

**World Health Organization
Healthy and Equitable Urban Planning through Intersectoral Action**

Shaping Healthy + Active Cities in NYC



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International Urban Design Consultant**

April 8th 2014

- 1. Health + Built Environment**
- 2. ADG Overview**
- 3. Aligning City Planning Policies**

THE 19th CENTURY:

Infectious Diseases

19th Century codes, planning and infrastructure as weapons in the battle against contagious disease

These strategies were built into the city fabric, and they were effective

THE 21st CENTURY:

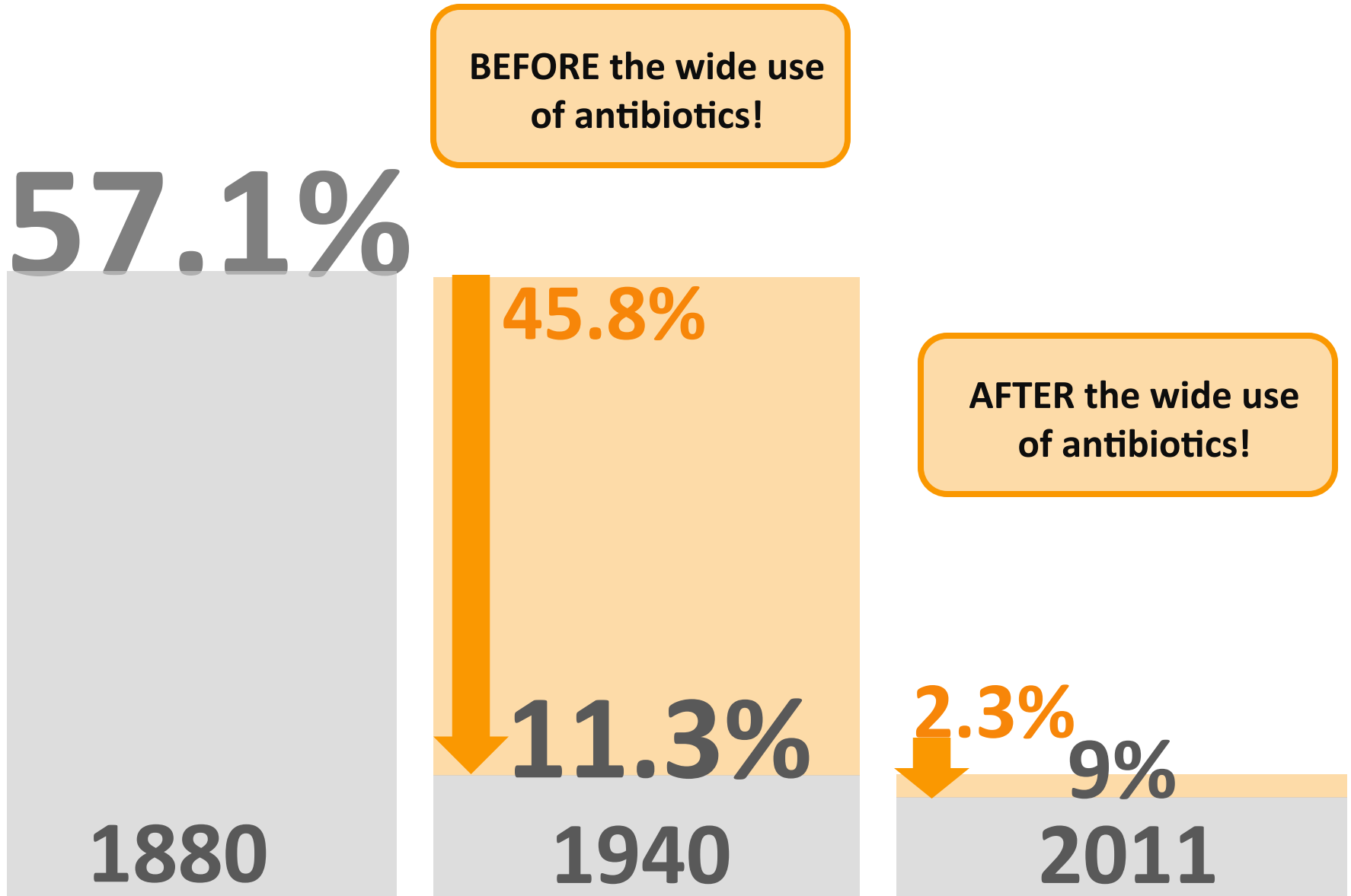
Chronic Diseases, many of which are “Diseases of Energy”

The emerging design solutions for health parallel sustainable design solutions

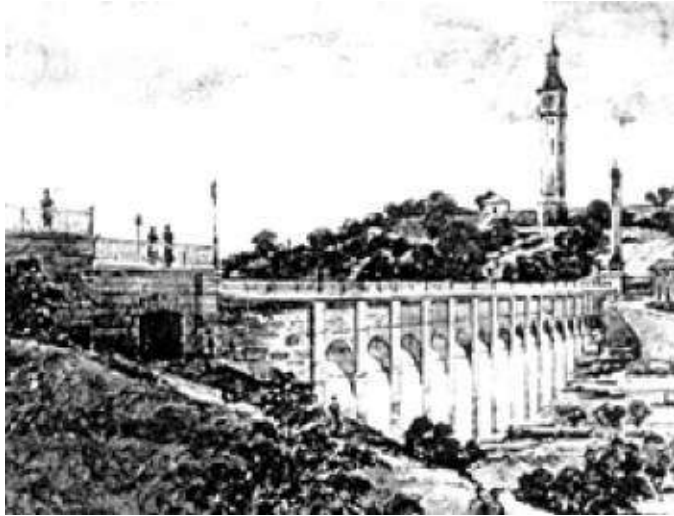
Effective designs will have to be an invisible, pervasive, and inevitable part of life

Health Successes: Infectious Disease Rates

Source: U.S. Centers for Disease Control and Prevention (CDC)



Success through urban & building design interventions



1842

New York's water system established – an aqueduct brings fresh water from Westchester.

