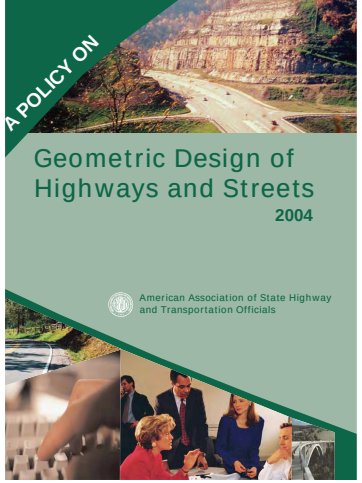
livable streets and manuals

OTREC 2011 2010: OPPOSITES ATTRACT: LIVABILITY AND THE 2010 HIGHWAY CAPACITY MANUAL

FRIDAY 9 SEPTEMBER 2011 | MARCY MCINELLY, AIA, PRESIDENT, URBSWORKS, INC

URBSWORKS | CONGRESS FOR THE NEW URBANISM PROJECT FOR TRANSPORTATION REFORM



1

THREE MANUALS

2

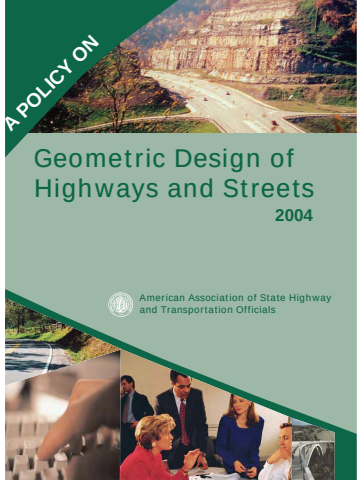
LIVABLE STREETS DEFINED

3

EXAMPLE OF MULTI-DISCIPLINARY
LIVABLE STREET DESIGN PROJECT & PROCESS

4

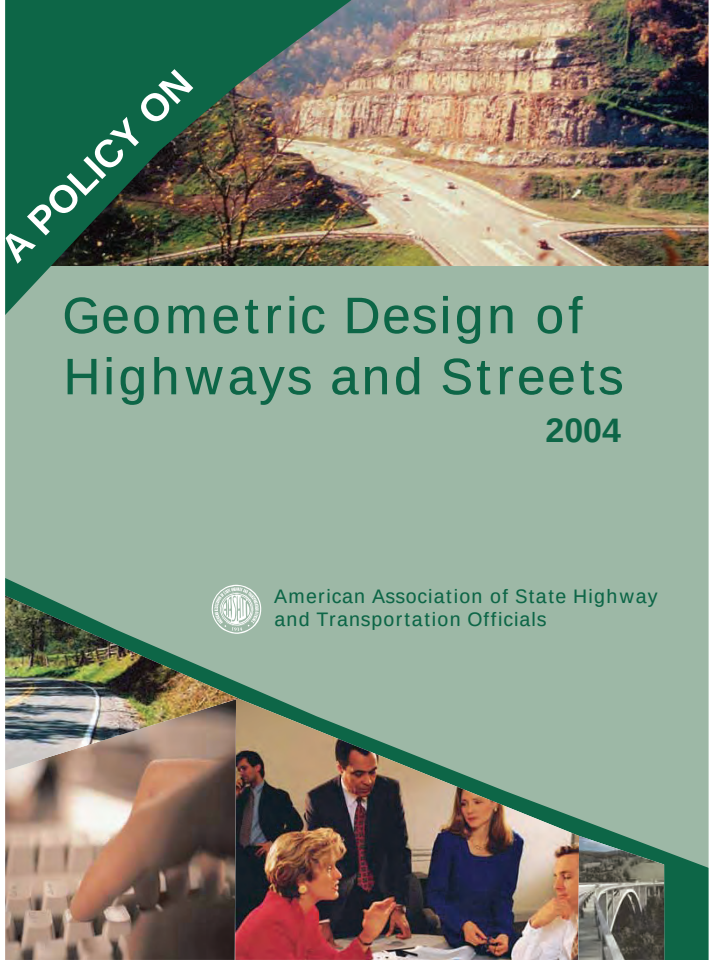
THE ROLE OF RESEARCH



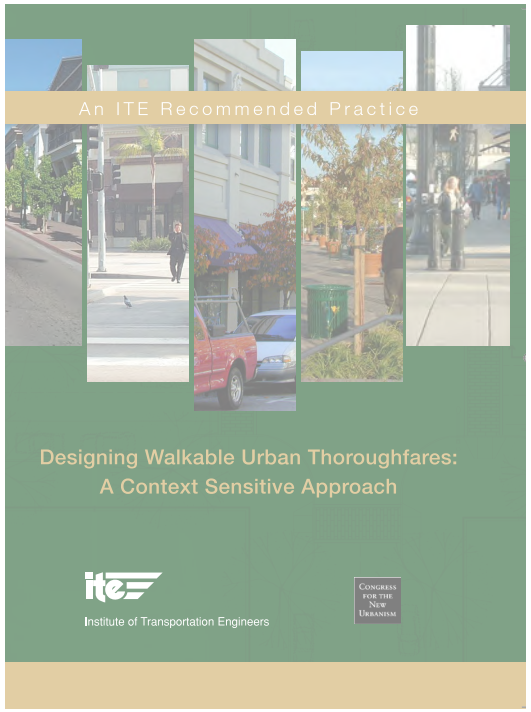
1

THREE MANUALS


HCM 2010
HIGHWAY CAPACITY MANUAL
VOLUME 1: CONCEPTS
VOLUME 2: UNINTERRUPTED FLOW
VOLUME 3: INTERRUPTED FLOW


A POLICY ON
Geometric Design of Highways and Streets
2004
American Association of State Highway and Transportation Officials


Measuring the Health Effects of SPRAWL
An ITE Recommended Practice
Designing Walkable Urban Thoroughfares: A Context Sensitive Approach



Significant collaboration between CNU and ITE (Institute of Transportation Engineers)

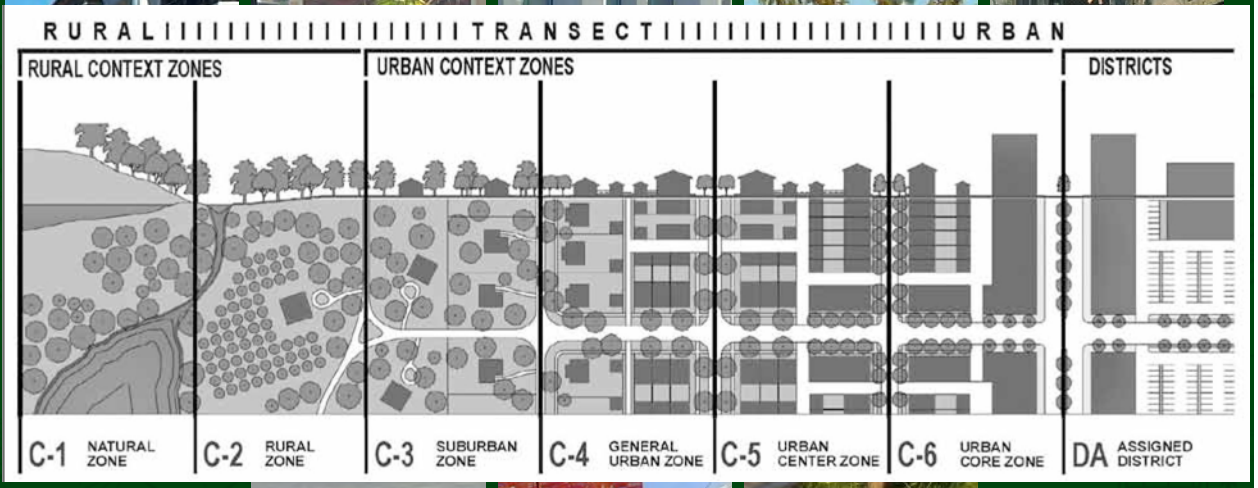
ITE received an unprecedented number of comments during balloting process (over 1,000)

