

BEHAVIOR MAPPING

The Local Landscape | Fall 2017

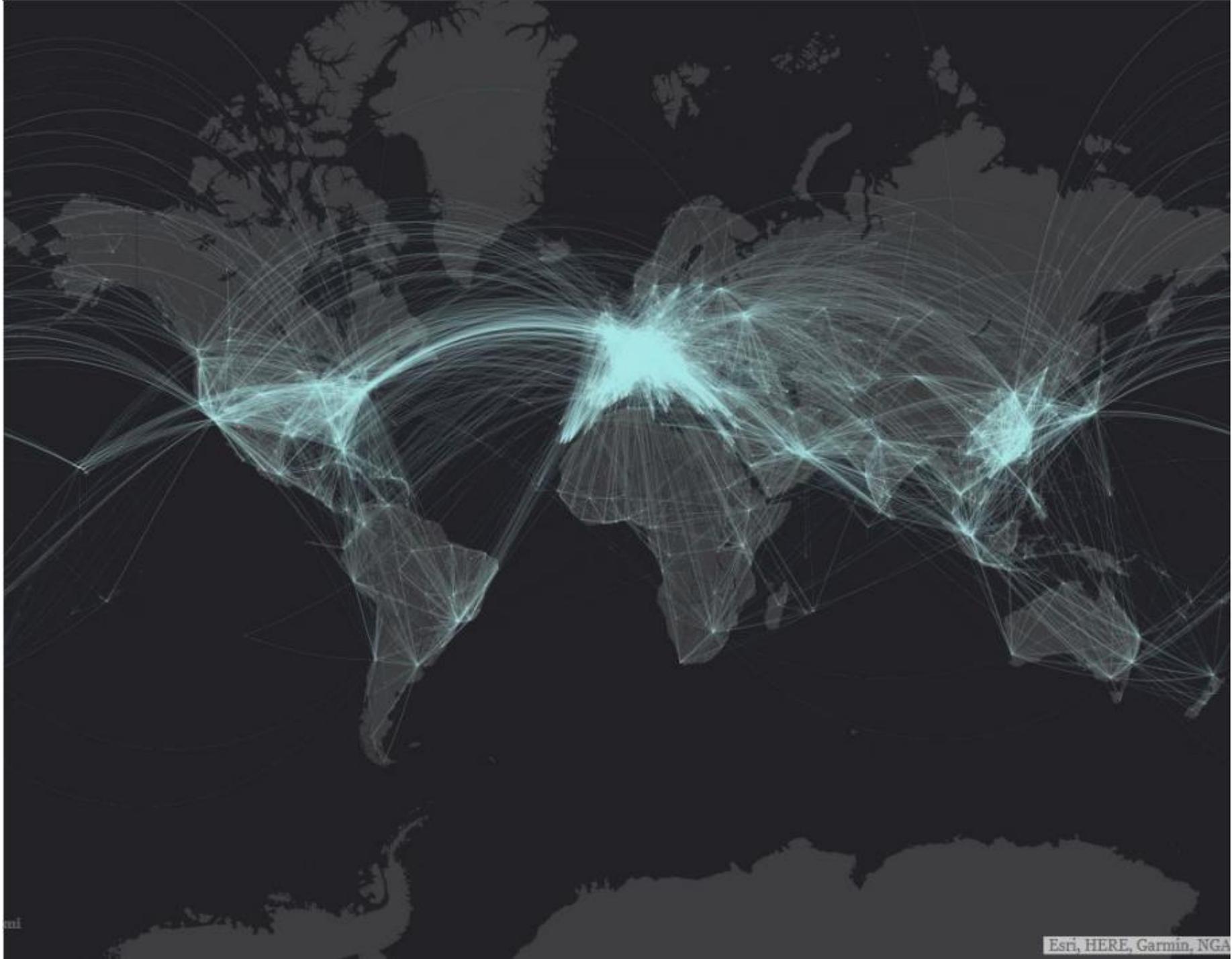
Behavioral Geography

- Study of how individuals make decisions in relationship to their spatial environment
- Many people's behaviors can be put together to reveal trends in behaviors
 - MAX ridership
 - Airplane flight traffic
- Individual decisions are also studied to understand how decisions about space are made

Behavioral Geography

Gravity model.

