El Paso Smart Code

Smart Code and
The Basics of The New Urbanism

November 2, 2010

SmartCode

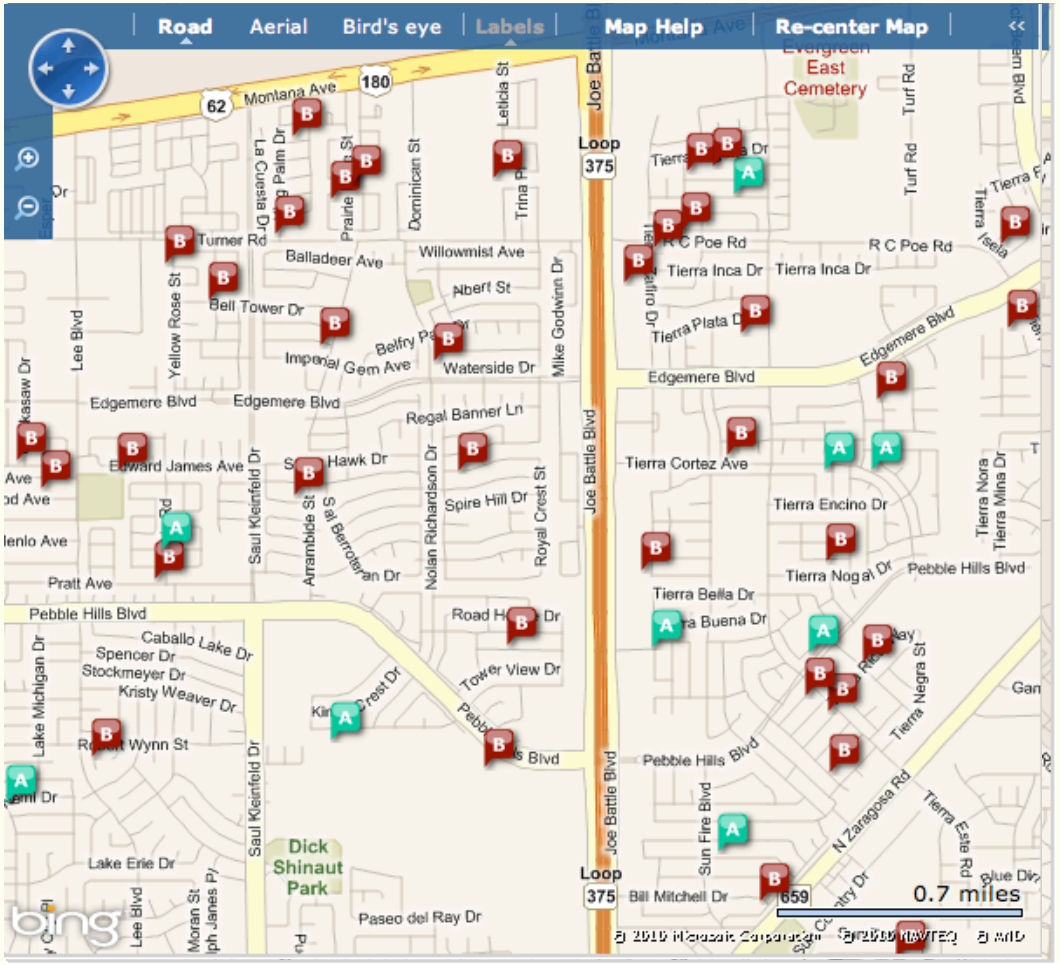
Development Types

- Growth: Traditional neighborhoods vs. sprawl
  - Traditional: Mixed use, pedestrian friendly, varied population, dominant development style for centuries
  - Sprawl: “Sweeping aside the old,” low density, disinvestment in city core

Edgemere Blvd
Edgemere Blvd
Edgemere Blvd
Edgemere Blvd
Edgemere Blvd
Kaitlyn Reece Dr
Kaitlyn Reece Dr
Tierra Berlin Ln
Tierra Roma Pl
Tierra Paris Pl
Rich Beem Blvd
Rich Beem Blvd
Rich Beem Blvd
Rich Beem Blvd
Las Tierras Community Church
Adrian's Hypnotiq Experience
Tierra Lince Dr
Tierra Karla Dr
Tierra Sara Ln
Tierra Jazmin Ln
Tierra Lince Dr
Tierra Sonora Dr
Tierra Yvette Ln
Tierra Fertil Dr
Tierra Mision Dr
Tierra Sonora Dr
Tierra Mina Dr
Spc. Rafael Hernando III Middle
Sgt. Roberto Ituarte Elementary
N Zaragosa Rd
Ranch Rd 659
Ranch Rd 659

SmartCode

You can’t sprawl yourself to prosperity

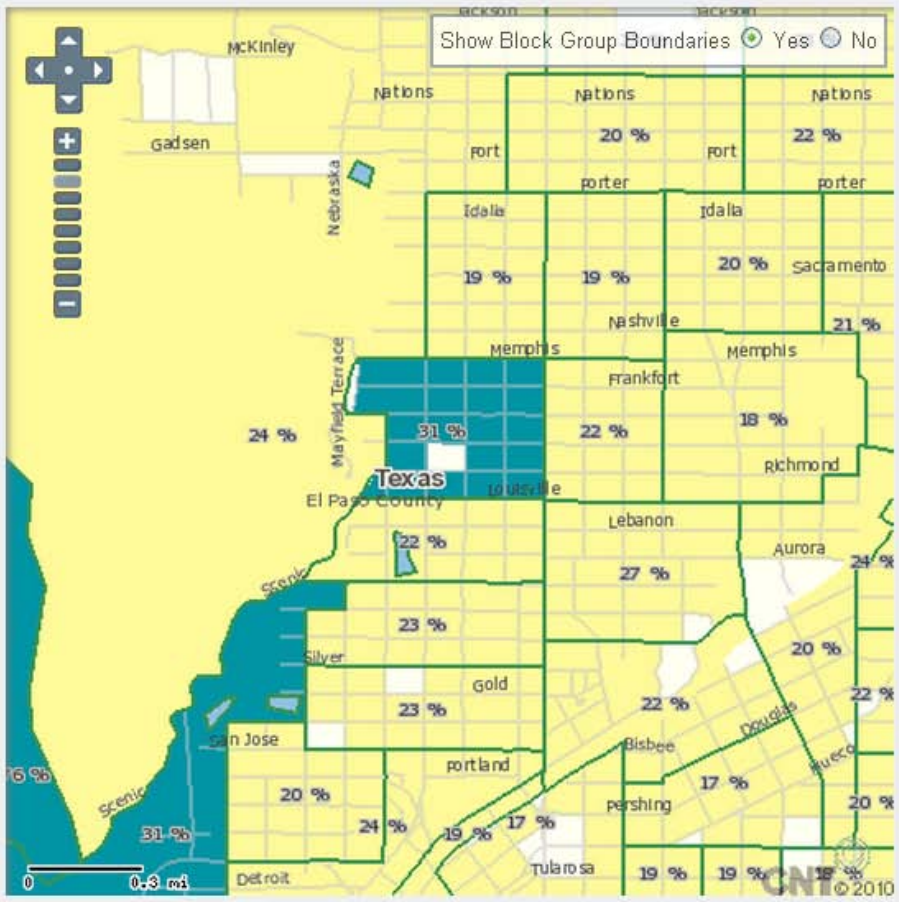


Housing Costs - % Income

Change

- Data Not Available
- Less than 30%
- 30% and Greater

Housing Costs factored as a percent of income has widely been utilized as a measure of affordability. Traditionally, a home is considered affordable when the costs consume no more than 30% of household income.

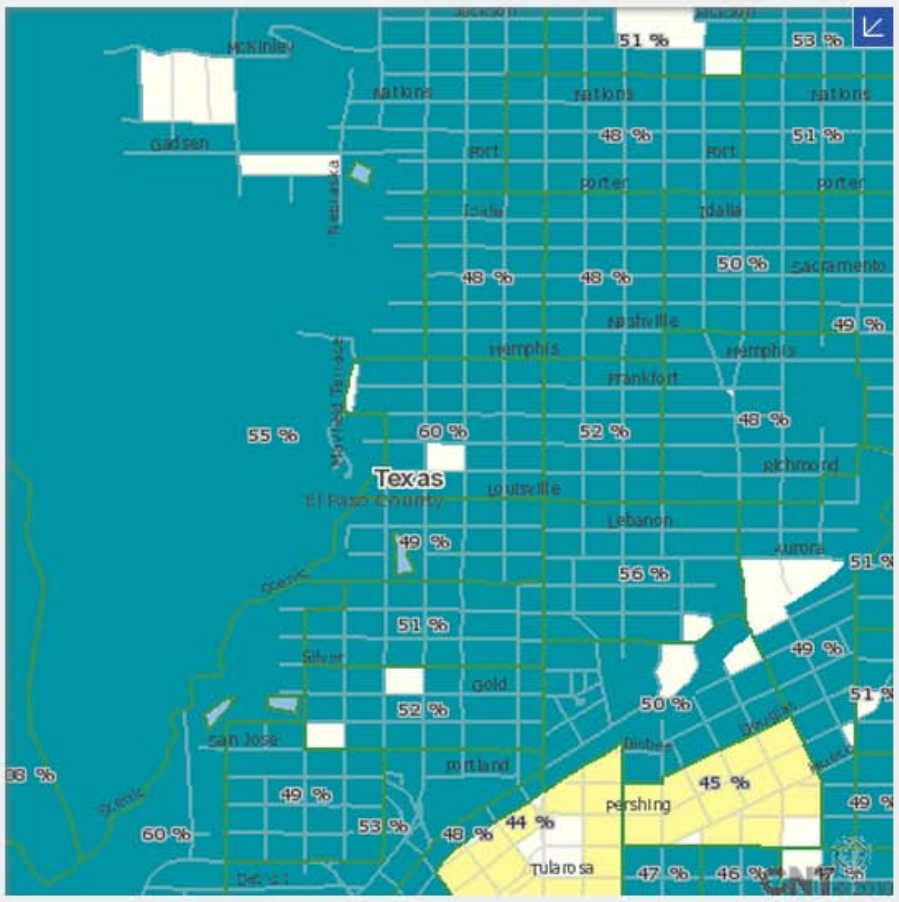


Housing and Transportation Costs - % Income

Change

- Data Not Available
- Less than 45%
- 45% and Greater

H+T has been developed as a more complete measure of affordability beyond the standard method of assessing only Housing Costs. By taking into account both the cost of housing as well as the cost of transportation associated with the location of the home, H+T provides a more complete understanding of affordability. Dividing these costs by Representative Regional Incomes illustrates the Cost Burden placed on a Typical Household by H+T expenses. While



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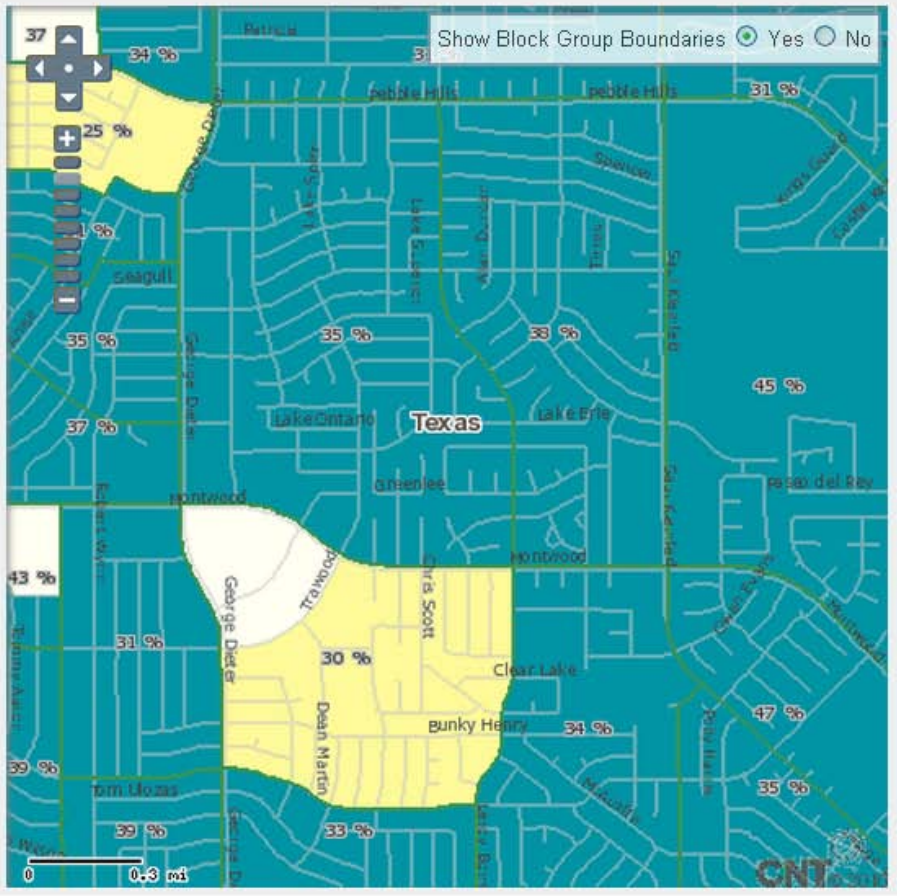

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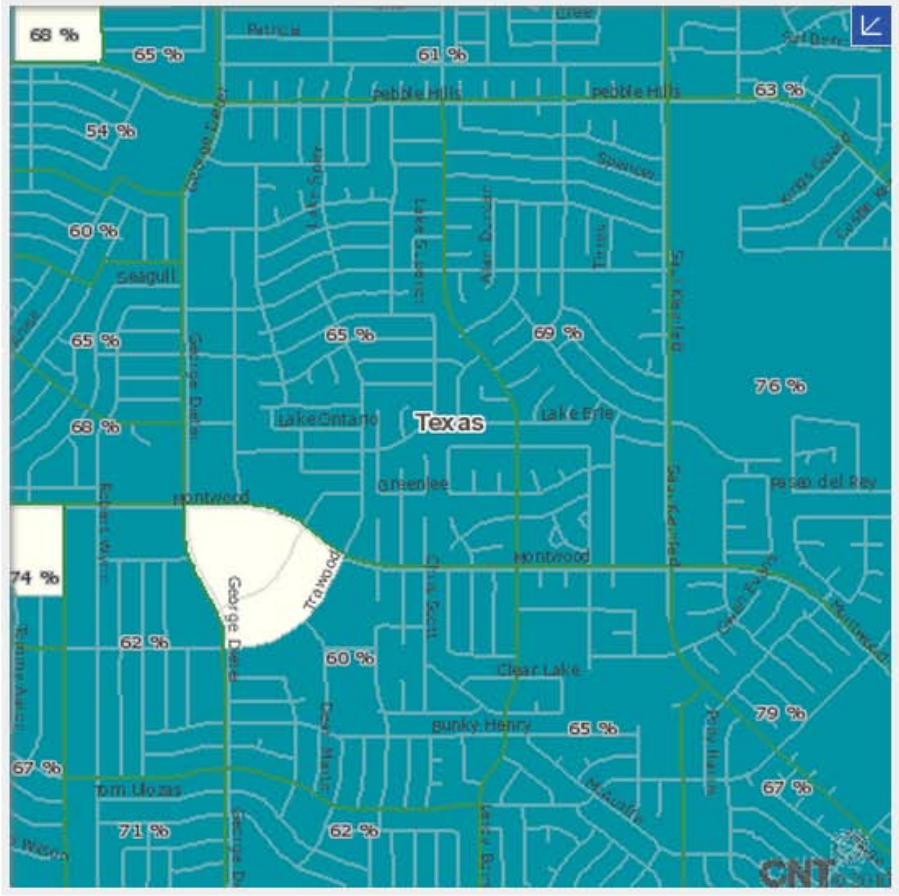


Physical Health

"Recently, there has been a growing body of evidence linking aspects of the built environment to obesity (33–52). The 20 articles that met the eligibility criteria for this review have all been published within the past 5 years. Of these 20 studies, 17 found a statistically significant relation between some aspect of the built environment and risk of obesity."

Mia A. Papas, Anthony J. Alberg, Reid Ewing, Kathy J. Helzlsouer, Tiffany L. Gary, and Ann C. Klassen **The Built Environment and Obesity** Epidemiol Rev (2007) 29(1): 129-143

Obesity Trends Among U.S. Adults between 1985 and 2009

Source of the data:

- The data shown in these maps were collected through CDC's Behavioral Risk Factor Surveillance System (BRFSS). Each year, state health departments use standard procedures to collect data through a series of telephone interviews with U.S. adults.

- Prevalence estimates generated for the maps may vary slightly from those generated for the states by BRFSS (http://aps.nccd.cdc.gov/brfss) as slightly different analytic methods are used.

- In 1990, among states participating in the Behavioral Risk Factor Surveillance System, ten states had a prevalence of obesity less than 10% and no states had prevalence equal to or greater than 15%.

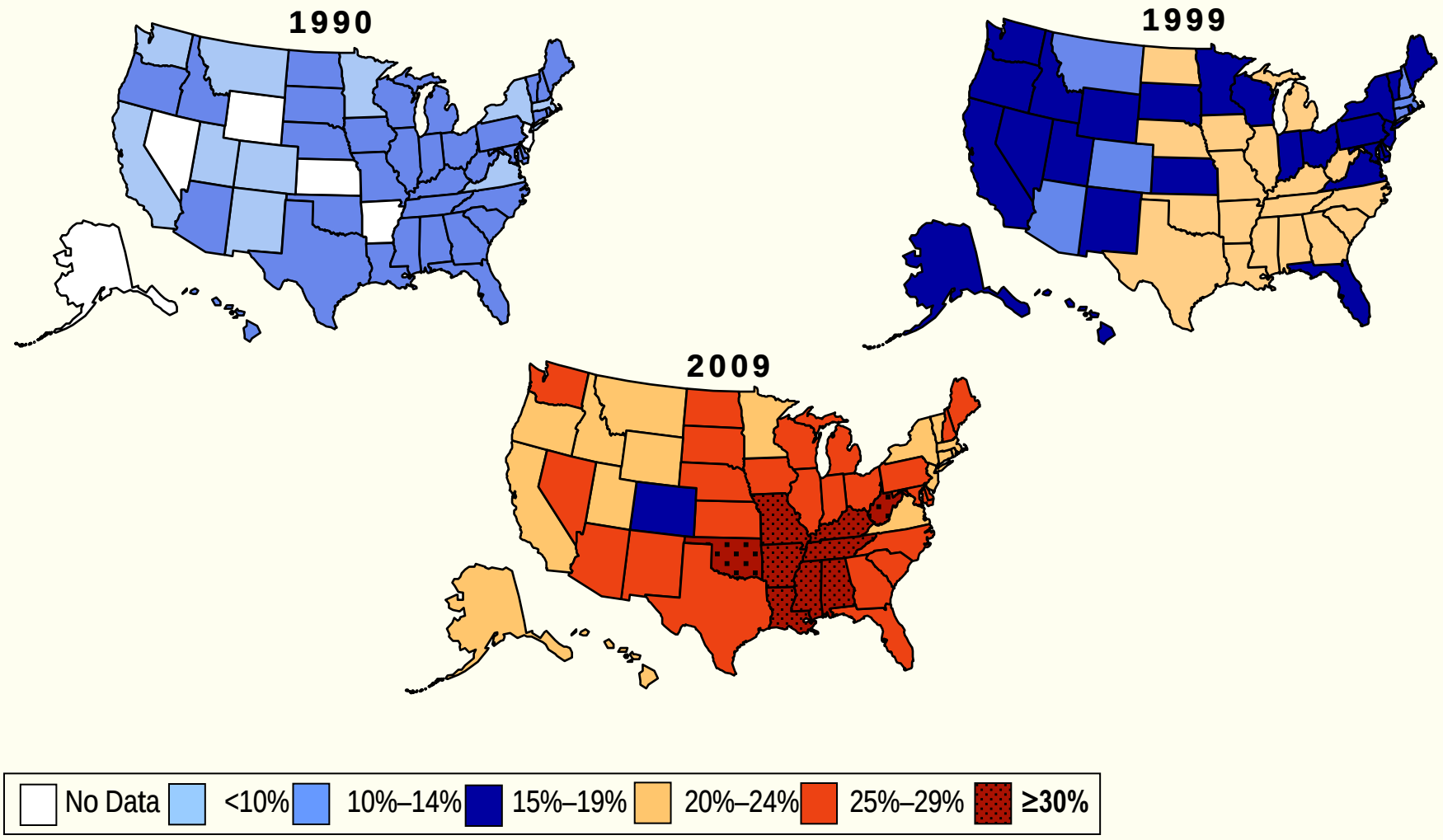
- By 1999, no state had prevalence less than 10%, eighteen states had a prevalence of obesity between 20-24%, and no state had prevalence equal to or greater than 25%.

- In 2009, only one state (Colorado) and the District of Columbia had a prevalence of obesity less than 20%. Thirty-three states had a prevalence equal to or greater than 25%; nine of these states (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee, and West Virginia) had a prevalence of obesity equal to or greater than 30%.

Obesity Trends* Among U.S. Adults

BRFSS, 1990, 1999, 2009

(*BMI ≥30, or about 30 lbs. overweight for 5'4" person)

