

A New Wireless Infrastructure for the Marano Campus Center

# Proposition

A key facet about technology is its ever-changing aspect. That even applies to buildings. One such place is the Marano Campus Center of SUNY Oswego, which is a very interesting one to look at, considering all that happens in it from our beloved hockey team to our wondrous TV station. I certainly cannot forget about, and must not forget about, the reason I'm here in the first place, our classes. This begs a crucial question. How does everything blend in such a wondrous way? I've mentioned a few activities that happen here, but the list continues. I am very grateful for my time working for the Campus Technology Services, allowing me to open my eyes to all the ins and outs of the behind-the-scenes on the technology side. I believe that through meticulous research, we can come to optimize a place many of us have to come to call home. I chose MCC (Marano Campus Center) to be the basis of creating this new and improved wireless network infrastructure in particular because of how interesting it is and all the moving pieces. To add to the list of what happens in MCC, there's the career center, advisor offices, tours that always pass through, and the long-awaited graduation! This is a tall task, but one I'm hopeful of rising above.

## Major Tasks

I've divided the tasks into groups, and further into subgroups, to help make clear what the objective is and the key pieces of information I will gather to accomplish it. Also, all these

present their questions of access and security that will soon be answered. The main goal of this is to make clear what our issues are and how they present themselves.

## Networking Infrastructure

### Users

The word “users” includes all the human actors of the devices, as well as the different devices themselves and all the different ways they may, or may not, interact with the system. First, and potentially the most important, we have our beloved students. Students rely on the internet at all times for various reasons. Schoolwork and leisure are the two most notable reasons. Making sure students have a reliable connection as they go from their dorms to the class is all-important, but luckily, here we are only focusing on the class. This also begs the question of what if the student is an alumnus? What if it has been .00001 seconds since a student graduated? At what point do we restrict their access to MCC wifi? All questions to be answered. We have our other main users of the network, the faculty and staff. As of writing this, my current breakdown of our faculty and staff is as follows: professors, dining staff, advisors in the Career Center, and our custodians, among many other important pieces of MCC that make the building function. Then there’s our guests, whoever they may be. Hockey fans, future students on a tour, and all who aren’t main users may still have access to our network. On the side of the devices themselves, it is more or less unreasonable to list out every possible device that a person may use, but to take

note of key ones. We have phones, tablets, and laptops (and additional personal computers). All are essential to the workflow for students, faculty, and staff. There are systems for making transactions in place at various points of commerce. All should be on one unified system in order to better ensure that security measures are universally applied and may not be omitted in certain unforeseen test cases.

## Security and Reliability

A very crucial part of networks is their security. A network that can be accessed and disrupted is not a sign of a very good network. Ensuring that firewalls are active and very effective will be a key point as well. This all while not being too restricted to what the main users need. A professor should be able to access a student's academic records, and only the students they advise, but not all other faculty. Students should be able to access their academic records and not the records of others. All important things to keep in mind when implementing this system

## Notable Locations/Events

These are all the non-human actors that also interact with each other in various ways. I cannot possibly list everything that goes on the MCC, but I can list all the important parts and where they happen.

1st floor

Here we have the cafeteria with a lot of traffic at midday for lunch, but it is almost always open to students for use. Here is also the main entrance to the locker rooms for Hockey as well as a direct entrance to the Ice Rink. This part is very important as many events take place here. The main one that needs to be done with care is Graduation. There's also the yearly OzFest that has outdoor vendors with their transaction network that needs to be taken into account as well.

### 2nd floor

This is by far going to be the largest task of this project, just because of how many parts there are here. The main one is the abundance of classrooms on this floor. There's also the arena, but that, for organizational purposes, will be a part of the 1st floor. There's the food stand, Crossroads, and its little sit-down area. The hallway past it is home to Monday through Friday tabling. Past that is our many studios, home to our many media organizations. Then, finally, we have the offices of advisors of various departments and the Compass, home to the career center.

### 3rd Floor

This is by far the simplest floor, being that it contains nothing more than classrooms and advisor offices.

## Resources

My primary resource will be the wealth of knowledge from my advisor, Jonathan Fargo. He knows his way around networking, especially the wireless infrastructure world, and I believe that

will be invaluable to completing this research project. Additionally, I will refer to various books by Cisco and articles on designing a network infrastructure to learn more about the design and implementation theory. This is an ask, but if I were also able to get my hands on an interior design map of MCC, that would help greatly.

## Outline

The outline as it stands will be a continuous work in progress. At the moment, I do have what I believe are key parts to breaking down my topic and maximizing all the information I can put on my page. It will go as follows:

- Advice to future honors students
- Introduction
  - What do I plan to do?
  - Why did I choose the topic?
  - Who does a better network infrastructure benefit?
- The moving parts of the Marano Campus Center
  - Go into the depths of all the actors that make up MCC
    - Users
    - Locations
    - Events
    - Networking Devices
- What do I plan to do to make the wireless infrastructure better?

- How I would accomplish the task
- Diagrams detailing the work and what it would look like
- Conclusion
- References