Blue Ridge Road Corridor Health Impact Assessment Project

Dr. Jacqueline MacDonald Gibson
Assistant Professor
Dept. of Environmental Sciences and Engineering
Gillings School of Global Public Health
University of North Carolina, Chapel Hill

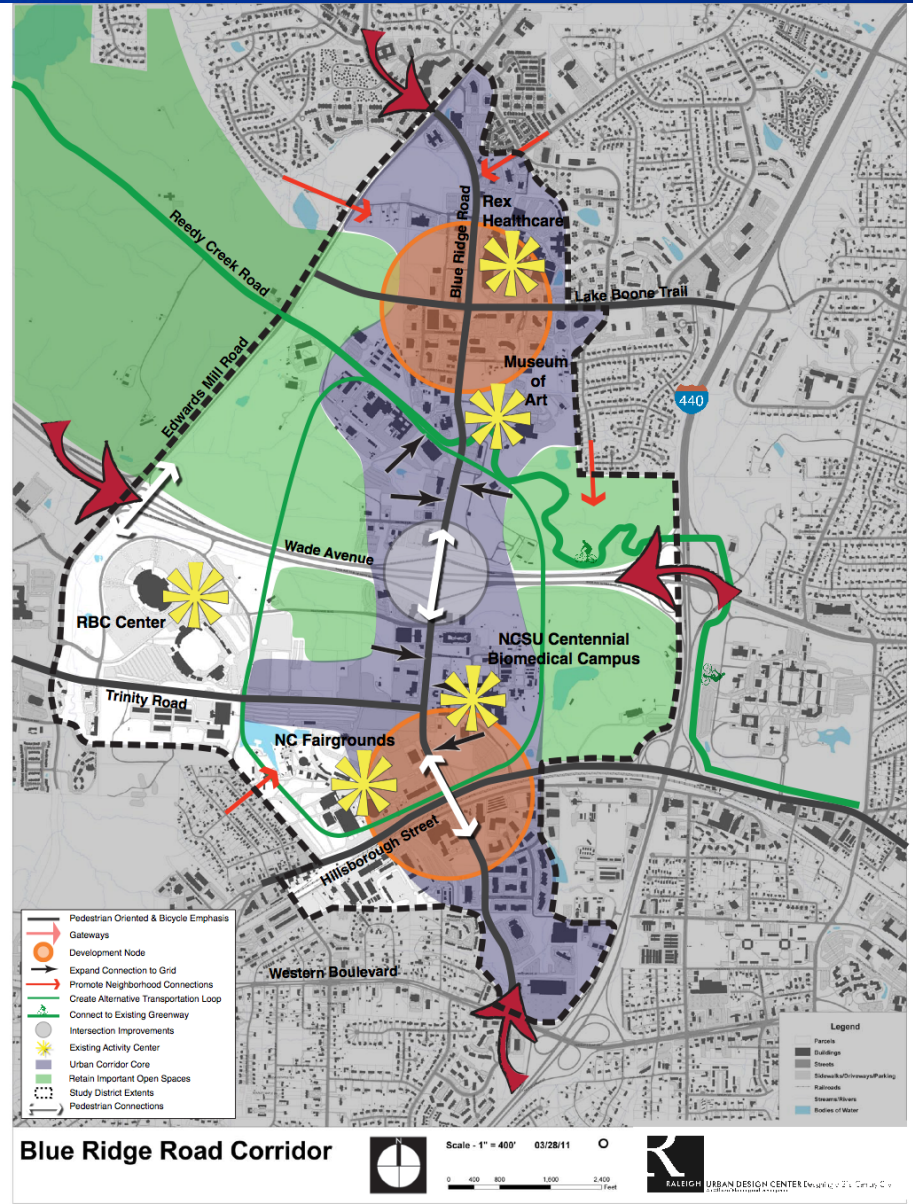
Project Goals

1. Quantify health impacts of adding sidewalks, trails, and other pedestrian improvements in the Blue Ridge Road Corridor.
2. Characterize users of NC Art Museum trails before and after installation of House Creek Greenway addition.

