

Wireless Expansion and Upgrade Project

What's Inside

[Why a Wi-Fi Upgrade?](#)

[The Wi-Fi Upgrade Process](#)

[Expanded Coverage](#)

[Project Advisory Group](#)

[Thank You](#)

Why A Wi-Fi Upgrade

In a single school day during the 2016-2017 school year, 61,190 different people used the campus wireless network at the University of Illinois.

Wireless usage has grown annually with no sign of slowing. Former Chief Information Officer Paul Hixson and Technology Services staff spotted this trend as the increased usage began to strain the existing Wi-Fi network. Coverage in academic spaces was often not sufficient to support the existing wireless devices on campus, let alone the expanding use of Wi-Fi. Insufficient coverage meant classes, both big and small, struggled to get connected. It was difficult to incorporate online resources into instruction.

In 2014, in response to the continual growth of Wi-Fi, the Office of the CIO began promoting a plan for a major investment in upgrading and expanding the Wi-Fi network. Campus partners agreed, and the Office of the Provost provided Technology Services with \$8,055,400 for the Wireless Expansion and Upgrade Project.

The project kicked off in August 2014 and was slated to run for a full three years. Thanks to the hard work of many teams at the University of Illinois, the project was completed ahead of schedule in May 2017.

Wi-Fi coverage was upgraded and expanded in 243 buildings across campus. Over 4,400 new wireless access points were installed, providing more than 6.25 million square feet of additional Wi-Fi coverage to academic spaces across campus. This effort significantly improved the current Wi-Fi experience for students, faculty, and staff, and prepared the University of Illinois for the continued growth of wireless usage in the future.

The remainder of this report provides additional detail and insight into the changes that occurred and their impact on teaching, learning, and research at the University of Illinois.

The Wi-Fi Upgrade Process

[Listen to the video](#) (on YouTube)

Transcript

In 2017, the Wireless Expansion and Upgrade Project was successfully completed at the University of Illinois. In this video we will walk you through the process of upgrading Wi-Fi in a building.

Step One: First, a wireless review is performed by Technology Services and a building Facility Coordinator to find spaces that lack sufficient Wi-Fi coverage.

Step Two: Next, Technology Services designs an updated wireless plan for the building. This plan identifies where Wireless Access Points are currently located. Wireless Access Points broadcast Wi-Fi signals. Updates to the building plan identify access points that can be moved to provide better coverage, and where new access points should be installed. Blueprints are updated. This plan is provided to Facilities and Services who run electric cables and do other work in the building.

Step Three: After that, Tech Services runs ethernet cable, installs the Wireless Access Points and completes testing.

The Wireless Expansion and Upgrade Project repeated this process in 243 buildings, improving Wi-Fi coverage at the University of Illinois.

Expanded Coverage

Totals

Project Totals:

243 buildings updated
4,470 new WAPs installed
6,258,000 square feet of additional wireless coverage

Annual Progression:

2014

142 new WAPs installed. 114,800 square feet of additional wireless coverage. 21 buildings updated.

2015

2,060 new WAPs installed. 2,884,000 square feet of additional wireless coverage. 51 buildings updated.

2016

1,431 new WAPs installed. 2,003,400 square feet of additional wireless coverage. 113 buildings updated.

2017

765 new WAPs installed. 1,071,000 square feet of additional wireless coverage. 55 buildings updated.

Expanded Coverage

Metrics Introduction

The completion of the Wireless Expansion and Upgrade Project means that the University of Illinois now has one of the largest and most robust Wi-Fi networks in higher education. But just how big is Wi-Fi at Illinois? Check out some of the stats on the following pages to get a sense of the scope of Wi-Fi usage at Illinois.

Expanded Coverage

Metrics

Typical daily usage - 55TB

On an average day, 55 terabytes of data flow over our Wi-Fi network. If you were streaming video, that would be the equivalent of watching 18,333 hours of Netflix in a single day - or watching all 65 episodes of House of Cards 282 times.