Many from outside engineering profession

Details of urban streets, interrelationship between streets and land use context overlooked in past guidance

Acknowledges that street design and operation should change depending on context

An ITE Recommended Practice



Designing Walkable Urban Thoroughfares: A Context Sensitive Approach

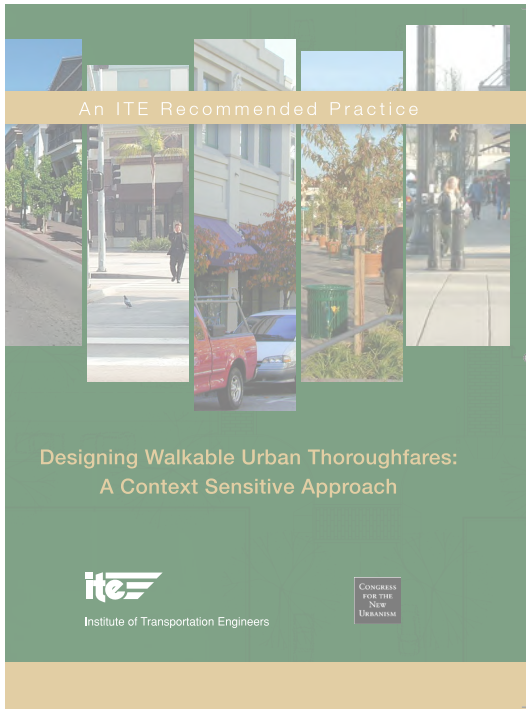
Institute of Transportation Engineers

Congress for the New Urbanism

Table 4.1 Context Zone Characteristics

Context Zone	Distinguishing Characteristics	General Character	Building Placement	Frontage Types	Typical Building Height	Type of Public Open Space	Transit (Where Provided)
C-1 Natural	Natural landscape	Natural features	Not applicable	Not applicable	Not applicable	Natural open space	None
C-2 Rural	Agricultural with scattered development	Agricultural activity and natural features	Large setbacks	Not applicable	Not applicable	Agricultural and natural	Rural
C-3 Suburban	Primarily single family residential with walkable development pattern and pedestrian facilities, dominant landscape character. Includes scattered commercial uses that support the residential uses, and connected in walkable fashion.	Detached buildings with landscaped yards, normally adjacent to C-4 zone. Commercial uses may consist of neighborhood or community shopping centers, service or office uses with side or rear parking.	Varying front and side yard setbacks	Residential uses include lawns, porches, fences and naturalistic tree planting. Commercial uses front onto thoroughfare.	1 to 2 story with some 3 story	Parks, greenbelts	Local, express bus
C-4 General Urban	Mix of housing types including attached units, with a range of commercial and civic activity at the neighborhood and community scale	Predominantly detached buildings, balance between landscape and buildings, presence of pedestrians	Shallow to medium front and side yard setback	Porches, fences	2 to 3 story with some variation and few taller workplace buildings	Parks, greenbelts	Local, limited stop bus rapid transit, express bus; fixed guideway
C-5 Urban Center	Attached housing types such as townhouses and apartments mixed with retail, workplace and civic activities at the community or subregional scale.	Predominantly attached buildings, landscaping within the public right of way, substantial pedestrian activity	Small or no setbacks, buildings oriented to street with placement and character defining a street wall	Stoops, dooryards, storefronts and arcaded walkways	3 to 5 story with some variation	Parks, plazas and squares, boulevard median landscaping	Local bus; limited stop rapid transit or bus rapid transit; fixed-guideway transit
C-6 Urban Core	Highest-intensity areas in subregion or region, with high-density residential and workplace uses, entertainment, civic and cultural uses	Attached buildings forming sense of enclosure and continuous street wall landscaping within the public right of way, highest pedestrian and transit activity	Small or no setbacks, building oriented to street, placed at front property line	Stoops, dooryards, forecourts, storefronts and arcaded walkways	4+ story with a few shorter buildings	Parks, plazas and squares, boulevard median landscaping	Local bus; limited stop rapid transit or bus rapid transit; fixed-guideway transit
Districts	To be designated and described locally, districts are areas that are single-use or multi-use with low-density development pattern and vehicle mobility priority thoroughfares. These may be large facilities such as airports, business parks and industrial areas.						As applicable

(Based on transect zone descriptions in *SmartCode* Version 9.2, 2008. Source: Duany Plater-Zyberk & Company.)
Shaded cells represent Context Zones that are not addressed in this report.



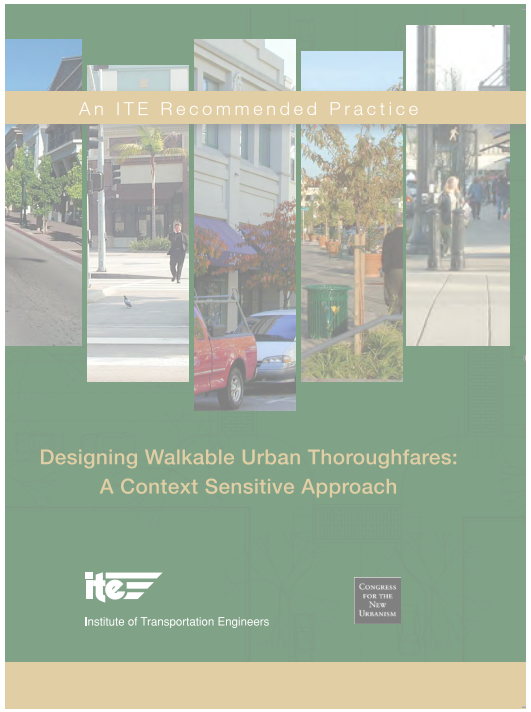
ITE manual broadens the choices for context, beyond “urban” or “rural”

Uses the urban transect, which includes context zones ranging from suburban to high density urban

Land uses govern level of activity; level of activity in turn governs design of the street

ITE manual replaces “design speed” with “target speed”

