

Urban Design and Sustainable Sites: Dual Performances or Dueling Performances?

May 18, 2011

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Civil Engineering
Landscape Architecture
Environmental Restoration
Planning

Outline

- What Do We Mean By Urban? And Urban Design?
- The Case For Hybrid Cities
 - Economic
 - Social
 - Environmental
- Case Studies

cities v. nature



+



Cities are Nature.

bellevue v. seattle
ann arbor v. detroit
burnaby v. vancouver
new jersey v. new york
silver spring v. washington dc
sarasota v. tampa/st. petersburg



walkable

v.



drivable







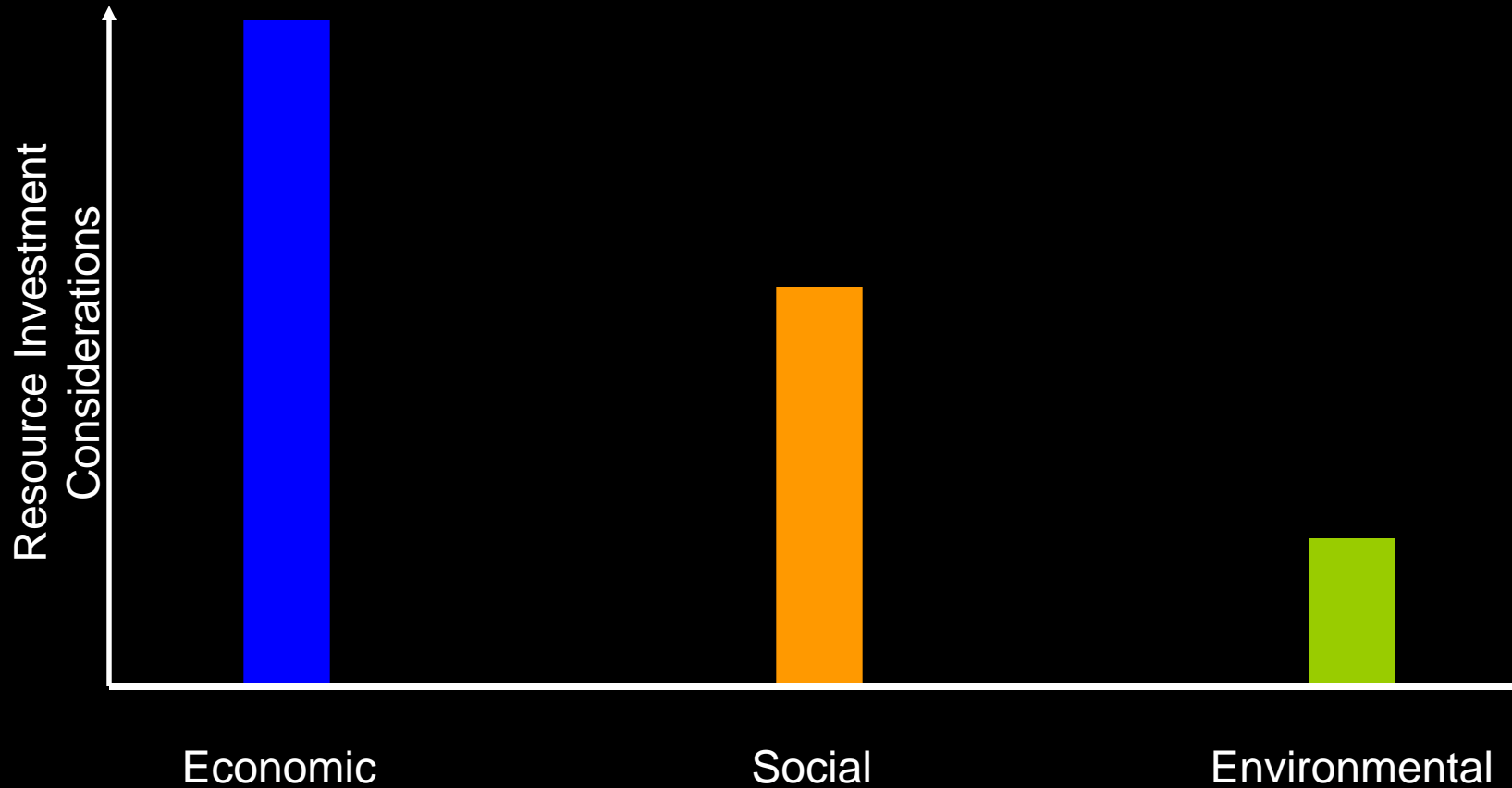




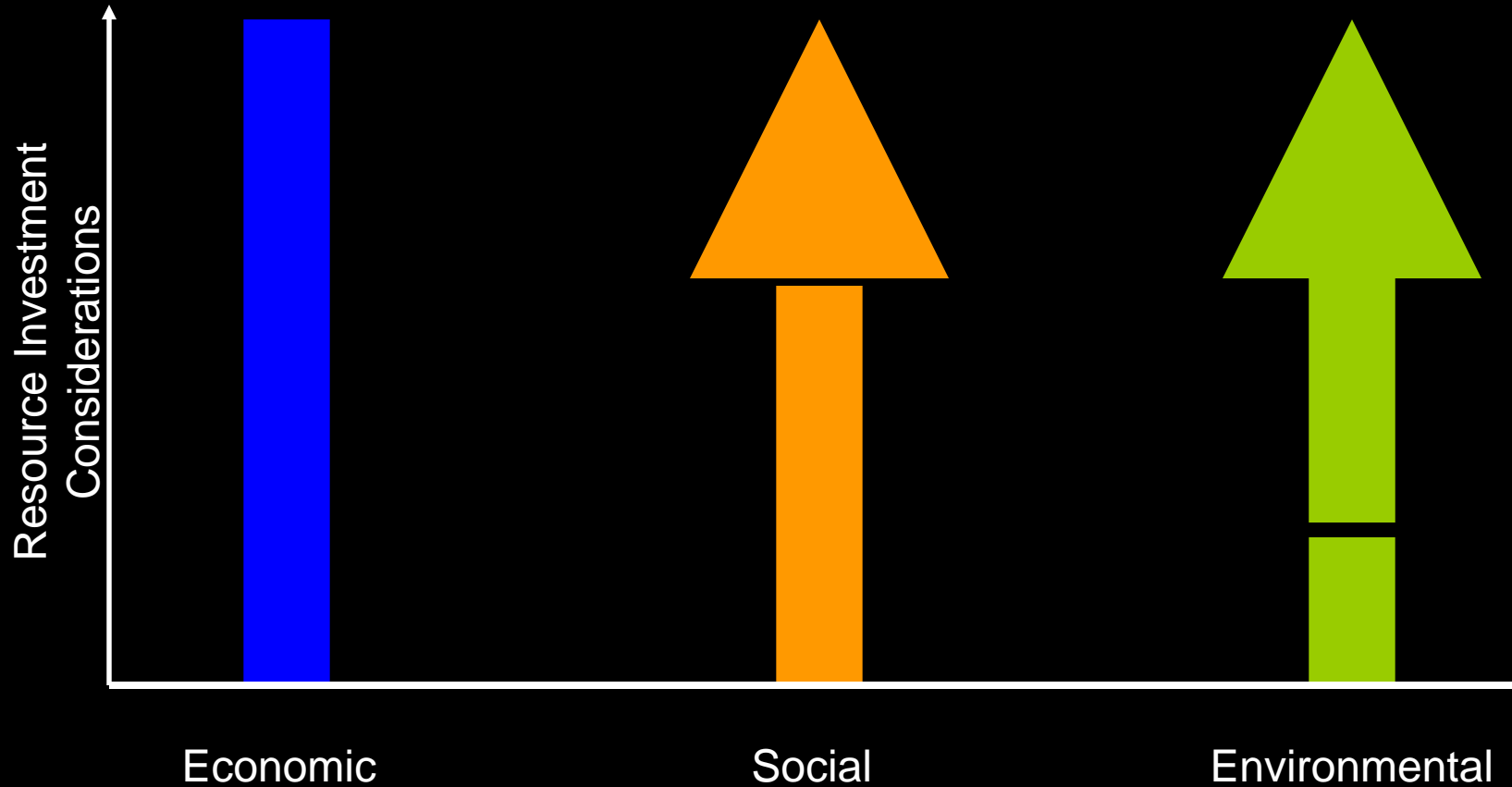


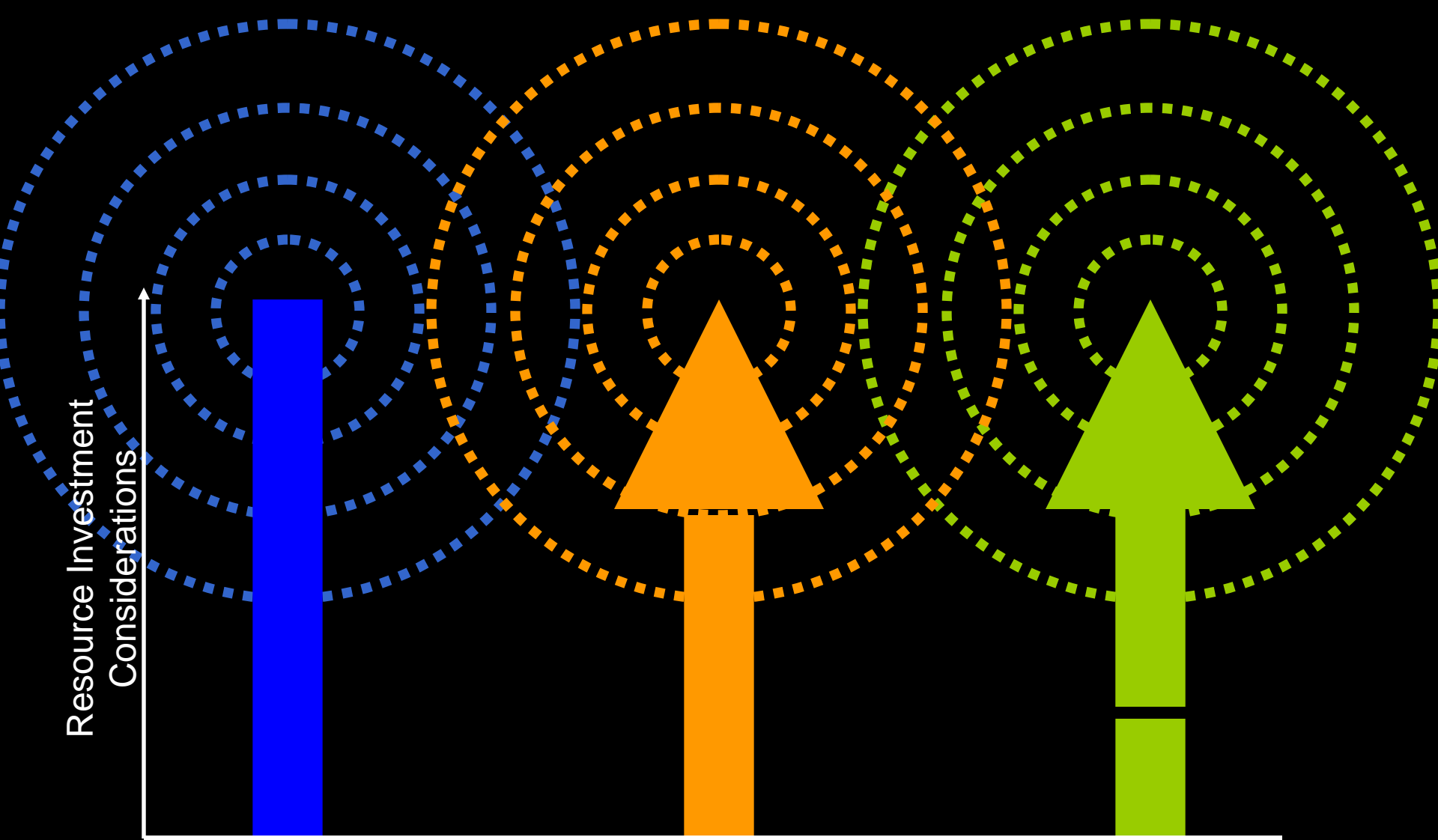
The Case For Cities

Typical Site Considerations



Toward Sustainable Sites





Economic

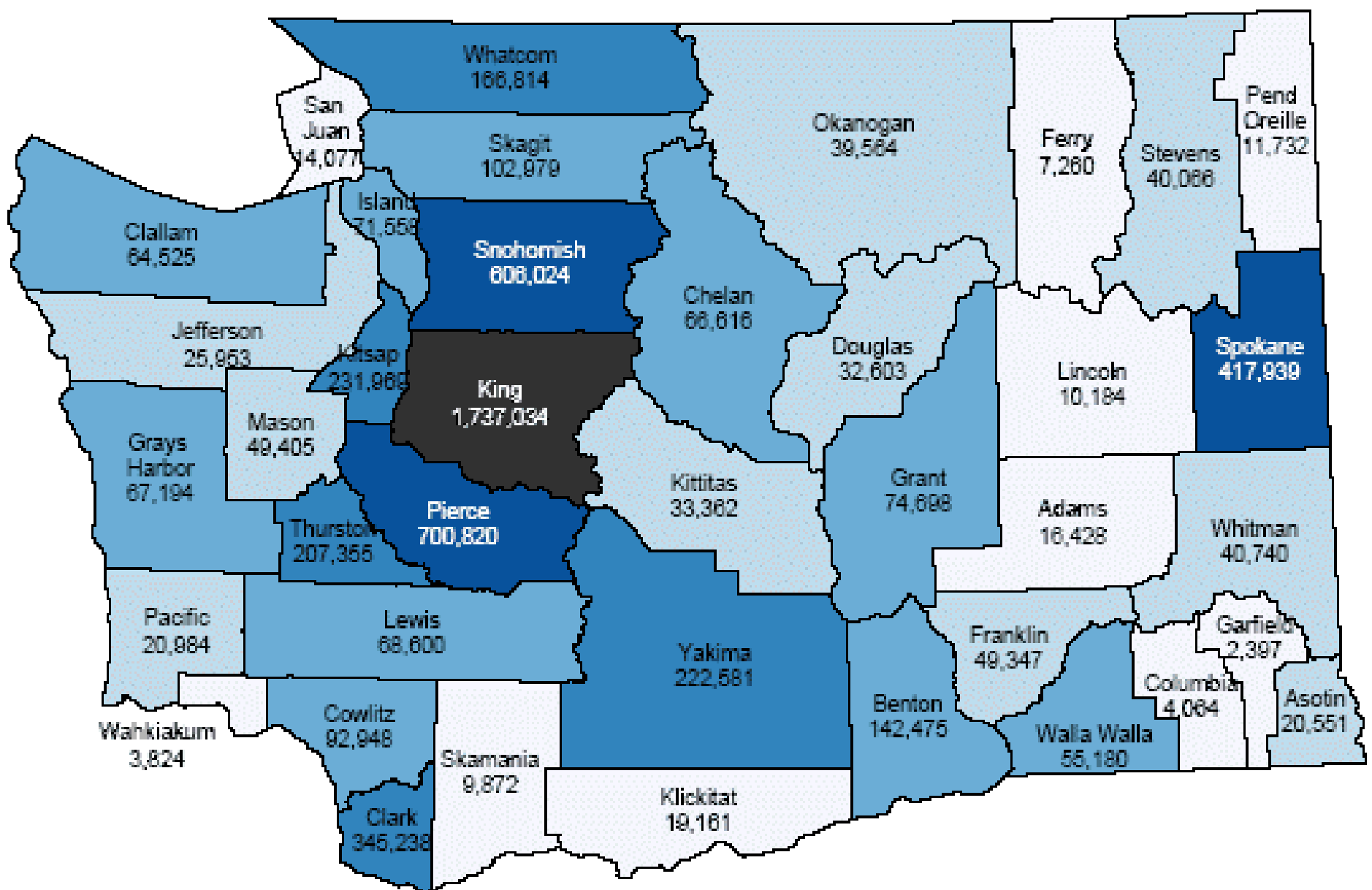
Social

Environmental

Sustainable Urban Sites

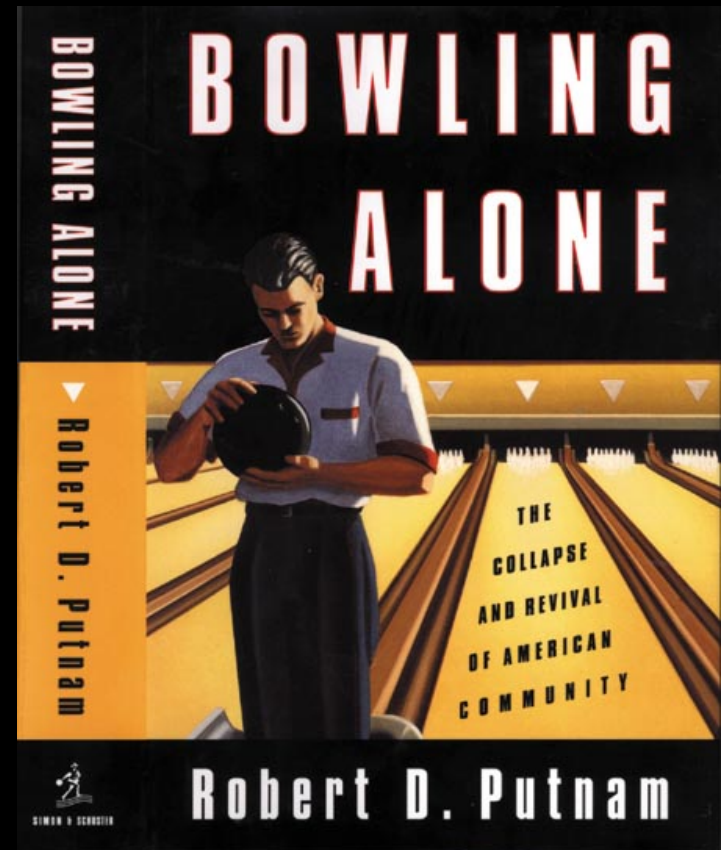
Economic

- Cities speed the accumulation of wealth
- Workers in cities earn 33% more than their non-urban counterparts
- 18% of the US GDP comes from 3 largest metro regions



