

*Thesis Proposal*  
***TidePools***

# Wireless network communities

Resurgence in ad hoc, mesh network interest

Low Cost way to share Internet in communities

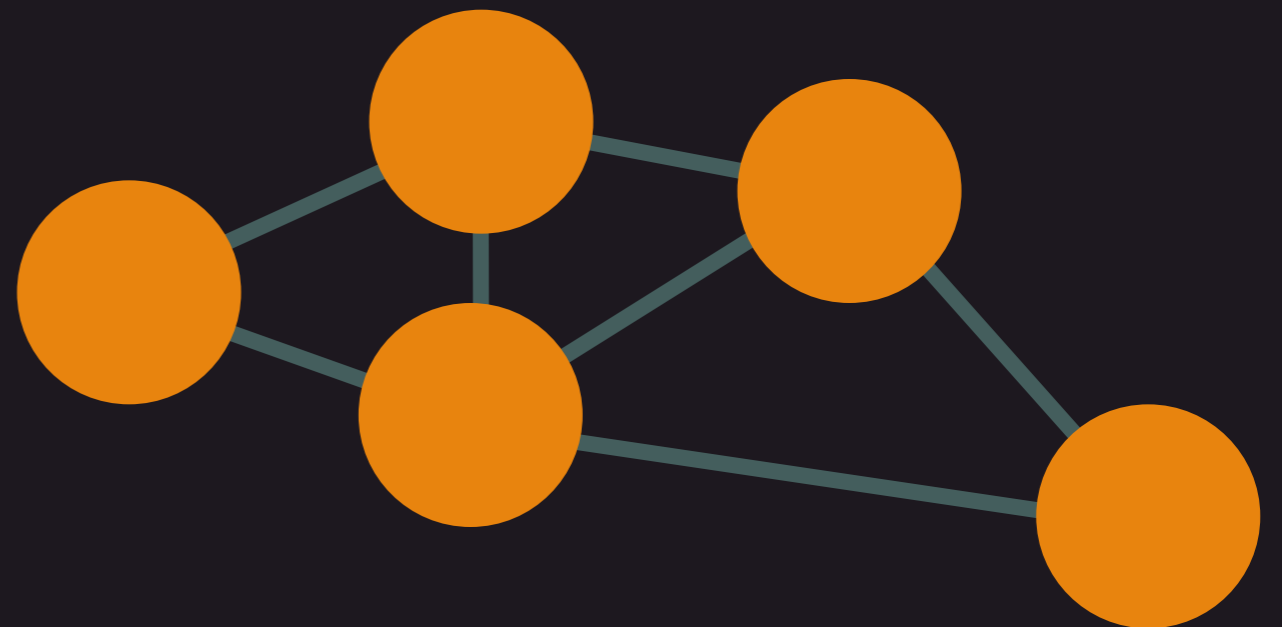
Devices connect directly each other

Communication outages:

- Oppressive regimes

- Censorship

- Natural disasters



# So why aren't there more?

**jrbaldw-in+on+around**  
...thesis blog

Search

## Community Network Survey

This survey is for research on the social layer in community wireless networks. Please send to all others involved in community networks.

What is the name of your community network? Where is it located?

---

How many people are part of the community network?

Less than 20 people  
 Less than 100 people  
 Less than 250 people  
 Less than 500 people  
 Less than 1000 people  
 Less than 2000 people  
 More than 2000 people  
 Don't know

---

How do you contribute to the network, what is your role?

---

How do you feel about your community network?

Proud  
 Disappointed  
 Hopeful  
 Hopeless  
 Indifferent

---

Has the community network developed or strengthened relationships you have with other members? In what ways?

Yes  
 No  
 Weakened the relationships  
 Don't know

Search

### Translator



### Oh...

Hey, this is my Research/production blog for MFA thesis in Design + Technology dept. at Parsons.  
A summary of my process so far. Thanks for hanging out!

### Categories

Concept  
Uncategorized

### Recent Posts

Community Network Survey  
Prototype 1  
And now there's a thesis blog

This work is licensed under a [Creative Commons License](#).  
Ripped a part [@pinboard](#) theme

Surveys of  
Networks

Interviews w/  
Experts studying  
Networked  
Communities

# *Wireless network communities*

## *Technical Problems*

Need Routers &  
Antennas for backhaul  
& wireless radio range

## *Social Problems*

Need Trust,  
Interdependence,  
Reciprocity

Need ritualized,  
face to face  
interaction

# *Social Goals*

Localized engagement to build network from grassroots level, until it reaches size to warrant municipal support.

Ensure people know about mesh / have software installed before communication outage.

