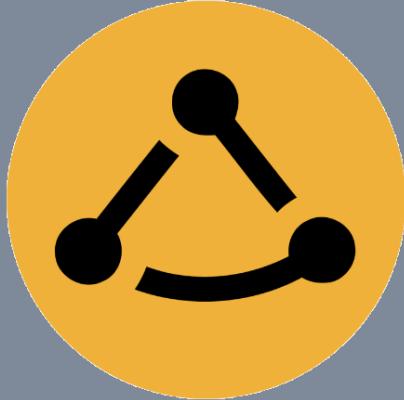
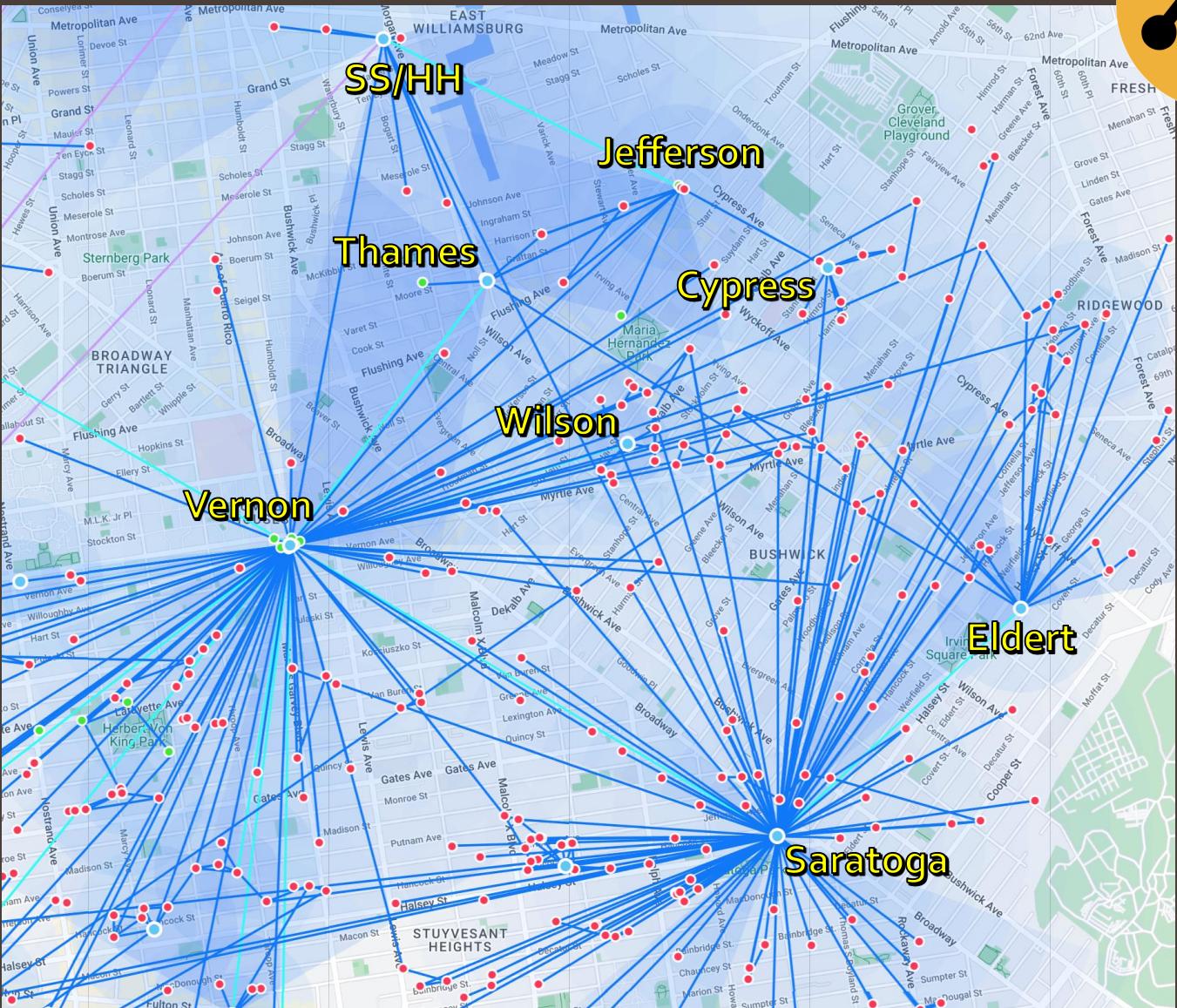


