



Impacts of nature-based solutions: developing the evidence base

Transforming Cities, Enhancing Well-Being:
Nature-Based Solutions for Healthy Communities (NBS4Health)

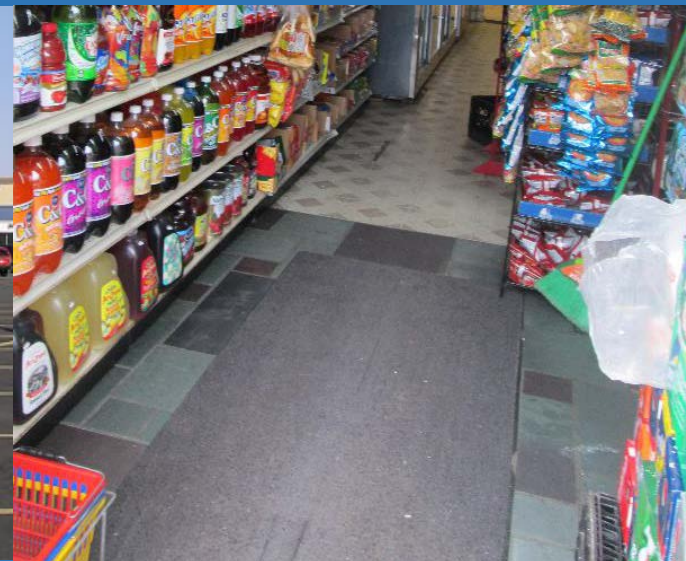
University of A Coruña, Spain

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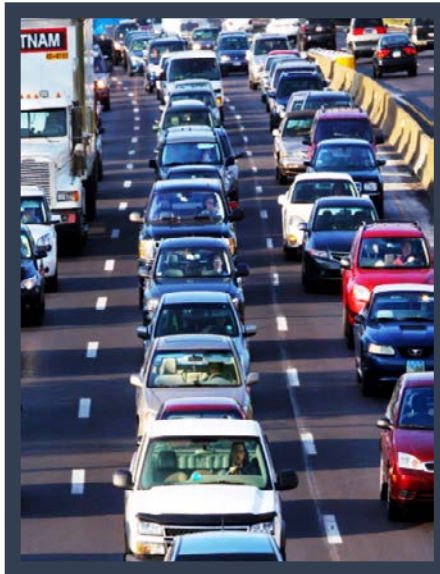
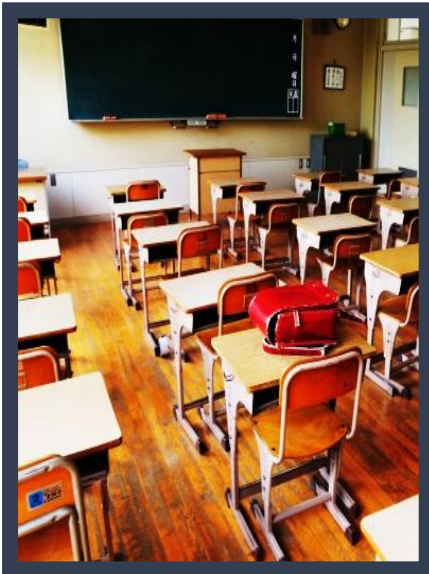
The Problem

Many daily policy decisions made outside of the health sector have significant health implications that go unrecognized because health is just not on the radar screens of decision-makers. We see evidence of this in built environment behavior settings and in unintended consequences of public policies.



Health in All Policies

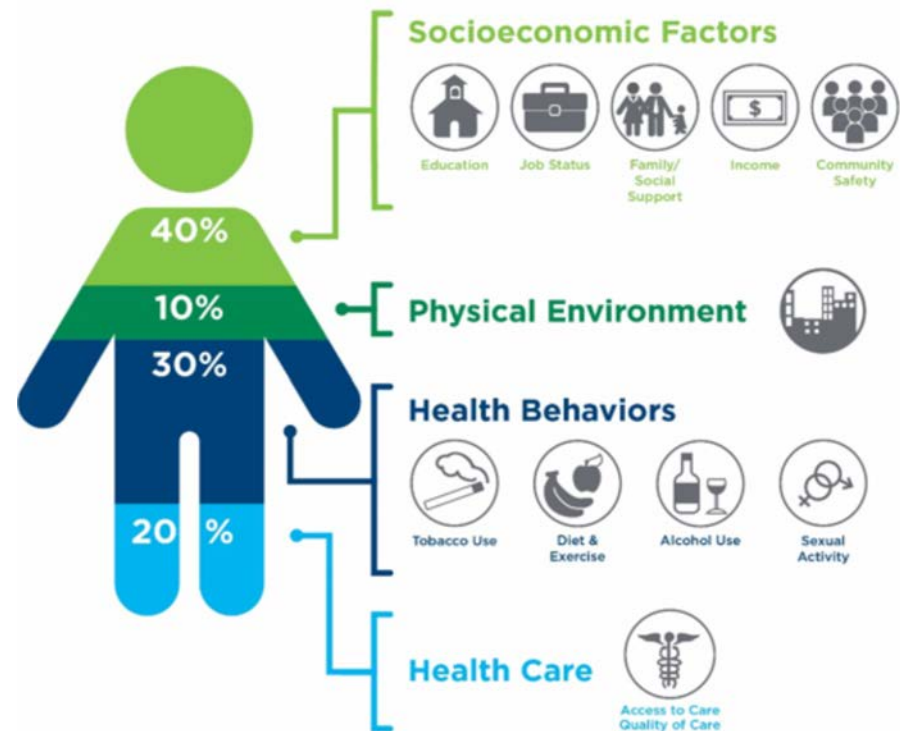
- Considers the intentional or unintentional impact of non-health policies on individual and/or population health
- Non-health sectors can include Education, Housing, Transportation, Economic Development, and others...