Geographic Scope

Pedestrian mobility among four nodes:

1. NC Museum of Art
2. NCSU Centennial Biomedical Campus
3. NC Fairgrounds
4. Rex Healthcare



Trail Surveys: Before and After House Creek Greenway Connection

Project Team

- Science team
  - Conduct health impact assessment
    - Solicit frequent input from BRRC design team, advisory board, and stakeholders
- Advisory board
  - Review strategic decisions of science team (e.g., pedestrian transit improvements to consider, health impacts to analyze, stakeholders to consult, survey questions to include)
  - Comment on science team work products

Science Team

- Jacqueline MacDonald Gibson, Ph.D.
  - Dept. of Environmental Sciences and Engineering, UNC
- Daniel Rodriguez, Ph.D.
  - Dept. of City and Regional Planning and Dept. of Epidemiology, UNC
- Steve Bevington, M.S.
  - NC Division of Public Health, Physical Activity and Nutrition Branch
- Taylor Dennerlein
  - Candidate for M.S.E.E. and M.C.R.P., UNC

Advisory Board Composition

- Rex Healthcare
- NC Museum of Art
- NC Department of Administration
- NC Fairgrounds
- NCSU
- Open Space and Parks Advisory Committee of Wake County
- City of Raleigh
- Wake County Health Department
- NC Department of Transportation
- Triangle Transit
- BRRC Stakeholder Group
- NC Alliance for Health

Health Impact Assessment: Definition

"HIA is a systematic process that

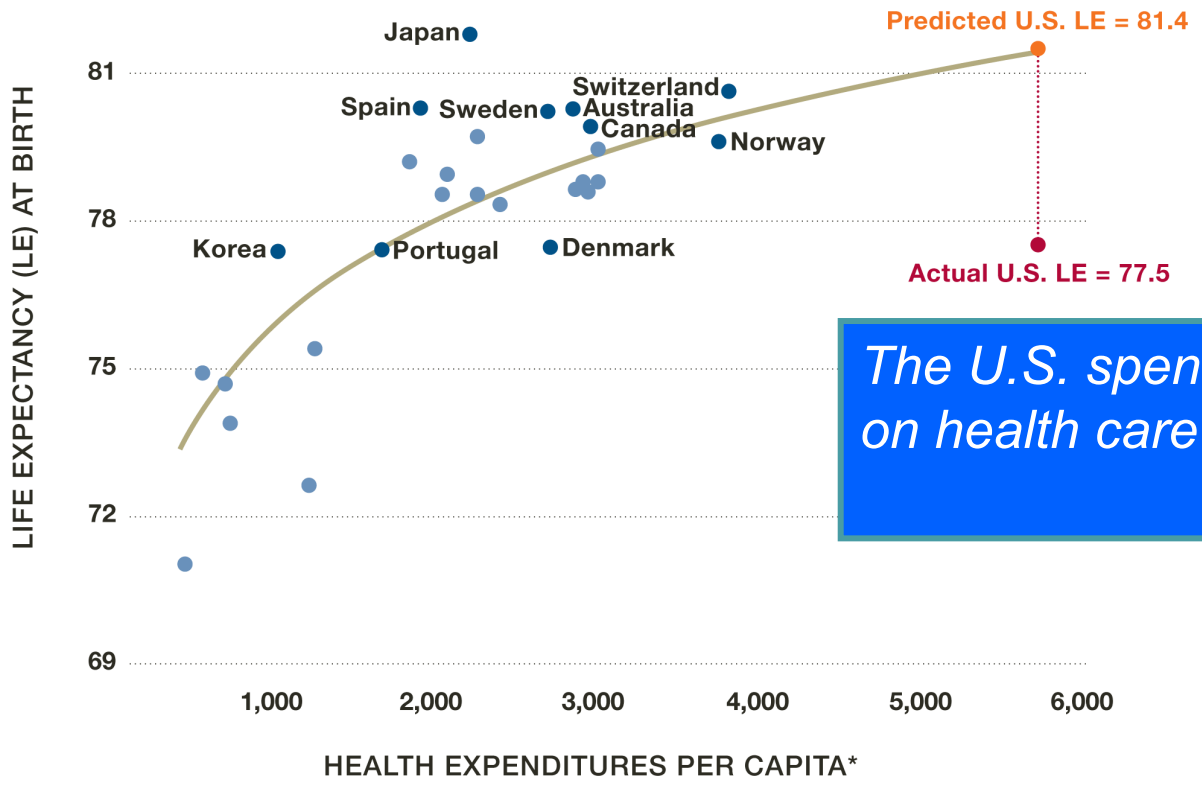
- uses an array of data sources and analytic methods and
- considers input from stakeholders

to determine the potential effects of a proposed policy, plan, program, or project on the health of a population . . . ."