Social

- Physical + Psychological Well-being
- Economics
- Violence, Crime + Social Norms
- Equity
 - Diversity
 - Perspectives
 - Job prospects





Social Life and the Built Environment



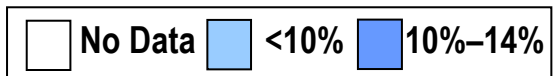
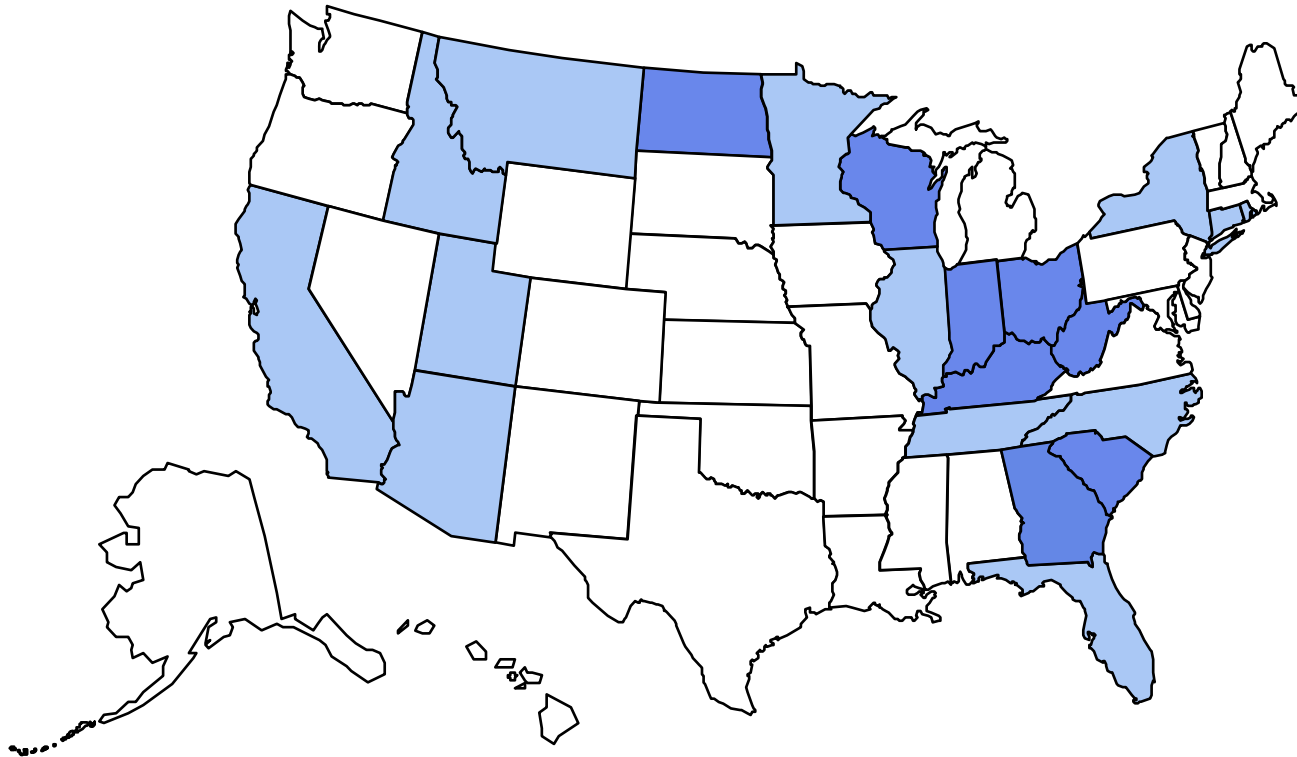
Image via Mithun



Psychological Well-being

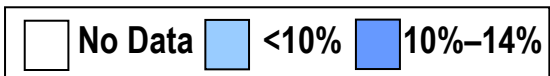
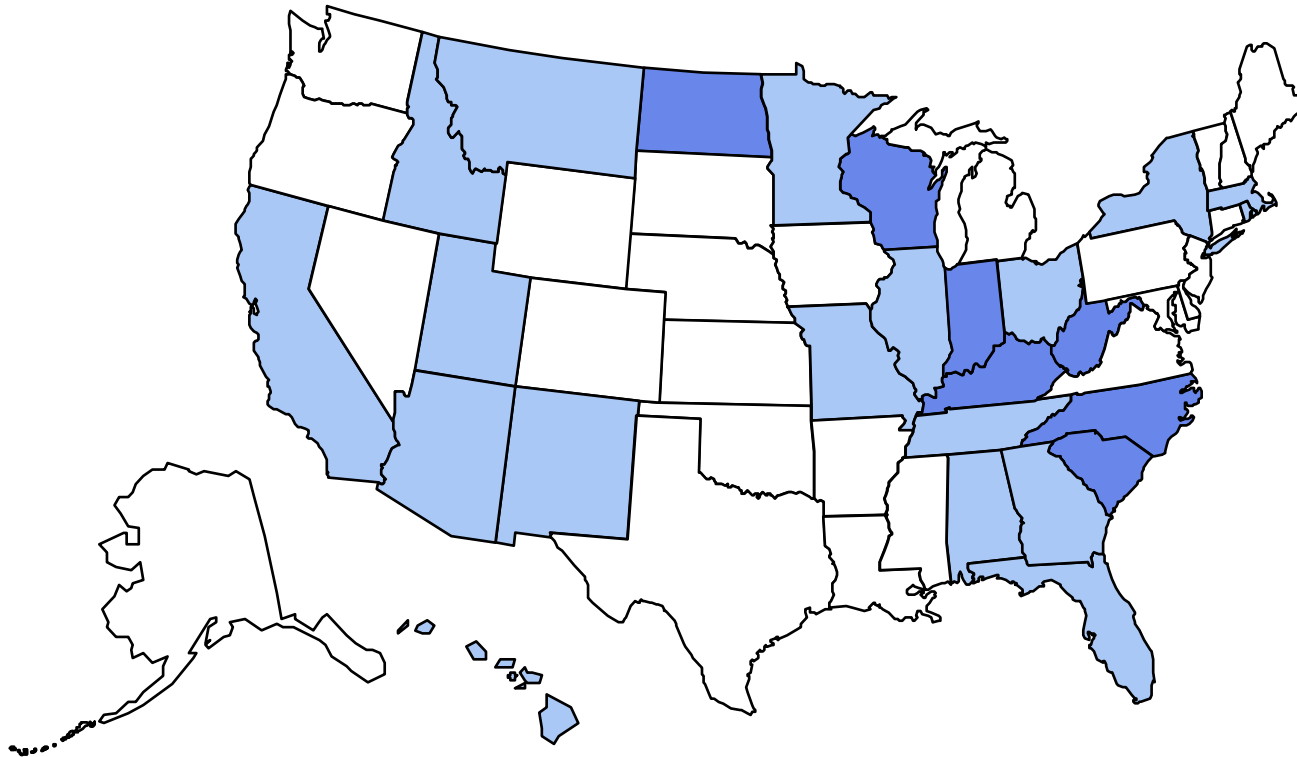
BRFSS, 1985

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



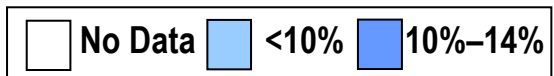
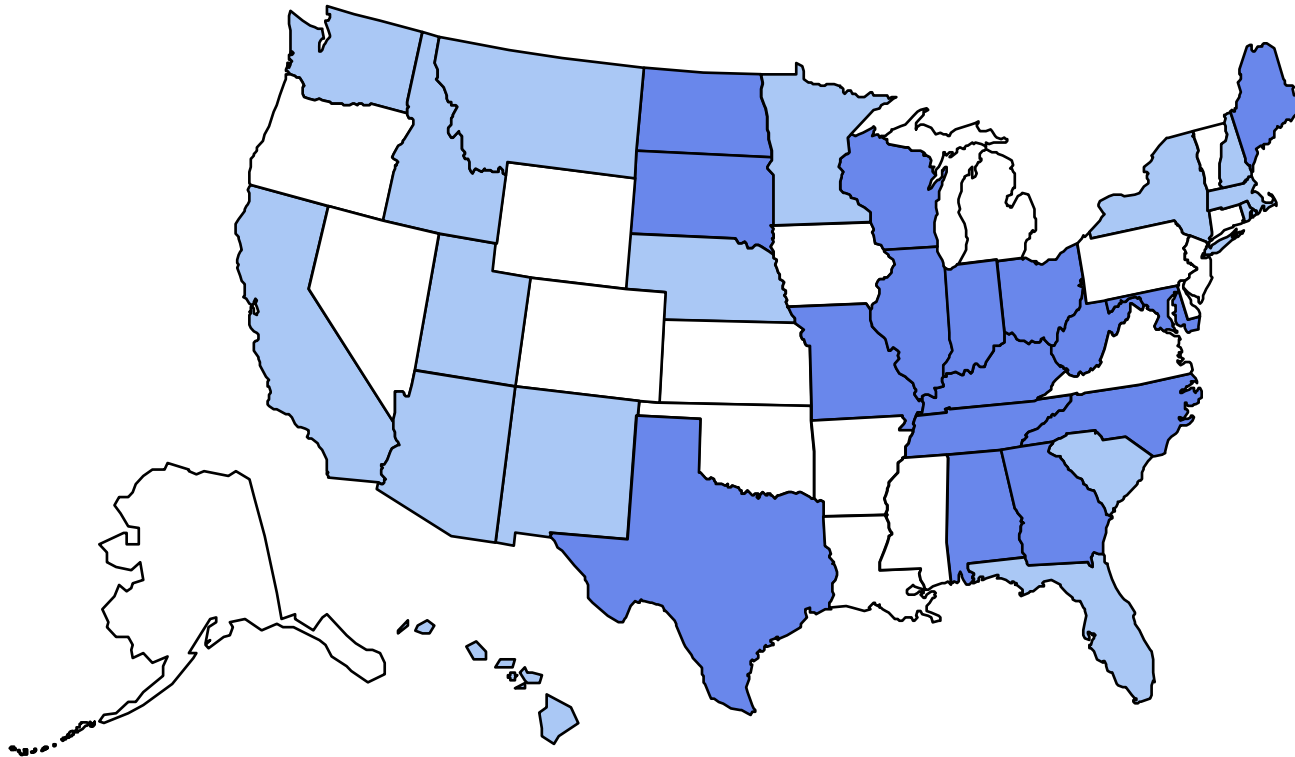
BRFSS, 1986

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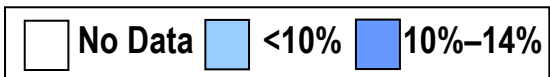
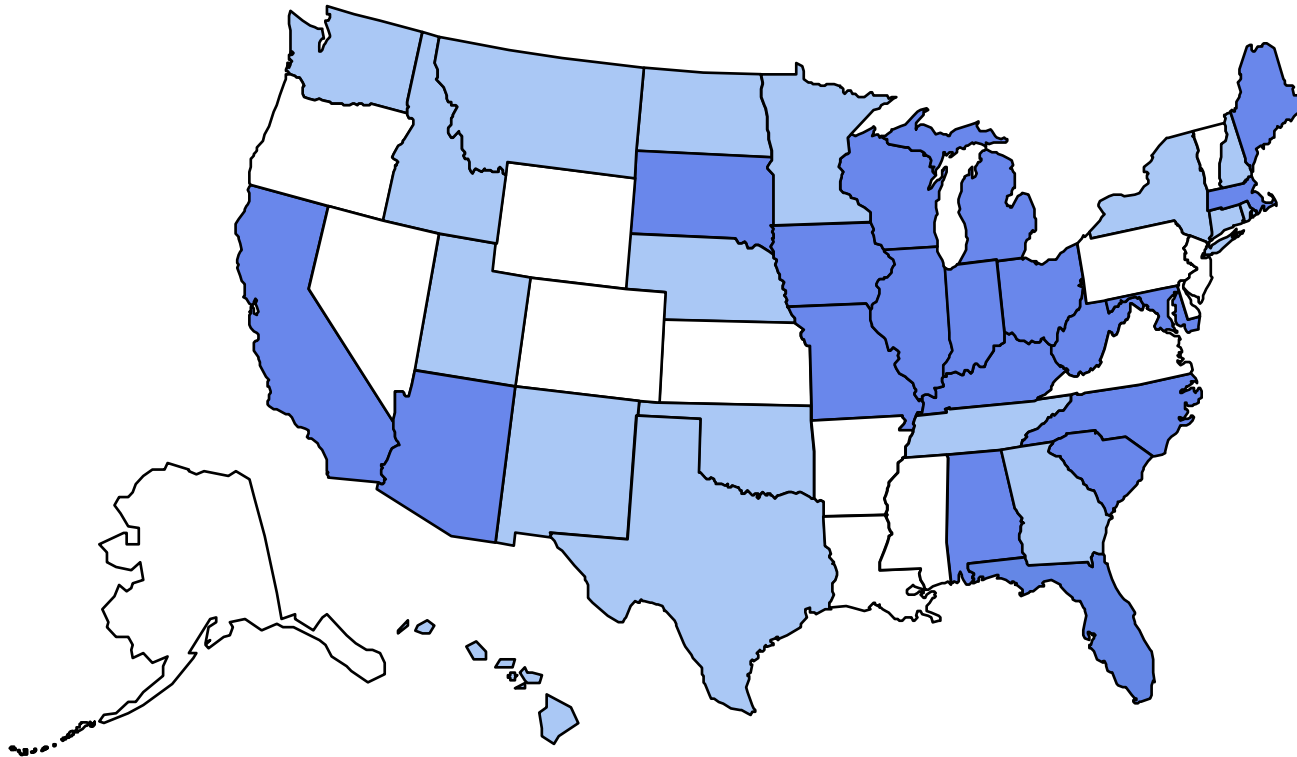
BRFSS, 1987

