Safe on the Move
The Importance of the Built Environment

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Seminar: Security Matters! Stockholm, May 20-21, 2010

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Structure of Presentation

• Factors influencing fear in public spaces and transportation settings

• Relationship of transit crime to social and physical characteristics of neighborhoods

• Policy and design recommendations for being safe on the move

The Ideal and the Real

Increasing calls for more walking, biking, and use of public transportation

↓

• reduced carbon emissions
• cleaner air
• less traffic congestion
• healthier lifestyle, counteract obesity, cardio-vascular diseases, children's diabetes

Prevailing trends

•Increased automobility/ car ownership
•Decreased independent mobility of children
•Decreased walking and biking
•Decreased transit use

Changes in Walking and Biking for the
Journey to Work Trip 1960-2000 (U.S. Census)

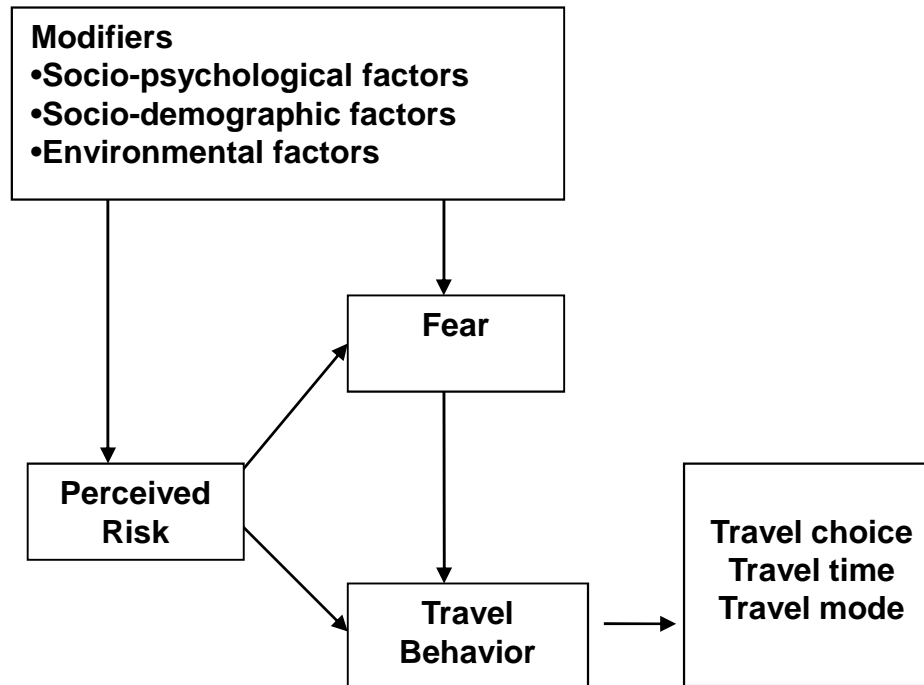| COMMUTERS	1960	1970	1980	1990	2000
WALK	6,416,343 9.92%	5,689,819 7.40%	5,413,248 5.60%	4,488,886 3.90%	3,758,982 2.93%
BICYCLE	N/A	N/A	468,348 0.48%	466,856 0.41%	488,497 0.38%

Fear of transportation environments

•Fear and anxiety about personal security are detractors from using public transit

•Avoidance of certain modes of transport, certain routes, and certain transit stops

•Use only during certain hours, and with company

Empirical research on the impact of
fear of crime on transit ridership

- An extra 10.5% of journeys would be generated if the public felt more secure when traveling, particularly when waiting at stations (U.K. Department for Transport survey in 2002 reported in Carter 2005).

- Negative perception of passengers about transit security influenced riders' decisions to use transit in New York City, Toronto, and London (Wekerle and Whitzman 1995)

- The majority of car owners who responded to a Los Angeles inner-city survey would use public buses if they perceived them as clean and safe (Loukaitou-Sideris 1997)

Who Is Afraid and Why?