# *Starts with Routers*



Router / Antenna

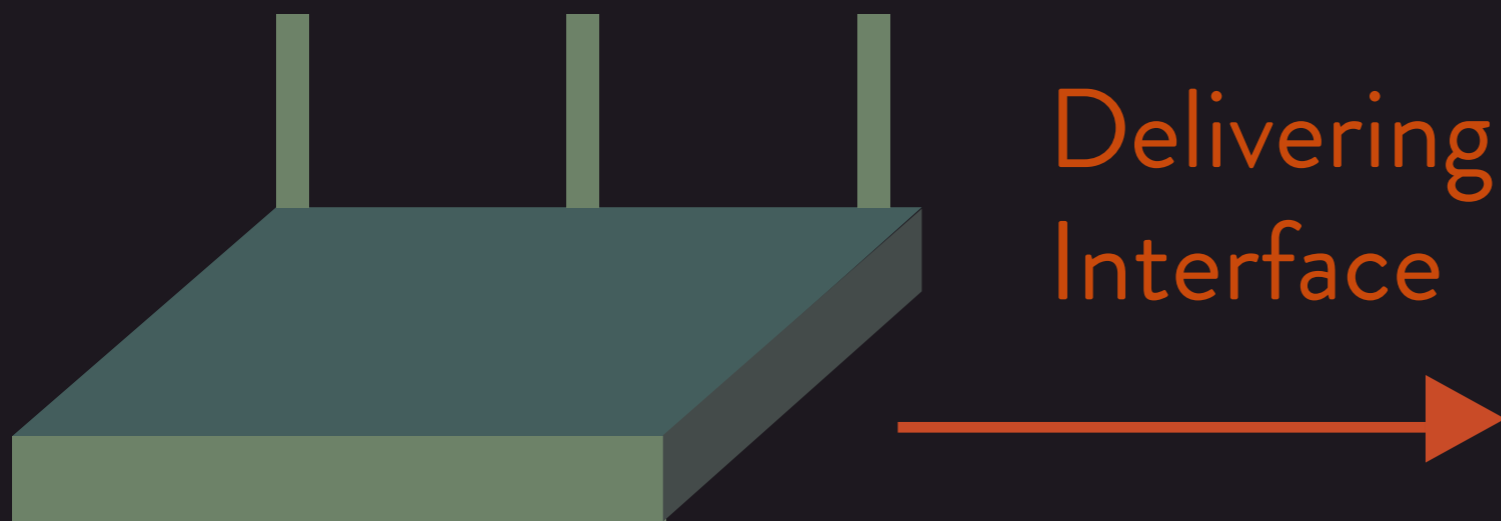
Tidepool Software

Commotion / OpenWRT

OLSR Mesh Protocol

Router or Antenna

# Mobile phone software



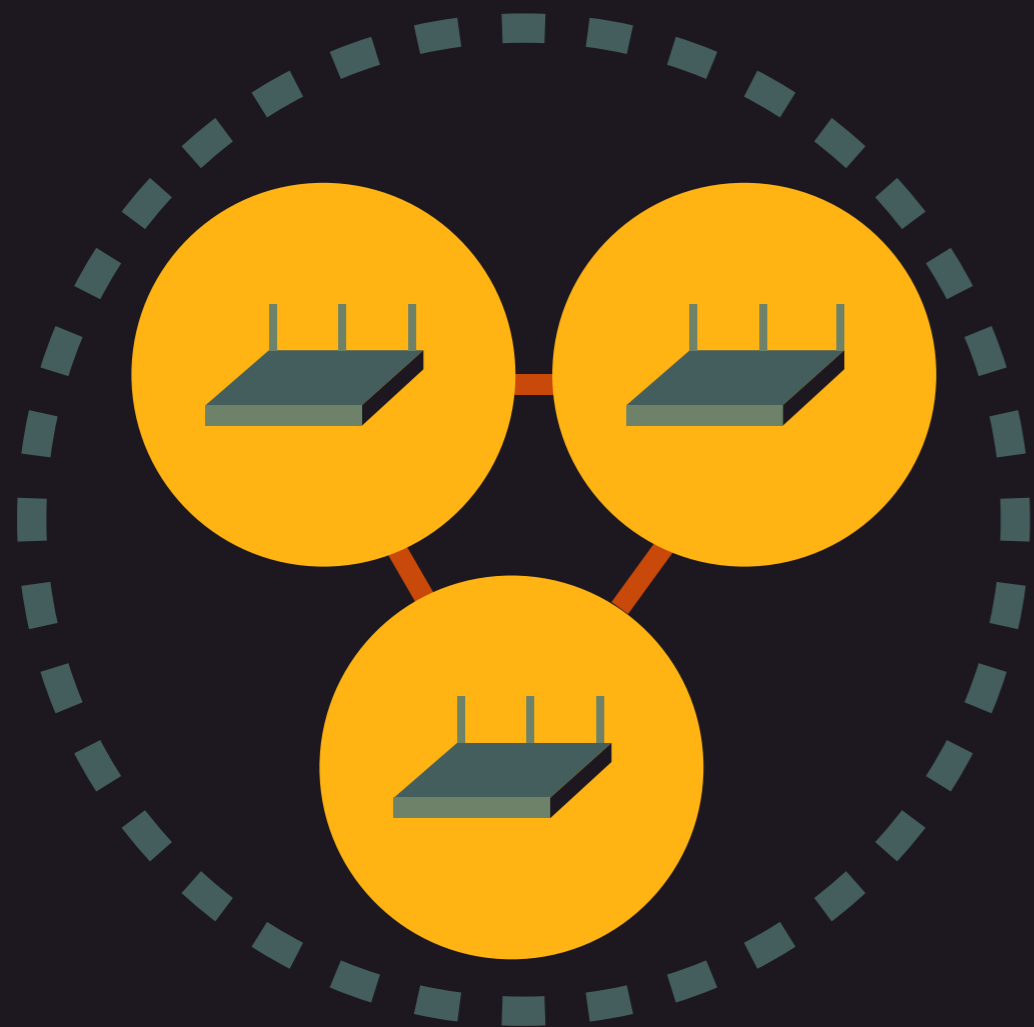
Delivering  
Interface



Captive Portal