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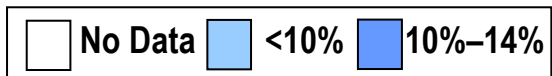
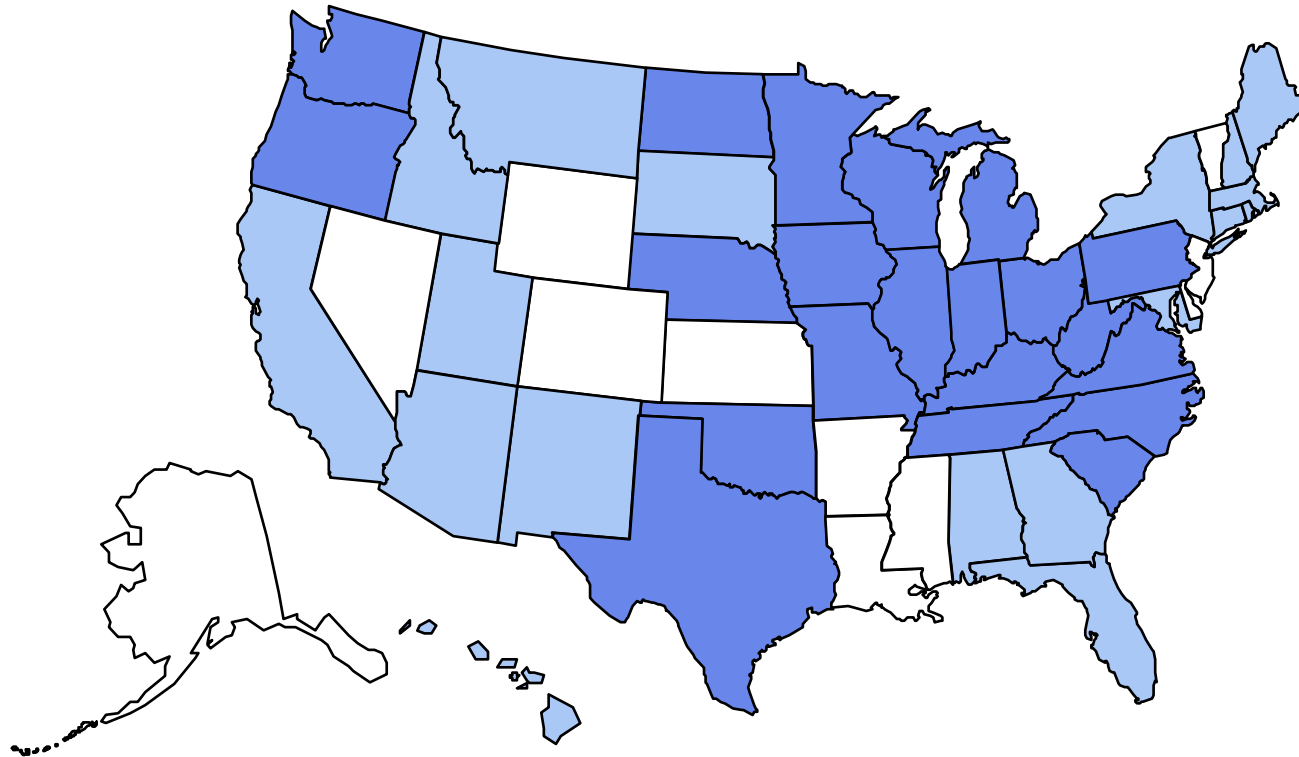
BRFSS, 1988

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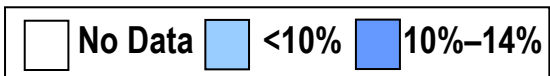
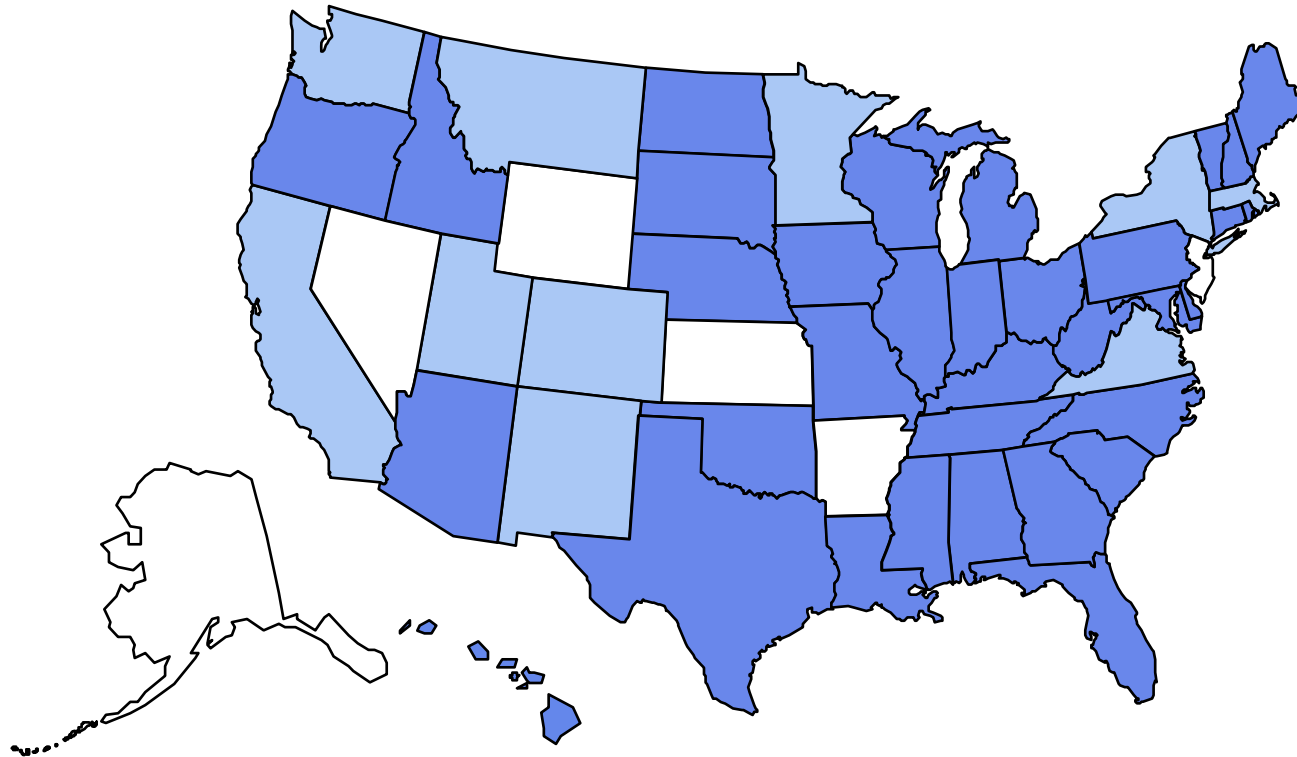
BRFSS, 1989

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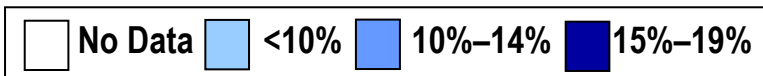
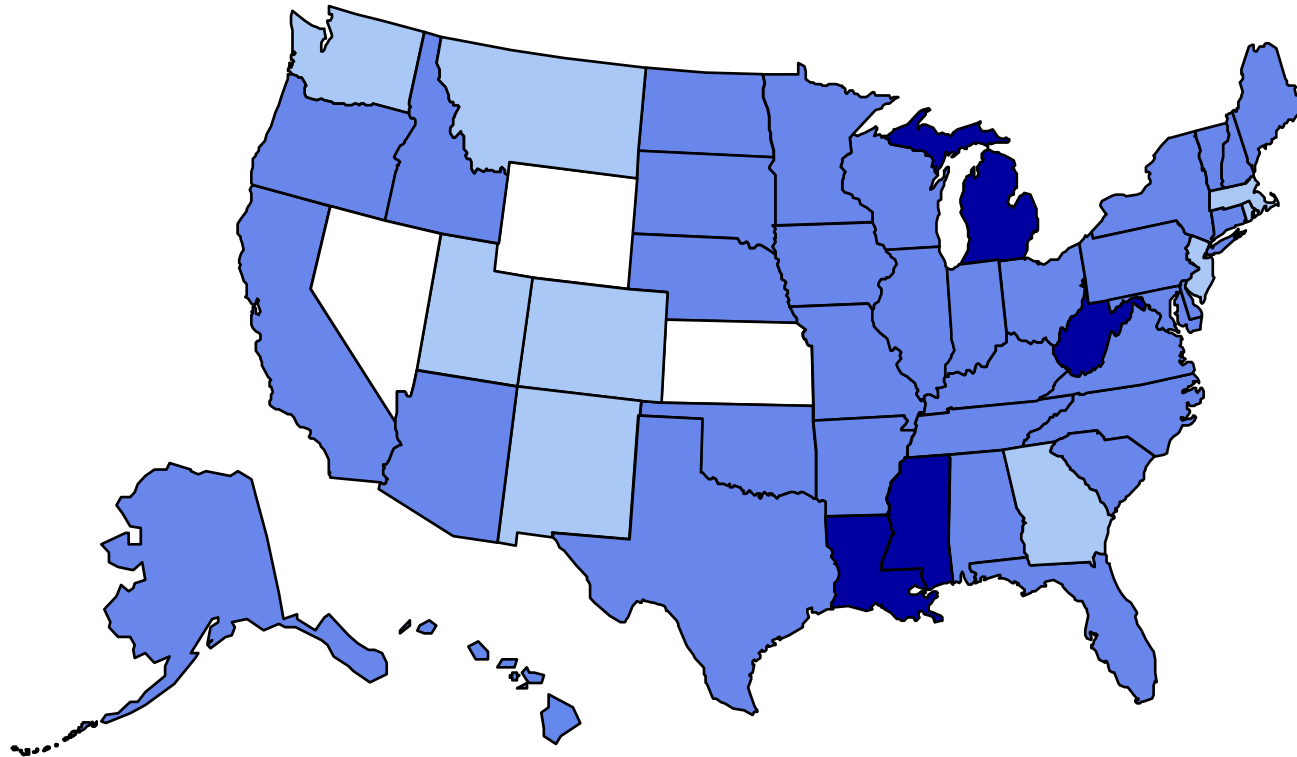
BRFSS, 1990

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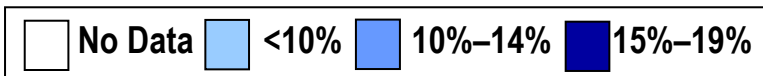
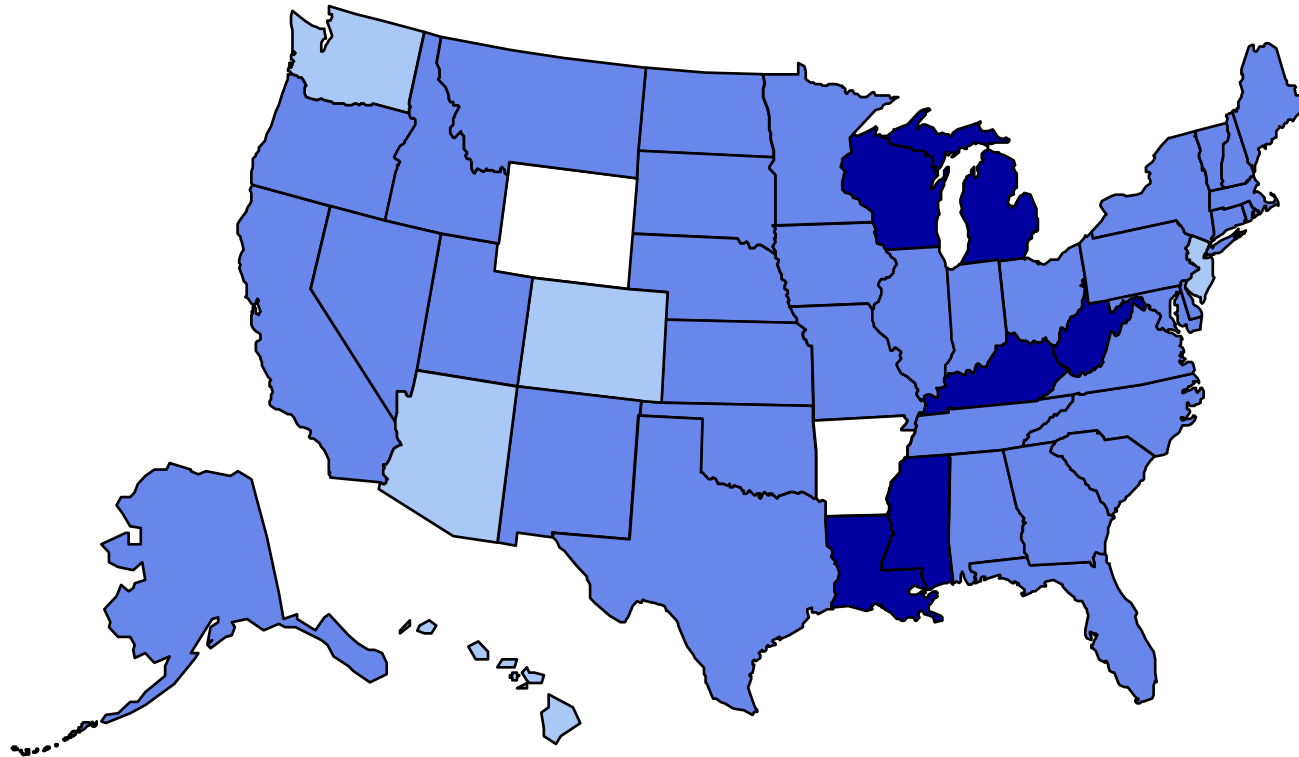
BRFSS, 1991

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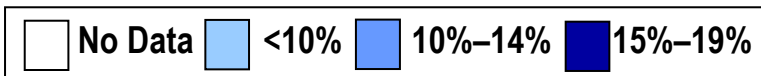
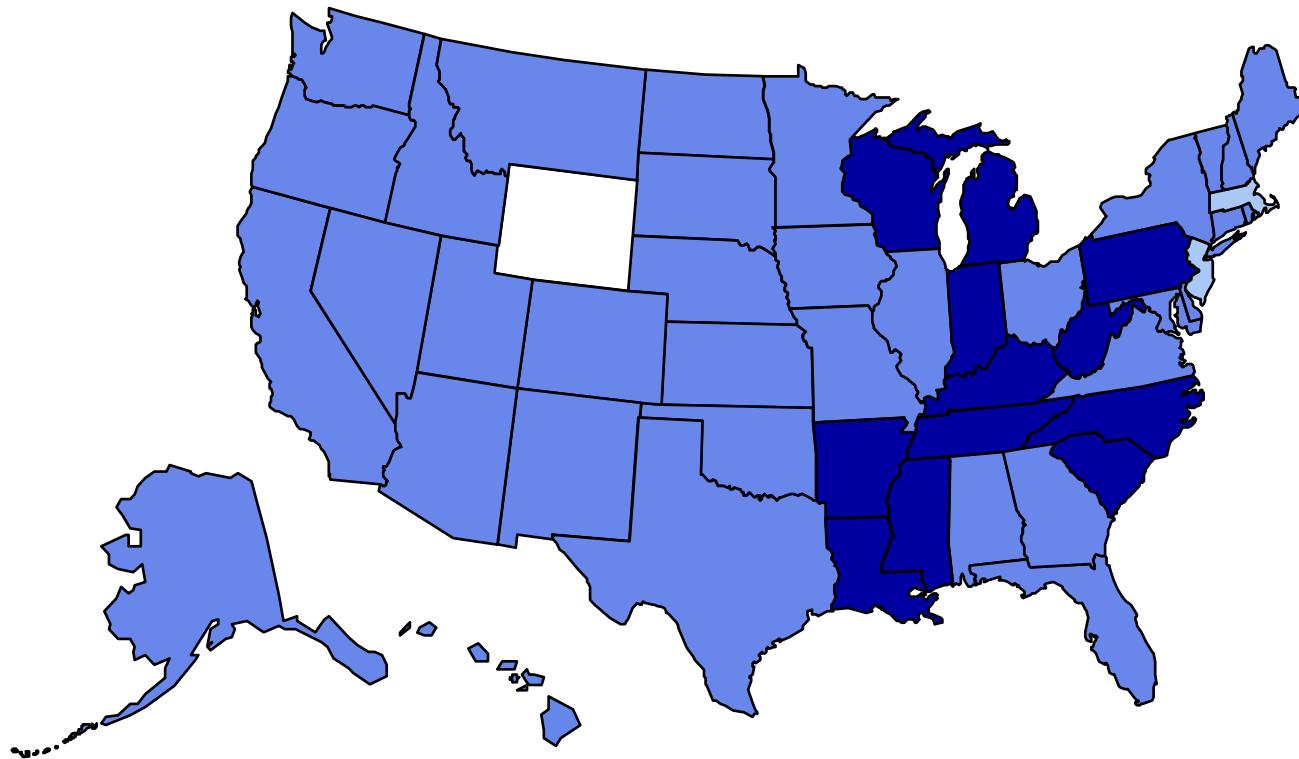
BRFSS, 1992