1857

NYC creates Central Park, hailed as “ventilation for the working man’s lungs”, continuing construction through the height of the Civil War

1881

Dept. of Street-sweeping created, which eventually becomes the Department of Sanitation

1901

New York State Tenement House Act banned the construction of dark, airless tenement buildings

1904

First section of Subway opens, allowing population to expand into Northern Manhattan and the Bronx

1916

Zoning Ordinance requires stepped building setbacks to allow light and air into the streets



The epidemics of today are:

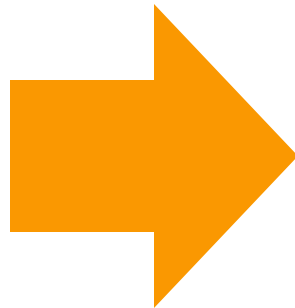
CHRONIC DISEASES
(obesity, diabetes, heart disease
& strokes, cancers)

Chronic Diseases - #1 cause of death globally (36 million deaths/y).

Leading Risk Factors accounting for 80% of deaths (WHO 2011):

- Tobacco
- **Physical Inactivity**
- **Unhealthy Diets**
- Harmful Use of Alcohol

Energy in:
Food

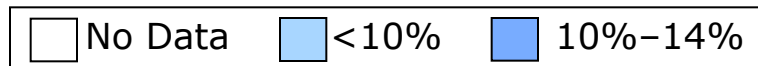
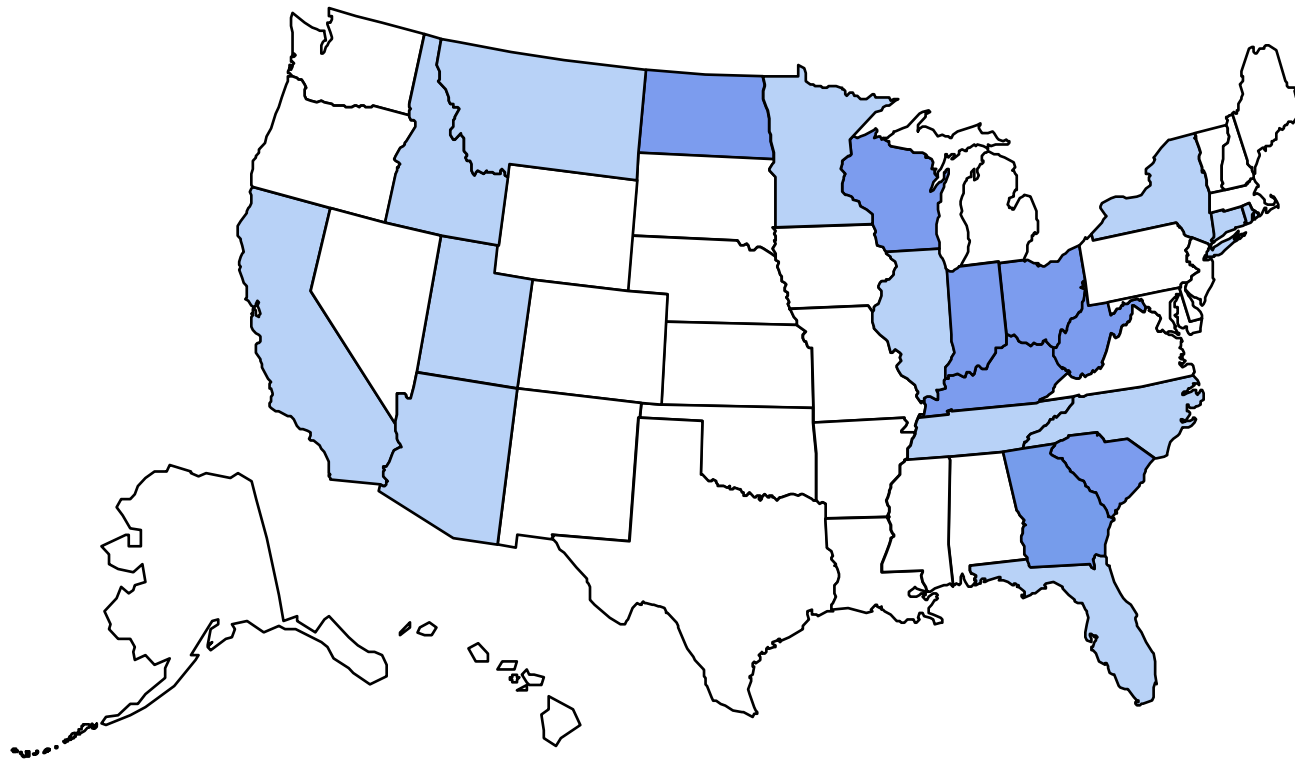