Design of the thoroughfare encourages desired operating speed

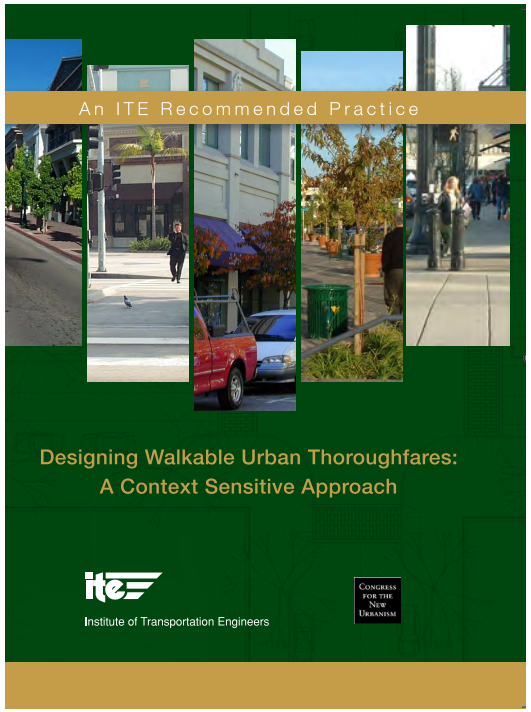


Functional classification describes a street's theoretical function and role in the network

Also governs certain design parameters

ITE manual acknowledges that the actual function of a street may be different

Physical design of the thoroughfare is determined by the street type (thoroughfare type) designation



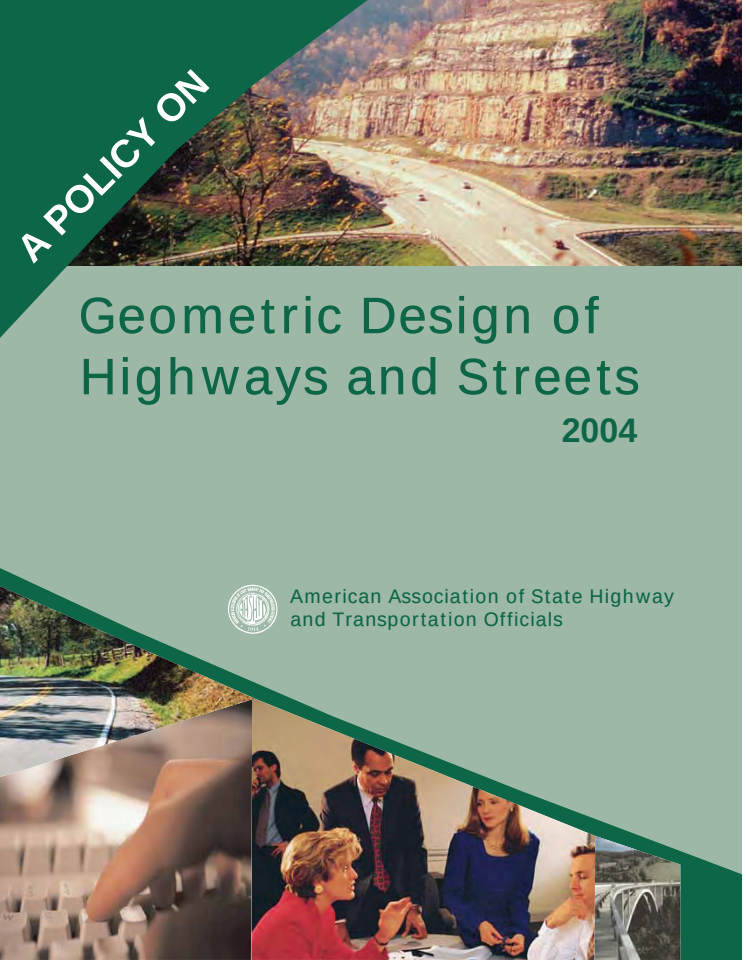
Contributors engineers, architects, planners, urban designers, developers, elected officials

Audience unlimited

Focus walkable urban thoroughfares; multi-modal streets; land use and urban design context

Other factors free; available on the web; hard copy by purchase

at cnu.org/streets



A Policy on Geometric Design of Highways and Streets

2004
Fifth Edition

Contributors limited

Audience limited

Focus automobiles, rural highways

Other biased toward automobiles; promotes speed; safety is defined as what is safe for auto drivers; difficult and costly to obtain

Contributors engineers and transportation planners with selected experience

Audience engineers and transportation planners, but also other users

Focus rural highways, freeways and urban streets; multi-modal LOS for urban streets (one section)

Other factors difficult and costly to obtain

2

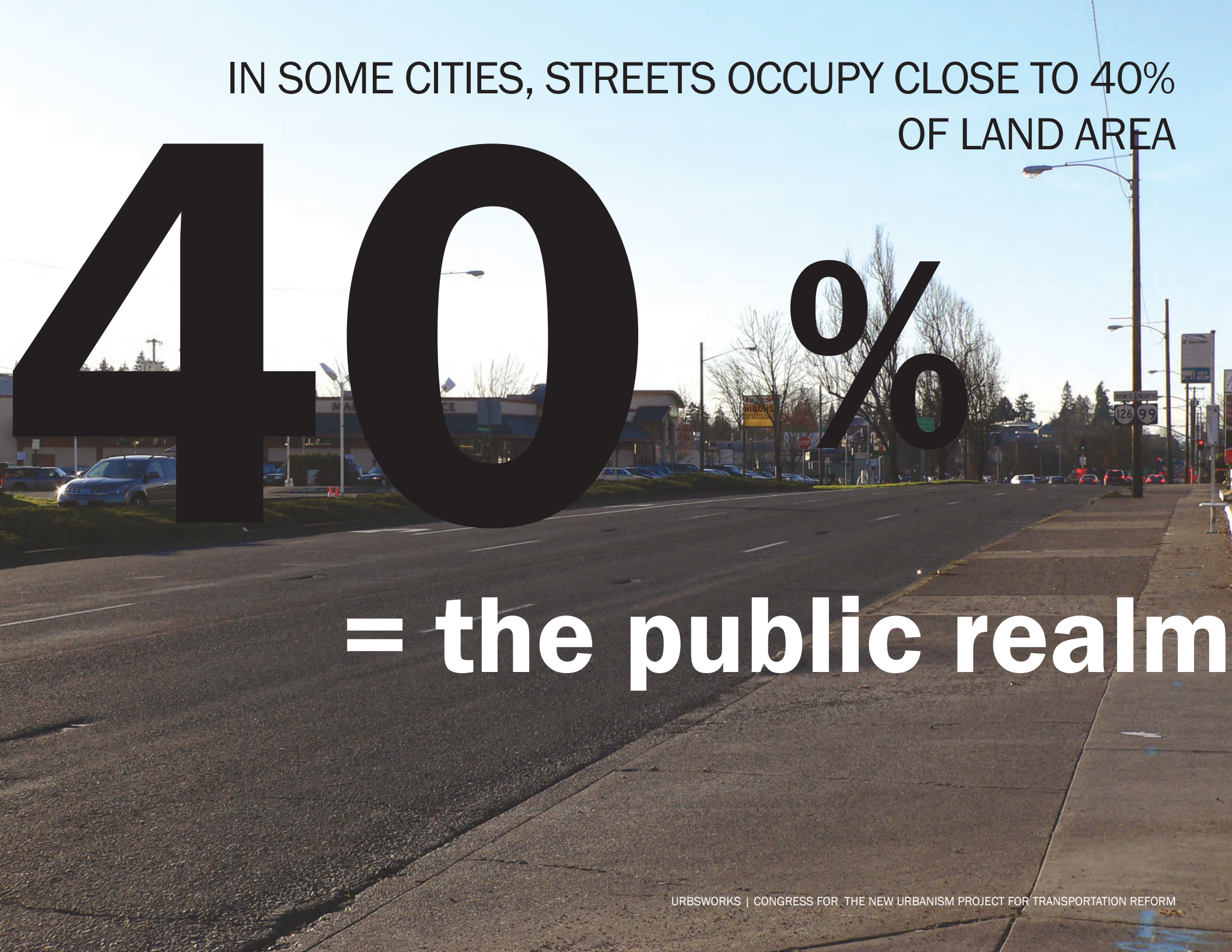
LIVABLE STREETS DEFINED

The design of the space between buildings is as important as the design of the buildings themselves. They are the public rooms of Ridgefield.