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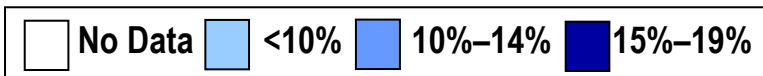
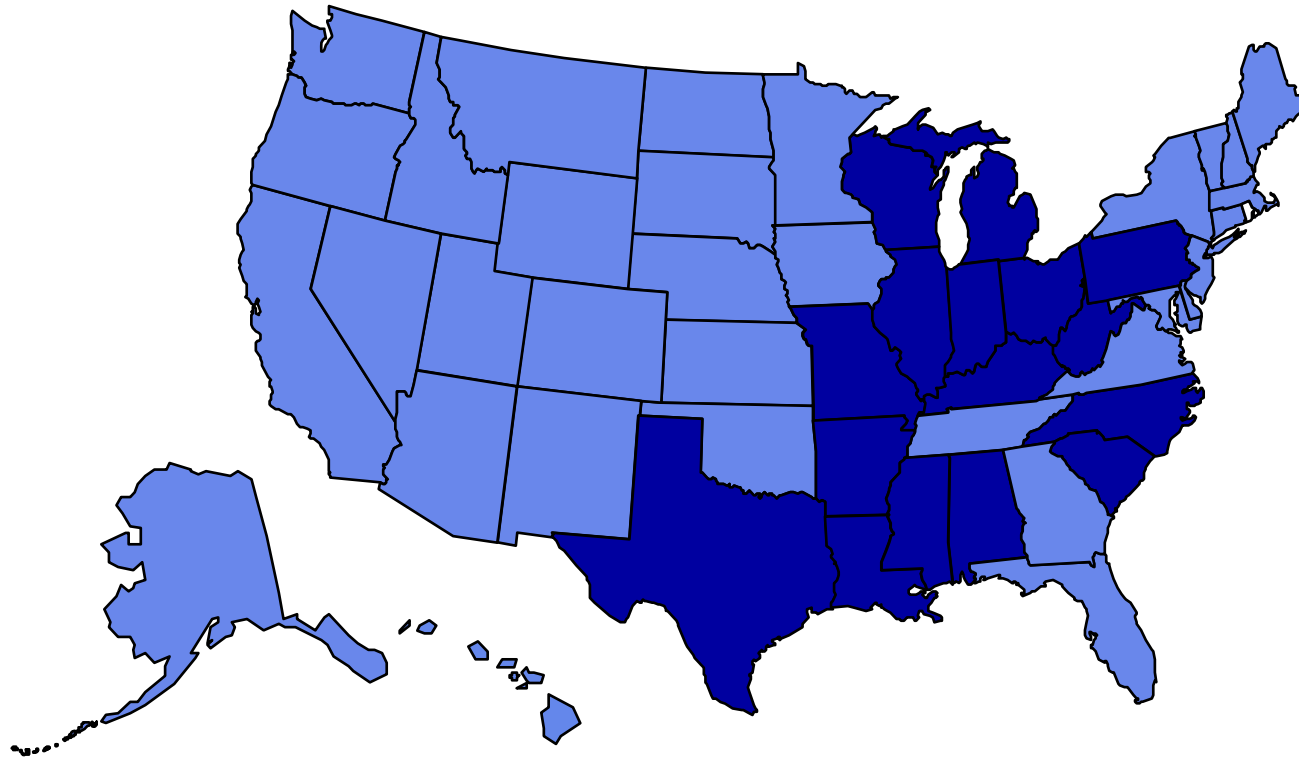
BRFSS, 1993

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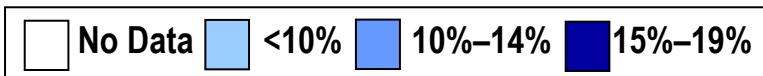
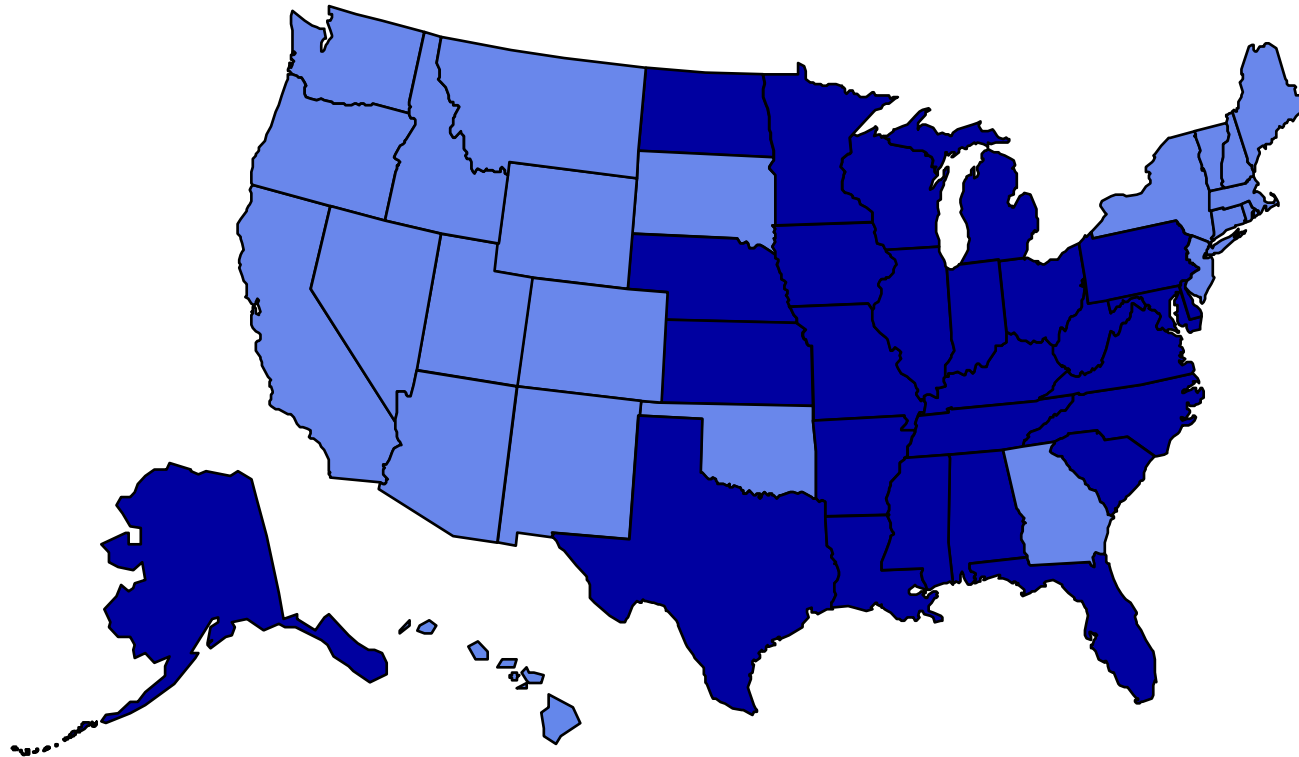
BRFSS, 1994

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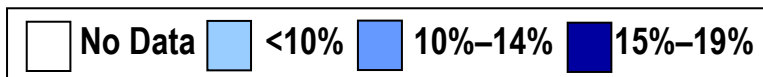
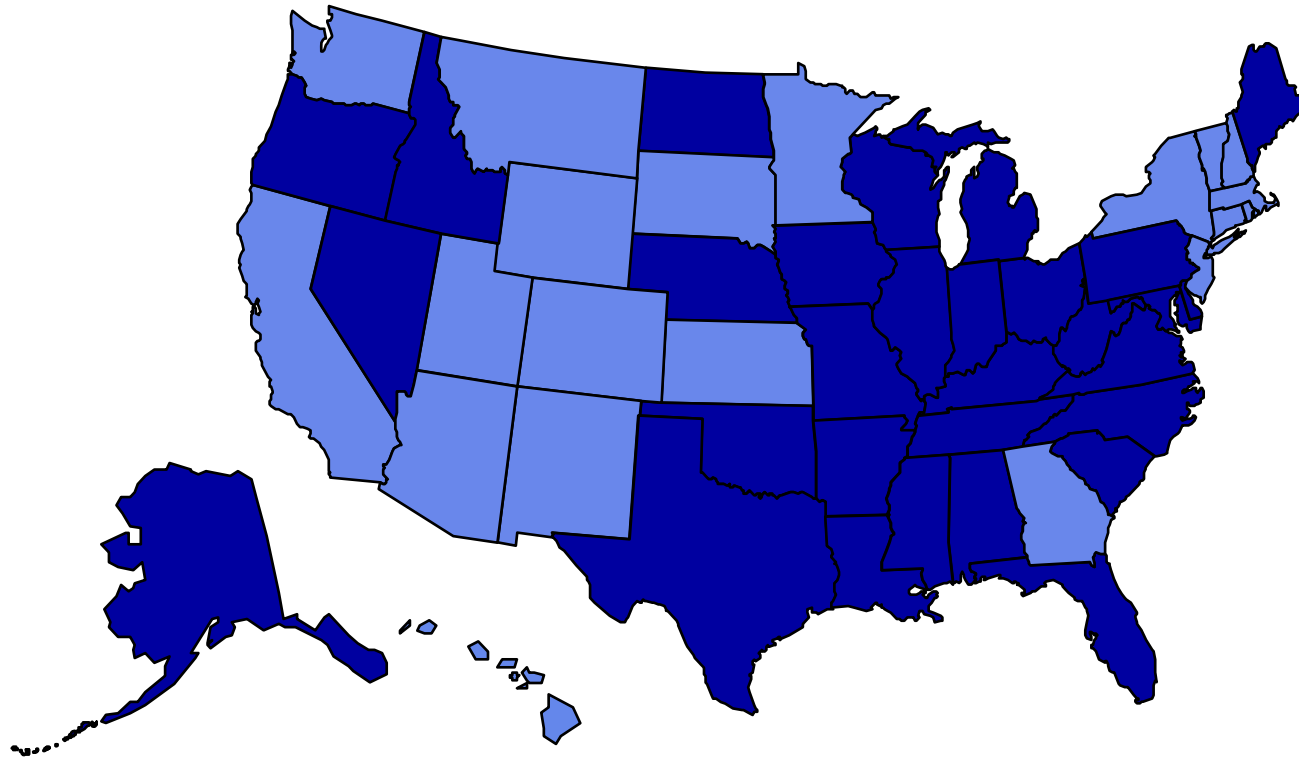
BRFSS, 1995

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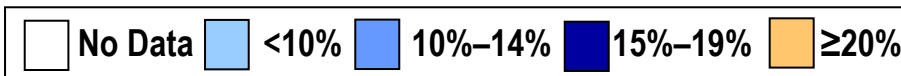
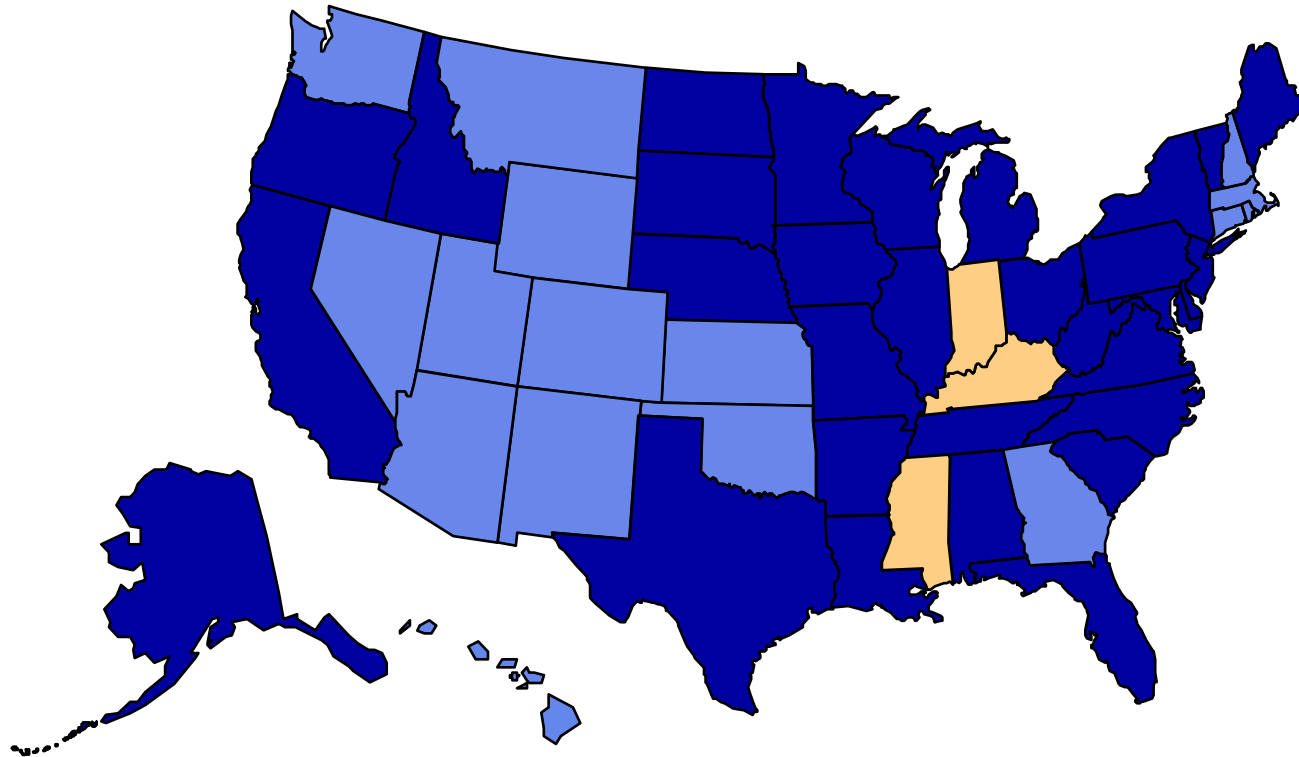
BRFSS, 1996

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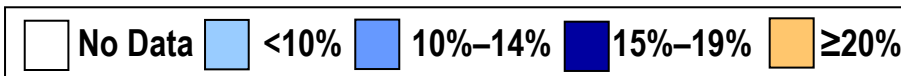
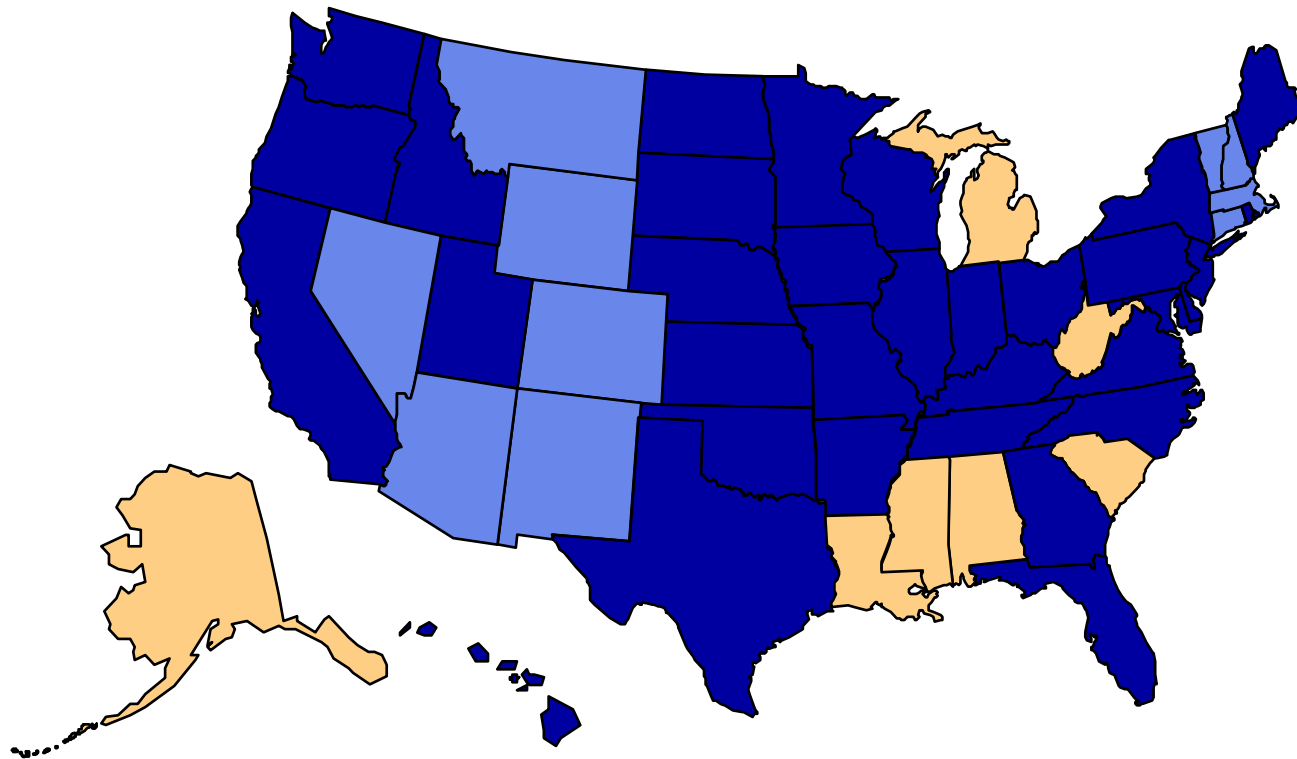
BRFSS, 1997