Unique devices in a week - 89,184

A wide variety of devices connect to the Wi-Fi network ranging from laptops to smart TVs, to watches, phones and tablets. In a single week during the 2017 school year, 89,194 unique devices connected to the Wi-Fi network. If you stacked up that many iPhones, they would be taller than the Sears Tower.

Simultaneous users - 45,000

A school as big as Illinois needs to be able to handle a lot of simultaneous Wi-Fi connections. On an average day, at peak usage times, 45,000 people are connected at the same time to our Wi-Fi network. That's like the entire city of Urbana checking Facebook all at once.

Project Advisory Group

The Academic Mobility Advisory Group (AMAG), made up of assistant and associate deans, directors, and administrators, is designed to serve in an advisory role for campus mobility initiatives, including the expansion and upgrade of campus wireless (Wi-Fi), cellular Distributed Antenna System (DAS), and the infrastructure and services needed to support the growing mobile application environment.

Members

Craig L. Flowers, Director of Computing Services, College of Veterinary Medicine; AMAG chair
Roberto Aldunate, Assistant Dean and Director of IT, College of AHS
Michael Bohlmann, Director of IT, College of Media
David Gerstenecker, Director of IT, College of ACES
Gabe Gibson, Director of Technical Services, College of LAS
Erik Hege, Assistant Dean for Infrastructure, School of Information Sciences
Jeremy Jones, IT Assistant Manager, College of Education
Marty Kaufmann, Assistant Athletic Director, Division of Intercollegiate Athletics
James Quisenberry, Associate Director of Housing for Technology Services, Student Affairs
David Ruby, Associate Director for Infrastructure Services, Engineering IT Shared Services
Matt Tomaszewski, Associate Provost for Capital Planning, Office of the Provost

Ex-Officio and Past Members

Mitchel Dickey, University of Illinois Students
David Dowler, Associate Director for Construction Services, Facilities and Services
Troy Gagne, Senior Project Manager, Technology Services
Greg Gulick, Deputy CIO, IT Operations, Technology Services
Amy Hovious, Communications and Outreach Specialist, Technology Services
Ryan Ladd, Senior Project Manager, Technology Services
Paul Lucas, Director Management and Planning, Technology Services
Brad Mahaffey, User Support Manager, College of Engineering
Brian Mertz, Manager, Media, Information, and Communications, Technology Services
Beth Scheid, Assistant CIO, IT Planning and Outreach, Technology Services
Tracy Smith, Director, IT Infrastructure, Technology Services
James Sims, Engineer, Capital Planning, Facilities and Services
Mary Stevens, Assistant Director, IT Infrastructure, Technology Services
Chuck Thompson, Assistant Dean and CIO, College of Engineering
Rob Watson, Communications and Outreach Specialist, Technology Services

Thank You

[Listen to the video](#) (plays on YouTube)

Thank you to all the colleges, units, and project team members who worked together to complete the Wireless Upgrade and Expansion Project! An expansive and complex project like this would not be possible without dedication to collaboration across campus. Thank you for helping us build the network infrastructure that will power the future of teaching, learning, and research at Illinois.

Transcript

In 2014, colleges and units across campus pledged \$8.4 million dollars to expand and update the Wi-Fi coverage in academic spaces at the University of Illinois at Urbana-Champaign. With the final installation wrapping up in May 2017, this three-year project was completed under budget and ahead of schedule. From large lecture halls and libraries to labs and fine arts studios, Wi-Fi coverage was upgraded and expanded in 243 buildings at the University of Illinois. Nearly 4,500 new Wireless Access Points were installed by University of Illinois staff. These new access points added more than 6.25 million square feet of Wi-Fi coverage to campus. The Wi-Fi network can handle more simultaneous connections than ever before. There are fewer drops in service, and students, faculty, and staff can connect in locations that previously never had Wi-Fi coverage. Thanks to the Wireless Upgrade and Expansion Project, the University of Illinois Wi-Fi network is ready to meet campus needs now and in the future. For more information about the project, please visit connect.illinois.edu.