--U.S. National Research Council Consensus Definition

Motivation for Conduction HIAs

The U.S. spends more money per person on health than any other country, but our lives are shorter—by nearly four years—than expected based on health expenditures.



The U.S. spent $2.3 trillion on health care in 2008

Prepared for the Robert Wood Johnson Foundation by the Center on Social Disparities in Health at the University of California, San Francisco.
Sources: OECD Health Data 2007.
Does not include countries with populations smaller than 500,000. Data are for 2003.
*Per capita health expenditures in 2003 U.S. dollars, purchasing power parity

© 2008 Robert Wood Johnson Foundation

www.commissiononhealth.org

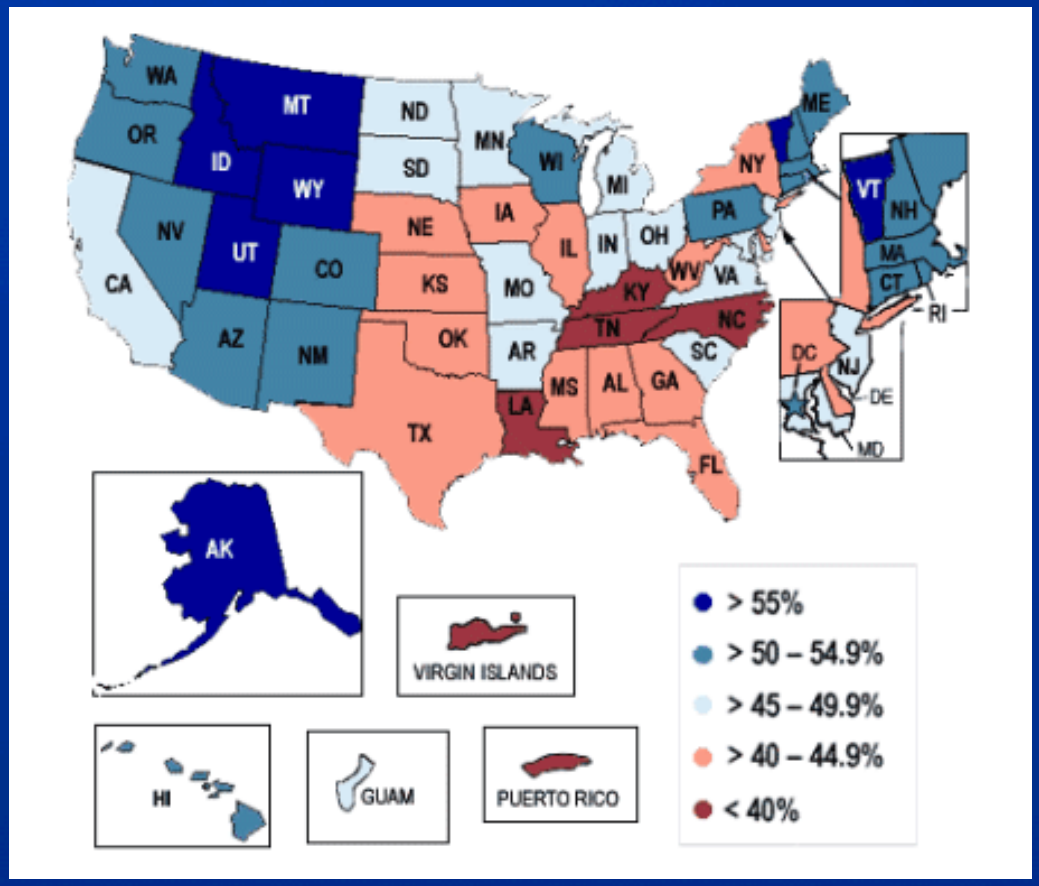
U.S. Public Health in the Twenty-First Century