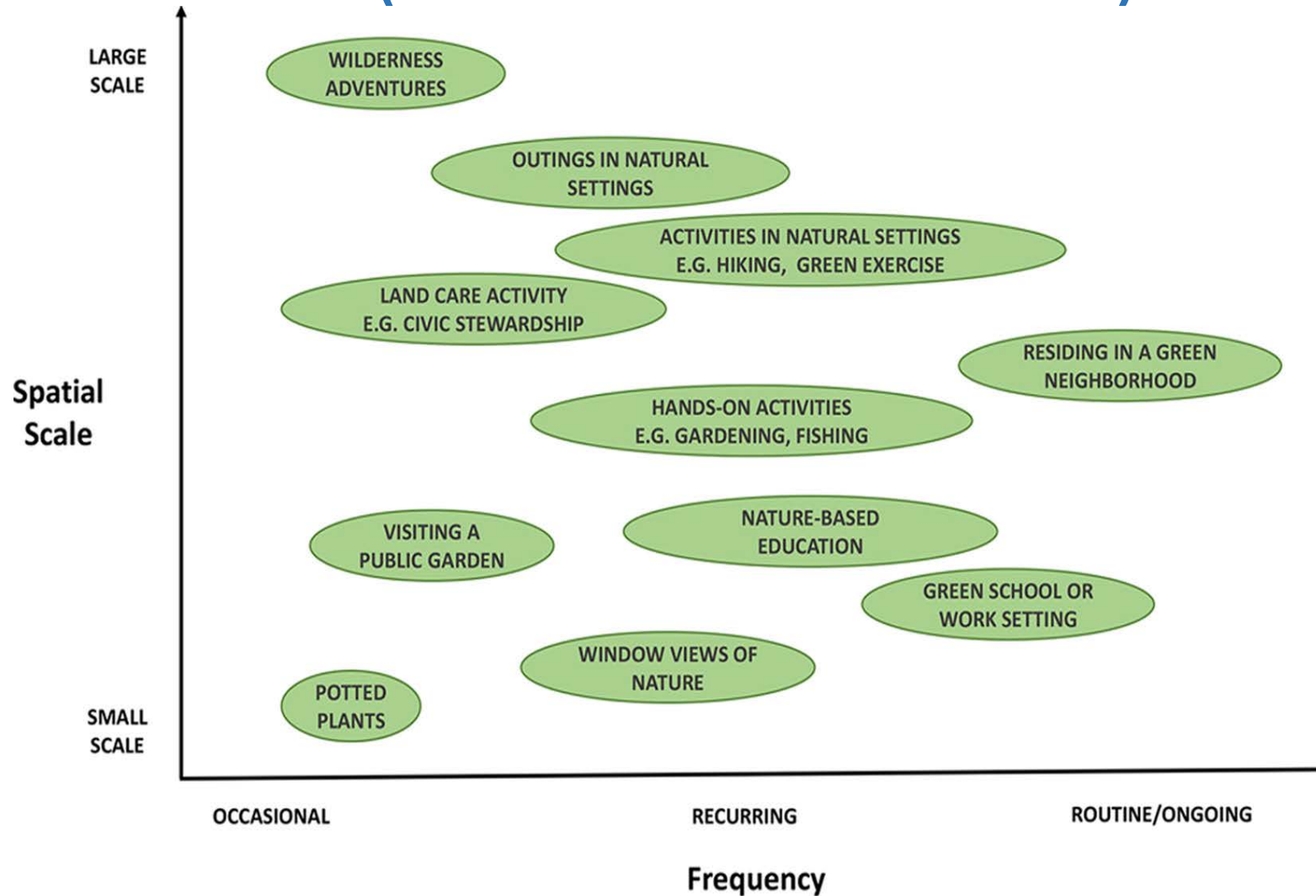
Improving Health and Well-being

“... a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity.” - World Health Organization, 1946

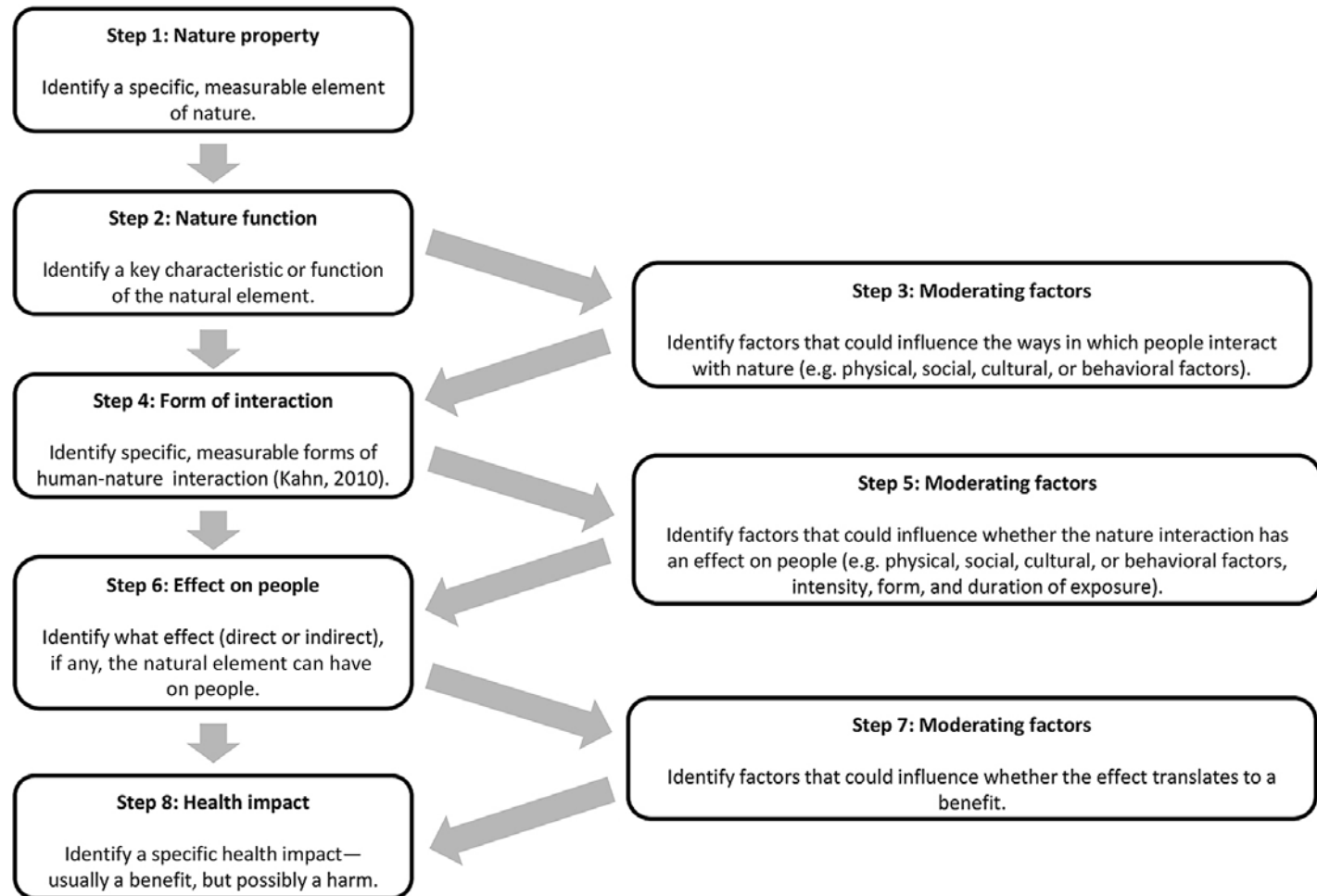
20%
of health
and well-being
is related to
access to care and
quality of services



Forms and Scales of Nature Contact (rural to urban transect)



Proposed Framework for Studying Health Benefits of Nature Contact (process and outcome indicators)



Health Impact Assessment: Plans, Policies, Projects





Planning Healthy Communities Initiative HIAs

Transportation

- Middlesex Greenway Use and Access Plan
- Bloomfield Avenue Complete Corridor Plan (Essex Co.)
- Rutgers University Bike Share

Resiliency & Environment

- Hoboken Stormwater Management Plan and Ordinance
- Mystic Island Voluntary Buyout Scenarios (Little Egg Harbor)
- New Brunswick Public Access to the Raritan River

Housing

- Expanding the Definition of Green: Impacts of Green and Active Living Design on Health in Low Income Housing (NY)

Community Planning

- Planning for Health: Incorporating Health Strategies and Indicators into Community Master Plans (Trenton)