Energy out:
Exercise

Obesity Trends* Among U.S. Adults

BRFSS, 1985

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

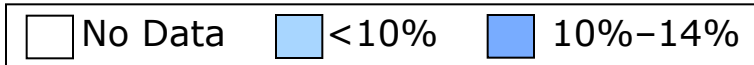
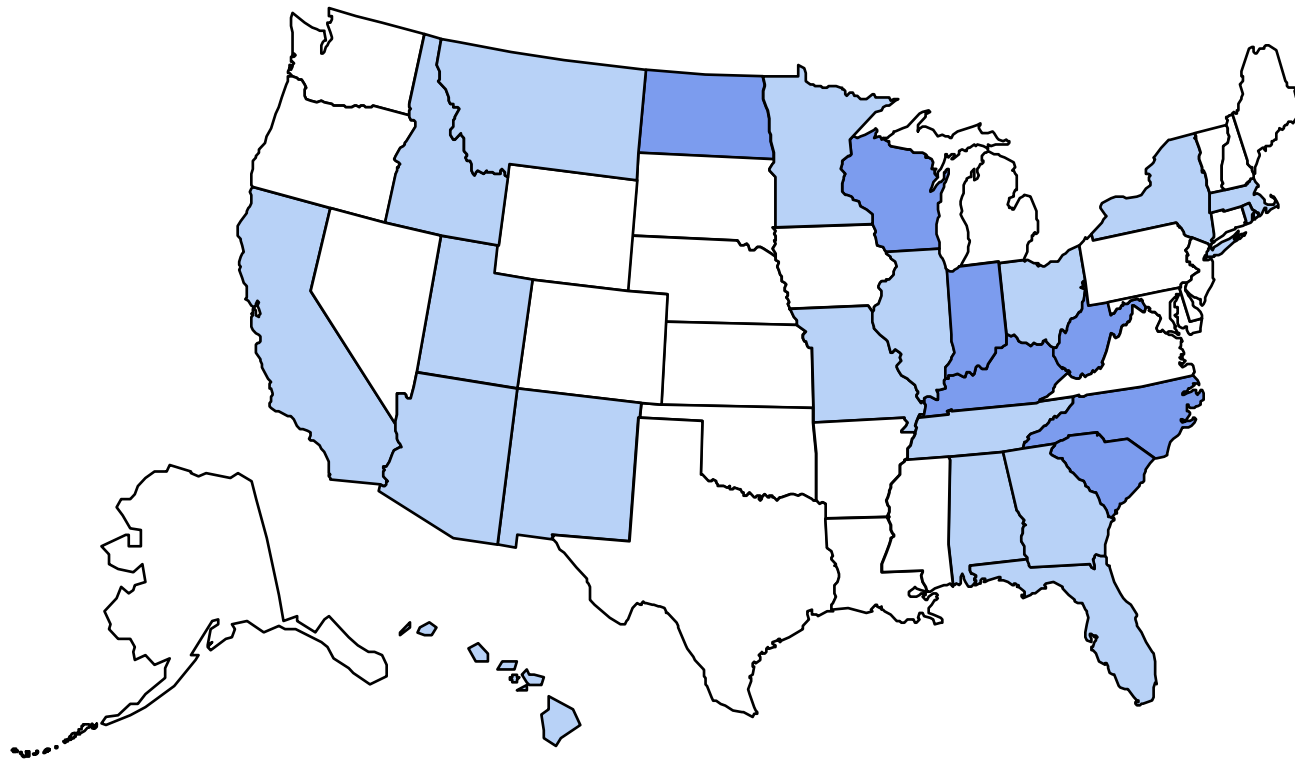