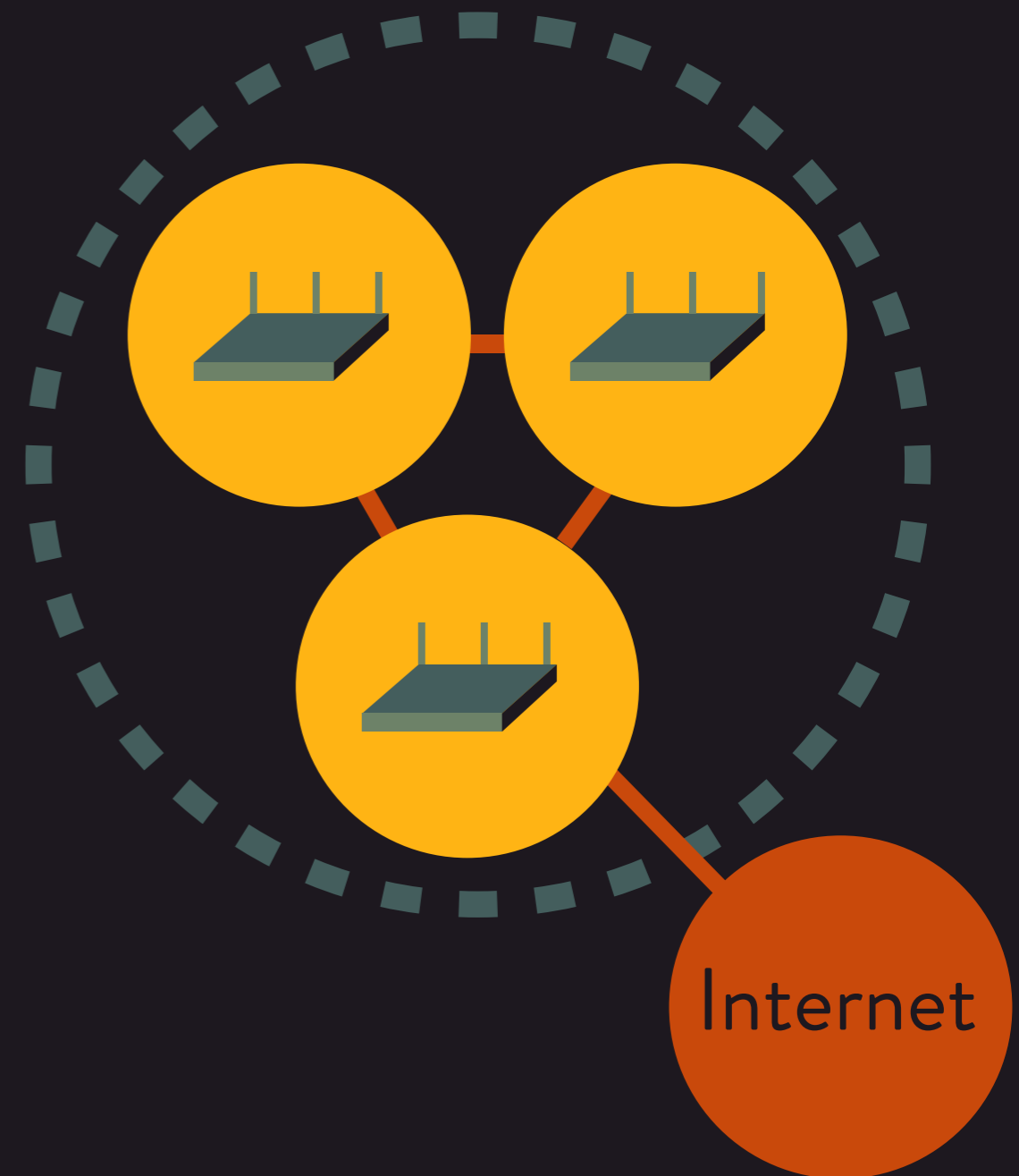
# Counter Public/Public Space

Remain a Counter Public



Local Area Network

Move to the Public



Internet

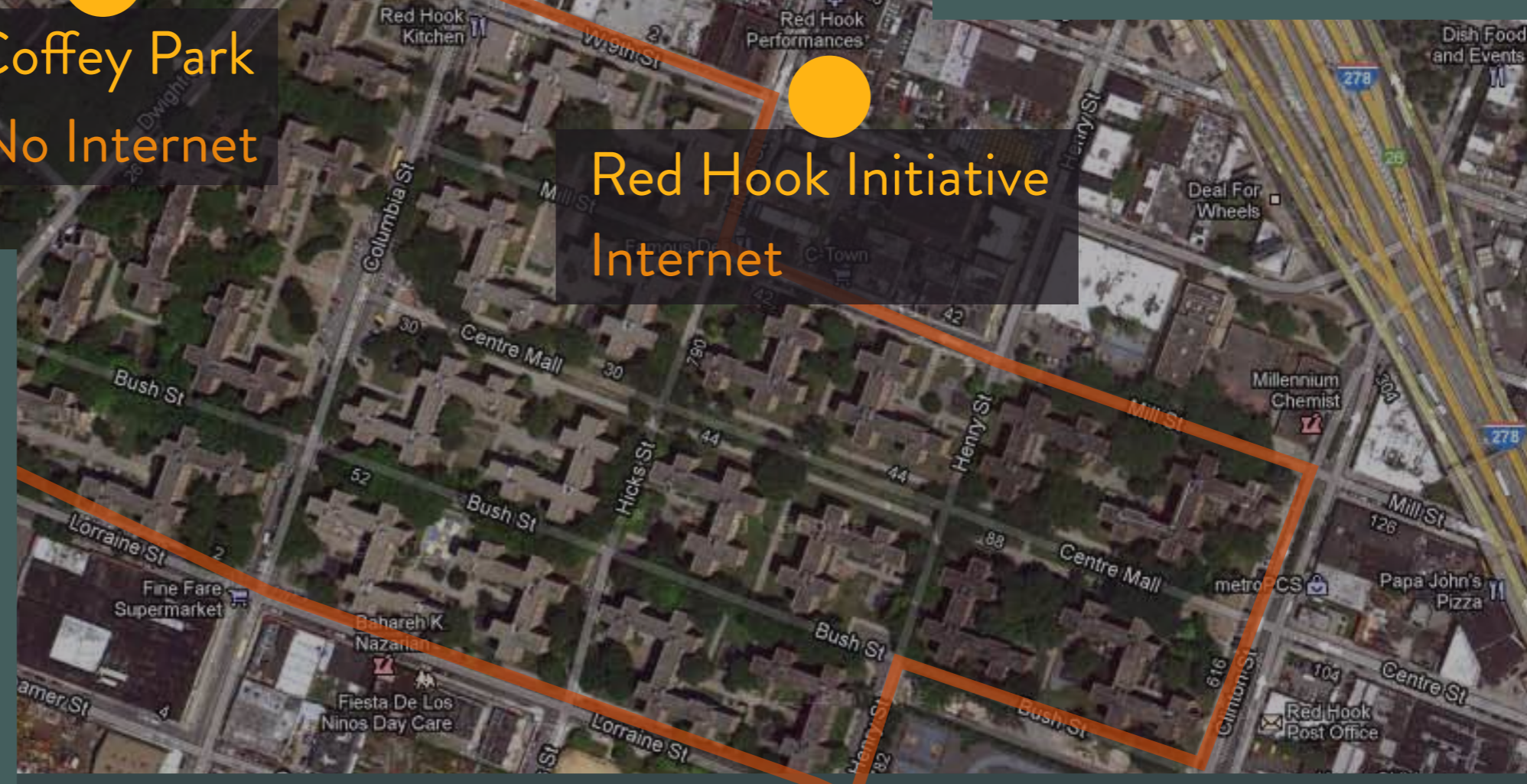
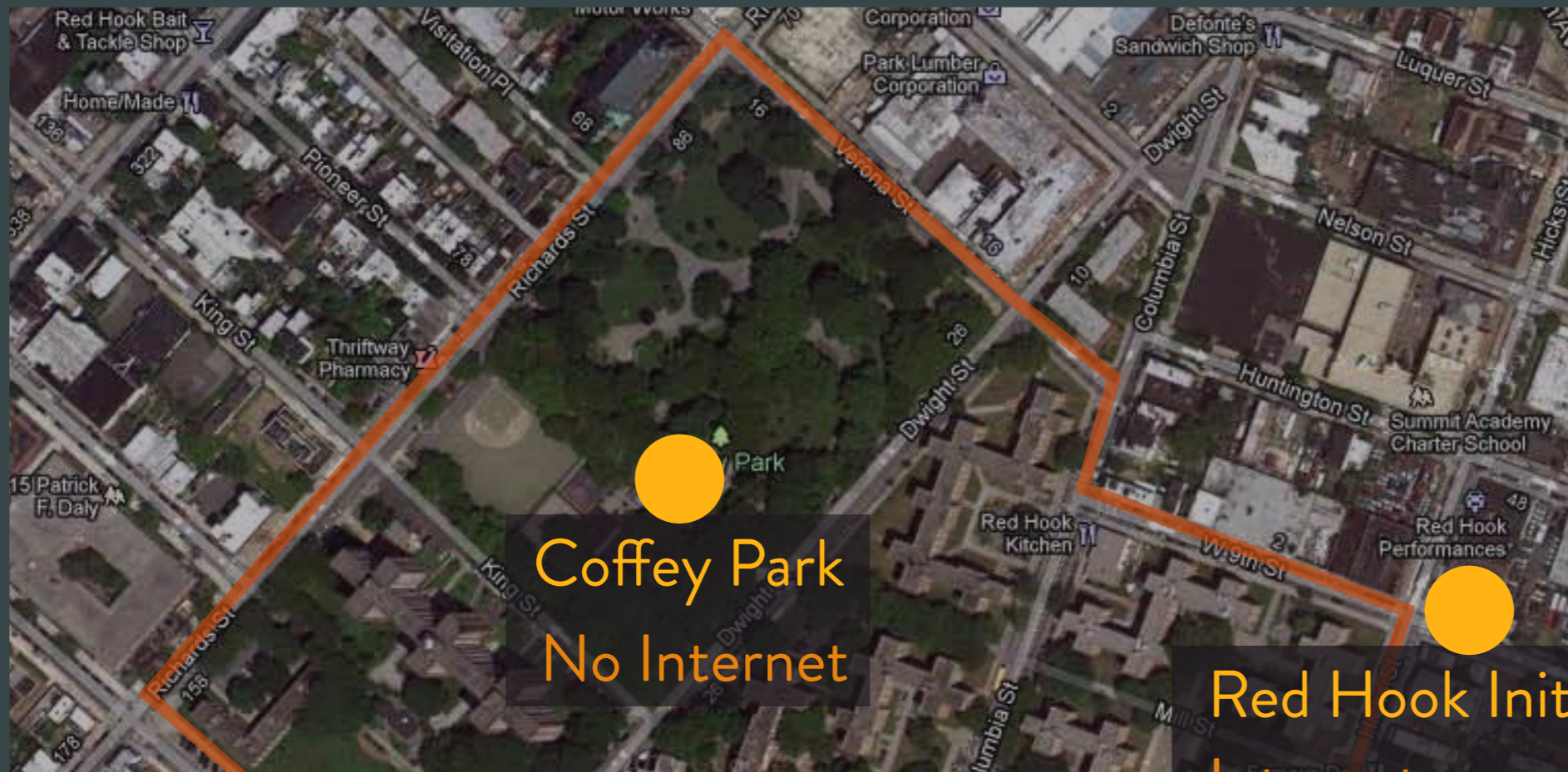
# Red Hook Housing Projects