Epidemic of overweight: heart disease, diabetes

- Diabetes affects 26 million Americans—8.3% of population
- Heart disease affects 33% of U.S. adults

among U.S. states

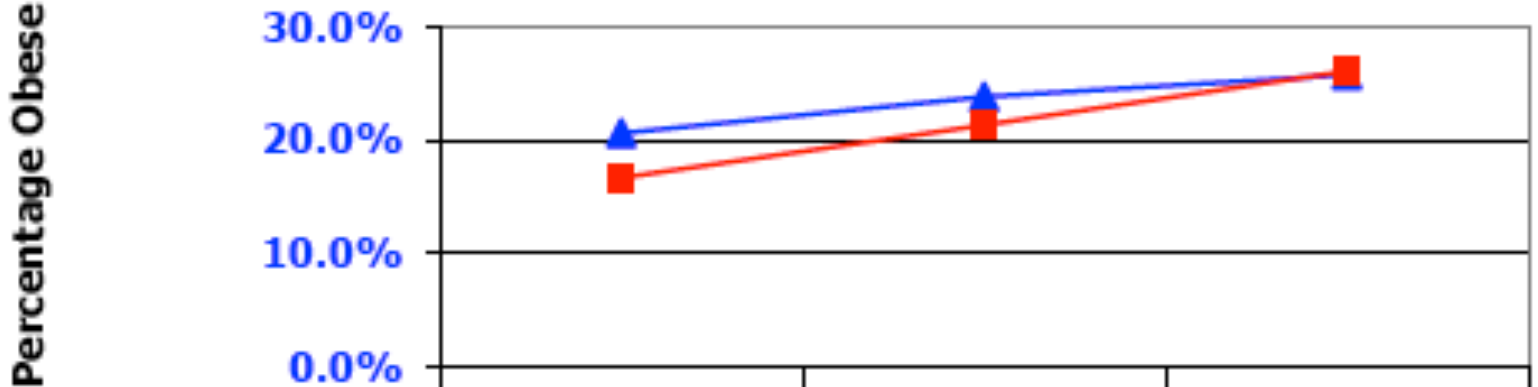
NC Physical Activity Levels Are Low, Obesity Rates Are High



Percentage of state population meeting physical activity guidelines. SOURCE: Shimomura Morgan, Journal of Extension, 2006.

- 66% of NC adults are inactive—46th among states
- Nearly 30% of NC residents are obese—41st among U.S. states