NYC Mesh

Bushwick Neighborhood Update



Bushwick

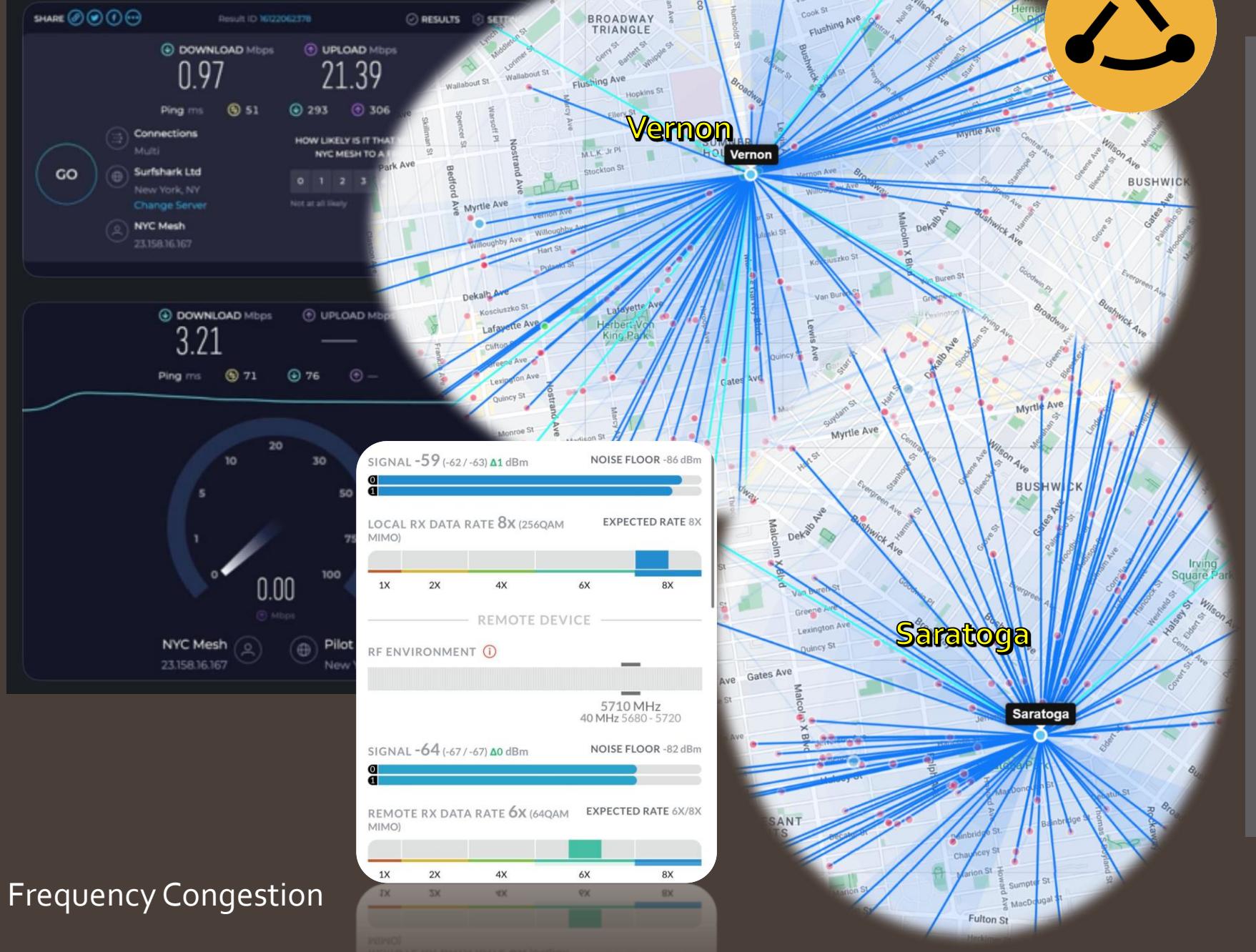


Bushwick Updates

- Testing of LTU
- 60 GHz Expansion
- Midsize Hub Routing
- New Hubs
 - Wilson
 - Thames
- Community
- Marketing

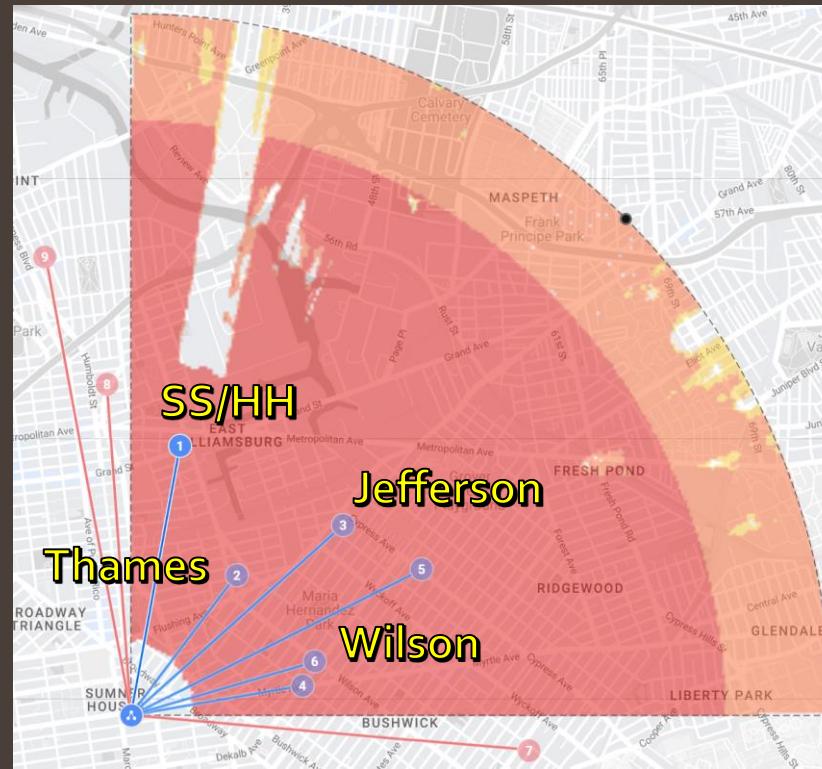
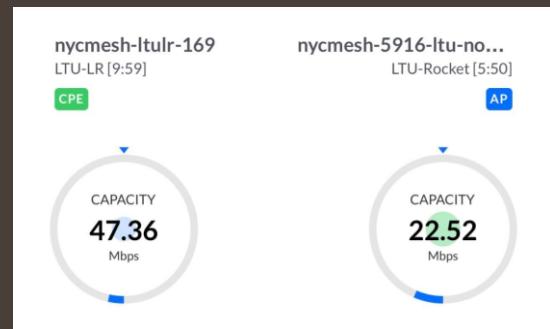