No internet, primarily Android smartphone users



Engage community  
Teach network building  
Mesh network for low cost Internet

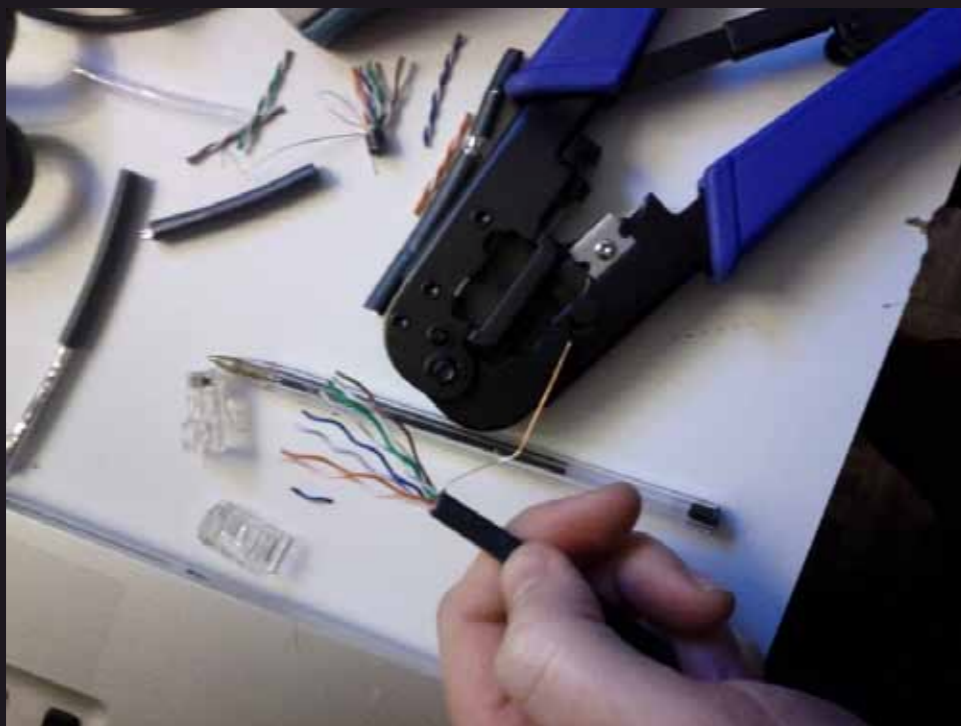
# Red Hook Housing Projects



# Configuring Equipment



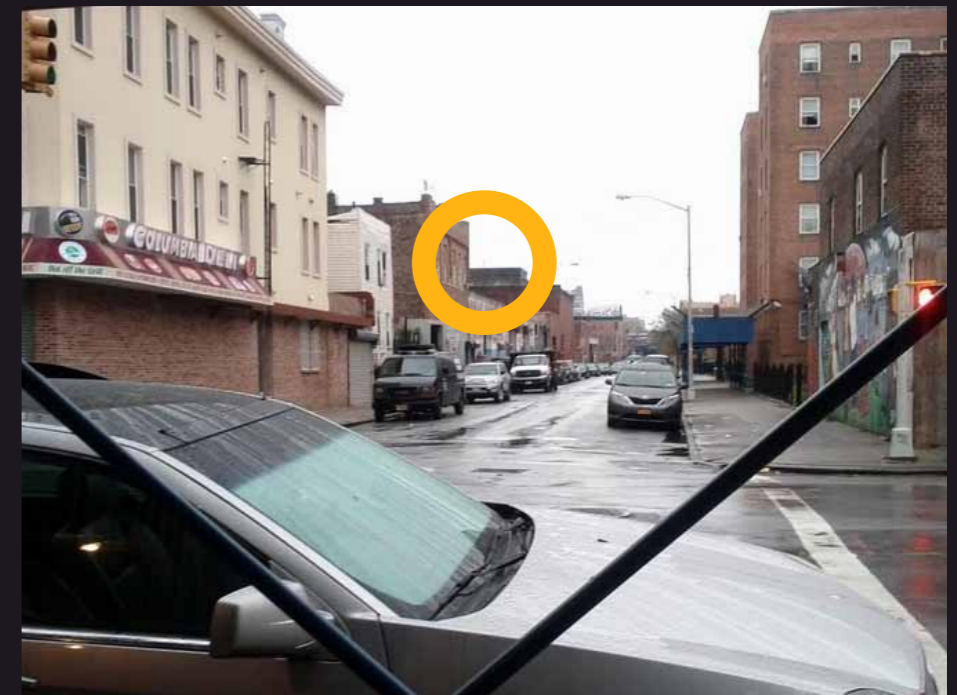
```
Terminal Shell Edit View Window Help
Terminal - ssh - 110x66
Enter 'help' for a list of built-in commands.
Backfire (10.83.1-905, r27688)
* 1/3 shot Kahlua In a shot glass, layer Kahlua
* 1/3 shot Bailey's on the bottom, then Bailey's,
* 1/3 shot Vodka then Vodka.
root@openit:~# cd /
root@openit:~# cd /
root@openit:~# ls
bin  etc  mail  proc  root  sbin  tmp  var
dev  lib  net  usr  sys  xbin  xusr  www
root@openit:~# cd tap
root@openit:tap# ls
TZ
dhcp.leases  log
lib          luci-indexcoche
root@openit:tap# cd /
root@openit:~# ls -l
drwxr-xr-x  2 root  root   641 Jul 15  2011 bin
drwxr-xr-x  4 root  root   820 Mar 27  02:44 dev
drwxr-xr-x  6 root  root   8 Mar 27  02:46 etc
drwxr-xr-x 13 root  root   632 Jul  7  2011 lib
drwxr-xr-x  2 root  root   3 Jul 15  2011 usr
drwxr-xr-x  4 root  root   0 Jan  1  1970 xbin
drwxr-xr-x 42 root  root   0 Jan  1  1970 xusr
drwxr-xr-x 16 root  root   211 Jul 15  2011 www
drwxr-xr-x  2 root  root   3 Jul 15  2011 xbin
drwxr-xr-x  2 root  root   629 Jul 15  2011 xusr
drwxr-xr-x 11 root  root   0 Jan  1  1970 xwww
-rw-r--r--  1 root  root  65638 Mar 27  2010 temp
drwxrwxrwt 13 root  root   348 Mar 27  03:00 tmp
drwxr-xr-x  6 root  root   86 Jul  7  2011 var
drwxr-xr-x  1 root  root   4 Jul 15  2011 www
root@openit:~# cd var
root@openit:var# ls
TZ
dhcp.leases  log
lib          luci-indexcoche
root@openit:var# cd /
root@openit:~# cd www
root@openit:www# ls
cgi-bin  index.html
root@openit:www# cd /
root@openit:~# ls usr
bin  lib  sbin  xbin
root@openit:~# cd usr
root@openit:usr# ls
bin  lib  sbin  xbin
root@openit:usr# cd bin
root@openit:usr/bin# ls
[
[[
arping  cacti  cronstab  mqr  killall  nmap  reset  tarnt  ut
awk      curl  find  killall5  nmap  seq  test  wpt
arping  dbclient  free  length  nc  seq  time  which
awk      diff  head  nc  less  nmap  sort  top  xargs
hvacman  dirname  headmap  nmap  logger  passwd  ssh  tr
hvacip2  dropbearkey  hvacid  nmap  lua  passwd  strings  tarncroute
brcot    du  id  nmap  lua  passwd  tail  uniq
clear    env  id  twinfo  nmap  print  tee  uptime
root@openit:usr/bin#
```