Obesity Is Increasing in Wake County



	2000	2004	2008
NORTH CAROLINA	20.6%	23.8%	25.7%
WAKE	16.7%	21.3%	26.1%

* Based on NC-NPASS data

Traditional Approach to Health

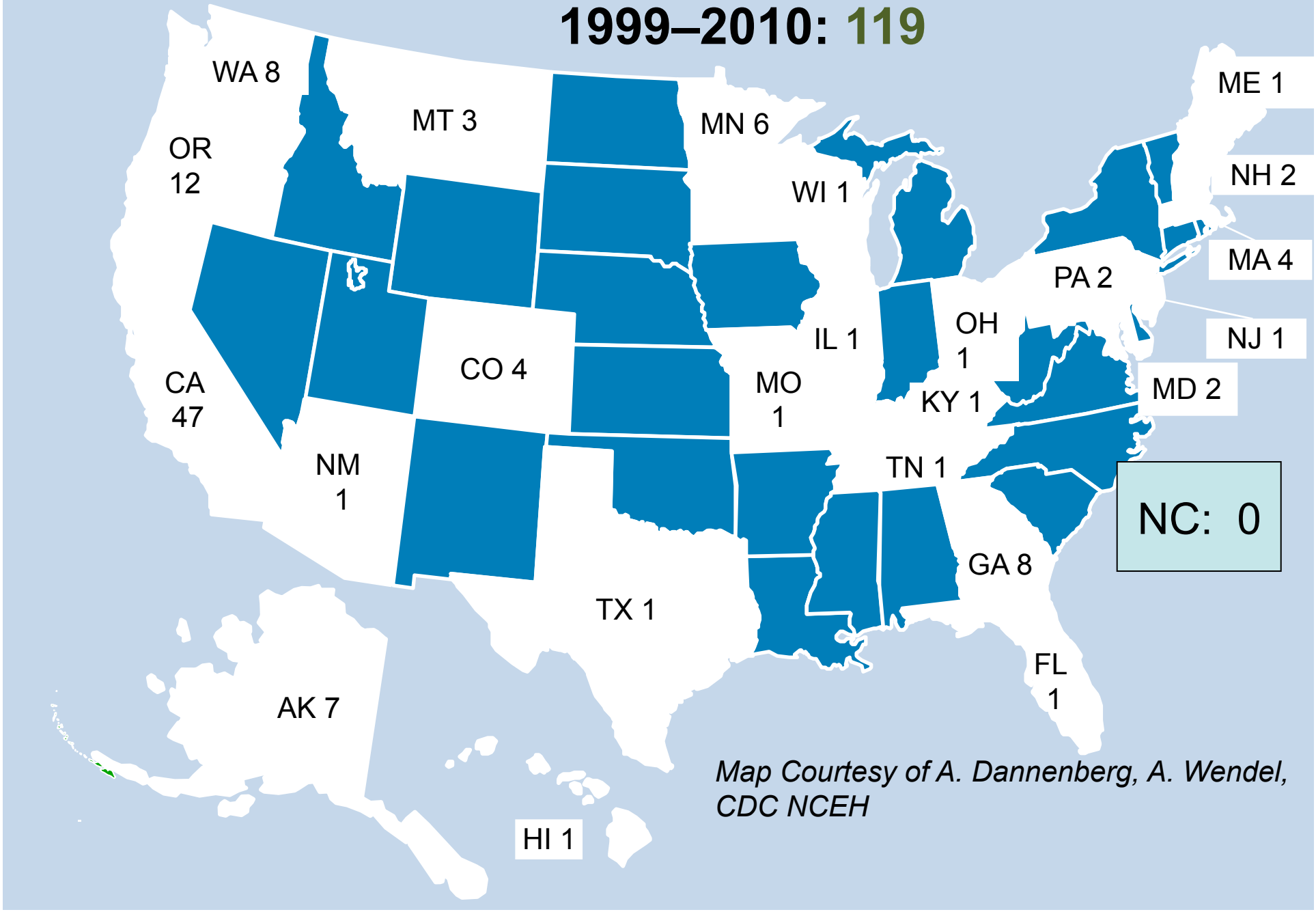
Medical care

- Prescribe medicine to treat symptoms

Modern Public Health—Back to the Future

Recognize that environments in which we live, work, play and age strongly influence health outcomes

Completed and In Progress HIAs 1999–2010: 119



Map Courtesy of A. Dannenberg, A. Wendel, CDC NCEH

Steps in an HIA

Screening
Is an HIA warranted?

Scoping
What pathways, health effects, populations will be considered?
What data are available?

Steps in an HIA

Screening
Is an HIA warranted?

Scoping
What pathways, health effects, populations will be considered?
What data are available?

Assessment
What is baseline population health status?
How will the proposed plan affect this health status?

Steps in an HIA

Screening
Is an HIA warranted?

Scoping
What pathways, health effects, populations will be considered?
What data are available?

Assessment
What is baseline population health status?
How will the proposed plan affect this health status?

Recommendations
What alternatives could minimize adverse health effects and optimize beneficial effects?
Who can implement recommendations and monitor effects?

Reporting
Document findings in written report.
Communicate findings to decision-makers, the public.

Monitoring and Evaluation
Was the HIA conducted according to plan, and did it have an influence?
Do health indicators change over time?

Project Status

Screening
Is an HIA warranted?