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1986

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

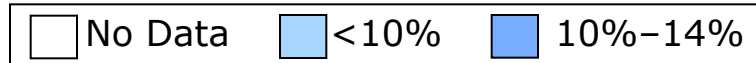
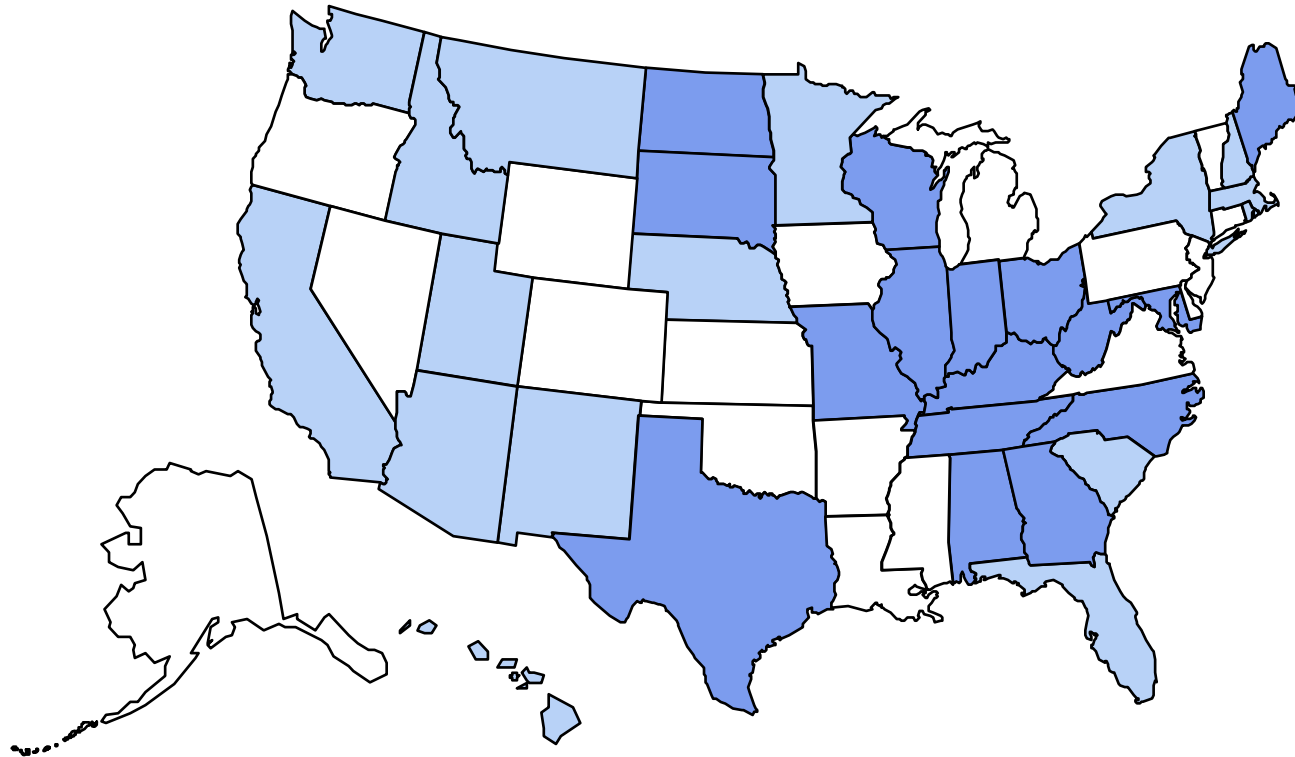


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1987

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

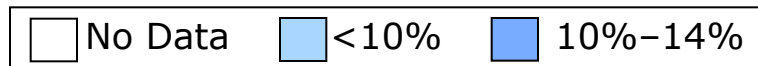
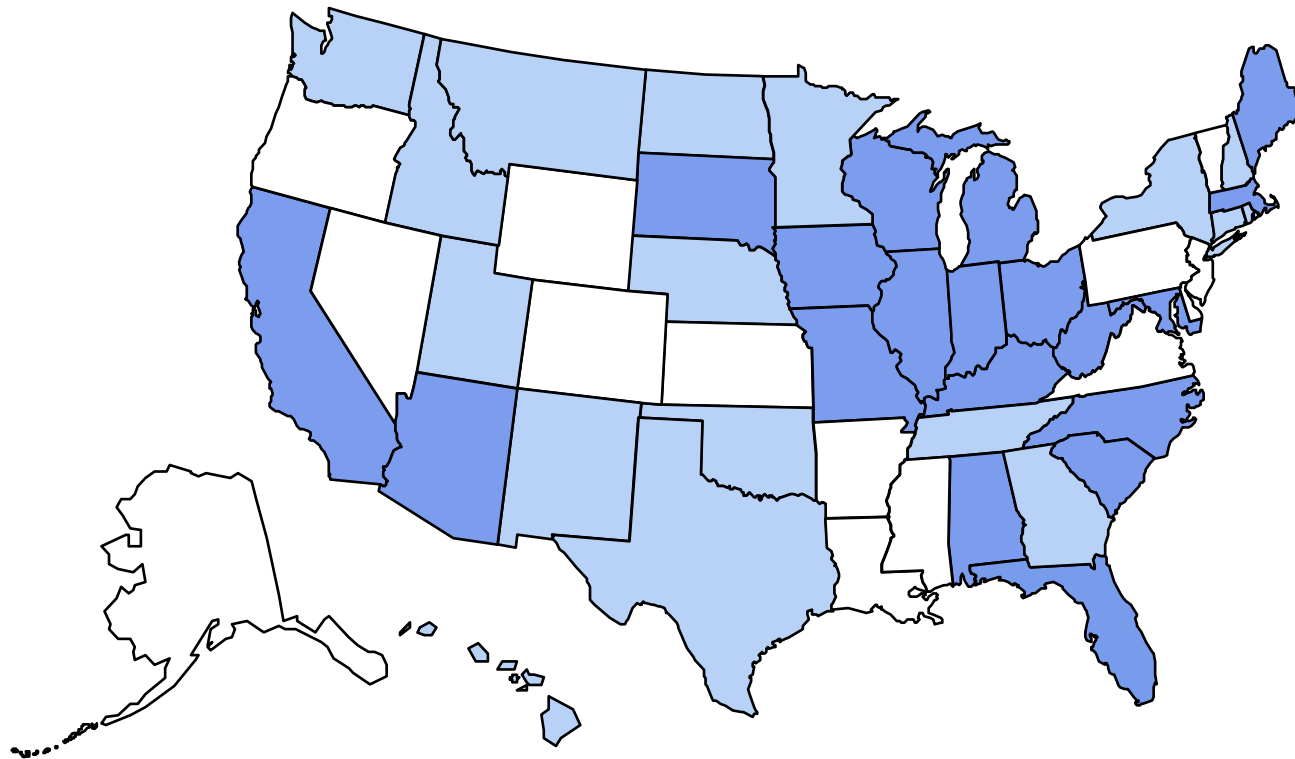