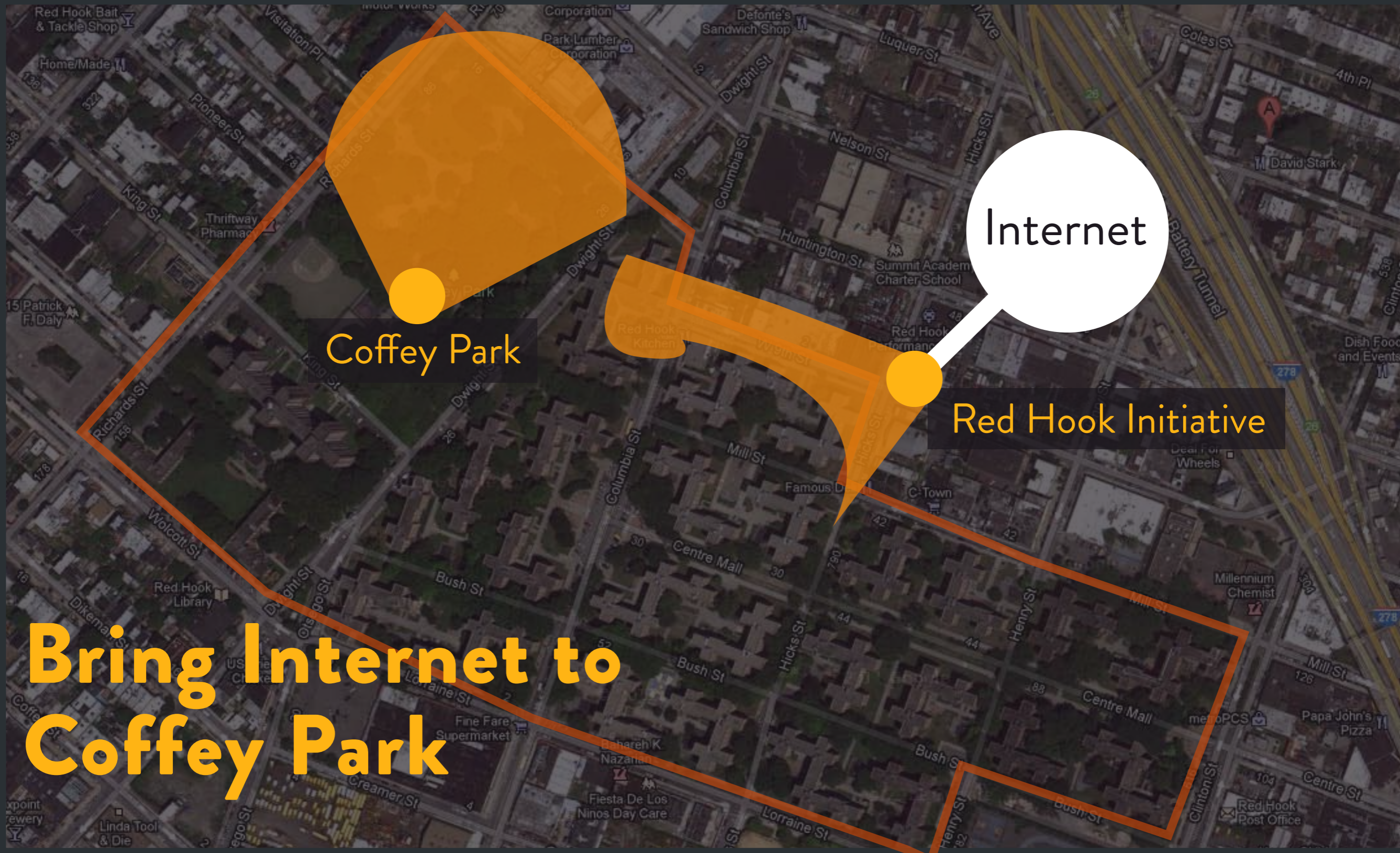
# Coffey Park tests



# Red Hook Initiative install



# Red Hook Housing Projects



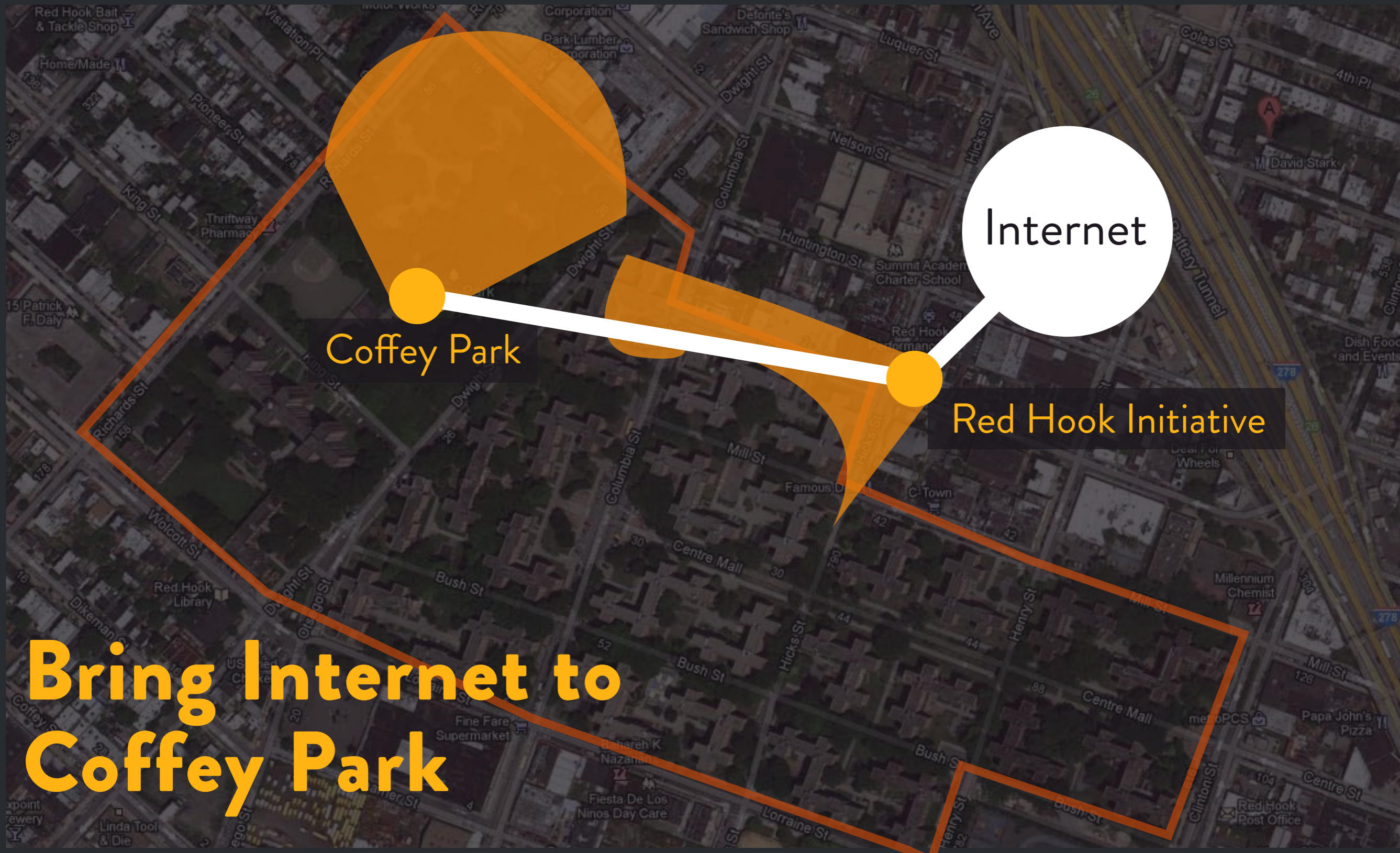
Internet

Coffey Park

Red Hook Initiative

Bring Internet to  
Coffey Park

# Red Hook Housing Projects



**Bring Internet to  
Coffey Park**

Internet

Coffey Park

Red Hook Initiative

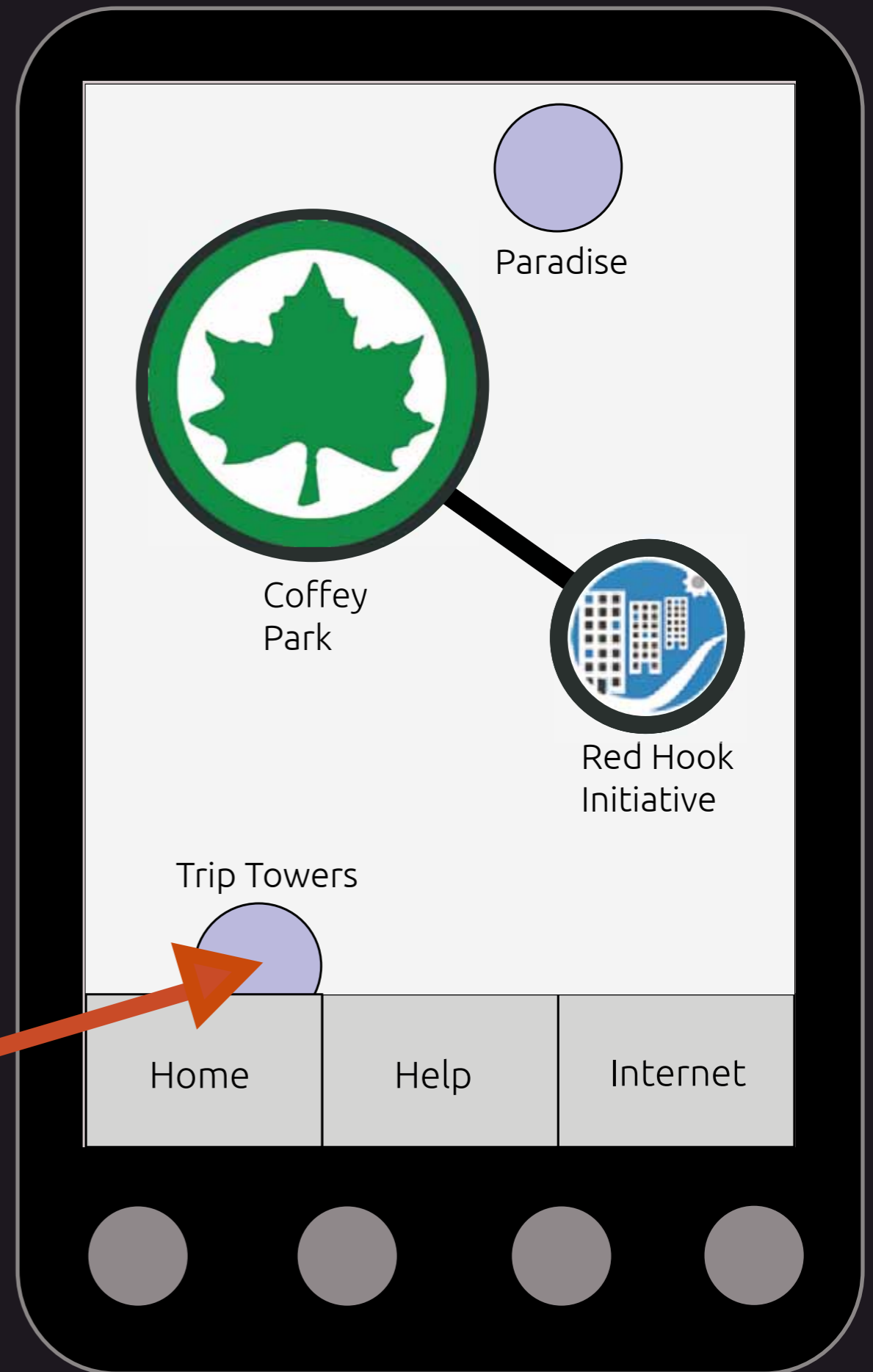
# Non-Cartesian Mapping

Radio waves have no geographic boundaries

Within walking distance, so Face to Face interactions can still happen

Landmarks = WiFi Hotspots

Can add more non-WiFi landmarks

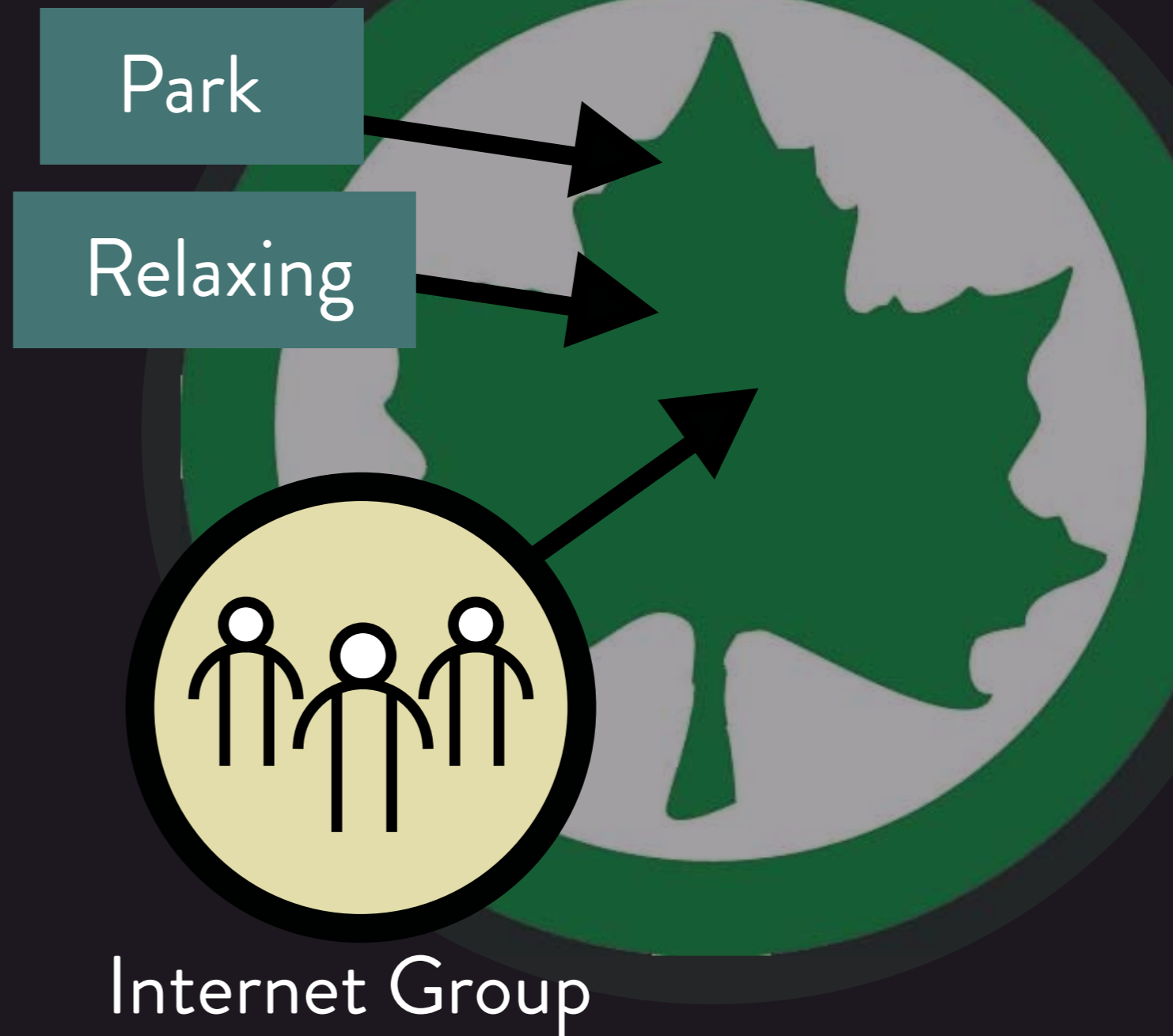


# Add Stuff Inside Landmark

More Landmarks &  
Groups


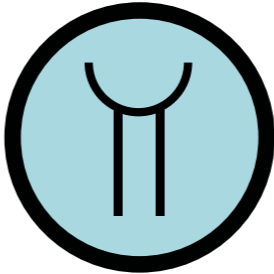
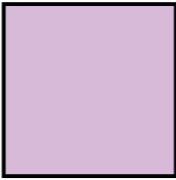

Tags

Nested JSON objects  
for Community API



# Landmark



Coffey Park Red Hook Housing Projects		
Groups / Landmarks	Upcoming Events	
 Picnic Tables	<div style="border: 1px solid black; padding: 5px;"><b>Internet Group</b> Meeting at 4:30, at Picnic Tables</div>	
<a href="#">Click for more</a>	<a href="#">Click for more</a>	
