

# ***Livability/Health and the role of Place, Walkability and Bicycling***



# *Where do we go from here?*



# WALKABILITY AUDITS



**A Tool for Organizing Strong Communities  
and Developing Complete Streets**















Comments

SHARON AND THE ANIMALS. SHARON: THE EVENTS IN EACH  
STATE ARE BEING COVERED BY LOCAL TV AND WE ARE  
KEEPING YOU UP TO DATE THROUGHOUT THE WEEK. SHARON: GARDEN  
KEEPER CENTER FOR HOME GARDENING. TAKE YOUR QUESTIONS  
AT 10:00 AM. WE'LL HAVE SHARON. JOIN US AT 10:00 AM  
AT 10:00 AM. WE'LL HAVE SHARON.

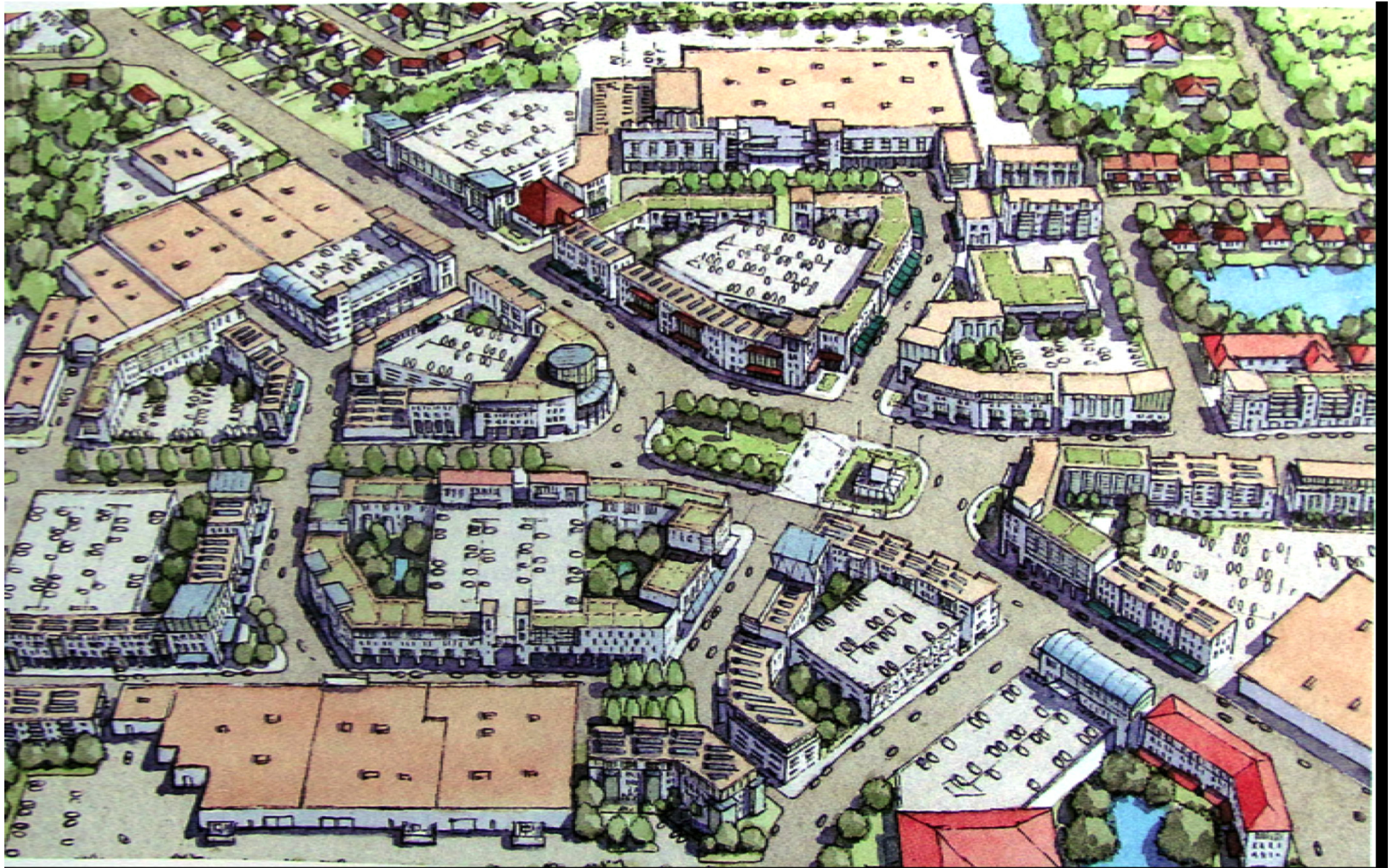
JAN HANDEL - EXECUTIVE DIRECTOR, VOICES FOR CHILDREN, ET  
ALIA  
ALIA HANDEL - EXECUTIVE DIRECTOR OF CASA, OR COURT  
APPOINTED SPECIAL ADVOCATES AT CLATSOP COUNTY  
LINKS TO VOICES AND COURT APPOINTED SPECIAL ADVOCATES  
WEBSITE

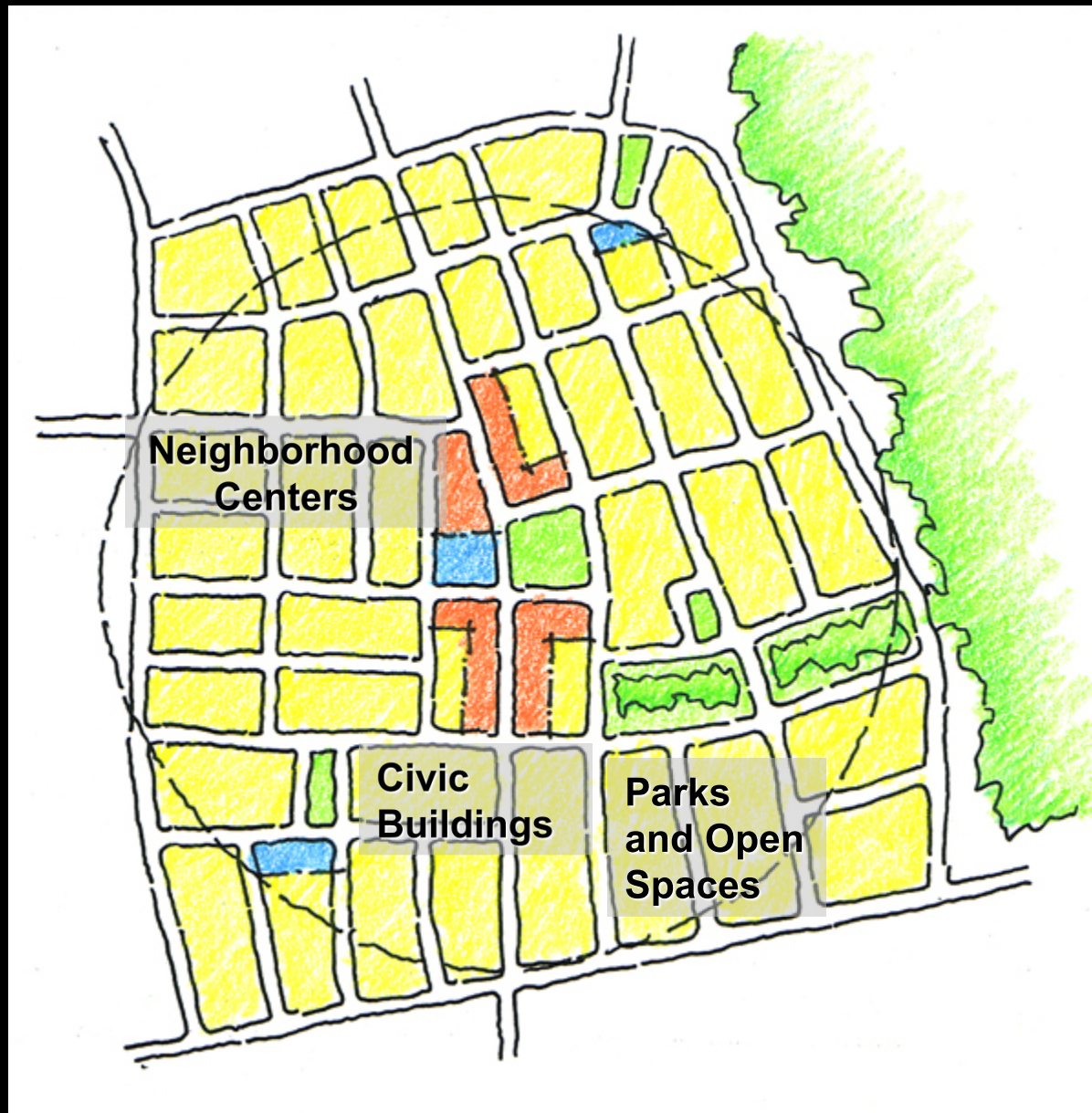




Is this an  
Complete  
Street?







**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.

# Walking Audit



Walking Workshops



**Dan has learned to see the world through the lens of his camera, carefully picking subjects of interest to illustrate his view of the world.**

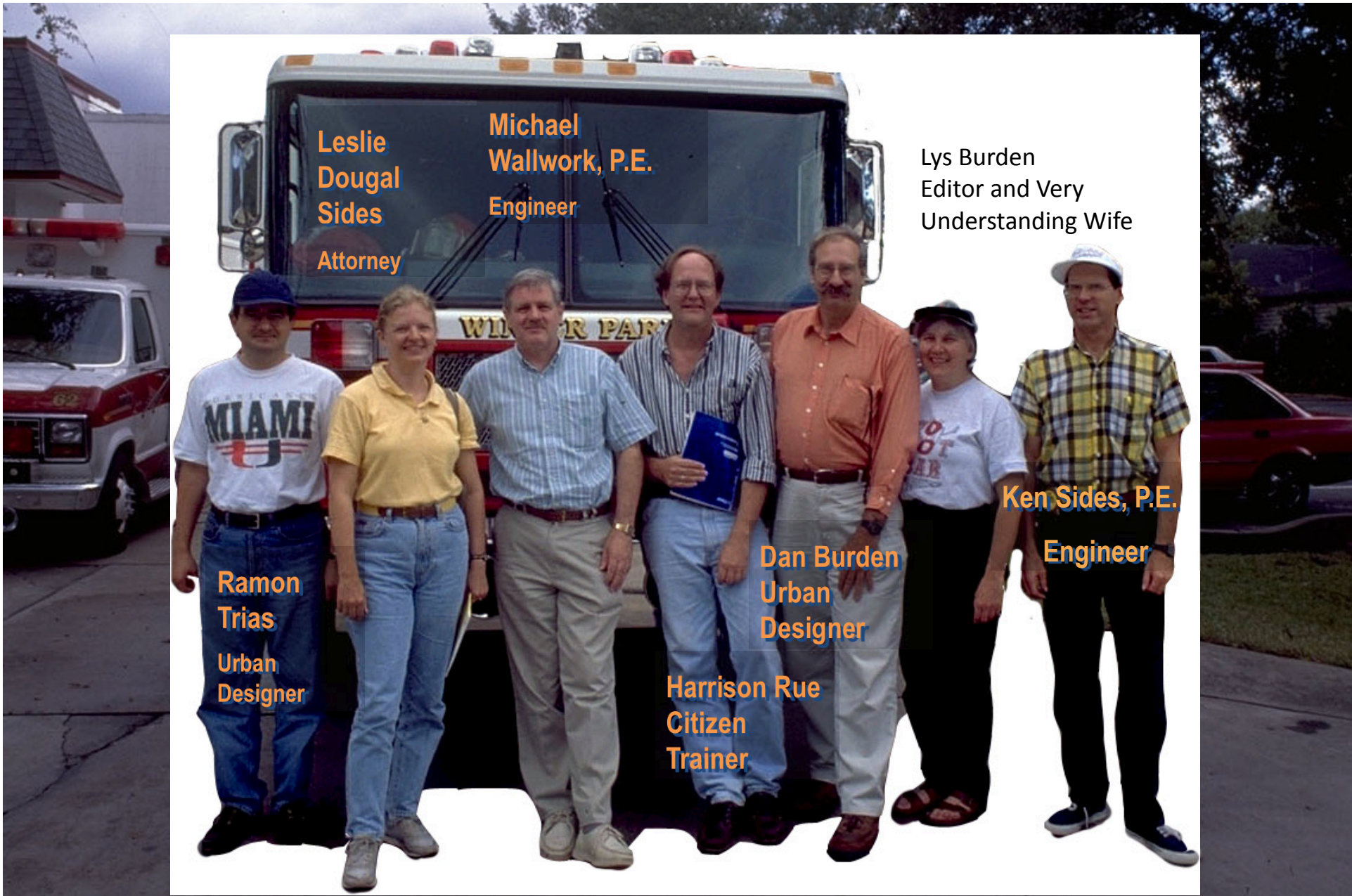
**There is a saying among National Geographic photographers.**