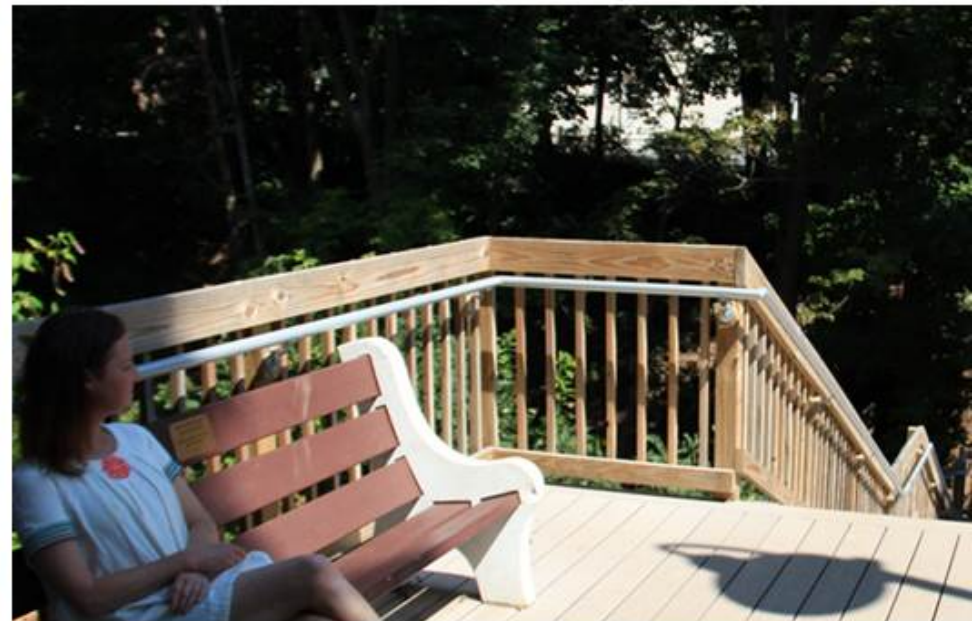




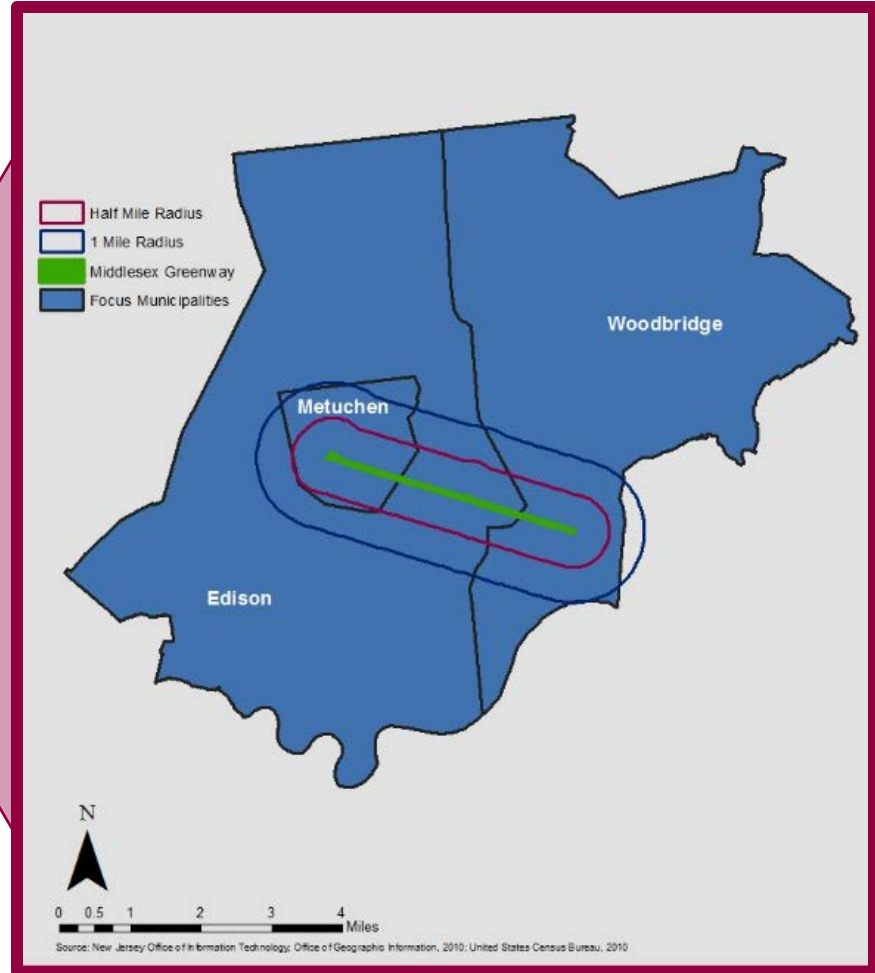
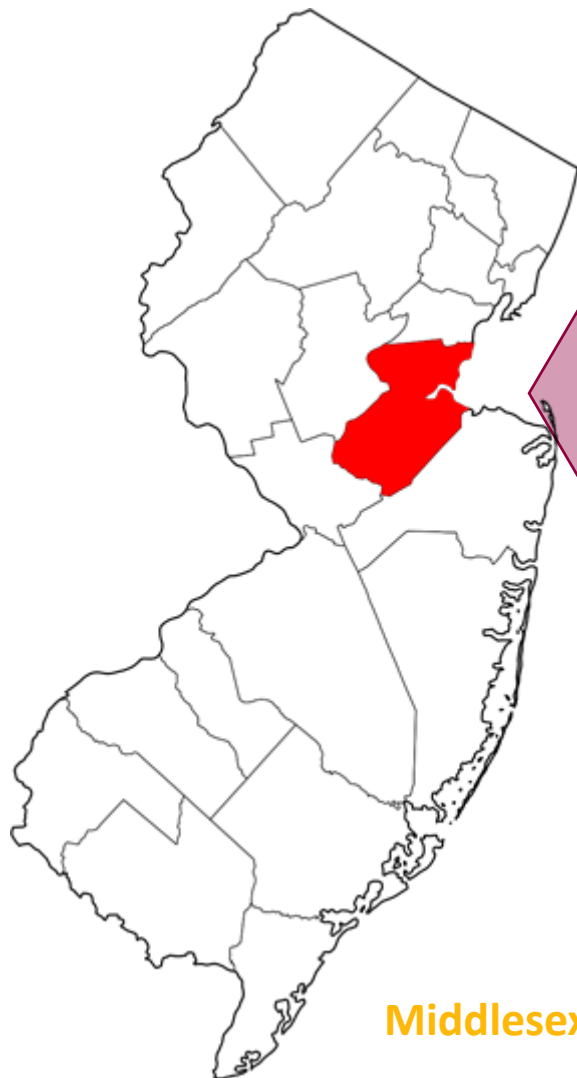
USE AND ACCESS PLAN



HEALTH IMPACT ASSESSMENT



Location



Middlesex County, NJ

Goals of the Access Plan

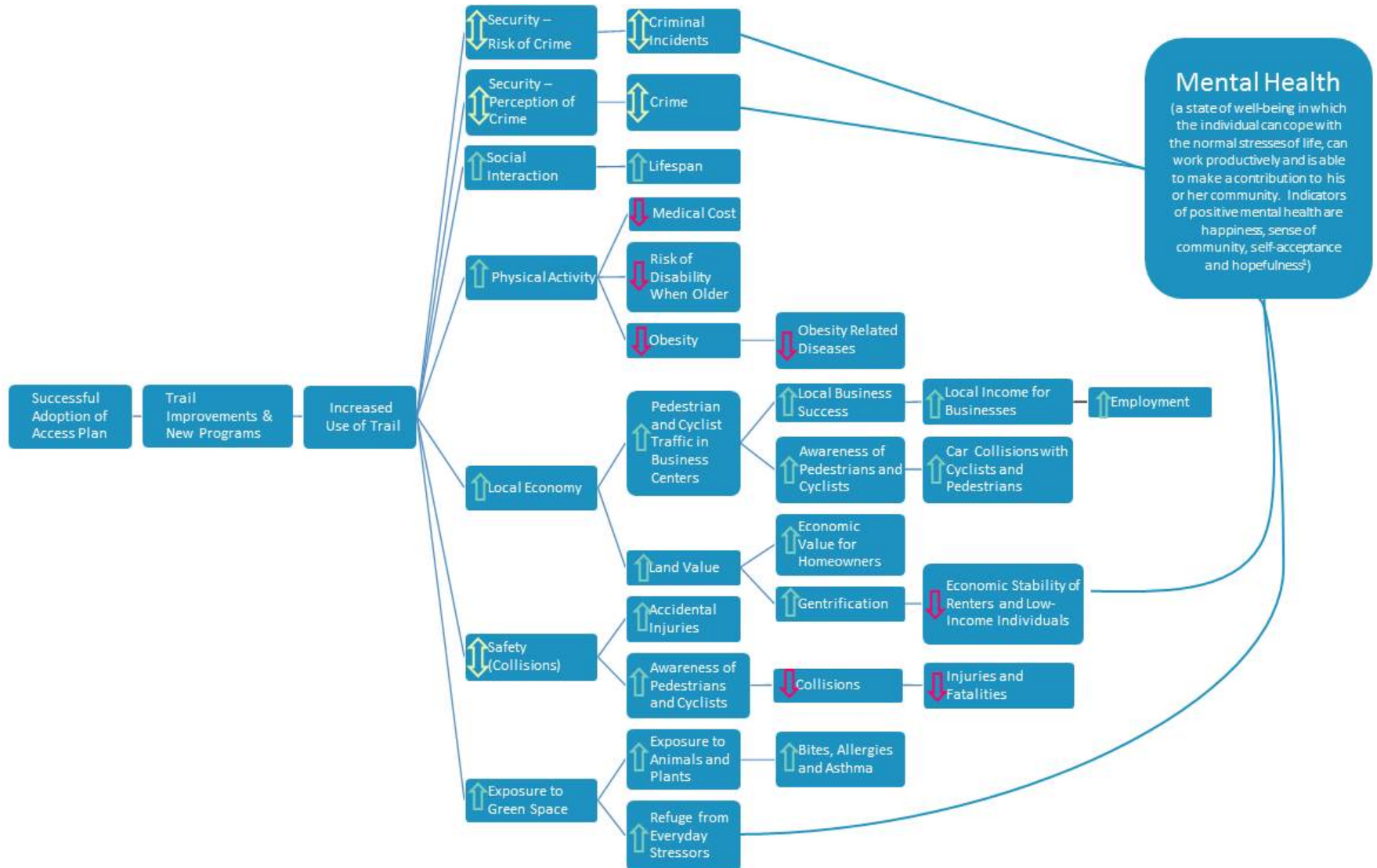
(1) To increase awareness and use of the existing Middlesex Greenway through:

- Improved access
- Economic development promotion– market as a tourism opportunity
- Increased publicity health and community benefits

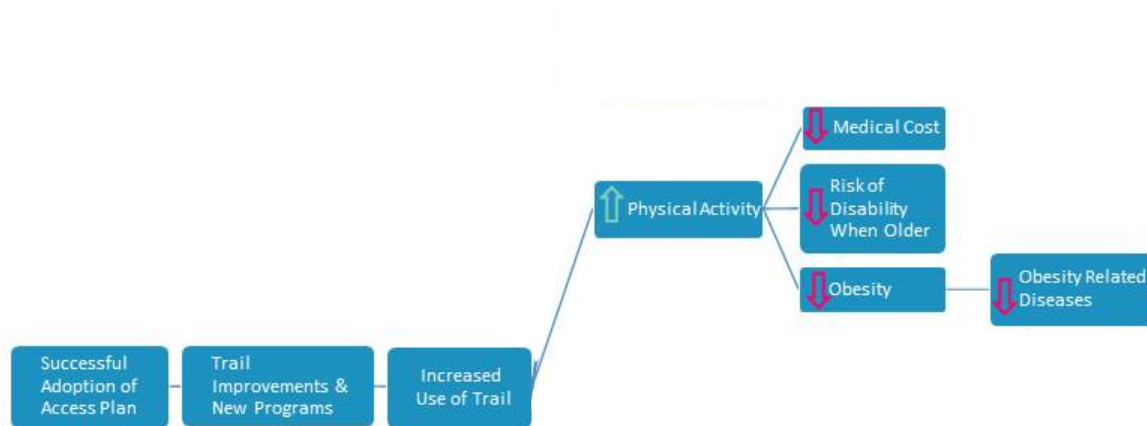
(2) To measure effects of trail use on:

- Physical health – physical activity and environmental exposures (greenspace, pollution, animal and plant vectors)
- Safety – accidents (collisions, injuries) and security (real and perceived crime)
- Vibrancy – local economic development, social cohesion