streets should be designed

streets should be safe attractive for everyone

transportation is about people

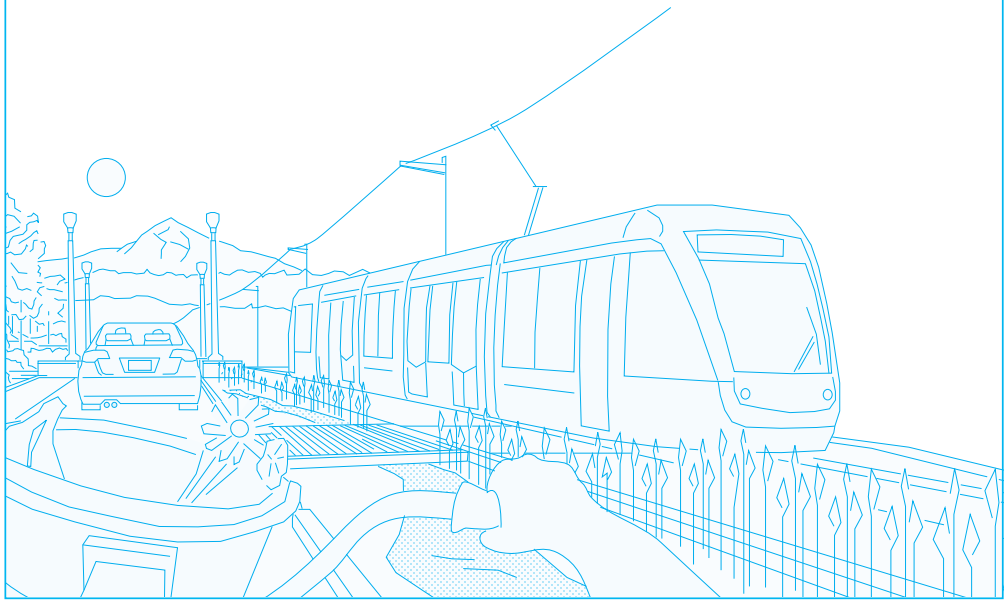

IN SOME CITIES, STREETS OCCUPY CLOSE TO 40%
OF LAND AREA
40%
= the public realm
URBSWORKS | CONGRESS FOR THE NEW URBANISM PROJECT FOR TRANSPORTATION REFORM

Congress for the New Urbanism Street Network Principles

CNU + SERA

Sustainable Street Network Principles

Project for Transportation Reform

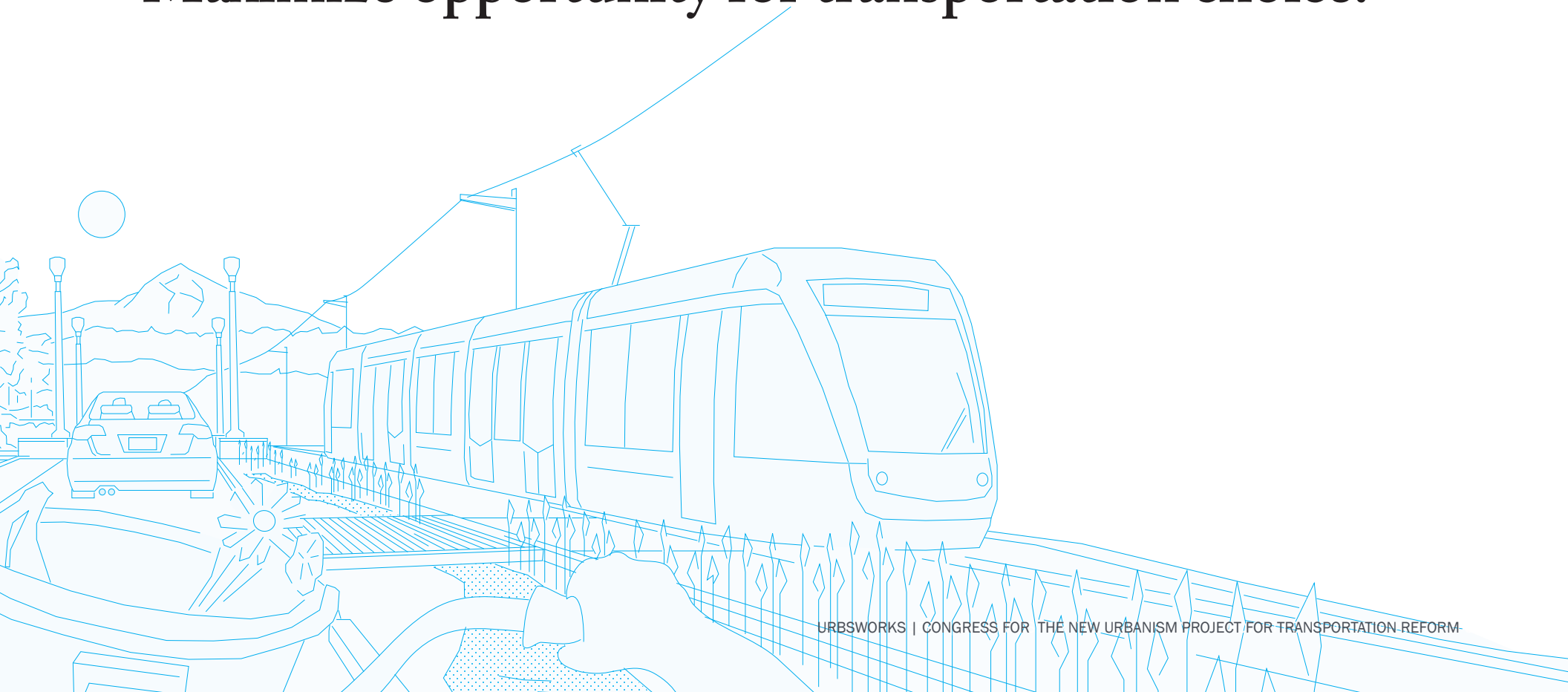


URBSWORKS | CONGRESS FOR THE NEW URBANISM PROJECT FOR TRANSPORTATION REFORM

Street networks support communities and places.