**“National Geographic photographers stand on top of the garbage cans to photograph the flowers ... while Life magazine photographers stand in the flowers to photograph the garbage cans.”**





Photo by Paul Zykofsky



Leslie  
Dougal  
Sides  
Attorney

Michael  
Wallwork, P.E.  
Engineer

Lys Burden  
Editor and Very  
Understanding Wife

Ramon  
Trias  
Urban  
Designer

Dan Burden  
Urban  
Designer

Ken Sides, P.E.  
Engineer

Harrison Rue  
Citizen  
Trainer

Authors of Healthy Street Guide, 1996





ALTERA  
REAL ESTATE

www.karenbandy.com  
*Karen Bandy* LTD.  
STUDIO  
OPEN  
Ground Floor

ALTERA

ALTERA









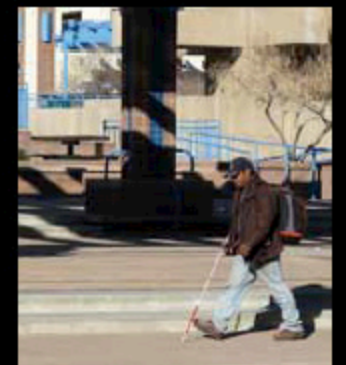








# Walkability Audit Tool



# Walkability Audits

## Introduction

When you are leading a walkability audit, you are teaching yourself and your entire group how to see better, more completely and with understanding. You are learning to see what is good, what is not so good, and what is a virtual nightmare.

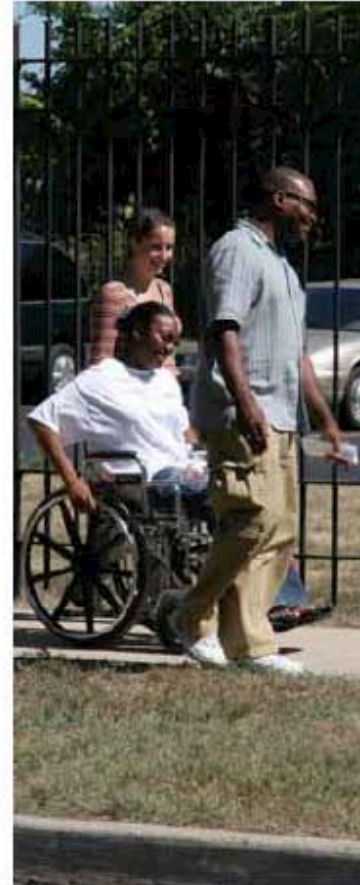
As a fast paced people we have tended to overlook the hundreds of conditions that make walking a challenge. We have made the most natural and time honored way to move -- walking -- un-natural. By breaking down walking environment features into basic components, crossings, sidewalks, buffers, parking, drive-ways, shade, ADA curb ramps, and other features, we can better evaluate any given block. We laid out this tool to also teach you about the vital role each of these elements -- it is meant to be a walking classroom.

Use this "*photo audit*" guide to help you pick numbers that most closely represent the level of care of a particular block or 4-5 block area.

Although this guide is meant to cover the basics, later, more complete and tested versions will get into many other details that are critical to walking. Consider this a start to unlock the mysteries and discoveries of how you and your associates can one day again, make walking a pleasant, and eventually, a walker's paradise.

Most of all, have fun in your discoveries. Learn much!

Discuss your point count as a group. Remember, as you look at these photos, they are only a general guide -- and you are **ONLY** evaluating the condition described by the title. For example, ignore the aesthetics of a treatment if you are measuring the width of a crossing.



# Instructions -- Setting Up Your Audit

Walking Audits are fun teaching tools allowing small groups of 4-8 people to self-evaluate a block, street, neighborhood, Main Street, a school site or other part of a community.

## Why Evaluate?

Evaluating a section of your town allows you to realize why many people walk or do not walk, or walk in ways that may seem unpredictable (like not crossing at intersections, or walking in the street when a sidewalk exists.) People who can choose their mode of travel will only walk when a number of quantitative and qualitative factors are present.

## Who to Invite?

It is important to have a small enough group to enable discussions. Although the walking audit can be performed by one organization, it is best to have a diversity of people, and especially someone who can make the needed changes over time. The following people often take part:

- Planner
- Citizen planner/advocate
- Person with disability
- Local engineer
- Police officer
- School official
- Elected leader
- Planning commissioner

## What you need

- Large Tape Measure (1" width, 35' long role up, or measuring wheel)
- Cameras (take lots of pictures)
- Extra copies of this tool (share)
- Scoring sheets
- Traffic Vests (Recommended)
- Comfortable walking shoes

## What you will Evaluate

People walk, bike or visit a place when it feels safe, secure (watched over) comfortable and when the built environment makes walking a natural activity. Notice where people walk in your neighborhood or town. What is working there, and what is not working in other areas?

- Street width
- Number of lanes
- Width of lanes
- Speed of traffic
- Block length
- Block pattern
- Presence of good sidewalks
- Planter strips
- On-street parking
- Places to go to nearby
- Location of buildings
- ADA ramps
- Intersection designs
- Motorist behavior
- Pedestrian behavior



## **Who to Invite?**

It is important to have a small enough group to enable discussions. Although the walking audit can be performed by one organization, it is best to have a diversity of people, and especially someone who can make the needed changes over time. The following people often take part:

- Planner
- Citizen planner/advocate
- Person with disability
- Local engineer
- Police officer
- School official
- Elected leader
- Planning commissioner













## Why Evaluate?

Evaluating a section of your town allows you to realize why many people walk or do not walk, or walk in ways that may seem unpredictable (like not crossing at intersections, or walking in the street when a sidewalk exists.) People who can choose their mode of travel will only walk when a number of quantitative and qualitative factors are present.



## What you need

- Large Tape Measure (1" width, 35' long role up, or measuring wheel)
- Cameras (take lots of pictures)
- Extra copies of this tool (share)
- Scoring sheets
- Traffic Vests (Recommended)
- Comfortable walking shoes



What is working there, and what is not working in other areas?

- Street width
- Number of lanes
- Width of lanes
- Speed of traffic
- Block length
- Block pattern
- Presence of good sidewalks
- Planter strips
- On-street parking
- Places to go to nearby
- Location of buildings
- ADA ramps
- Intersection designs
- Motorist behavior
- Pedestrian behavior

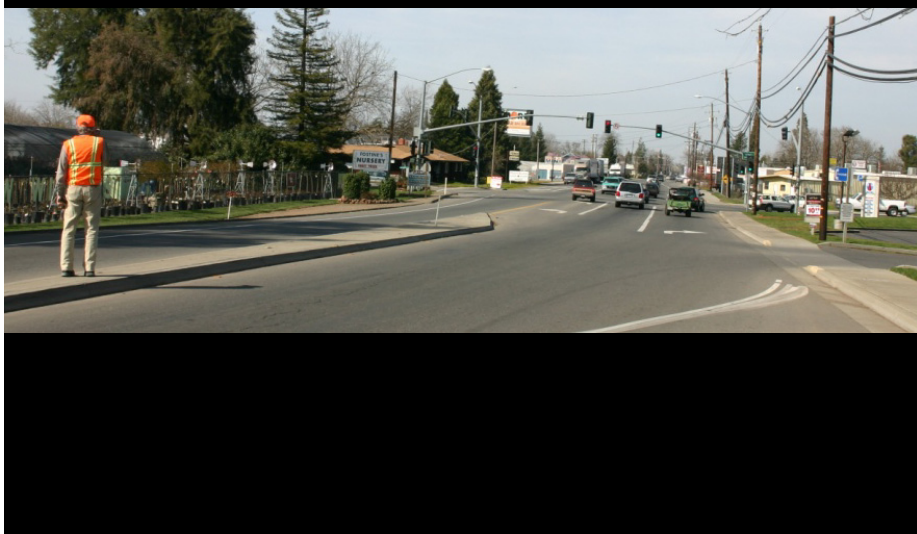






West Lafayette, Indiana (Home of Purdue University)













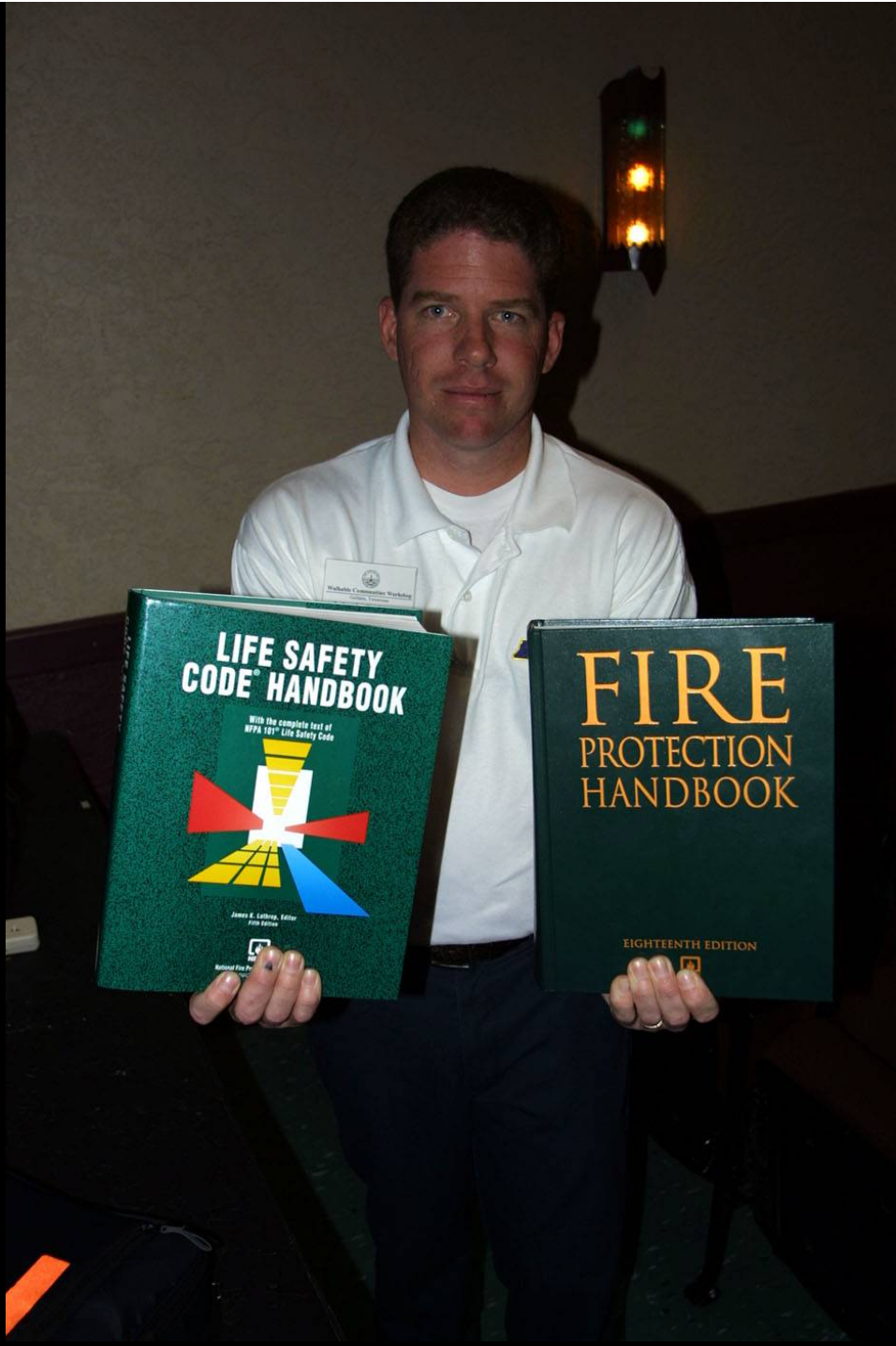












**LIFE SAFETY  
CODE HANDBOOK**  
With the complete text of  
NFPA 101 Life Safety Code  
James E. Lottig, Editor  
Fifth Edition  
National Fire Protection Association

