Improving the Pedestrian Environment in Auto-Oriented and Low-Income Areas

Jim Charlier
Charlier and Associates
Boulder, CO

Paul Zykofsky
Local Government Commission
Sacramento, CA

Rail-Volution 2006

November 8, 2006
Improving the Pedestrian Environment in Low-Income Areas

Paul Zykofsky, AICP
Local Government Commission

Hurley Way Revitalization Project

June 28, 2006
Local Government Commission

- Nonprofit membership organization based in Sacramento, CA of local government officials – elected and staff
- Founded in 1979 to work on energy issues
- During 1980s expanded to work on pollution prevention, waste management, hazardous waste
- 1991: Started working on land use issues
The Ahwahnee Principles, 1991

- Response to our members’ concerns over sprawling, poorly planned development in their communities
- Assembled with assistance from leading architects and planners working on innovative solutions
The Ahwahnee Principles, 1991

- Revitalize existing parts of our communities through infill development
- Plan complete and integrated communities with mix of uses
  - Within walking distance of one another
  - Within walking distance of transit stops
  - With a diversity of housing types
  - With a center focus
The Ahwahnee Principles for More Livable Communities

- Embraced by local government officials in California and other states
- LGC initiated programs on land use and transportation planning
- 1993 created Center for Livable Communities
- Over 200 cities and counties in California adopted all or part into their planning documents
- Since 2001 have organized National New Partners for Smart Growth Conference
Safe Routes to Schools

**Focus on Livable Communities**

**The Economic Benefits of Walkable Communities**

Not so long ago, a vast majority of children routinely traveled their neighborhoods on foot or by bicycle almost as a right of passage. Today, a new generation of homes and schools challenges their kids to traverse all their streets, looking for their children’s safety concerns due to perceived dangers from both crime and traffic. The condition of children walking and cycling has changed in many communities. New are 13% of all trips to and from children to walk, adding even more cuts to the morning class.

There is a way to break the cycle. A new movement is emerging that is focusing on guiding bike, bike path, and bike education and senior citizens today. In communities that walk, biking, and safe cycling are increasing. Parents and neighborhood groups, school and local officials, law enforcement officers, and traffic engineers are working together to make streets safer for pedestrians and bikes, along heavily traveled routes to school while encouraging both parents and children to use safer modes of transportation.

**Why We Need Safe Routes:**

- **Children are at risk from unsafe streets.**
  - In California, more than 3,100 children were killed by motor vehicles.
  - Bicyclist accidents are a real safety issue for children, and children who walk or bike are at risk.
  - Children and adults who walk or bike often use unsafe streets, putting themselves and others at risk.

- **Children are losing their independence.**
  - Children are being relieved of their responsibilities, and they are dependent on adults to move about.
  - Children are no longer able to explore their communities without fear.

**Why People Don’t Walk and What City Planners Can Do About It**

Walking is key to staying healthy.

Why are we driving everywhere instead of walking?

- Regular physical exercise is an important part of maintaining good health. It is also an essential part of preventing and controlling obesity.

- Walking provides a low-impact workout that can be enjoyed by people of all ages and abilities.

- Walking is a great way to reduce stress and improve mental health.

- Walking is good for the environment.

- Walking is a way to save money.

**Designing Safe Streets and Neighborhoods**

Caught in the Crosswalk

- One of the difficulties in creating more walkable and bike-friendly neighborhoods is the concern over safety. Good design can help overcome many of the fears over personal safety and being victimized by crime, as companion fact sheet explains. But of equal concern is the sense that many of our streets and avenues are not designed to be safe.

**Land Use Planning for Safe, Crime-Free Neighborhoods**

A sense of community is key to neighborhood safety.

- A recent study published by the University of Southern California found that strong communities are key to neighborhood safety.

- Community members are more likely to feel safe and secure when they feel connected to their neighbors and have a sense of belonging.