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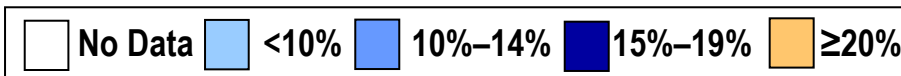
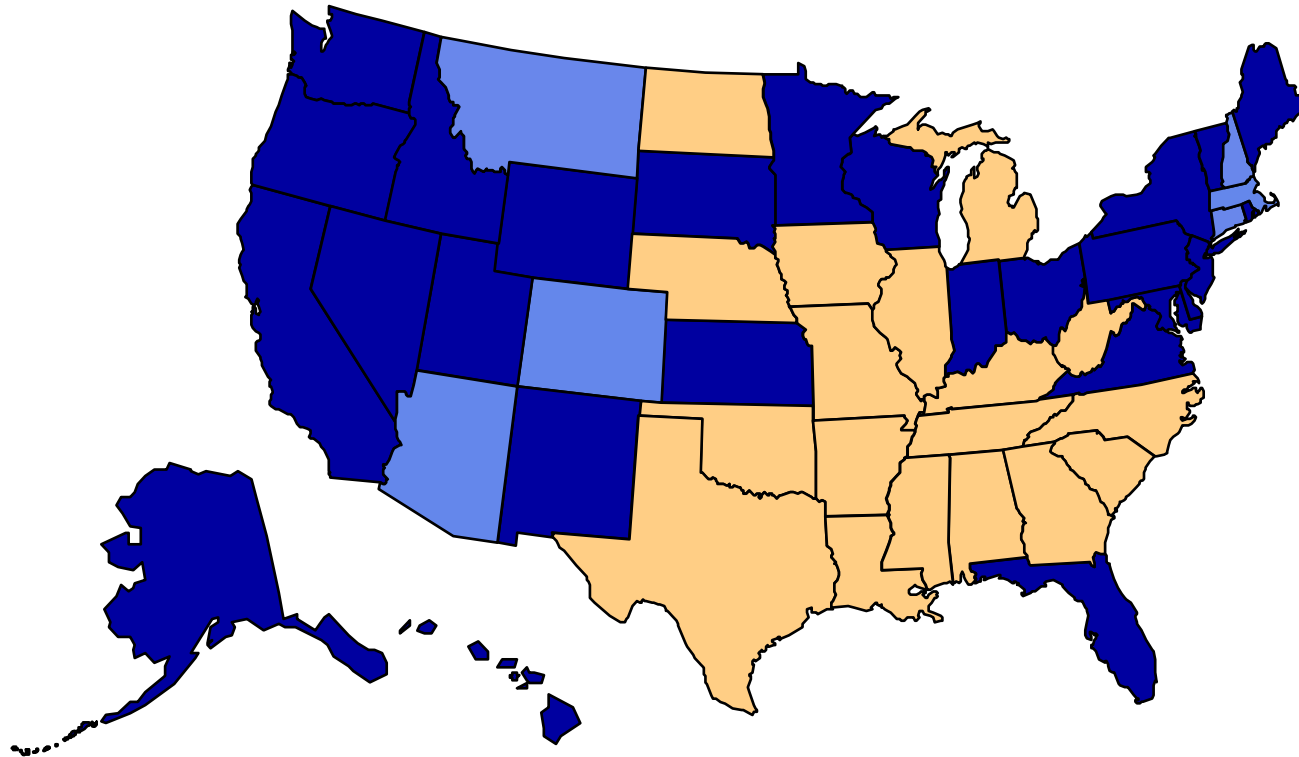
BRFSS, 1998

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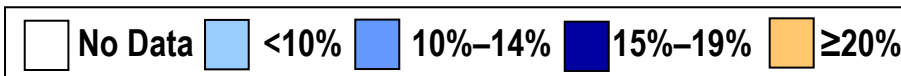
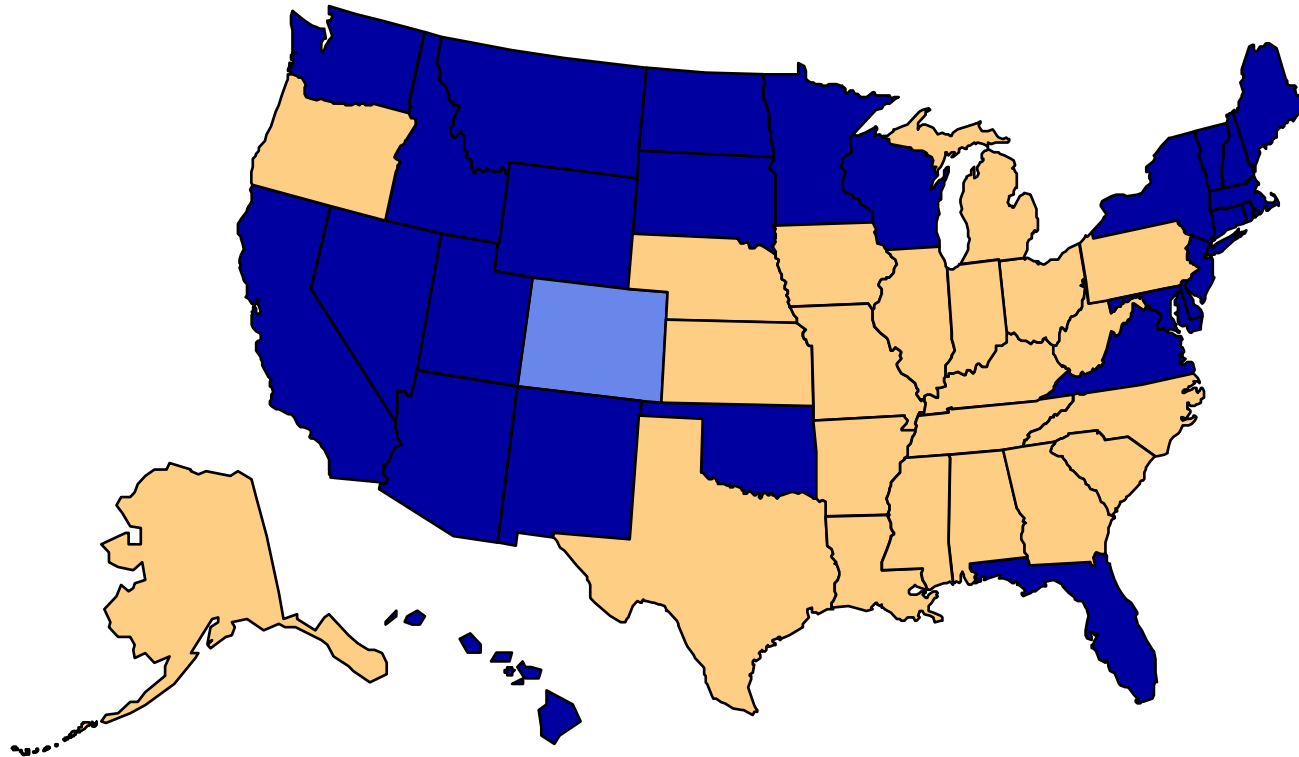
BRFSS, 1999

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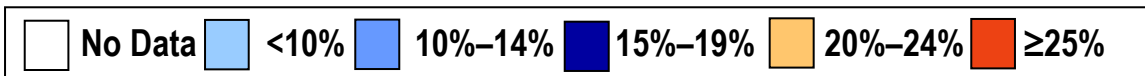
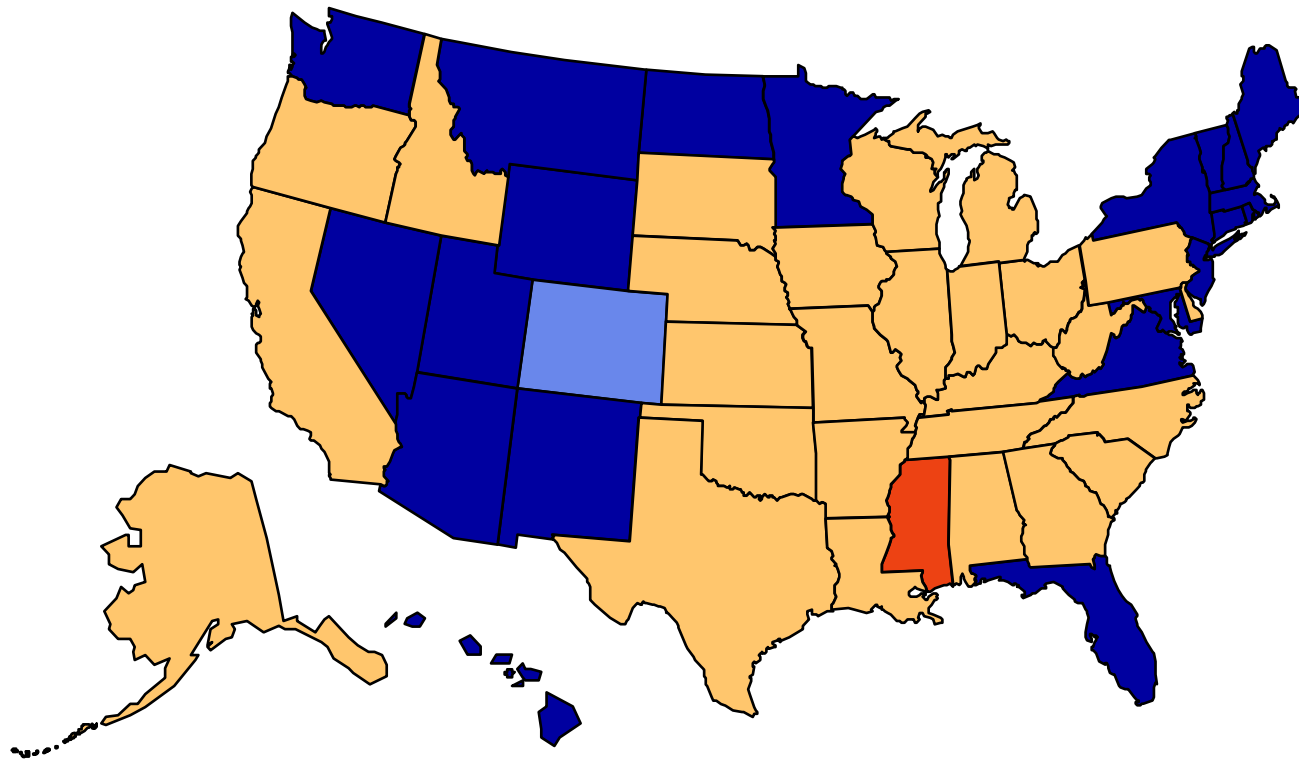
BRFSS, 2000

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



BRFSS, 2001

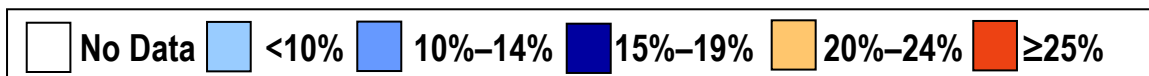
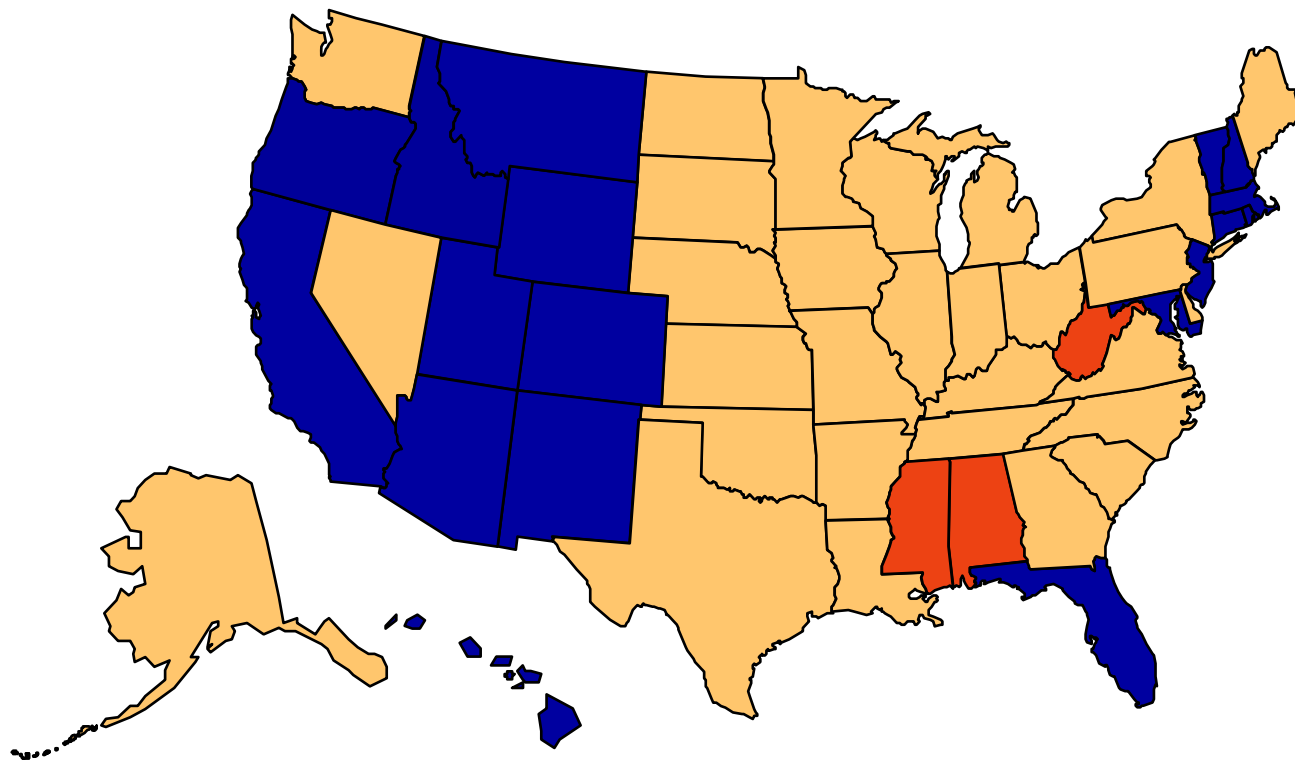
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

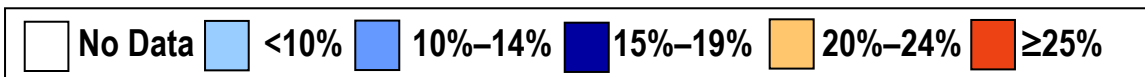
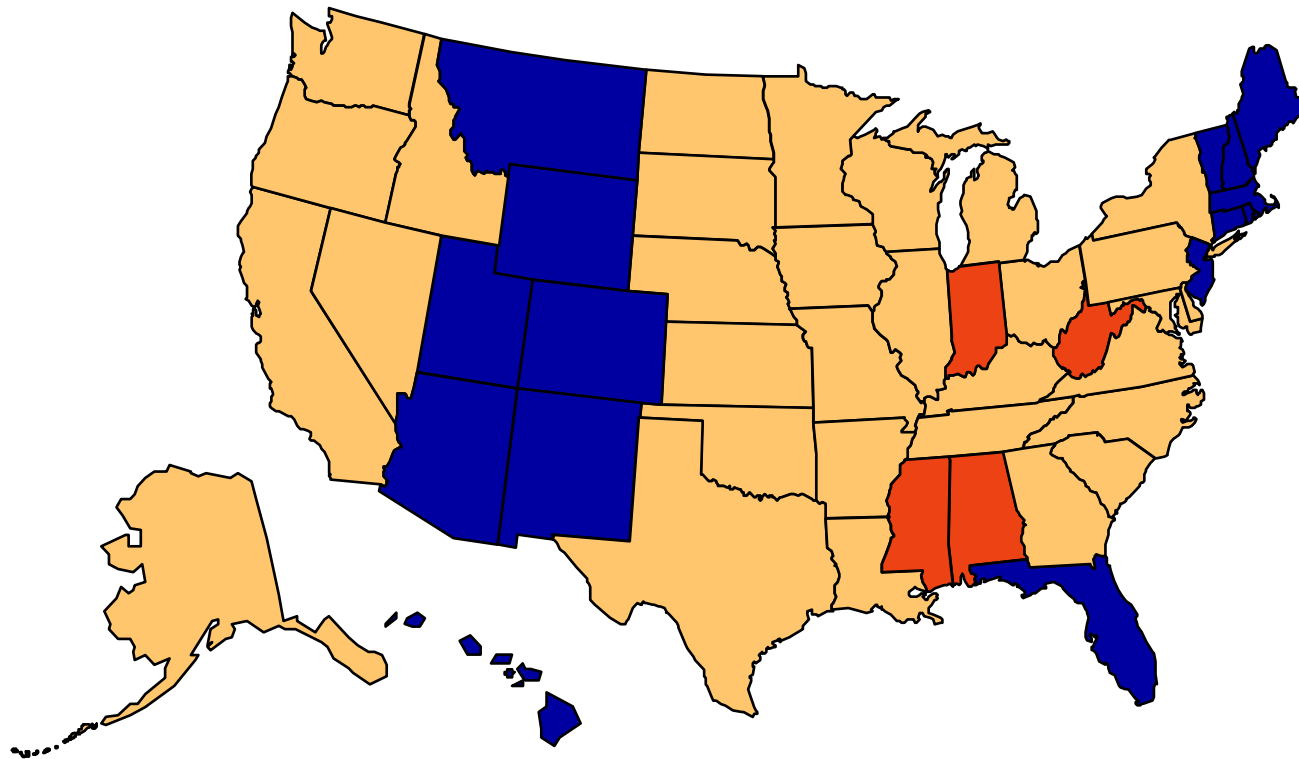
BRFSS, 2002