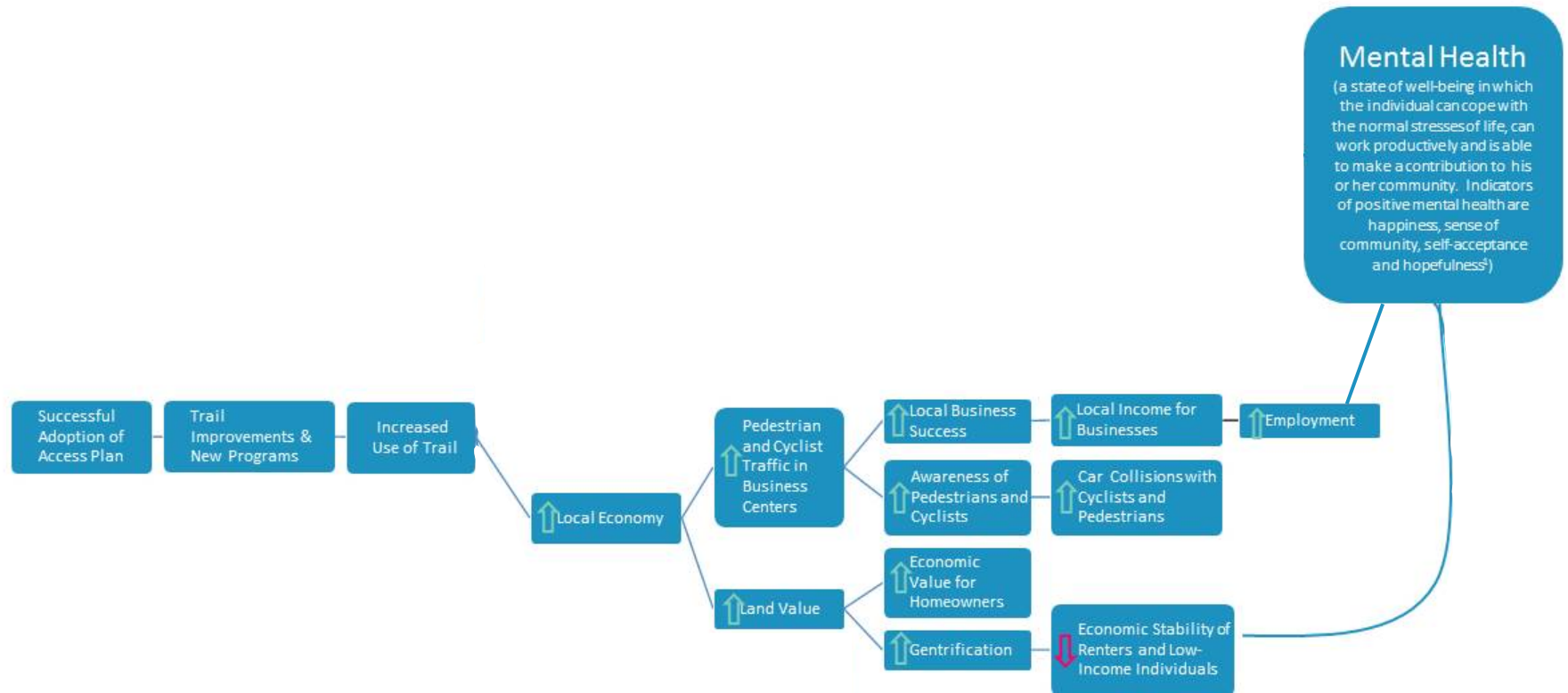
Greenway Health Pathway with Indicators



Greenway Health Pathway with Indicators



Greenway Health Pathway with Indicators

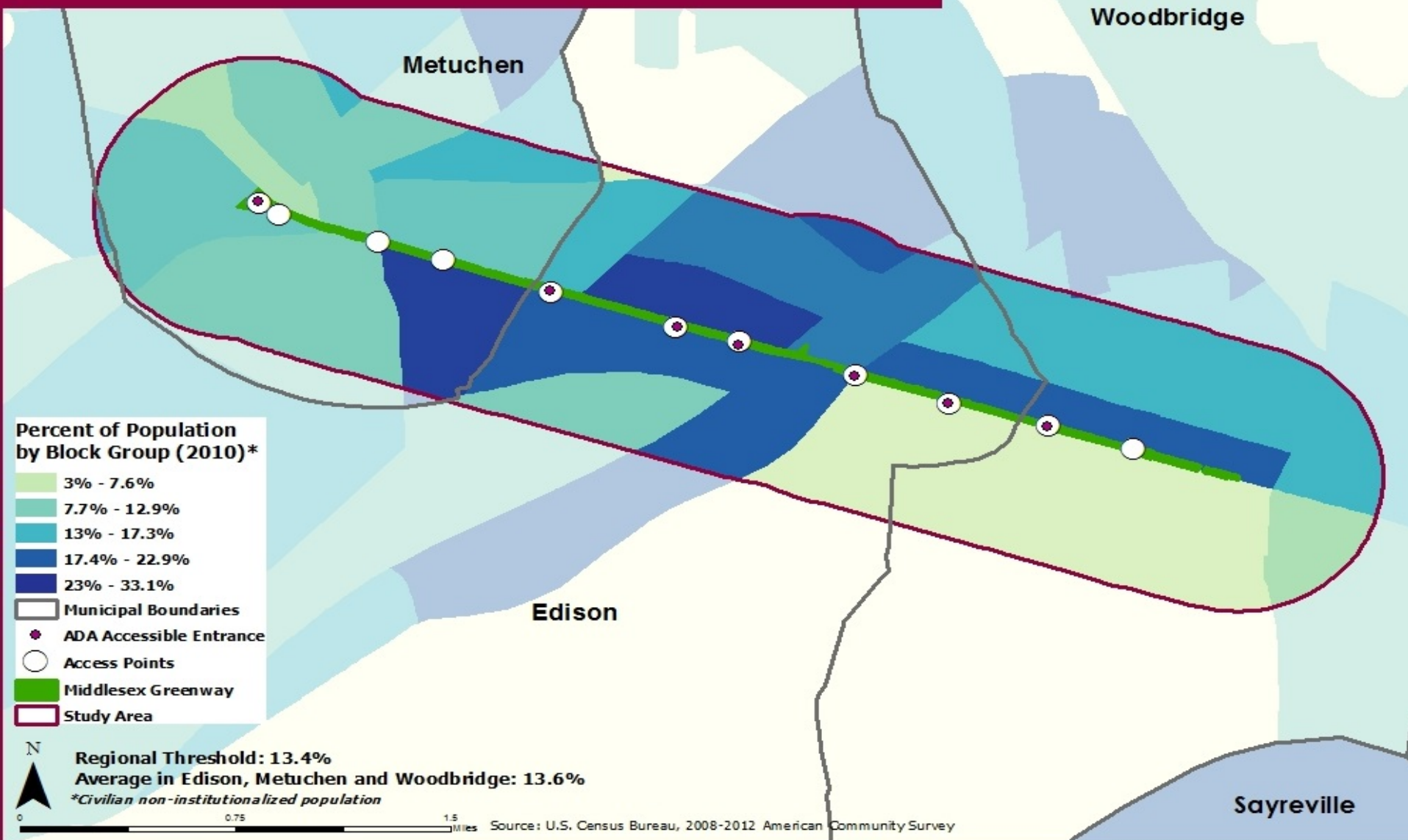


Impacted Populations

- Senior citizens/elderly
- Disabled
- Hispanic population
- School children (middle school located on Greenway)
- Local businesses

Impacted Subpopulations of Special Interest			
Comparative Profile of Traditionally Disadvantaged Populations			
	Middlesex Greenway	Middlesex Greenway	Middlesex County
	.5 mile radius	1 mile radius	
Percent Hispanic	16.90%	26.40%	18.40%
Percent Elderly Persons (75+ Years)	16.3	6.50%	6.00%
Percent Persons with Disabilities	10.90%	8.70%	8.30%

**Middlesex Greenway Study Area (.5 mile radius):
Households with Members Over 75 Years of Age, 16.3% Average**



Sources and Methods

Baseline Health Data

- Available Statistics
- Community survey*
- Key contact interviews



Projected Health Impacts

- Literature Review
- Community Engagement: open house, roundtables, senior center
- Interviews/follow-up with steering committee, etc.
- Community survey*

(over 550 respondents)

Baseline Health: Survey Respondents

Physical Condition

- Over 12% with asthma
- Almost 10% with heart condition
- 42% advised to increase physical activity
- 70% physically active
 - 4x month or more running, calisthenics, sports, or walking for exercise





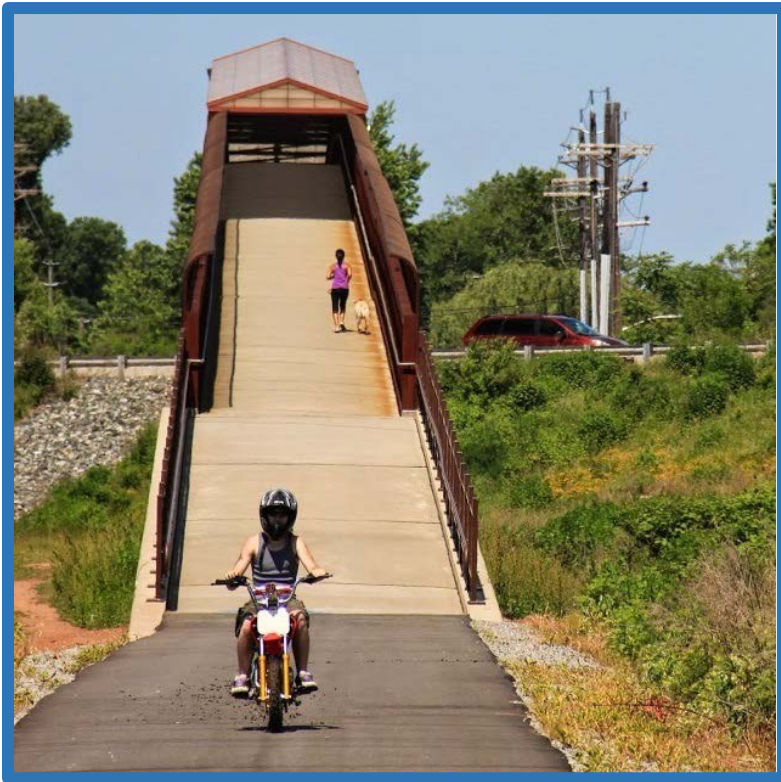
Typical Trail User



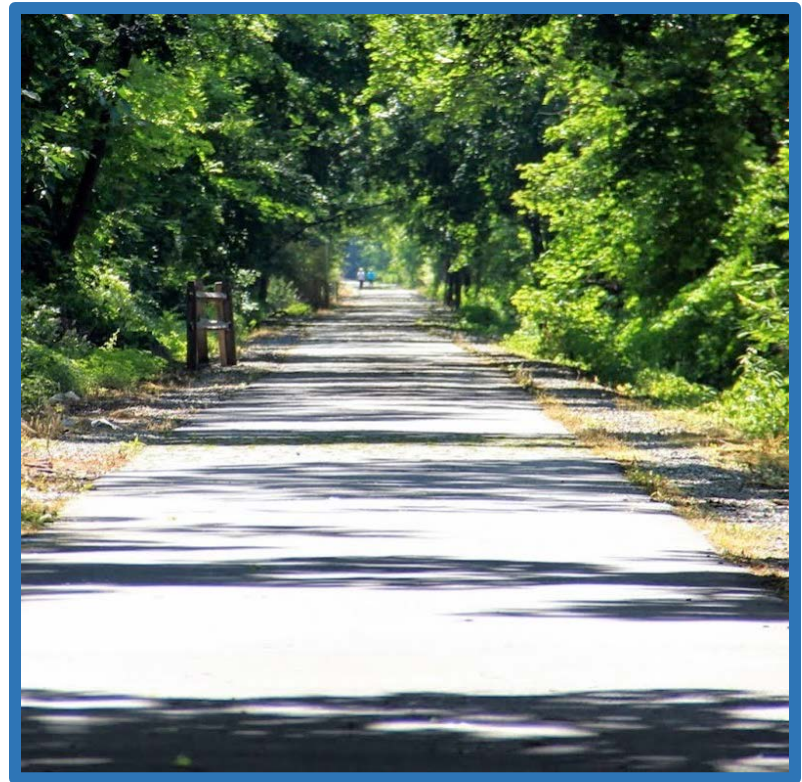
- Uses trail an average of 6 times per month
- Uses for 30 minutes to one hour
- Uses for fitness or pleasure walking
- Walks or jogs
- Goes out with 1-2 other people

Survey Concerns – Needed Improvements

“There are often motorbikes that cause a big problem, with noise and dangerous driving on the trail”

