Healthy Built Environments
Where do we go from here?
Wheels and Heels Summit
A LOOK AT COMMUNITIES THROUGH A NEW LENS

By Dan Burden, Director of Innovation and Inspiration
Walkable and Livable Communities Institute

Newark, Delaware           March, 2014
Who is served by this landscape?
What is “Place?”

Thornton, Colorado
Littleton,
New Hampshire
STEINBECK

Travels with Charley
IN SEARCH OF AMERICA
In building facilities to accommodate cars… we often forget about the people… we often forget about the people.
AMERICAN WHEELMEN

Bicycling's Dreamer

Dan Burden
Winner of the 1983 Paul Dudley White Award
An alternative to food
Origins of the Avatar 2000
The grueling John Marino Open
MOTHER: Vicky aged eight in 1979 was allowed to walk to the swimming pool alone half a mile away.

SON: Ed, now eight is only allowed to walk on his own to the end of his street (300 yards).

GRANDFATHER: Jack aged eight in 1950. Able to walk about one mile on his own to the woods.

GREAT-GRANDFATHER: George aged eight in 1919. Allowed to walk six miles to go fishing.
Childhood needs

1. To develop fully children need a broad range to roam

2. U.S. children today have a range one/ninth of their parents

3. Einstein roamed the streets of Munich at the age of four, exploring on his own

4. Our most important neural pathways are developed before the age of nine.
My trip to school each morning feels cold, quiet, and nice but when I sing when I am walking I feel happy. I even sing when it's raining but if someone comes by I stop singing when it rains my shoes get wet & muddy. I also have to walk 3 blocks to school so my feet get hurt. I also see people walking their dogs but they're friendly. I see cats that are nice. I sometimes pet the dogs & cats. I always see beautiful flowers, lamppost lions, birds, and the wind always feel cool.
Many of our suburban and country highways are being improved for motorists. Most of them are now unfitted for all other users. It is no longer safe to walk, ride or bicycle on roadways, especially at night when it is extremely perilous. The entire width of some highways is taken up by the roadway and on others what is not needed for roadway is left ungraded or so rough that it is useless for pedestrians, equestrians or cyclists.

No highway should be permitted to be without due provision for pedestrians and where practical for equestrians or bicyclists.

There should be a sidewalk or reasonably well made foot-path on one side at least of every highway. There should of course be two sidewalks or foot-paths on important highways.
If it weren’t for the damn pedestrian there would be no traffic problem in Los Angeles...

... circa 1972, Traffic Engineer

Compact villages and a strong civilian presence is the only solution to our traffic problems...

... circa 1995, San Diego Traffic Engineer
It may look like a guy building a sidewalk but it is really part of a left-wing plot to social engineer us out of our cars.
Suburbanization—and the sprawling growth it propelled—made sense for a time. But that was then; the economy is different now. A new geography is required.
Texaco gas station with a classic car inside.

A vintage photo of a harbor scene with people and boats.

A sign promoting the Ethyl Corporation with the text "It gets cheaper by the mile!"

A magazine cover titled "National Geographic: After Oil Powering the Future."
Last year car buyers ranked fuel economy 17th on their list of priorities, just below cup holders and the car's stereo system, according to a survey by CNW Research, a respected automotive market analysis firm.

Newsweek, April 08
Which form focus of investment shown in the two panels to the right brings about the greatest good for a society?

Places for people, or places for cars?
If you plan cities for cars and traffic, you get cars and traffic.

If you plan for people and places, you get people and places.
Principles for Active Transportation

Well Connected

Building Orientation And Massing

Proper Street Type And Speed

People First Designs

Good Links And Transit

Key Features:

- Block Form
- Block Scale
- Pattern
- Block Circumference

- Diagonal Corners
- People First Priority
- Right Height
- Right Setback

- Scaled to human eye
- Proper speed for street life
- Vertical green features

- Parking on street and to rear
- Buffer to street
- Low speed, low noise

- Walking
- Bicycling
- Transit
- Well located transit station
The numbers I calculate are in excess of 4 million dollars, using compounded interest at the 50-year average for investment portfolios of 7.6% and the AAA figure of $8,000/yr for cost.

... Mobility Researcher   David Levinger
Narrow streets
Short blocks
Tight corner radii
Great plazas
Beautiful buildings
Limited parking

Built by Pirates

Óld Town,
Key West,
Florida
Designed by college graduates

new Town, Key West, Florida
“What is the first thing an infant wants to do and the last thing an older person wants to give up?”
“What is the first thing an infant wants to do and the last thing an older person wants to give up?”