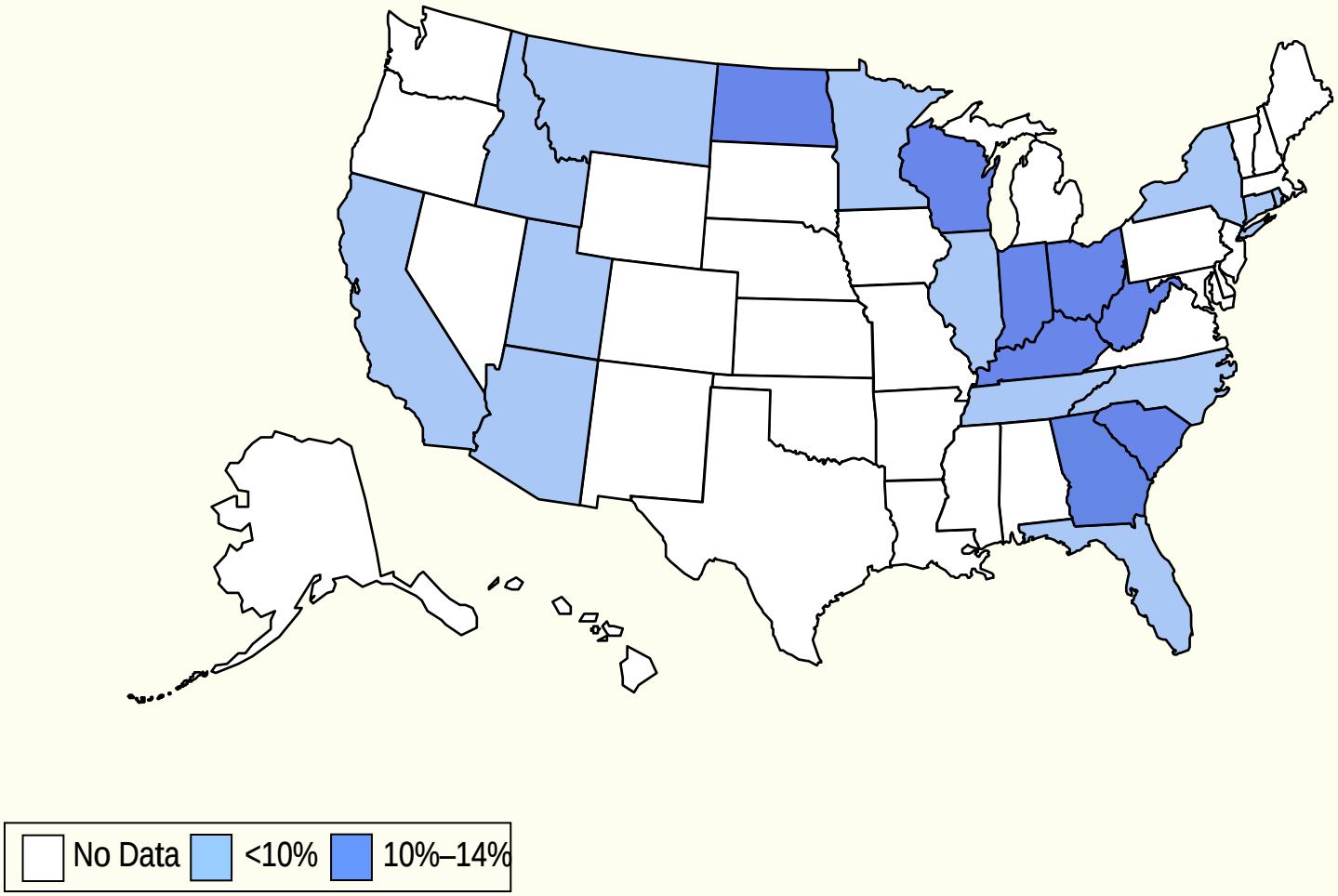


SmartCode

Obesity Trends* Among U.S. Adults

BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1986

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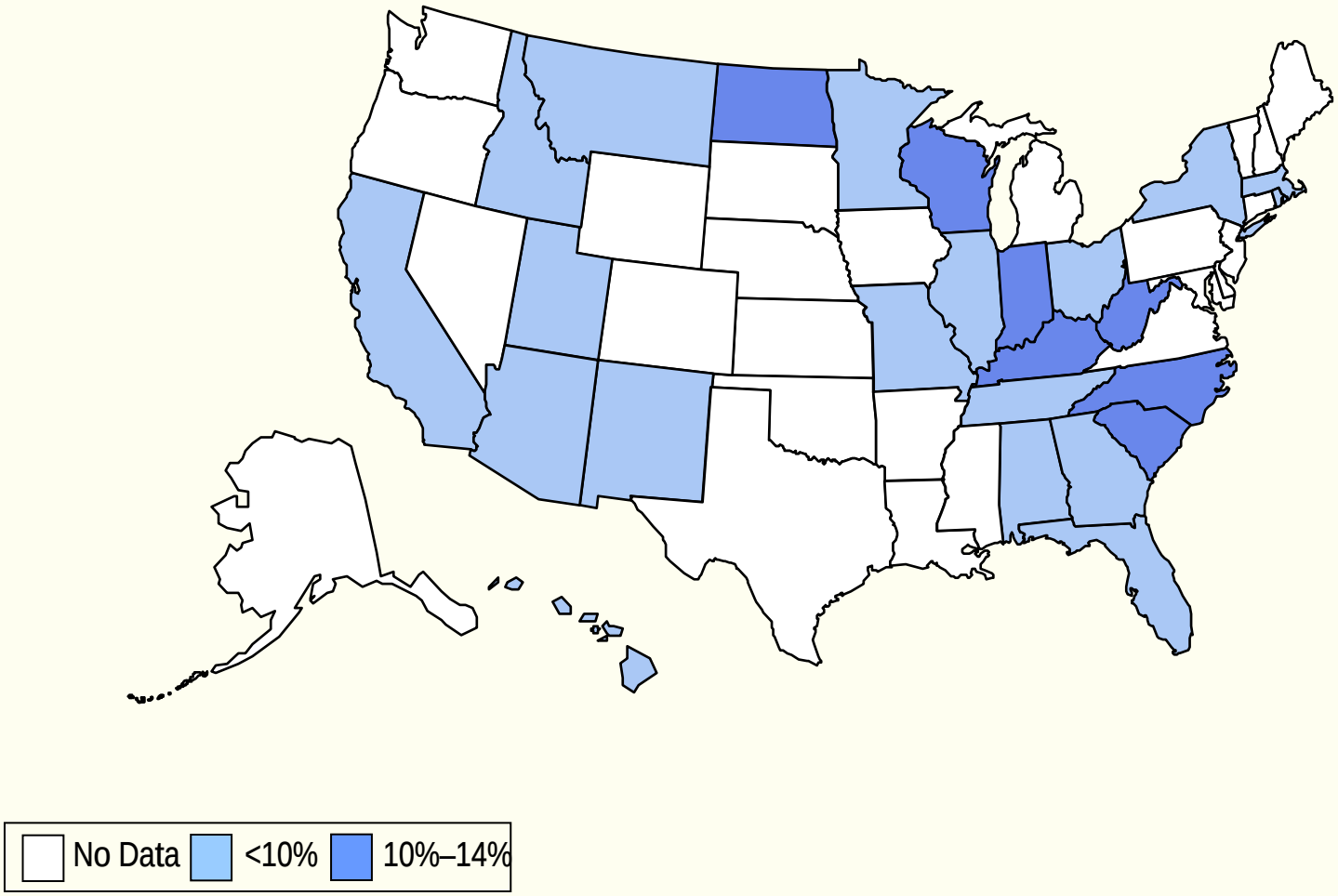
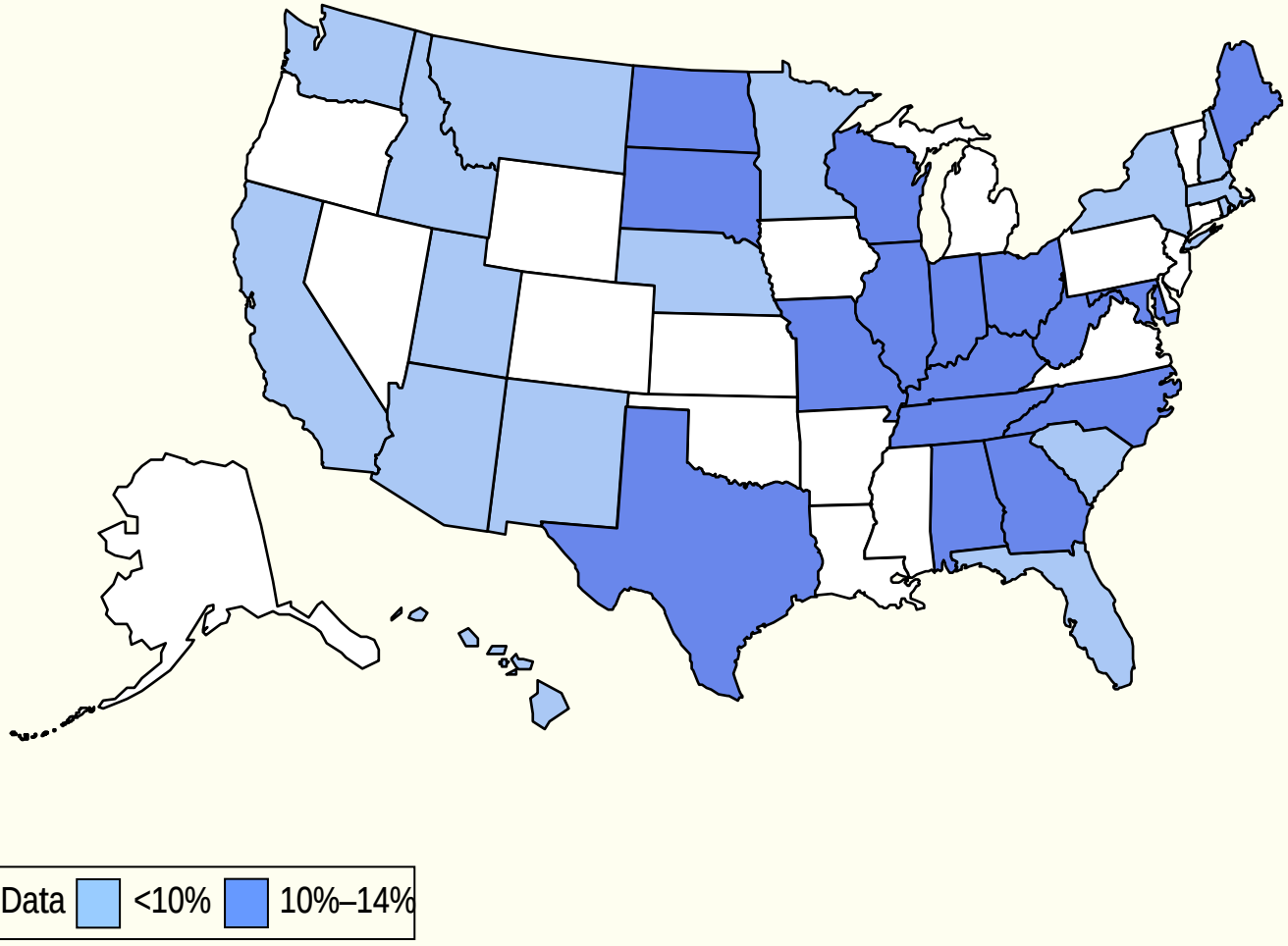


Obesity Trends* Among U.S. Adults

BRFSS, 1987

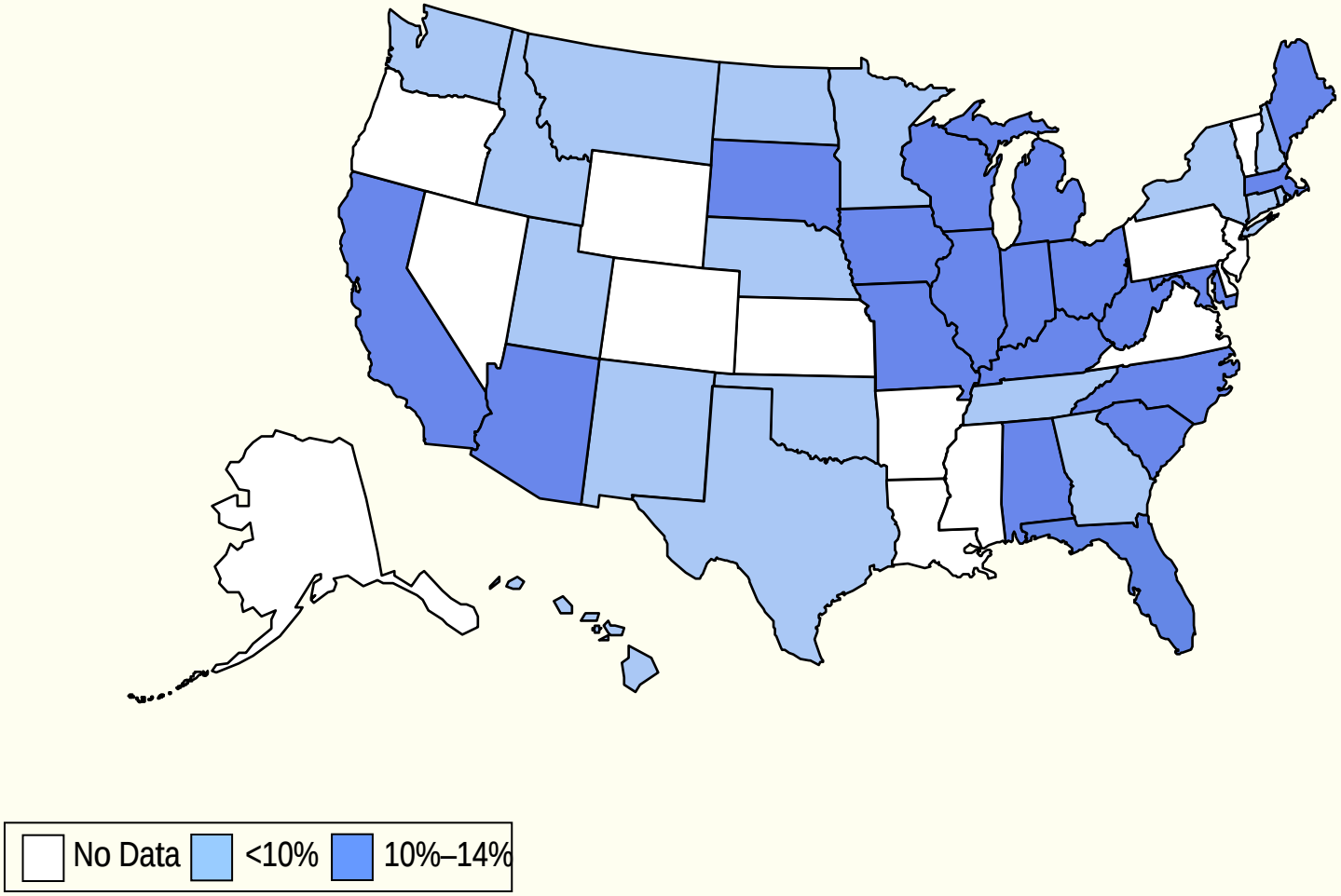
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1988

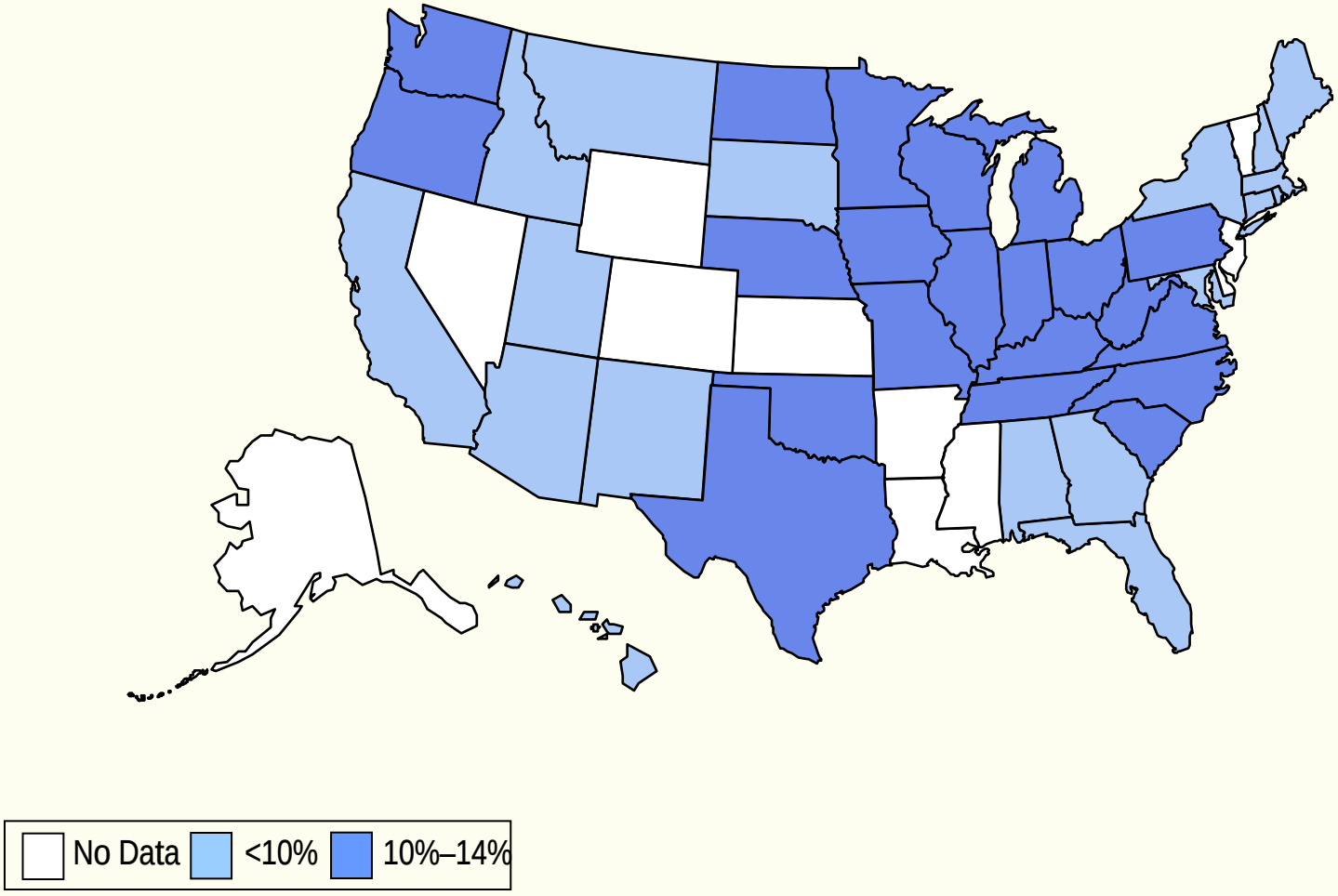
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1989

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1990

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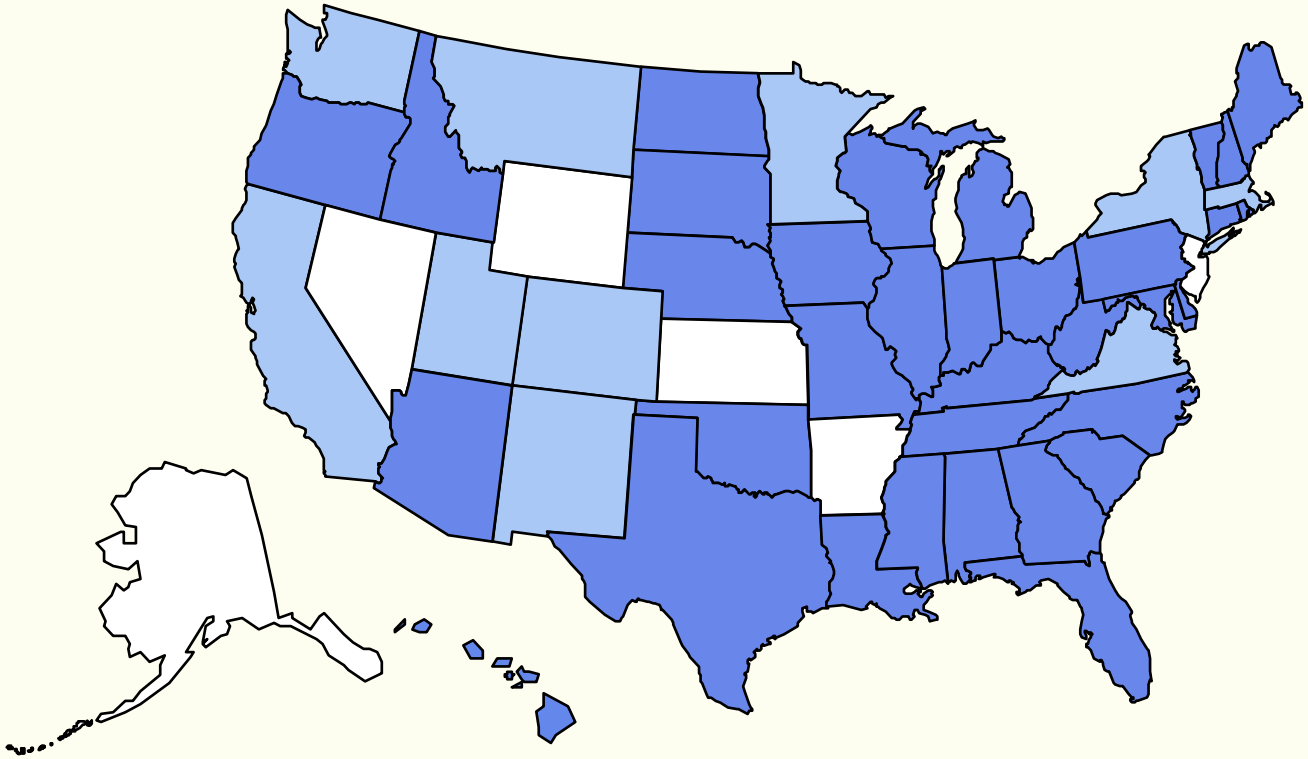
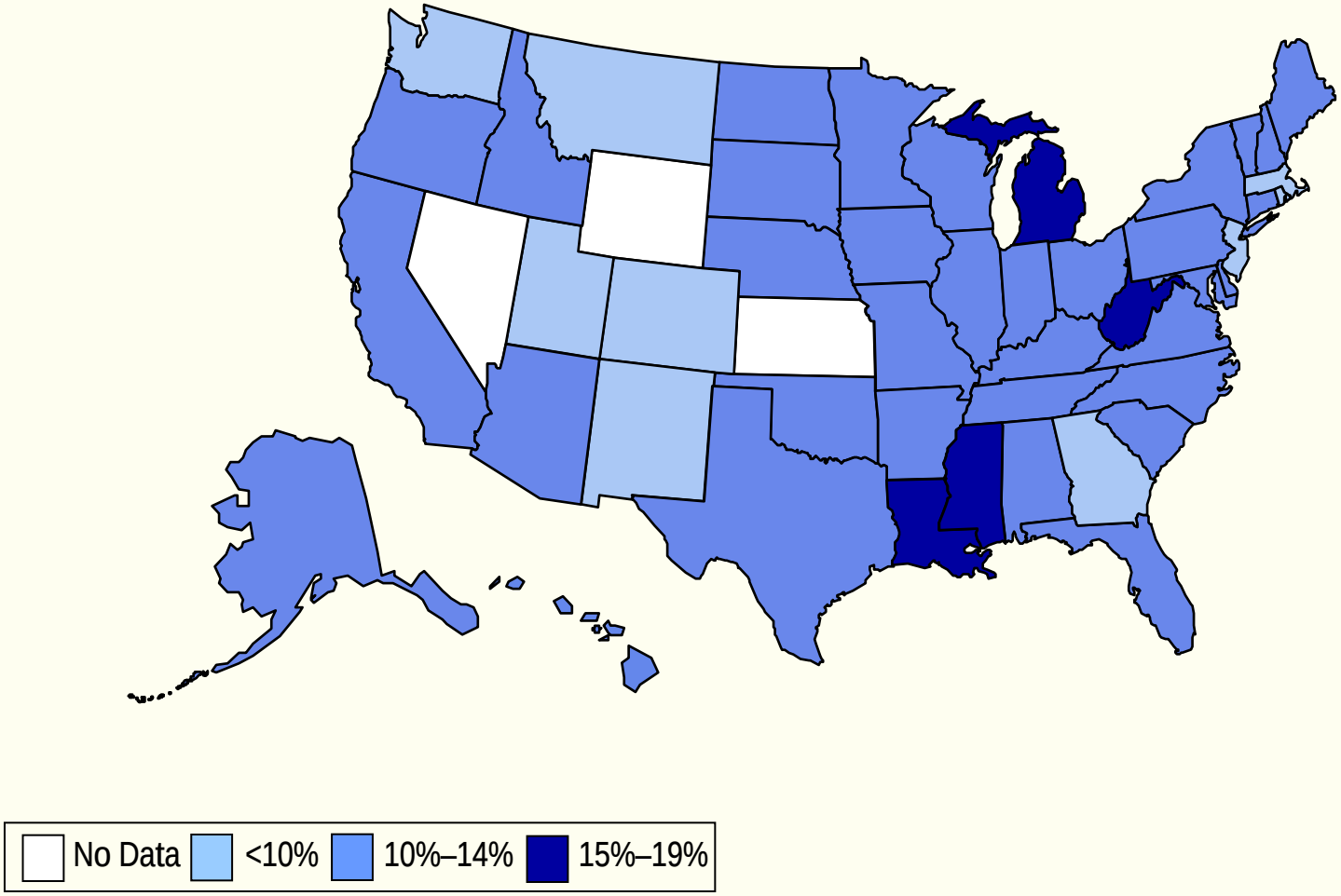


No Data | <10% | 10%–14%

Obesity Trends* Among U.S. Adults

BRFSS, 1991

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1992

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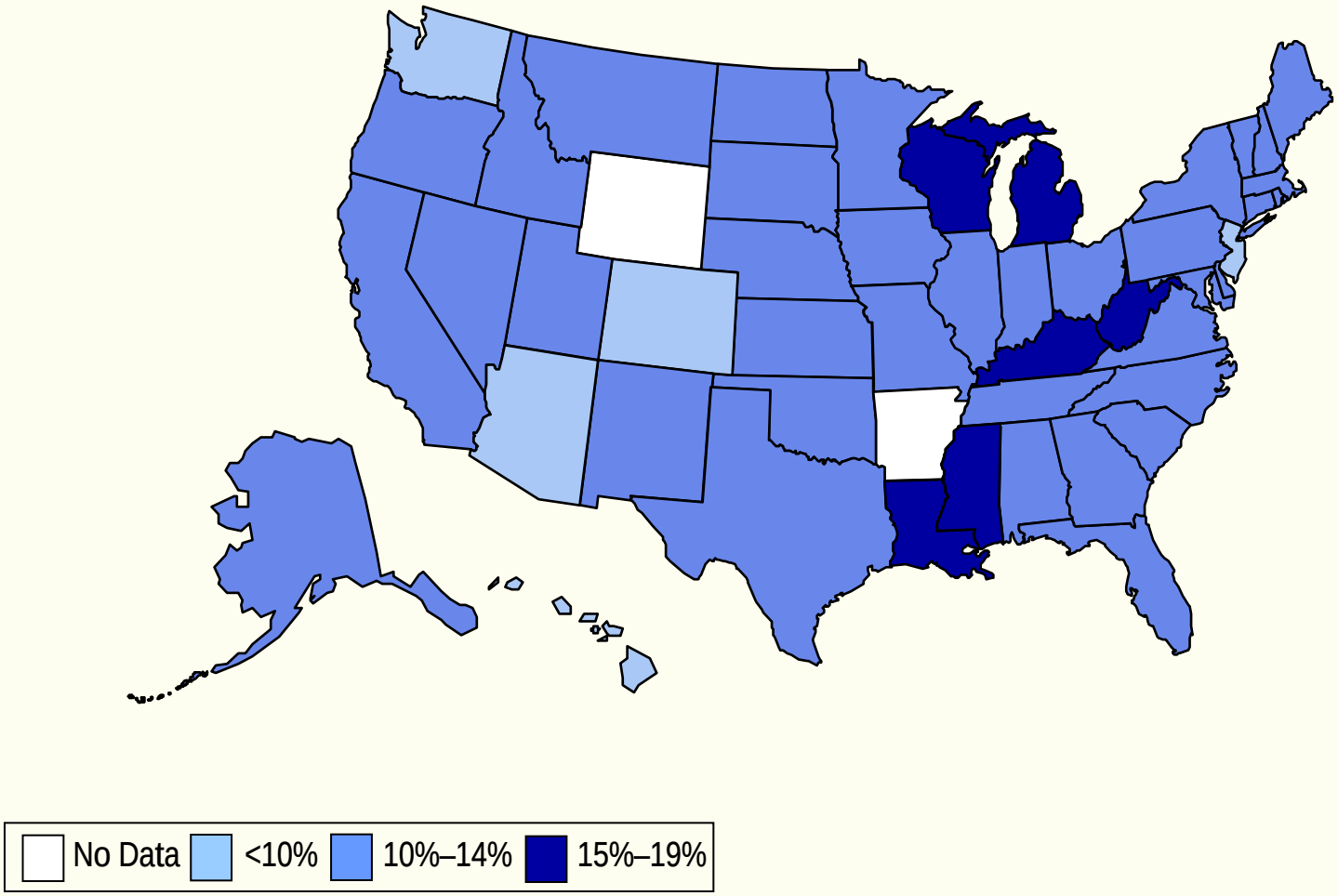