**FIRE  
PROTECTION  
HANDBOOK**  
EIGHTEENTH EDITION  
National Fire Protection Association



# Bus Audits

**At times it is possible to use a city bus or mid-size shuttle bus to handle 15-40 walking audit participants.**

**In this setting three sister cities of Redmond, Kirkland and Bellevue, Washington did a combination bus and walking workshop.**

**Key issues for all three communities were arrived at in a short period of time. The fire chief centered in the bottom photo realized he did not need cul-de-sacs, once he stood at one and heard why they were not good for the community.**







## Walking Audit Feedback, Include Children's Insights



Cotati, CA













# WALKS!

## Walking for Fun, Exercise, and Transportation

National Transportation Expert Dan Burden in Flagstaff for  
Two Days for International Walk-to-School Day

### **WALKING AUDITS** - How walkable is your neighborhood? *Tuesday, Oct. 5*

- o **Sunnyside Neighborhood:** Meet at 10 a.m. in the courtyard of the Greenlaw Garden Apartments, 7th Avenue and King Street (behind Price Choppers).
- o **Bow and Arrow Neighborhood:** Meet at 1 p.m. in Bow and Arrow Park on the corner of Lake Mary Rd. and Zuni.
- o **Coconino Estates Neighborhood:** Meet at 3 p.m. in the parking lot across the street from Marshall School.

### **PUBLIC PRESENTATION**

*Tuesday, Oct. 5, 6:30 p.m.*

*NAU Liberal Arts Building #18, Room 135*

Dan Burden will talk about ways to make Flagstaff neighborhoods more pedestrian-friendly, drawing upon his extensive experience and examples of walkable communities all across the country. Public parking is available in lot P1 on the north side of Dupont Ave.

### **WALK TO SCHOOL**

*Wednesday, Oct. 6 (Marshall, call 522-7860) (Sechrist, call 714-0504)*

Dan Burden will lead parents, students, and teachers on a walking audit ending at Sechrist Elementary School. The County Health Dept. will lead a walk to Marshall Elementary. To participate in the Marshall walk, meet anytime between 7:00-8:30 am. Free breakfast for participating children.

**Additional information, [www.friendsofflagstaff.org](http://www.friendsofflagstaff.org) or 556-8663**

Sponsors: Friends of Flagstaff's Future, Flagstaff Medical Center, Coconino County Health Department, Coconino County Board of Supervisors, City of Flagstaff Parks and Recreation Department, Northern Arizona University's Master of Liberal Studies Program, Flagstaff Biking Organization, People for Parks, and the North Flagstaff Trails Alliance.

# FLAGSTAFF



# Five keys to Success of Place

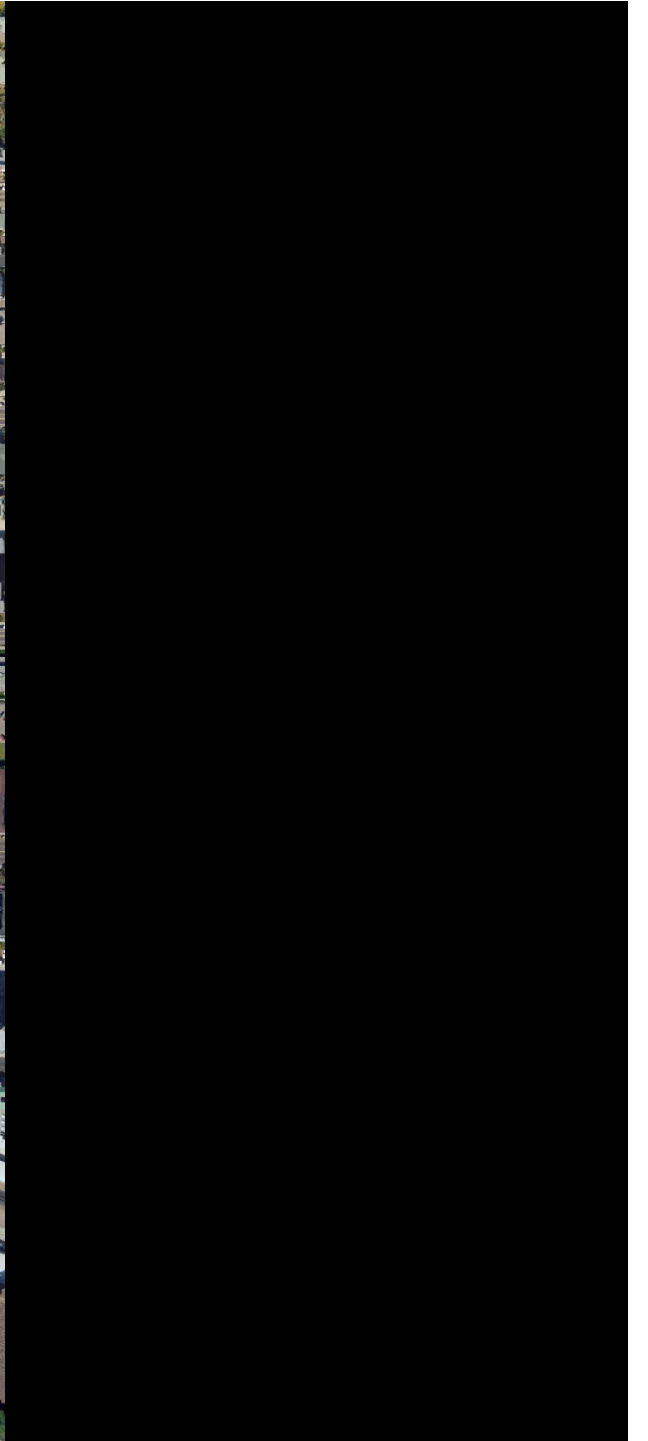
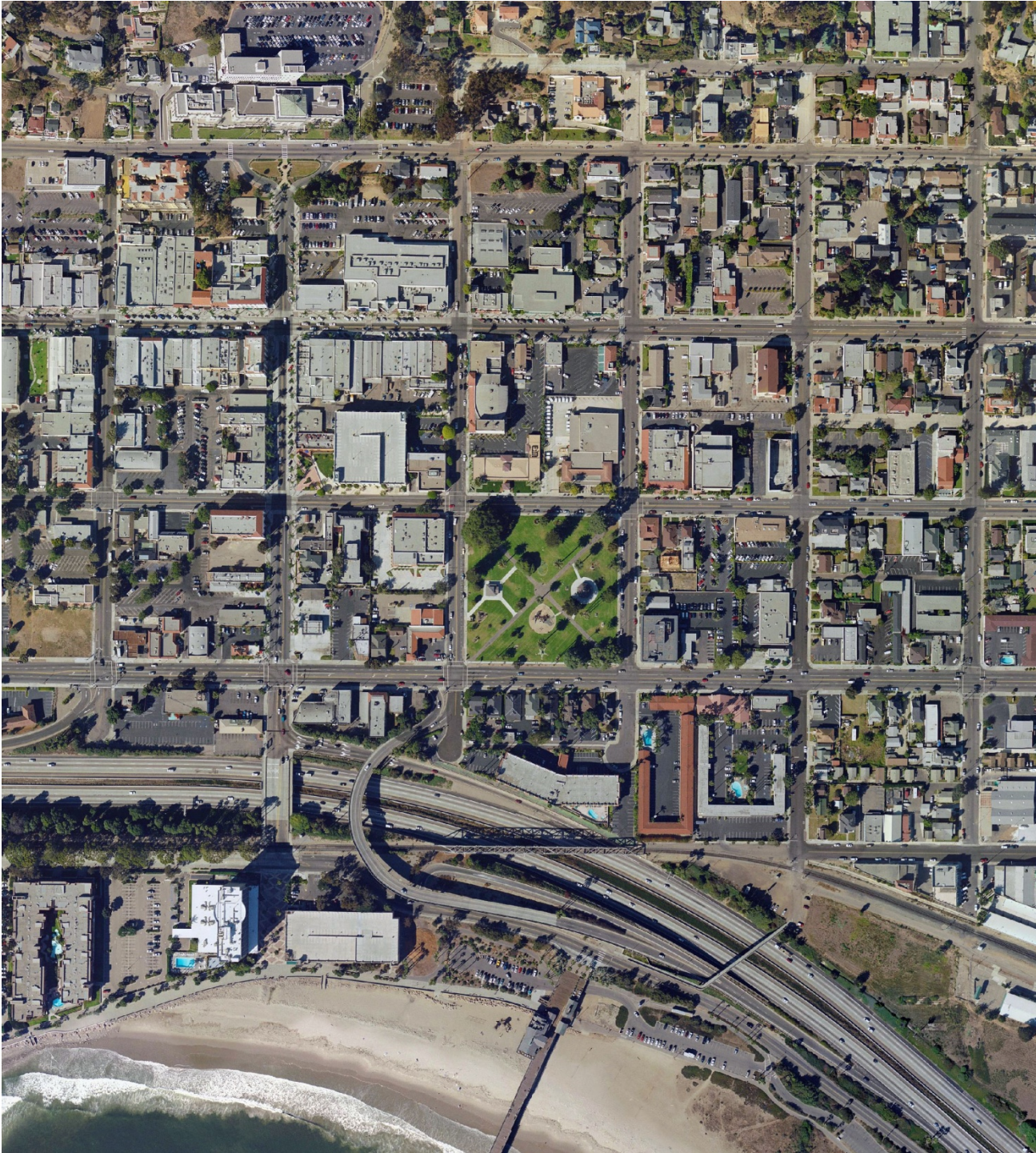
**Security**  
**Convenience**  
**Efficiency**  
**Comfort**  
**Welcome**

# Walkability Assessment

# Downtown

1	0	1	2	3	4	5	6	7	8	9	10	HUMAN SCALE (BUILDINGS, STREETS, WALKWAYS IN HARMONY)
2	0	1	2	3	4	5	6	7	8	9	10	DEFINED TOWN CENTER AND TOWN/STREET CHARACTER
3	0	1	2	3	4	5	6	7	8	9	10	ENCLOSURE / STREETScape, LANDSCAPING, BUFFER FROM TRAFFIC
4	0	1	2	3	4	5	6	7	8	9	10	TRAILS, SIDEWALKS AND CROSSINGS
5	0	1	2	3	4	5	6	7	8	9	10	IMAGEABILITY AND COMPLEXITY, SENSE OF ARRIVAL (MEMORABLE)
6	0	1	2	3	4	5	6	7	8	9	10	SECURITY AND TRANSPARENCY (NUMBER OF PEOPLE AND POTENTIAL TO BE SEEN)
7	0	1	2	3	4	5	6	7	8	9	10	STREET CONNECTIVITY, WALKABLE SCALE AND DENSITY
8	0	1	2	3	4	5	6	7	8	9	10	STREET DESIGN --APPROPRIATE SCALE AND SPEED
9	0	1	2	3	4	5	6	7	8	9	10	INTERSECTION DESIGN -- APPROPRIATE SCALE AND SPEED
10	0	1	2	3	4	5	6	7	8	9	10	COMPLETE STREET SCORE (BICYCLE, PEDESTRIAN, TRANSIT FRIENDLY)
11	0	1	2	3	4	5	6	7	8	9	10	OPEN SPACE/PARKS/PLAZAS --QUALITY, SCALE, ACCESS, SECURITY, USE
12	0	1	2	3	4	5	6	7	8	9	10	SOCIABILITY - NUMBER AND DIVERSITY OF PEOPLE WALKING