**Transportation Tools to Improve Children’s Health and Mobility**

Look What California Is Doing...
Health, Physical Activity and Community Design

- Concern over impacts of sedentary lifestyle on public health
- 200,000 deaths/year attributable to physical inactivity
- Increase in seriously overweight youth
  - 5% in 1963-70
  - 14% in 1988-94
The Burden of Physical Inactivity

- The Problem
  - 27% of adults are sedentary
  - 61% of adults are overweight
  - 1 in 4 adults is obese

- The Outcome
  - Obesity, Cardiovascular Disease, Cancer, Diabetes
  - Physical inactivity is a primary factor in over 250,000 deaths annually.

- Medical costs associated with physical inactivity and its consequences may exceed $125 billion annually.

Obesity Trends Among U.S. Adults

* BMI ≥ 30, or ~ 30 lbs overweight for 5’4” woman

1985

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

* BMI ≥ 30, or ≈ 30 lbs overweight for 5’4” woman

1987

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

1989

* BMI $\geq 30$, or
$\sim 30$ lbs
overweight for
5’4” woman

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

* BMI ≥ 30, or ~ 30 lbs overweight for 5’4” woman

1991

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

1993

* BMI \( \geq 30 \), or 
\~ 30 lbs 
overweight for 
5’4” woman

No Data

10% - 14%

15% - 19%

\geq 20%

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

* BMI ≥ 30, or ~ 30 lbs overweight for 5’4” woman

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

1997

* BMI ≥ 30, or
~ 30 lbs
overweight for
5’4” woman

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

* BMI ≥ 30, or ~ 30 lbs overweight for 5’4” woman

1999

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

* BMI ≥ 30, or ~ 30 lbs overweight for 5’4” woman

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity* Trends Among U.S. Adults

2003

* BMI ≥ 30, or ~ 30 lbs overweight for 5’4” woman

Source: Behavioral Risk Factor Surveillance System, CDC
Diabetes and Gestational Diabetes Trends Among Adults in the U.S., BRFSS

2001

Underlying Causes of Death in the US

- Tobacco: 19%
- Diet/Activity Patterns: 14%
- Alcohol: 5%
- Microbial Agents: 4%
- Toxic Agents: 4%
- Firearms: 3%
- Sexual Behavior: 3%
- Motor Vehicles: 5%
- Illicit Drug Use: 14%

Explaining the Epidemic

- Not genetic or biological changes
- But sweeping societal and environmental changes
Physical Inactivity and Overweight Trends Among Youth

- 1 in 3 high school youth do not engage in vigorous physical activity
- Less than 30% attend daily physical education
Physical Inactivity and Overweight Trends Among Youth

- 1 in 7 youth ages 6–19 is overweight
- Children spend more time watching television in a year than they do attending school
The Disappearing Walk to School

- 1 in 4 trips made by 5-15 year olds are for the journey to and from school.
- Only 10% of these trips are made by walking and bicycling.
- Of school trips one mile or less, about 28% are walk-based and less than 1% are bike-based.
The Disappearing Walk

- One fourth of all trips people make are less than one mile, yet three-fourths of these short trips are made by car.

Source: Nationwide Personal Transportation Study (NPTS), 1970, 1990, 1995
The harangues haven’t worked...

Percentage of Adults reporting participation in regular and sustained activity (1986-1994 BRFSS*)

*25 states and the District of Columbia
The good news...

“Physical activity need not be of vigorous intensity for it to improve health.”

The good news…

- Significant health benefits can be obtained through moderate amount of physical activity on most days of the week:
  - 30 minutes of brisk walking or raking leaves
  - 15 minutes of running
  - 45 minutes of playing volleyball
It’s the Community Design…

“Reliance on physical activity as an alternative to car use is less likely to occur in many cities and towns unless they are designed or retrofitted to permit walking or bicycling. The location of schools, work sites, and shopping areas near residential areas will require substantial changes in community or regional design.”

Factors that Influence Active Living

- Land Use Mix
- Network Connectivity
- Street Design
- Site Design
- Density
- Beliefs/Perceptions
  - Crime
  - Safety
Residents of mixed-use communities have more opportunities to walk and use transit.

