Benefits of Multimodal Transportation on Public Health and Social Equity

Department of Rail and Public Transportation Steering Committee on Multi-Modal and Public Space Design Guidelines

Michael O. Royster, MD, MPH
Director, Office of Minority Health and Health Equity
Virginia Department of Health
Health

The presence of complete physical, mental, and social well-being and not merely the absence of disease.

-World Health Organization
Major Determinants of Public Health

Percentage Contribution

- Behaviors-40%
- Genetics-30%
- Social Circumstances-15%
- Medical Care-10%
- Environment-5%

Social Determinants of Health (SDOH)

“The complex, integrated, and overlapping social structures and economic systems that include the social environment, physical environment, and health services and structural and societal factors that are responsible for most health inequities. SDOH are shaped by the distribution of money, power and resources which are themselves influenced by policy choices.”

-Centers for Disease Control and Prevention (CDC)
College graduates earn over 70 percent more on average than those with only a high school diploma—that’s an average of $1 million more over a lifetime.
Transportation
Transportation Policies Affect Health Through...

↑ Active Transportation

↑ Physical Activity

↓ All-Cause Mortality
↓ Cancer Mortality
↓ Cardiovascular Mortality
↓ Colon and Breast Cancer
↓ Diabetes
↓ Stroke
↓ Heart Disease
↓ Stress

↓ Risk Pedestrian/ Bicyclist Fatalities

↓ Air Pollution

↓ Asthma
↓ Lung Disease
↓ Lung Cancer
↓ Mortality

↓ Driving

↓ Car Collisions

↓ Car Injuries
↓ Car Fatalities
20-Minute Neighborhoods & Health

↑ Destinations and Good Land Use Mix

↑ Active Transportation

↑ Physical Activity

↓ Mortality & Chronic Disease
↓ Stress

↓ Risk Pedestrian & Bicyclist Fatalities

↑ Population and Residential Unit Density (↓ Sprawl)

↓ Driving

↓ Air Pollution

↓ Mortality & Chronic Disease

↓ Car Collisions

↓ Car Injuries

↑ Minor Car Collisions

↓ Car Injuries

↓ Car Fatalities

↑ Car Injuries

UPSTREAM PUBLIC HEALTH
Pedestrian/Bicycle Infrastructure & Health

↑ Sidewalks

↑ Bicycle/Pedestrian Paths

↑ Quality Pedestrian Facilities

↑ Street Lighting

↑ Route Connectivity

↑ Active Transportation & Physical Activity

↓ Mortality & Chronic Disease

↓ Stress

↓ Risk Pedestrian and Bicyclist Injuries/Fatalities

↑ Exposure to Air Pollutants

UPSTREAM PUBLIC HEALTH
Transit Access & Health

↑ Transit Access

↑ Transit Use

↑ Physical Activity

↓ Mortality & Chronic Disease
↓ Stress
# Table 2: The Cost of Transportation-Related Health Outcomes

The consequences of inactivity, obesity, exposure to air pollution, and traffic crashes in the U.S. are staggering when viewed in terms of cost. Fortunately, with certain policy changes, these costs are largely preventable.

<table>
<thead>
<tr>
<th>The National Health Costs of...</th>
<th>$\text{Estimate Includes}$</th>
<th>Source</th>
</tr>
</thead>
</table>
| Obesity and overweight        | $142 \text{ (Billions)}$   | - Healthcare costs  
- Lost wages due to illness & disability  
| Air pollution from traffic    | $50-80 \text{ (Billions)}$ | - Health care costs  
Available at: [www.fhwa.dot.gov/policy/hcas/addendum.htm](http://www.fhwa.dot.gov/policy/hcas/addendum.htm) |
| Traffic crashes               | $180 \text{ (Billions)}$   | - Healthcare costs  
- Lost wages  
- Property damage  
- Travel delay  
- Legal/administrative costs  
- Pain & suffering  
Available at: [www.aaanewsroom.net/assets/files/20083591910.crashesVscongestionfullreport2.28.08.pdf](http://www.aaanewsroom.net/assets/files/20083591910.crashesVscongestionfullreport2.28.08.pdf) |

All cost estimates adjusted to 2008 dollars.