Walking is the exercise that does not need a gym. It is the prescription without medicine, the weight control without diet, and the cosmetic that can’t be found in a chemist. It is the tranquilizer without a pill, the therapy without a psychoanalyst, and the holiday that does not cost a penny. What’s more, it does not pollute, consumes few natural resources and is highly efficient. Walking is convenient, it needs no special equipment, is self-regulating and inherently safe.

A walkability plan must set a stage for all other modes of transportation to work, including transit. If people cannot walk then transit remains ineffective.
The Average U.S. Family now pays $16,000 per year in health care costs, and this figure is rising. With almost double the cost per capita of the average OECD nations, the U.S. receives less in the way of health care and health outcomes. This is not sustainable.

Source: The Kaiser Family Foundation, April 2011
Vehicle miles traveled (VMT) around the U.S. have increased by 70 percent over the last 20 years, compared with a two percent increase in new highway construction. The U.S. General Accounting Office predicts that road congestion in the U.S. will triple in 15 years even if capacity is increased by 20 percent. Traffic is growing about five times faster than the growth in population.

(Data compiled for a report to the U.S. Department of Transportation in 2006 written by Stephen Polzin, transportation researcher at the University of South Florida in Tampa.)
Cities are an invention to maximize exchange (goods, culture, friendship, knowledge) and to minimize travel.

The role of transport is to maximize exchange.

....David Engwicht
The Economics of Place:
The Value of Building Communities Around People
The Day that Bubbles Froze Before Hitting the Ground
The street is the river of life of the city, the place where we come together, the pathway to the center.

William H. Whyte
"I am more and more convinced that our **happiness** depends more on the way we meet the events of life than on the nature of those events themselves."

Alexandervon Humboldt

Early 1800's

The Father of Geography, and the last Master of Geography.

Darwin refers to Humboldt as the most scientific traveller who ever lived."

Humboldt made order out of our complex Universe
“I know no safe depository of the ultimate powers of the society but the people themselves.

And if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion.”

*Thomas Jefferson - September 28, 1820*
Where have all our children gone?

Future facing towns, those creating jobs, attracting our children, and which are most sought after by retiring boomers, have several features in common:

- They are designed for "people first"
- They focus on placemaking
- They have trails
- Their per capita VMT is declining
- Their downtowns are abuzz with life
- They are giant mixing bowls of creative minds
- Healthy food is easy to find; music and arts are found in abundance

These towns focus on happiness
Transportation has always built our cities.

Always.
Just as with Youth ... Senior Years have distinct periods

We must adjust as we age
<table>
<thead>
<tr>
<th></th>
<th>Housing Costs</th>
<th>Transportation Costs</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td><strong>New York City</strong></td>
<td>37.1%</td>
<td>15.1%</td>
<td>52.2%</td>
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<tr>
<td><strong>Tampa</strong></td>
<td>31.1%</td>
<td>25.1%</td>
<td>56.4%</td>
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</table>
Cost of owning a car (per year):

- Funds staying in the local economy:
  - License, taxes, repairs, tires, registration, maintenance
  - $1,390

- Funds leaving the local economy:
  - Gas, insurance, purchase price over time, finance charges
  - $7,095

If a city could reduce car ownership by 15,000 cars:

- $127,275,000
  - Money that could stay in the local economy

According to AAA, Americans spend on average $8,485 each year on their cars. Seems like a lot of money, doesn’t it? And most of that money leaves your local economy. What if you were able to get rid of a car and spend—or invest—that money in your community? What if 15,000 people decided to make that same decision? That’s exactly what happened in Washington, D.C. From 2005 to 2009, the District’s population increased by 15,862 people while car registrations went down by close to 15,000 vehicles. Living in a walkable city has value beyond personal convenience—it also allows more of your money to stay closer to home while reducing your carbon footprint. With better information, can we make our cities more intelligent? We can. **What makes a city intelligent? You do.**
Fig. 1. U.S. gross national product (GNP) and mean life satisfaction from 1947 to 1998.
New measure for street performance: People come to your street to shoot their wedding pictures.
We should “discourage through traffic”

1938 - FHA Technical Bulletin No. 7
Planning Profitable Neighborhoods
Land Use & Transportation – Ideal Traffic Planning