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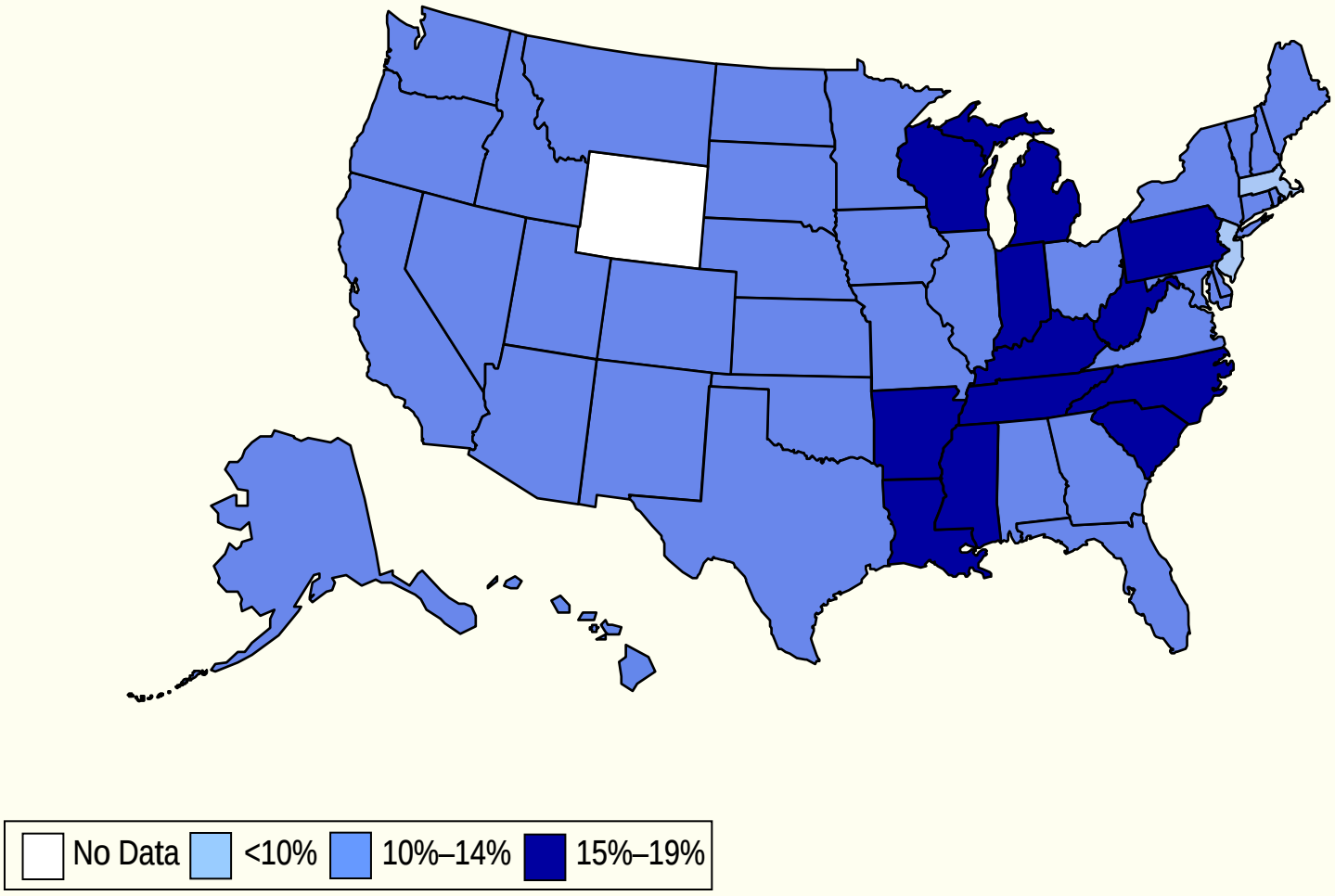
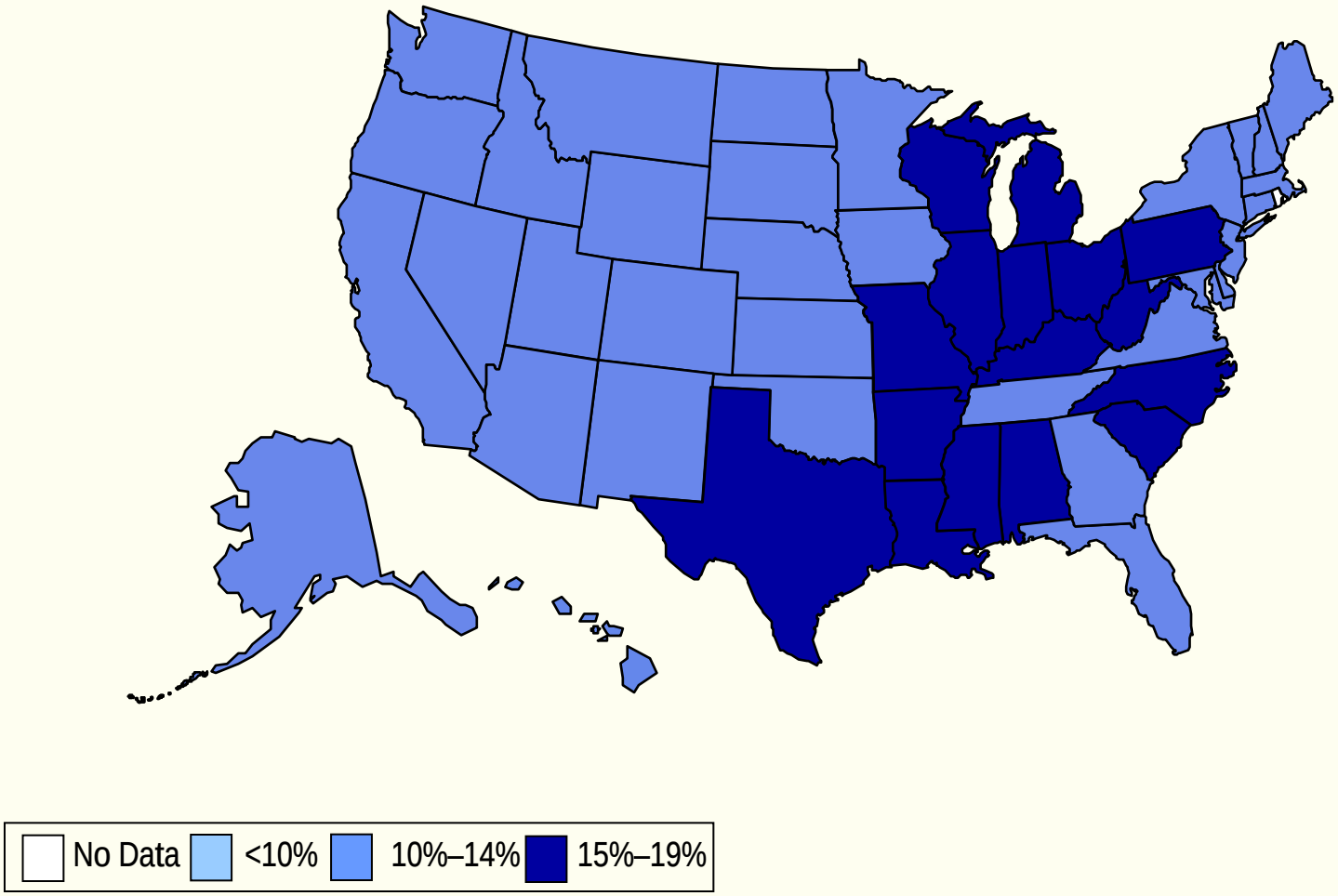


Obesity Trends* Among U.S. Adults

BRFSS, 1994

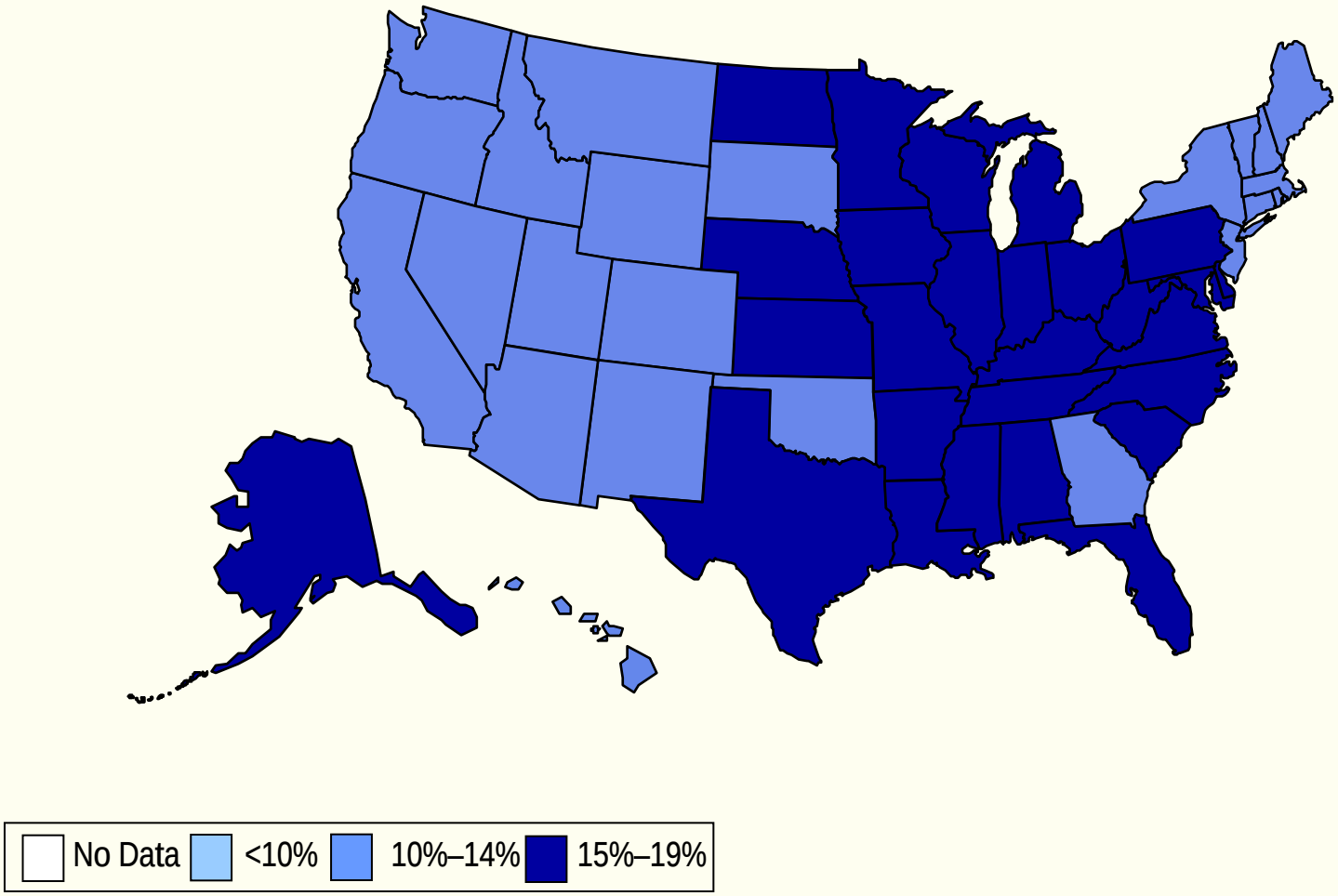
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1995

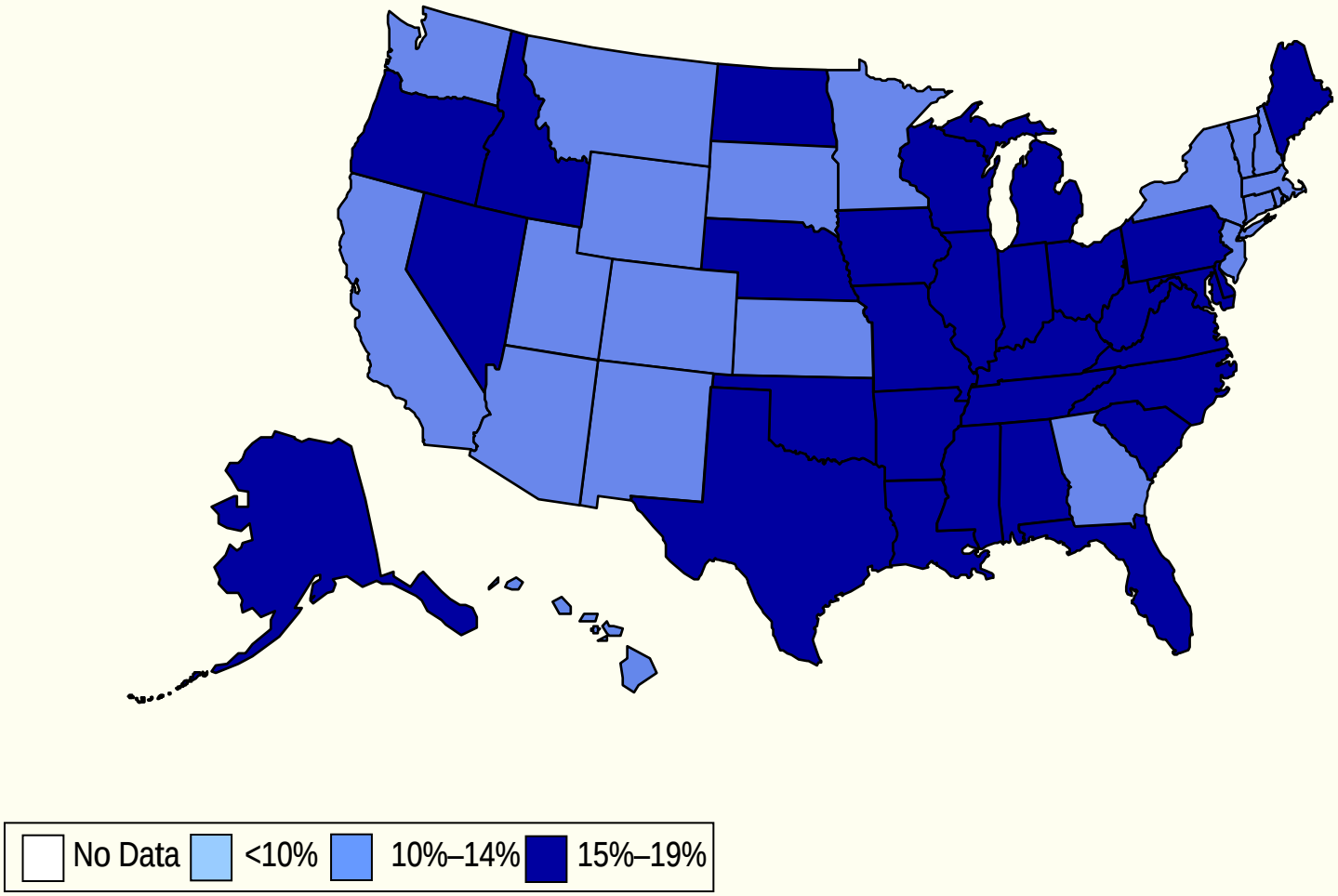
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1996

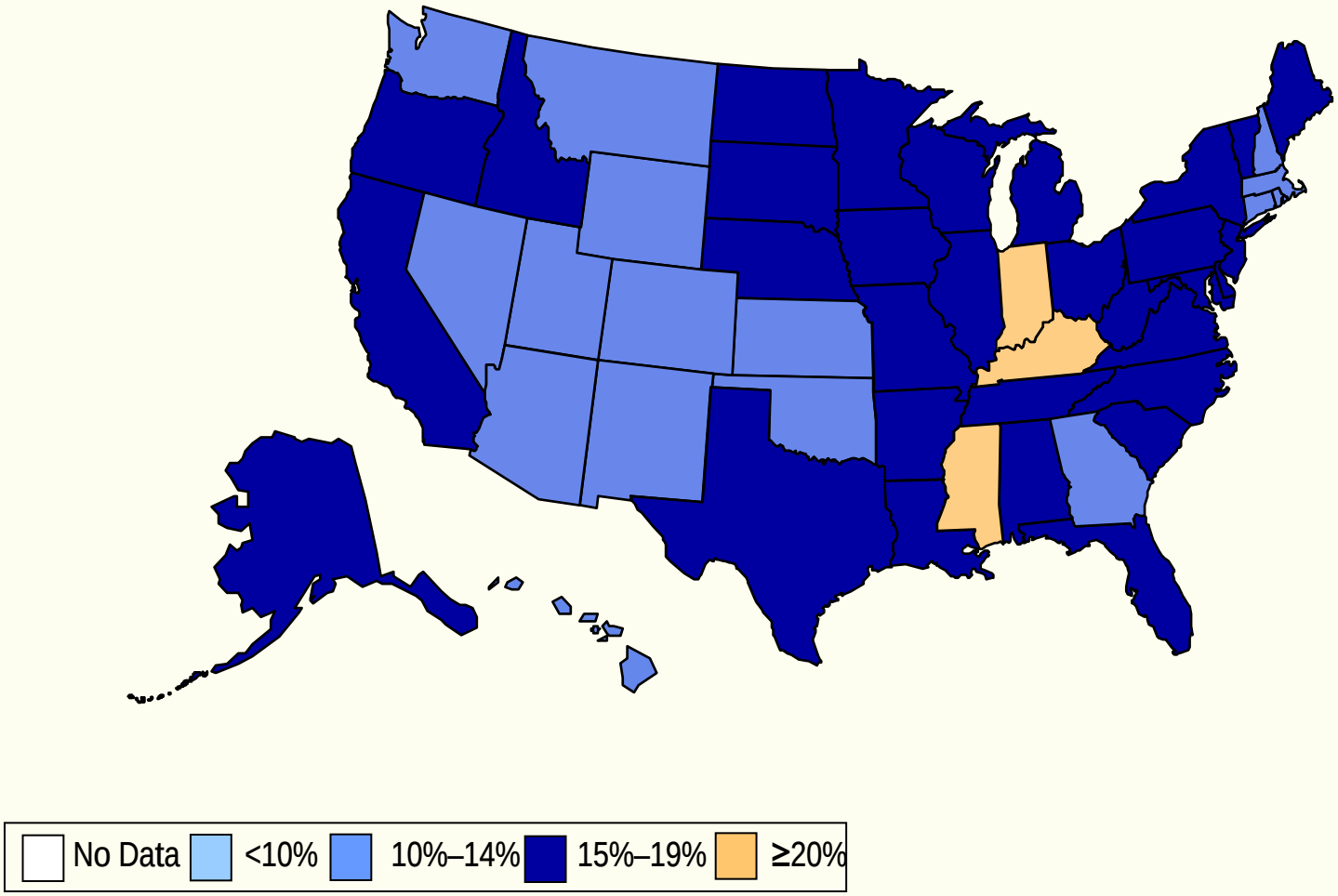
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1997

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 1998

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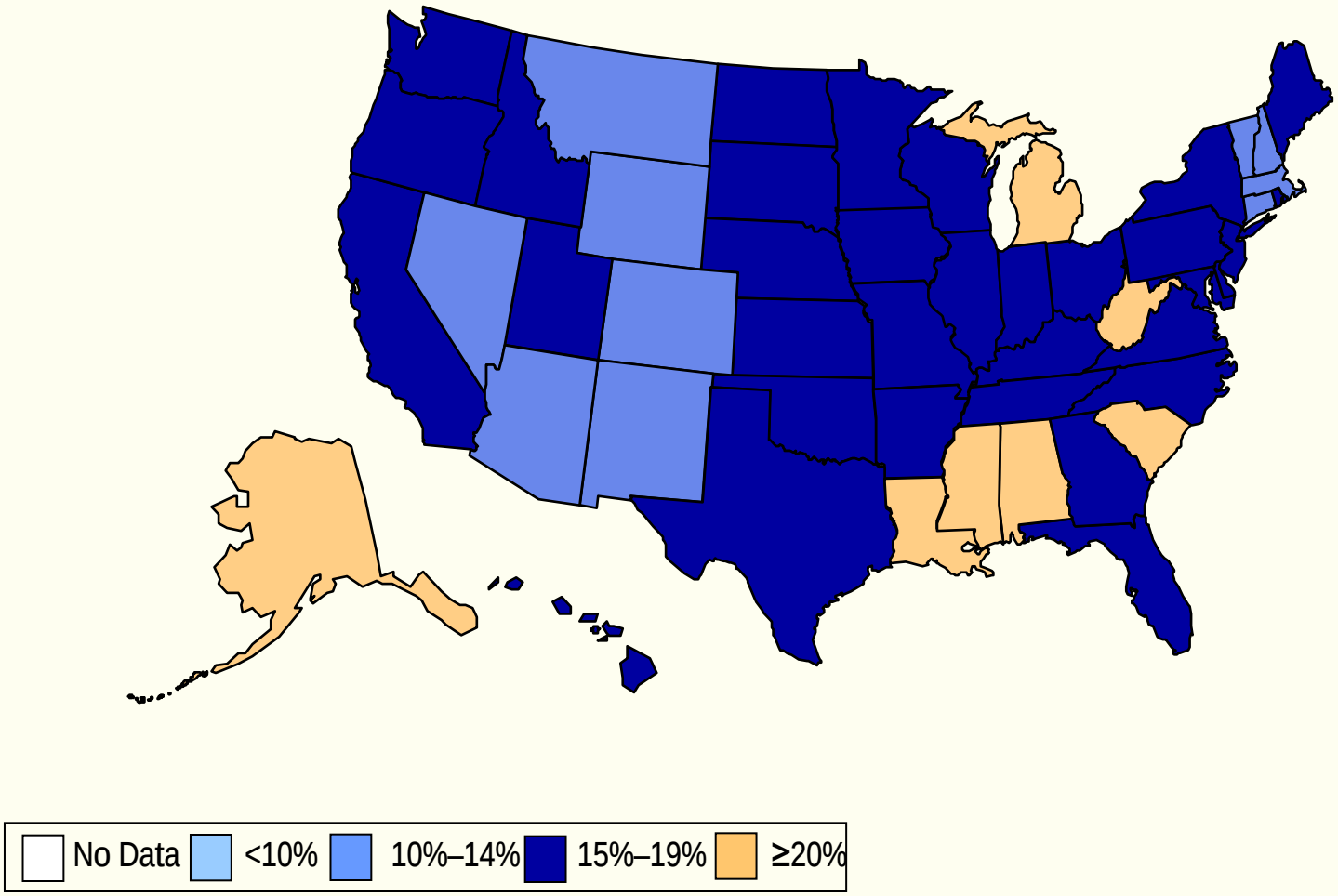
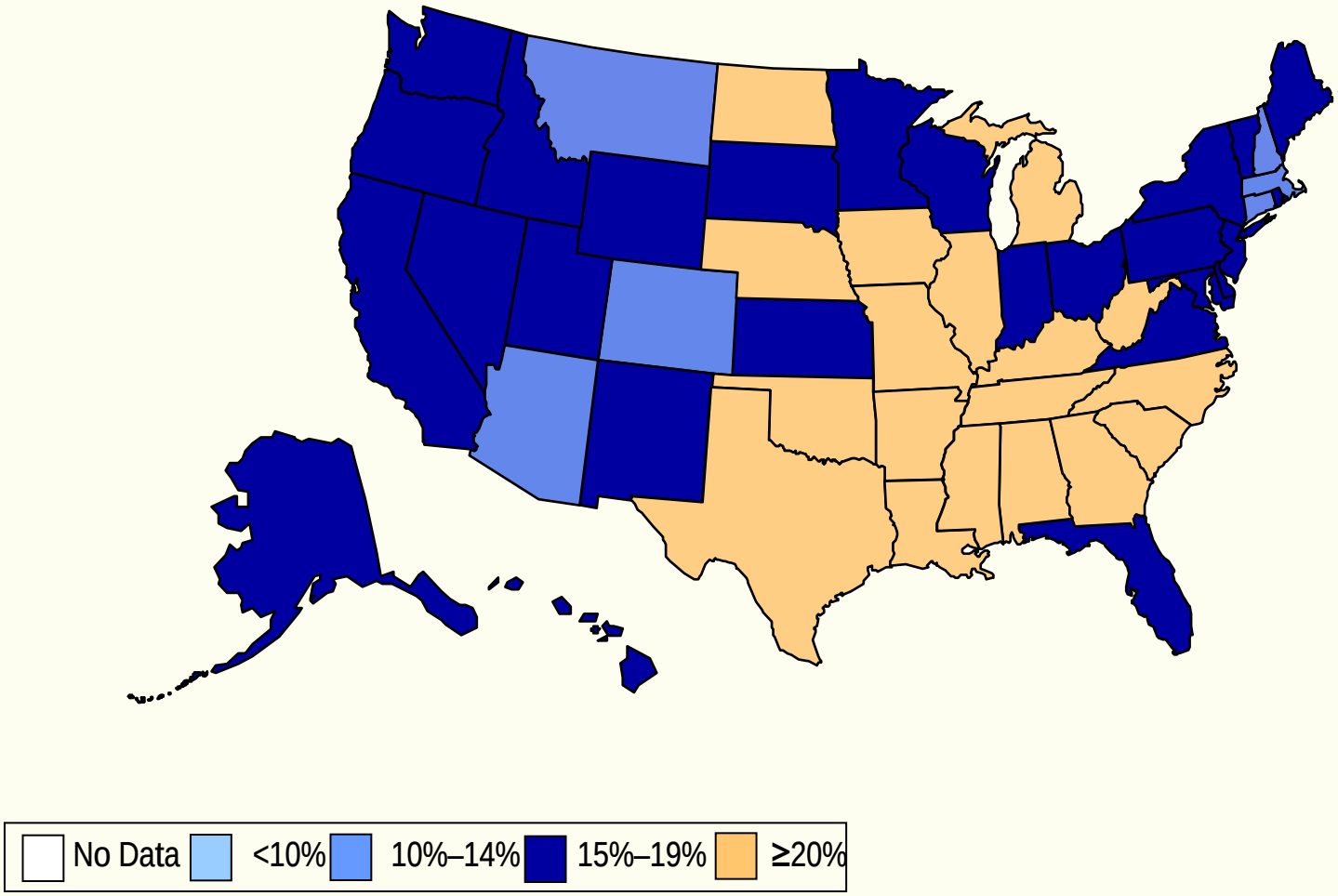