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1988

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

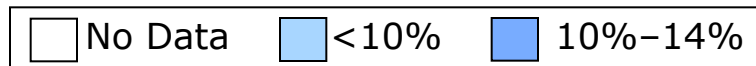
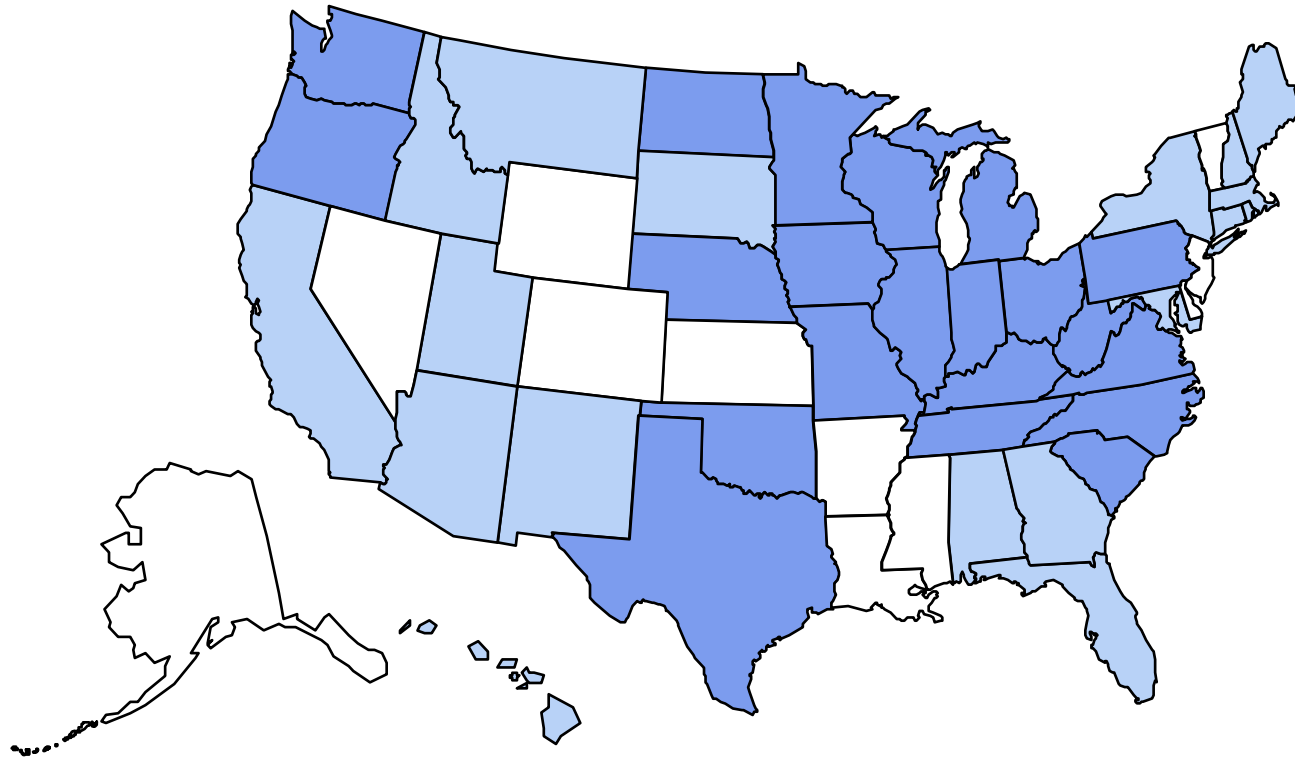


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1989

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

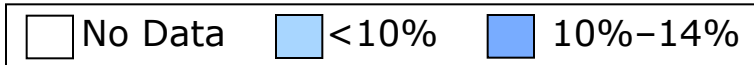
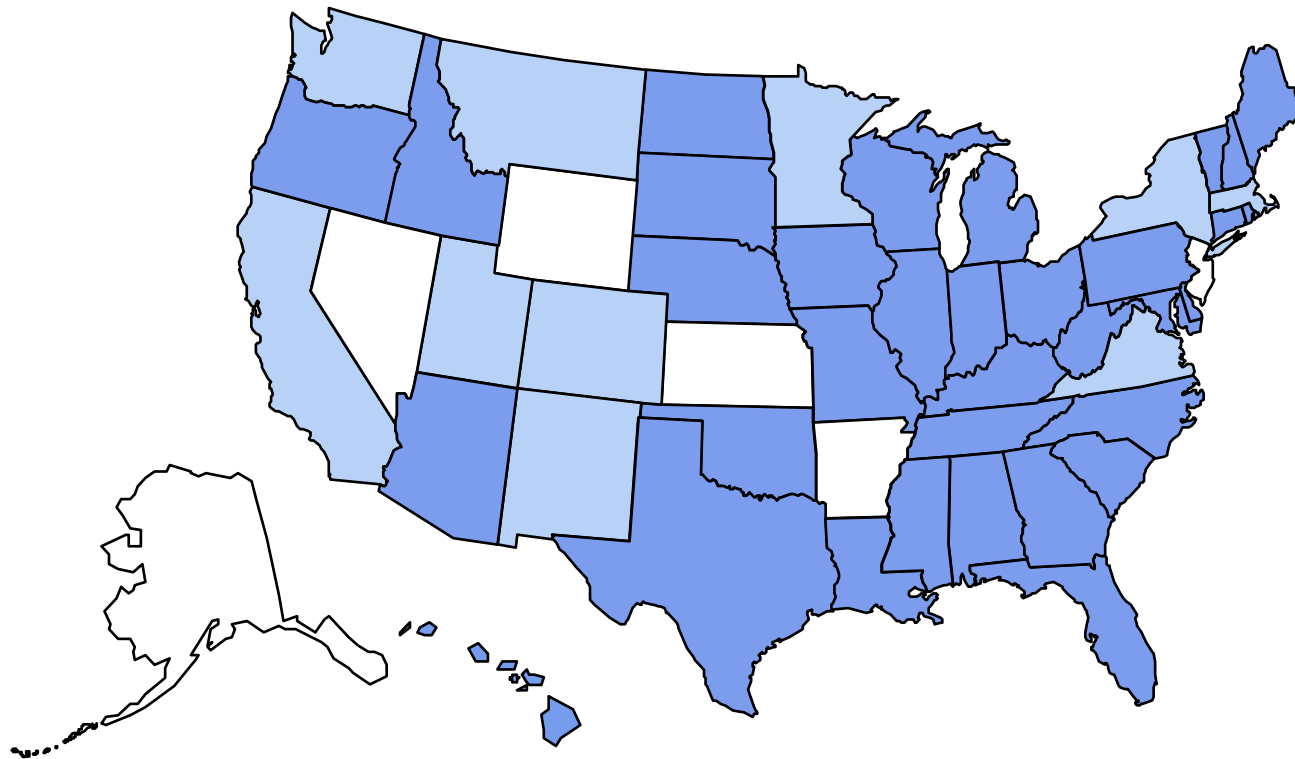