For trips less than one mile (75% of trips), mixed-use communities generate up to 4-times as many walk trips.
Alternative Patterns of Development

Traditional

Conventional
Connectivity —
Summary of the Literature

- Poor network connectivity reduces pedestrian mobility and trips
- As the number of intersections and blocks increase the number of walk trips increase
- As the number of cul-de-sacs and loops increase the number of walk trips decrease
Traditional vs. Conventional

Central Business Districts at the same scale

Savannah, Georgia

Irvine, California
Site Design —
Summary of the Literature

- Design features that promote walk/bike trips
  - Appropriate levels of residential density, land use mix, and street connectivity
  - Region-specific architecture
  - Short building setbacks
  - Neighborhood parks and greenspace
Site Design — Example
Compact Development — Summary of the Literature

- Appropriate residential and employment density (>7 units and 100 employees per acre) are associated with increased walk, bike, and transit trips
Compact vs. Low Density Development

San Diego County

Projected land consumption by 2020 under existing policies

San Diego Association of Governments
Compact vs. Low Density Development

San Diego County

Projected land consumption by 2020 under Smart Growth, transit-oriented scenario

San Diego Association of Governments
Land Use Pattern Affects Travel — Higher Density can reduce Vehicle Trips

Significant reduction as we go from 3-4 units/acre to over 20 units/acre

Source: John Holtzclaw, PhD, Sierra Club
Land Use Pattern Affects Travel — Density to Support Transit

For Light Rail Service
- 18-25 units/acre in urban area

For Bus Service
- 7 units/acre (every 30 minutes)
Street Design —
Summary of the Literature

- Perceptual qualities of the street influence pedestrian use
- Good pedestrian environments
  - maintain visual and sensory attention
  - streets are calm, narrow, and complex
Principles of Healthy Streets

- Street as an outdoor room
  - People feel more comfortable when trees and houses provide a sense of enclosure
  - Eyes on the street make the street safer
Principles of Healthy Streets

- Streets designed for people, not just cars
- Friendly to cars, pedestrians and cyclists
Principles of Healthy Streets

- Streets designed so drivers feel comfortable at slow speeds
  - 15-25 mph on neighborhood streets
  - 25-35 mph on avenues and boulevards
Principles of Healthy Streets

- Narrower streets are slower and safer
  - Longmont, CO study of 20,000 accidents
    - Found street width had the greatest relationship to injury accidents
  - Accidents/mile/year were higher on wider streets
    - 40-foot wide street: 2.23 a/m/y
    - 36-foot wide street: 1.21 a/m/y
    - 24-foot wide street: 0.32 a/m/y

Incremental Efficiency

Roadway Volume/Capacity Relationship

Source: Glatting Jackson
Healthy Streets Need Good Sidewalks

- Detached from curb
- At least 5 feet wide
- Planting strip helps shade street and sidewalk

**SIDEWALK FEATURES**

- Width (minimum 5')
- 6 feet if at back-of-curb (AASHTO)
- Crossfall 1:50
- Pedestrians need a 2 foot wide buffer to all edges, curb, buildings, bridge railings etc.
- Buffer to motor vehicles (4-10'), nature-strip 7 feet wide to plant trees
- Street lighting, shade
- Pavers can be used for enhancement
Curb extensions

Most focus has been on reducing crossing distance

Other advantages

- Better visibility (both ways)
- Traffic calming
- Room for street furniture
- Additional on-street parking*
  - corner is “protected”
Benefits of curb extensions
Would you allow your child to cross this street?

From 103 Feet to 26 Feet

La Mesa, California
Road Diets — Castro Street, Mountain View, CA

- 4 lanes to 3 and 2 lanes
- Added median and flex area
- Improved safety for motorists, cyclists & pedestrians
Road Diets — Castro Street, Mountain View, CA

- 4 lanes to 3 and 2 lanes
- Added median and flex area
- Improved safety for motorists, cyclists & pedestrians

After
Road Diets — Castro Street, Mountain View, CA

- 4 lanes to 3 and 2 lanes
- Added median and flex area
- Improved safety for motorists, cyclists & pedestrians
## Road Diets in Seattle
(4 to 3 lanes)