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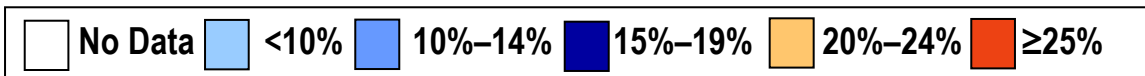
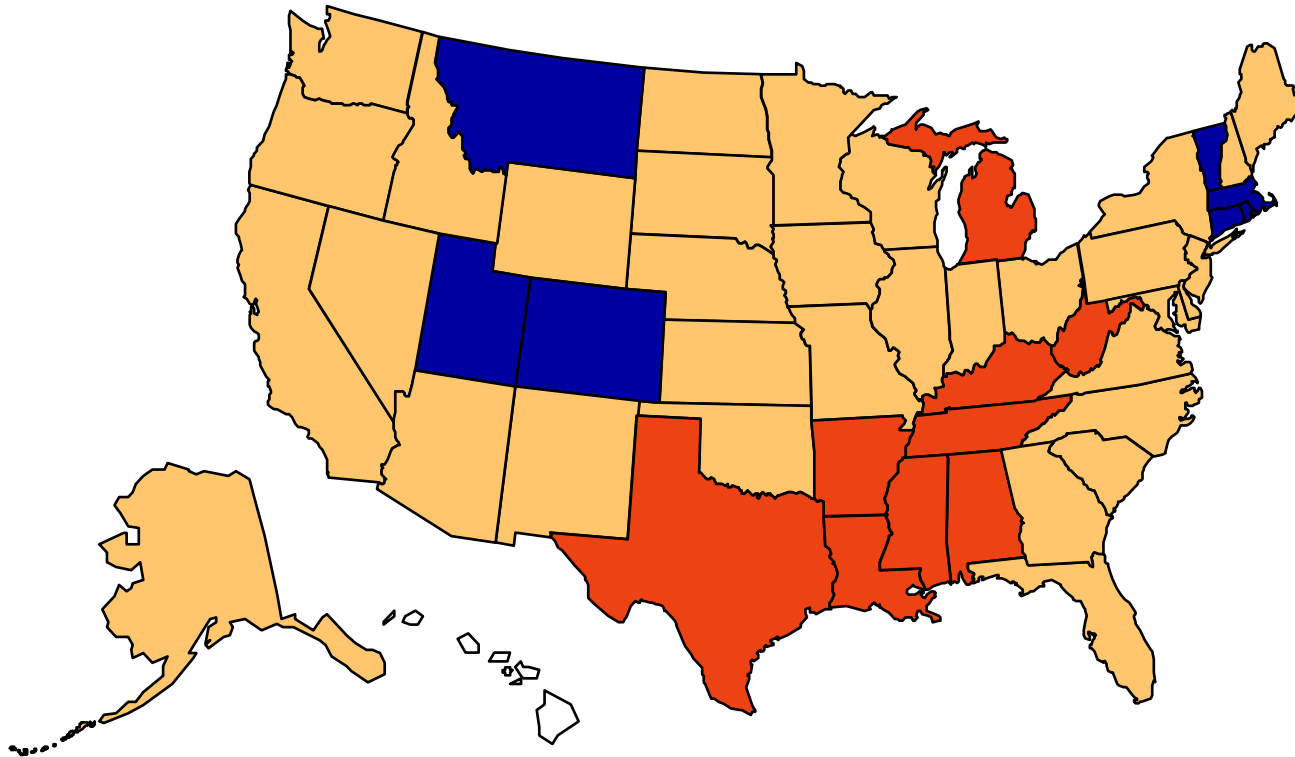
BRFSS, 2003

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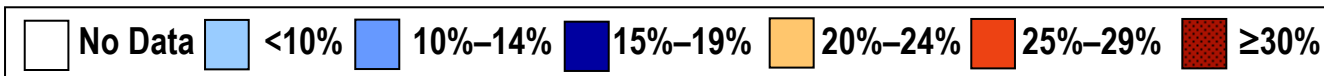
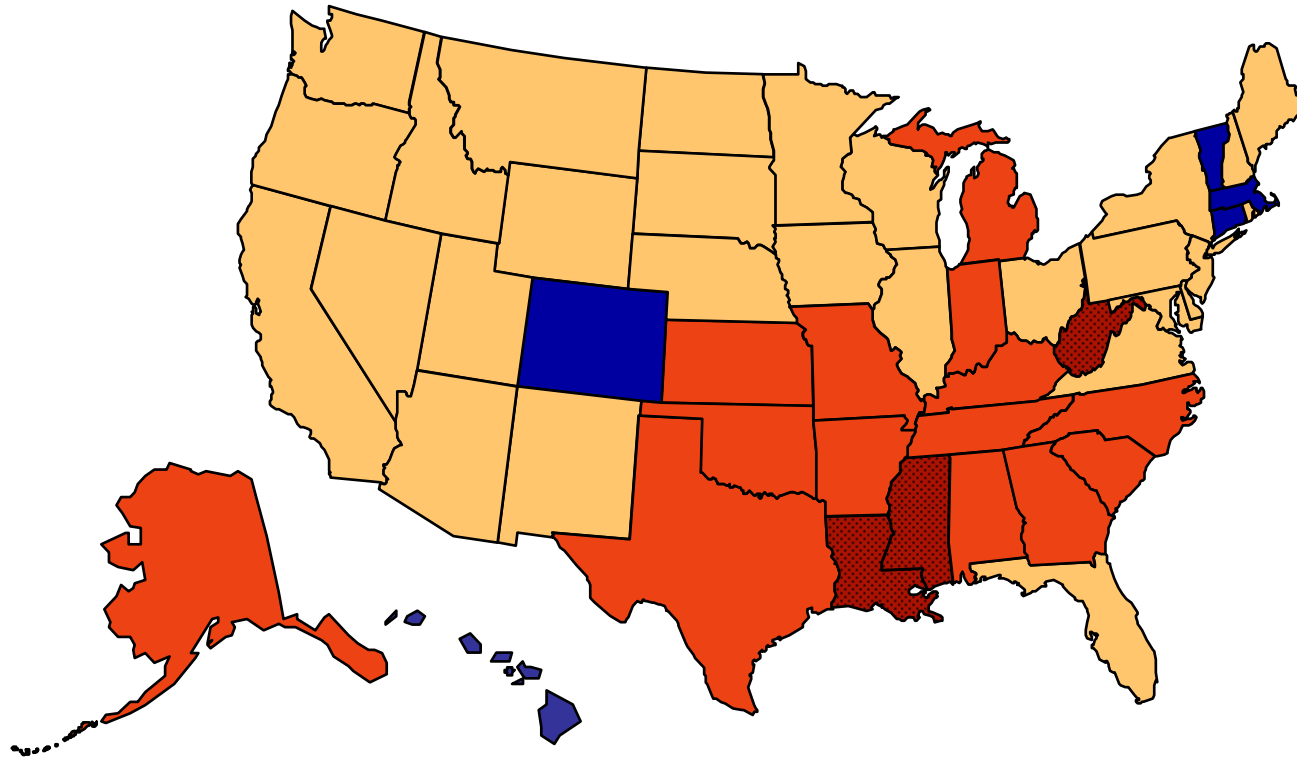
BRFSS, 2004

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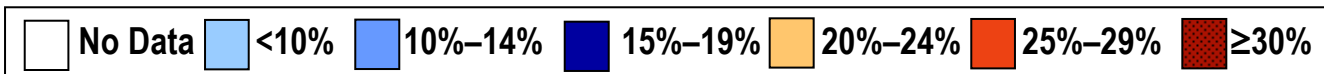
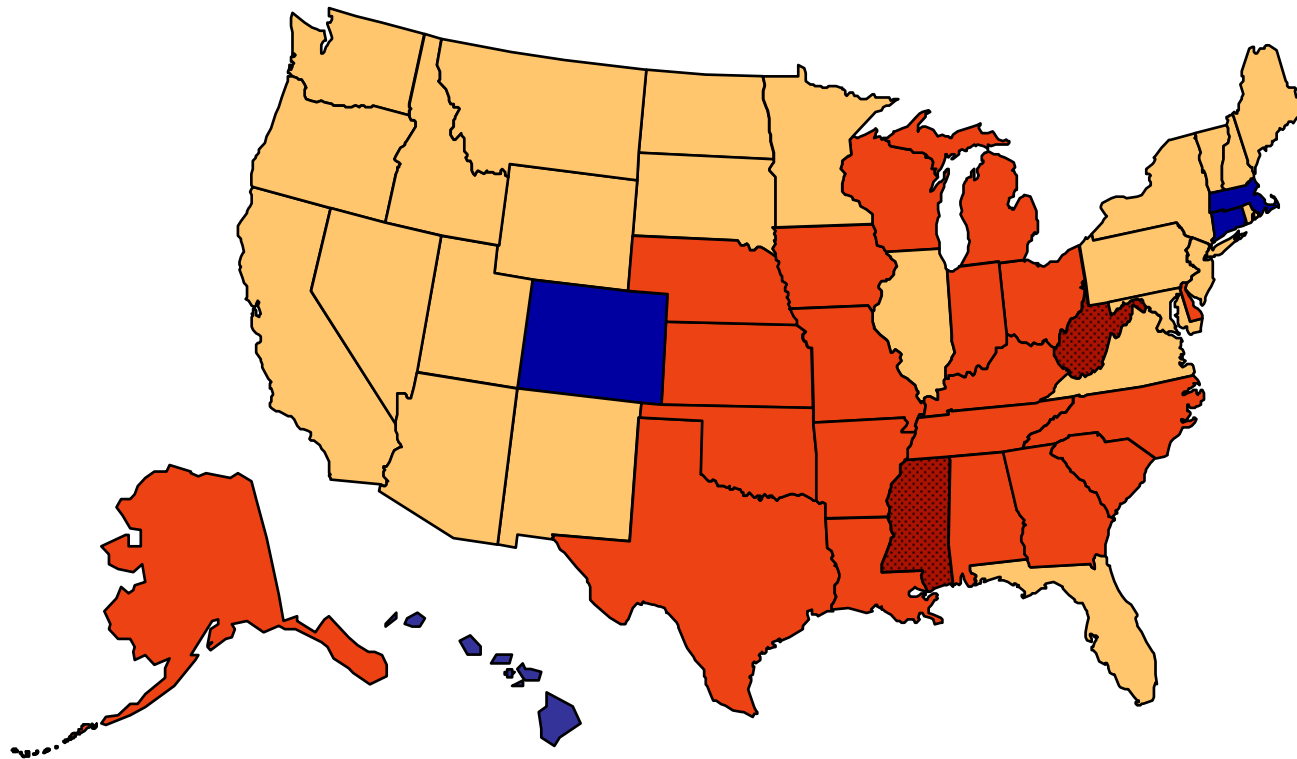
BRFSS, 2005

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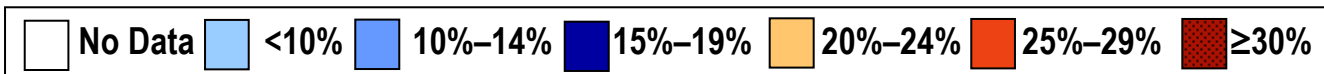
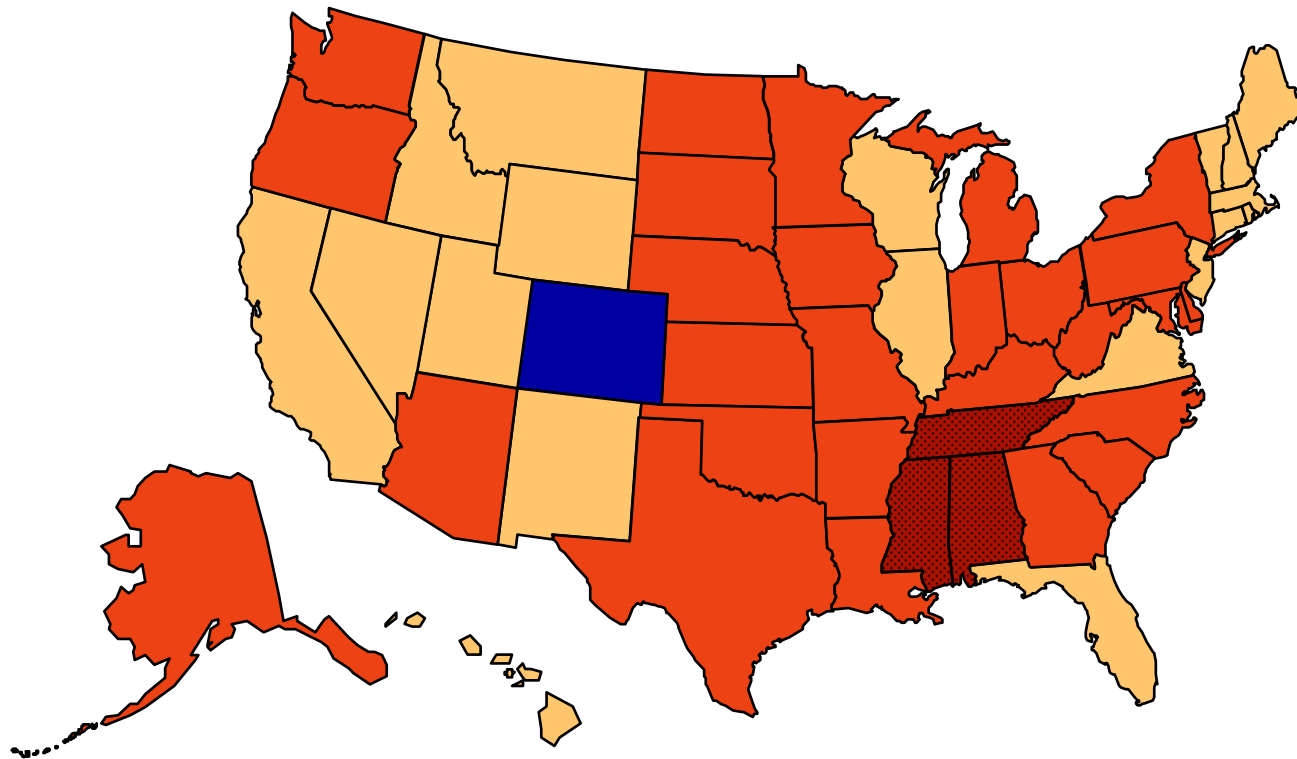
BRFSS, 2006