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1990

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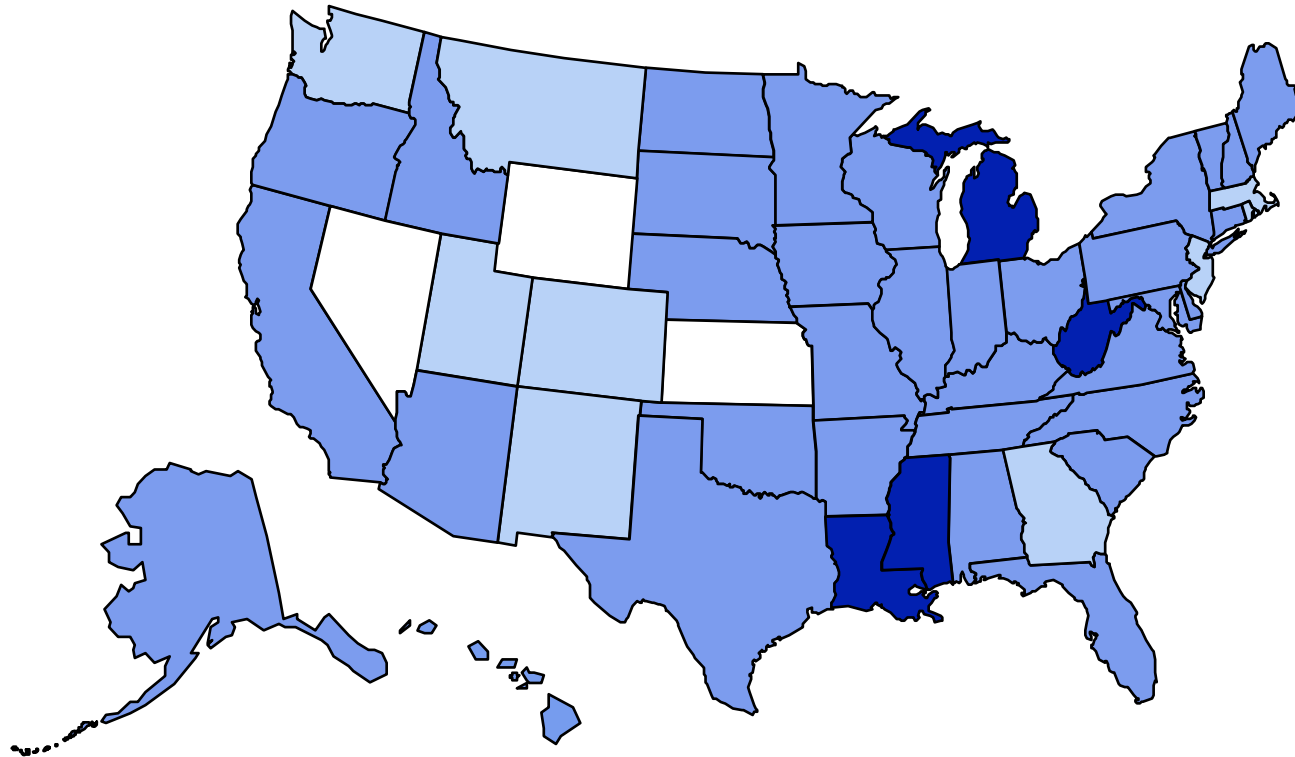