Source: Hidden Health Costs of Transportation. American Public Health Association
Transportation Disadvantage and Health Equity
Transportation Disadvantage and Health Equity - Racial/Ethnic Minority

Transportation Disadvantage and Health Equity - Rural
Transportation Disadvantage and Health Equity - 65 Years and Older

Blueprint for Healthy Transportation System

Continues investment and support for strategies with known success
Connects communities and people to each other and to services
Protects the environment
Provides equitable access to transportation
Promotes public health
Results in cost savings

Offers a balance between modes of transport: driving, walking, biking, and public transit.

Source: At the Intersection of Public Health and Transportation: Promoting Healthy Transportation Policy, American Public Health Association.
AT THE INTERSECTION OF PUBLIC HEALTH AND TRANSPORTATION:
Promoting Healthy Transportation Policy

http://www.apha.org/NR/rdonlyres/43F10382-FB68-4112-8C75-49DCB10F8ECF/0/TransportationBrief.pdf
the transportation prescription

BOLD NEW IDEAS FOR HEALTHY, EQUITABLE TRANSPORTATION REFORM IN AMERICA

WHO IS IMPACTED BY TRANSPORTATION INEQUITY?

People of color, people experiencing poverty, people with disabilities, and people who experience language barriers are disproportionately impacted by burdens of the transportation system but do not receive an equal share of the benefits. In this document, we will refer to these groups of individuals as ‘impacted communities’ or ‘impacted persons’.

http://www.upstreampublichealth.org/currentwork/transportation/THEprinciples
1. Ensure equal access to essential goods & services, jobs & economic opportunities, and healthy foods & places.

Examples that support this principle include:

- Complete streets policies that meet the needs of all users, including pedestrians, bicyclists, public transit riders, children, older adults, and people with disabilities.
- Inclusionary zoning policies and transit-oriented development incentives to connect jobs to attainable housing and reduce commute times, congestion, and air pollution.

2. Engage & empower impacted communities early & often, with opportunities to have real influence during all stages of decision-making.

Examples that support this principle include:

- Engaging transit-dependent groups in public processes, particularly for decisions about fares, service, and accessibility; budget for participant compensation.
- Outreach strategies, materials, and events that are tailored to the language, culture, media, location, and physical abilities of impacted communities.
3. Implement transportation funding & investment policies that address historical disinvestment for impacted persons and for underserved neighborhoods.

Examples that support this principle include:

- Road-pricing policies, such as tolls or fees, which do not disproportionately burden low-income communities or limit access to goods, services, and opportunities.
- Increasing access to car sharing, carpooling, and other programs that limit the cost of car ownership for people who have few transportation options.

4. Promote access to jobs, including in the transportation sector.

Examples that support this principle include:

- Prioritizing transportation investments that create jobs and economic opportunities for communities experiencing high unemployment and poverty rates.
- Prioritizing investment in education, training, and employment opportunities for groups traditionally underrepresented in the transportation sector.
5. Prioritize transportation investments that ensure healthy & safe communities.

Examples that support this principle include:
- Shifting the unjust balance of expensive, highway-dominated transportation investments to safe, reliable, and efficient alternatives that support impacted communities.
- Using Health Impact Assessments to evaluate how transportation planning and projects will impact health equity.

6. Adopt transportation policies that promote environmental justice & sustainability.

Examples that support this principle include:
- Strengthening and enforcing measures to improve air quality and reduce exposure to vehicle emissions, especially in impacted communities.
- Considering cumulative environmental impacts of past land use and transportation decisions in new plans and projects.
Tools to Support Healthy Transportation Policy
Health Impact Assessment

How does the proposed project, plan, policy affect

Democratic process
Housing
Air quality
Noise
Safety
Social networks
Nutrition
Parks and natural space
Private goods and services
Public services
Transportation
Social equity
Livelihood
Water quality
Education

and lead to health outcomes

http://www.cdc.gov/healthyplaces/hia.htm
HIA can evaluate many types of projects, plans, policies

<table>
<thead>
<tr>
<th>Topic</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land use plans</td>
<td>Housing developments, revitalization plans</td>
</tr>
<tr>
<td>Transportation plans</td>
<td>New transit stations, roadway expansions, new rail lines</td>
</tr>
<tr>
<td>Health planning</td>
<td>Menu labeling</td>
</tr>
<tr>
<td>Comprehensive or specific area plans</td>
<td>Guides for future development</td>
</tr>
<tr>
<td>City, state, or national policies</td>
<td>Labor, education, incarceration, immigration</td>
</tr>
</tbody>
</table>

Health Impact Partners
HEALTH IMPACT ASSESSMENT ON TRANSPORTATION POLICIES IN THE EUGENE CLIMATE AND ENERGY ACTION PLAN

A collaborative project of Upstream Public Health, the City of Eugene Office of Sustainability, Community Health Partnership: Oregon’s Public Health Institute, and Lane County Public Health.