Obesity Trends* Among U.S. Adults

BRFSS, 1999

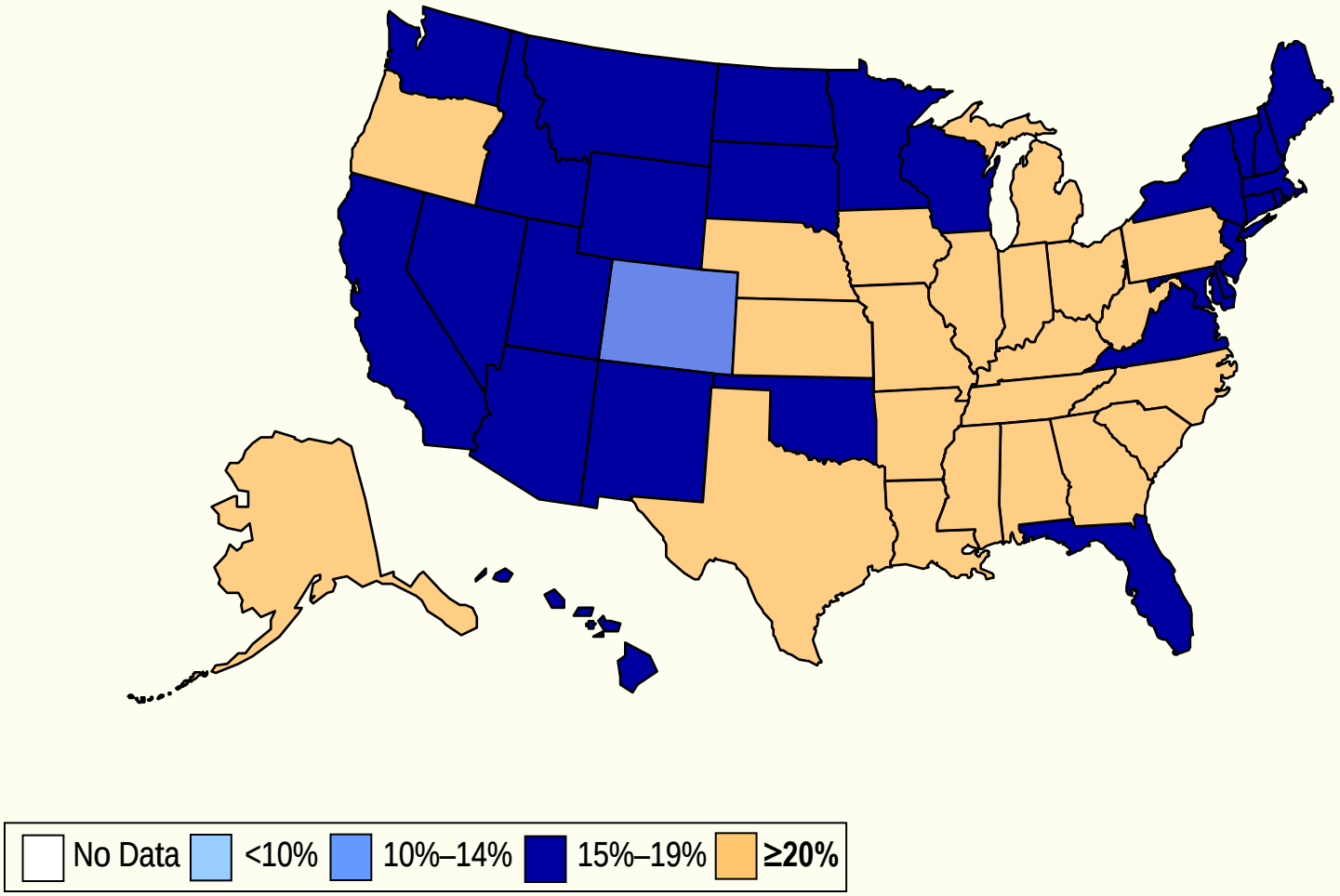
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 2000

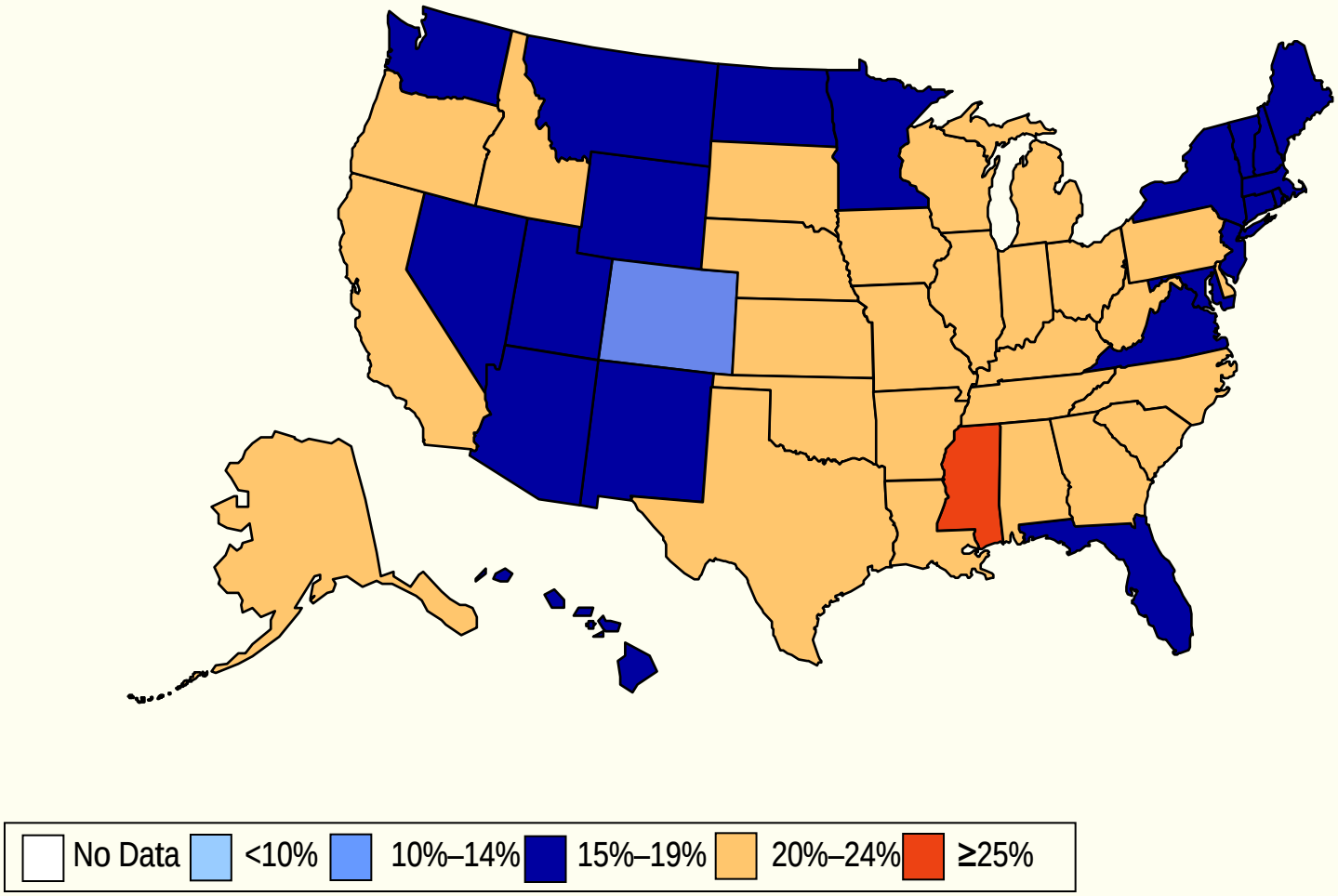
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 2001

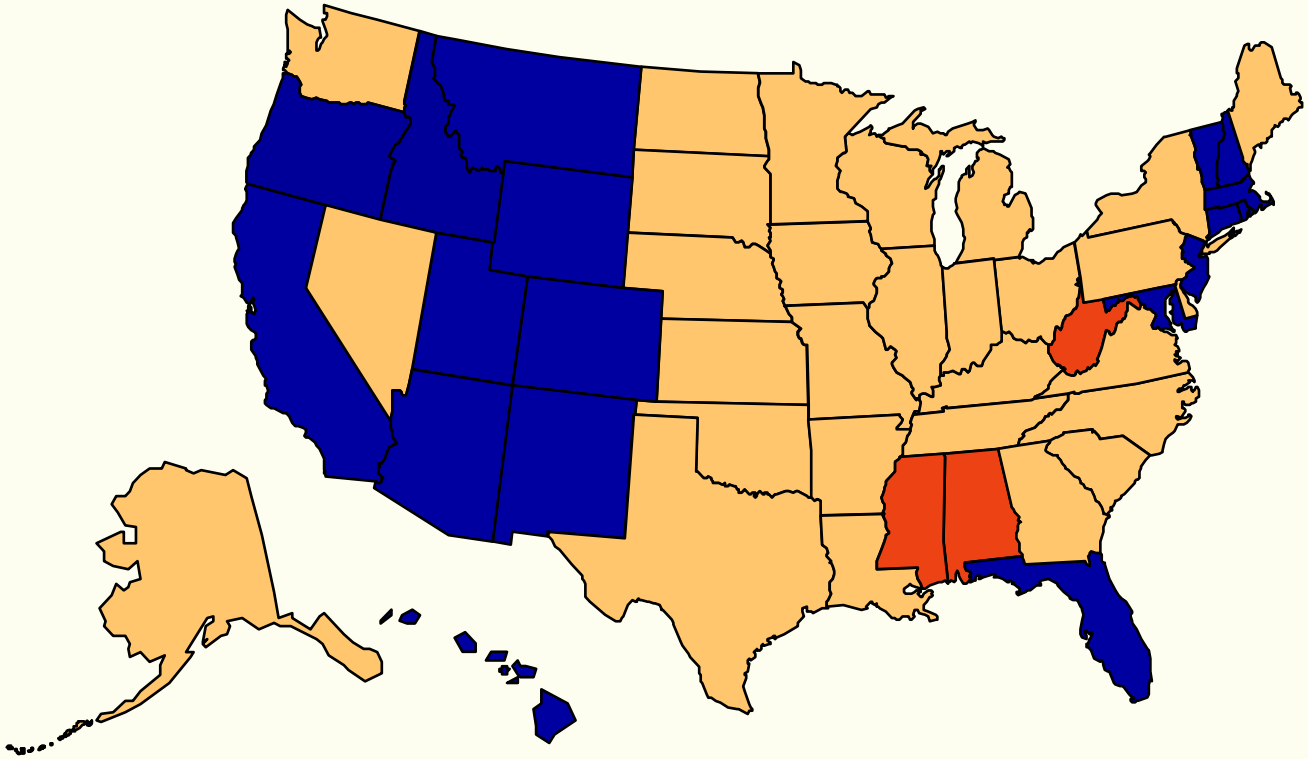
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 2002

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)

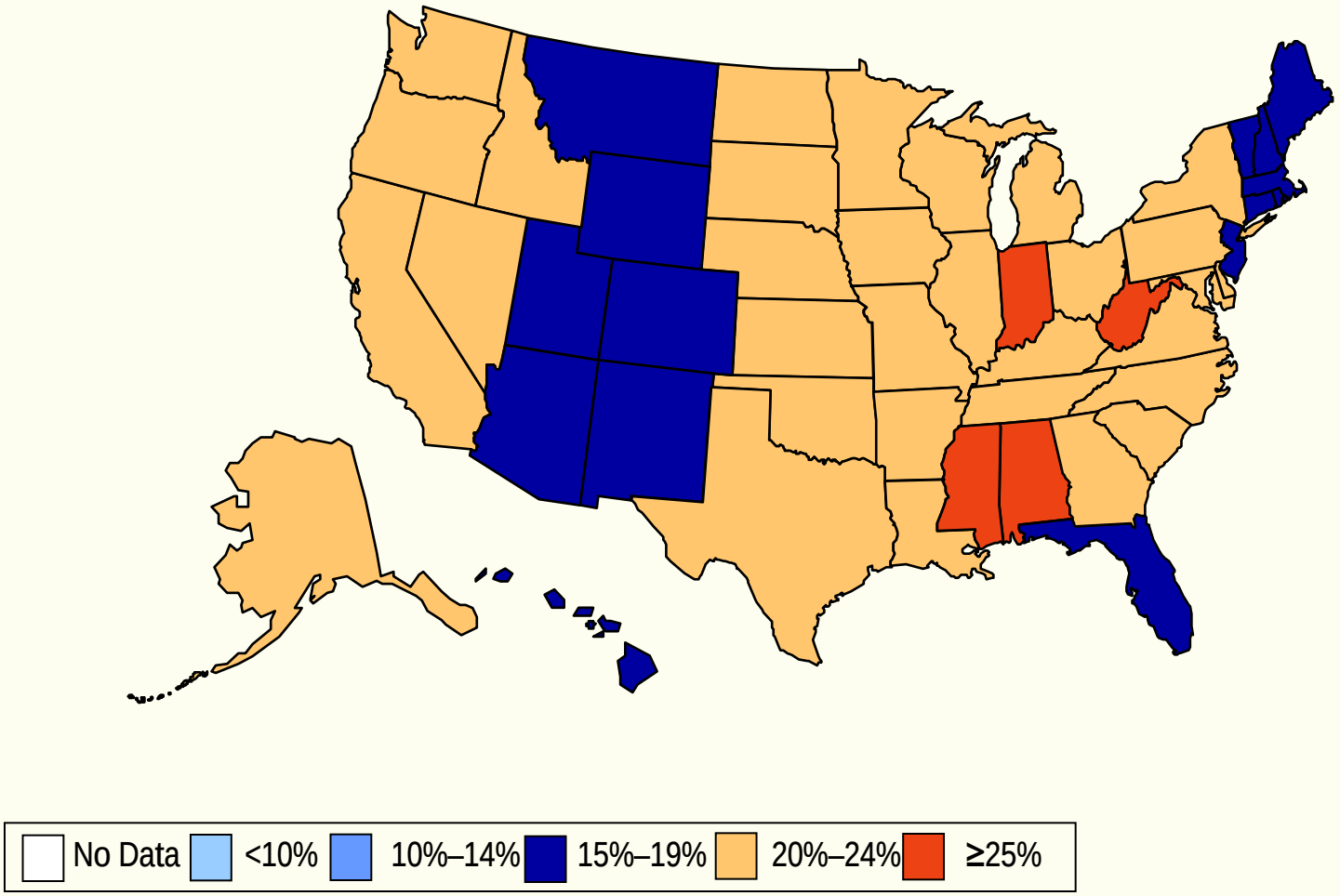


No Data | <10% | 10%–14% | 15%–19% | 20%–24% | ≥25%

Obesity Trends* Among U.S. Adults

BRFSS, 2003

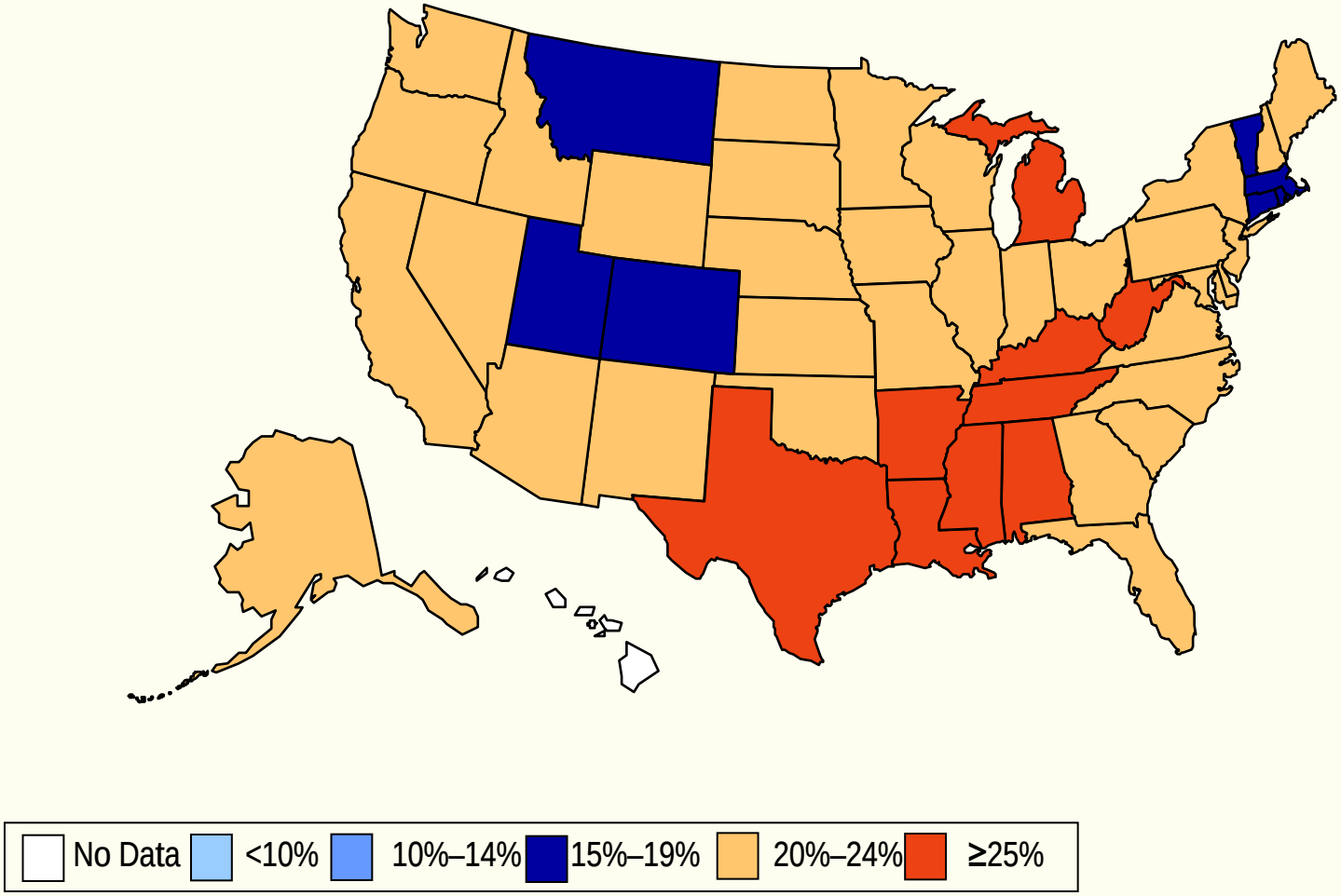
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 2004

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)



Obesity Trends* Among U.S. Adults

BRFSS, 2005

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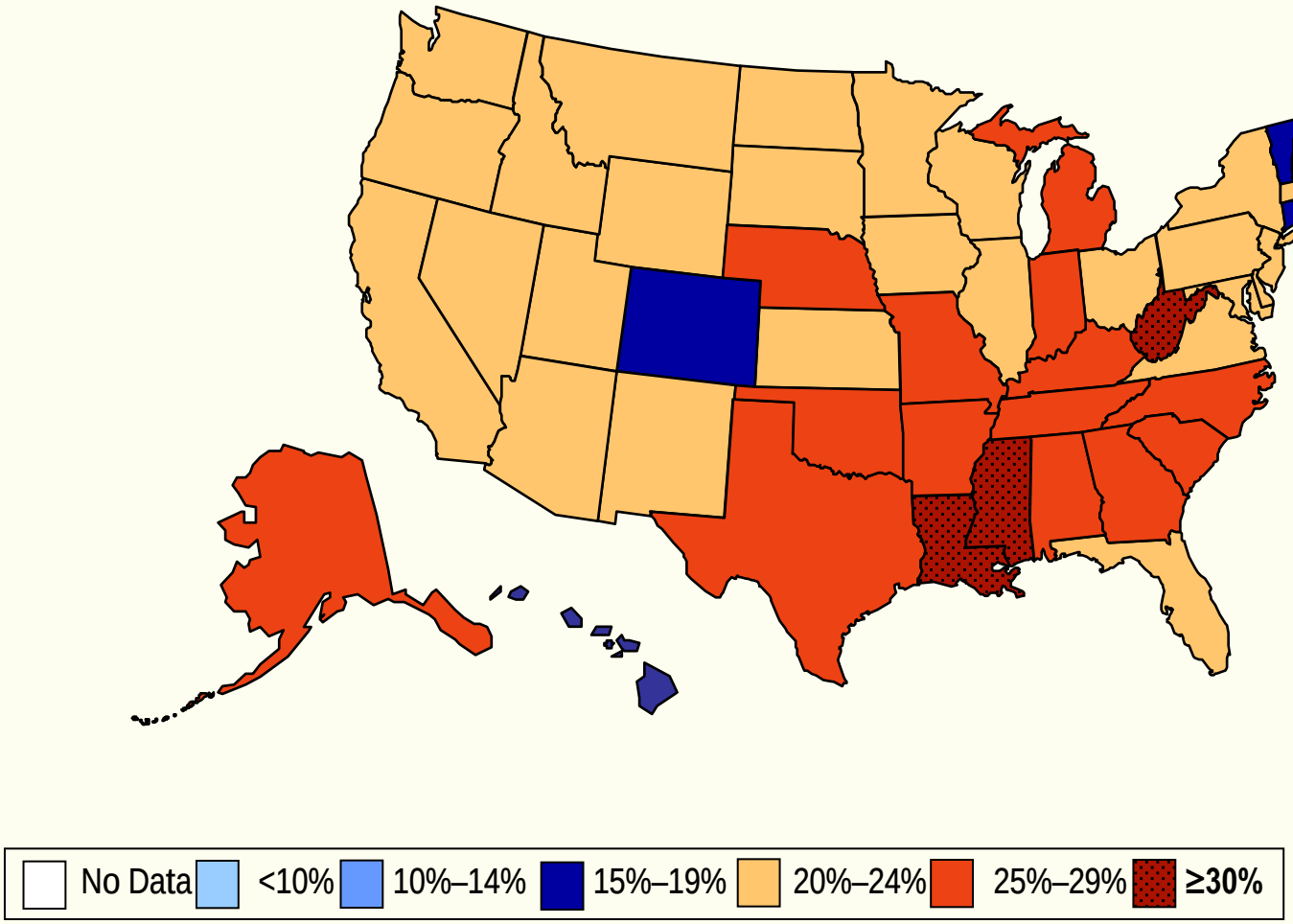

Obesity Trends* Among U.S. Adults

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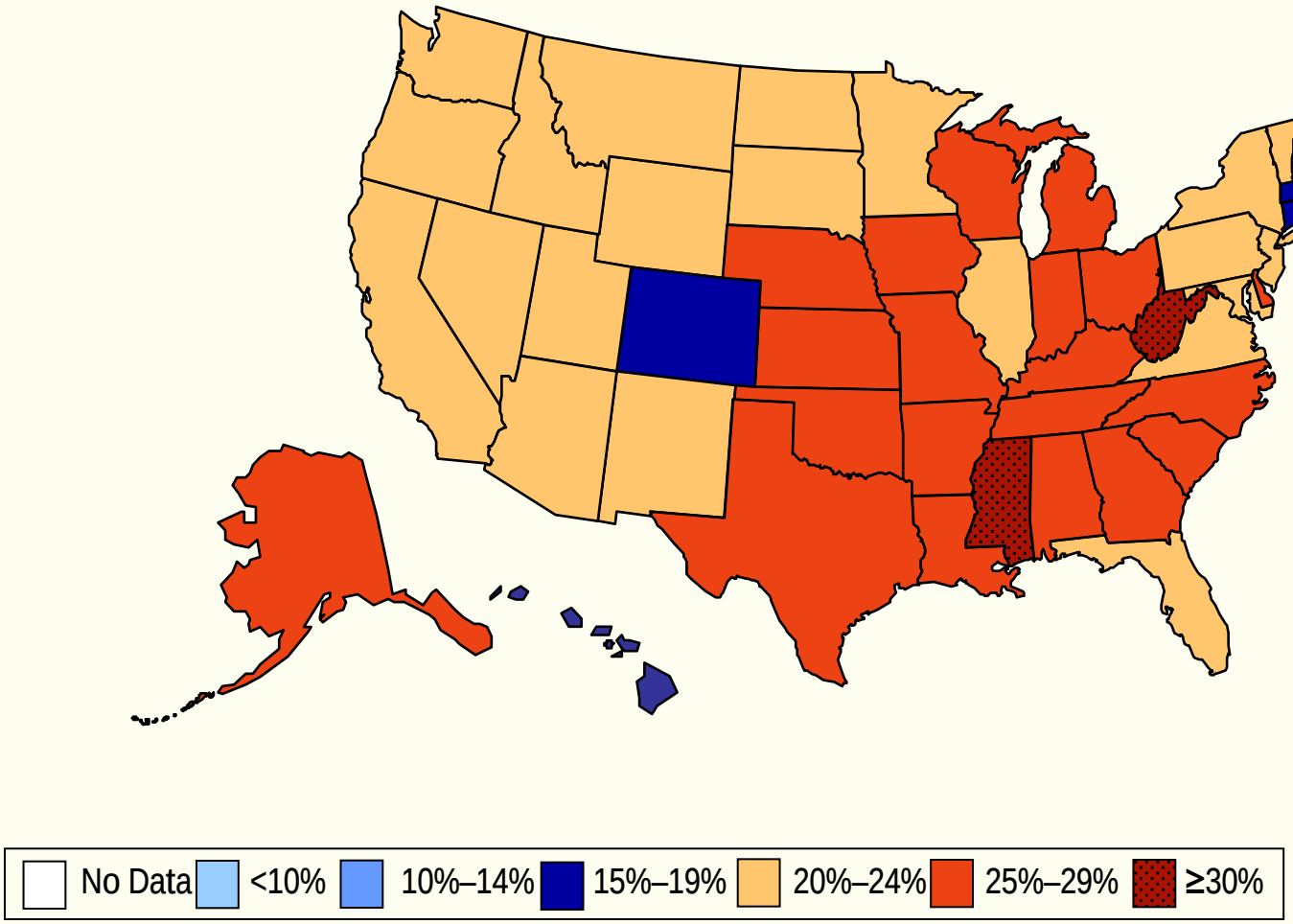

