What’s Health Got to Do With It?
Health and Land Use Planning

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Why Assess Health Consequences?
The Iceberg: A Metaphor for the Level at Which We Interact With a System

Heart disease, obesity, hypertension

Fruit and vegetable consumption

Access to grocery stores

Should all neighborhoods provide an opportunity to be healthy?

Source: Sustainability Institute, adapted from other versions from the organizational learning field
America Is Not Getting Good Value for Its Health Dollar

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.

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
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Mortality

- 7 out of 10 deaths in the U.S. are from chronic diseases such as heart disease, cancer and stroke
- Many of these diseases could be prevented
- These chronic diseases are primarily related to four risk behaviors
  - lack of physical activity
  - poor nutrition
  - tobacco use
  - excessive alcohol consumption
Current Health Care Spending

Factors Influencing Health

- Behaviors & Environment 70%
- Genetics 20%
- Medical Care, 10%

National Health Expenditures

- Medical Services 96%
- Prevention, 4%

$2.2 Trillion
Urban Sprawl/Suburbia

Low density, low land-use, low connectivity, auto dependent with poor pedestrian and transit infrastructure
Traditional Neighborhood/Smart Growth

High density, high land-use mix, high connectivity, and has more transportation choices.
Sacramento, California
How Walk Score Works
Walk Score is a number between 0 and 100 that measures the walkability of any address.

<table>
<thead>
<tr>
<th>Walk Score</th>
<th>Description</th>
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<tbody>
<tr>
<td>90–100</td>
<td>Walker's Paradise — Daily errands do not require a car.</td>
</tr>
<tr>
<td>70–89</td>
<td>Very Walkable — Most errands can be accomplished on foot.</td>
</tr>
<tr>
<td>50–69</td>
<td>Somewhat Walkable — Some amenities within walking distance.</td>
</tr>
<tr>
<td>25–49</td>
<td>Car-Dependent — A few amenities within walking distance.</td>
</tr>
<tr>
<td>0–24</td>
<td>Car-Dependent — Almost all errands require a car.</td>
</tr>
</tbody>
</table>
Green = More walkable areas
Red = Less walkable areas
From 2000 to 2009, 90 square miles were urbanized in the Sacramento region.

El Centro Road, North Natomas, Sacramento
We’re Leaving Open Spaces in Between...

Development adjacent to a ranch in Galt

7:15 am on I-5 from Laguna to Sacramento
We’re building an “Asphalt Nation”

• Elk Grove residents now average 60 minutes in commute time, up by 10% from 2000

• North Natomas residents average 50 minutes in commute time
Why Should We Care About It?

• The way we build our cities, communities and neighborhoods affects our health and the environment
  - Injury rates
  - Physical activity
  - Food environment
  - Obesity
  - Greenspace
  - Social capital
Additional Consequences

- Air quality
- Noise levels
- Water quality
- Economics
We’re Driving Ourselves Crazy

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<table>
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<tbody>
<tr>
<td><strong>Number of miles we drive</strong></td>
<td><strong>25% increase in last 10 years</strong></td>
</tr>
<tr>
<td><strong>Time we spend in traffic</strong></td>
<td><strong>236% increase since 1982</strong></td>
</tr>
<tr>
<td><strong>Money lost in time and fuel</strong></td>
<td><strong>$78 billion</strong></td>
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</table>
Sacramento commuters waste an average of 41 hours a year in traffic congestion.