<div style="border: 1px solid black; padding: 5px;"> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec tempor urna vestibulum ante faucibus non porttitor tortor ornare. Sed eu mauris felis.</div>		
 Internet Group joined Coffey Park		
Home	Help	Internet

# *Social incentive mechanisms*

Which ones lead to face to face or ritualized interaction?

Civic engagement?

Network building?



# Passive Incentive Test

## Backchatter Conversation



ebooksclub.org\_The\_Cinema...\_Docume...orary\_Art\_.pdf



ebooksclub.org\_Art\_School...\_Proposition...\_Century\_.pdf



ebooksclub.org\_Sound\_Souv...\_enirs\_Audio...\_Practices.pdf



ebooksclub.org\_Game\_Soun...\_d\_An\_Introd...nd\_Design.pdf



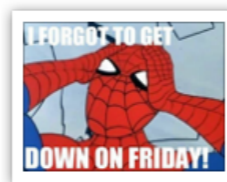
ebooksclub.org\_The\_Sound...\_of\_Poetry...T...of\_Sound.pdf



ebooksclub.org\_Sex\_Secrets...\_of\_the\_Kama...Pleasures.pdf



9596651168%20target=.gif



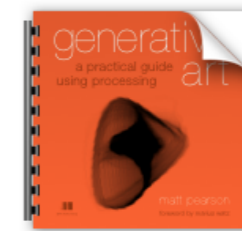
forgot.jpeg



Apollo > Users > jrbaldwin > Documents > -V100  
Databases > hackny > tumblr > tumblr.php



useragentswitcher.xml



Generative.Art.pdf



leaf patterns.jpg



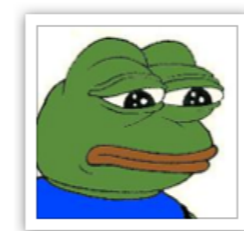
4171\_vintage\_mexican\_mola...\_silk\_applique\_textile\_4.jpg



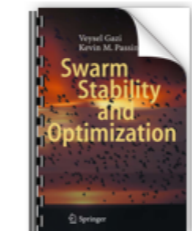