- Based on Newton's Law of Gravitation
- Movement declines with increasing distance – i.e. the further away something is from your home, the less likely you are to travel there
- Concept of distance is relative to the individual person



Behavioral maps



- A systematic observation research technique that tracks behavior over space & time

Behavioral maps

Place-centered

- Documents behavior of all individuals within a specified space & time
- For example – car or bike traffic in a specified area, plotting location of people in a park/plaza
- Can reveal how or when a particular space is being used

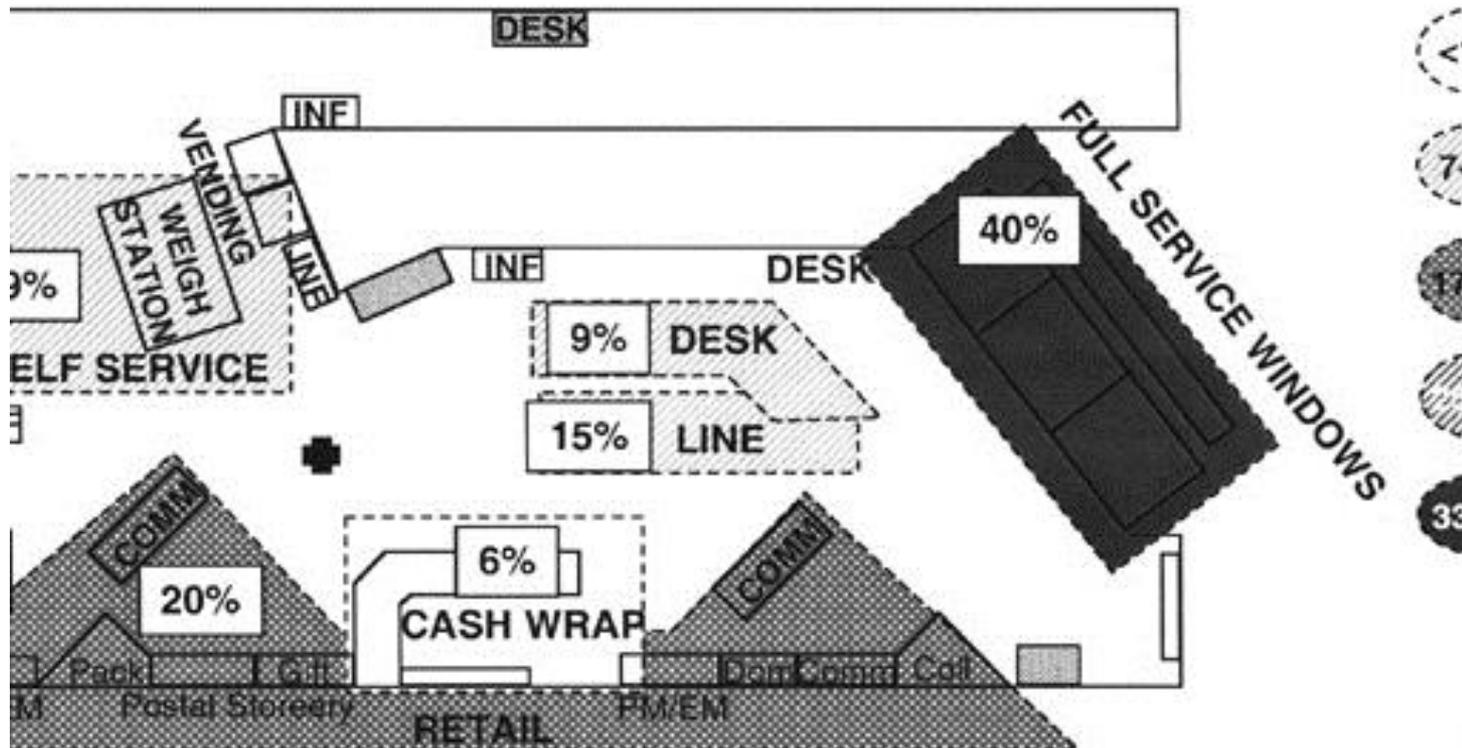
Behavioral maps

Individual centered

- Documents the tracks of an individual's movement over time & space
- Requires that you follow an individual or place a GPS device on them
- For example – following a shopper to understand shopping-related behaviors, or tracking an animal to record their patterns of movements or range