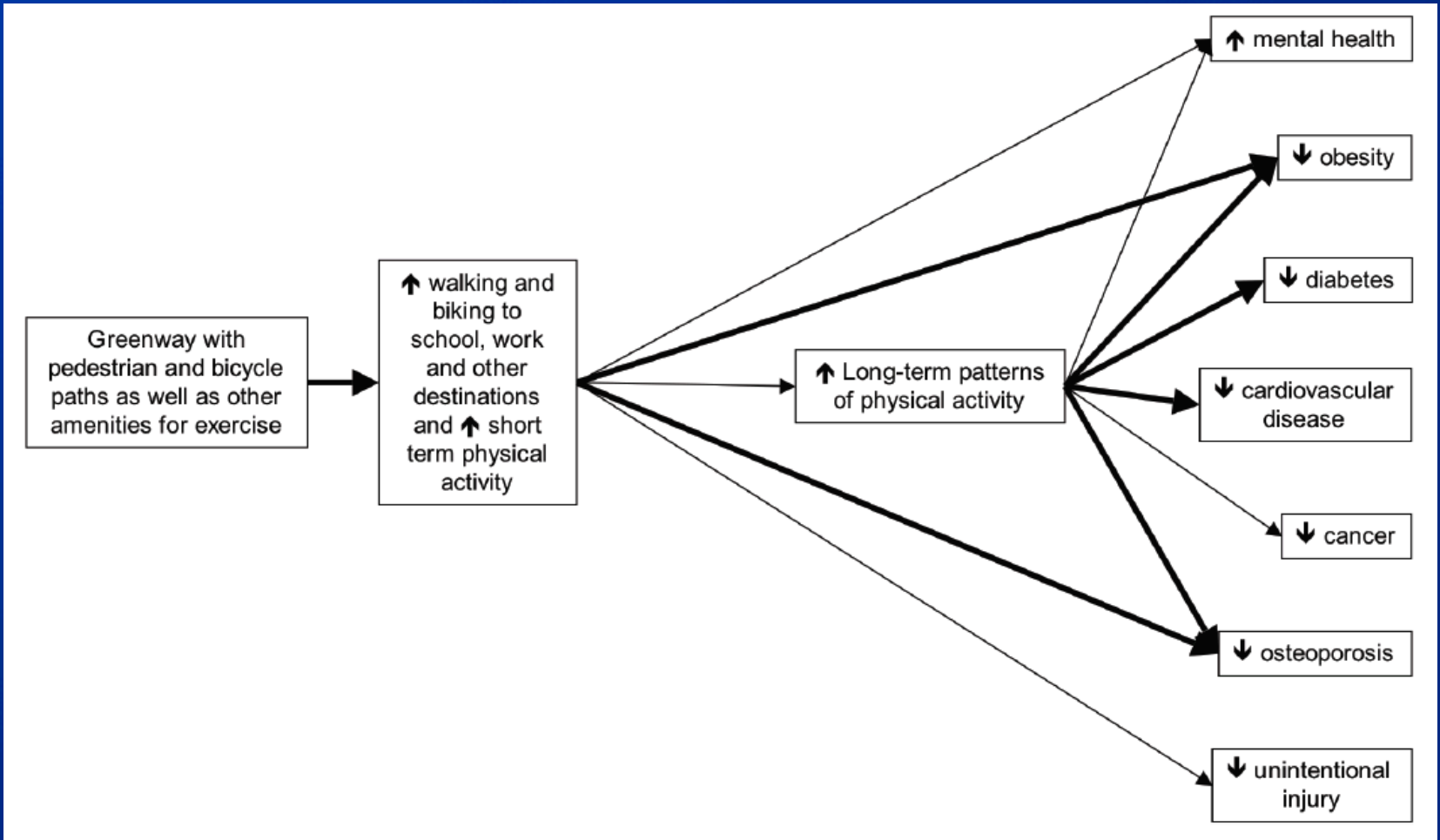
Scoping
What pathways, health effects, populations will be considered?
What data are available?

- Focus Group 1- 2/28/12 (Neighborhood group)
- Focus Group 2- 3/1/12 (Advisory board)
- Focus Group 3- 3/6/12 (Neighborhood group + area employees)
- Focus Group 4- 3/8/12 (Art museum staff)
- Focus Group 5- 3/20/12 (Students, neighbors, employees)

Key Concerns

Physical Environment		Health		Desired Changes	
Lack of adequate sidewalks/ cross walks	5	Stress	5	Make it more aesthetically pleasing	5
Intersections and roads built for cars, not people	4	Safety from Injury	5	Sidewalks/cross walks on major roads	4
Noise pollution	4	Physical Activity	2	Build more things to walk to (coffee shops, restaurants, etc.)	4
Lack of public transportation	4	Crime	2	Bike lanes/bike racks	4
Drunk/distracted drivers	3	Better mental health	2	Better connected public transit	3
Lack of efficient road system	3			Educational opportunities	3
Light pollution	3			Better publicity, signage, maps, etc.	3
Lack of clear trail indicators (signs, maps, etc.)	3			More walking trails	2
Large gaps between destinations not conducive to walking (no small shops)	3			Better access to walking trails/ open space	2
Pedestrian bridge not open at night	3			Mixed-use development	2
Lack of free parking/public parking	3			More water fountains and restrooms	2

How Sidewalks, Trails, and Bike Paths Link to Activity and Health



Project Timeline

- February 2012: Focus groups
- May 2012: Written report of scoping analysis
- May 2012: First survey of park users
- November 2012: HIA progress report
- March 2013: HIA first draft; stakeholder review
- May-June 213: Second survey of park users
- June 2013: HIA second draft; stakeholder review
- October 2013: Project completion, final HIA report