- Feelings of fear of crime cannot be described by "mathematical functions of actual risk but are rather highly complex products of each individual's experiences, memories, and relations to space" (Koskela, 1997)

Modifiers of Fear and Perceptions of Risk

SOCIO-PSYCHOLOGICAL	SOCIO-DEMOGRAPHIC	ENVIRONMENTAL
• Experiences and Memories • Prior Victimization • Familiarity with Setting • Media Stories • Admonitions	• Gender • Race/Ethnicity • Age • Poverty • Disability • Sexual orientation	• Geographic Setting • Physical Incivilities • Social Incivilities • Boundedness • Natural Surveillance Opportunities • Lighting Level

Women's fear of public spaces

- Perceived vulnerability because of lesser physical ability

- Influences of parental advices and societal admonitions

- Concerns for children who often accompany them

- Persistent sexual harassment

- Media accounts and sensationalization of crime

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Source: Loukaitou-Sideris and Eck (2007)

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"Physical Incivilities"

Environmental factors contributing to fear

Darkness

Desolation

Lack of surveillance opportunities from surrounding establishments

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People Fear

"… physical features, such as bushes, low lighting, and dark tunnels. Such features often limit the 'prospect,' or the ability to see into a place where someone may be hiding. Such features may also provide 'refuge' for a criminal to wait for a potential victim. Feared features are often high in 'boundedness' or limits on the ability to escape if danger arises. Feared places typically display some combination of low prospect, high refuge, and high boundedness.
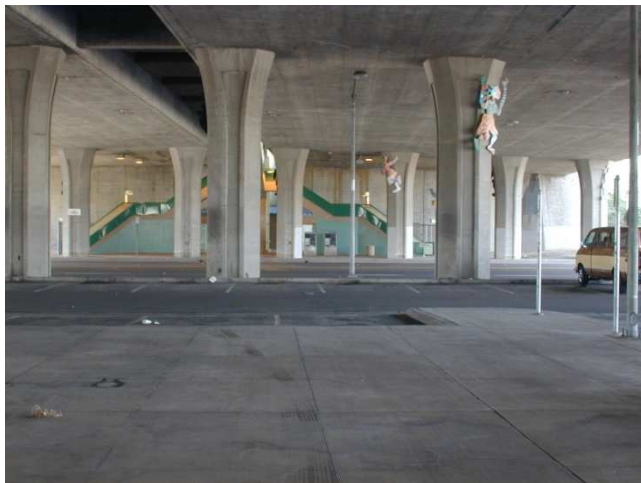
Day in Zelinka and Brennan, 2001

Frightening Spaces

Enclosed spaces with limited exit opportunities

Anonymous and deserted open spaces

Feared transportation settings

Empty parking structures

Desolate bus stops

Empty train wagons

Crime and the Spatial Characteristics of Place

Place: a very small area – a street segment, street corner, intersection, bus stop, building– that reflects the activities of its users and may impact a specific criminal event.

A place is embedded in a **space**—a block, collection of blocks, a neighborhood, a district

Environmental backcloth: Physical factors present at a place which may enhance or decrease opportunities for crime (Brantingham and Brantingham 1993).

Hot spots: Crime tends to concentrate disproportionately in a few places.

Built environment attributes affecting crime

- Type of surrounding land uses
  - "negative land uses" (liquor stores, bars, pawn shops, check-cashing establishments, vacant buildings)

- Street layouts

- Visibility (unobstructed sight lines)

- Density??

- "Broken windows"?

