

Module 4: Planning a network

1. Recap from last week
2. Network deployment planning
3. Mapping the Fort York Micro Mesh
4. Connecting technical and outreach strategies
5. Wrap-up & homework

Recap from last week

Using `Raspberry Pis`, we formed a `wireless mesh network` (week 1), we then learned more about `networks and the internet` (week 2), and `configuring wireless mesh networks` (week 3).

This week we will start to think about scale and putting these networks out into the wild.

Network deployment planning

Goals, site evaluation, and important considerations for creating a network!

Identify goals

Key questions:

- How will the network be used? What will it accomplish?
 - Detail specific applications or "use cases" (helps understand capacity)
- In one area, how many people do you expect to be on the network? (helps understand link speed "budget", select hardware)
 - Assessment based on surveying needs
 - Calculations using link planning software (e.g. RadioMobile)
 - Trial and error!
- *Others?*

Evaluate potential sites

- **Wireless Networking Potential**, including tallest buildings, line of sight, obstructions (e.g. hills, trees and more), interference (i.e. other installations of wireless equipment (Resources: [Wireless Networking in the Developing World](#))
- **Mounting and Power Options**, including where and how can power be provided? Roofs access and safety? Windows or tinted glass?
- **Social Opportunities and Challenges**, important locations, active members, local businesses, owners, willingness? (Resources: [Commotion Wireless Construction Kit](#))

Important factors while planning

- Antenna types and characteristics
 - Transmit (TX) Power (dBm)
 - Gain (amplification based on shape)
 - Sensitivity or Received Signal Level (RSL)
 - Loss (distance, cable connections), attenuation (passing through objects), and scattering (dispersal)
- Noise and obstructions

Mapping the Fort York Micro Mesh

Connecting technical & outreach strategies

Let's look at [Commotion Construction Kit](#)'s other resources:

- [Survey your Neighbors](#)
- [Identify Neighbourhood Skills](#)
- [Inventory your Neighbourhood](#)

Wrap-up & Homework

Recap

- Discussed considerations for planning and deploying a network
- Went outside (hopefully)!
- Brainstormed how that might apply in Toronto

Questions?

Homework

Next session we will discuss Measuring a Network as well as Net Neutrality.

□ *Watch these videos on Net Neutrality!*

- [Net Neutrality - 6 Minute Explanation](#) by drawntoknowledge (*Note: This video incorrectly labels ISPs as Tier 1 providers*)
- ["The Internet We Want" Panel starting @ 27:00](#) hosted by Logic Magazine and NYC DSA Tech Action committee

Optionally:

- Read ["A plan to rescue the Web from the Internet"](#) by Andrew Staltz