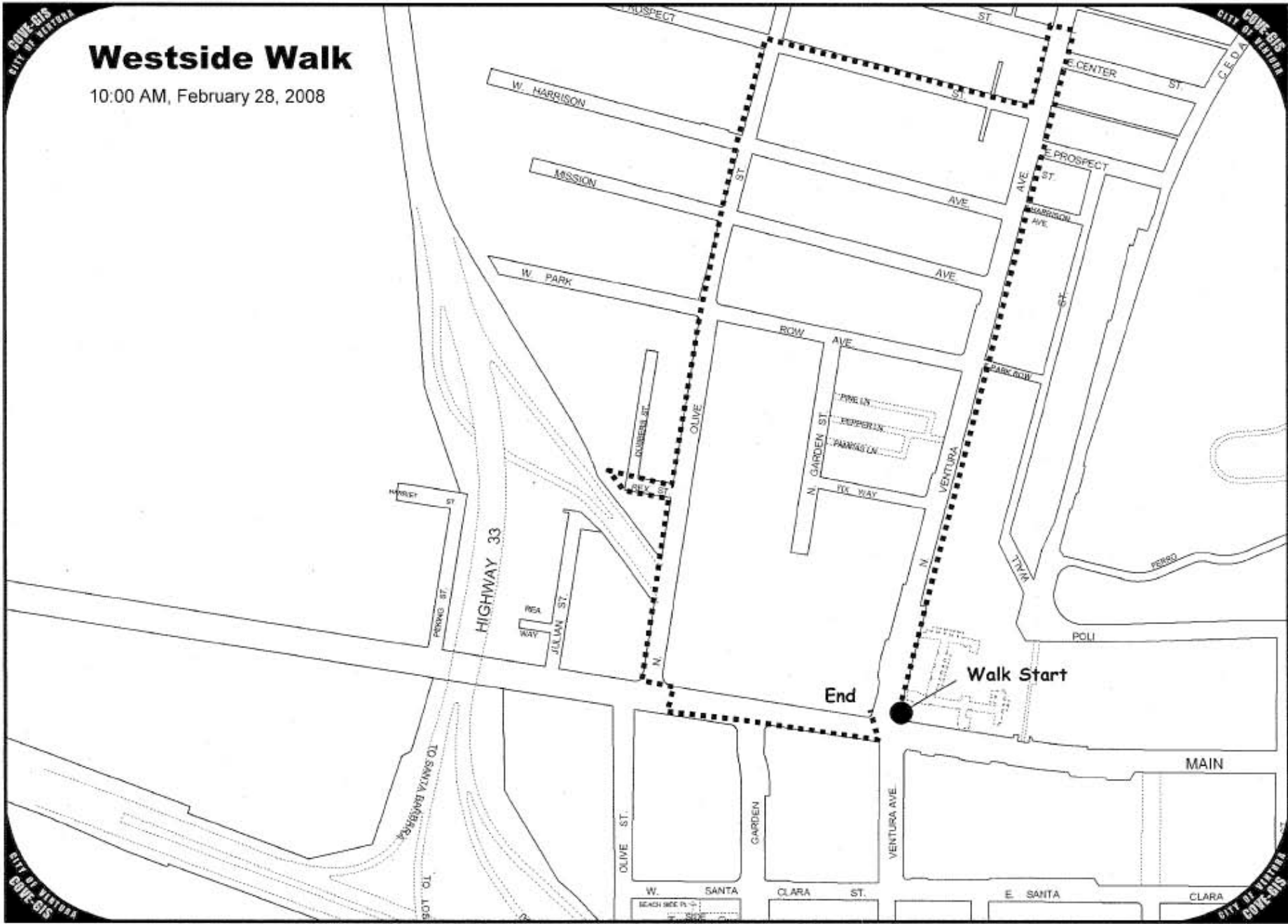
COMPOSITE SCORES ABOVE 5.0 ARE CONSIDERED WALKABLE. HIGHLY WALKABLE NEIGHBORHOODS HAVE SCORES ABOVE 7.0 (TOTAL AVERAGE)





# Westside Walk

10:00 AM, February 28, 2008







# LAKE OSWEGO

Downtown Area-Wide  
Transportation  
Management Plan



FIGURE 2

## Vehicle Speed

### Legend

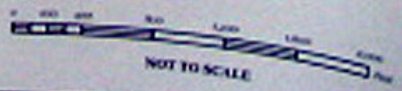
#### Speed Limits

- 20 MPH
- 25 MPH
- 30 MPH
- 35 MPH
- 40 MPH

#### Observed Speeds

- 85th PERCENTILE\*  
\*maximum speed at which 85% of cars select travel

- STUDY AREA
- TAXLOTS
- RAILROAD



This information on this map was derived from other maps and City of Lake Oswego databases and does not constitute a warranty of accuracy. The City of Lake Oswego is not responsible for any errors or omissions on this map. The City of Lake Oswego is not responsible for any errors or omissions on this map. The City of Lake Oswego is not responsible for any errors or omissions on this map.