04 Postcards From Italy.mp3



OReilly Learning PHP MySQL and JavaScript Jun 2009.pdf



t105654\_feels bad man.jpg



SwarmStabilityandOptimizati...on.pdf



PicBasic Projects 30 Projects using picbasi...nes ELSEVI.pdf



Physical Computing - Sensing and ...Computers.pdf



Programming Interactivity.pdf



Getting.Started.with.Processi...ng.pdf



Make - Electronics Dec 2009.pdf



Learning Processing A Beginner's Gu...g Images.pdf



OReilly.Visualizing.Data.Jan. 2008.pdf



MIT,.Processing.A.Programmi...ng.Handbook...2182629].pdf



Experimenting with the PicBasic Pro Compiler-full.pdf

# *Asynchronous, Passive Interactions*

*For Locals?*

# Media Storage / Web Host



Image/Video/File Dropbox / Feed


Incentive: Install File server / HTTP server

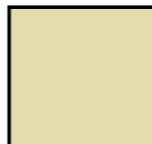
Free hosting of personal/group sites  
---> Autonomy of local information

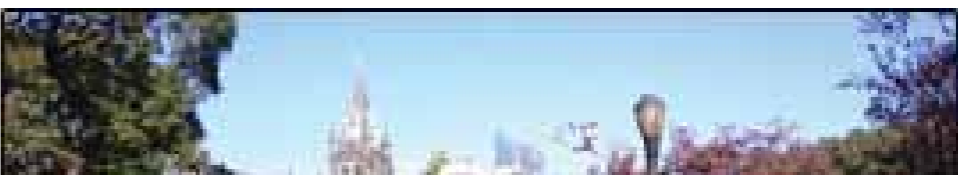
Embedded JSON objects  
= API to Internet

Coffey Park  
Red Hook Housing Projects



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 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec tempor urna vestibulum ante faucibus non porttitor tortor ornare. Sed eu mauris felis.