Obesity Trends* Among U.S. Adults

BRFSS, 2007

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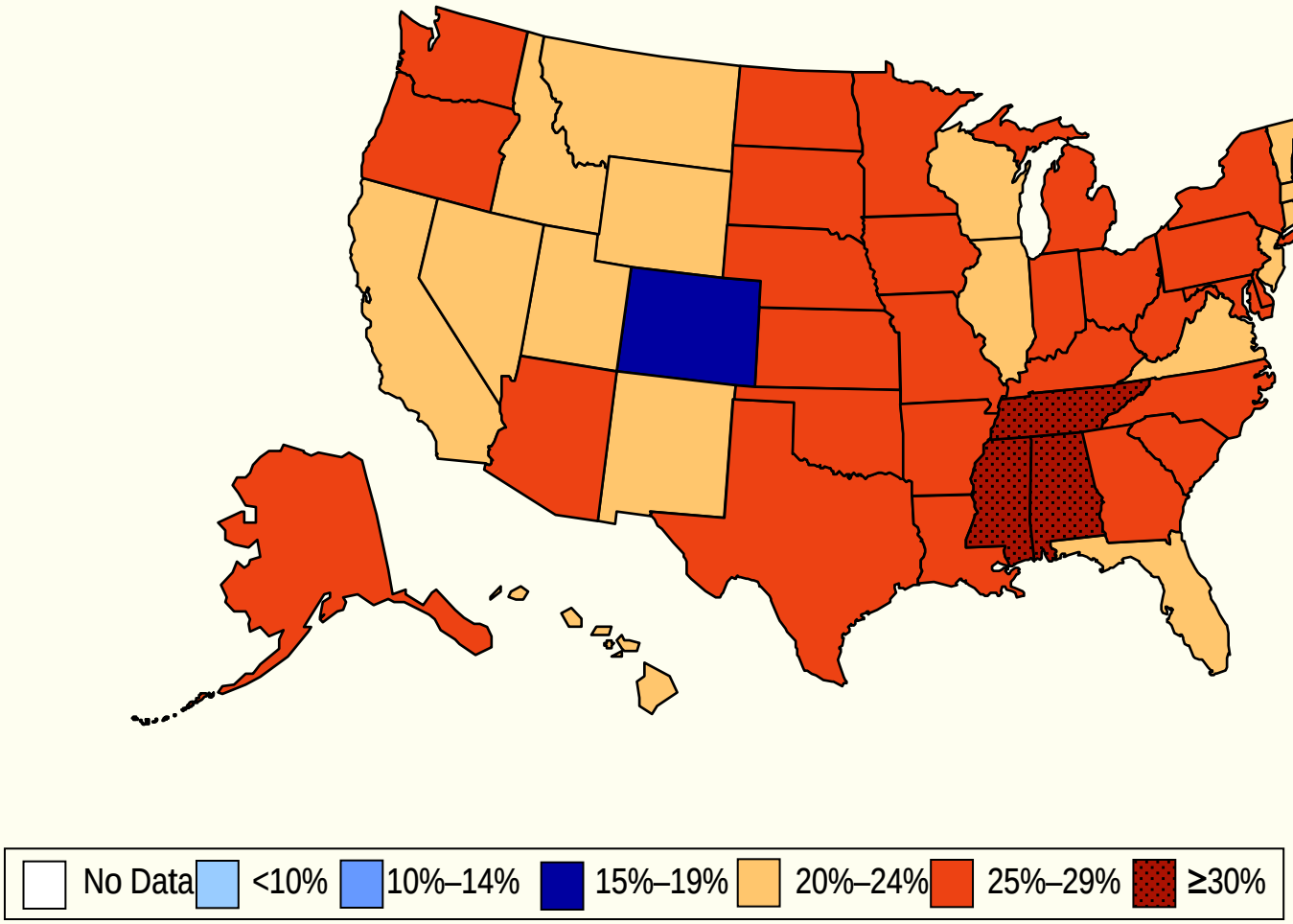

Obesity Trends* Among U.S. Adults

BRFSS, 2008

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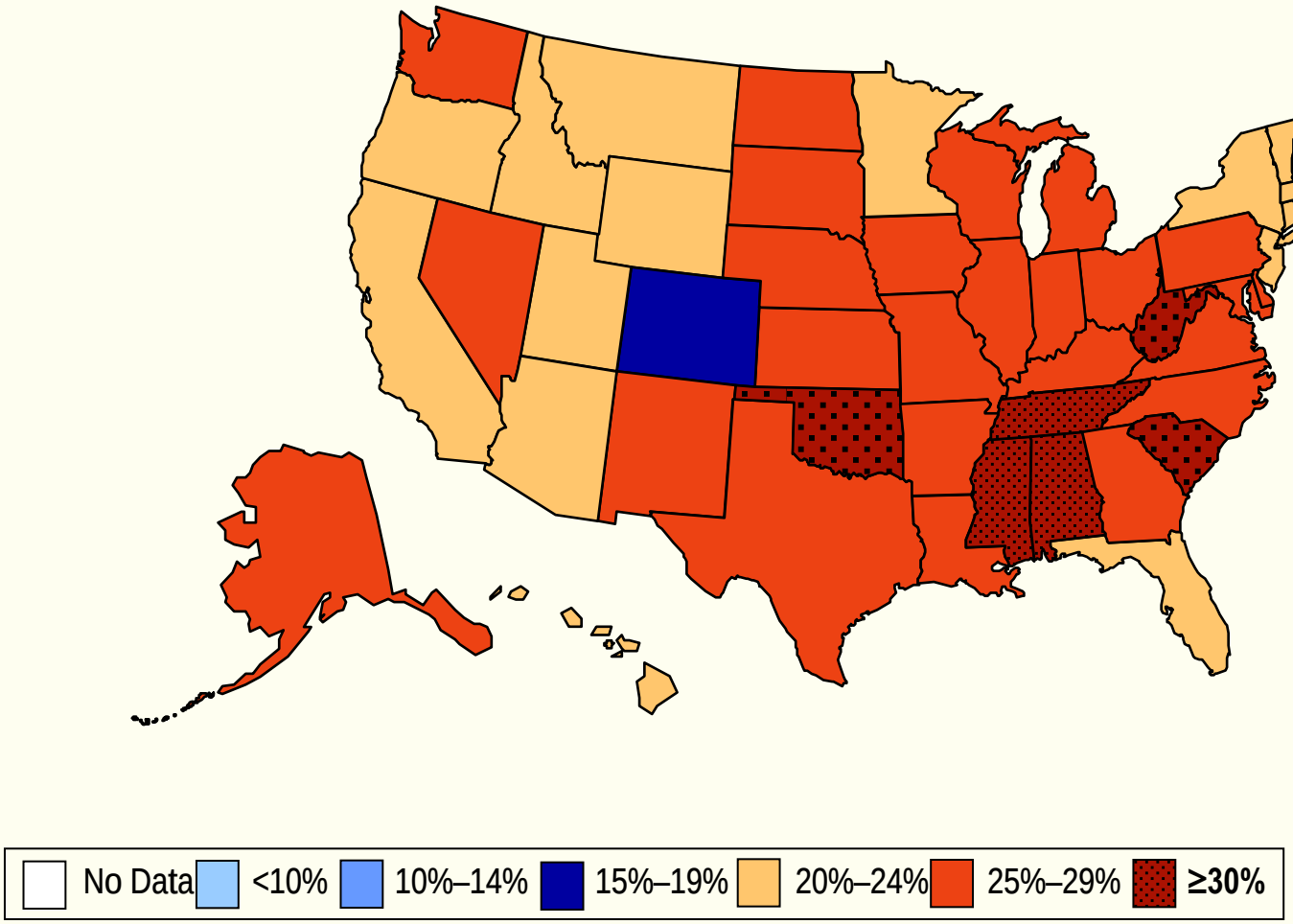

Obesity Trends* Among U.S. Adults

BRFSS, 2009

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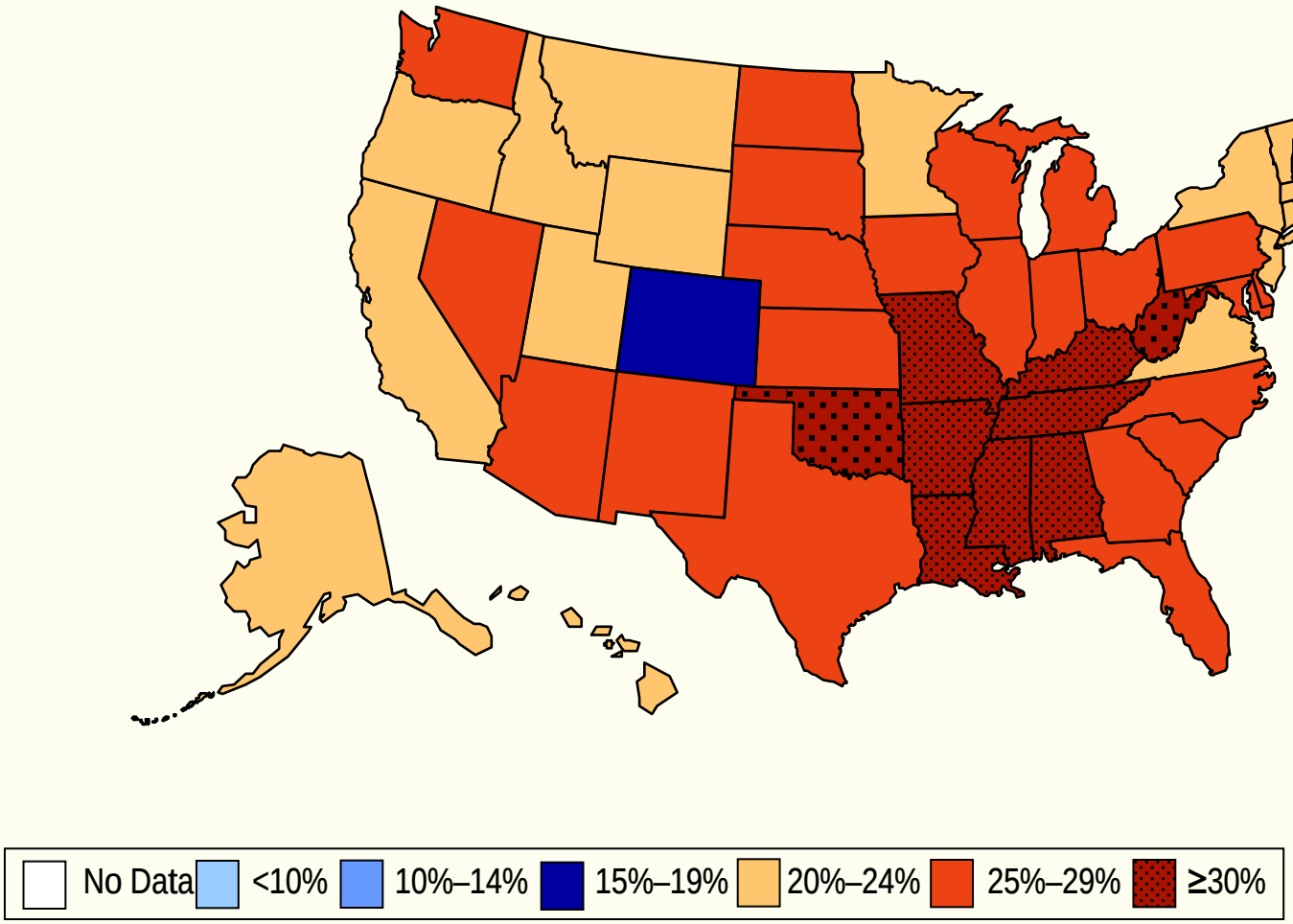
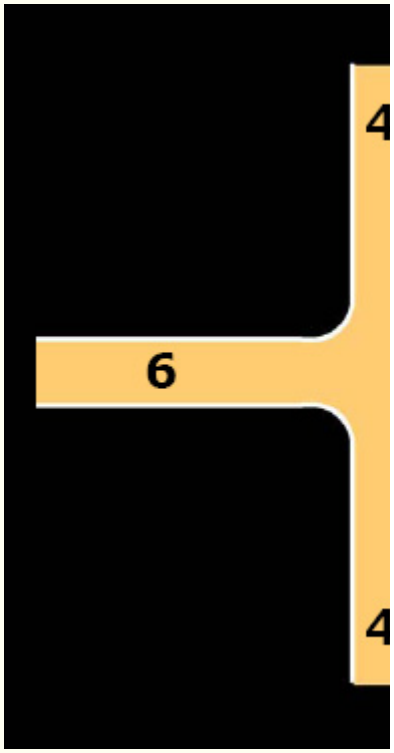


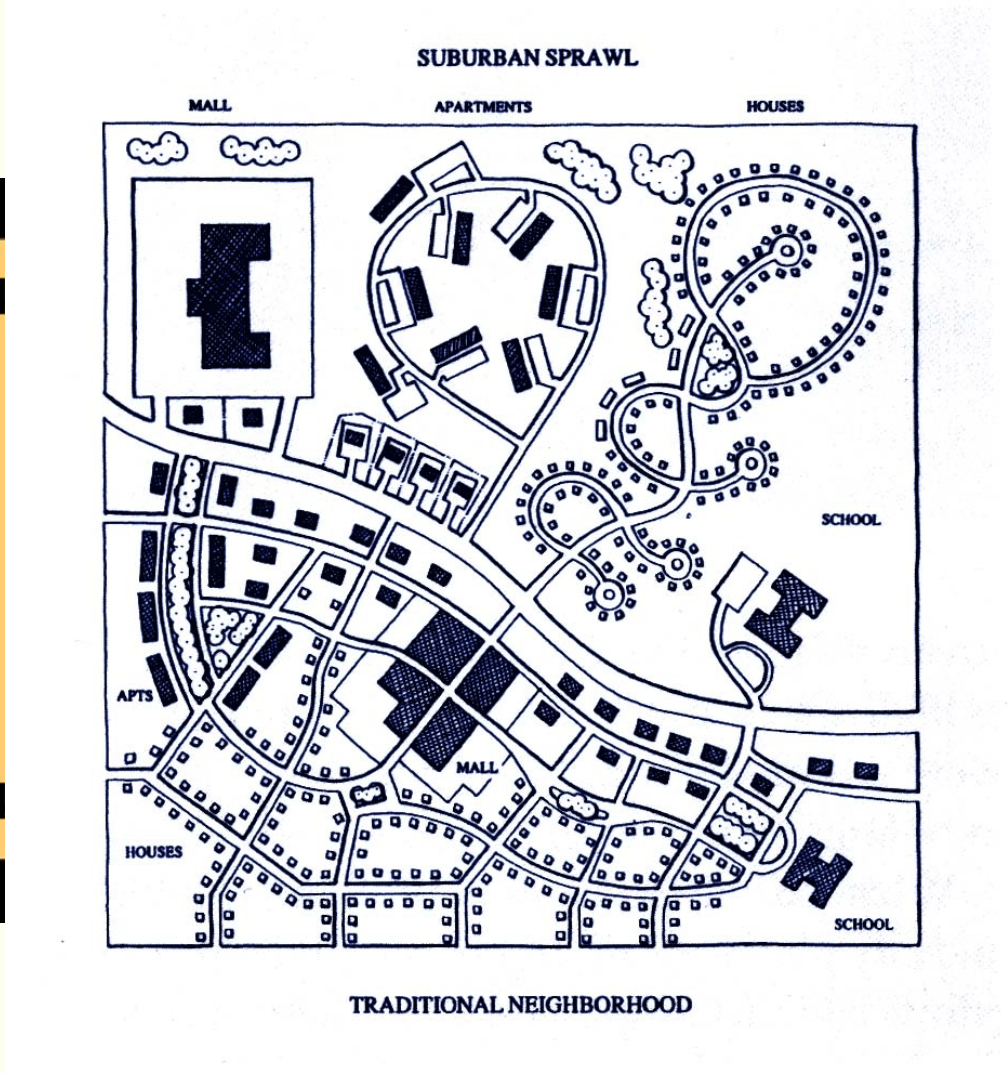
Nearly 3 out of 10 El Paso children overweight (Centers for Disease Control)

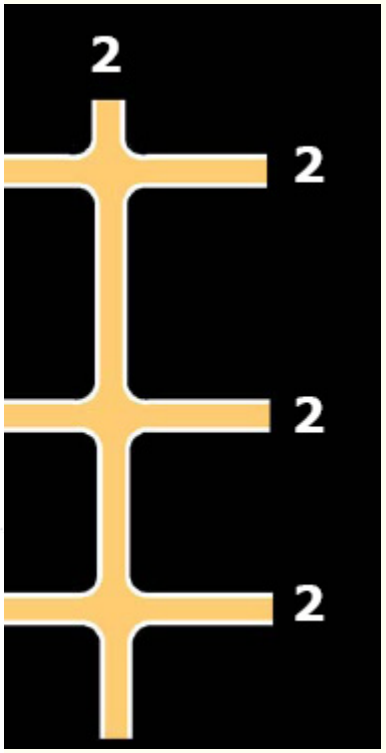
Fundamental Rules for a Traditional Neighborhood

- The center
- Five minute walk
- Street network
- Narrow, versatile streets
- Mixed use
- Special sites for special buildings

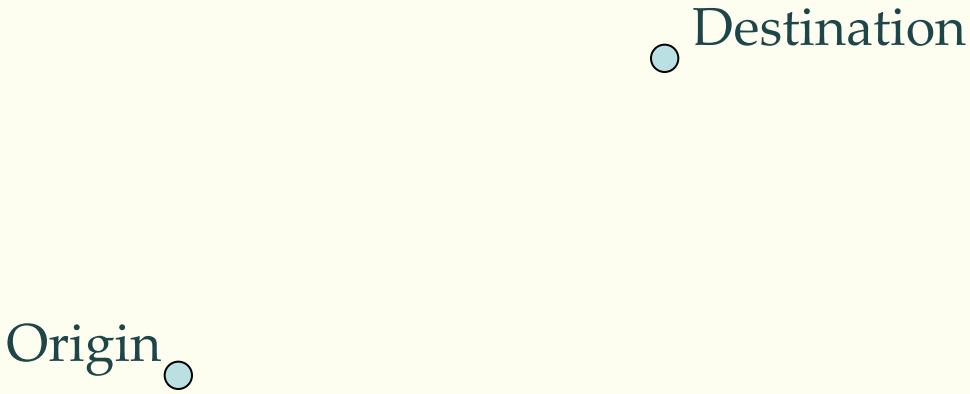
Why Traffic Is Congested





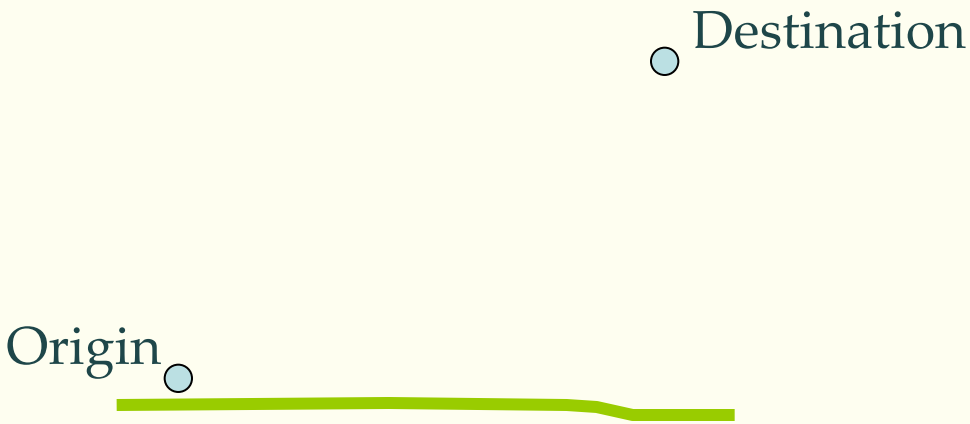


the power of connected streets



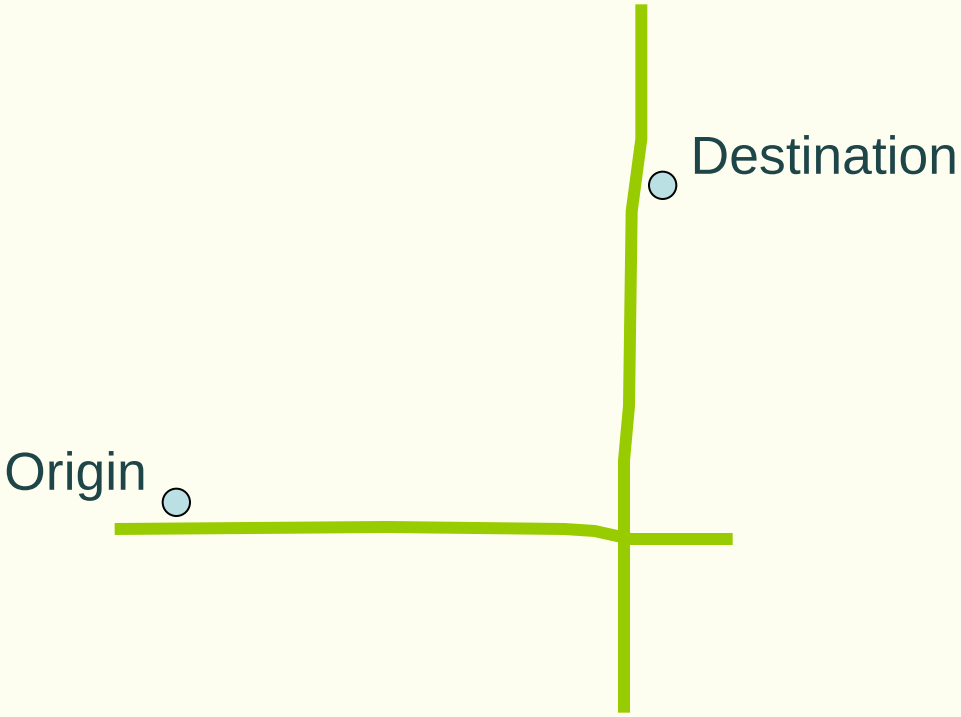
how do we get from here to there?

the power of connected streets



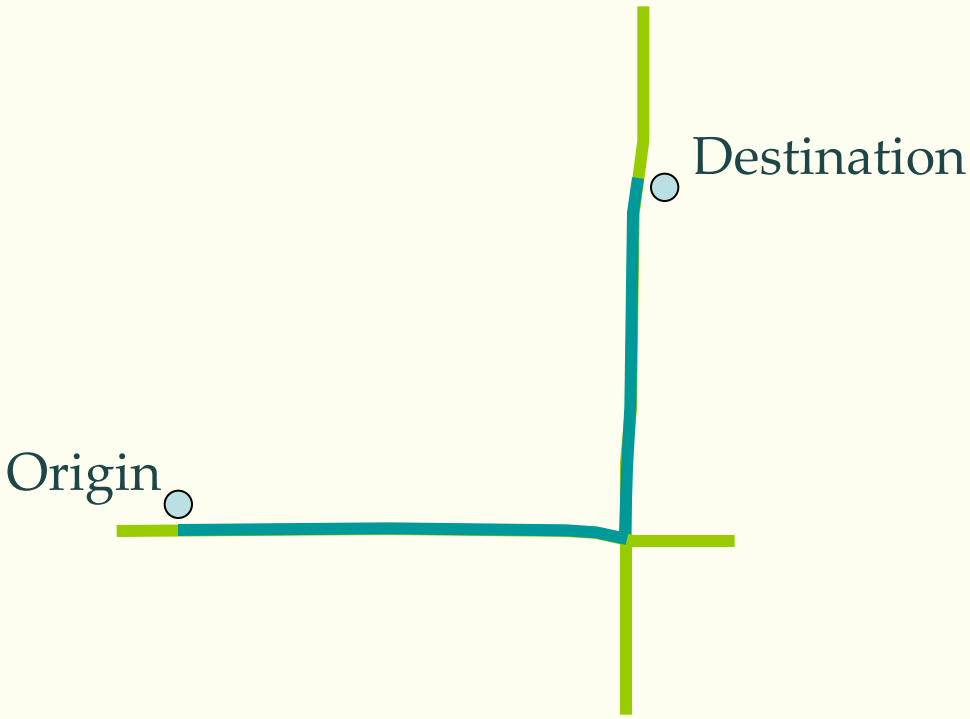
how do we get from here to there?

the power of connected streets



how do we get from here to there?