**DKS Associates**  
TRANSPORTATION SOLUTIONS

# Ten Steps To Walkability

**Compact, lively town center**

**Low speed streets, distributed volumes**

**Fine grained streets, many trails, transit links**

**Neighborhood schools and parks, within one quarter mile or one eighth mile**



**Public places with inviting features: benches, restrooms, shade, water and art**

**Convenient, safe and efficient crossings**

**Many people of all ages and abilities walking many hours**

**Celebrated public space and public life, parades, markets, festivals, awards**

**Land use and transportation partnerships**

**Affordable, inspiring, well maintained streets and homes.**

# What are the problems here?



Lack of Security

Lack of people

Lack of investment

Lack of diversity

Auto dependence

No place to buy a popsicle

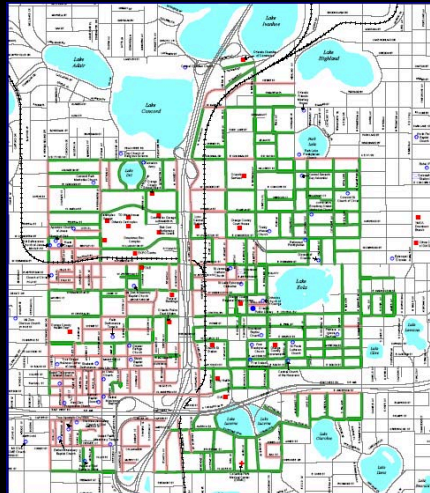
Lack of diversity

Lack of activity

# Walkability Science



Rubber band planning



Sense of Aesthetics



Levels of Quality

# Walkability Support



Openly Hostile



Intolerant



Tolerant



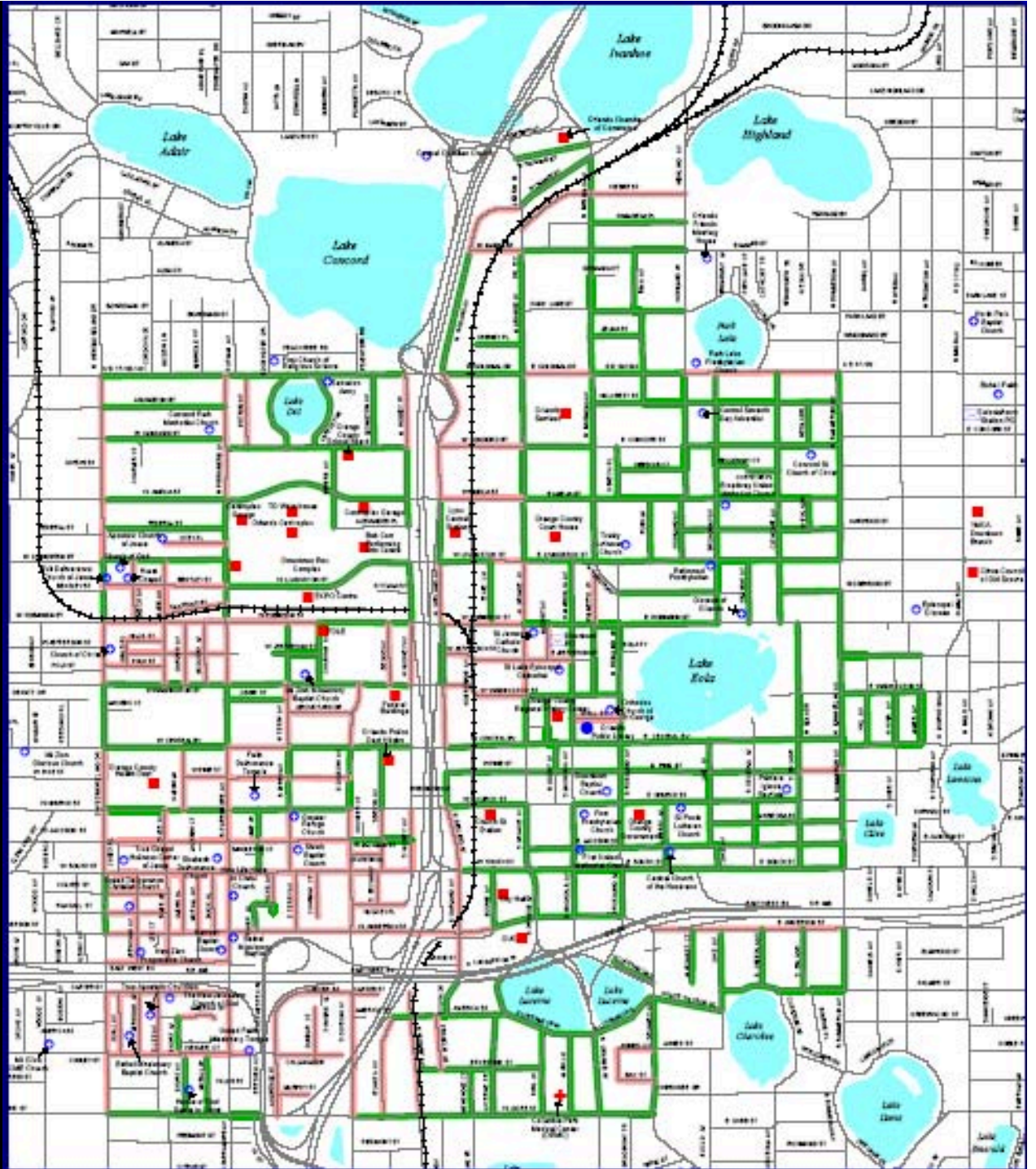
Supportive



Place

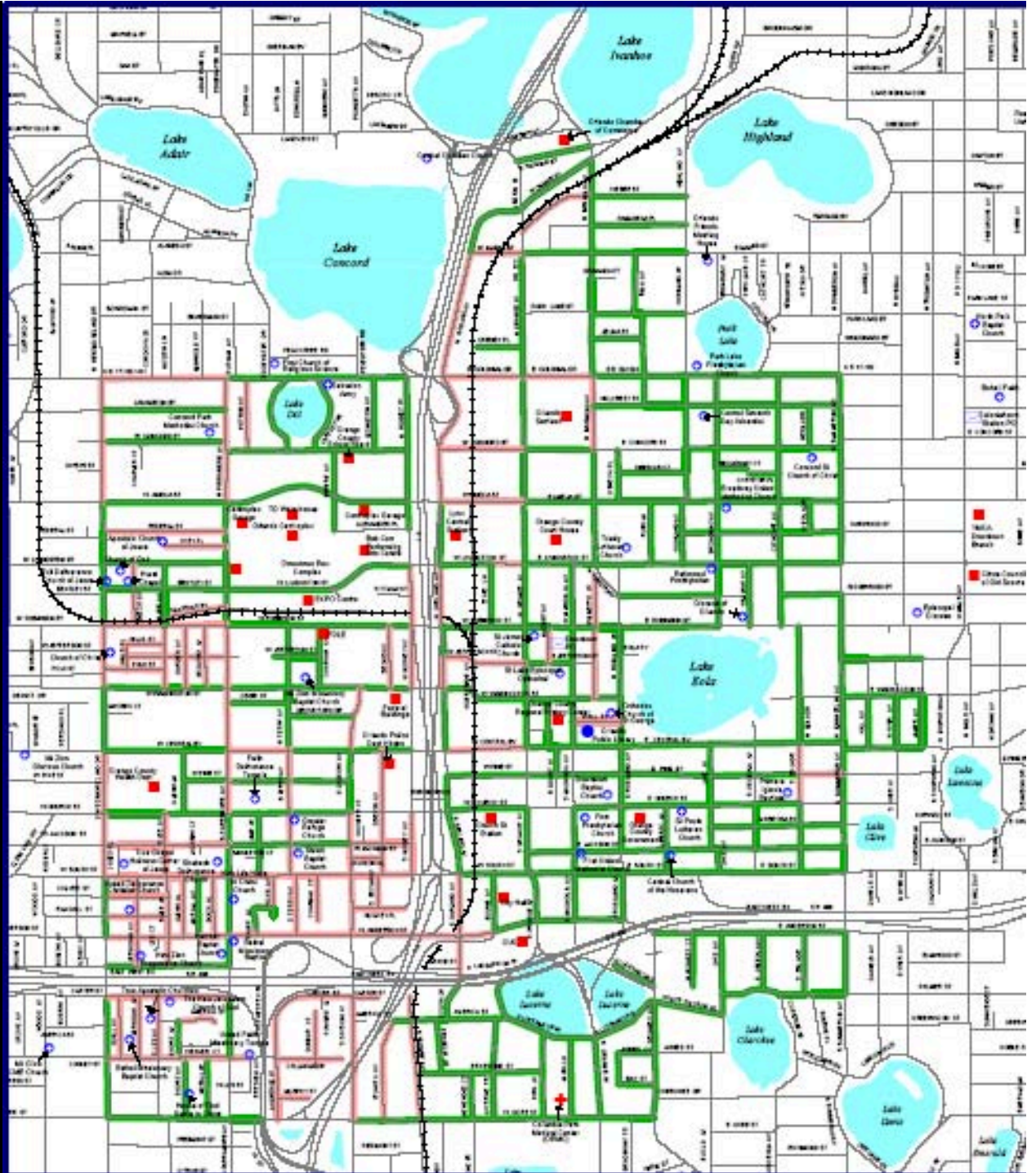


# Sense of Security





# Sense of Aesthetics

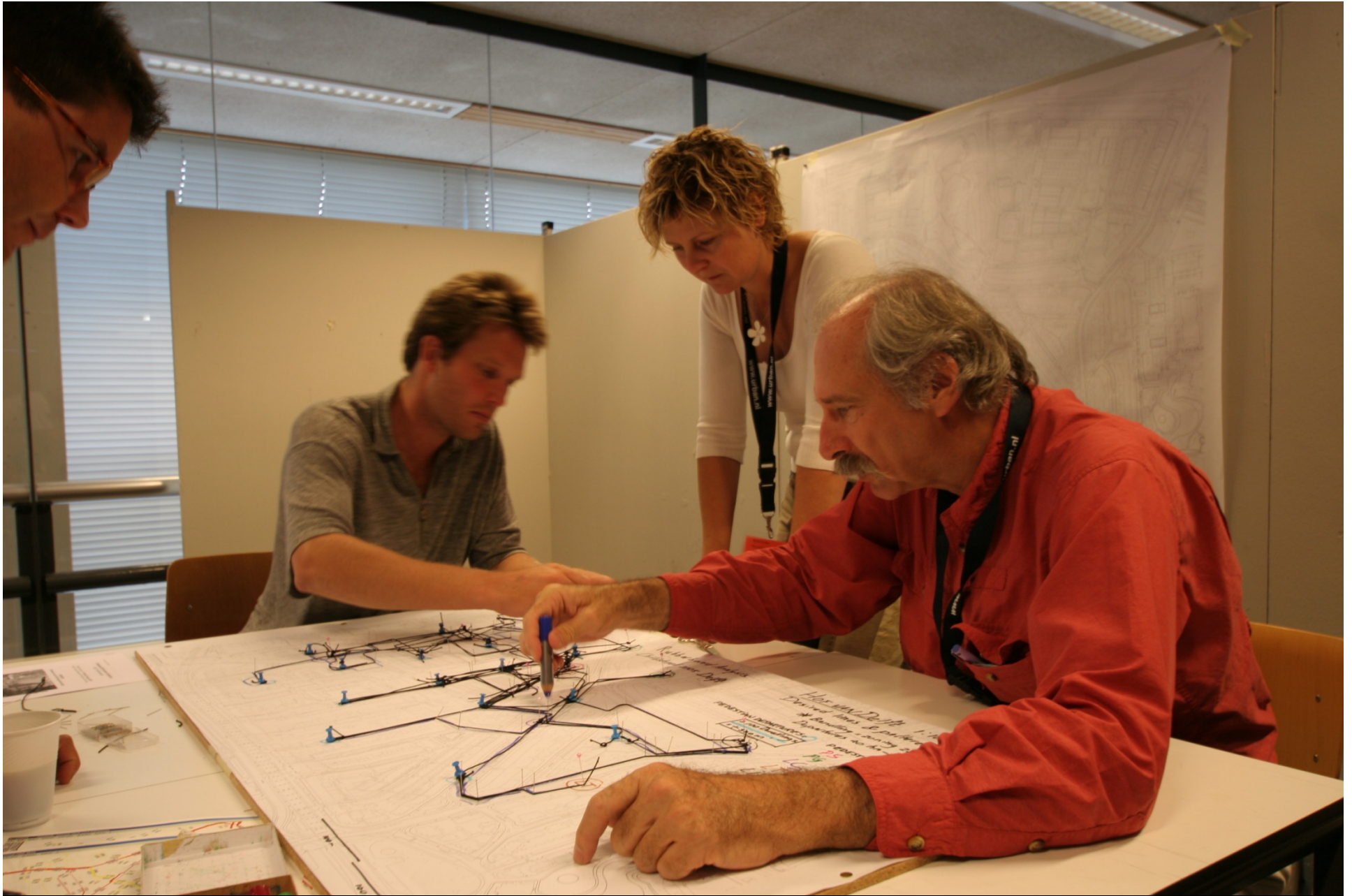




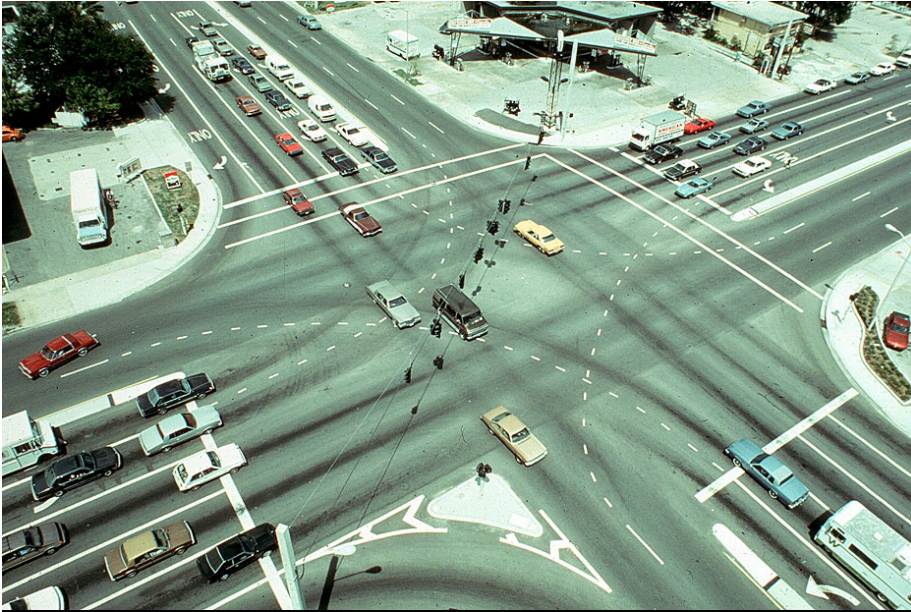
Rubber Band Planning



Rubber Band Planning



Rubber Band Planning



Tampa, Florida



Washington, D.C. (Connecticut and "K")

Both intersections will fail in time and will reach the same Level of Service. In the intersection on the left the low **Level of Quality** reduces walking, bicycling and transit use, drives out association and depresses the value of nearby properties.

On the right, level of quality is high, walking, bicycling and transit are celebrated, property values are exceptionally high and traffic moves well most hours, since not everyone is driving.


# People: Physical, social and psychological Space

**Pedestrian Space Requirements**

3' 2' 1' 0' 1' 2' 3'

Seven people Equivalent of Two SUV's

Just as with driving, social walking requires two adults to be alongside one another



← 6.0 Feet Needed →



**Pedestrian Space Requirements**

1.5' 1' .5' 0' .5' 1' 1.5'

People in Motion Require Strolling Width

Planning

Includes: Baggage Swaying Speed Obstacles Direction Change



1.5 - 2.5 Feet Actual

3.0 - 4.0 Feet Needed for Movement

Romantic couples need less space, children and seniors often need more



# Pedestrian Space Requirements

1.5' 1' .5' 0' .5' 1' 1.5'

People in Motion Require Strolling Width



Planning

Includes:  
Baggage  
Swaying  
Speed  
Obstacles  
Direction Change

**1.5. - 2.5 Feet Actual**

**3.0 - 4.0 Feet Needed for Movement**

# Pedestrian Space Requirements

3' 2' 1' 0' 1' 2' 3'

Women  
Carrying  
Bags

Not able to  
walk next to  
one another  
and socialize



4.5 Feet Actual

6.0 Feet Needed

# Pedestrian Space Requirements

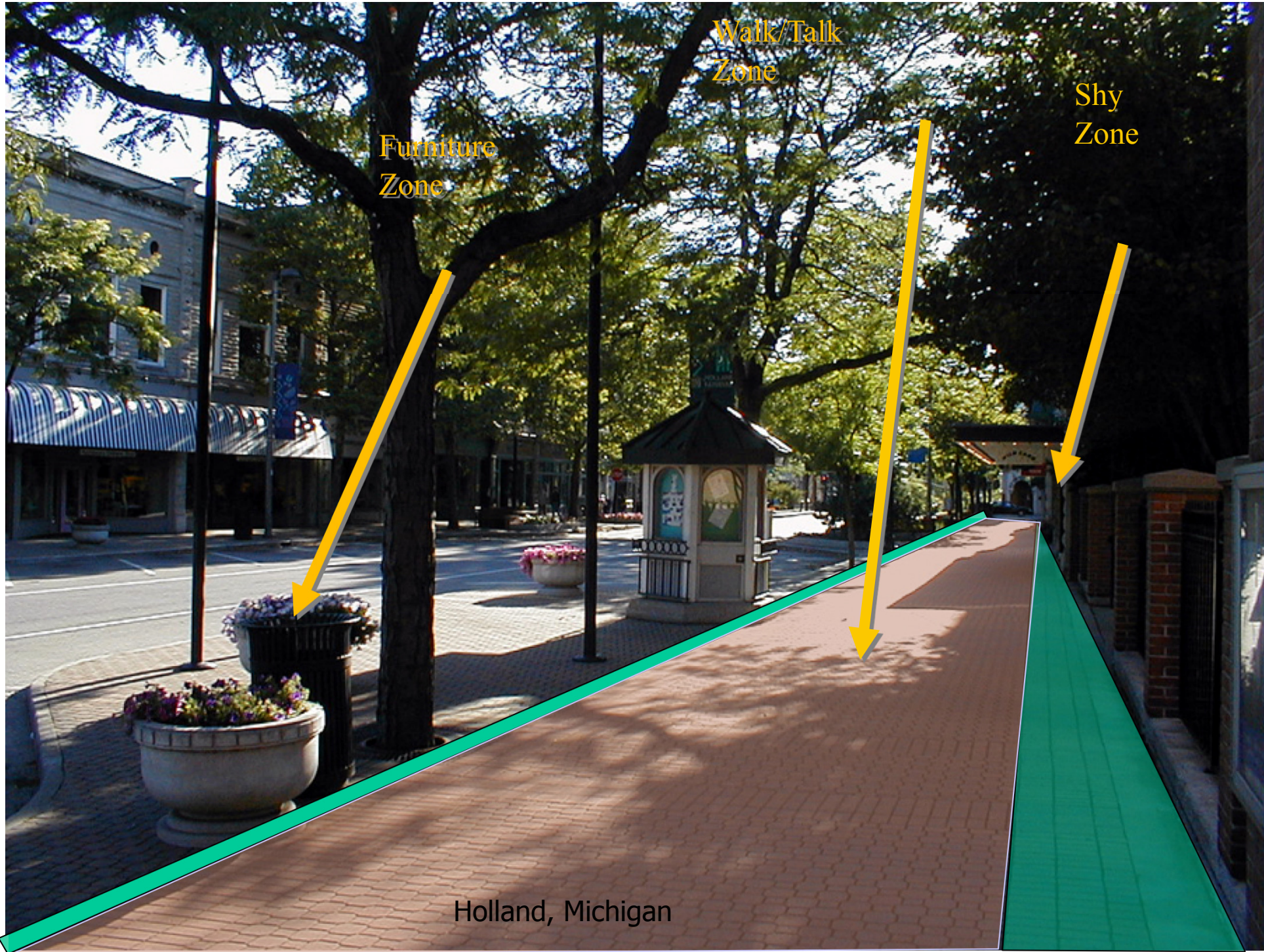
3' 2' 1' 0' 1' 2' 3'