Place-centered

Map created based on customer locations every hour at a US post office – reveals places and areas most heavily used



Behavioral maps

- Relies on characteristics that are readily observable
 - sex, age, alone or in group, what they are doing
- Recording must be done in a systematic & reliable fashion

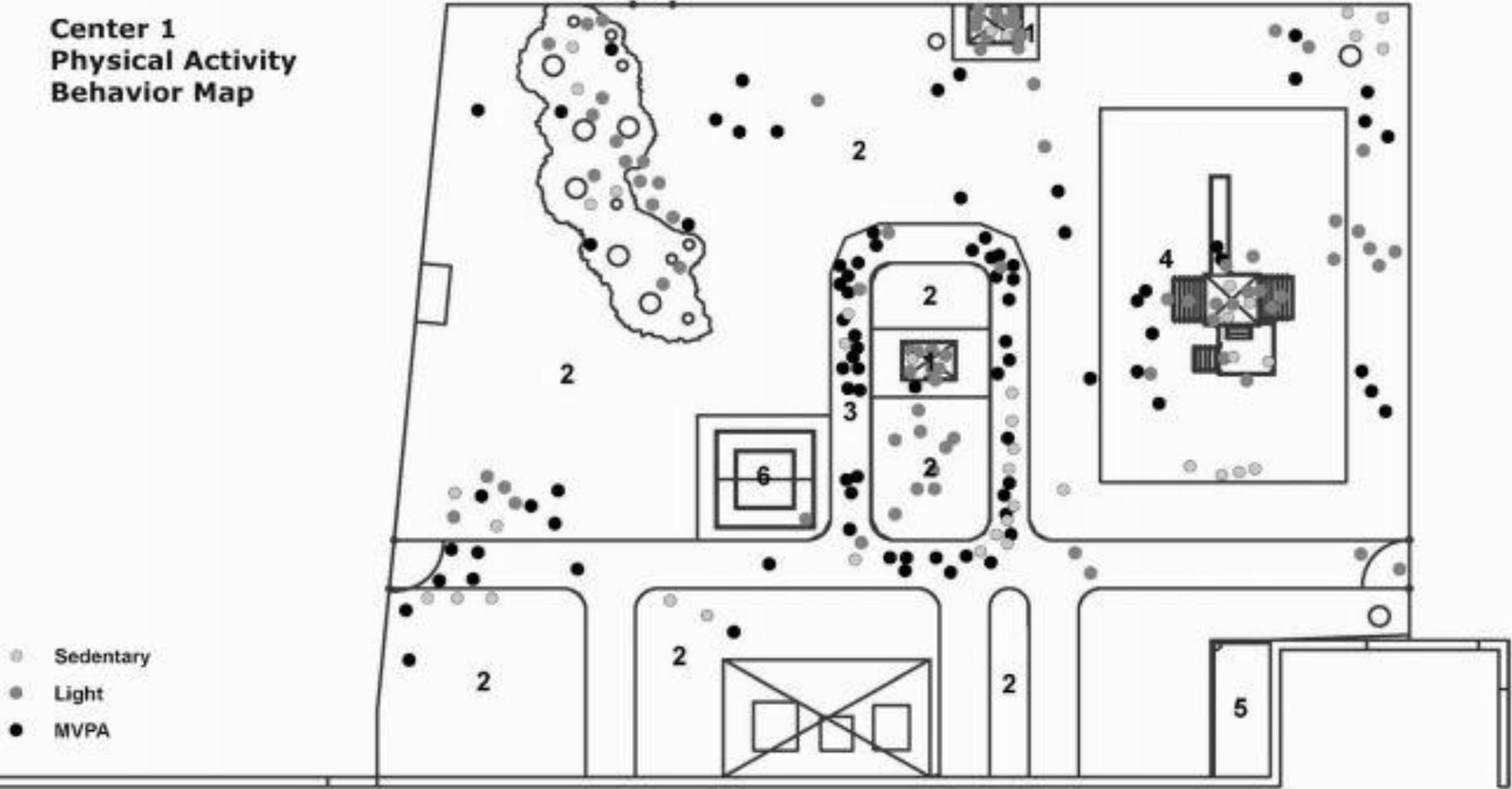
Why map behaviors?

- With any man-made environment, there is the intent of its design and there is how the space is actually being used
- Behavioral mapping, allows us to really understand how the space is being used

When should I use behavioral mapping?

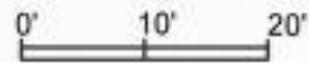
- To identify patterns of movement & use in a specific environment
 - ▣ Making changes/improving an existing space
 - ▣ Understanding if a space is being used as planned

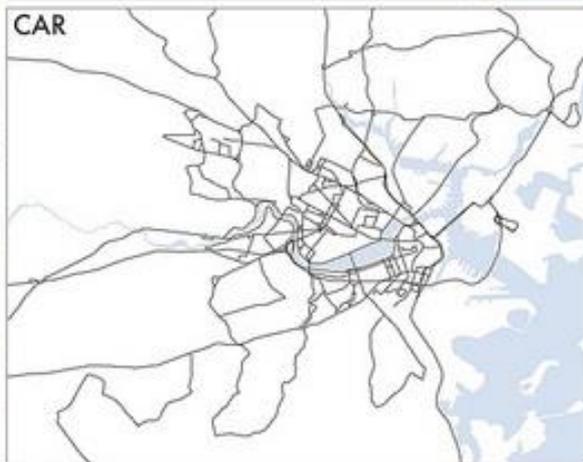
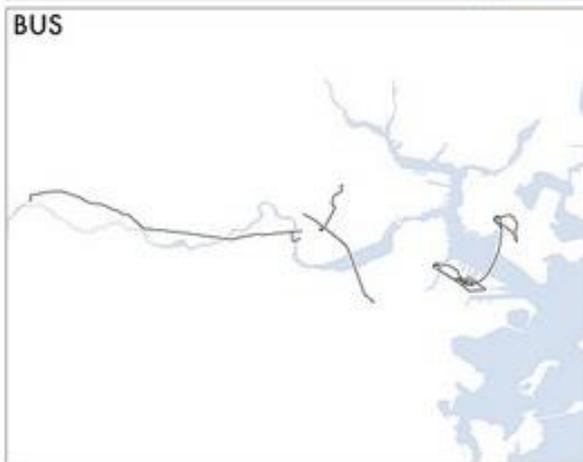
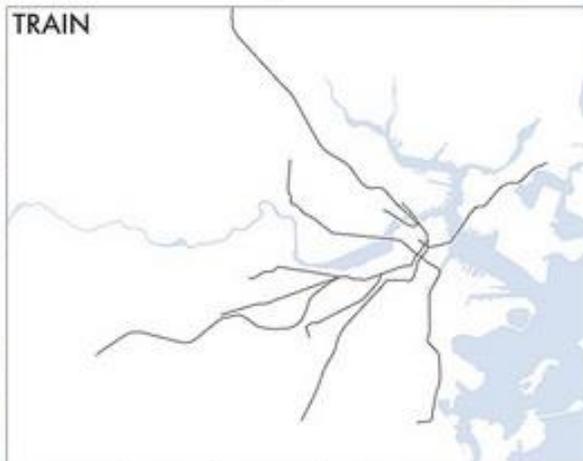
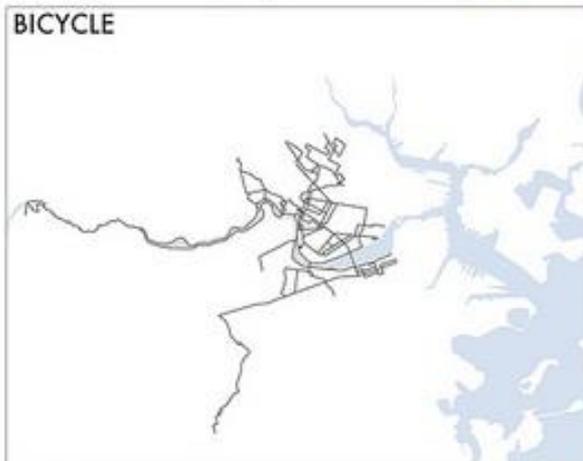
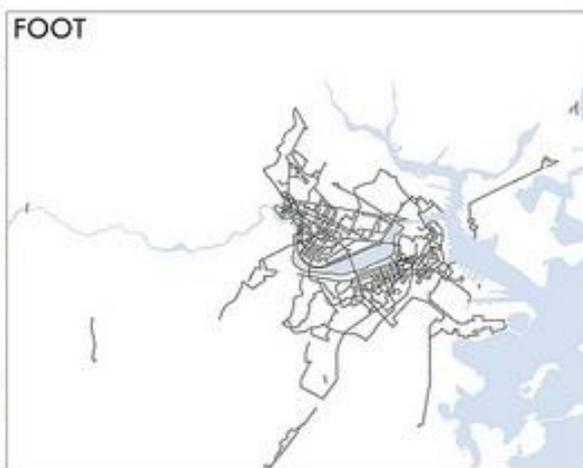
**Center 1
Physical Activity
Behavior Map**



- Sedentary
- Light
- MVPA

Setting categories
 1 - Dramatic play 2 - Open area 3 - Pathway
 4 - Play equipment 5 - Porch transition 6 - Sandplay





TIME

TIME OF DAY
Starting between
Ending between
+ + + + + +
12 : 00 AM and 12 : 00 AM
- - - - - -

DATE OF RIDE
Month:
M A M J J A S O N
Day of week:
S M T W T F S

DAY OR NIGHT
Daylight (sunrise to sunset)
Non-daylight (sunset to sunrise)
Either day or night

DURATION OF RIDE
All durations
0 6 hrs
 Include rides longer than 6 hours

MEMBERSHIP

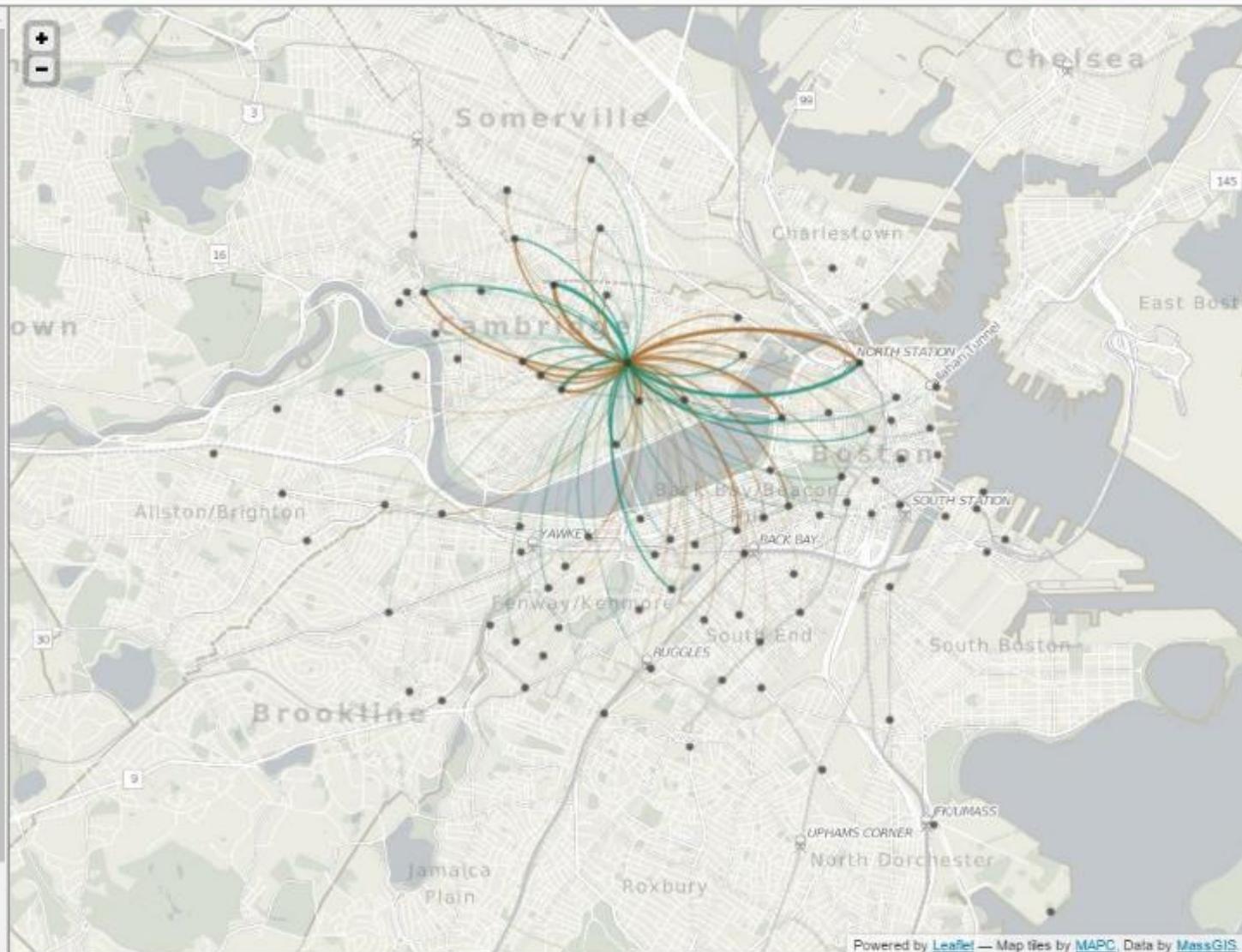
MEMBER TYPE
Registered
Casual
All members

DEMOGRAPHICS (registered riders only)

SEX OF RIDER
Female
Male
All riders

AGE OF RIDER
All ages
17 80

HOME OF RIDER
Central city: Hubway service area
Inside Route 128
South and west (S. Station commuter lines)
North (N. Station commuter lines)
Any location



[Click to view all stations](#)

 Trips to selected station
 Trips from selected station

One Kendall Square at Hampshire St / Portland St

Select stations on the map to view their trip volumes

Powered by [Leaflet](#) — Map tiles by [MAPC](#), Data by [MassGIS](#)

Methods

1. Start with a site plan or map of the area, using several copies of the map if necessary
2. Create a list of the behaviors that will be recorded (helps to avoid making assumptions about what they might encounter, and focus on what behaviors should be tracked)
3. Develop a method for recording behaviors on the map and what other data should be recorded (i.e. age, time)

Methods



4. Go to site and record behaviors, taking notes on the map
5. Aggregate the results and display in a map to show patterns and/or distributions of behaviors

Collecting data

Mapping.

- ▣ Area is rapidly surveyed at once and all behaviors are noted on a map; subsequent 'snapshots' are taken at intervals to reveal patterns

Chart-based.

- ▣ Tallies behaviors on a chart, often in conjunction with time data; most useful when features of the environment are not primary focus

Shadowing.

- ▣ Similar to behavior mapping, but more obtrusive; requires that you follow an individual to track their movements & behavior, while simultaneously asking questions to understand the reasoning behind behaviors

Collecting data

Trace.

- ▣ Observing physical evidence of activities
- ▣ Documenting trash found in a park or 'social' trails in an undeveloped park

GPS.

- ▣ Automatically tracking the movement of people, bikes, vehicles, shopping carts, etc

Time-Lapse video.

- ▣ Data is collected and then reviewed; useful for covering the use of space over long time periods