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1991

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



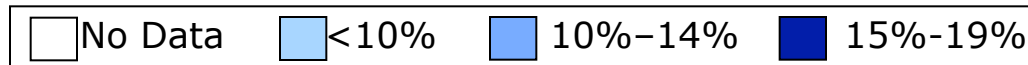
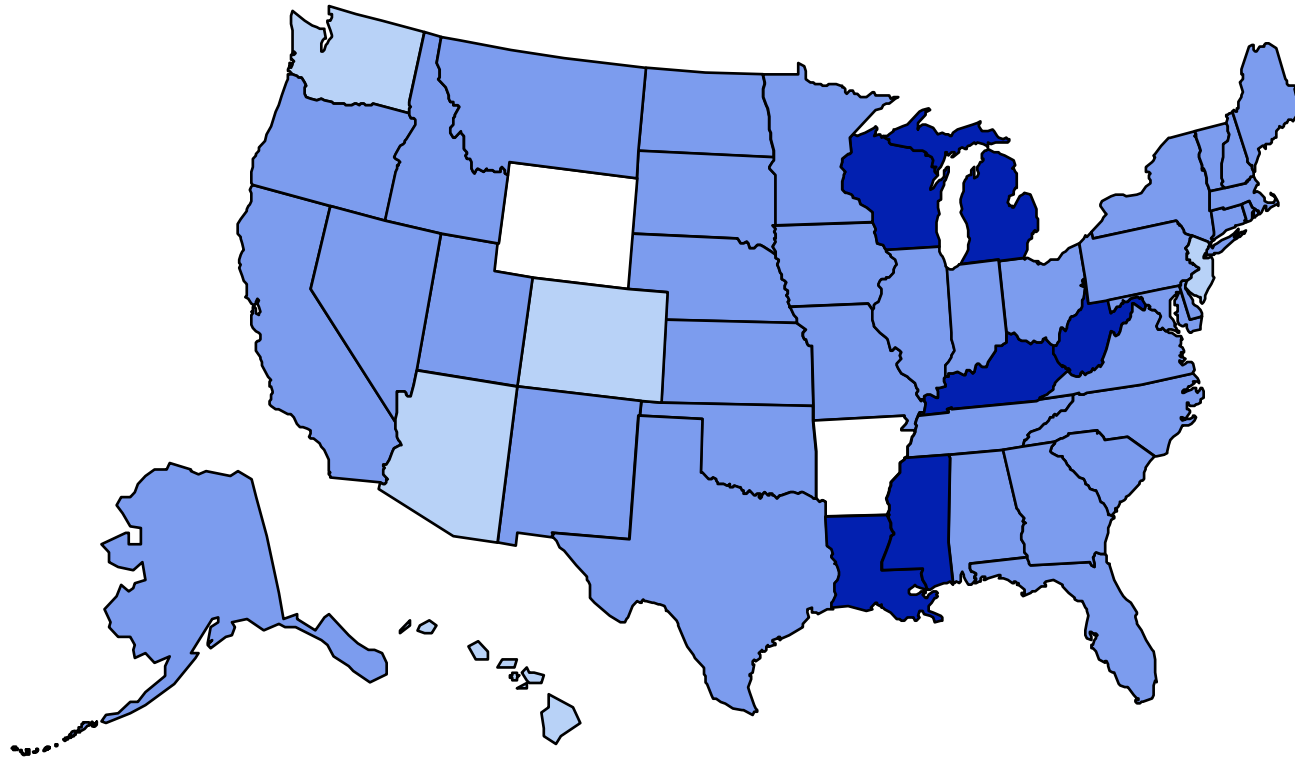
Legend: No Data <10% 10%-14% 15%-19%

Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1992

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

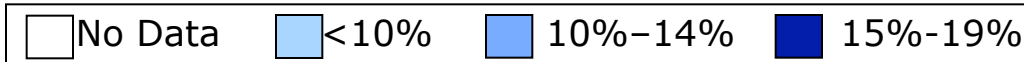
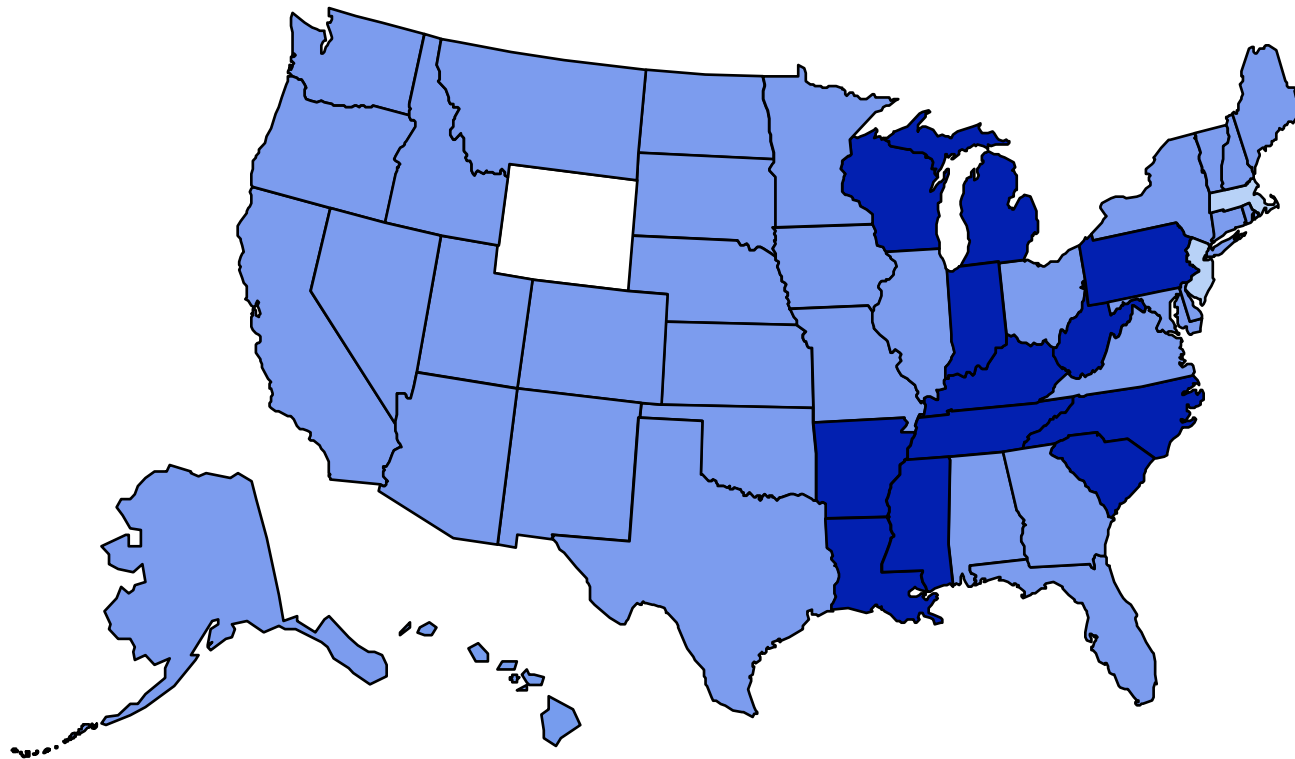