By 2025 congestion is expected to worsen by 50%.
Transportation

• Automobile crashes are the leading case of death for people ages 1 – 24
Transportation

• Commuting has been related to back pain, cardiovascular disease, obesity, reduced physical activity, reduced social capital and stress
Transportation and Access

- 5% of households in Sacramento do not have a car thus they have to rely on walking, cycling, or taking public transportation to get to destinations.
- Many of them do not live in areas where it is safe to walk or cycle or have access to public transportation which leads to increased injuries and fatalities.
Transportation and Costs

• Transportation is also a large percentage of families’ budgets

• Families can save an average of $9,000 a year if they don’t need a car
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>$$$ (Billions)</th>
<th>Estimate Includes</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic crashes</td>
<td>$180</td>
<td>• Healthcare costs&lt;br&gt;• Lost wages&lt;br&gt;• Property damage&lt;br&gt;• Travel delay&lt;br&gt;• Legal/administrative costs&lt;br&gt;• Pain &amp; suffering&lt;br&gt;• Lost quality of life</td>
<td>AAA. Crashes vs. Congestion? What’s the Cost to Society? Cambridge, MD: Cambridge Systematics, Inc.; 2008. Available at: <a href="http://www.aaanewsroom.net/assets/files/20083591910.crashesVscongestionfullreport2.28.08.pdf">www.aaanewsroom.net/assets/files/20083591910.crashesVscongestionfullreport2.28.08.pdf</a></td>
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</table>

All cost estimates adjusted to 2008 dollars.
Injury

- Only 5% of trips are made on foot but account for 12% of all traffic deaths.

- In Sacramento County 9 people are killed in automobile collisions per 100,000 people and 2 of those are pedestrian deaths.

- Most of these injuries occur in the outer lying suburbs where there has been less investment in bike/ped infrastructure.
Pedestrian Fatal Injury Rates by Vehicle Speed and Age

- Hit by a vehicle traveling at 20 MPH: 9 out of 10 pedestrians survive.
- Hit by a vehicle traveling at 30 MPH: 5 out of 10 pedestrians survive.
- Hit by a vehicle traveling at 40 MPH: only 1 out of 10 pedestrians survives.
Injury

• Most dangerous roads tend to have:
  o Multiple lanes
  o High speeds
  o No sidewalks
  o Long distances between crosswalks
  o Roadways lined with large commercial establishments and apartments
“Get more exercise”...

Physical Activity

• 17% of people in Sacramento are physically inactive
• 47% of children and teens live within a 30 minute walk of their school but only 30% reported that they had walked at least once in the past week
  ○ Safety is mentioned as one of the largest barriers
• The percentage of trips made by biking and walking in the U.S. has dropped significantly
  ○ 3% of people in Sacramento take transit to work
  ○ 3% of people walk to work
  ○ 2% of people bike to work
Physical Activity

- Most people will walk half a mile to get to destinations
- Several studies have shown that living in a walkable neighborhood is related to increased walking, reduced obesity and reduced VMT
Physical Activity

- People living in transit oriented neighborhoods make significantly more transit trips

- On average people who take public transportation get an additional 21 minutes of physical activity a day
Physical Activity

- Physical activity has been linked to several chronic diseases and mental health outcomes
  - Mortality
  - Cardiovascular disease
  - Diabetes
  - Obesity
  - Depression
  - Stress
  - Absenteeism
  - Productivity
  - Concentration
  - Self-confidence
“Eat more fruits and vegetables...”
I think I see affordable healthy food on the horizon!

It's just a mirage!
Nutrition Environment

- For every 100,000 people living in the Sacramento area there are 69 fast food restaurants but only 20 grocery stores
- 19% of people are living in a food desert
Nutrition Environment

• 17% of adults are suffering from food insecurity and it is even higher for children at 25%
• 54% of adults and 44% of children don’t eat 5 or more servings of fruits and vegetables a day
Obesity in Sacramento

- 26% of adults in Sacramento are obese and 37% are overweight
- 20% of 5th graders are at an unhealthy body weight
- Urban sprawl has been associated with overweight, obesity, minutes walking, and hypertension
Transportation, Land Use and Obesity

![Graph: Obesity/Vehicle Miles Traveled in U.S.](image)
Obesity Accounts for 21 Percent of U.S. Health Care Costs, Study Finds

ScienceDaily (Apr. 9, 2012) — Obesity now accounts for almost 21 percent of U.S. health care costs -- more than twice the previous estimates, reports a new Cornell University study.