Issues



Overcrowding of Large Hubs | 5GHz Frequency Congestion

Upgrades: LTU

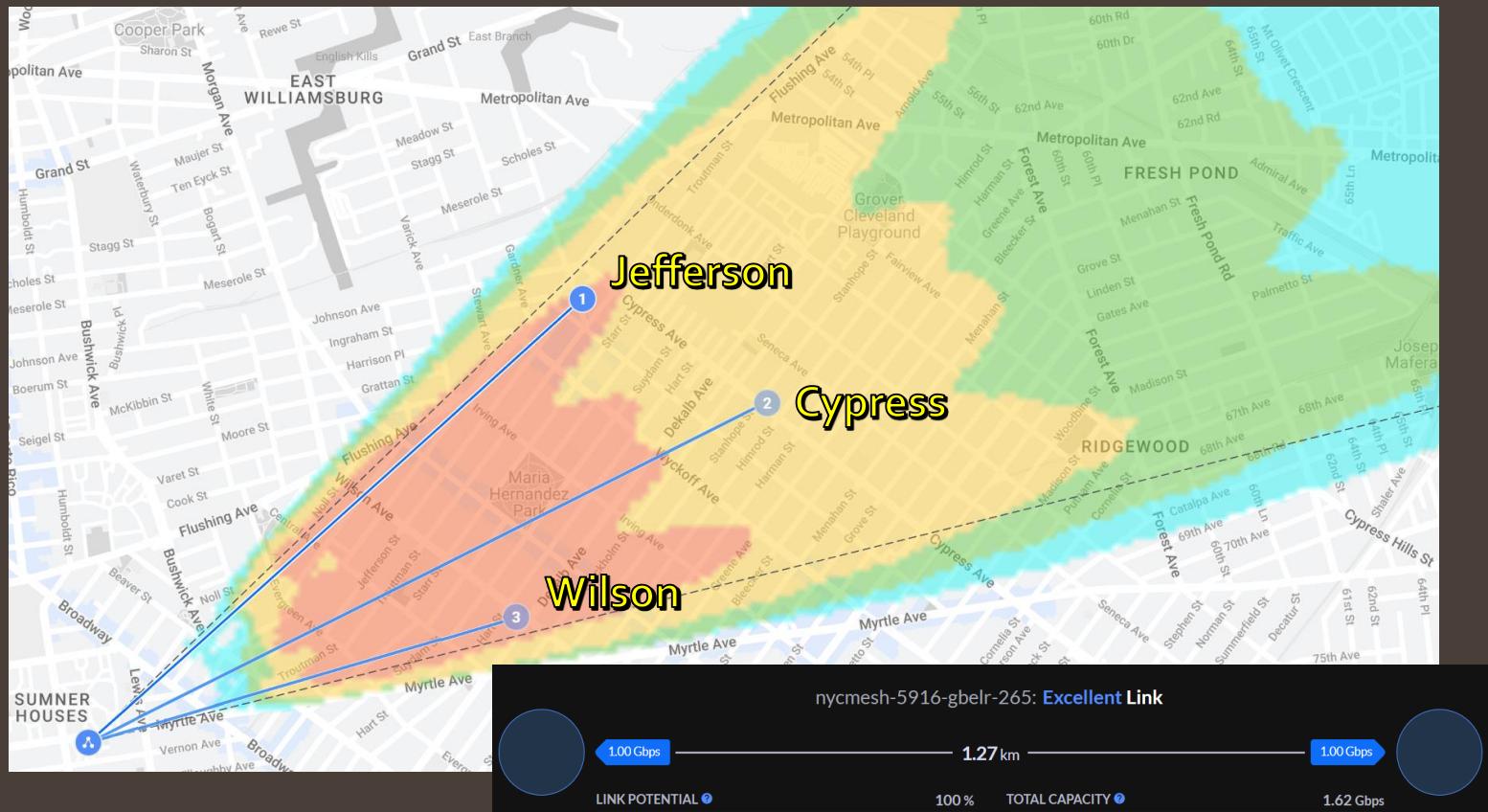


Donation of many LTU-LR | Poor Sector PTmP Performance in 5GHz Congested Areas | Decent PTP Performance (100 MHz)

Upgrades: 60 GHz

- Issues to Solve:
 - 5GHz Congestion
 - Low Performance
 - Medium Hub Bandwidth
 - Long WDS Paths

- Extend 60GHz to:
 - Wilson (AF6oLR)
 - Cypress (AF6oLR)
 - Jefferson (AF6oLR)
 - Thames (GBE-LR)