August 2010

ABOUT THIS PROJECT
This project examines the health benefits and negative impacts of transportation recommendations within the Eugene Climate and Energy Action Plan (CEAP). It examines seven objectives within the CEAP and summarizes the scientific evidence that links those policies to health issues in Eugene. Those health issues include injuries and chronic cardiovascular and respiratory diseases and will be impacted by the CEAP objectives through changes in collision rates, physical activity, and air pollution.
Healthy Corridor for All

A Community Health Impact Assessment of Transit-Oriented Development Policy in Saint Paul, Minnesota

http://www.policylink.org/site/c.lkiXLbMNJrE/b.7841971/k.7BB/The_Healthy_Corridor_for_All_Health_Impact_Assessment.htm
Recent News

2011-12-20 The HDMT is undergoing an update!

Over the next few months, the HDMT Community Health Indicators will be updated with new data from local sources and the US Census. Be on the lookout for new data!

Visit the HDMT News Archive.

http://www.thehdmt.org/

Get Started...

- Begin with an introduction or download a helpful presentation (PDF).
- Use the Tool.
- Access Community Health Indicators.
- Download Healthy Development Checklist.
- Check out SF neighborhood data.
- Access HDMT resources.

The Tool

The Healthy Development Measurement Tool is a comprehensive evaluation metric to consider health needs in urban development plans and projects. The HDMT explicitly connects public health to urban development planning in efforts to achieve a higher quality social and physical environment that advances health.

Who We Are

We're committed to assessing urban environmental conditions and responding to health inequities and environmental policy gaps using health impact assessment methods. We're the San Francisco Department of Public Health Program on Health Equity and Sustainability.

Be sure to contact us with any questions or comments.
MODEL for LIVING STREETS
DESIGN MANUAL
Los Angeles County 2011
KING COUNTY EQUITY IMPACT REVIEW TOOL

REVISED OCTOBER 2010


Contacts for questions about use of this tool:
Gloria Albetta   gloria.albetta@kingcounty.gov
Sandy Ciske       sandra.ciske@kingcounty.gov

King County
## Health Opportunity Index

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>Housing &amp; transportation costs relative to income</td>
</tr>
<tr>
<td>Education</td>
<td>Enrollment &amp; Attainment</td>
</tr>
<tr>
<td>Job Participation</td>
<td>Percent of 16-64 yo. employed or looking for work</td>
</tr>
<tr>
<td>Townsend Deprivation</td>
<td>Percent unemployed; no car; rental; crowding</td>
</tr>
<tr>
<td>Income Diversity</td>
<td>Diversity of incomes</td>
</tr>
<tr>
<td>Racial Diversity</td>
<td>Diversity of races</td>
</tr>
<tr>
<td>EPA air toxics</td>
<td>Cancer risk, respiratory risk and neurological risk</td>
</tr>
<tr>
<td>Local Commute of Workers</td>
<td>Ratio of in to outflow of workforce</td>
</tr>
<tr>
<td>Population Churning</td>
<td>In &amp; out migration relative to total population</td>
</tr>
<tr>
<td>Population Density</td>
<td>Control for population concentration</td>
</tr>
</tbody>
</table>

## Move upstream for the greatest impact

| Neighborhood, city, county, regional level | Strip mall, transit node | Intersection, school route |

- **Upstream**
  - Influence the overarching vision, policies & standards

- **Midstream**
  - Interject healthy design into slated projects

- **Downstream**
  - Retrofit yesterday’s mistakes

Source: SHCC
Local Health Districts

Cost And UPS Code Listing | Community Health Service Directory | District Directors

Community Health Services

Vital Records Birth, Marriage & Death Certificates

Backgrounder
The Hidden Health Costs of Transportation
Michael O. Royster, MD, MPH
Office of Minority Health and Health Equity
Virginia Department of Health
(804) 864-7425
michael.royster@vdh.virginia.gov

www.vdh.virginia.gov/healthpolicy