Home      Help      Internet

# Social Capital

Rewarding Skills & Participation



Mozilla Open Badges

*Possible network outcome*

Defined roles



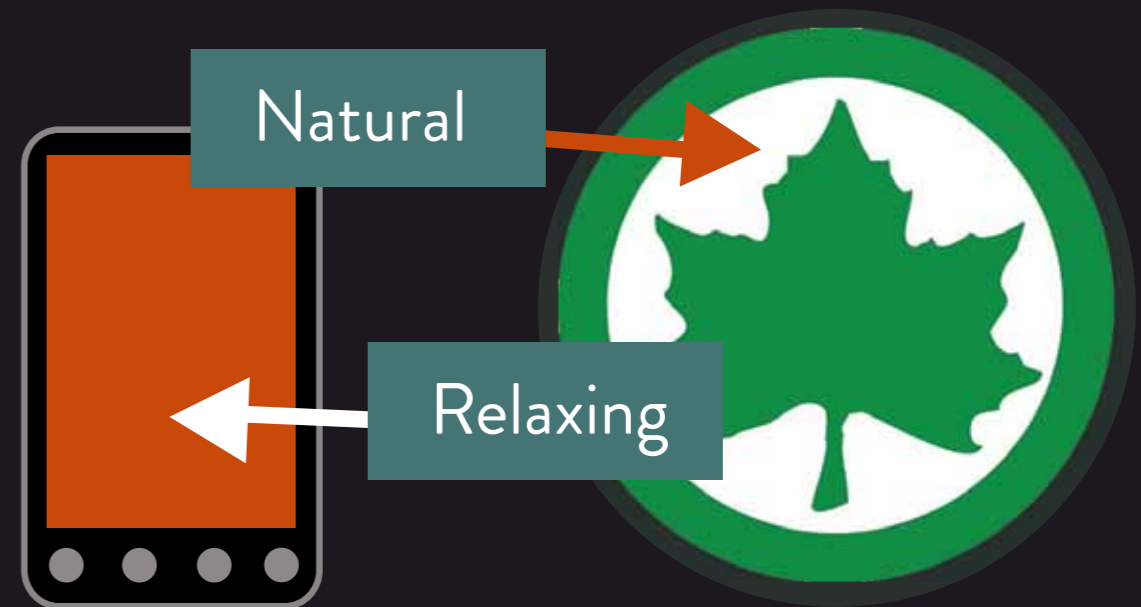
Self-Assembly in Swarm Theory

# *Synchronous, Active Interactions*

*For Visitors, Nomads?*

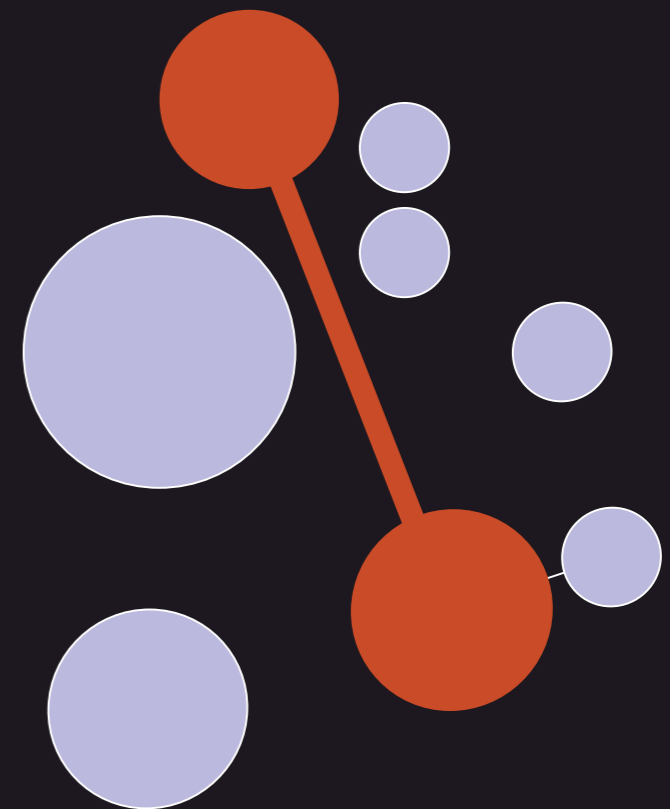
# Tag Migration

Devices & routers collect tags from places frequently visited, deposit them on other devices/routers



Find similar groups and people

Similar people more likely to build backbone directional antennas between landmarks?

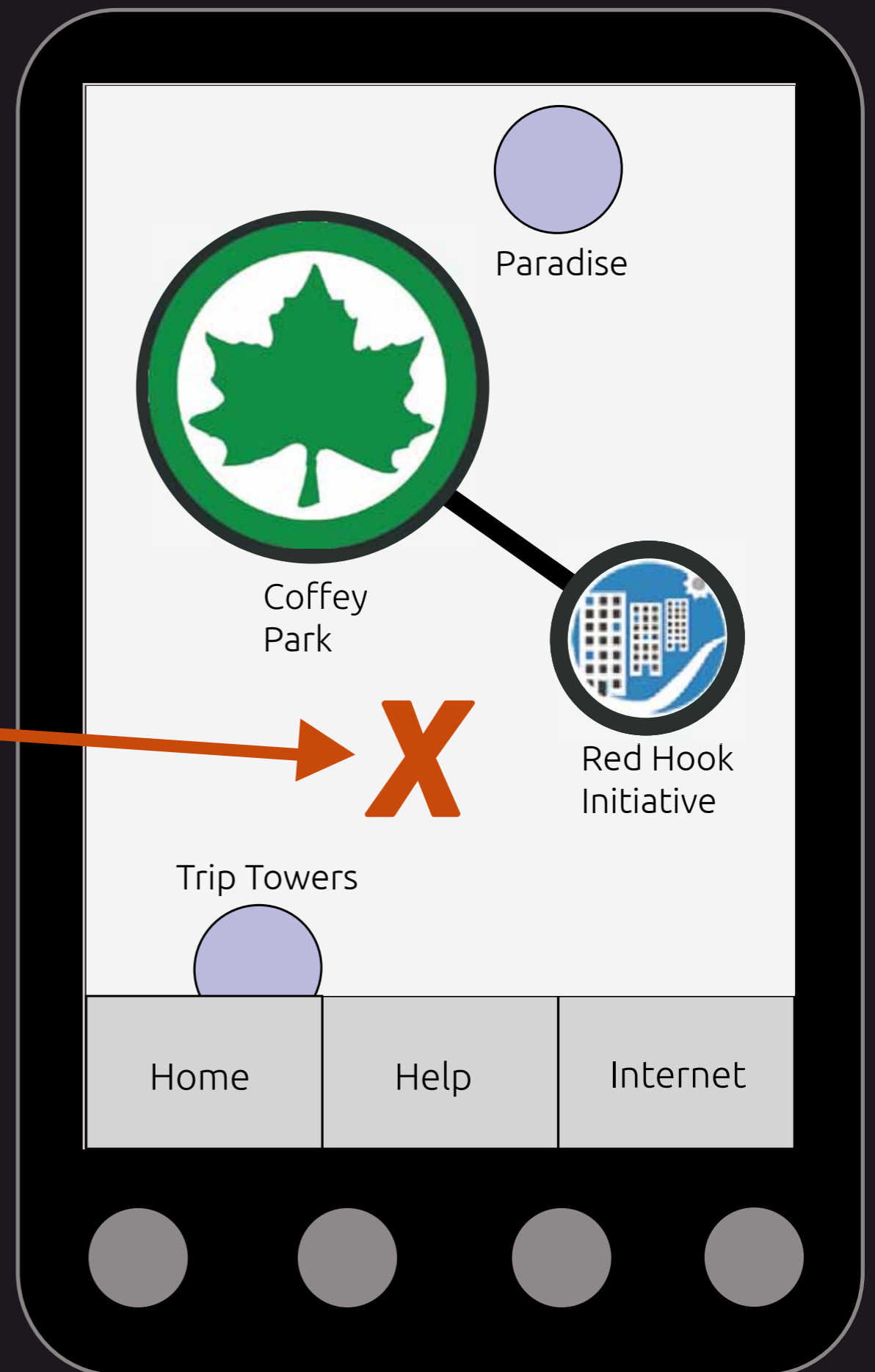


# Treasure Map

Mark / Find Hidden Locations

Secret Restaurants  
Points of Interest  
Weird things

Mini Dérives



***Thank you!***

**jrbaldwin**