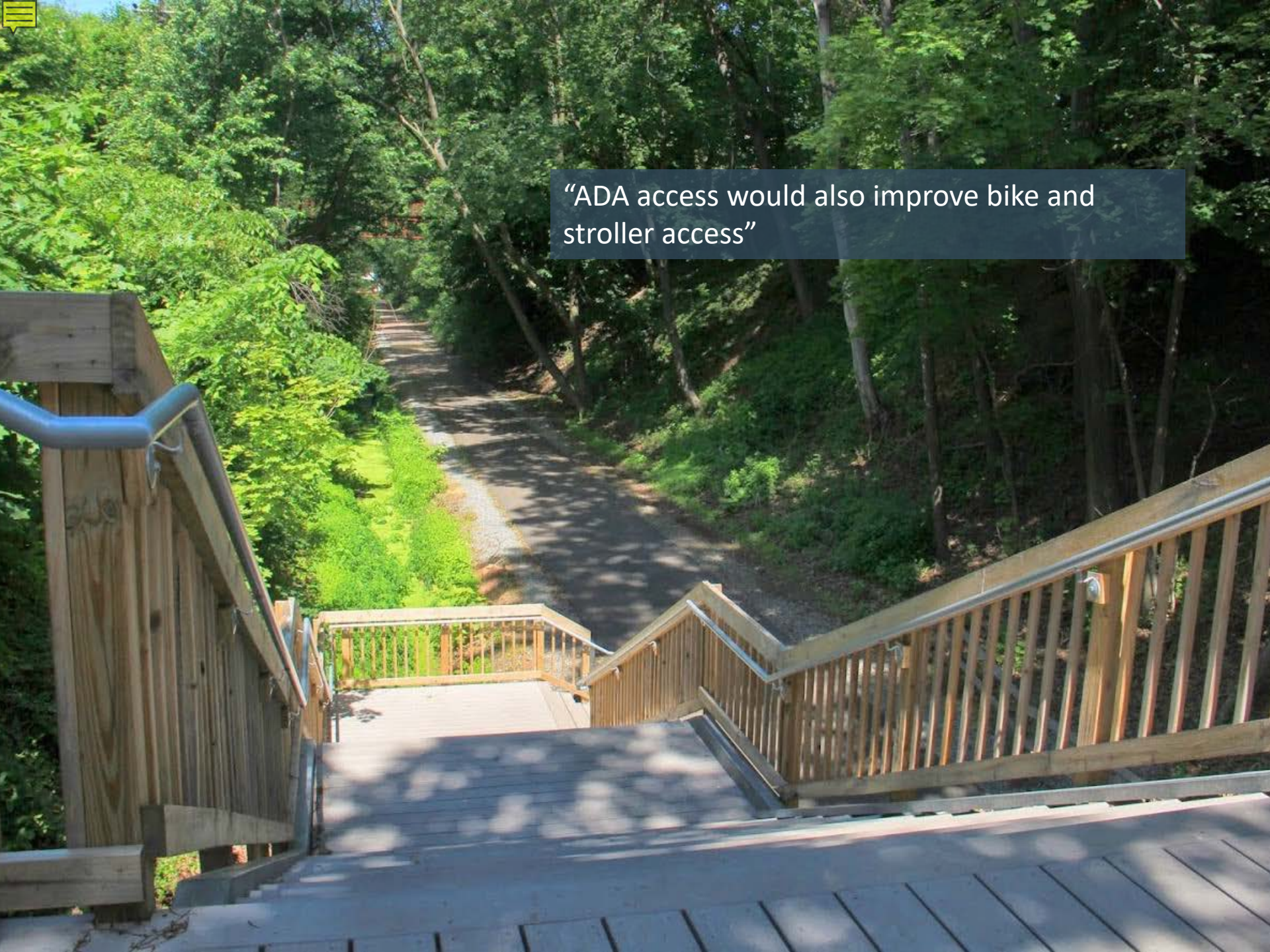



“I have concerns regarding safety as a woman alone”





“ADA access would also improve bike and stroller access”



A man in a light blue polo shirt and dark pants is walking away from the camera on a paved path. The path is flanked by gravel shoulders and dense vegetation, including tall evergreens on the left and bare deciduous trees and brush on the right. In the distance, a group of people is walking in the same direction. The sky is overcast.

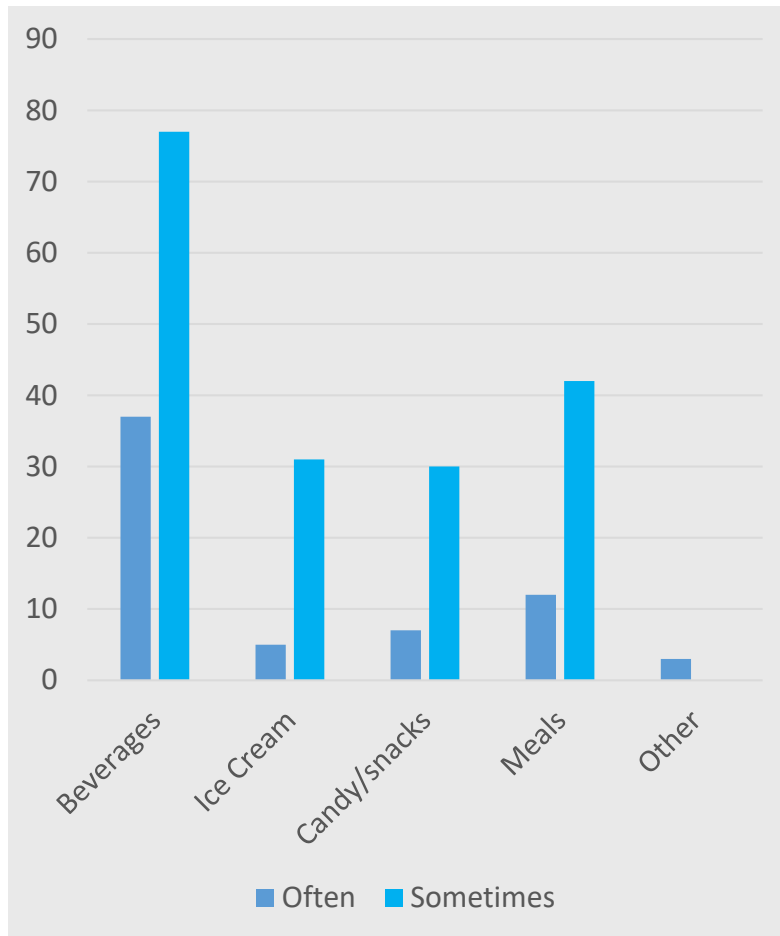
“Now that I came to know about it, I will surely go for a walk or biking.”

“I always wish there were more benches. Lots of times I just need a place to rest & a place to relax.”

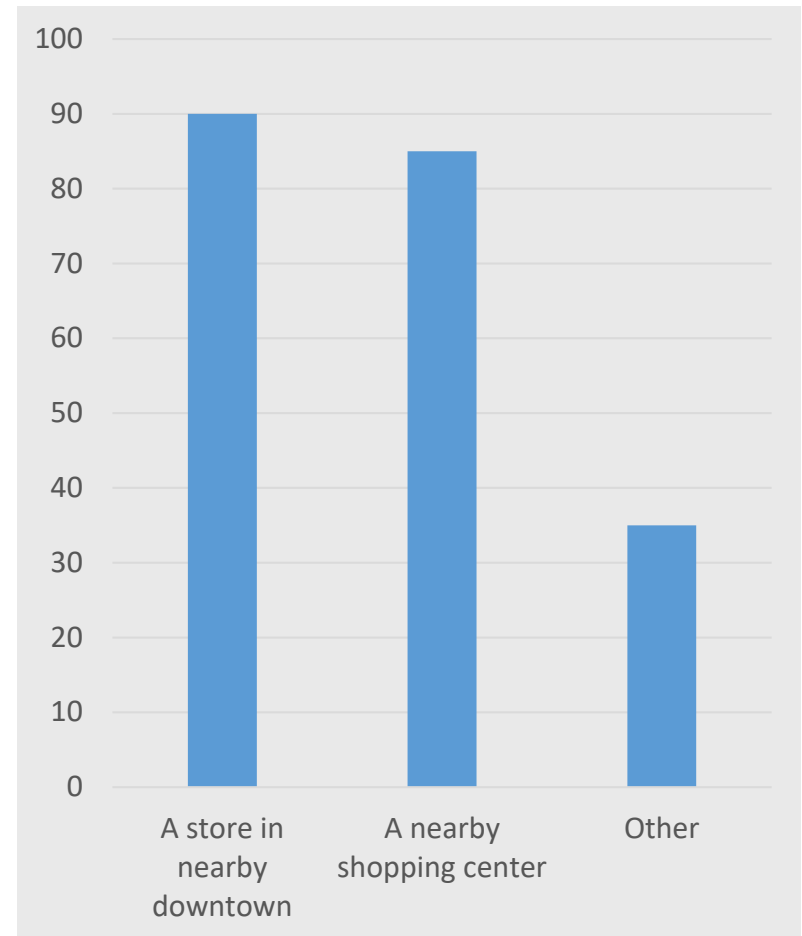


Economic Benefit

In conjunction with your use of the trail, do you purchase any of the following?