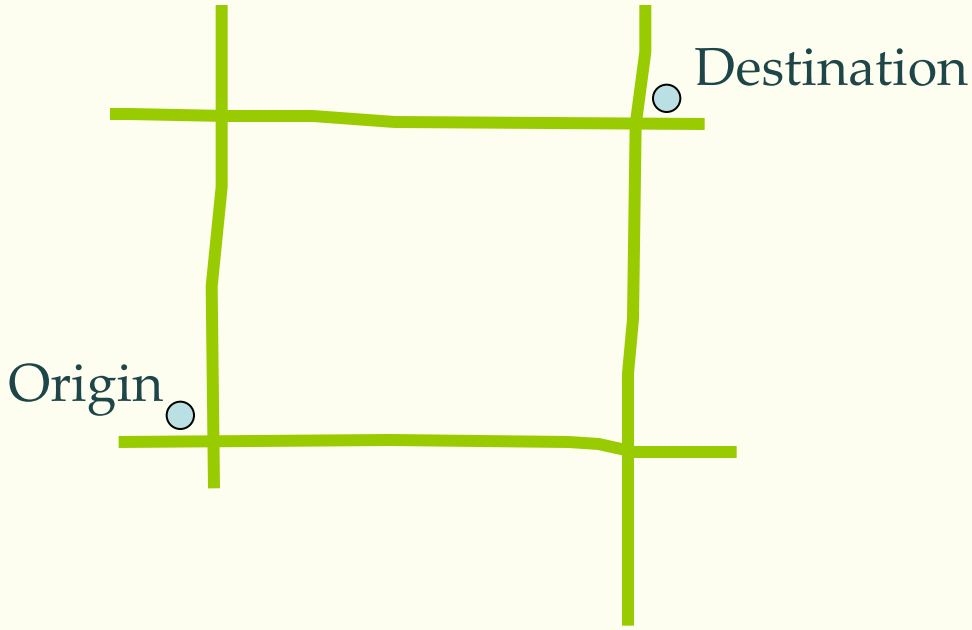
the power of connected streets



1 possible route

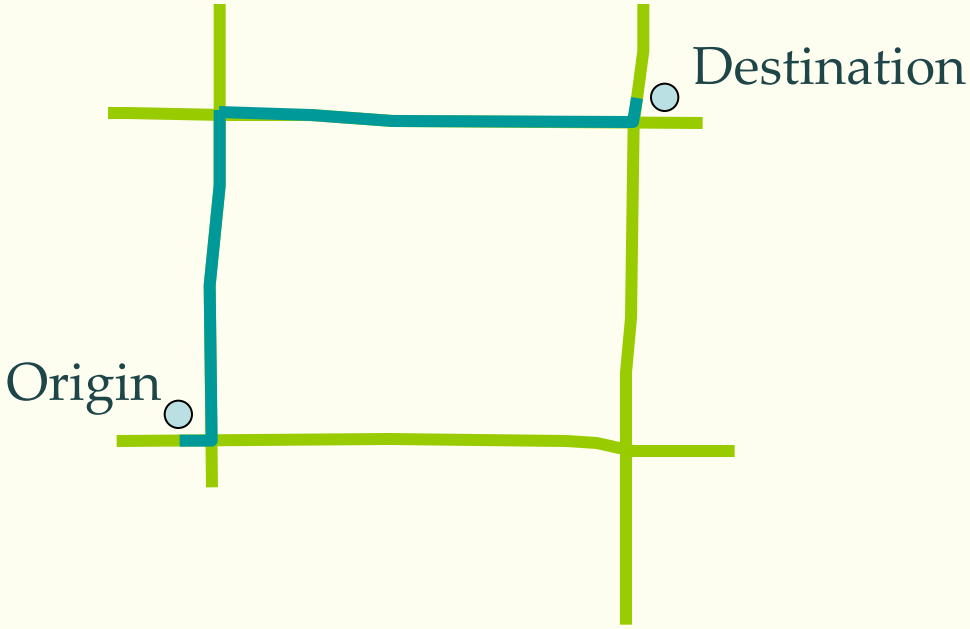
SmartCode

the power of connected streets



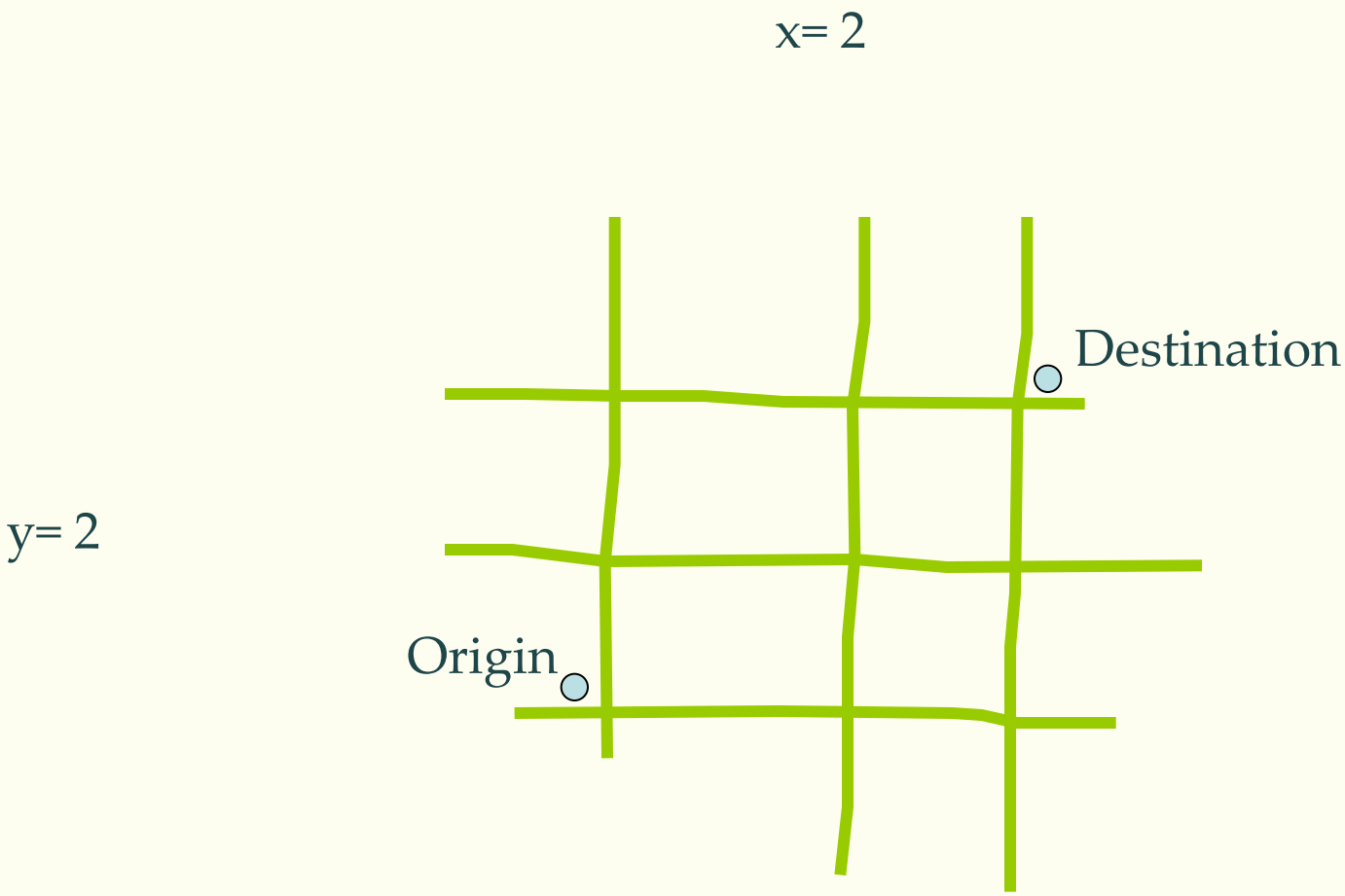
add a second pair of streets to the network, and…

the power of connected streets



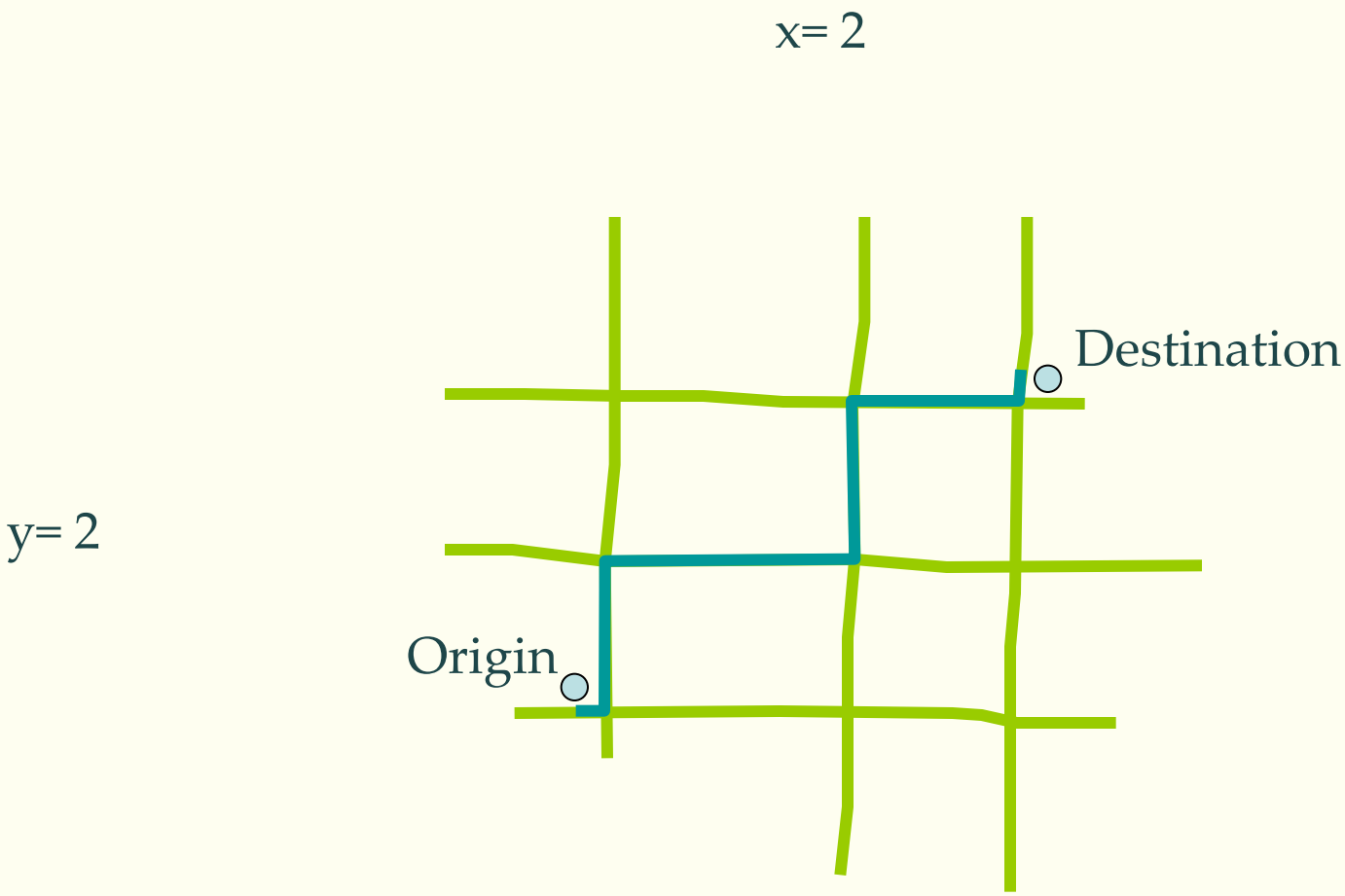
2 possible routes

the power of connected streets



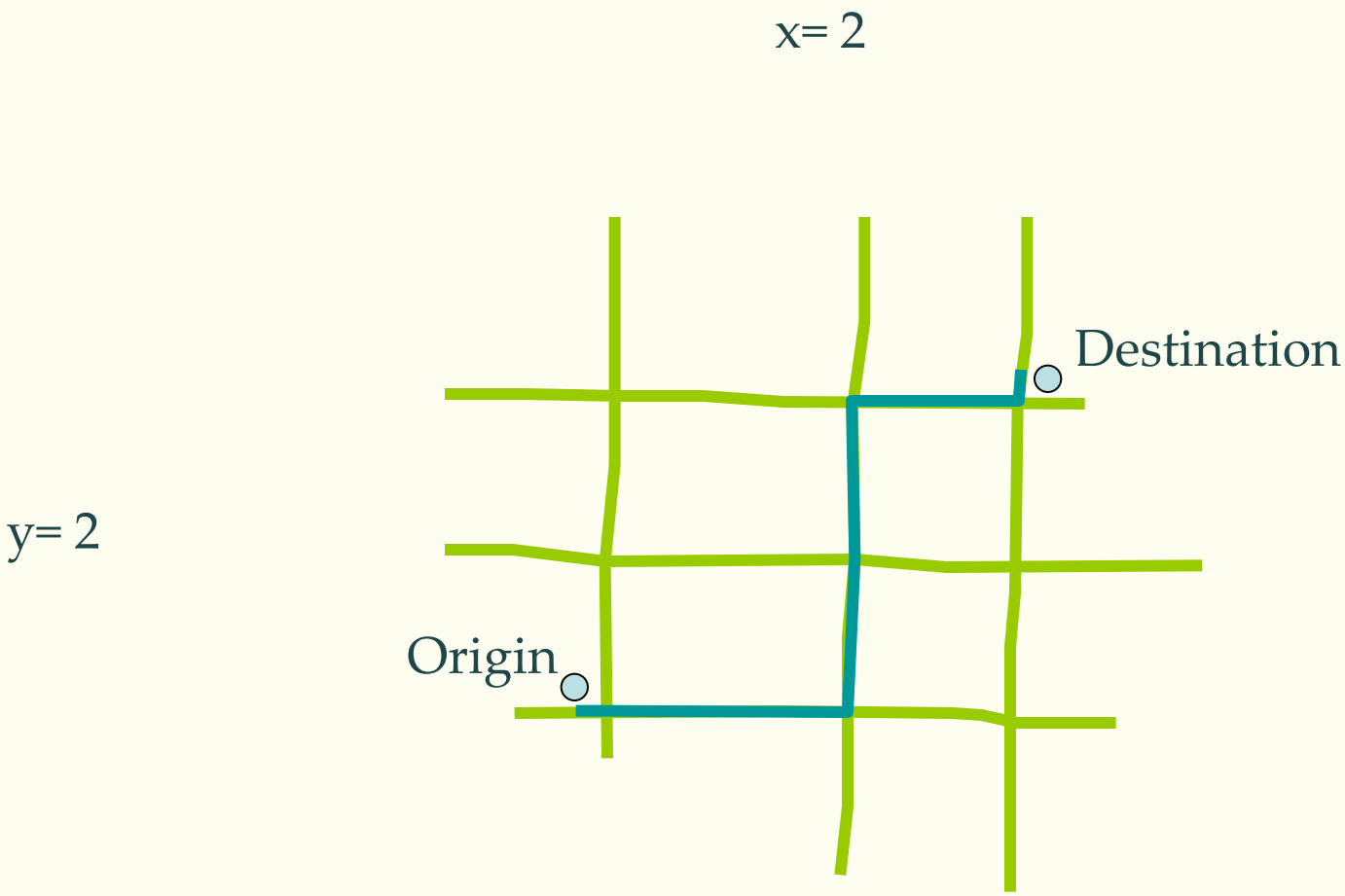
add another street in each direction…

the power of connected streets



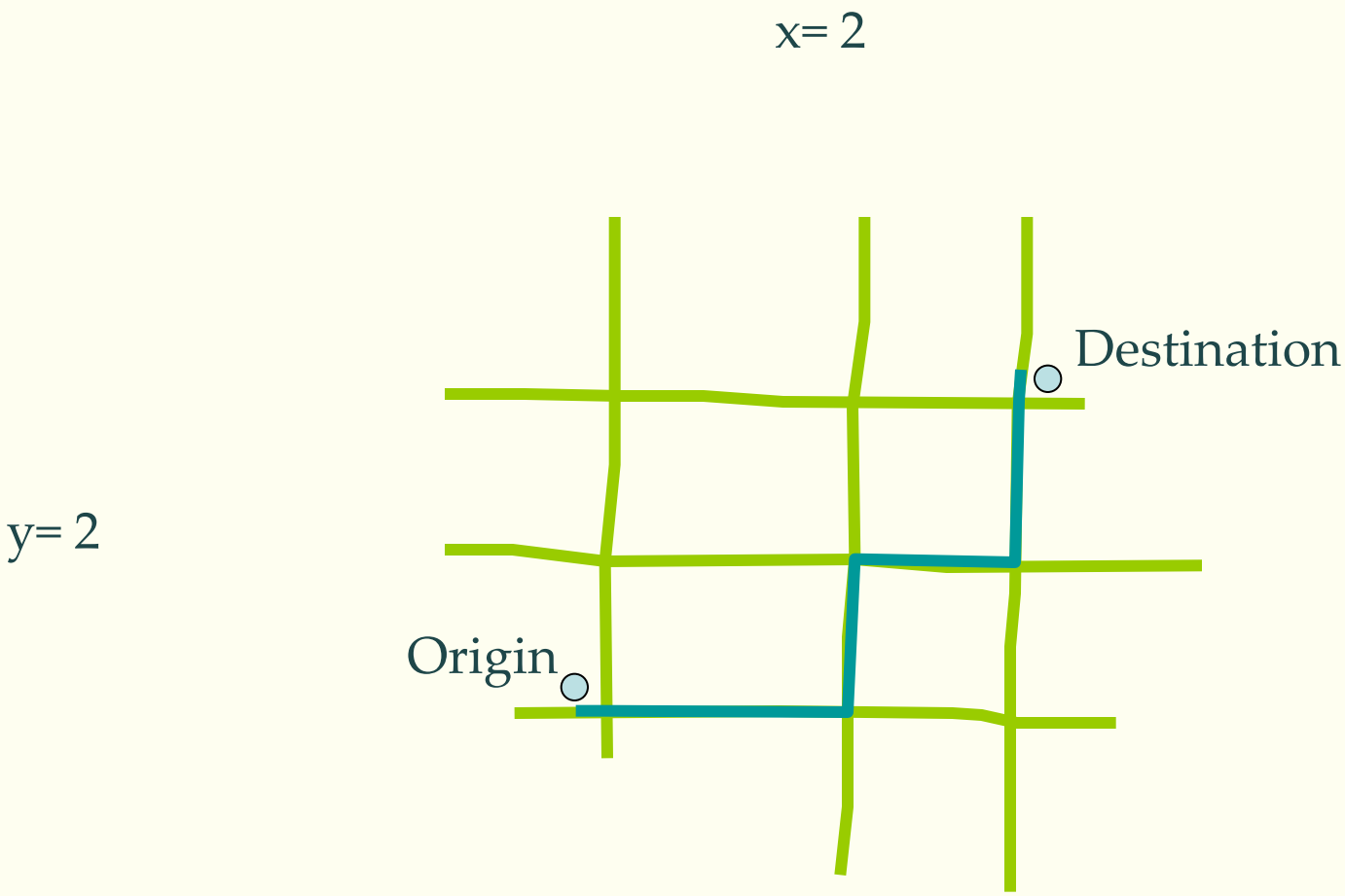
more possible routes

the power of connected streets



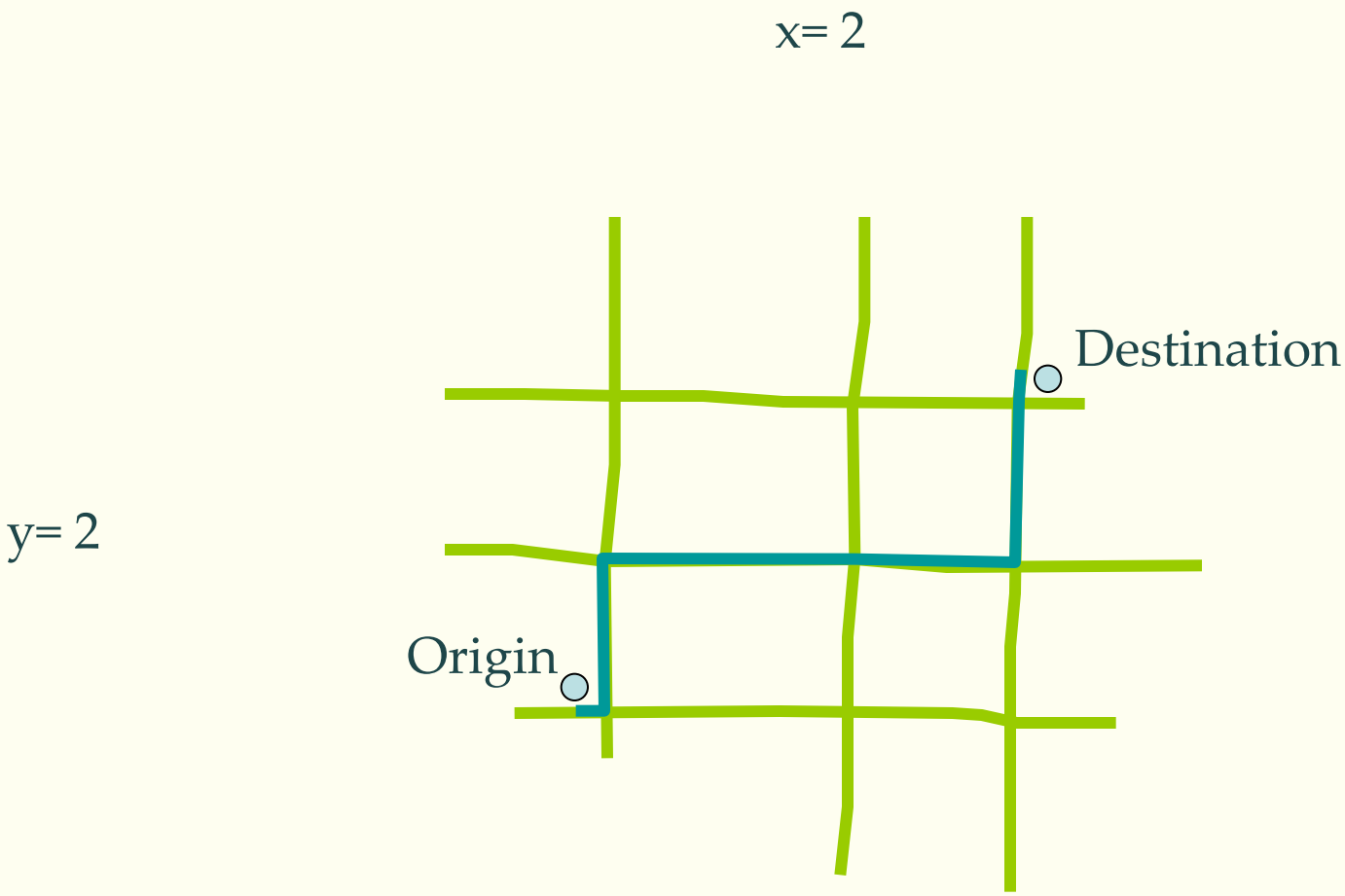
more possible routes

the power of connected streets



more possible routes

the power of connected streets



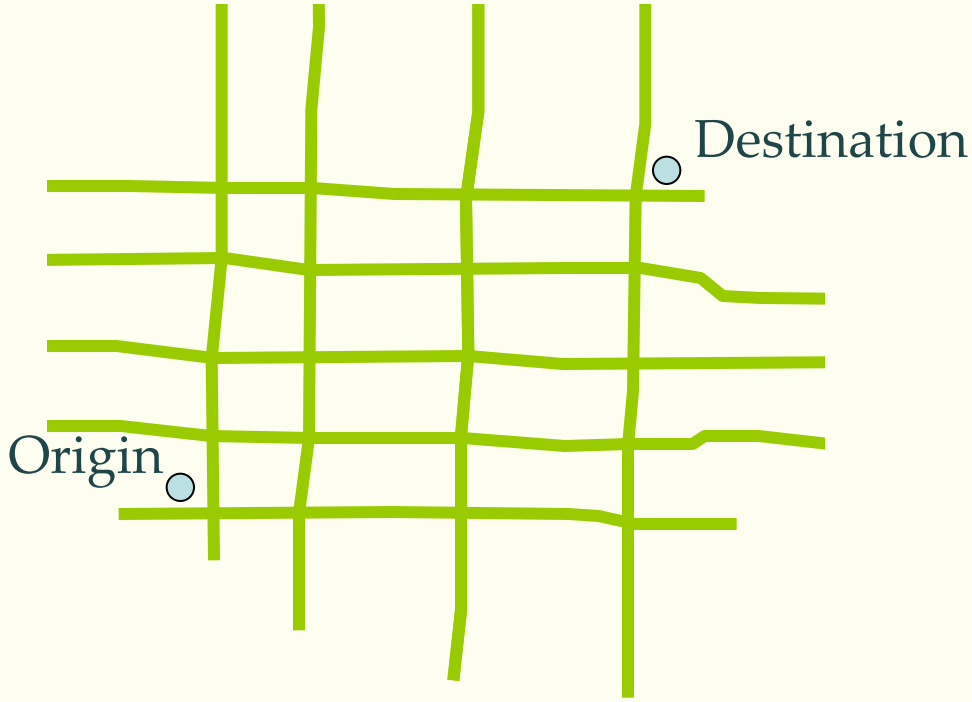
more possible routes: 6 in all, without doubling back

SmartCode

the power of connected streets

x= 3

y= 4



continue enhancing the network: 4 x 3 grid yields 35 routes

SmartCode

the power of connected streets

continue enhancing the network: 5 x 4 grid yields 126 routes

SmartCode

the power of connected streets

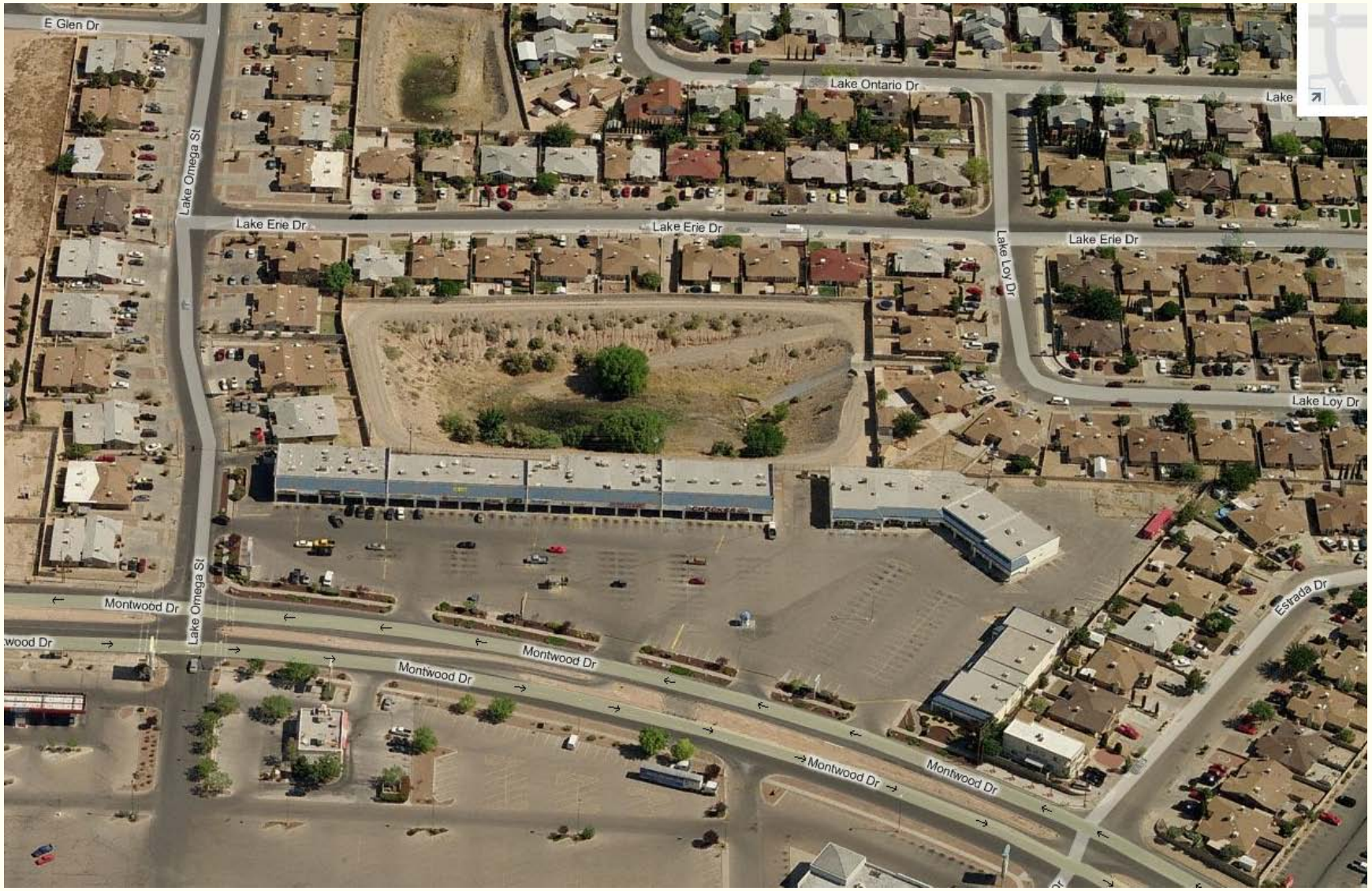
make a town, not "pods." 8 x 8 grid yields 12,870 routes