<table>
<thead>
<tr>
<th>Roadway</th>
<th>Date</th>
<th>ADT Before</th>
<th>ADT After</th>
<th>Collision Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenwood Ave N</td>
<td>Apr-95</td>
<td>11872</td>
<td>12427</td>
<td>24 to 10 58%</td>
</tr>
<tr>
<td>N 80th St to N 50th</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N 45th Street</td>
<td>Dec-72</td>
<td>19421</td>
<td>20274</td>
<td>45 to 23 49%</td>
</tr>
<tr>
<td>Wallingford Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th Ave NW</td>
<td>Jan-94</td>
<td>10549</td>
<td>11858</td>
<td>18 to 7 61%</td>
</tr>
<tr>
<td>Ballard Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin Luther King Jr W</td>
<td>Jan-94</td>
<td>12336</td>
<td>13161</td>
<td>15 to 6 60%</td>
</tr>
<tr>
<td>North of I 90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dexter Ave N</td>
<td>Jun-91</td>
<td>13606</td>
<td>14949</td>
<td>19 to 16 59%</td>
</tr>
<tr>
<td>Queen Ann Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24th Ave NW</td>
<td>Oct-95</td>
<td>9727</td>
<td>9754</td>
<td>14 to 10 28%</td>
</tr>
<tr>
<td>NW 85th to NW 65th</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Conditions in low income areas

- No “typical”
  - Some areas have good “bones”, good infrastructure
    - Problems more related to safety, security, etc.
  - Other areas lack basic infrastructure
Conditions in low income areas

Missing basic infrastructure
Conditions in low income areas

High speed streets
Difficult street crossings
Conditions in low income areas

Fear of crime
Conditions in low income areas

Lack of code enforcement
Conditions in low income areas

Poor maintenance
Conditions in low income areas

Poor maintenance
Conditions in low income areas

Dogs...
Visión

Cutler Orosi Vision

Local Government Commission
Walkable Communities, Inc
Tulare County and CALTRANS
Community Workshop
Thursday, Nov. 1

Reunión de la Comunidad
jueves, 1 de noviembre
1. Sidewalk Finished

2. Better Lighting

3. Stop sign on Main St.
Cutler Orosi Priorities

- Recreation Center: 72
- Lighting: 46
- More affordable housing: 42
- Complete sidewalk: 39
- Fix, paint existing buildings: 32
- Fix existing roads: 30
- Clean alleys: 30
- More businesses, employment: 29
- Traffic signal (63 & 408): 28
- Park in Orosi: 28
- Plaza between towns: 24
- Soccer Field: 23
Focus Groups
Friday, Nov. 2

Grupos de Discusión
viernes, 2 de noviembre
Design Tables
Saturday, Nov. 3

Talleres de Diseño
sábado, 3 de noviembre
**Phase One**  
*Build Community Pride and Safety*

- Complete Sidewalk System
- Clean up area streets and alleys
- Provide façade improvements
- Street lighting on 63 and El Monte (416) in urban areas
- Add tree wells where feasible on El Monte (416) and 63
- New residential streets to be built to AASHTO standards (26 curb face to curb face with parking on both sides of street)
- Provide basic shelter at transit stops
- Add appropriate street furniture, including benches
- Stripe outside lanes to 12 feet on 416 and 63
- Fund raising and budgeting for Phase Two projects
Public Places -
Lugares Públicos

- Orosi
- Cutler
- El Monte
- HWY 63
- Rd 124
- Sand Creek
- Realignment
Phase Two
Create By-pass and reduce lanes

Build 3 intersection improvements for bypass

- A roundabout at El Monte (416) and 120
- Create channel intersection at 63 and 201
- Create channel intersection at 201 and 120

Rebuild 63 with two travel lanes, median, 2-bike lanes, on-street parking and tree wells from Railroad drive to existing two-lane section

- Roundabout at 63 and 498
- Roundabout at First Drive and Orosi Drive
- Narrow Orosi Drive to 24 feet from 63 to Second
- Drive with grass added on park side
Phase Two (Continued)
Create By-pass and reduce lanes

Rebuild El Monte (416) with two travel lanes, median, 2-bike lanes, on-street parking and tree wells from Avenue 120 to Road 130.