20-Year Forecast

Capacity

Years

20-Year Forecast

Widen
Chain of Impacts

Widen Road

- Reduce Delay
  - Move Home
    - Lose Business & Jobs
    - Community Disinvestment
  - Range Farther
    - Big Box
    - Inactivity Epidemic
- Reduce Cost
  - Drive More
    - More VMT
    - Increased Energy Demand
  - Own More Cars
    - Higher Carbon Footprint
    - Increased Household Transportation Costs
It costs $2.8M per year for one fire station with two apparatus. A well-connected system covers 4.6 times more houses. ($159 per year for well-connected vs $740 for poorly connected) City of Charlotte, N.C.
Where would you rather walk?  
Where would you rather bike?  
Which is the safest place to bike?  
Where would you rather drive?  
Where would you rather live?  
Which is the safest place to drive?
A connected network of streets (right side of drawing) with sidewalks cuts walking distances between housing, shopping, work and school.

(Source: A. Duany/E. Plater-Zyberk)
Not Walkable
High Car Dependency
Serious Congestion

Walkable
Low Car Dependency
Moderate Congestion
Size neighborhoods for a 5-minute walk

Design for a mix of land uses:

Make blocks a walkable size:

- Block perimeters of 1,500’ to 2,000’
- Create a connected network of streets

Centers include denser housing, a square, civic uses, and neighborhood-oriented retail.
Small Apartment - Typical
Small Apartment Complex
Transit Compatible
Connectivity
Burnaby, British Columbia
High Gate Village - Former Strip Mall
New Port Village, Port Moody
New Port Village, Port Moody
Can handle 25,000 vehicles per day
Vancouver now has so much density that there is no comparison until you travel to Asia ... to Beijing, Hong Kong, or Tokyo.

As Vancouver has built itself into the one city in the “Most Livable City in the World” ... Vehicle Miles Per Day (VPD) is declining. Registered car ownership is also declining.

Virtually all growth occurred in brown fields, industrial yards, old rail yards. Virtually all former single family homes are still in place. Loved, cared for, and worth a heck of a lot of money.
This 5-lane Main Street was converted to…
Pottstown PA
If we want a booming economy of mom and pop stores, we'd better build the environment where they succeed.
Canada
Marine Drive, Dundarave, B.C.

Highway 93, Missoula, Montana
USA
Make blocks a walkable size

Disconnected

Connected

Create a connected network of streets

Use block perimeters of 1,200 to 2,100 feet
Design for a mix of land uses:

Centers include denser housing, a square, civic uses, and neighborhood-oriented retail.
If these walking routes are to work they have to be an A or B quality.
## 2 Lane Streets with Curb and Gutter

<table>
<thead>
<tr>
<th>Street Option</th>
<th>Construction Cost Per Mile</th>
<th>Sidewalk</th>
<th>Bike Lanes</th>
<th>Lane Width</th>
<th>% Difference</th>
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</thead>
<tbody>
<tr>
<td>12’ Lanes (28’ F-F)</td>
<td>$3,800,000</td>
<td>-</td>
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<tr>
<td>12’ Lanes + 5’ sidewalk (28’F-F)</td>
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<td>-</td>
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<td>11’ Lanes (26’ F-F)</td>
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<tr>
<td>11’ Lanes + 5’ sidewalk (26’ F-F)</td>
<td>$3,950,000</td>
<td>3.80%</td>
<td>-</td>
<td>-1.30%</td>
<td>2.50%</td>
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<tr>
<td>Street Option</td>
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<tr>
<td>12’ Lanes (40’ F-F)</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>12’ Lanes + Bike Lanes (50’ F-F)</td>
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<td>-</td>
<td>5.40%</td>
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<td>12’ Lanes + Bike Lanes + 6’ Sidewalk (50’ F-F)</td>
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<td>3.40%</td>
<td>5.10%</td>
<td>-</td>
<td>8.5%</td>
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<tr>
<td>11’ Lanes (36’ F-F)</td>
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<td>-2.10%</td>
<td>-2.0%</td>
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<tr>
<td>11’ Lanes + Bike Lanes (46’ F-F)</td>
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<td>5.50%</td>
<td>-2.10%</td>
<td>3.5%</td>
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<tr>
<td>11’ Lanes + Bike Lanes + 6’ Sidewalk (46’ F-F)</td>
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<td>3.40%</td>
<td>5.20%</td>
<td>-2.10%</td>
<td>6.50%</td>
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Nearly $16 million is spent per new mile of which only $250,000 is spent on bicycle and pedestrian infrastructure and ADA compliance.