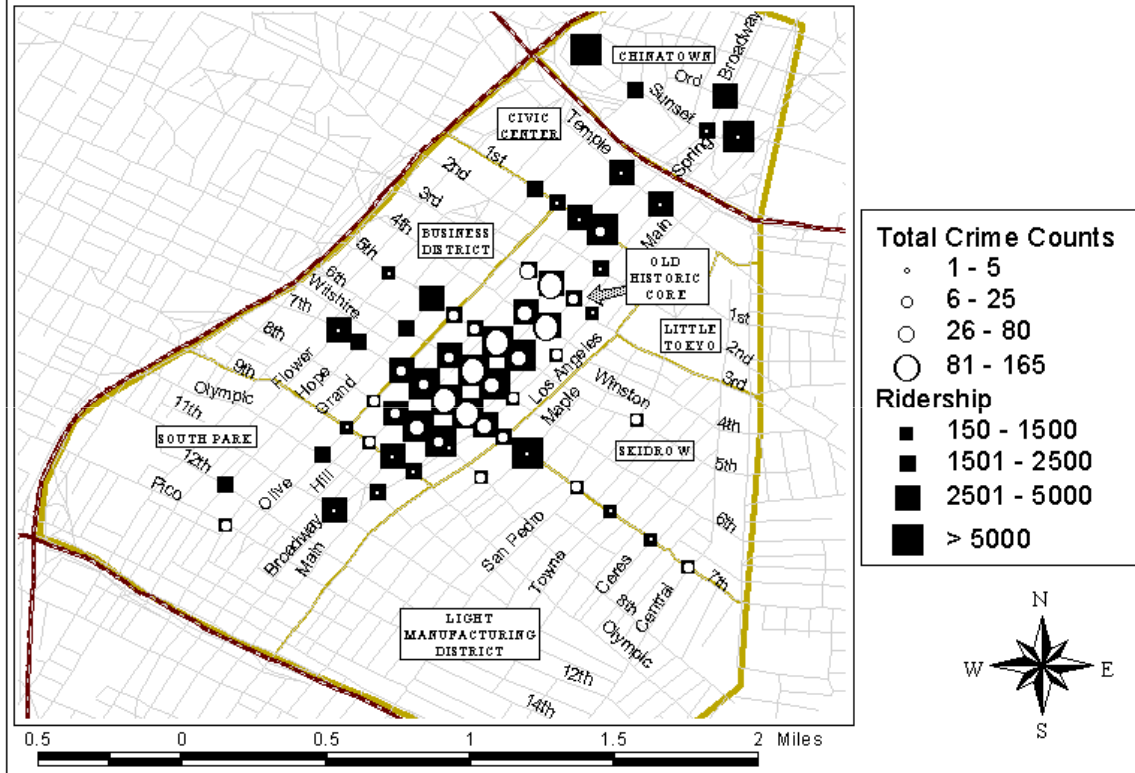# Transit Crime in Los Angeles Bus Stops

Study sample:
100 downtown LA intersections with bus stops--collection of data in 50-meter radius around the intersection (about ½ block in either direction)

2805 bus stop crimes
577 serious (Type 1) crime incidents
2228 less serious (Type 2) crime incidents

# Ridership and Total Crime Counts at the Study Intersections

CHINATOWN

CIVIC CENTER

BUSINESS DISTRICT

OLD HISTORIC CORE

LITTLE TOKYO

SOUTH PARK

SKIDROW

LIGHT MANUFACTURING DISTRICT

Ord
Sunset
Broadway
Spring
Temple
Main
2nd
1st
3rd
4th
5th
6th
Wilshire
7th
8th
9th
Olympic
11th
12th
Pico
Flower
Hope
Grand
Olive
Hill
Broadway
Main
Los Angeles
Maple
Winston
San Pedro
Towne
Ceres
8th
Central
Olympic
12th
14th
1st
2nd
3rd
4th
5th
6th
7th

Total Crime Counts
- 1 - 5
- 6 - 25
- 26 - 80
- 81 - 165

Ridership
- 150 - 1500
- 1501 - 2500
- 2501 - 5000
- > 5000

0.5 0 0.5 1 1.5 2 Miles

N
W   E
S

Transit Crime at Los Angeles Green Rail Stations

Study sample:

14 stations and 24 parking lots
Collection of data in ¼ mile
(0.4 Km) radius around each
station.