• Roundabout at El Monte (416) and 124
Highway 63 Truck Bypass

Desvío en la Ruta 63 para camiones
Highway 63 at First Street and 404

Ruta 63 en la Calle Primera y la 404
Highway 63 at El Monte Avenue

Esquina de la Ruta 63 y la Avenida El Monte
First Drive and Orosi Drive in Cutler

Calle Primera y Calle Orosi en Cutler
Highway 63 at Road 408

Ruta 63 y la Calle 408
Improving Traffic Safety and Circulation in El Monte

Prepared by:
Glatting Jackson
Walkable Communities, Inc.
Local Government Commission
Quatro Design Group
Livable Streets, Inc.
Community Partners, LLC

Prepared by:
Caltrans and
the City of El Monte

El Monte, California

August 3-8, 2006
In 22 seconds at 30 mph a motorist travels 968 feet (3.1 football fields).

In 6 seconds at 30 mph a motorist travels 264 feet (.9 football fields).

In 3 seconds at 30 mph a motorist travels 132 feet (.4 football fields).
Tyler Avenue and Ramona Boulevard
Four Way Stop (Alternative)
Curb Extensions

Reduce intersection and street sections to compact, human scale
Use 9-10 foot storage lanes
Use 10 foot travel lanes
Use 7 foot wide bike lanes
Place tree wells in parking bays
Use enhanced crosswalk markings
Use raised medians, as appropriate

Tyler Avenue and Ramona Boulevard
Santa Anita at Ramona
Improved Safety and Traffic Efficiency
Compact Intersection Design

Reduce Ramona to two lanes, plus a turn lane
Create pork chop island as shown
Use curb extensions, as shown
Place on-street parking on all streets
Create bike lanes on Santa Anita and Ramona (East)
Narrow travel lanes to 10 or 11 feet
All storage lanes to be 9-10 feet
Insert medians as shown
Use enhanced crosswalk markings
Two ADA ramps per corner

Santa Anita Avenue and Ramona Boulevard
Example
Roundabout

Benefits:
Injuries reduced 90%
30% more traffic capacity
Gateway entry
Pedestrian friendly
Speeds controlled
Reduced noise
Reduced pollution
Reduced maintenance
Business friendly
Santa Anita at Valley Boulevard
Improved Safety and Traffic Efficiency
Starfish Roundabout (favored by Lions)

Reduce Valley Blvd. to two lanes plus turn lane
Create pork chop island as shown
Use curb extensions, as shown
Place on-street parking on all streets
Create bike lanes on Santa Anita and Ramona (East)
Narrow travel lanes to 10 or 11 feet
All storage lanes to be 9-10 feet
Insert medians as shown
Use enhanced crosswalk markings
Two ADA ramps per corner
Santa Anita Avenue at Valley Boulevard
Reduce Valley to two lanes
Roundabout handles all vehicles, but restricts left turns to WB-40
Pedestrians cross 14 feet vs 78 feet
Significant new parking on all streets
Gateway entry to new development and Valley Mall, new landscaping
Reduces personal injury crashes 80-90%
Improves Levels of Service and reduces noise, delay and pollution all hours of the day
Ramona at Lexington
Improved Safety and Traffic Efficiency
Compact Intersection Design

Reduce Ramona to two lanes, plus short turn lanes
Create roundabout at Lexington
Use curb extensions, as shown
Place on-street parking on both sides
Create bike lanes on Ramona
Narrow travel lanes to 10 or 11 feet
All storage lanes to be 9-10 feet
Insert medians as shown
Use enhanced intersection markings
Two ADA ramps per corner

Existing Conditions: Pedestrians cross 72 feet at intersections (20 seconds)

Future Conditions: Pedestrians cross 14 feet at intersections (4 seconds)

Ramona Boulevard and Lexington Avenue
For more information

- Local Government Commission Center for Livable Communities
  - Web: [www.lgc.org](http://www.lgc.org)
  - Phone: 800-290-8202
  - e-mail: center@lgc.org

- Walkable Communities
  - Web: [www.walkable.org](http://www.walkable.org)