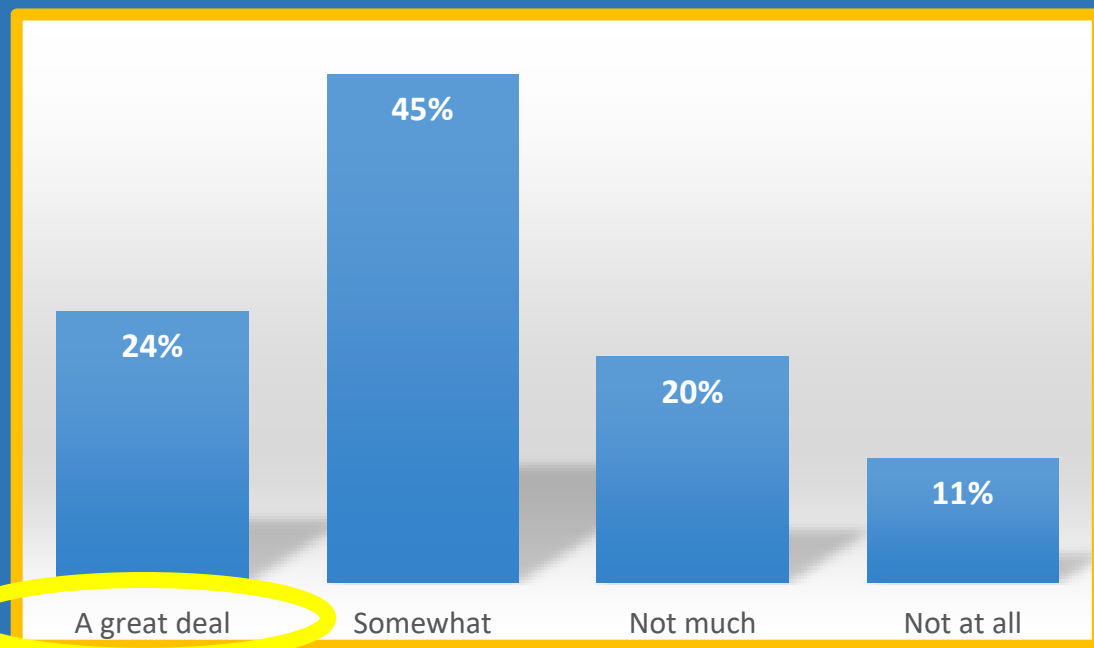


Where do you purchase these items?



Survey Results – Greenway Saves Green

How much do you think your use of the Middlesex Greenway has increased your level of physical activity compared to before the trail was in place?



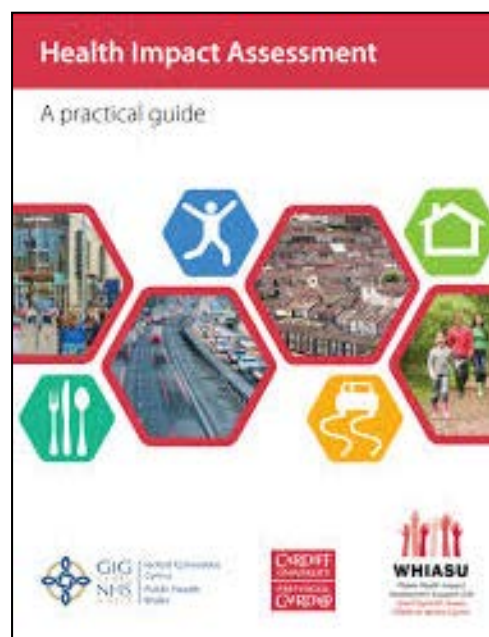
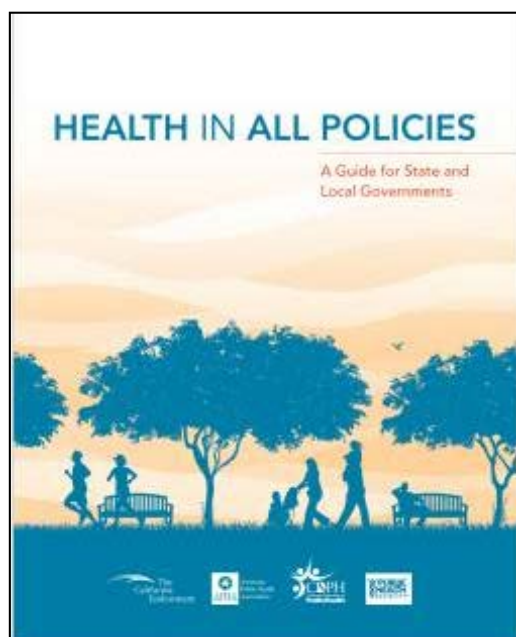
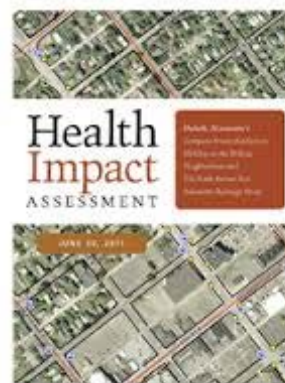
Summary of HIA Findings with Indicators

Impact of Increased Greenway Usage

Health Outcome or Health Determinant	Direction and Extent	Magnitude	Likelihood	Distribution
Security – Risk of Crime	Unknown	Medium	Possible	Trail Users, Homes, and Business Districts Surrounding the Greenway
Security – Perception of Crime	Positive	Medium	Possible	Trail users, residents of surrounding municipalities
Social Interaction	Positive	High	Likely	Trail Users
Physical Activity	Positive	High	Likely	Trail Users
Local Economy	Positive	Medium	Possible	Residents of Surrounding Municipalities
Safety (Collisions)	Unknown	Medium	Unlikely	Trail users, users of area roads
Exposure to Green Space	Positive and Negative	Medium	Likely	Trail users

HIA and HiAP Challenges...