SmartCode

the power of connected streets

Beaufort, SC

SmartCode


E Glen Dr
Lake Ontario Dr
Lake Omega St
Lake Erie Dr
Lake Erie Dr
Lake Erie Dr
Lake Loy Dr
Lake Loy Dr
Montwood Dr
Montwood Dr
Montwood Dr
Montwood Dr
Montwood Dr
Estrada Dr

The House that Sprawl Built

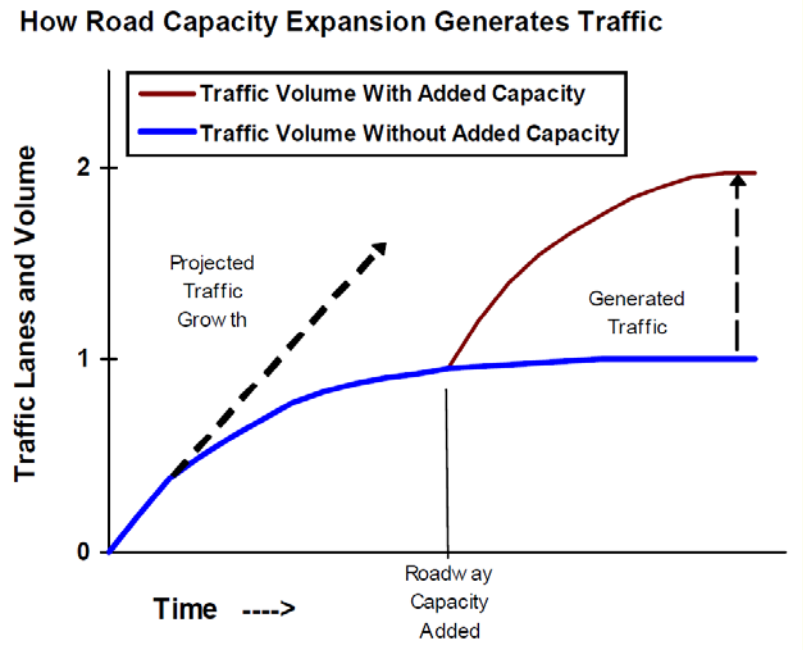
- Large lot, pastoral dream
- Public realm vs. the private
- Segregation of society by income
- Illegal types of affordable housing
  - Above retail, accessory dwelling units

Physical Creation of Society

- Drivers vs. Pedestrians
- Safe streets vs. dangerous streets
  - Civil Defense Committee of AASHTO
    - Nuclear event
  - Cul-de-sac maneuver
  - Curb radius
  - On street parking
  - Eyes
  - Trees

American Transportation Mess

- Highwayless town and the townless highway
- Adding lanes makes traffic worse



Source VTPI: Generated Traffic and Induced Travel

"Traffic congestion tends to maintain equilibrium. Congestion reaches a point at which it constrains further growth in peak-period trips. If road capacity increases, the number of peak-period trips also increases until congestion again limits further traffic growth. The additional travel is called "generated traffic." Generated traffic consists of diverted traffic (trips shifted in time, route and destination), and induced vehicle travel (shifts from other modes, longer trips and new vehicle trips). Research indicates that generated traffic often fills a significant portion of capacity added to congested urban road."

Source VTPI: Generated Traffic and Induced Travel

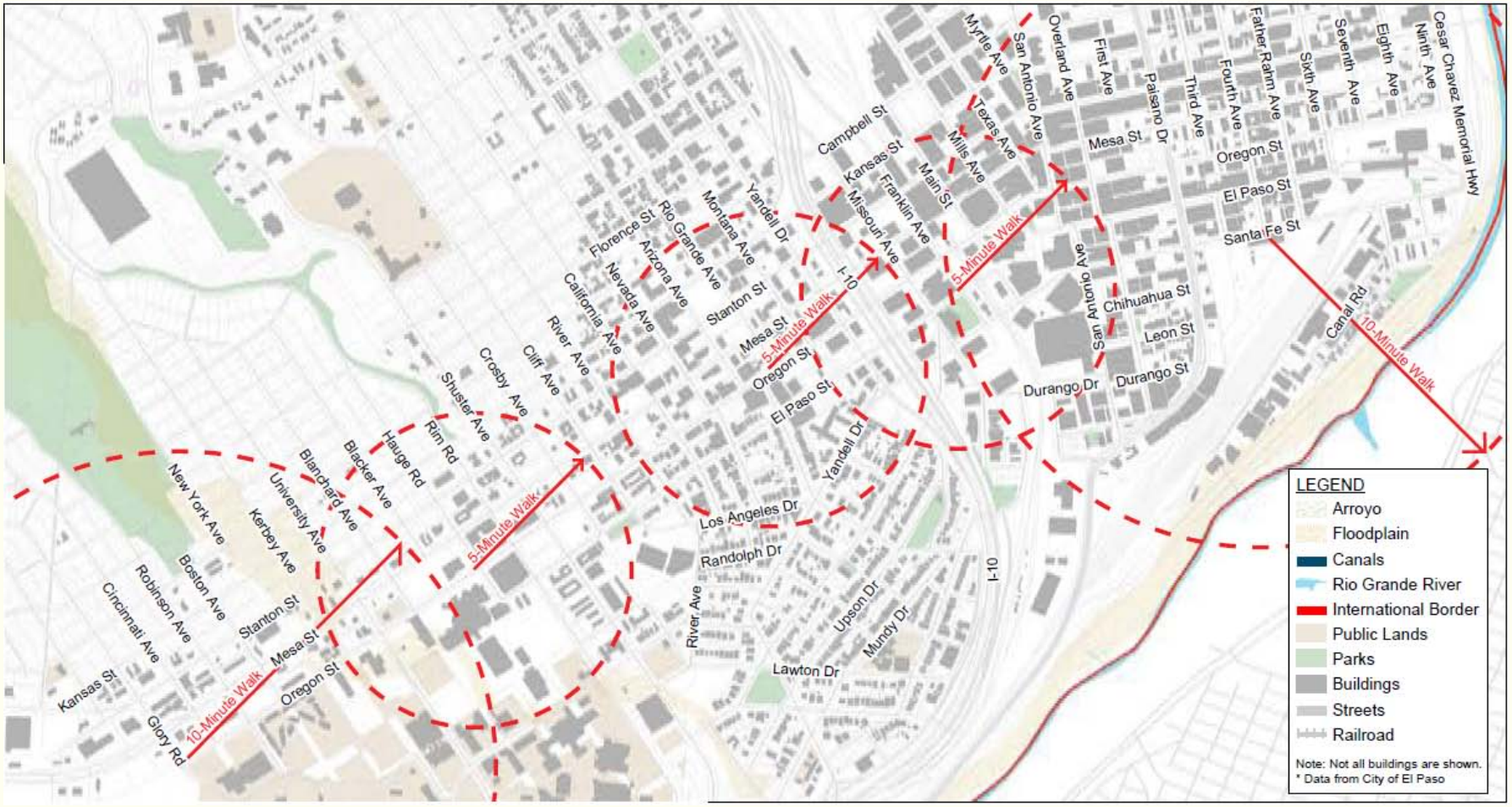
"Teenage drivers have high rates of both fatal and nonfatal crashes compared with adult drivers. Teenagers drive less than all but the oldest people, but their numbers of crashes and crash deaths are disproportionately high. Based on crashes of all severities, the crash rate per mile driven for 16-19 year-olds is 4 times the risk for drivers 20 and older. Risk is highest at age 16. The crash rate per mile driven is nearly twice as high for 16 year-olds as it is for 18-19 year-olds."

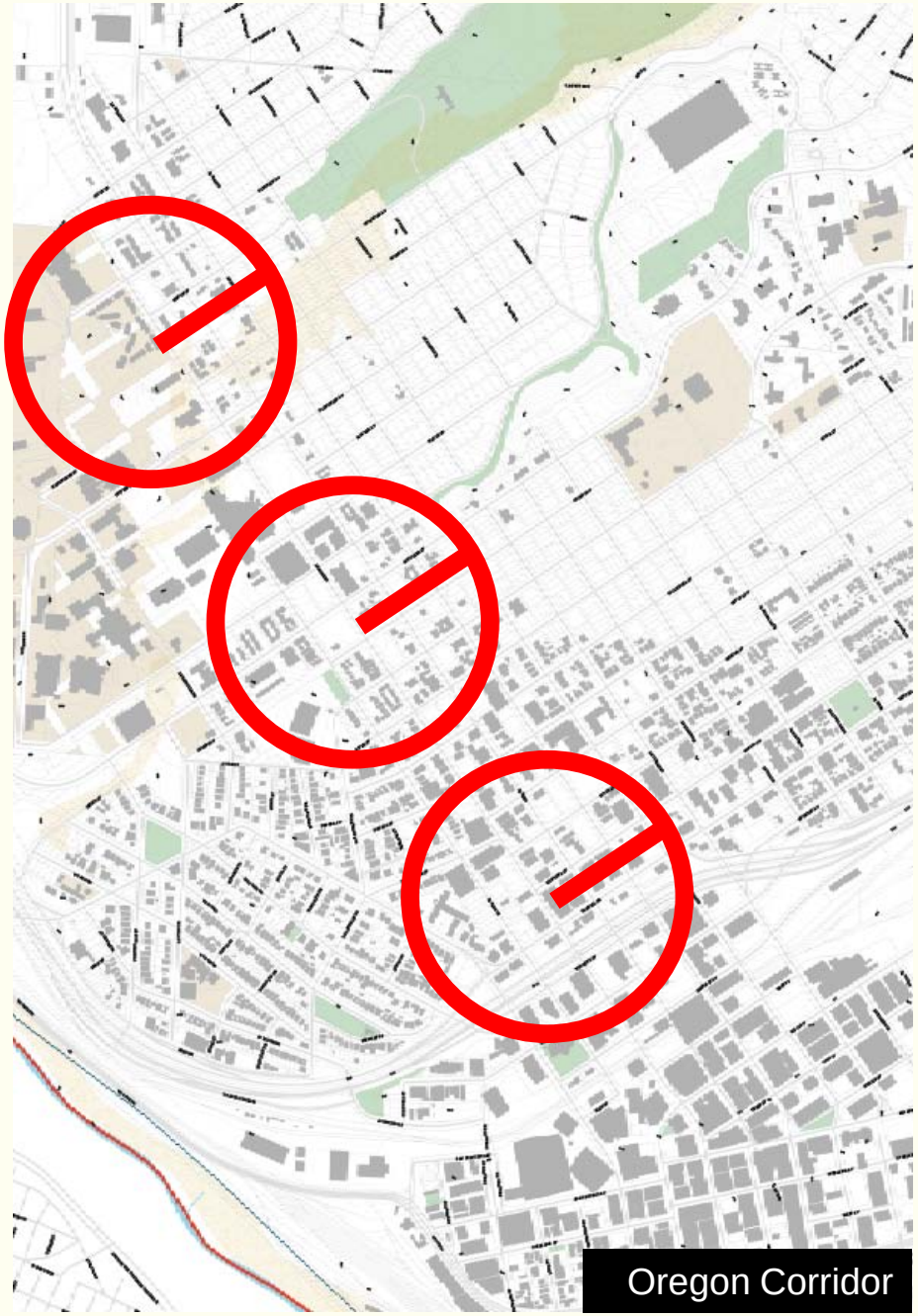
Insurance Institute for Highway Safety, Highway Loss Data Institute, 2010.

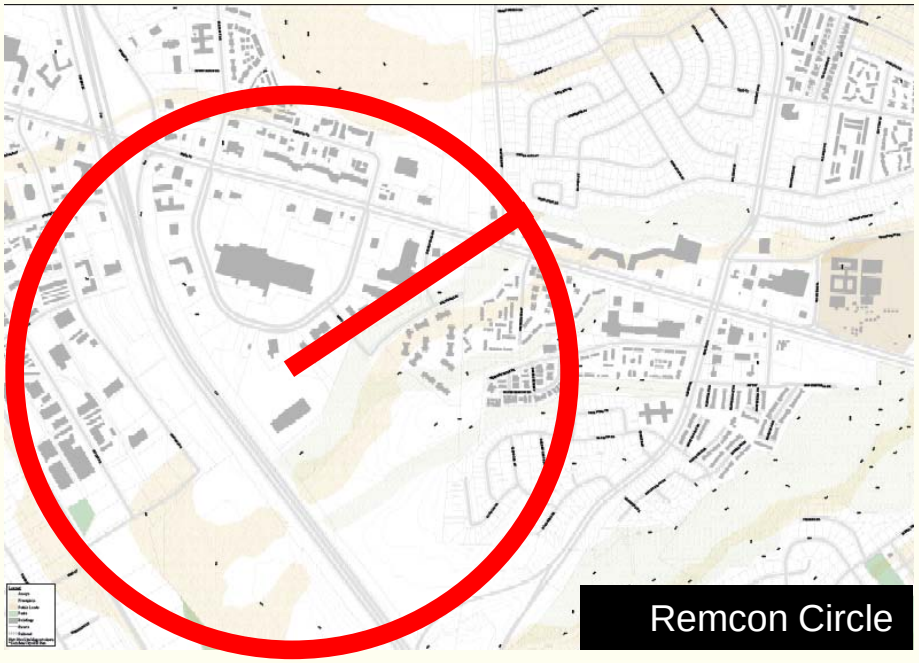
Best Practices

- Defined neighborhoods within pedestrian sheds (1/4 mile radius)
- Rural to urban transect zones
- Small blocks
- Streets for all modes of transit
- Appropriate building frontages
- Sense of enclosure

Defined neighborhoods within pedestrian sheds (1/4 mile radius)

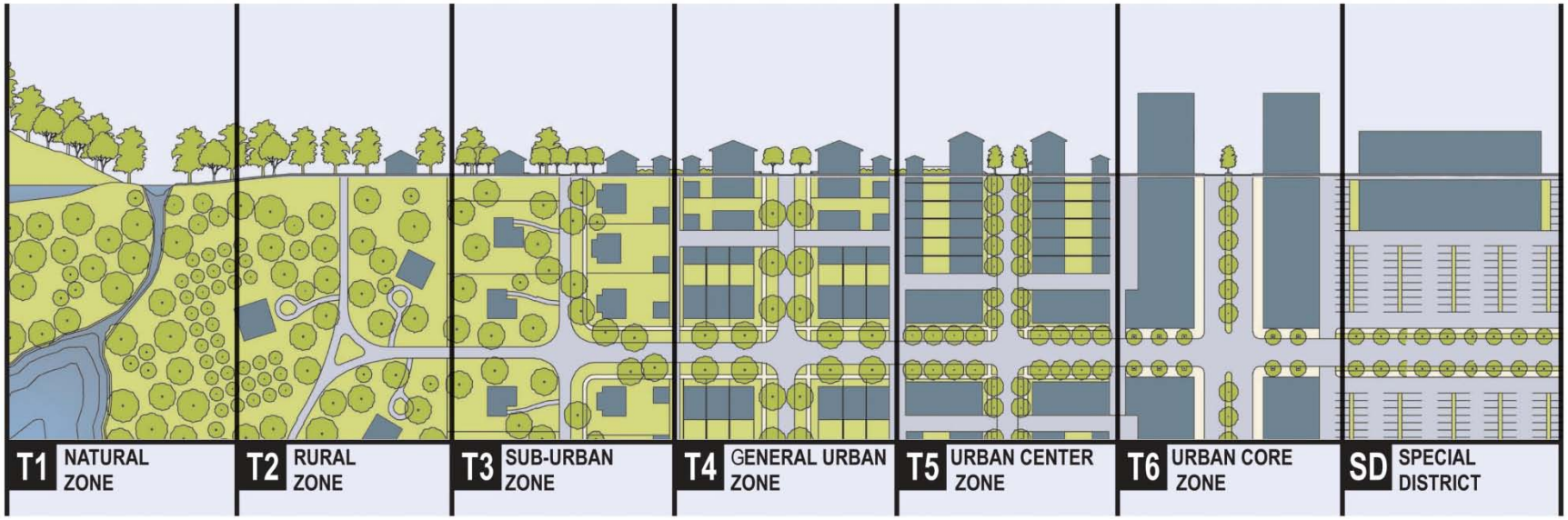



Oregon Corridor


Remcon Circle

5 Points

Rural to urban transect zones

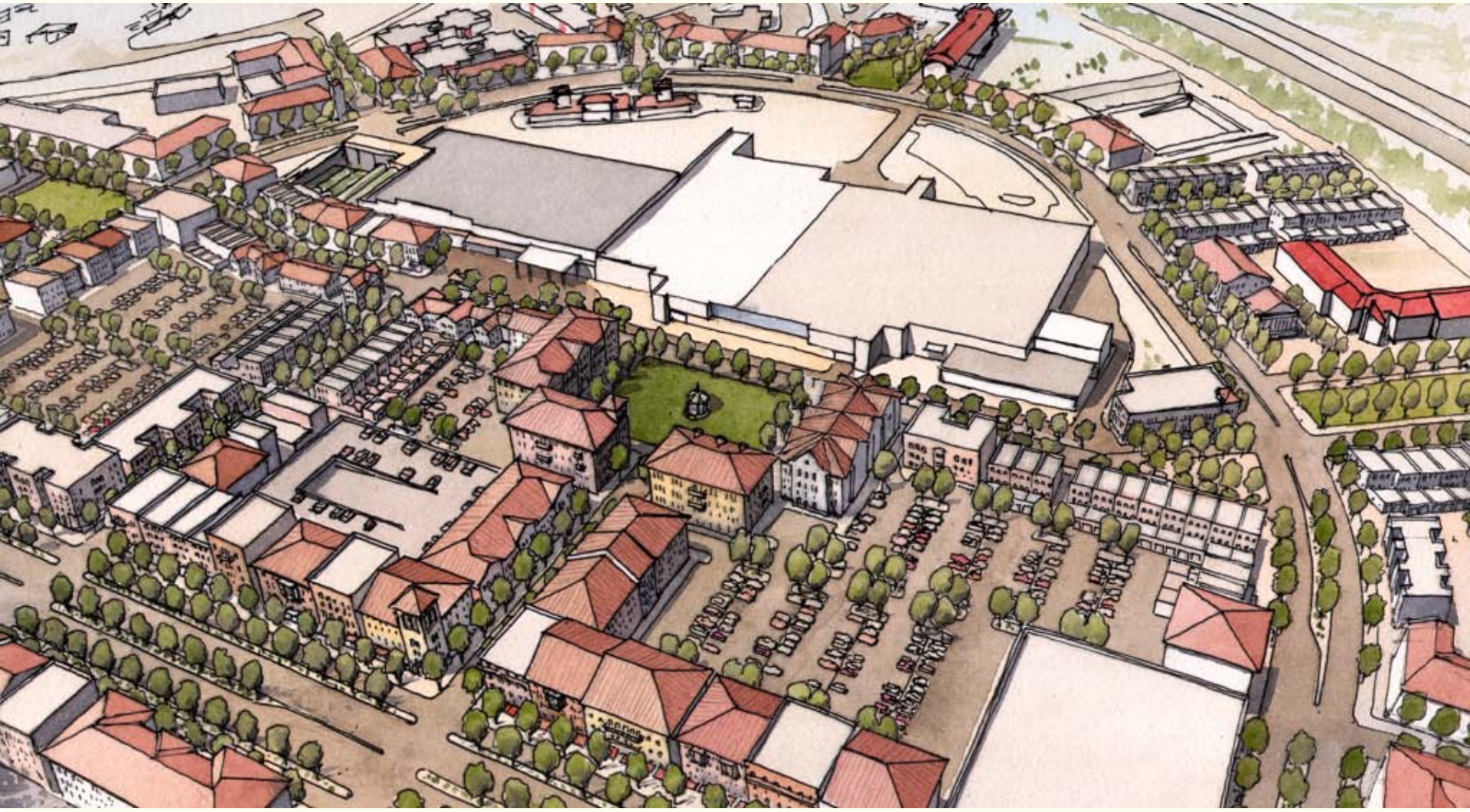


Small blocks

Remcon Circle, El Paso

Johnson Square Area
Savannah, GA

Streets for all modes of transit



SmartCode

MESA
GOODYEAR
GOODYEAR
GOODYEAR
GOODYEAR

El Paso, TX
Mesa Street

SmartCode

El Paso, TX
Mesa Street

SmartCode

El Paso, TX
Mesa Street

SmartCode

El Paso, TX
Mesa Street

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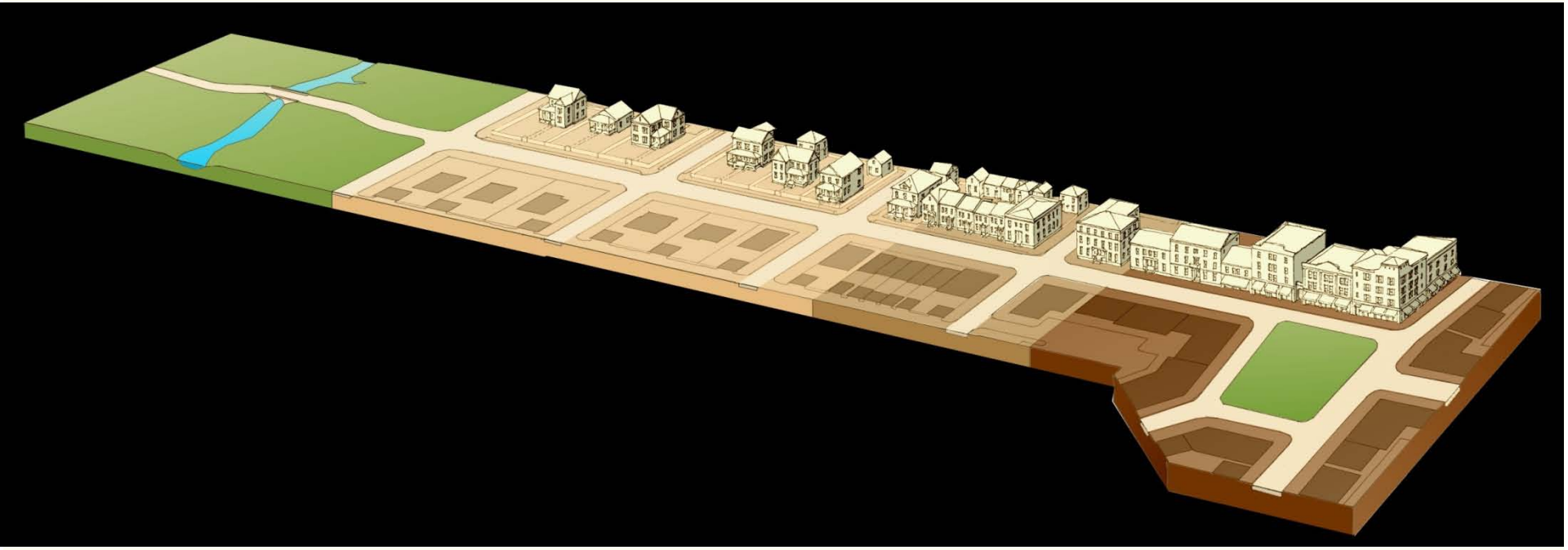
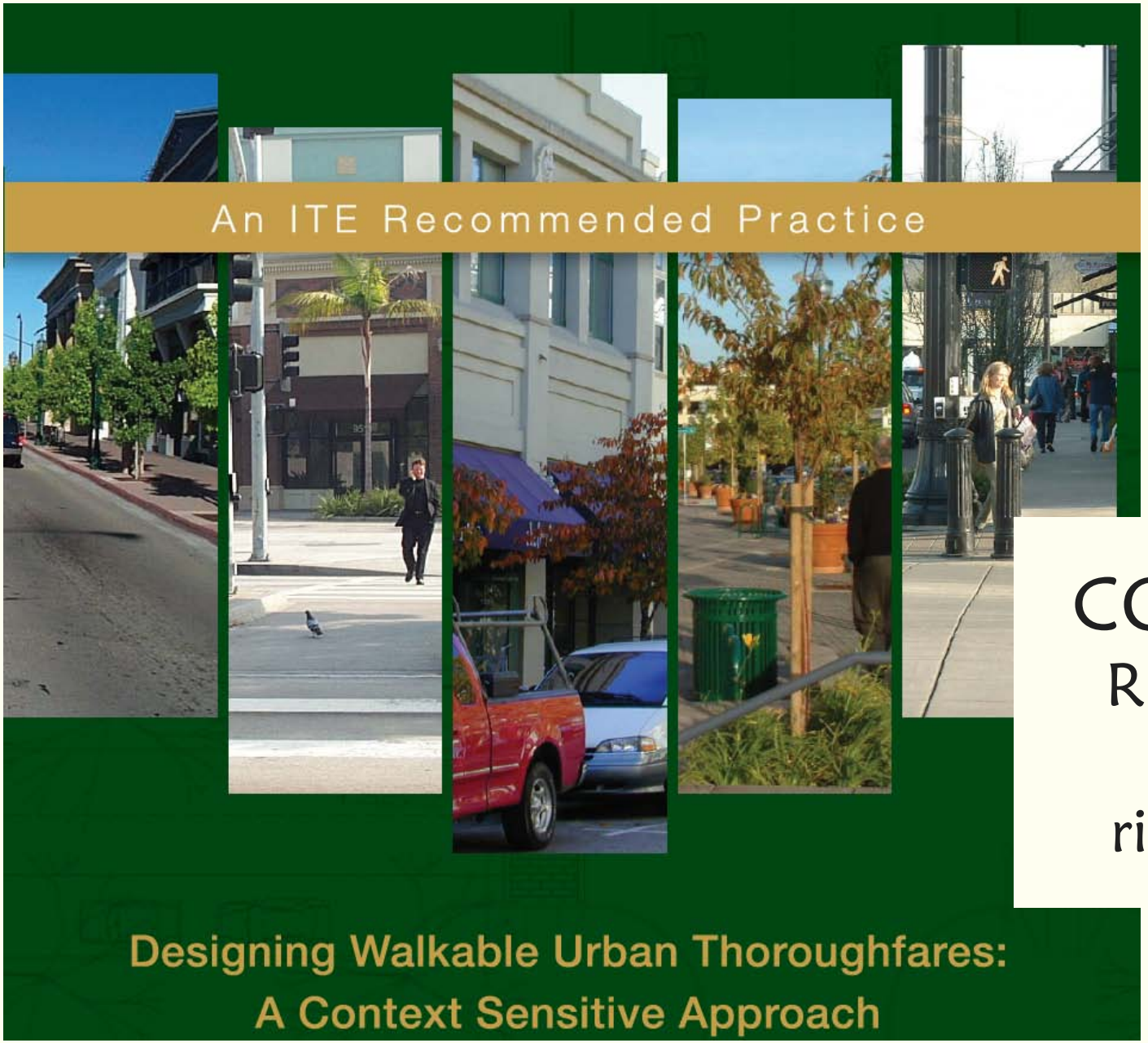
El Paso, TX
Mesa Street