Significant Improvements to Congestion & Bandwidth at Medium Hubs

Upgrades: wAP / SXT



Architecture	MIPSBE	ARM 32bit
CPU	QCA9557	IPQ-4018
CPU core count	1	4
CPU nominal frequency	720 MHz	716 MHz

RBwAPG-5HacD2HnDr3		wAP / SXT				
Mode	Configuration	1518 byte	512 byte	64 byte		
		kpps	Mbps	kpps	Mbps	kpps
Bridging	none (fast path)	162.5	1973.4	469.9	1924.7	1484.8
Bridging	25 bridge filter rules	162.1	1968.5	352.9	1445.5	359.2
Routing	none (fast path)	162.5	1973.4	469.9	1924.7	1488
Routing	25 simple queues	162.5	1973.4	469.9	1924.7	506.3
Routing	25 ip filter rules	162.2	1969.8	240.8	986.3	242.9
						124.4

RBOmniTikG-5HacD		Omnitik QCA9557 1G all port test				
Mode	Configuration	1518 byte	512 byte	64 byte		
		kpps	Mbps	kpps	Mbps	kpps
Bridging	none (fast path)	81.2	986.1	234.9	962.2	477.7
Bridging	25 bridge filter rules	81.2	986.1	118.4	485.0	119.5
Routing	none (fast path)	81.2	986.1	234.9	962.2	408.2
Routing	25 simple queues	81.2	986.1	158.3	648.4	165.8
Routing	25 ip filter rules	64.8	786.9	70.4	288.4	60.9
						31.2


```
/interface bridge port  
add bridge=mesh hw=no interface=ether1  
add bridge=mesh hw=no interface=ether2  
add bridge=mesh hw=no interface=ether3  
add bridge=mesh hw=no interface=ether4  
add bridge=mesh hw=no interface=ether5  
add bridge=mesh interface=wlan1  
add bridge=mesh interface=wlan2  
add bridge=mesh interface=wlan4  
add bridge=wds interface=wlan3  
add bridge=wds interface=dynamic internal-path-cost  
  
:beep frequency=1200 length=100ms  
  
/interface bridge filter  
add action=drop chain=forward in-bridge=mesh  
add action=drop chain=forward in-bridge=wds  
add action=drop chain=forward in-interface=wlan2
```

Internet NYC Mesh 96%

Uptime 0.31 Mbps ↑ 0.05 Mbps

Activity 1 ms G 1 ms 1 ms

Internet Health See All

-24h Now

Speed Test Run Now

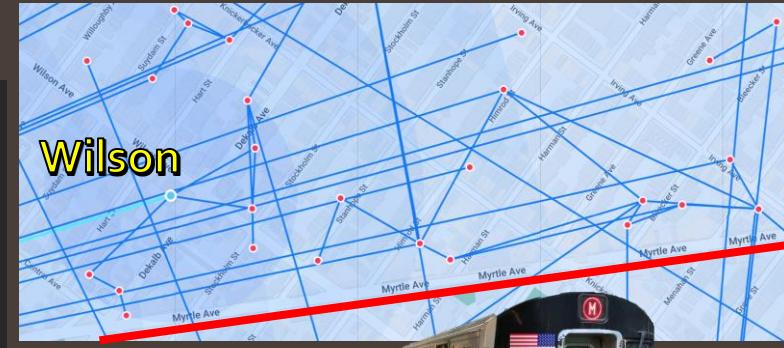
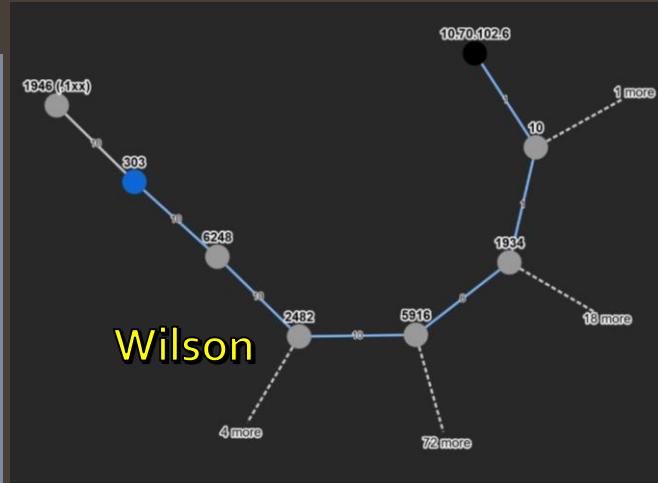
Runs Daily at 03:00 AM