540 crime incidents
172 Type 1 crime incidents
328 Type 2 crime incidents
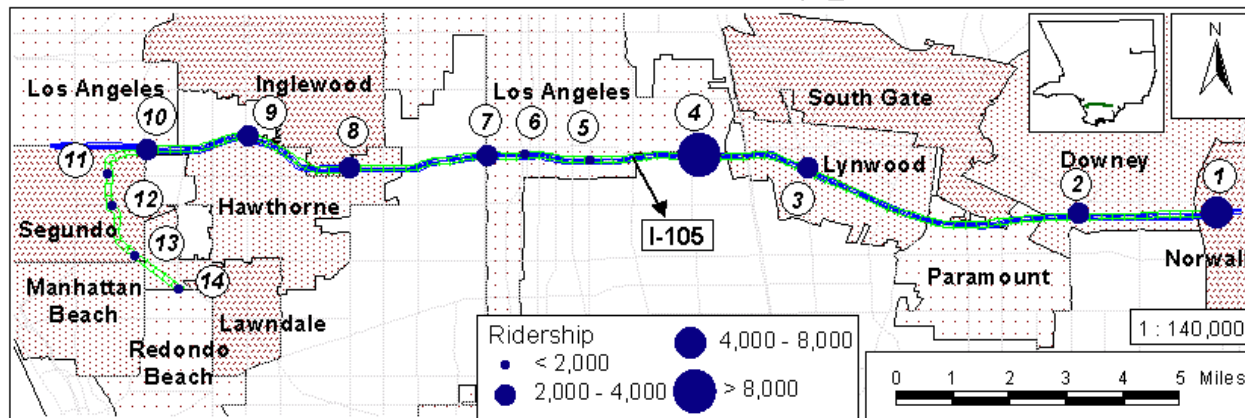
Environmental Indicators: Bus Stops

- **Urban Form Characteristics**

  - *Factors facilitating escape*

    - Alley/mid-block connection

  - *Land Use*

    - Single-family
    - Multi-family
    - Small/Open Air commercial
  - Small Closed front commercial
    - Liquor stores
    - Check cashing
    - Adult movie theaters bookstores
    - Surface parking lot
    - Parking structure

  - *Condition*
    - Vacant lots / buildings

    - Run-down establishments

    - Graffiti/Litter

Street Characteristics

- Street Vehicle Traffic
- On Street Parking

Bus Stop Characteristics

- Visibility
- Lighting
- Public Phones
- Bus Shelters
- Caretaker/ Guard
- Police Substation
- Pedestrian Presence

Environmental Indicators: Transit Stations

- **Urban Form Characteristics**

  - *Land Use*
    - Single- and multi family
    - Mixed Use
    - Office
    - Retail (neighborhood / Big Box)
    - Industrial
    - Surface parking lot/ parking structure
    - Vacant land
    - Open Space (parks)
    - Specific negative land use
  - *Condition*
    - Density
    - Vacant buildings
    - Neighborhood condition
    - Building stock condition
    - Neighborhood dynamics (decaying, stable, prosperous)
    - Sense of safety (good, average, poor)

Street Characteristics

- Street vehicle traffic
- Pedestrian Traffic

Station Characteristics

Park N Ride Lots
- Graffiti/Litter
- Distance from platform
- Lighting
- Fencing
- Security Guards
- Pedestrian Presence

Platform
- Graffiti/Litter
- Type (overpass, underpass, surface)
- Lighting
- Guards/police
- Pedestrian Presence
- Visibility from surroundings
- Hiding Places