SmartCode

Appropriate building frontages

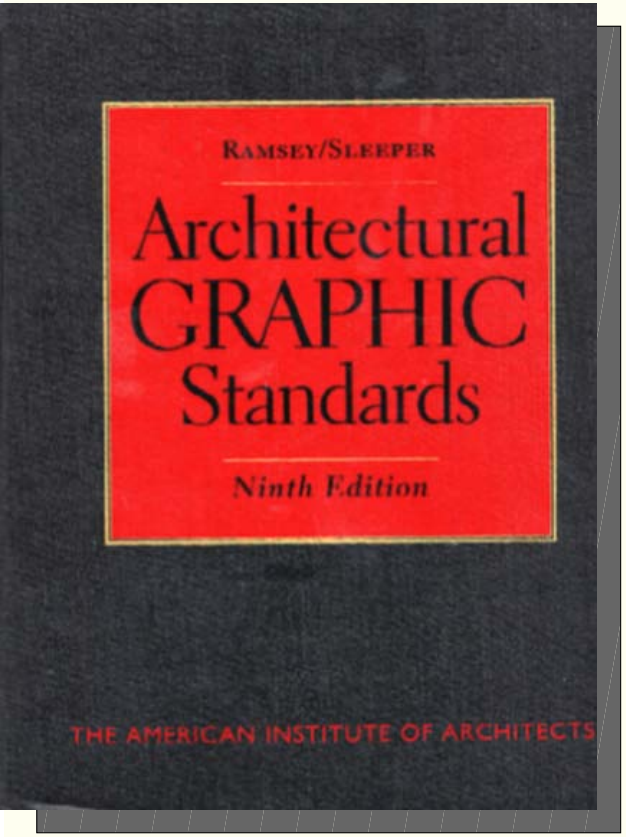




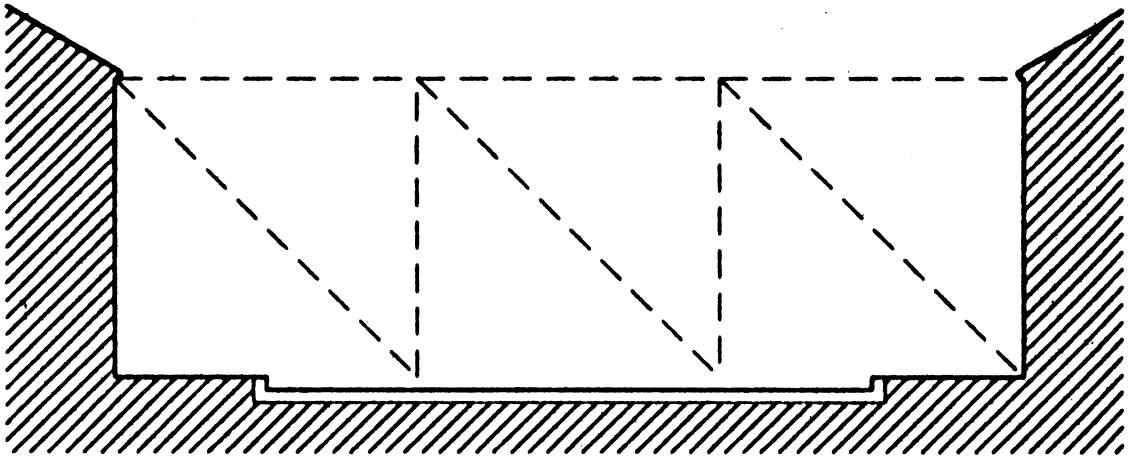
CONTEXT:
Right tools
for the
right place

Boulder

Sense of enclosure

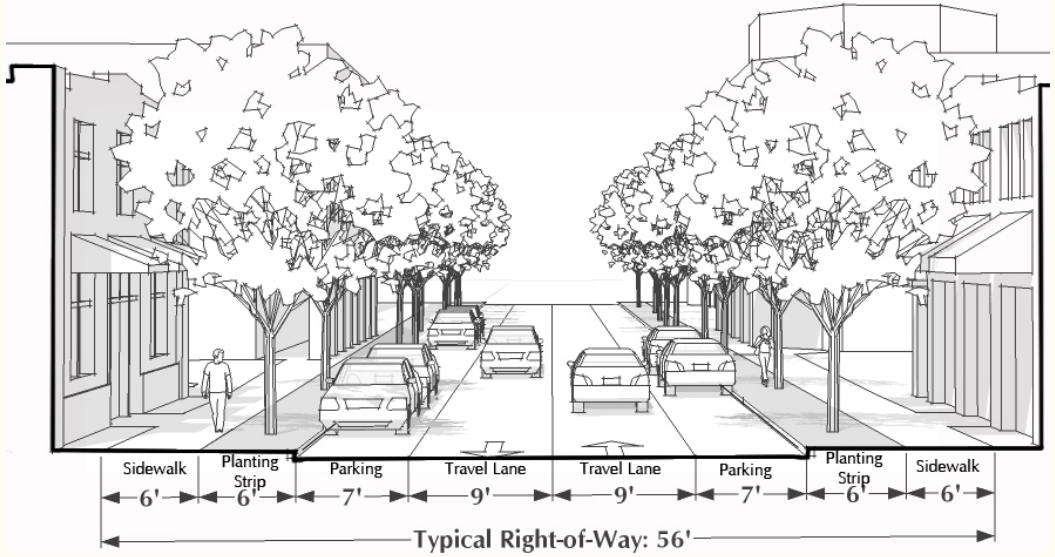


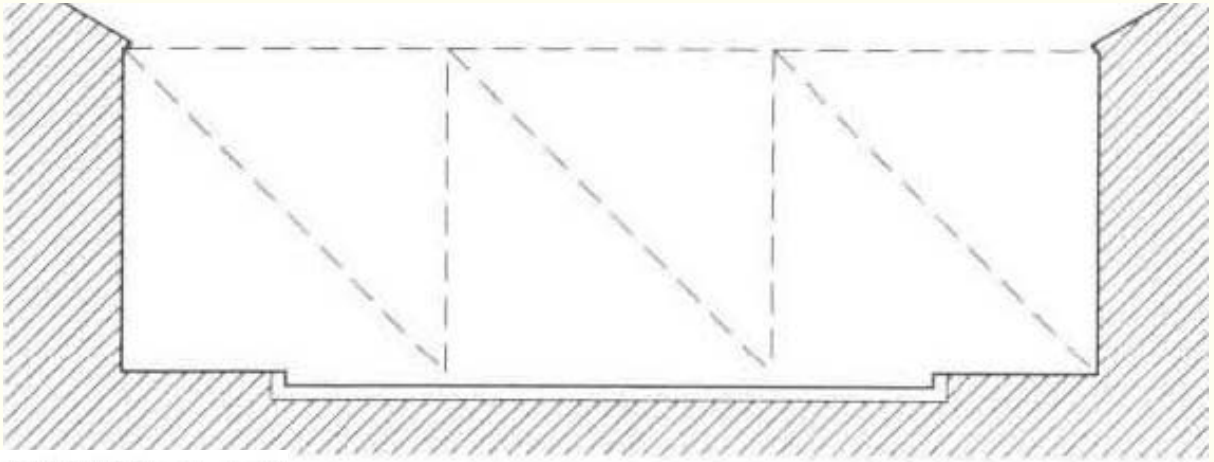
The height-to-width ratio of the space generates spatial enclosure, which is related to the physiology of the human eye. If the width of a public space is such that the cone of vision encompasses less street wall than sky opening, the degree of spatial enclosure is slight. The ratio of 1 increment of height to 6 of width is the absolute minimum, with 1 to 3 being an effective minimum if a sense of spatial enclosure is to result. As a general rule, the tighter the ratio, the stronger the sense of place and, often, the higher the real estate value. Spatial enclosure is particularly important for shopping streets that must compete with shopping malls, which provide very effective spatial definition. In the absence of spatial definition by facades, disciplined tree planting is an alternative. Trees aligned for spatial enclosure are necessary on thoroughfares that have substantial front yards.



RATIO 1 : 3

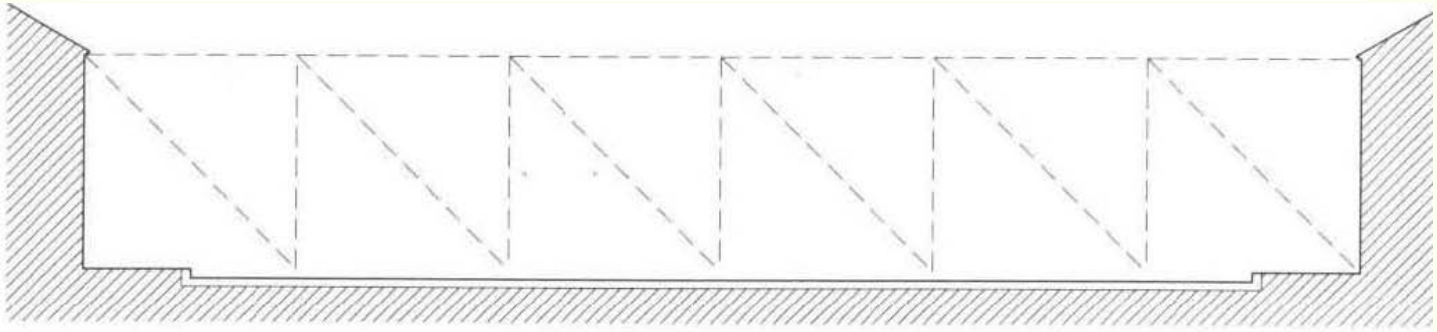
Height-to-Width Ratio





RATIO 1 : 3

proportion of building height to public space



RATIO 1 : 6

proportion of building height to public space

SmartCode

How you can get there

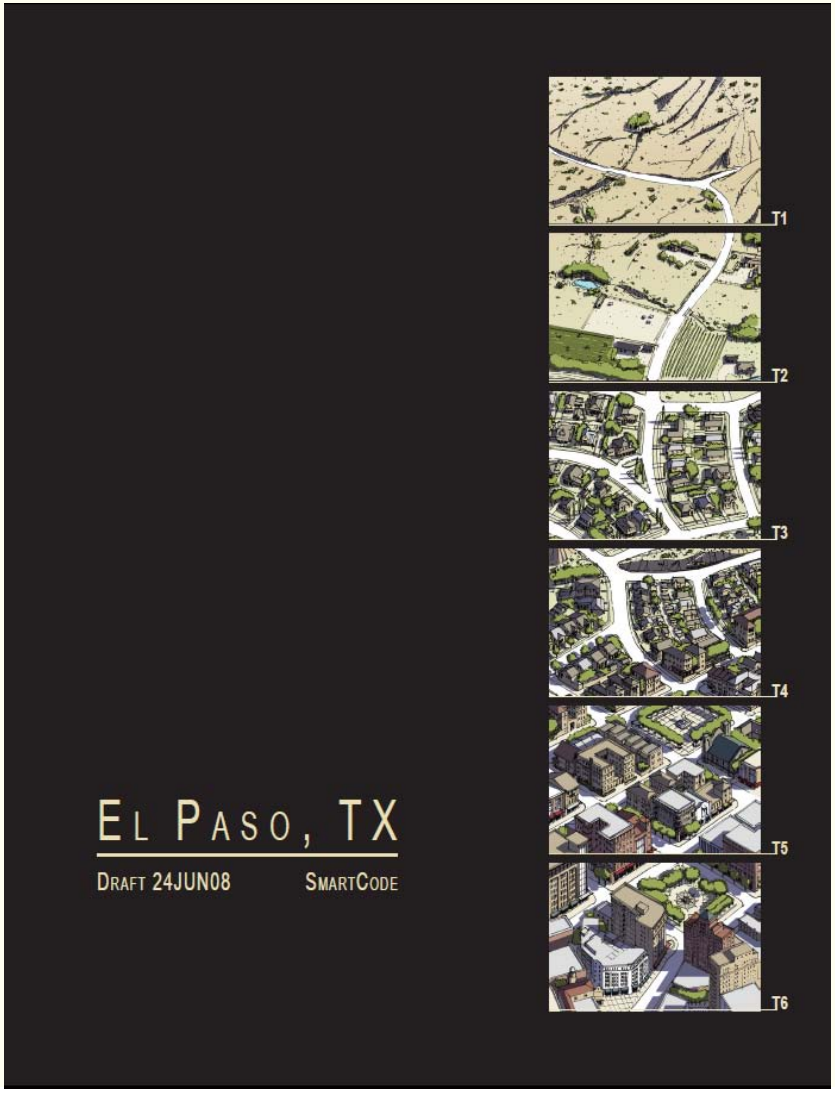


TABLE 7: Private Frontages. The Private Frontage is the area between the building Facades and the Lot lines.

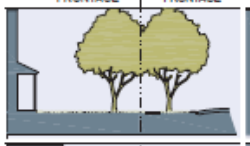
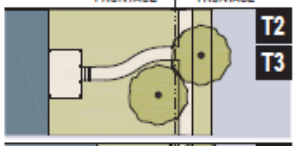
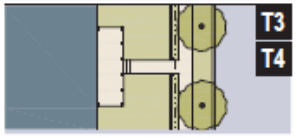
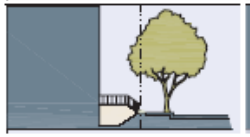
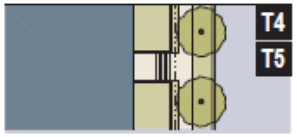
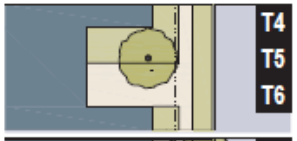
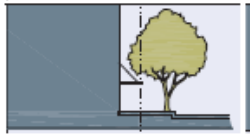
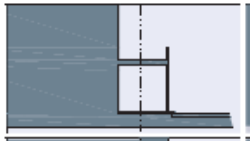
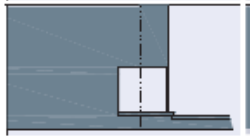
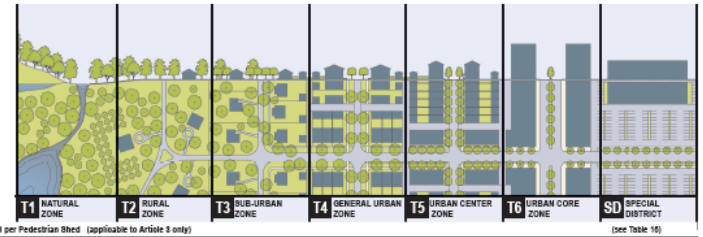
	SECTION	PLAN	
	LOT ▶ PRIVATE ▶ FRONTAGE / ◀ R.O.W. ◀ PUBLIC FRONTAGE	LOT ▶ PRIVATE ▶ FRONTAGE / ◀ R.O.W. ◀ PUBLIC FRONTAGE	
a. Common Yard: a planted Frontage wherein the Facade is set back substantially from the Frontage Line. The front yard created remains unfenced and is visually continuous with adjacent yards, supporting a common landscape. The deep Setback provides a buffer from the higher speed Thoroughfares.			T2 T3
b. Porch & Fence: a planted Frontage wherein the Facade is set back from the Frontage Line with an attached porch permitted to Encroach. A fence at the Frontage Line maintains street spatial definition. Porches shall be no less than 8 feet deep.			T3 T4
c. Terrace or Lightwell: a Frontage wherein the Facade is set back from the Frontage line by an elevated terrace or a sunken Lightwell. This type buffers Residential use from urban Sidewalks and removes the private yard from public Encroachment. Terraces are suitable for conversion to outdoor cafes. Syn: **Dooryard.**			T4 T5
d. Forecourt: a Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back. The Forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other Frontage types. Large trees within the Forecourts may overhang the Sidewalks.			T4 T5 T6
e. Stoop: a Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor Residential use.			T4 T5 T6
f. Shopfront: a Frontage wherein the Facade is aligned close to the Frontage Line with the building entrance at Sidewalk grade. This type is conventional for Retail use. It has a substantial glazing on the Sidewalk level and an awning that may overlap the Sidewalk to within 2 feet of the Curb. Syn: Retail Frontage.			T4 T5 T6
g. Gallery: a Frontage wherein the Facade is aligned close to the Frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the Sidewalk. This type is conventional for Retail use. The Gallery shall be no less than 10 feet wide and should overlap the Sidewalk to within 2 feet of the Curb.			T4 T5 T6
h. Arcade: a colonnade supporting habitable space that overlaps the Sidewalk, while the Facade at Sidewalk level remains at or behind the Frontage Line. This type is conventional for Retail use. The Arcade shall be no less than 12 feet wide and should overlap the Sidewalk to within 2 feet of the Curb. See Table 8.			T5 T6

TABLE 14. SMARTCODE SUMMARY

Note: All requirements in this Table are subject to calibration for local context.



	T1 NATURAL ZONE	T2 RURAL ZONE	T3 SUB-URBAN ZONE	T4 GENERAL URBAN ZONE	T5 URBAN CENTER ZONE	T6 URBAN CORE ZONE	SD SPECIAL DISTRICT	
a. ALLOCATION OF ZONES per Pedestrian Shed (applicable to Article 3 only)							(see Table 16)	
CLD requires	no minimum	50% min	10 - 30%	20 - 40%	not permitted	not permitted		
TND requires	no minimum	no minimum	10 - 30%	30 - 60 %	10 - 30%	not permitted		
RCD requires	no minimum	no minimum	not permitted	10 - 30%	10 - 30%	40 - 80%		
b. BASE RESIDENTIAL DENSITY (see Section 3.4)								
By Right	not applicable	1 unit / 20 ac avg.	2 units / ac. gross	4 units / ac. gross	6 units / ac. gross	12 units / ac. gross		
By TDR	by Variance	by Variance	6 units / ac. gross	12 units / ac. gross	24 units / ac. gross	96 units / ac. gross		
Other Functions	by Variance	by Variance	10 - 20%	20 - 30%	30 - 50%	50 - 70%		
c. BLOCK SIZE								
Block Perimeter	no maximum	no maximum	3000 ft. max	2400 ft. max	2000 ft. max	2000 ft. max *		
d. THOROUGHFARES (see Table 8 and Table 4)						* 3000 ft. max with parking structures		
HW	permitted	permitted	permitted	not permitted	not permitted	not permitted		
BV	not permitted	not permitted	permitted	permitted	permitted	permitted		
AV	not permitted	not permitted	permitted	permitted	permitted	permitted		
CS	not permitted	not permitted	not permitted	not permitted	permitted	permitted		
DR	not permitted	not permitted	permitted	permitted	permitted	permitted		
ST	not permitted	not permitted	permitted	permitted	permitted	not permitted		
RD	permitted	permitted	permitted	not permitted	not permitted	not permitted		
Rear Lane	permitted	permitted	permitted	permitted	not permitted	not permitted		
Rear Alley	not permitted	not permitted	permitted	required	required	required		
Path	permitted	permitted	permitted	permitted	not permitted	not permitted		
Passage	not permitted	not permitted	permitted	permitted	permitted	permitted		
Bicycle Trail	permitted	permitted	permitted	not permitted *	not permitted	not permitted		
Bicycle Lane	permitted	permitted	permitted	permitted	not permitted	not permitted		
Bicycle Route	permitted	permitted	permitted	permitted	permitted	permitted		
e. CIVIC SPACES (see Table 18)						* permitted within Open Spaces		
Park	permitted	permitted	permitted	by Warrant	by Warrant	by Warrant		
Green	not permitted	not permitted	permitted	permitted	permitted	not permitted		
Square	not permitted	not permitted	not permitted	permitted	permitted	permitted		
Plaza	not permitted	not permitted	not permitted	not permitted	permitted	permitted		
Playground	permitted	permitted	permitted	permitted	permitted	permitted		
f. LOT OCCUPATION								DISPOSITION
Lot Width	not applicable	by Warrant	72 ft. min 120 ft. max	18 ft. min 96 ft. max	18 ft. min 180 ft. max	18 ft. min 700 ft. max		
Lot Coverage	not applicable	by Warrant	60% max	70% max	80% max	90% max		
g. SETBACKS - PRINCIPAL BUILDING (see Table 16)								
(g.1) Front Setback (Principal)	not applicable	48 ft. min	24 ft. min	6 ft. min 18 ft. max	2 ft. min 12 ft. max	2 ft. min 12 ft. max		
(g.2) Front Setback (Secondary)	not applicable	48 ft. min	12 ft. min	6 ft. min 18 ft. max	2 ft. min 12 ft. max	2 ft. min 12 ft. max		
(g.3) Side Setback	not applicable	96 ft. min	12 ft. min	0 ft. min	0 ft. min 24 ft. max	0 ft. min 24 ft. max		
(g.4) Rear Setback	not applicable	96 ft. min	12 ft. min	3 ft. min *	3 ft. min *	0 ft. min		
Frontage Buildout	not applicable	not applicable	40% min	60% min	80% min	80% min		
h. SETBACKS - OUTBUILDING (see Table 16)								
(h.1) Front Setback	not applicable	20 ft. min +bldg setback	20 ft. min +bldg setback	20 ft. min +bldg setback	40 ft. max from rear prop	not applicable		
(h.2) Side Setback	not applicable	3 ft. or 6 ft.	3 ft. or 6 ft.	0 ft. min or 3 ft.	0 ft min	not applicable		
(h.3) Rear Setback	not applicable	3 ft. min	3 ft. min	3 ft.	3 ft. max	not applicable		
i. BUILDING DISPOSITION (see Table 9)								
Edgeyard	permitted	permitted	permitted	permitted	not permitted	not permitted		
Sideyard	not permitted	not permitted	not permitted	permitted	permitted	not permitted		
Rearyard	not permitted	not permitted	not permitted	permitted	permitted	permitted		
Courtyard	not permitted	not permitted	not permitted	not permitted	permitted	permitted		
j. PRIVATE FRONTAGES (see Table 7)								CONFIGURATION
Common Yard	not applicable	permitted	permitted	not permitted	not permitted	not permitted		
Porch & Fence	not applicable	not permitted	permitted	permitted	not permitted	not permitted		
Terrace or Dooryard	not applicable	not permitted	not permitted	permitted	permitted	not permitted		
Forecourt	not applicable	not permitted	not permitted	permitted	permitted	permitted		
Stoop	not applicable	not permitted	not permitted	permitted	permitted	permitted		
Shopfront & Awning	not applicable	not permitted	not permitted	permitted	permitted	permitted		
Gallery	not applicable	not permitted	not permitted	permitted	permitted	permitted		
Arcade	not applicable	not permitted	not permitted	not permitted	permitted	permitted		
k. BUILDING CONFIGURATION (see Table 8)								
Principal Building	not applicable	2 Stories max	2 Stories max	3 Stories max, 2 min	5 Stories max, 2 min	8 Stories max, 2 min		
Outbuilding	not applicable	2 Stories max	2 Stories max	2 Stories max	2 Stories max	not applicable		
l. BUILDING FUNCTION (see Table 10 &Table 12)								FUNCTION
Residential	not applicable	restricted use	restricted use	limited use	open use	open use		
Lodging	not applicable	restricted use	restricted use	limited use	open use	open use		
Office	not applicable	restricted use	restricted use	limited use	open use	open use		
Retail	not applicable	restricted use	restricted use	limited use	open use	open use		
ARTICLE 6								
ARTICLE 2, 3, 4								