Last Speed Test May 23, 5:07 PM ↓ 747 Mbps ↑ 773 Mbps

3X Routing for Medium Hubs | Baseline from ConfigGen | Small WDS



Upgrades: Wilson Hub



5GHz Congestion | Long WDS Chains | LOS Limitation MTA-M

Upgrades: Wilson Hub Statistics

Large Performance Increase

```
=====Omni Speed Test=====
Speedtest from 10.69.24.82 to 10.10.10.100

    status: done
    time-remaining: 0s
    ping-min-avg-max: 12.8ms / 38.9ms / 217ms
    jitter-min-avg-max: 4us / 20.1ms / 189ms
    loss: 0% (0/100)
    tcp-download: 3.97Mbps
    tcp-upload: 5.25Mbps local-cpu-load:15%
remote-cpu-load:72%
    udp-download: 16.2Mbps local-cpu-load:20%
remote-cpu-load:76%
    udp-upload: 20.9Mbps local-cpu-load:19%
remote-cpu-load:65%
```

```
=====Omni Speed Test=====
Speedtest from 10.69.24.82 to 10.10.10.100
```

```
    status: done
    time-remaining: 0s
    ping-min-avg-max: 3.59ms / 10.9ms / 14.8ms
    jitter-min-avg-max: 6us / 2.10ms / 9.07ms
    loss: 0% (0/100)
    tcp-download: 39.0Mbps local-cpu-load:41%
    tcp-upload: 71.1Mbps local-cpu-load:69%
remote-cpu-load:30%
    udp-download: 40.4Mbps local-cpu-load:36%
remote-cpu-load:34%
    udp-upload: 73.0Mbps local-cpu-load:43%
remote-cpu-load:37%
```

```
=====Omni Speed Test=====
Speedtest from 10.69.24.82 to 10.10.10.100
```

```
    status: done
    time-remaining: 0s
    ping-min-avg-max: 854us / 1.59ms / 4.19ms
    jitter-min-avg-max: 2us / 506us / 3.15ms
    loss: 0% (0/100)
    tcp-download: 219Mbps local-cpu-load:100%
    tcp-upload: 204Mbps local-cpu-load:100%
remote-cpu-load:52%
    udp-download: 668Mbps local-cpu-load:99%
remote-cpu-load:58%
    udp-upload: 683Mbps local-cpu-load:100%
remote-cpu-load:59%
```



Name: nycmesh-lbe-2482
Location: Stations-Vernon-5916
IP: 10.98.108.170
Last seen: 2024-04-10 12:54:39
Signal: None DBm
Downlink: 21.87 mbps
Uplink: 61.56 mbps
Status: disconnected
Outage score: 0.9921547

Name: nycmesh-ltulr-2482
Location: Stations-Vernon-5916
IP: 10.98.108.183
Last seen: 2024-04-11 16:36:13
Signal: -61 DBm
Downlink: 47.36 mbps
Uplink: 135.118 mbps
Status: active
Outage score: 0



Upgrades: Thames Hub

5GHz Cross Connect | Test Bed



Reliability: Rain Fade

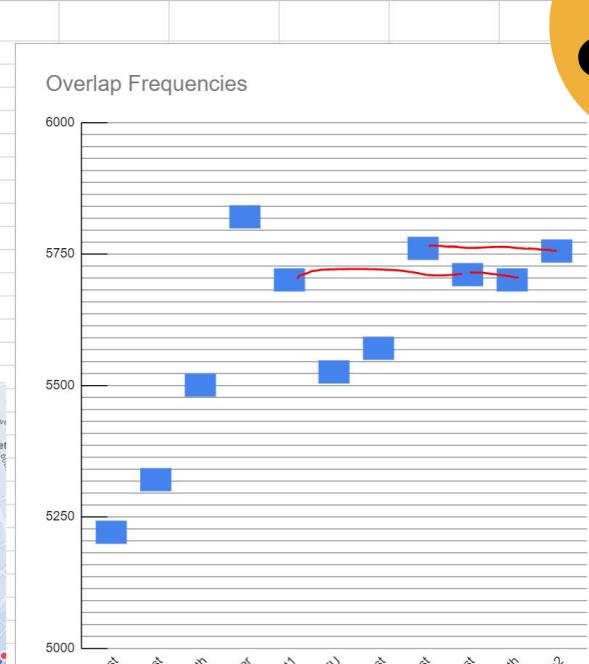
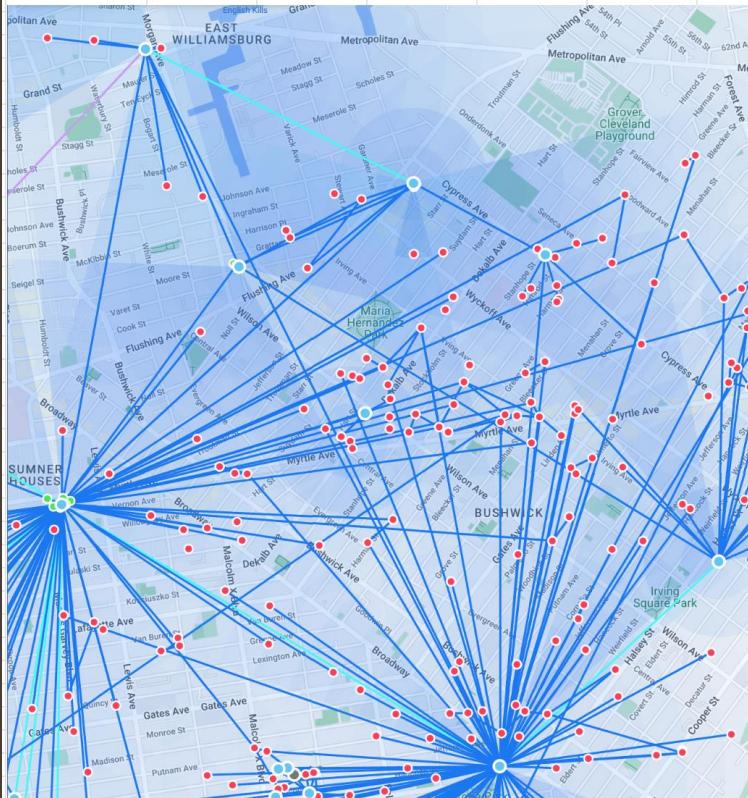
Vernon Backup | Proven Functionality