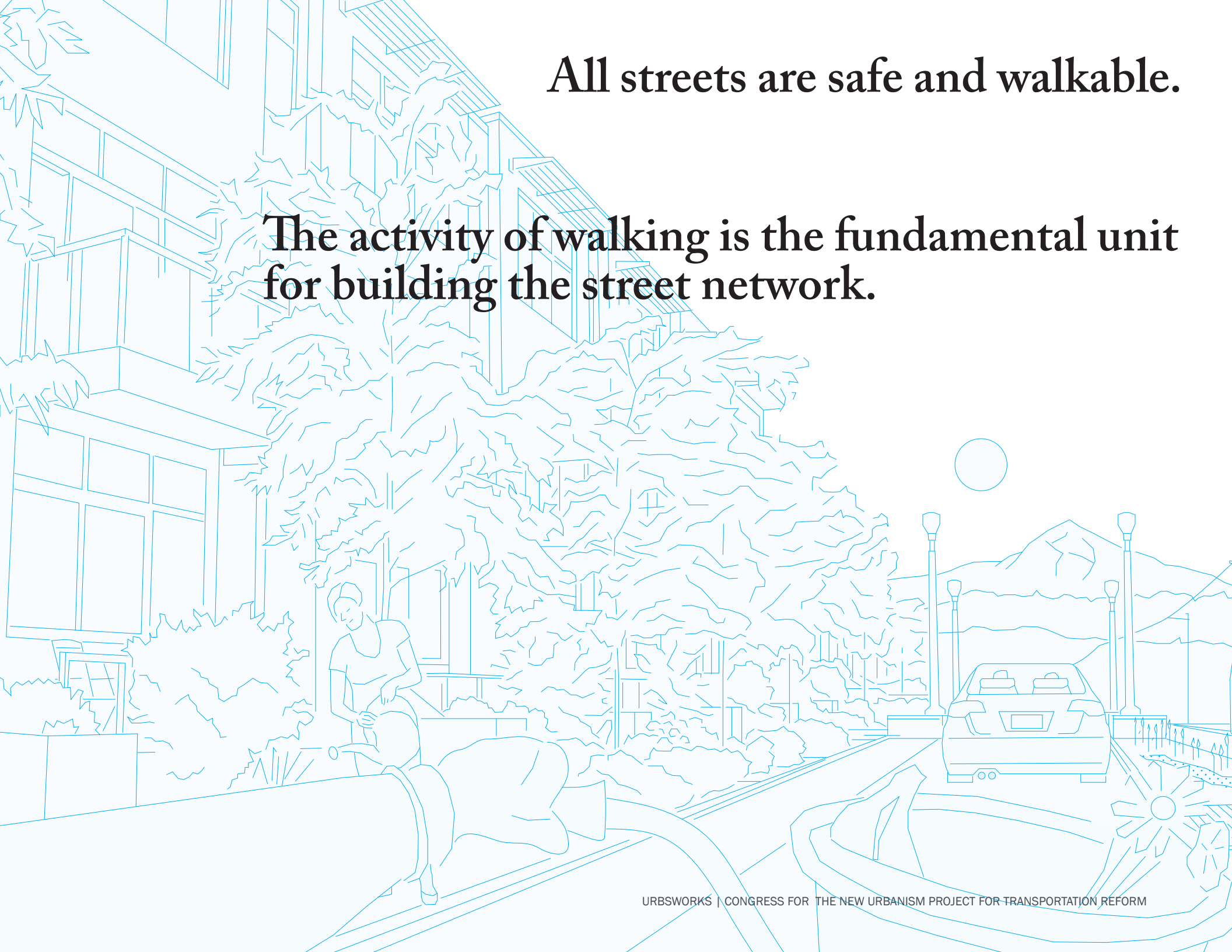
Street networks attract and sustain economic activity.

Maximize opportunity for transportation choice.



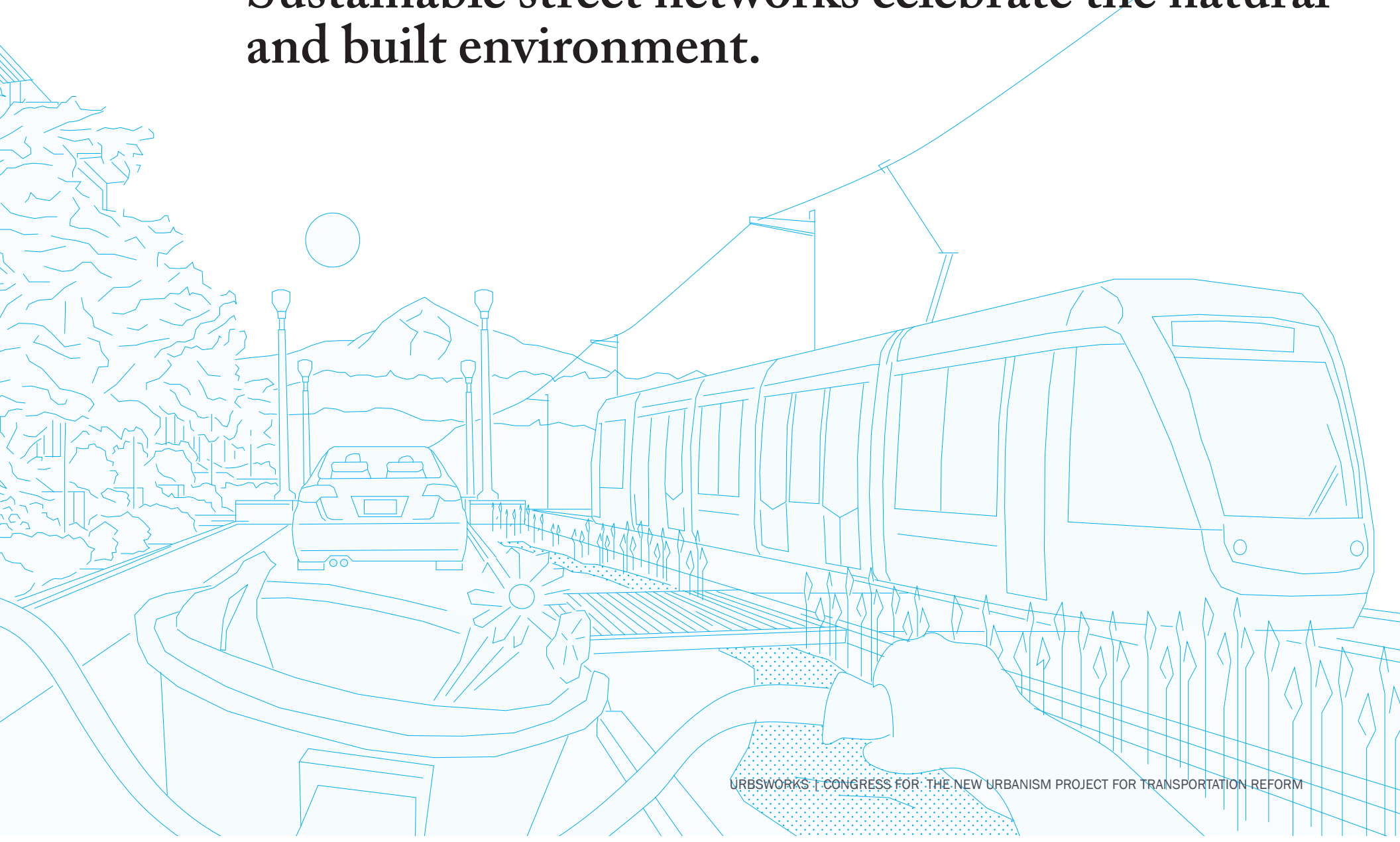
All streets are safe and walkable.

The activity of walking is the fundamental unit for building the street network.



Integrate the street network with the natural system at all scales.