Seven people  
Equivalent of  
Two SUV's

Just as with driving, social walking requires two adults to be alongside one another



← 6.0 Feet Needed →



Furniture  
Zone

Walk/Talk  
Zone

Shy  
Zone

Holland, Michigan

Attractive lamps

Eyes on street

Shore line

Parking buffer

Furniture zone  
4-8 feet

Walk/Talk Zone 15-25 feet  
(comfortable width)

Properly scaled  
signs

Great Street





Canopy 12 years old

Attractive coordinated signs

Parking buffer

Coordinated street furniture

Bike parking

Sidewalk 25+ Feet

Shy zone 2 feet

Great Street

# Neighborhood Walkways





**Four Foot Maximum  
Height Fence**

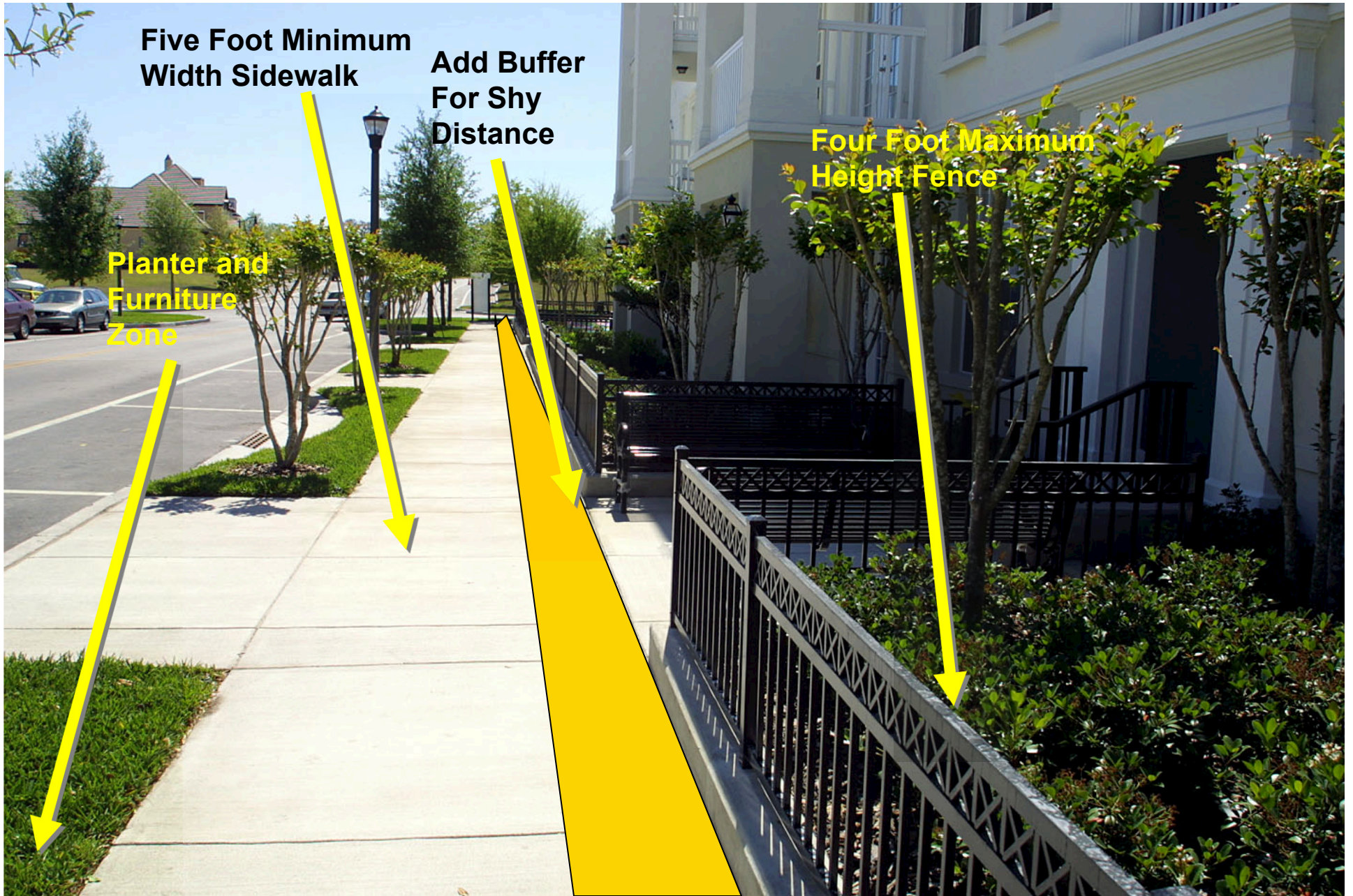
**Five Foot Minimum  
Width Sidewalk**

**Add Buffer  
For Shy  
Distance**

**Planter and  
Furniture  
Zone**

Baldwin Park, Orlando, Florida





**Five Foot Minimum  
Width Sidewalk**

**Add Buffer  
For Shy  
Distance**

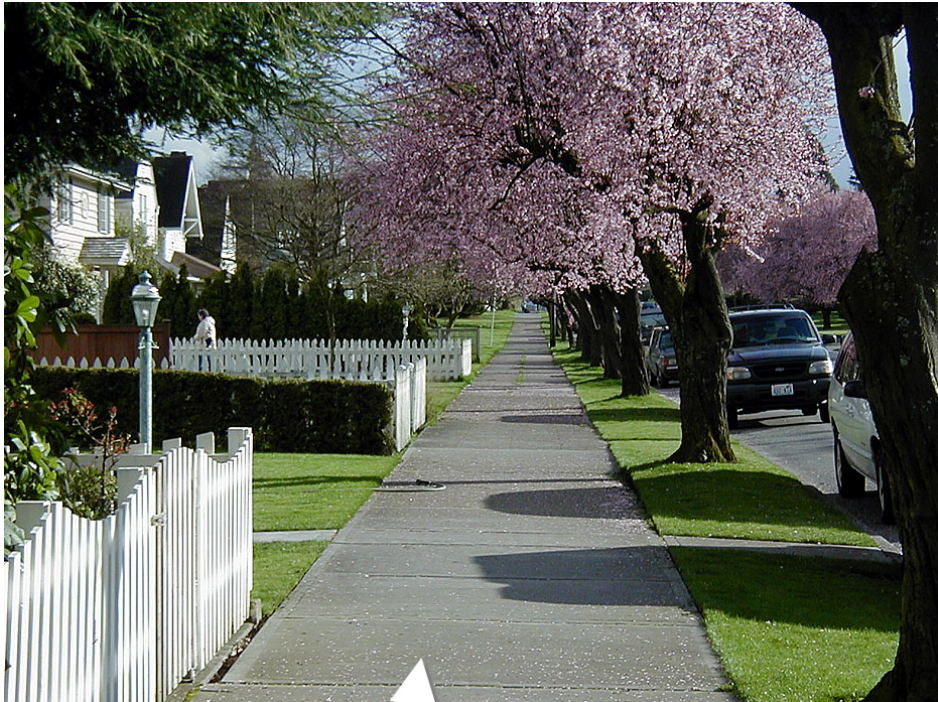
**Four Foot Maximum  
Height Fence**

**Planter and  
Furniture  
Zone**

Baldwin Park, Orlando, Florida



Issaquah Highlands, Issaquah, Washington



It is Okay to exceed  
minimums

Twenty foot Planter

Seven foot sidewalk



# City of Marina Sidewalk Specifications by Travelway Type and Location

## Local Travel Ways

**Alleys,** No sidewalks  
**Lanes,** None under 10 houses  
**Streets,** None under 10 houses



Lane



Street

## Sidewalk

5 foot width  
 Two ramps per corner  
 Concrete preferred  
 Non-mountable curb

## Planter Strip

6 foot width  
 Trees, 30-50 feet  
 Lighting optional

## Schools

Elementary  
 Middle, High  
 Colleges



Elementary School



Campus

8 foot width  
 Two ramps per corner  
 Concrete preferred  
 Non-mountable curb

6 foot width  
 Trees, 30-50 feet  
 Lighting required

## Primary Roads

Avenues  
 Boulevards



Avenue –Mixed Use



Boulevard

6 foot width  
 Two ramps per corner  
 Concrete preferred  
 Non-mountable curb  
 For attached walks  
 add 2 foot width

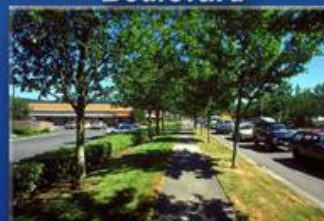
6 foot width  
 Trees, 30-50 feet  
 Lighting  
 recommended

## Commercial Areas

Main Street  
 Other Commercial



Main Street



Other Commercial

8-20 foot width  
 Two ramps per corner  
 Concrete /pavers OK  
 Non-mountable curb

6 foot width  
 Trees, 30-50 feet  
 Lighting required

## Special

Transit Parks  
 Pedestrian Parks  
 Woonerven (People Streets)  
 Other Special Use



Transit Station



Waterfront District

15 or more width  
 Two ramps per corner  
 Concrete preferred  
 Non-mountable curb

6 foot width  
 Trees, 30-50 feet  
 Lighting required



# Places of Discovery























## Walking Audit Feedback, Include Children's Insights





















BROADWAY BLVD

CHERRY AV  
0-100N

SPEED  
LIMIT  
30



madaras  
*Art*  
INSIDE

















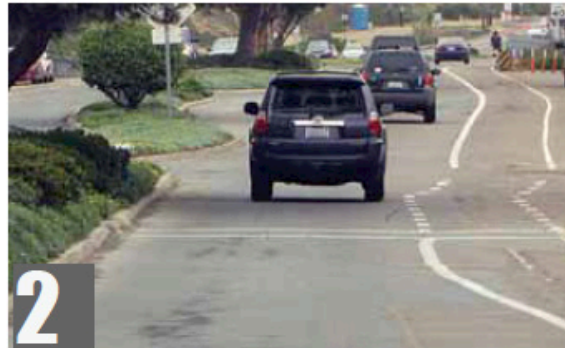






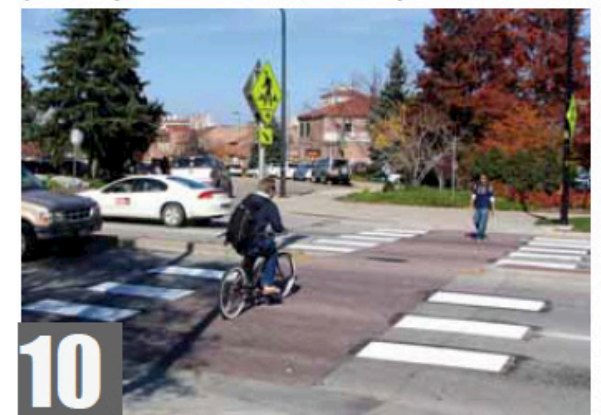
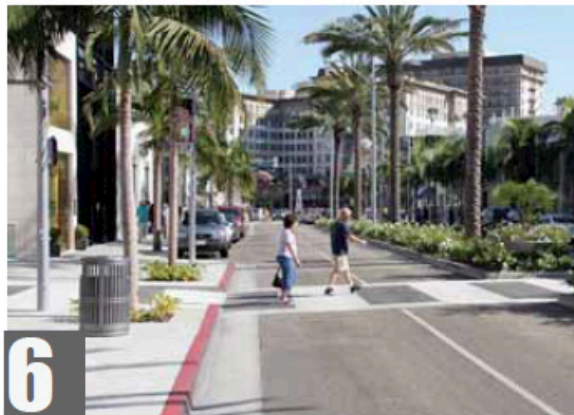
- 0-2 Walker's Nightmare
- 3-4 Walking is tolerable, but not pleasant
- 5-6 Walking is almost pleasant
- 7-8 Walking is pleasant, almost fun
- 9-10 Walker's Paradise