Reliability: Frequency Congestion

Local Overlap	Center Frequency	Control Frequency	Channel Width	Start Range	End Range
511-northeast	5220	5210	40	5200	5240
511-west	5320	5310	40	5300	5340
3606-south	5500	5490	40	5480	5520
3606-south-tower	5820	5810	40	5800	5840
5916-east1	5700	5710	40	5680	5720
5916-LTU	5525	5525	40	5505	5545
1417-east	5570	5560	40	5550	5590
5014-west	5760	5750	40	5740	5780
664-west	5710	5700	40	5690	5730
1340-north	5700	5710	40	5680	5720
1340-north2	5755	5765	40	5735	5775

values above are manually entered, they don't track changes from each page
they should though, if someone wants to make them do that :)



5GHz is Very Congested | Overlapping Sector Coverage | Manual Frequency Planning | DFS Channel Drop

Community



Bushwick Ayuda Mutua

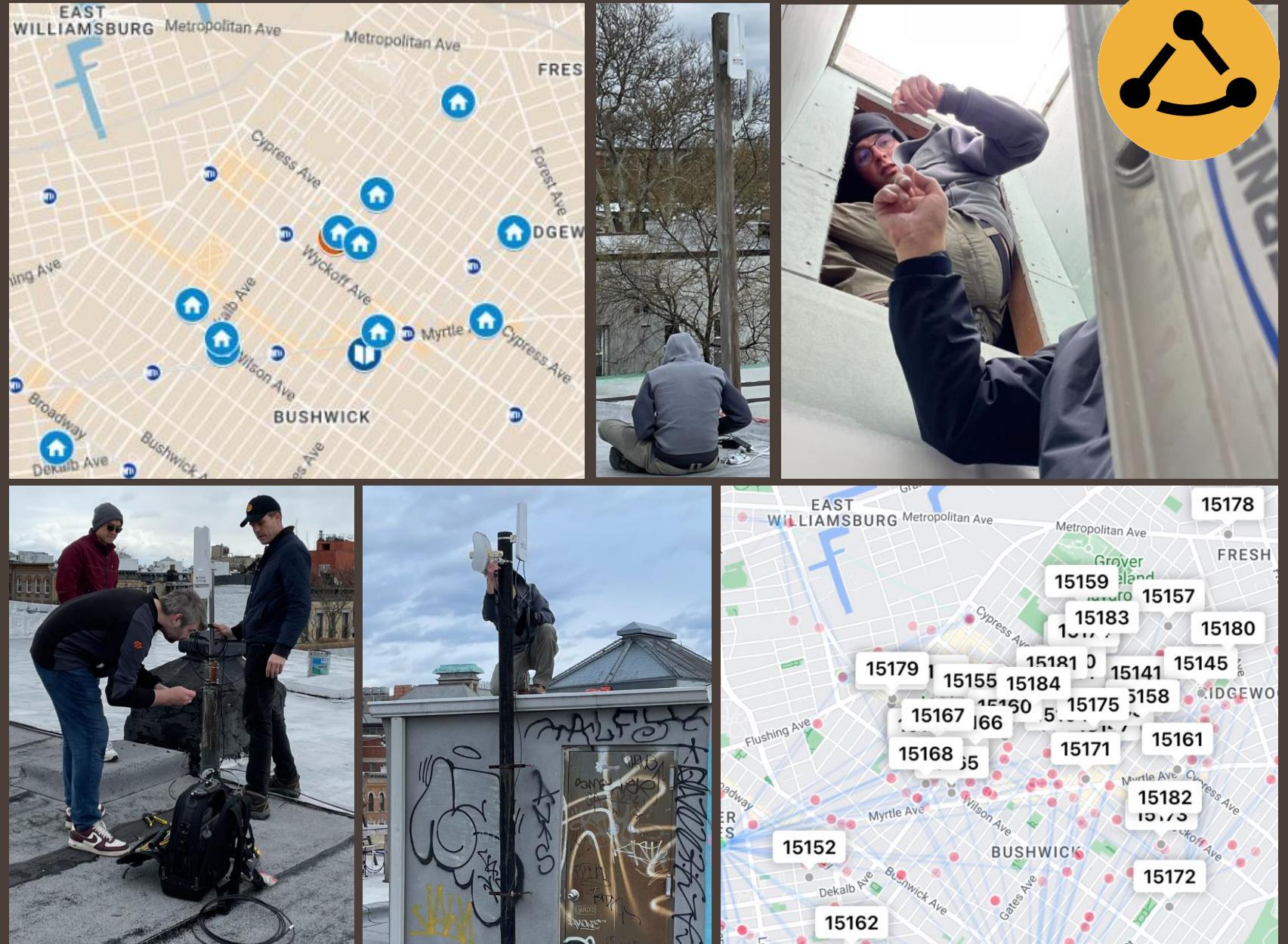
A network of Bushwick neighbors supporting neighbors.