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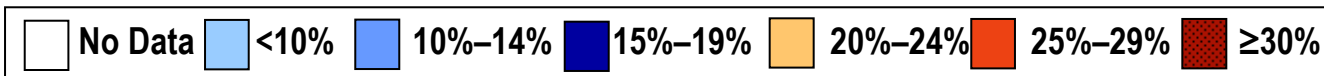
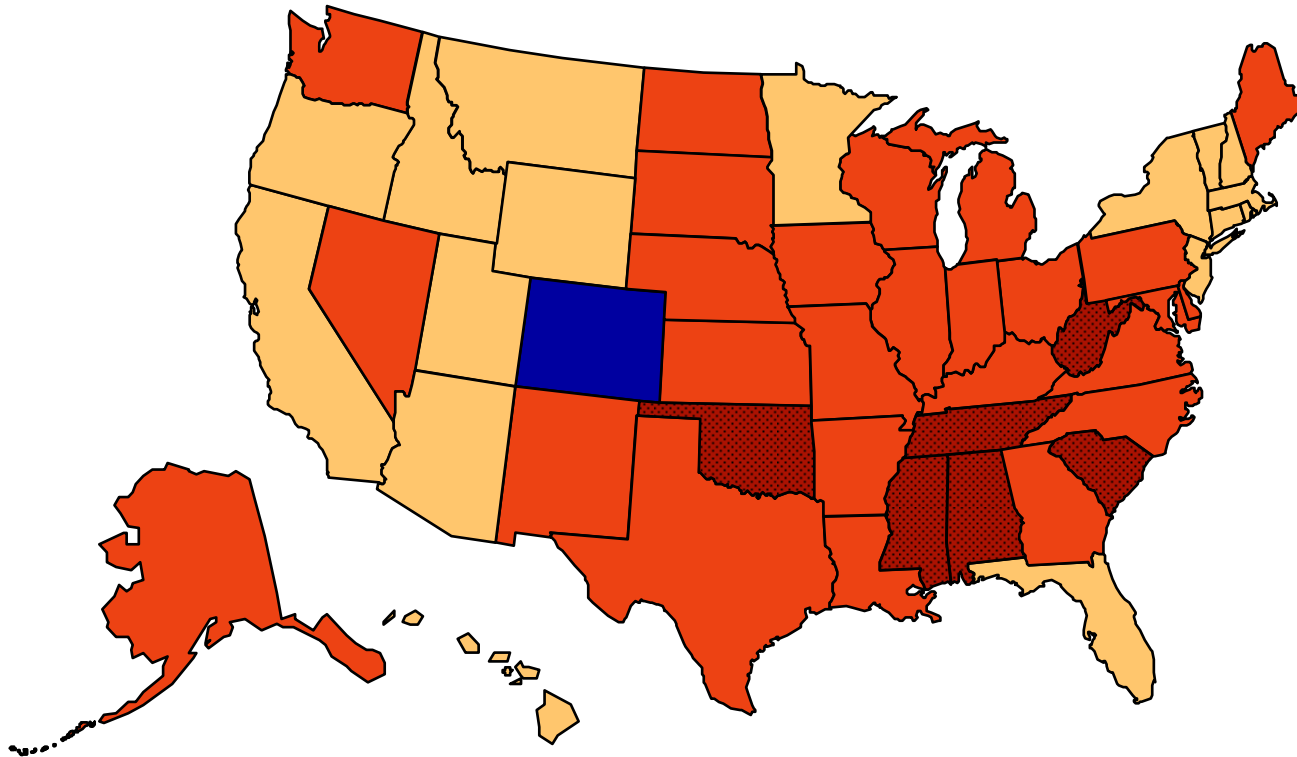
BRFSS, 2007

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



BRFSS, 2008

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





Airshaft of a dumbbell
tenement, New York City,
taken from the roof, ca.
1900. 196-GS-14.





3.3%
OF TRIPS ON
BIKE OR FOOT



14.9%
OF TRIPS ON
BIKE OR FOOT

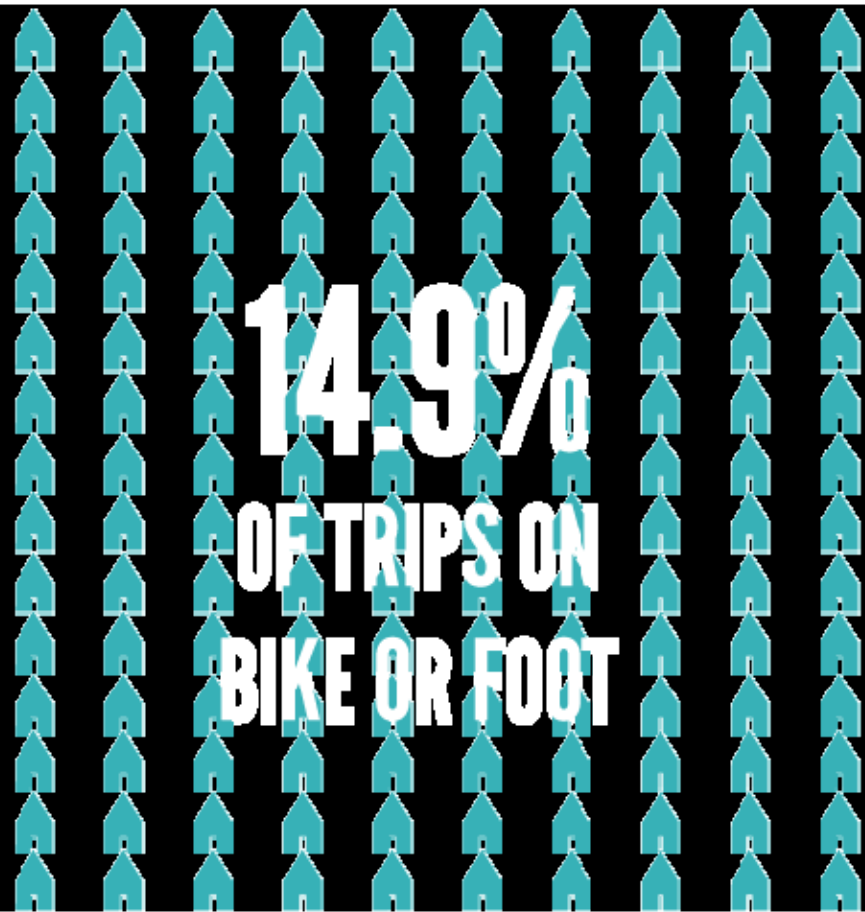
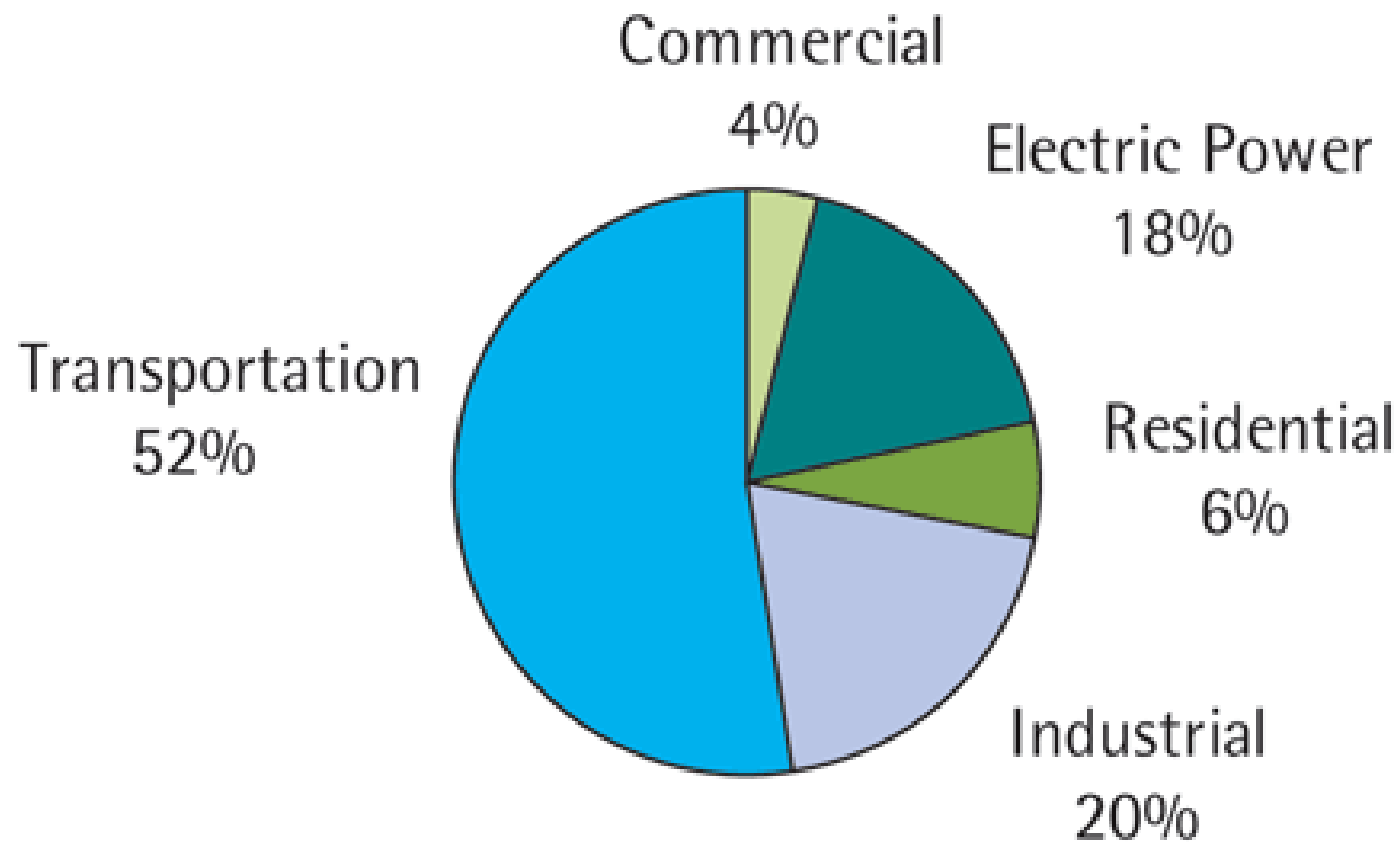




Image by flickr user niznoz



Image by flickr user Tasslehoff Burrfoot



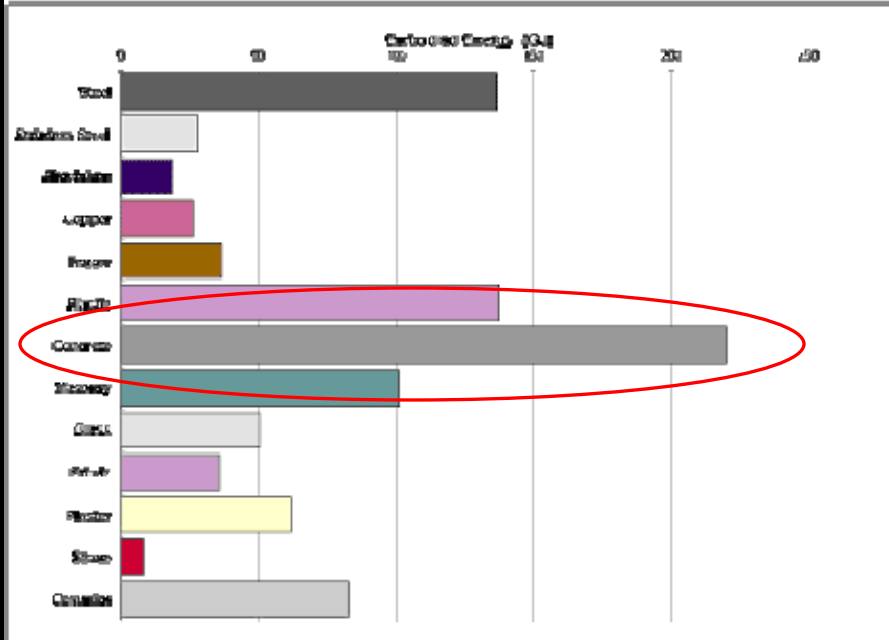
CO₂ emissions from fossil fuels in Washington State

Total: 78.7 million metric tons

Embodied Energy

Minnesota Building Materials
Database

<http://www.buildingmaterials.umn.edu/>



cities v. nature

cities w/ nature

grafting



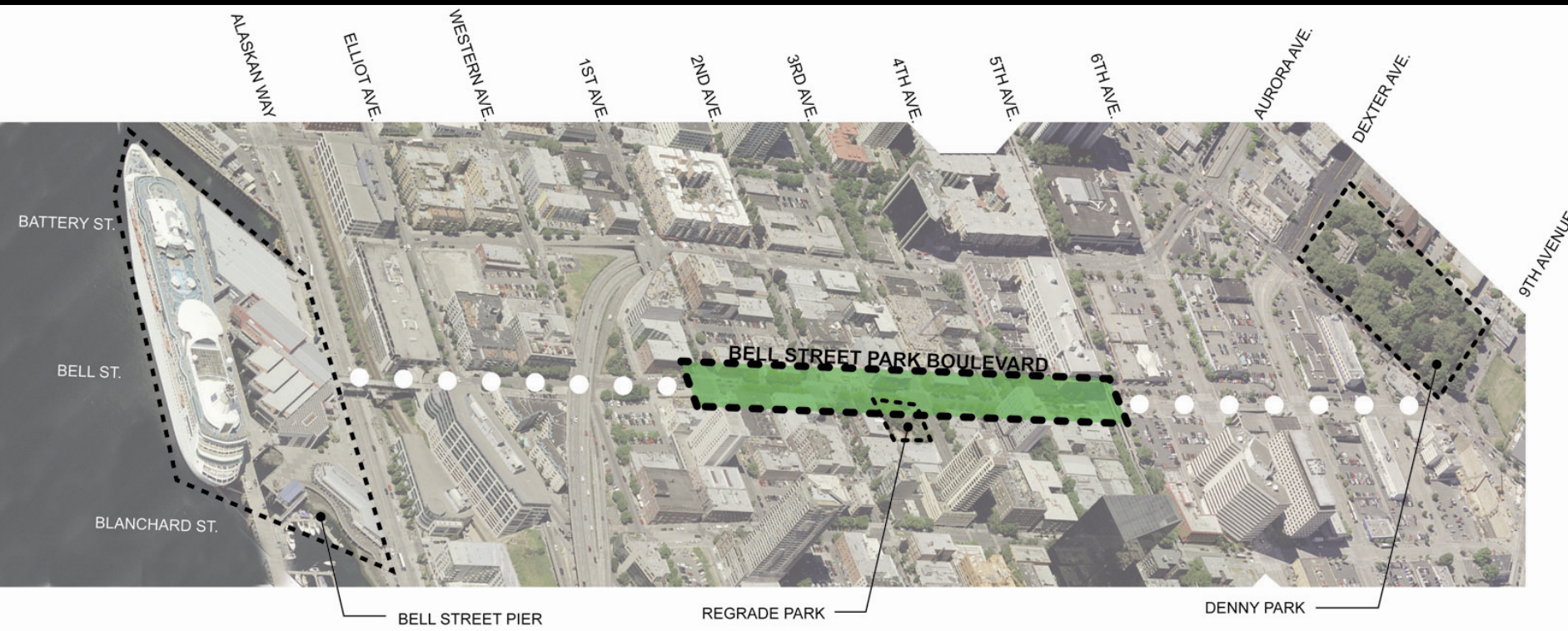
image by flickr user IITA Image Library

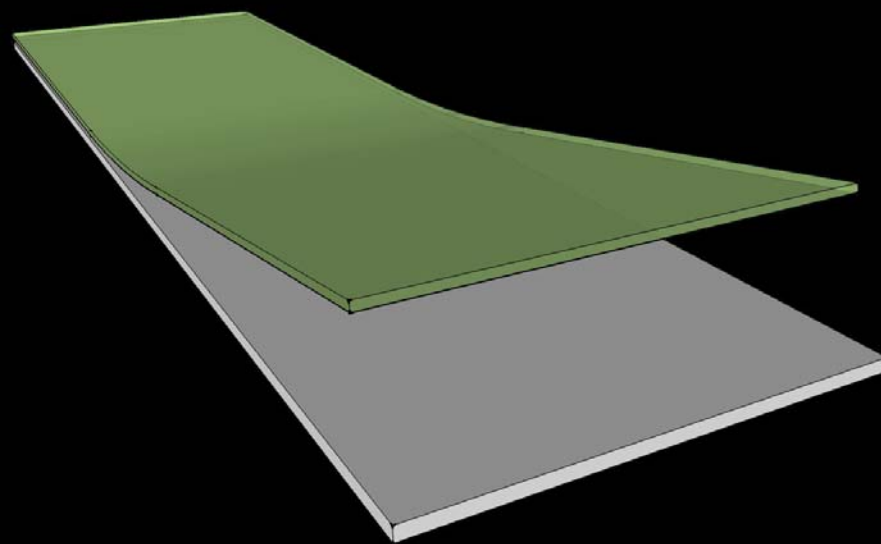
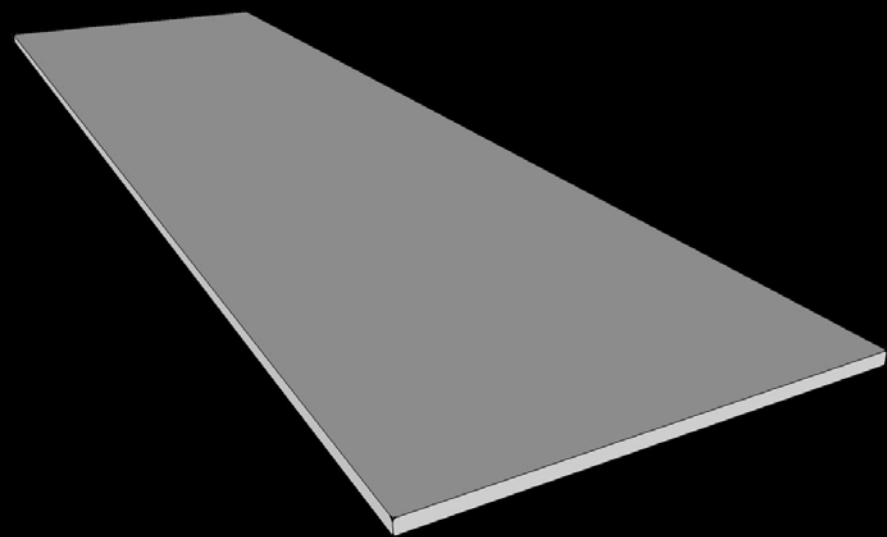
pruning