Environmental Variables Related to Bus Stop Crime

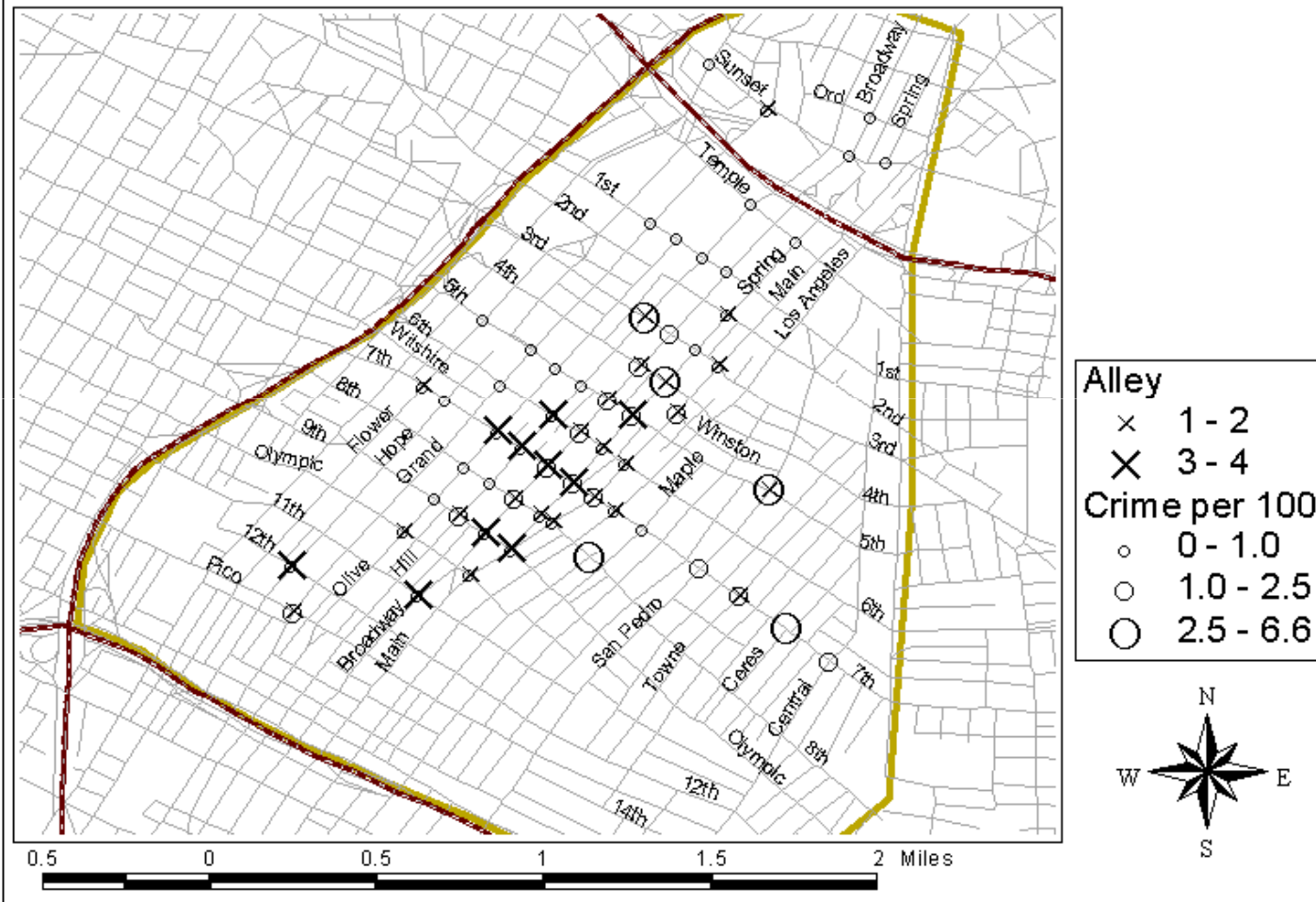| Variables Associated with High Crime Rates	Variables Associated with Low Crime rates
1. Alleys and mid-block connections 2. Liquor stores and other undesirable establishments 3. Vacant buildings and lots 4. Run-down buildings 5. Litter	1. Large/closed front commercial 2. Visibility 3. Bus shelters 4. Street traffic 5. Pedestrian presence