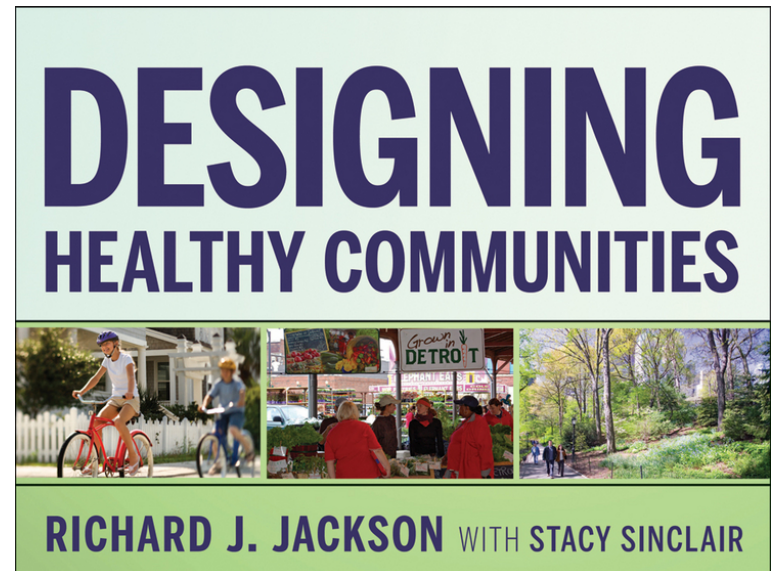
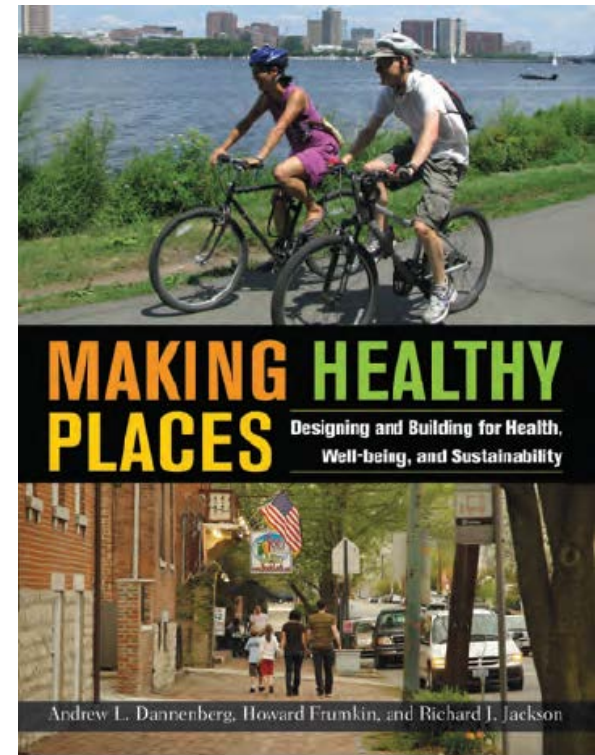
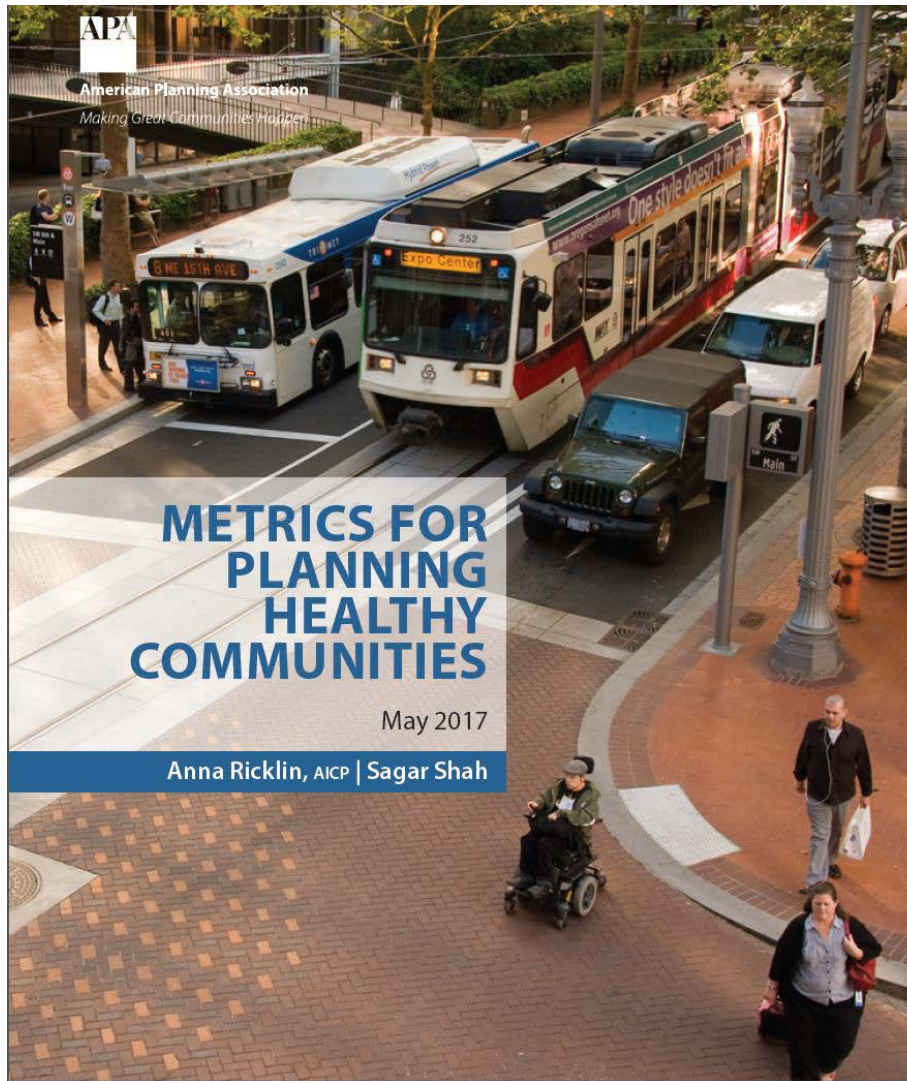
- Finding data & best practice
- Connecting to resources (people & evidence)
- Deciding when you have enough evidence
- Finding creative ways to fund HIA



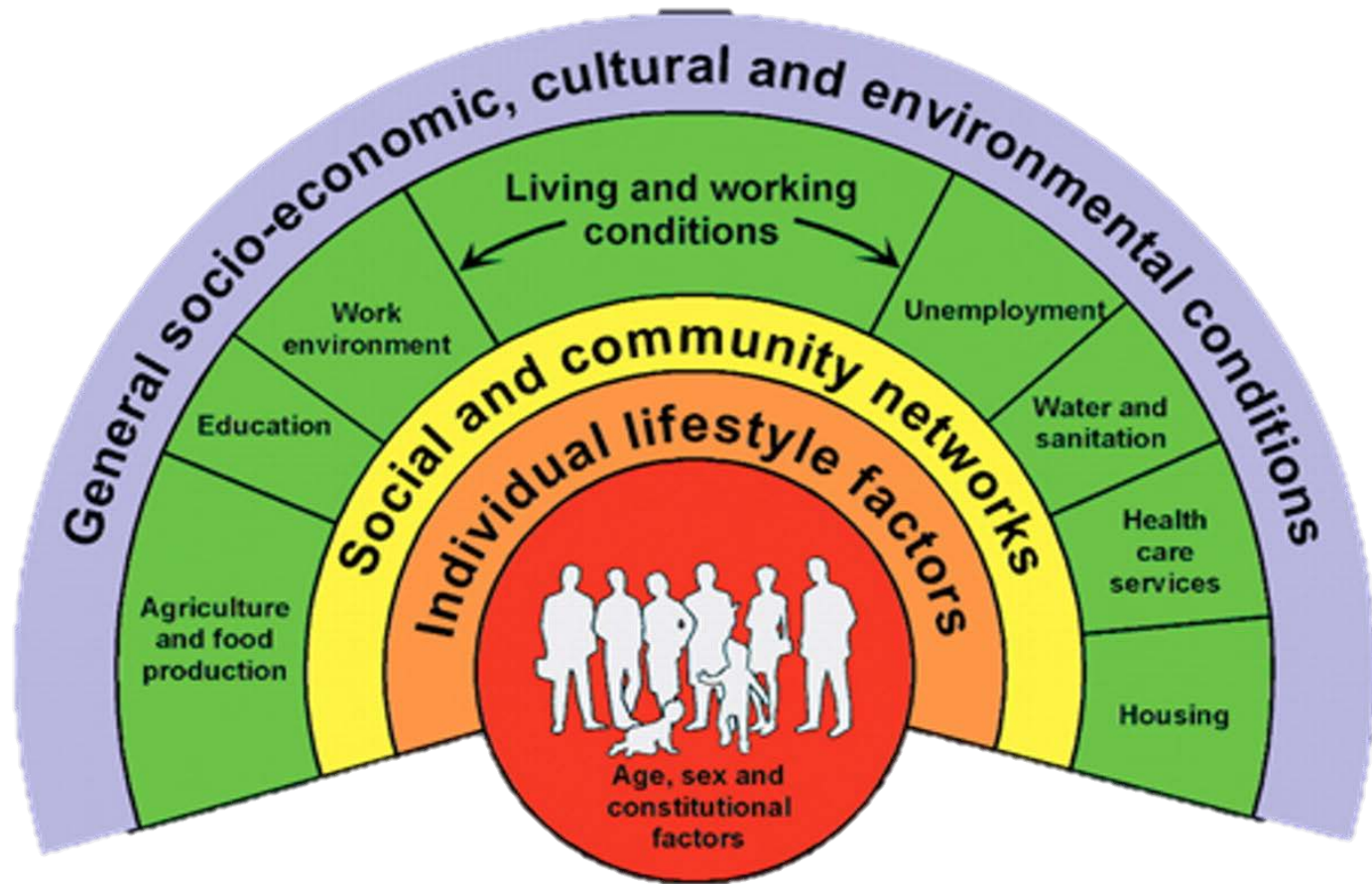
...and Opportunities

- Builds collaboration
- Calls attention to inequity
- Can result in low-cost “quick wins” for health
- Offers opportunity to measure environment-behavior change

Indicators and Metrics



High Leverage Indicators that Mediate/Integrate NBS Processes and Outcomes



Source: Dahlgren and Whitehead, 1991

Thank you!



Dr. Jennifer Senick, jsenick@rutgers.edu

Back up Slides

Greenway HIA Impact Evaluation – Built Environment/Behavior Change Strategies

- County is considering placing **movable park benches** at strategic locations Woodbridge Twp. used HIA in successful grant proposal for funding to extend Greenway **to connect with local park**.
- Greenway Coalition is considering a special committee to **develop robust signage**.
- County will put **activity loops** that include the Greenway in its master Plan Open Space element.
- County is considering launching a **"Greenway Prescription for Health"** program with local doctors.
- Woodbridge Wellness Committee - **Walk with Mayor**