Sustainable street networks celebrate the natural and built environment.



Charter of the New Urbanism

The Congress for the New Urbanism views disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage as one interrelated community-building challenge.

We stand for the restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy.

We recognize that physical solutions by themselves will not solve social and economic problems, but neither can economic vitality, community stability, and environmental health be sustained without a coherent and supportive physical framework.

We advocate the restructuring of public policy and development practices to support the following principles: neighborhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions; urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology, and building practice.

We represent a broad-based citizenry, composed of public and private sector leaders, community activists, and multidisciplinary professionals. We are committed to reestablishing the relationship between the

3

EXAMPLE OF A MULTI-DISCIPLINARY LIVABLE STREET DESIGN PROJECT & PROCESS

Kelso | Longview TSP

Street Types based on a combination of land use, mode priorities, economic development objectives and transportation needs

Context land use and urban design

Mode priorities for streets and street segments; network approach

Cross sections each component evaluated through detailed assessment of tradeoffs

Greats Streets employs a Complete Streets approach, with the addition of economic health, placemaking and network considerations

Great Streets typology

KELSO | LONGVIEW TSP

CHARACTERISTICS	WORKING GREAT STREET	CIVIC GREAT STREET	SHOPPING GREAT STREET	LIVING GREAT STREET
context: land use	employment / industrial	commercial/government	commercial	residential
context: urban form	walkable suburban	walkable urban	walkable urban	green leafy walkable
baseline characteristics	safe and walkable			
network priorities	· freight movement · through movement	· through movement · local movement	· through movement · local movement	· local movement
modes * prioritized modes	· trucks * · auto * · transit * · bicycle · pedestrian · emergency response *	· trucks * · auto * · transit * · bicycle * · pedestrian * · emergency response *	· trucks * · auto * · transit * · bicycle * · pedestrian * · emergency response *	· trucks · auto · transit · bicycle * · pedestrian * · emergency response
components	· sidewalk · street trees · plant strip · bike lane · transit stops and transfers	· sidewalk · on-street parking · street trees · tree wells · bike lane · transit stops and transfers	· sidewalk · on-street parking · street trees · tree wells · bike lane · transit stops and transfers	· sidewalk · street trees · plant strip · transit stops and transfers
tradeoffs				
target speed	35 mph	25 mph	20-25 mph	18-20 mph
functional classification				
cross section (minimum required)				
cross section (desirable)				

Tigard HC Transit Land Use Plan

Place Types based on a combination of physical characteristics

Physical characteristics land use mix and emphasis; types of businesses; types of housing; urban form and architecture; hours of activity/day (intensity); character–"look and feel"

Transportation transportation for all modes

Other civic uses and identity; parks and open space; stormwater; trees and tree canopy; parking design and management

Score VMT, GHG reduction, jobs to housing balance, transit supportiveness, walkability, etc

TY•POL•OGY

TYPOLOGY–FOCUSED
COMMUNITY–DRIVEN
CONTEXT–SENSITIVE

DEFINITION

A framework for describing the character of different areas. Used in comparing and contrasting the characteristics of good places. Typologies are aspirational—they represent what could be.

Town Center / Main Street

The area has an urban village feel. Within one half mile around the station is a mix of housing, retail, services, civic uses and office. Open spaces and businesses combine to create vibrant streets. Apartments or condominiums occupy the upper level of some buildings. The edges of the area are predominantly residential, blending into the surrounding neighborhoods.

Employment / Retail Destination

A moderately to intensely populated station area with a land use emphasis on employment and retail activities. Other possibilities include civic buildings and colleges. This central employment/retail core is surrounded by medium to high density multi-story housing like townhouses and apartment buildings. This creates opportunities to live and work in close proximity.

Transit Corridor

A suburban residential feel mixed with commercial uses closer to the transit corridor. Housing is in the form of townhouses and detached houses with apartments located in clusters near the corridor. The area also has moderately scaled office employment, shopping and dining located near the station.

Transit Neighborhood

Moderately populated with a residential feel. Housing in the district is mainly single-dwelling residential with some multi-dwelling housing mixed in. There are limited commercial uses which take the form of small-scale retail or office. More significant clusters of retail and restaurants are within walking and biking distance.

TYPE COMPARISON

	Town Center/Main Street	Employment/Retail	Transit Corridor	Transit Neighborhood
Land Use Focus	Specialty retail, office, dining, medium to high-density housing	An employment and regional shopping destination	Shopping, dining and residential	Primarily residential
Character and Layout	The area has an urban village feel. Within one half mile around the station is a mix of housing, retail, services, civic uses and office. Open spaces and businesses combine to create vibrant streets. Apartments or condominiums occupy the upper level of some buildings. Moving away from the station, there may be townhouses with ground floor office and home-based businesses. The edges of the station area are predominantly residential, blending into the surrounding neighborhoods.	A moderately to intensely populated station area with a land use emphasis on employment and retail activities. Other possibilities include civic buildings and colleges. This central employment/retail core is surrounded by medium to high density multi-story housing in the form of townhouses and apartment buildings. This creates opportunities to live and work in close proximity.	A suburban residential feel mixed with commercial uses closer to the transit corridor. Housing is in the form of townhouses and detached houses with apartments located in clusters near the corridor. The area also has moderately scaled office employment, shopping and dining located near the station.	Moderately populated with a residential feel. Housing in the district is mainly single-dwelling residential with some multi-dwelling housing mixed in. There are limited commercial uses which take the form of small-scale retail or office. More significant clusters of retail and restaurants are within walking and biking distance.
Comparison	Lake Oswego/First Addition, downtown Milwaukie and downtown Vancouver	Bridgeport Village, Tanasbourne, and Lloyd/Irvington	Hillsdale, Orenco and Lake Grove	Laurelhurst, Ladd's Addition/ Hawthorne, Summerfield, and Sellwood/Westmoreland
Activity Level	The area is considered a 14-hour activity center, with daytime uses that include office jobs, retail and restaurants. Nighttime activity includes eating and drinking establishments.	The district is considered an 18-hour activity center, with a majority of daytime activity in the form of office jobs and shopping. Nighttime activity includes full-service restaurants and entertainment.	A 14-hour activity center, with a majority of daytime uses in the form of restaurants, cafes and retail. Schools and a range of personal and professional services are also found here. Nighttime uses are centered on restaurants.	A 12–14 hour activity center. The majority of residents leave the area to work. Most jobs found nearby are retail or restaurant focused.
Open Space, Public gathering Space	Yes	Yes	Yes	Yes
Accessible by all types of transportation?	Yes	Yes	Yes	Yes

TYPE 1

TYPOLOGY–FOCUSED
COMMUNITY–DRIVEN
CONTEXT–SENSITIVE

TYPOLOGY ONE

Town Center/ Main Street

Specialty Retail

Office

Dining

Medium to High-density Housing

POTENTIAL STATION COMMUNITY LOCATIONS

Apartments or condominiums occupy the upper level of some buildings. Moving away from the station, there may be townhouses with ground floor office and home-based businesses.

The area is served by pedestrian friendly streetscapes based on an urban style grid network and narrow streets.

The area within one half mile of the high capacity transit station is a mix of housing, retail, services, civic uses and office.

Open spaces and businesses combine to create vibrant streets.