Figure 3

Environmental Variables Related to Station Crime

Variables Associated with Higher Crime Rates	Variables Associated with Lower Crime Rates
1. Large park-and-ride lots 2. Underpass platforms 3. Poor visibility 4. Residential/retail land use 5. Liquor stores and other undesirable establishments 6. Graffiti and Litter 7. Dilapidated buildings	1. Official/industrial land use 2. Well-kept streetscape 3. Well-kept buildings

Dark and desolate station parking lots under freeways

Dark underpass stations

Hiding places, nooks, and corners

Limited opportunities for natural surveillance

"Negative land uses" in the vicinity of transit stops

Socio-demographic variables related to transit crime

Variables associated with higher crime rates	Variables associated with lower crime rates
1. High population density	1. Owner-occupied homes
2. More persons per household	2. High-income households
3. Younger population	3. Neighborhoods with majority white population
4. Population with less than high school education	4. High numbers of population with college education

Relationship between Type 2 Crime and Population Density
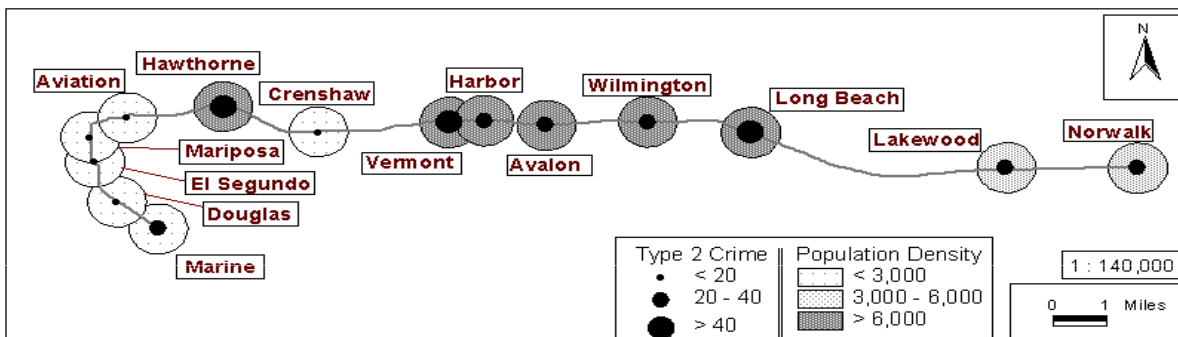
Relationship between Type 1 Crime and Average Household Income on station neighborhood
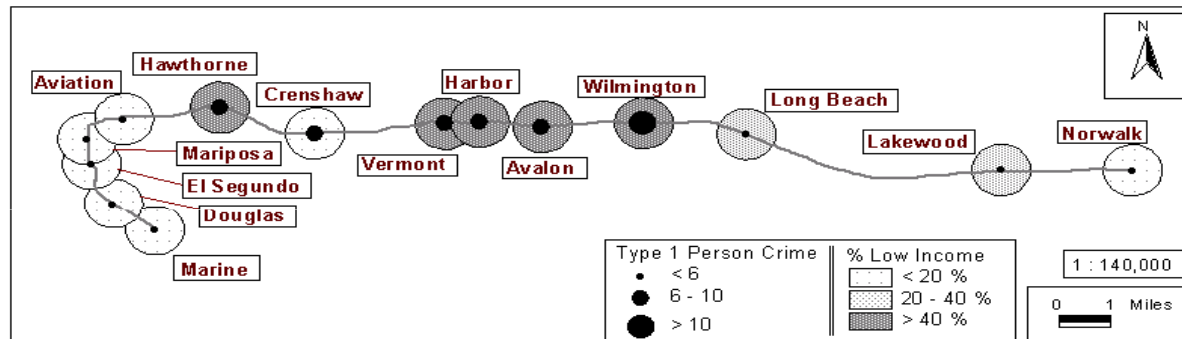
What needs to happen

- Prioritizing needs
- Adopting a 'whole journey approach'
- Tailoring initiatives to needs
- Enhancing visibility and natural surveillance
- Fixing 'broken windows"
- Keeping away from bad neighbors
- Adopting a multi-pronged approach to safety

Thank you!