We are a collective group of Bushwick residents, long-term residents and recent arrivals, rooted in the mission of creating a local network for neighbors to support neighbors.



BAM Neighborhood Installs with Mil Mundos | Collective Focus | Bushwick City Farm | Jefferson Migrant Shelter

Community: BAM Installs



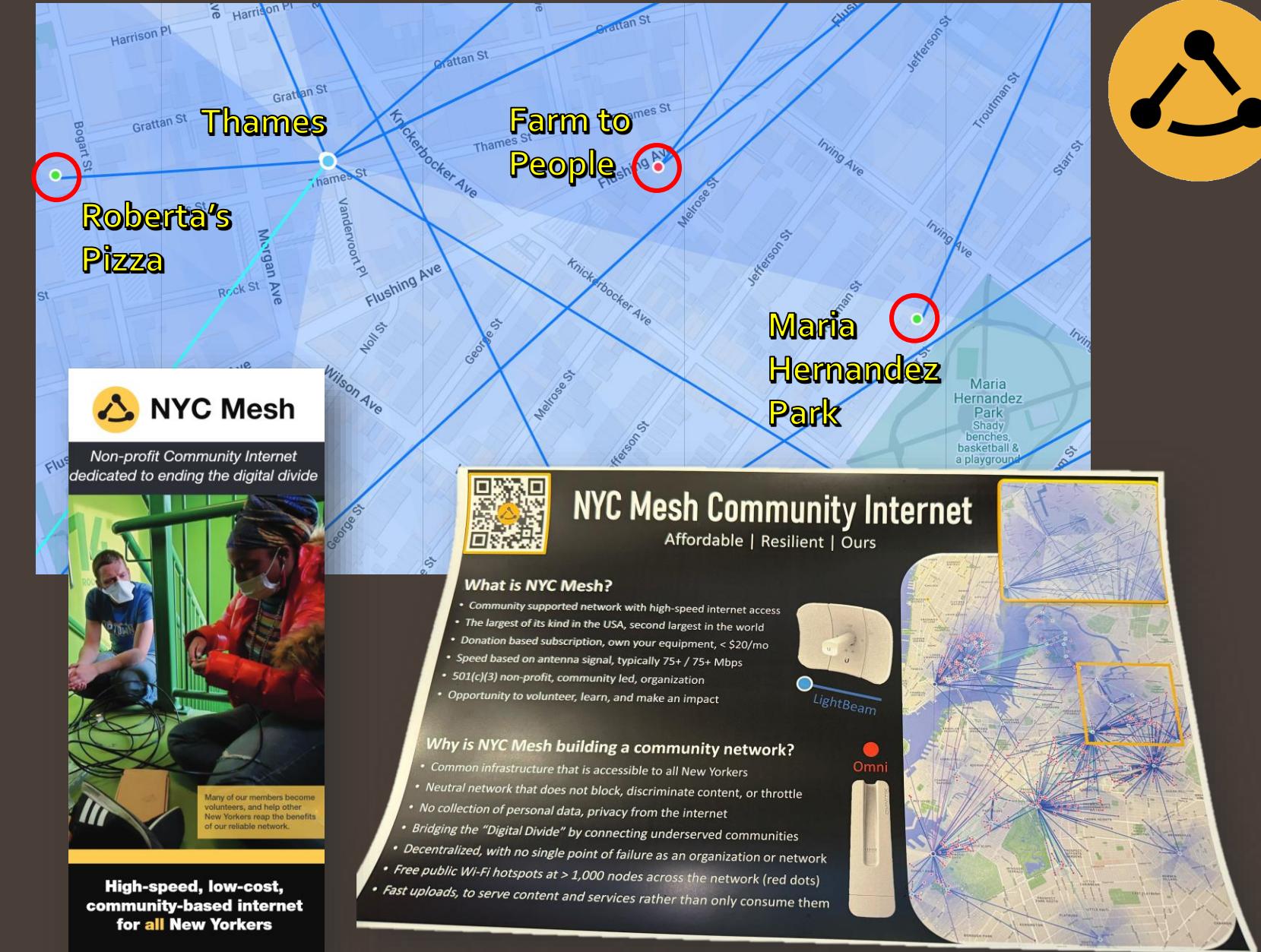
1 Day | 12 Volunteers | 4 Teams | 10 Nodes Installed | 11 Nodes Left to Complete | Next Wave Coming Soon

Community: Statistics



Significant Consistent Usage at Shelters | 3 AP at City Farm | Could Benefit from Power Improvements