Town Center / Main Street Station Community Type One

Focus Specialty retail, office, dining, medium to high-density housing, urban village feel

The Town Center / Main Street Station Community includes significant housing, employment and commercial businesses and serves the local population. The area within 1/2 mile of the high capacity transit station is a mix of housing, retail, services, civic uses and office. This area has a jobs to housing balance of 2:1. Residential units in the form of flats (apartments or condominiums) occupy the upper level of some buildings. Moving away from the station, there may be townhouses with ground floor office and home-based businesses. The edges of the station area are predominantly residential, blending into the surrounding single dwelling neighborhood.

The physical character, urban form, streetscape design and mix of uses is unique to each Town Center / Main Street Station Community, and is a reflection of the distinctive personality of the community in which it is located.

References for comparison

Stakeholder interviews From Stakeholder interviews, "Places People Love," this Station Community is most like Lake Oswego/First Addition, Downtown Milwaukie and Downtown Vancouver.

Metro State of the Centers From Metro State of the Centers, this Station Community could resemble Hollywood, Multnomah Village and Lake Oswego Downtown District.

State of the Centers Report Data

Center	Hollywood	Downtown Milwaukie	Lake Oswego Downtown
Activity level	14 hour*	14 hour*	14 hour*
Jobs to housing ratio	3:1	2:1	2:1
Median household size	1.34	2.1	1.71
Median household income	$35,888	$46,139	$71,492
Median age	47	39	45
Home ownership	37%	42%	47%
People per acre	77	21	30
Dwelling units per acre	12	5	8
Total businesses per acre	5.3	0.9	2.8

** Estimated for the purposes of this report. All other data is from the Metro State of the Centers Report.*

town center / main street

STATION COMMUNITY ONE

Highest land use intensity. Tends to have a more balanced number of jobs to housing; lower VMT per capita; lower CO_2 emissions.

TYPE 2

TYPOLOGY–FOCUSED
COMMUNITY–DRIVEN
CONTEXT–SENSITIVE

Employment / Retail Destination

Station Community Type Two

Focus Regional employment and/or commercial activity and institutional

The Employment / Retail Destination Station Community is a moderately to intensely populated district with an emphasis on employment and commercial retail activities. A destination for transit trips, this district focuses on office and/or retail employment, and is highlighted by a regional shopping center and/or large-scale office complexes. Employment uses include a range of professional, research and technology-based manufacturing. Civic uses and colleges can also be found here. The core of the center is surrounded by medium to high density multi-story housing in the form of townhouses and apartment buildings, creating opportunities to live and work in close proximity.

The area has a jobs to housing ratio of almost 7:1, which indicates that a large percentage of the workers in the center travel from outside the area to a job within the district. Additionally, the regional shopping center draws many trips in from outside the area.

References for comparison

Stakeholder interviews From "Places People Love," this Station Community is most like Bridgeport Village.

Metro State of the Centers From Metro State of the Centers, this Station Community is most like Lloyd/Irvington, Tanasbourne and Bridgeport Village.

State of the Centers Report Data

Center	Lloyd District	Tanasbourne	Bridgeport Village
Activity level	18 hour	12 hour*	14 hour*
Jobs to housing ratio	7:1	1:1	22:1
Median household size	1.5	1.97	2.38
Median household income	$42,000	$60,882	$67,268
Median age	37	30	40.9
Home ownership	20%	1%	59%
People per acre	71	24	13
Dwelling units per acre	8	8	0.6
Total businesses per acre	na**	0.5	0.8

** Estimated for the purposes of this report. All other data is from the Metro State of the Centers Report.*
*** Metro State of the Centers Report provided no data for this center type.*

employment / retail destination

STATION COMMUNITY TWO

High land use intensity. Ratio of jobs to housing skewed toward jobs; tends to have higher VMT per capita; higher CO2 emissions.

TYPE 3

TYPOLOGY–FOCUSED
COMMUNITY–DRIVEN
CONTEXT–SENSITIVE

TYPOLOGY THREE

Transit Corridor

Shopping
Dining
Residential

POTENTIAL STATION COMMUNITY LOCATIONS

A suburban residential feel mixed with commercial uses closer to the transit corridor. Housing is in the form of townhouses and detached houses with apartments located in clusters near the corridor.

Schools and a range of personal and professional services are found here.

The area has a complete sidewalk network.

A 14-hour activity center, with a majority of daytime uses in the form of restaurants, cafes and retail.

transit corridor neighborhood

STATION COMMUNITY THREE

Transit Corridor Neighborhood

Station Community Type Three

Focus Shopping, dining and residential

The Transit Corridor Station Community has a suburban residential feel. The arterial serving the corridor was originally designed to serve auto traffic, but significant efforts have been made to improve the pedestrian environment. The corridor has evolved into a destination location for restaurants and a mix of national chain retail and small-scale, locally-owned retail. The area has schools within walking distance of the district. High capacity transit stations located strategically along the corridor serve adjacent neighborhoods. Employment land uses, shopping and dining may be located near the station but are smaller in scale than the same uses at the other Station Communities. The station area allows for a synergy of land uses because they are oriented to customers who use either transit or the auto.

References for comparison

Stakeholder interviews From "Places People Love," this Station Community is most like Hillsdale.

Metro State of the Centers From Metro State of the Centers, this Station Community is most like Hillsdale, Orenco and Lake Grove

State of the Centers Report Data

Center	Hillsdale	Orenco	Lake Grove
Activity level	14 hour	12 hour*	14 hour*
Jobs to housing ratio	3:1	2:1	5:1
Median household size	2.08	1.35	2.05
Median household income	$55,000	$44,447	$66,642
Median age	33	60	30
Home ownership	36%	47%	32%
People per acre	29	16	15
Dwelling units per acre	10	5	2
Total businesses per acre	na**	1.6	1.1

** Estimated for the purposes of this report. All other data is from the Metro State of the Centers Report*
*** Metro State of the Centers Report provided no data for this center type.*

Relatively low land use intensity. Tends to have a more balanced number of jobs to housing.

TYPE 4

TYPOLOGY–FOCUSED
COMMUNITY–DRIVEN
CONTEXT–SENSITIVE

TYPOLOGY FOUR

Transit Neighborhood

Primarily Residential

POTENTIAL STATION COMMUNITY LOCATIONS

Moderately populated with a residential feel. Housing in the district is mainly single-dwelling residential with some multi-dwelling housing mixed in.

There are limited commercial uses which take the form of small-scale retail or office. More significant clusters of retail and restaurants are within walking and biking distance.

The area has community destinations, civic uses and planned events. Art and public realm design creates a strong feeling of community identity.

Residents enjoy nearby recreational paths, parks and open space, and access to community gardens.

transit neighborhood station community

STATION COMMUNITY FOUR

Transit Neighborhood Station Community

Station Community Type Four

Focus Residential

The Transit Neighborhood Station Community is moderately populated and has a residential feel. There are few commercial land uses in this Station Community, and when they are present, they occur at locations where such uses have historically located; usually at the crossroads of through streets. When they occur, commercial land uses take the form of small-scale retail or office, usually on the ground floor of one or two corner buildings. Examples of the retail that might be found here includes coffee shops and specialty stores, while office uses may include professional services, some in the form of home-based businesses. Some of these buildings have residential uses above or behind the retail or office use. More significant clusters of retail and restaurants are within walking and biking distance.