image by flickr user ax2groin

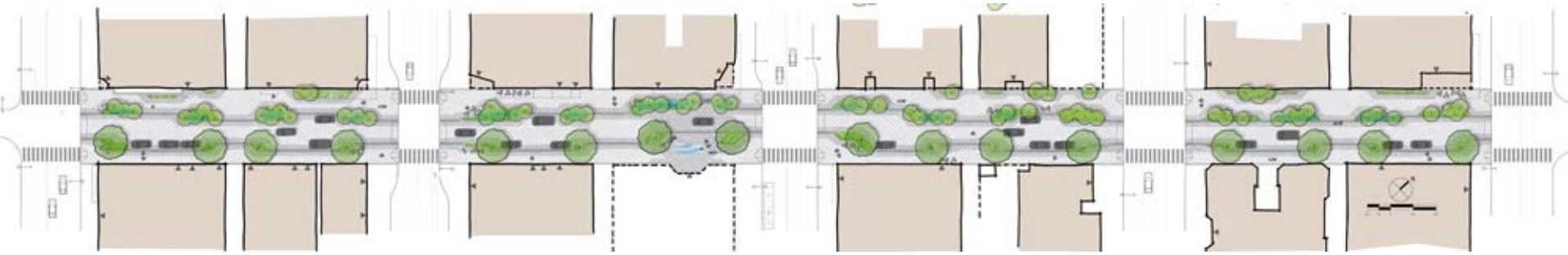
Bell Street Park: urban context





grafting: bell street park

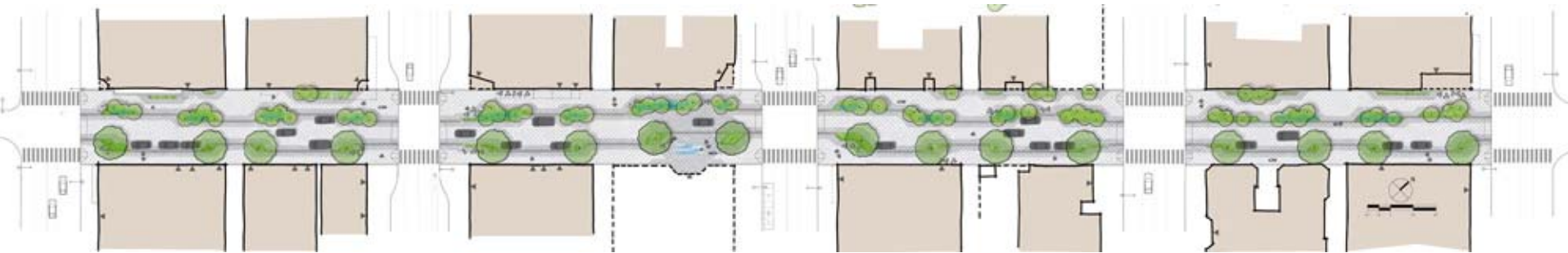
THREE MOVES: reclaim, elevate, mix.



www.depave.org



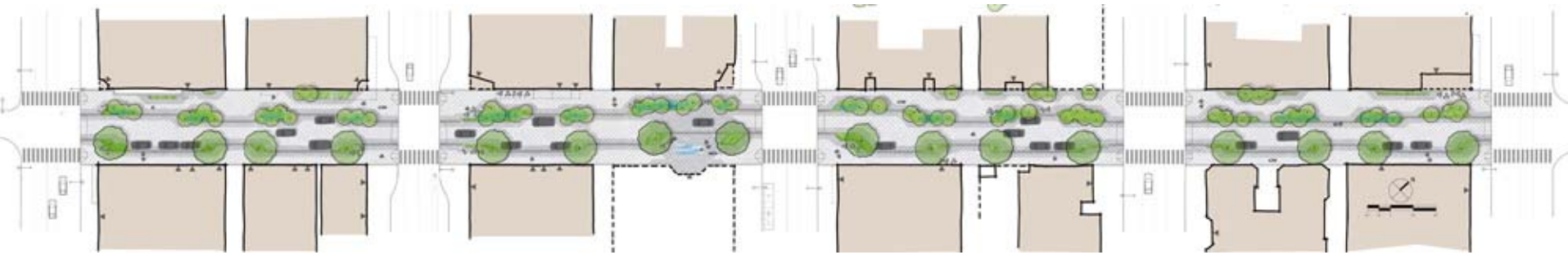
THREE MOVES: reclaim, elevate, mix.



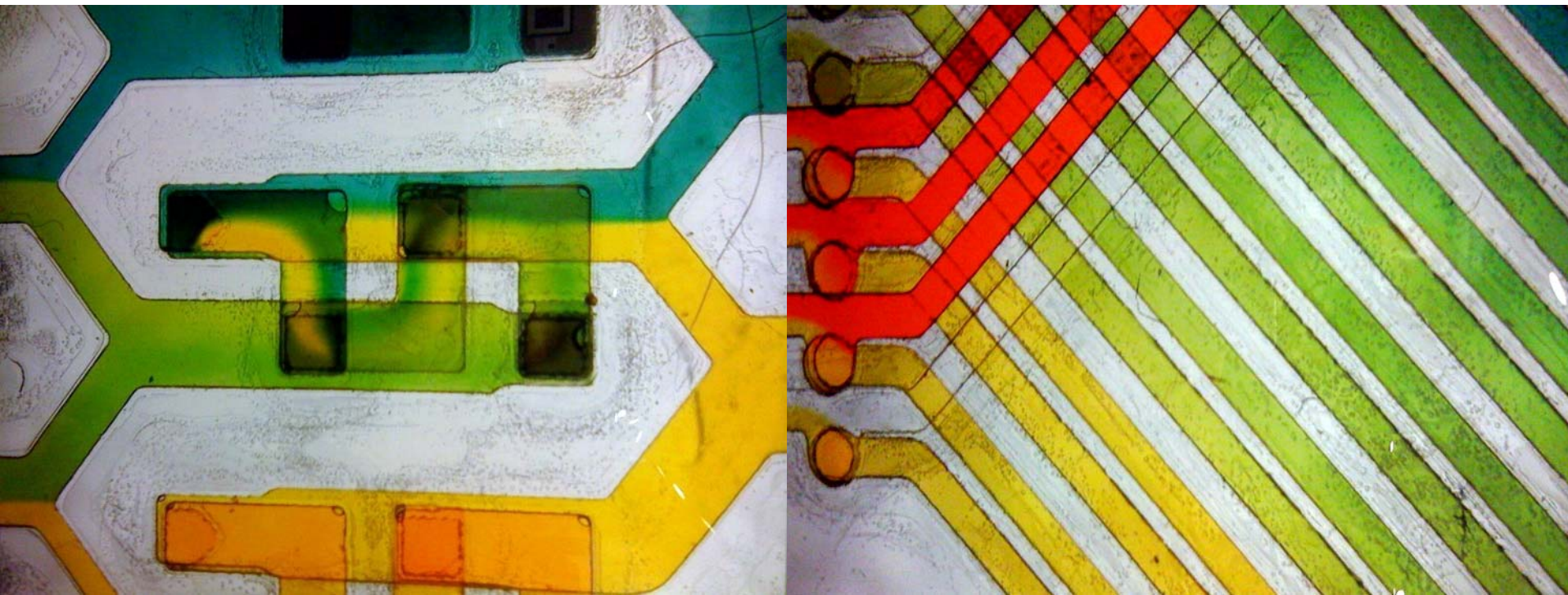
Brighton New Road



THREE MOVES: reclaim, elevate, mix.



Combinatorial Micromixer (Neils and Folch)









Thornton Creek, Seattle WA

Water Quality Channel

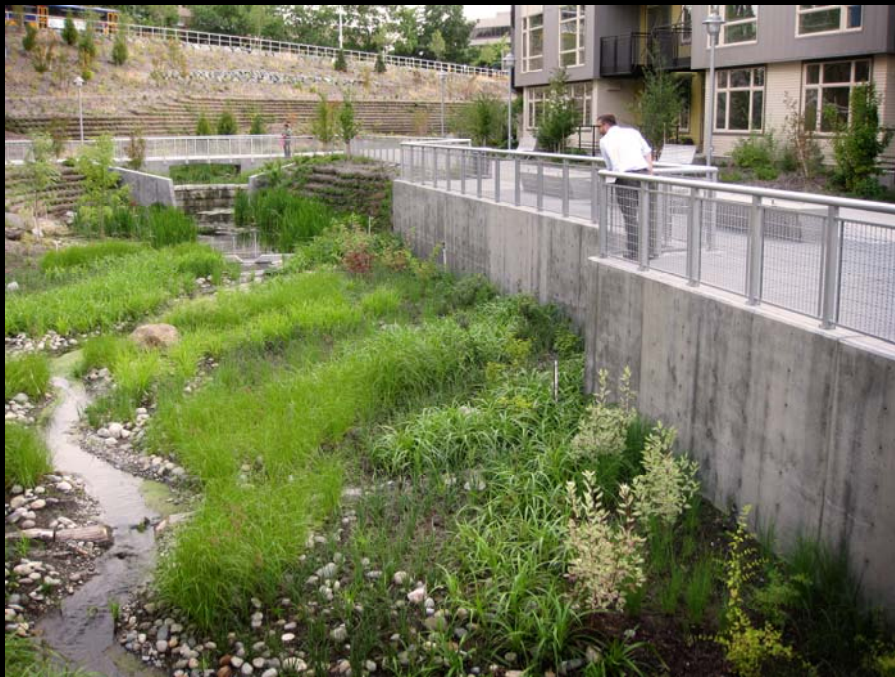
- Treatment of 680 Acres of urban runoff
- Community participation
- Negotiated Property Agreement
- Public/Private Joint construction



TCWQC:

Urban Stormwater Treatment + Mixed Use + Neighborhood Connectivity





habitat

- in-stream and riparian habitat with large woody debris
- upslope bird habitat
- base flow channel for downstream habitat

water

- sediment pool
- channel & bioswale terrace
- lower cascade & water feature
- upper cascade, swale, & water feature
- weir walls
- levee

mobility

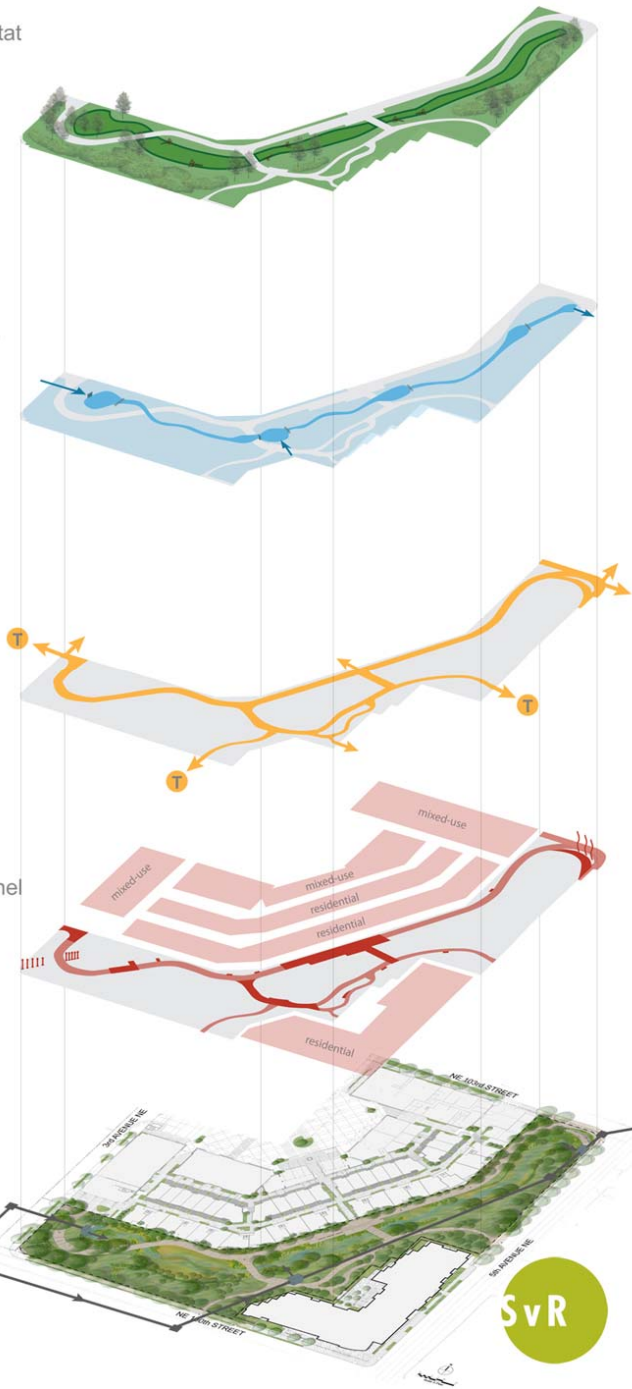
- Pedestrian connections to:
- Northgate Mall & 5th Ave
 - residential neighborhood
 - regional transit hub
 - commercial & mixed-use

community

- central promenade
- central bridge across channel
- overlook area
- public art
- seating areas

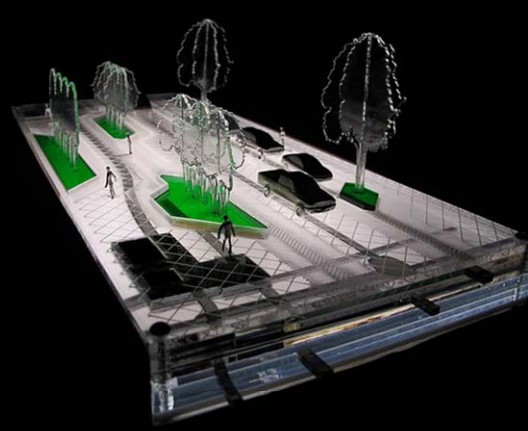
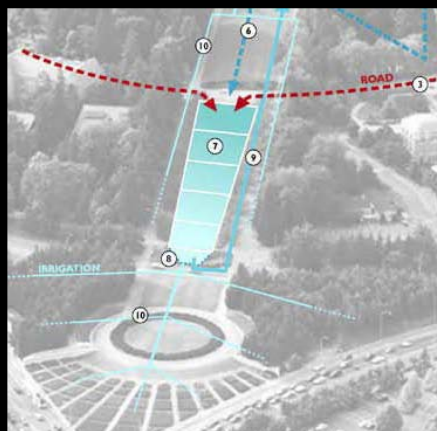
utility

- high flow bypass
- offline facility
- diversion structure
- Thornton Creek headwaters
- water quality monitoring equipment









Urban Design and Sustainable Sites: Dual Performances or Dueling Performances?

May 18, 2011

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Civil Engineering
Landscape Architecture
Environmental Restoration
Planning