Marketing

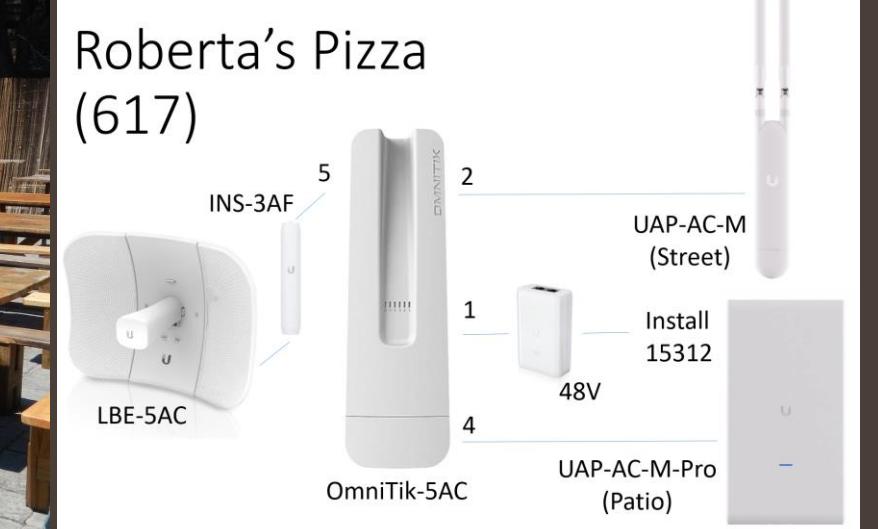


Persistent Advertisement of 11" x 17" Metal Signs | Reflects the Neighborhood | Standard NYC Mesh Leaflets

Marketing: Roberta's Pizza



Roberta's Pizza
(617)



A neighborhood institution, culinary destination, and hub for innovative entrepreneurship with a large outdoor event space



Marketing: Farm to People



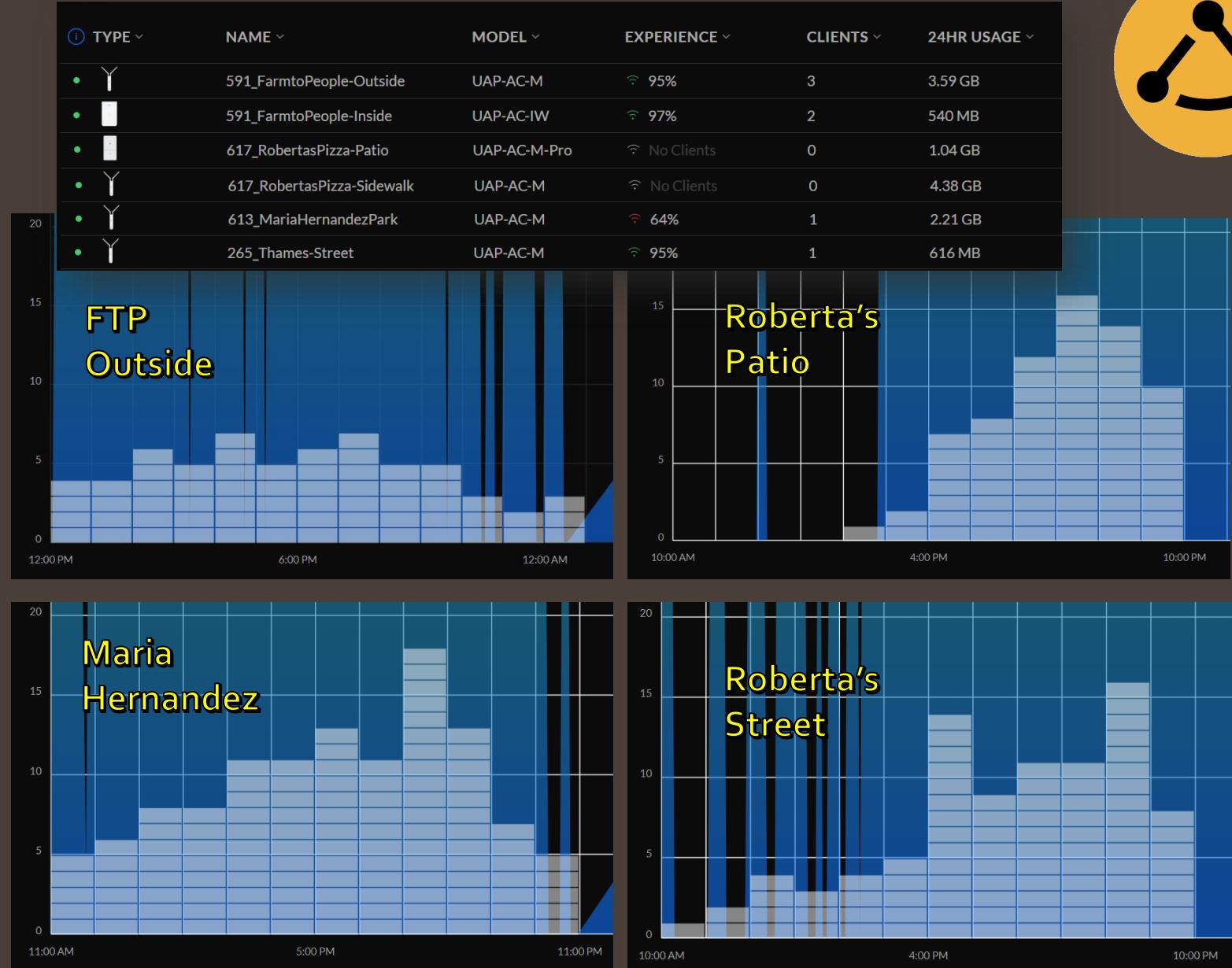
FTP delivers local, farm fresh produce boxes, pantry items, dairy, meat, and other ethically-grown groceries to your door

Marketing: Maria Hernandez

Wi-Fi Coverage in Park



Marketing: Statistics



Typical Daily Activity | Large Bursts Use During Events at Marketing Locations

Questions?