**Exemplary Crossing:** When crossings are highly visible, and speeds are low, motorists almost automatically stop to let pedestrians go. These double set of bands are highly visible to approaching drivers. Yielding rates are high.  
*(Broadway Avenue in Boulder, Colorado)*



## 1A CROSSWALKS Visibility and Detection

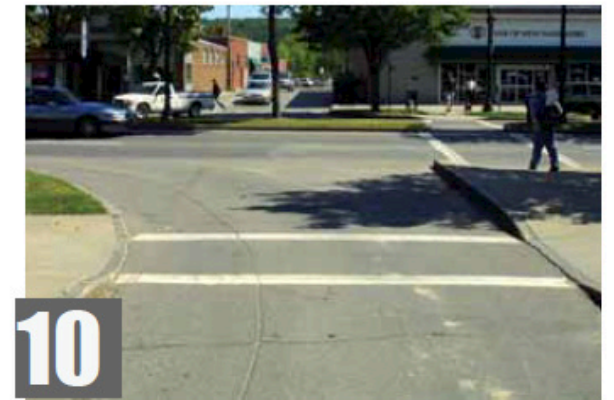
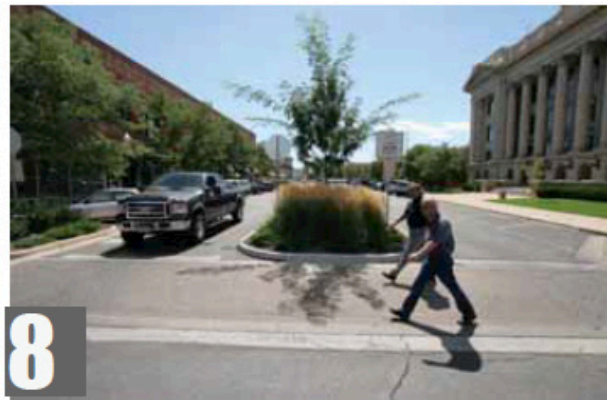
**Exemplary Crossing:** When crossings are highly visible, and speeds are low, motorists almost automatically stop to let pedestrians go. These double set of bands are highly visible to approaching drivers. Yielding rates are high.  
*(Broadway Avenue in Boulder, Colorado)*





# 1B CROSSWALKS Width of Crossing

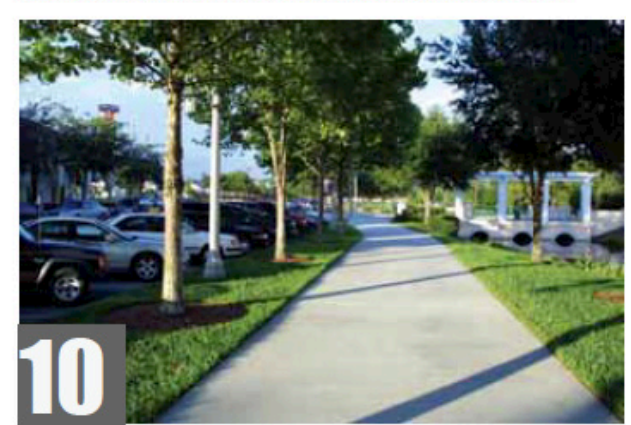
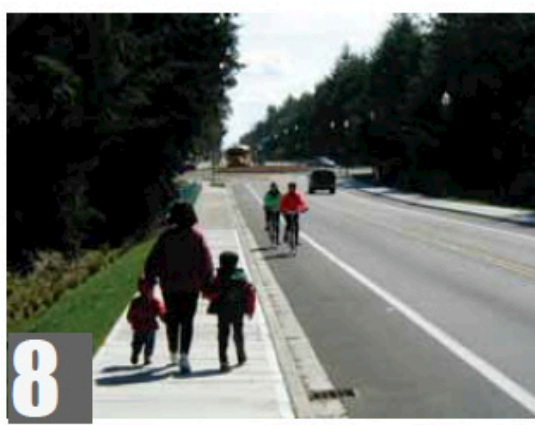
**Exemplary Crossing:** In the ideal crossing pedestrians would not cross side street widths wider than 14 feet, and motorists would enter the areas at speeds no higher than 10 mph.  
*(Keene, New Hampshire)*





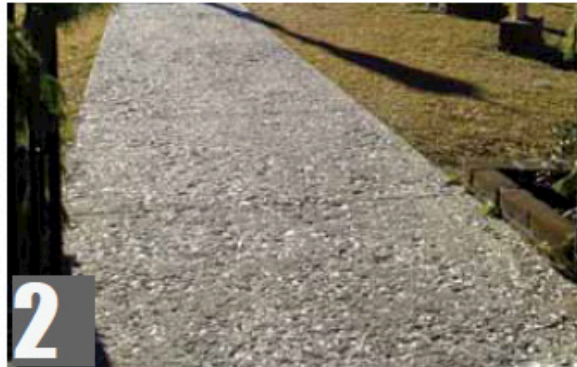
## 2A SIDEWALKS Width

**Exemplary Width:** Although sidewalks can be too wide, there are places where a wide walkway creates the right mood for comfortable strolls that are fully at ease. Widths of ten feet feel quite good to most people. (*Celebration, Fl*)





0



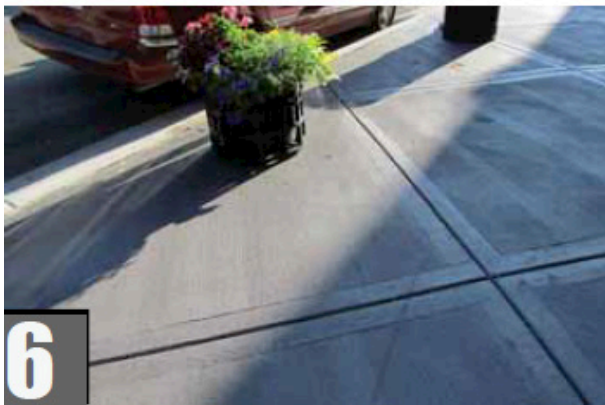
2



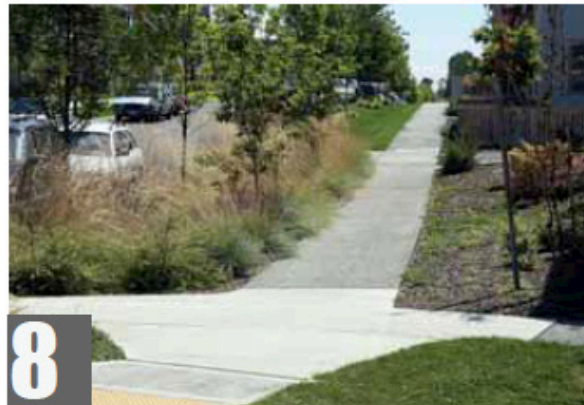
4

## 2B SIDEWALKS Surface Condition and Type

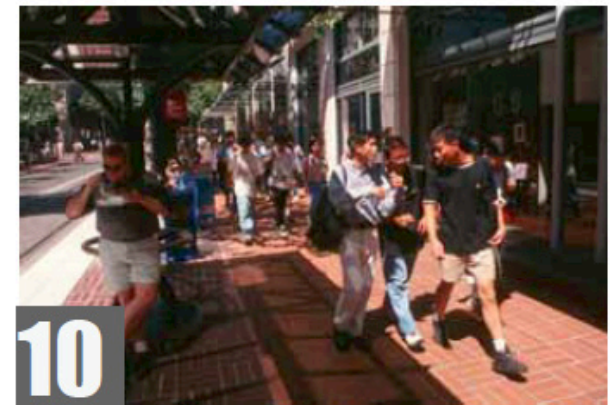
**Exemplary Type:** Surfaces with high coefficient of friction, such as these bricks in Portland, Oregon were found through research and experimentation ... anti-slip and yet smooth in all weather. *(Portland, Oregon)*



6



8

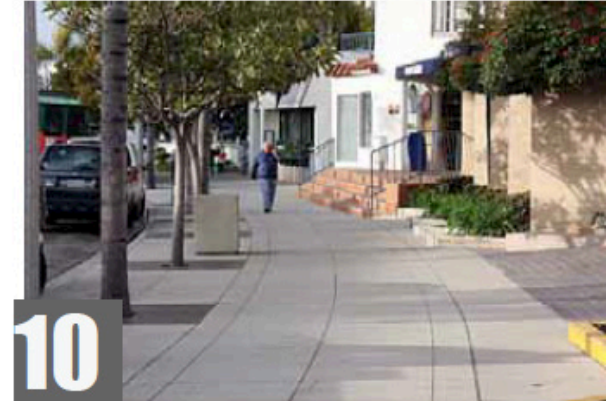
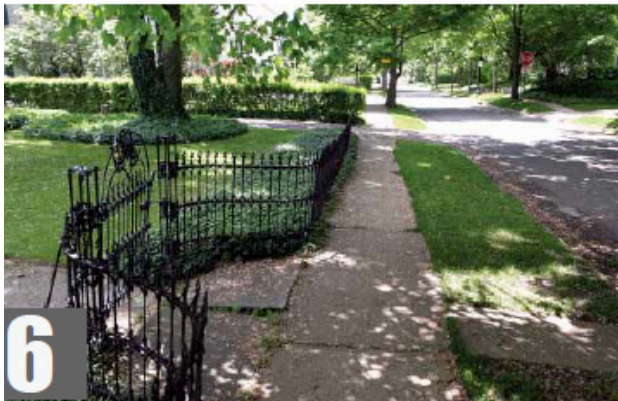


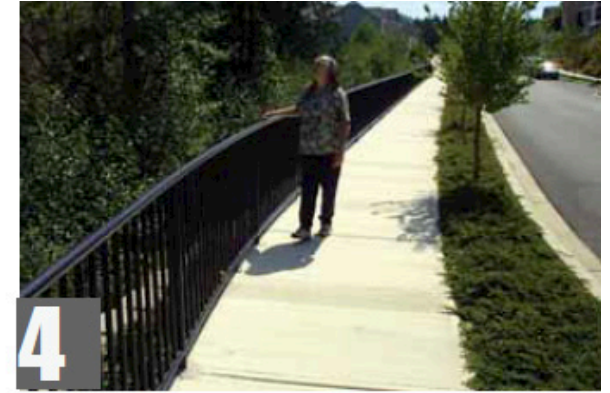
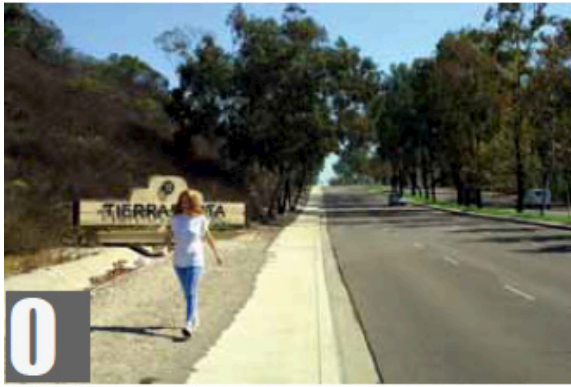
10