References for comparison

Stakeholder interviews From "Places People Love," this Station Community is most like Laurelhurst, Ladd's Addition/Hawthorne and Summerfield.

Metro State of the Centers From Metro State of the Centers, this Station Community is most like Clinton, King City, and Sellwood/Westmoreland.

State of the Centers Report Data

Center	Clinton	King City	Sellwood/ Westmoreland
Activity level	14 hour	12*	18 hour
Jobs to housing ratio	3:1	2:1	3:1
Median household size	2.08	1.35	1.8
Median household income	$55,000	$44,447	$49,000
Median age	33	60	41
Home ownership	36%	47%	55%
People per acre	29	16	42
Dwelling units per acre	10	5	9
Total businesses per acre	na**	1.6	na**

** Estimated for the purposes of this report. All other data is from the Metro State of the Centers Report.*
*** Metro State of the Centers Report provided no data for this center type.*

Lowest land use intensity;
Ratio of jobs to housing skewed toward housing; tends to have higher VMT per capita; higher CO_2 emissions.

4

THE ROLE OF RESEARCH

Congress for the New Urbanism (CNU)

A partner and collaborator in policy, guidance and research

Organization's strength comes from practitioners' experience in a variety of fields

In every region of the US and internationally

Members: engineers, planners, architects, developers and elected officials

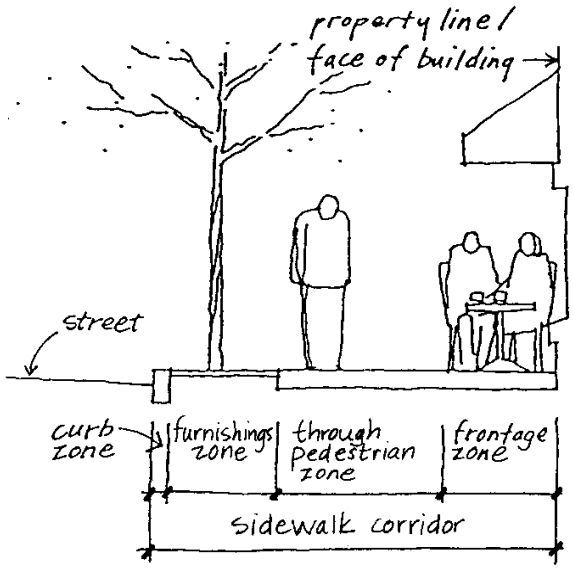
National organization supports members in advocacy and practice

street design and traffic safety

Eric Dumbaugh, PhD

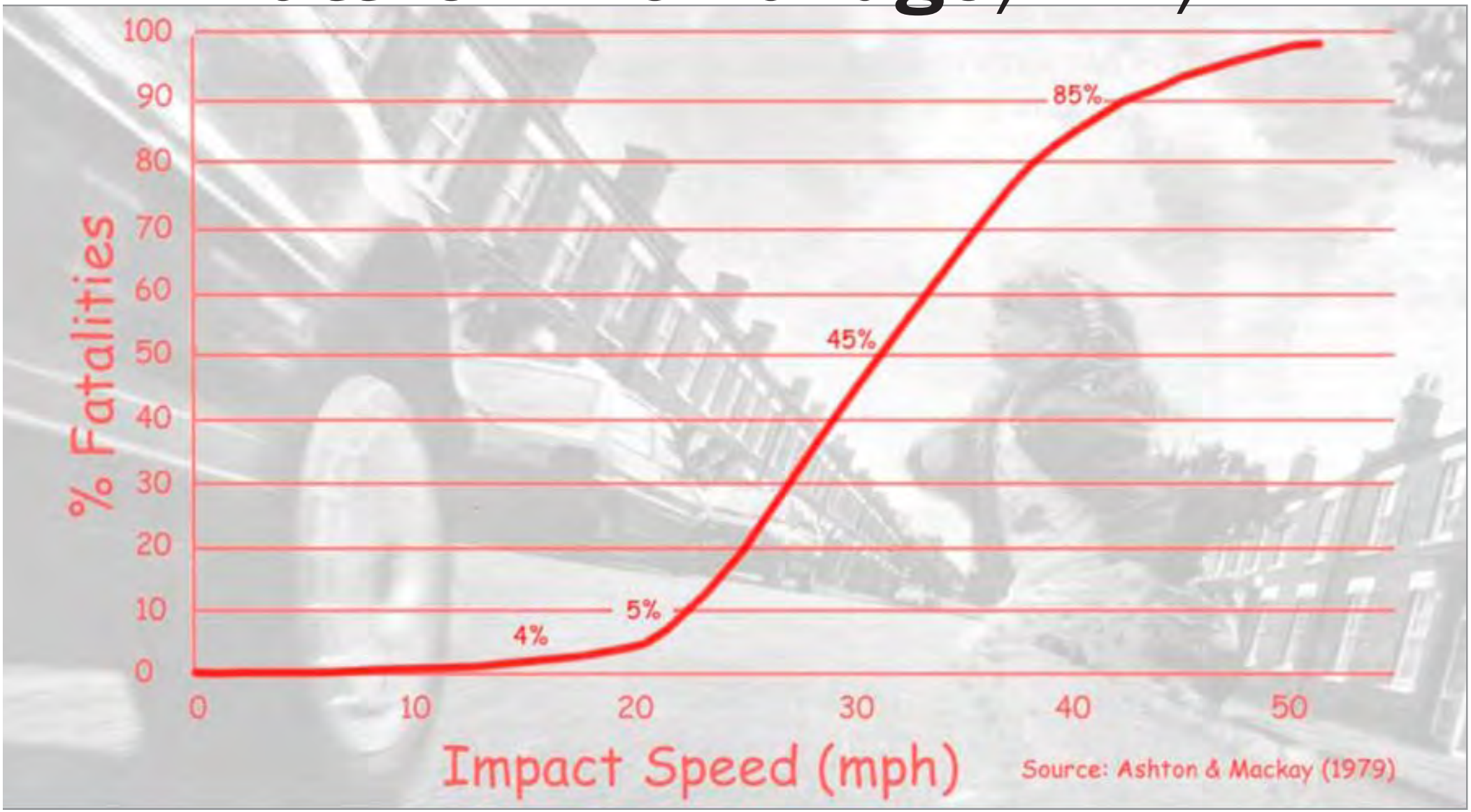
Sidewalk design—Franklin Boulevard today

Sidewalk design—Shattuck Avenue, Berkeley, California
a) frontage zone: canopy & merchandise display; b) through pedestrian zone; c) furnishings zone



safety and public health

Matthew Trowbridge, MD, MHP



adapted by Ben Hamilton-Baillie

economic health of cities

Joe Cortright and CEOs for Cities

livable streets and manuals

OTREC 2011 2010: OPPOSITES ATTRACT: LIVABILITY AND THE 2010 HIGHWAY CAPACITY MANUAL

FRIDAY 9 SEPTEMBER 2011 | MARCY MCINELLY, AIA, PRESIDENT, URBSWORKS, INC

URBSWORKS | CONGRESS FOR THE NEW URBANISM PROJECT FOR TRANSPORTATION REFORM