The research, which is the first to show the causal effect of obesity on medical care costs, uses new methods and makes a stronger case for government intervention to prevent obesity, the authors say in the January issue of the Journal of Health Economics.

The study reports that an obese person incurs medical costs that are $2,741 higher (in 2005 dollars) than if they were not obese. Nationwide, that translates into $190.2 billion per year, or 20.6 percent of national health expenditures. Previous estimates had pegged the cost of obesity at $85.7 billion, or 9.1 percent of national health expenditures.

"Historically we've been underestimating the benefit of preventing and reducing obesity," said lead author John Cawley, Cornell professor of policy analysis and management and of economics. "A healthy weight leads to wage benefits that are crucial for a variety of outcomes, including job success and future earnings. These benefits can amount to millions of dollars per person, and obesity accounts for a substantial share of chronic diseases, such as heart disease, diabetes, and some types of cancer. For any type of surgery, obesity increases the risk of complications and results in longer hospital stays. Thus, reducing obesity could yield much lower health care costs in the long run."
Greenspace

- Parks should be within walking distance of peoples homes with many access points
- Increased connectivity and having sidewalks and bike lanes also increases access to parks
Greenspace

• By focusing on higher density infill development greenspace can be preserved
• New developments should include views of nature and greenspace when possible
• Preserving greenspace will lead to less air and water pollution
Greenspace

- Greenspace is associated with:
  - Mortality
  - Physical activity
  - Attentional restoration
  - Productivity
  - Happiness
  - Social capital
  - Aggression
  - Stress
Social Capital

• Factors related to increased social capital include:
  ○ Walkable communities
  ○ Distribution of affordable housing
  ○ Mixed land use
  ○ Reduced sprawl
  ○ Parks
  ○ Schools
  ○ Mass transit

• Social capital has been linked to reduced crime, reduced drug and alcohol use, and improved mental health
Air Pollution

- Motor vehicle emissions contribute to 56% of total carbon monoxide emissions and 41% of greenhouse gas emissions
- On 3% of days Sacramento exceeds ozone standards and on 14% of days we exceed PM 2.5 standards
Air Pollution

• Health consequences of air pollution:
  o Mortality
  o Respiratory diseases
  o Cardiovascular disease
  o Emergency room visits
  o Headaches
  o Nausea
Noise Pollution

- Traffic volume, traffic speed, and the number of trucks on the road influence noise pollution
- Noise pollution is associated with
  - Sleep disturbance
  - High blood pressure
  - Hearing impairment
  - Social interference
  - Annoyance
  - Productivity
  - Sense of serenity
Water Pollution

- Increased impervious surfaces reduces the land’s ability to filter water
- Consequently:
  - Surface water quality declines
  - Ground water supply is reduced
  - Land becomes more prone to flooding
Economics

- Walkable communities attract businesses which helps the local economy thrive
- People who walk or bike to local business tend to spend more money overall
- It also increases house values
  - A 1 point increase on Walkscore is associated with a $700 - $3,000 increase in property value
  - Adding bike lanes was associated with a $5,000 - $8,000 increase in home prices
Two-thirds of the structures that will be standing in the U.S. in 2050 have not yet been built.
How Do We Want to Invest in Our Future?
Building Healthier Communities

• How can we build healthier communities?
  ○ Increase density, land use, and connectivity
  ○ Install medians
  ○ Add sidewalks and bike lanes
  ○ Increase access to public transportation
  ○ Complete streets and road diets
  ○ Reduce speed limits
  ○ Add crosswalks with longer timing signals
  ○ Traffic calming (roundabouts, curb bulb outs)
  ○ Increase pedestrian scale lighting
  ○ Add parks and other greenspace
So What Can You Do?

- **Networking**
  - Establish relationships with local planners, developers, public health professionals and government officials

- **Advocacy**
  - Educate others
  - Attend local planning commission and city council meetings
Summary

• The way we design and build the places we live, work, and play has an enormous impact on our health
• You can have a positive impact on what happens in your neighborhood and community
Thank you!

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