify and contract with an external vendor, specializing in conducting professional wireless site surveys. The site survey will test a variety of wireless signal factors across both the 2.4 and 5 ghz bands, identify ideal install locations for access points, and make recommendations on antenna types and direction settings. Given that Lied Library is so large and has some unique architectural features (such as a five story open atrium), this is an important step, and a step which was also performed back in 2005 to help design the existing wireless network.
- Fall / Winter 2013: Specify and order new hardware associated with the new network. This step goes hand in hand with monitoring the ratification of the 802.11ac standard, and the timeline is subject to change.
- Spring 2014: Installation of new hardware across all five floors of Lied Library.
- Spring 2014: The contracted external vendor returns to conduct a post site survey, to ensure that the new network installed performs as expected.
- Summer 2014: The new wireless network becomes operational.