## 2C SIDEWALKS Maintenance

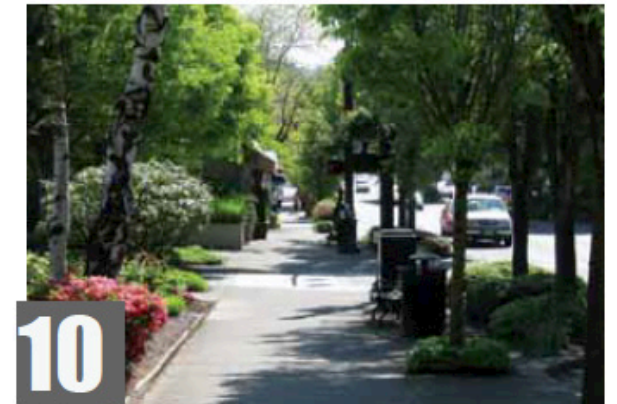
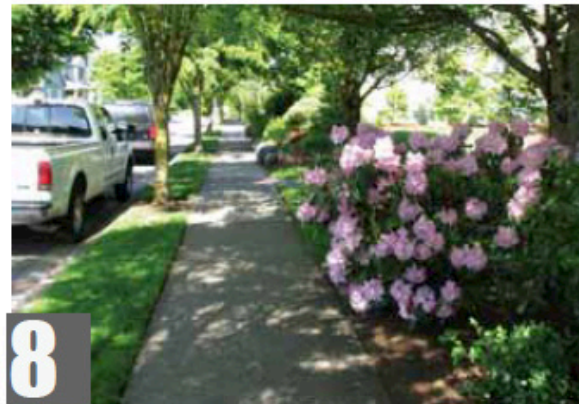
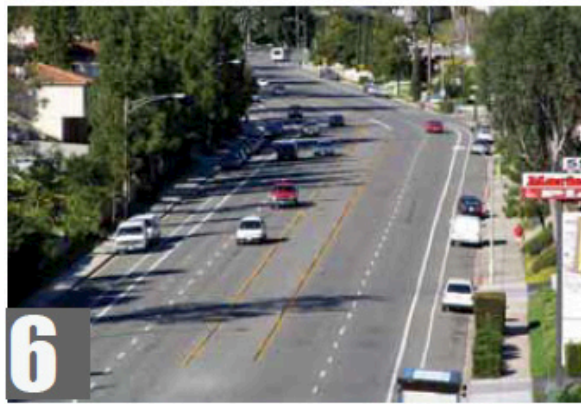
**Exemplary Maintenance:** Sidewalks are built with top quality materials. Careful attention is paid to construction methods, leading to almost self-maintaining systems. Tree selection is important if sidewalks are to have a long life.  
*(San Diego, Ca.)*

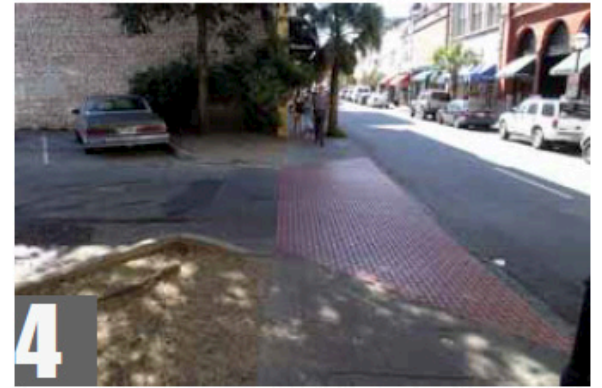




## 3A BUFFER To Street

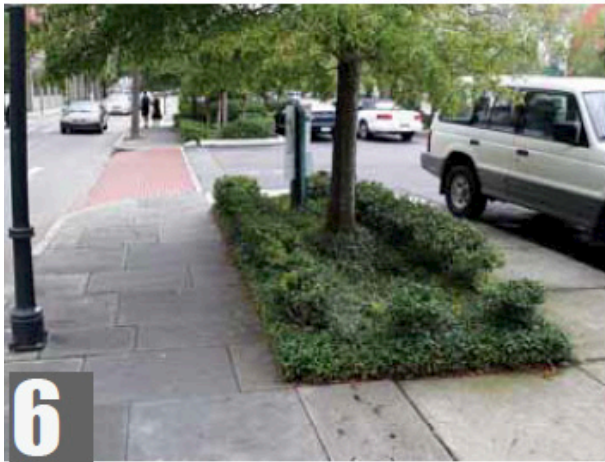
**Exemplary Buffer:** When vertical height is added (note wall of trees and ground cover) people feel relaxed and are willing to spend time (and money) in an area. *(Lake Oswego, Oregon)*

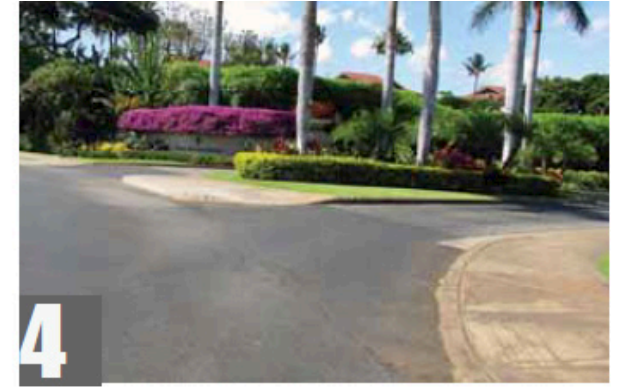




## 3B BUFFER To Parking Lots, other space

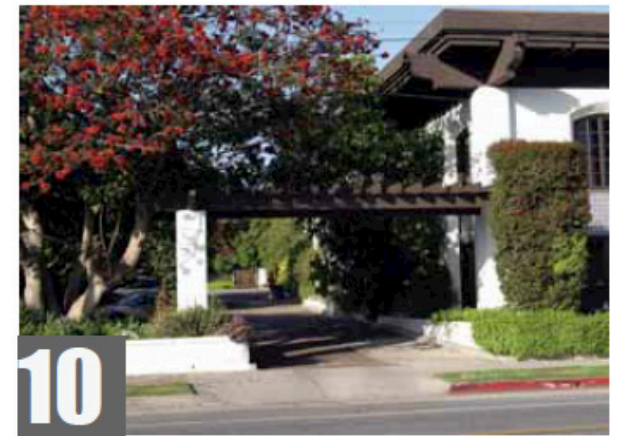
**Exemplary Buffer:** Highest quality parking edges are adopted and cared for; create no visual screening of pedestrians and create gardens.  
*(Sacramento, California)*





## 4 DRIVEWAYS Width, Contrast, Speed

Exemplary Driveway: Santa Barbara (below) sets the bar height for virtually everything walkable and aesthetic. A narrow, offset entry graces a pleasant walkway where safety is the quest. *(Santa Barbara, California)*



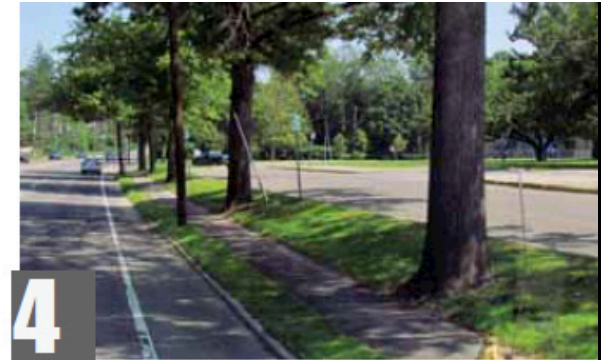




0



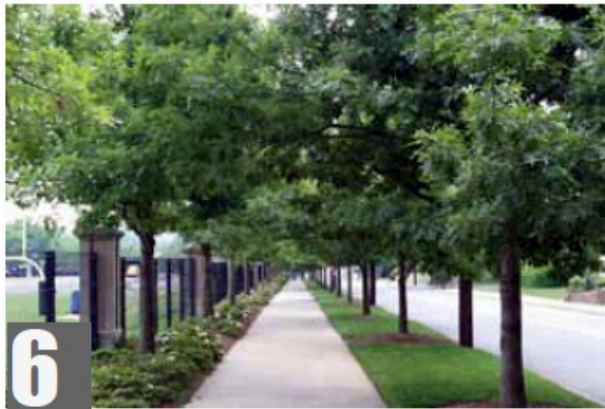
2



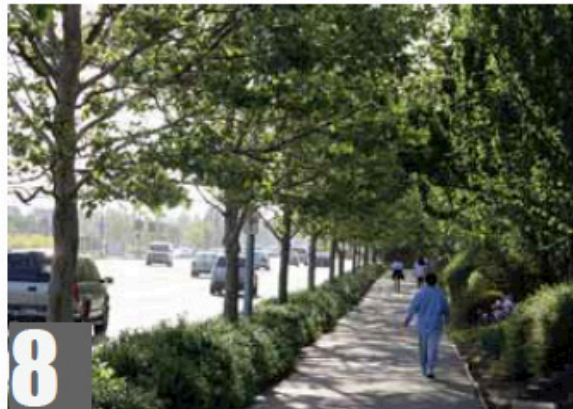
4

## 5 SHADE Trees

**Exemplary Shade:** The ideal shade planting should create a crowning achievement, sometimes caught on principal streets, and more often caught on neighborhood streets. Many towns call themselves Tree Cities, but it is time to raise the bar height to have streets of this quality become common place. *(Winnipeg, Canada)*



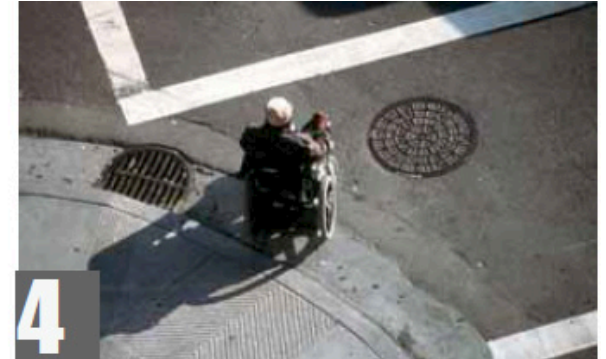
6



8

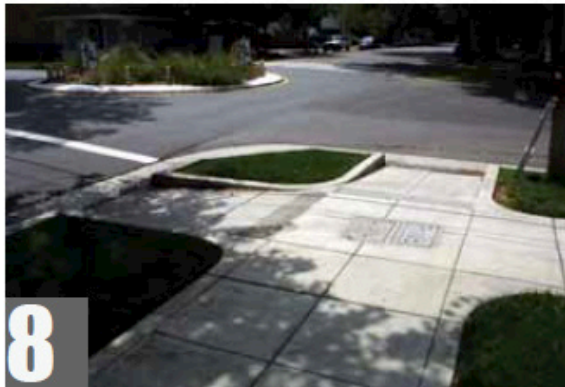


10



## 6 ADA Ramps

**Exemplary ADA:** The ideal set of ramps is found on narrow streets with tight corner radii of 15 feet or less. This ramp perfectly aligns with routes of travel, set back from the street. It also sports an edge, while providing contrast. Note how the drainage grates capture all water on both sides of the radius. (*Celebration, FL*)



# Walking Audit Scoring Sheet (Please Copy and Print out multiple copies)

Date: \_\_\_\_\_

Location: Town/Street \_\_\_\_\_

Block: \_\_\_\_\_

1A Crosswalk Markings      1 2 3 4 5 6 7 8 9 10      Comments:

1B Crossing Width          1 2 3 4 5 6 7 8 9 10      Comments:

2A Sidewalk Width          1 2 3 4 5 6 7 8 9 10      Comments:

2B Sidewalk Surface        1 2 3 4 5 6 7 8 9 10      Comments:

2C Sidewalk Maintenance   1 2 3 4 5 6 7 8 9 10      Comments:

3A Buffer to Street          1 2 3 4 5 6 7 8 9 10      Comments:

3B Buffer to Parking Lot    1 2 3 4 5 6 7 8 9 10      Comments:

4 Driveways                 1 2 3 4 5 6 7 8 9 10      Comments:

5 Shade                      1 2 3 4 5 6 7 8 9 10      Comments:

6 ADA Ramps                 1 2 3 4 5 6 7 8 9 10      Comments:

