Regional Planning Agency
Healthy Community Design
Technical Assistance Call

APRIL 28, 2016
10:30AM – 12:00PM

Welcome!
Reminder

• Please log into your Webex with your names
• Please mute your lines
• Use the chat box, raise hand function, anytime
• Please turn off your email while participating
• If you decide on hold, please know we will all be listening to your hold music
Today’s Agenda

• Welcome and Introductions
• Transportation + Health
  – Brief review of previous health and transportation call
  – Overview of Local Mode Measurement project and PAST tool being developed to support physical activity and health evaluation efforts
• Example of Projects 1422 Sites Are Advancing to Increase Active Transportation
  – RPA work with 1422 sites on projects to encourage active transportation
• Additional RPA Transportation and Health Project Examples
• Next Call: May 26 – Climate Change and Health
• Closing and Meeting Evaluation
Transportation + Health Flashback

HOW TRANSPORTATION INFRASTRUCTURE IMPACTS HEALTH
Quality of Transportation Infrastructure

Mode Choice

Wasted Time
Wasted Fuel
Access to Healthcare
Physical Activity*
Air Pollution*
“Eyes on the street”
Crashes
Noise
Carbon Emissions

Various Disseminated Health Effects
Respiratory Conditions
Cardiovascular Disease
Cancer
Obesity
Social Cohesion
Crime
Mortality
Injury
Mental Health
Global Environmental and Human Health

All outcomes are interrelated

Adapted from Cole et al. 2008
Examples of Transportation + Health Tools

- **HEAT**, Health Economic Assessment Tool from the World Health Organization (WHO)
- **PEQI**, Pedestrian Environmental Quality Index
- The “Power Model” for collisions
- **WISQARS**, Web-based Injury Statistics Query and reporting system for costs of collisions
Types of Health Outcomes Data

- Health surveys
  - BRFSS
  - NHANES
  - MCBS

- Disease & injury registries
  - Massachusetts Cancer Registry (MCR)
  - Occupational Lead Registry
  - Weapon Related Injury Surveillance System (WRISS)

- Clinical data & Hospitalizations
  - Claims data
  - Electronic health records – EHR/EMR
  - Administrative - Discharge/ER data

- Count/census–
  - Census
  - Vital records
  - Reportable diseases
  - National Vital Statistics System (NVSS)

- Other
  - Clinical trials – ex. Womens health Initiative, Framingham Heart Study
  - Environmental – EPA, BEH, DCR
  - Transportation – MassDOT, municipal, mobile data
  - Services – DMH, DTA, DCF etc.
  - Emergency services – ex. police logs, EMS calls, violent injury tracking
Transportation + Health

DEVELOPING A NEW METHOD FOR LOCAL MODE MEASUREMENT
Background

• CDC Grant to Reduce Hypertension and Diabetes (1422)

• Key element: Active Transportation (Walk Primarily)

• Desire to create:
  – Additional measure (short- and long-term)
  – Project level
How can we know sooner about effects of the changes? And how can we connect to health measures?
Quality of Transportation Infrastructure

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- Crashes
- Noise
- Carbon Emissions

Various Disseminated Health Effects

- Respiratory Conditions
- Cardiovascular Disease
- Cancer
- Obesity
- Social Cohesion
- Crime
- Mortality
- Injury
- Mental Health
- Global Environmental and Human Health

How to measure and monitor shorter-term and intermediate effects

All outcomes are interrelated

Adapted from Cole et al. 2008
MEMORANDUM

SUBJECT: Background research on mode shift measurement and goals
PREPARED BY: David Watson (WatsonActive LLC)
DATE: July 6, 2015 (revised September 1, 2015)

The Massachusetts Department of Public Health (MDPH), in partnership with WatsonActive and the Metropolitan Area Planning Council (MAPC), is engaged in an effort to determine best practices, create guidelines, and provide technical assistance to communities to measure bicycling and walking mode share and set mode shift goals. The relationship between the built environment and physical activity is well understood, as is the relationship between physical activity and health outcomes. MDPH is interested in bridging those relationships to directly predict and measure the impact of bicycling and walking projects and programs on health outcomes. Communities could then set mode share goals for based on anticipated/desired health outcomes, and MDPH could use changes in mode share as a measure of project or program outcomes.

WatsonActive was tasked with providing background research to the project team to assist them in determining what tools and methods to test for measuring mode share and establishing mode shift goals. WatsonActive focused its efforts on a literature search, but also conducted several key informant interviews. This memorandum is a guide to the resulting resource library that is now available to the project team, consisting of Google Drive folders organized by topic and chronologically, supplemented by Evernote Notebooks containing relevant web pages. Links to these resources have been shared with the project team, and these resources may be moved to other platforms at the discretion of the project team.

Google Drive folders:
- Data: bicycle and pedestrian data reports
- HIA: documents related to Health Impact Assessments
- Measurement Tools: see Section III below
- Miscellaneous: other interesting, but not directly relevant, materials
- Plans and Goals: see Section V below

Evernote Notebooks:
- Data Analysis: see Section IVA below
- Mode Shifts: see Section IVB below
Active Transportation Mode Measurement and Monitoring

- Identify Intervention
- Establish Baseline
- Estimate Change
- Implement Intervention
- Measure Change
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Planning Active Streets Tool

Purpose: Use a roadway categorization approach that accounts for:

- Local origins (homes, apartments, etc.)
- Local destinations (e.g., Shopping, Services, Restaurants; Schools; Open Space; Transit)

And that uses a (modified) travel demand model based on:

- Massachusetts Household Travel Survey
- Business locations
- School buildings & districts
Network Based Approach
Active Transportation Mode Measurement and Tracking

1. Identify Intervention
2. Establish Baseline
3. Estimate Change
4. Implement Intervention
5. Measure Change
Estimating Change

How much change do we think would be associated with the intervention? What is our best guess?
Estimating Change

Here's the concept
Estimating Change

Here’s a hypothetical example

“What is the magnitude of impact that the new 0.5 mile sidewalk segment in Littlefield Center will have on walking rates?”

Baseline Estimate:
1,000 pedestrian trips/week in project area

In Littlefield Center (relative to area):
- Older than average residents (-)
- Lower income than average residents (+)
- Lower educational attainment (-)
- Lower vehicle ownership (+)
- Higher percentages of transit riders (+)
- Lower rates of perceived crime (+)

Distance to nearest:
- grocery store ++
- commercial center ++
- bus stop +++
- Sidewalk coverage ++++

Due to the measures and mediating variables for Littlefield Center, we predict that the new 0.5 mile sidewalk segment will result in a 10%-20% change in pedestrian trips.
Active Transportation Mode Measurement and Tracking

1. Identify Intervention
2. Establish Baseline
3. Estimate Change
4. Implement Intervention
5. Measure Change*

*Monitor Over Time
Additional Elements

• Mix of count methods
  – Manual
  – Automated

• Outputs to serve as inputs
  – HEAT
  – ITHIM

• Use in other work
  – BP projects
  – HIAs
Transportation + Health

EXAMPLES OF LOCAL WORK
Transportation + Health

OTHER RPA EXAMPLES
Additional RPA Transportation and Health Project Examples