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1993

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

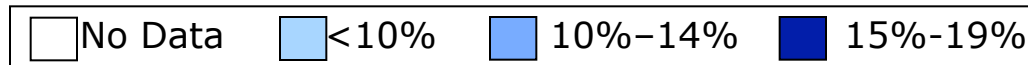
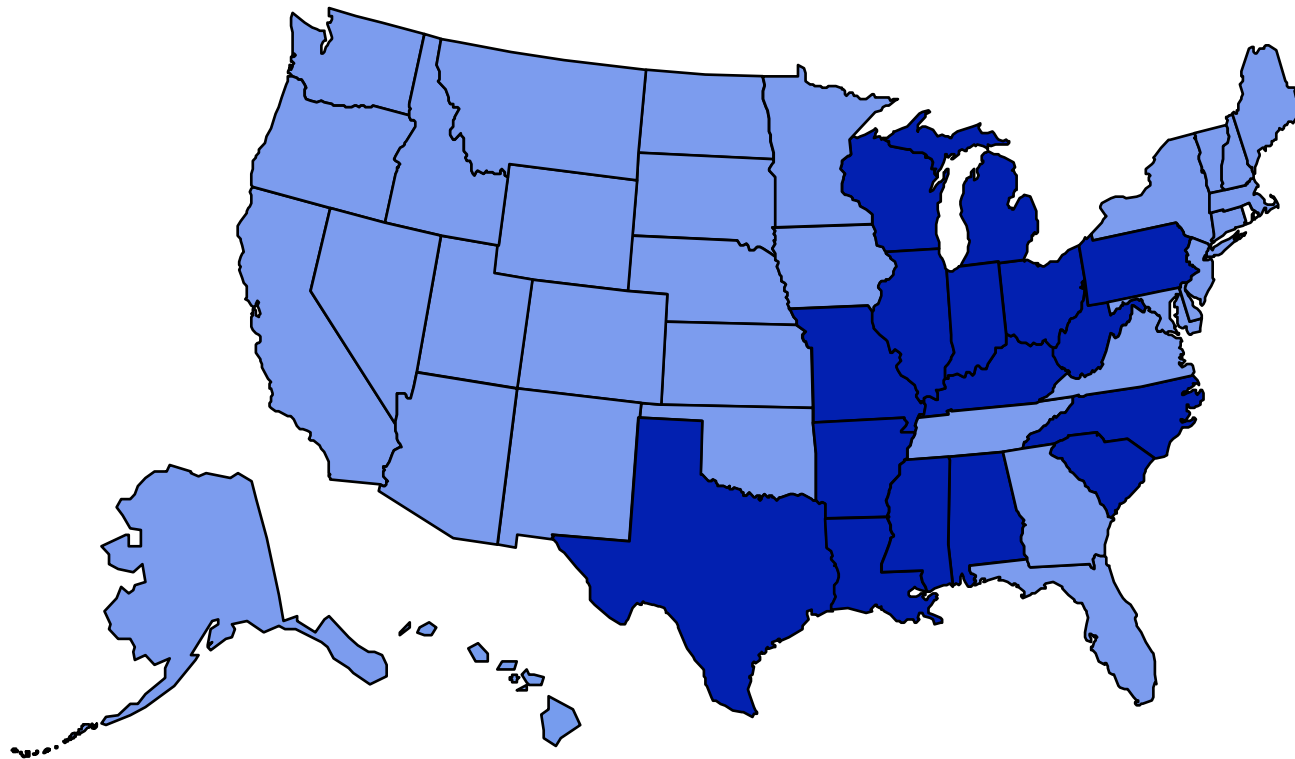


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1994

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

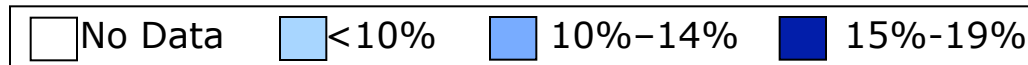
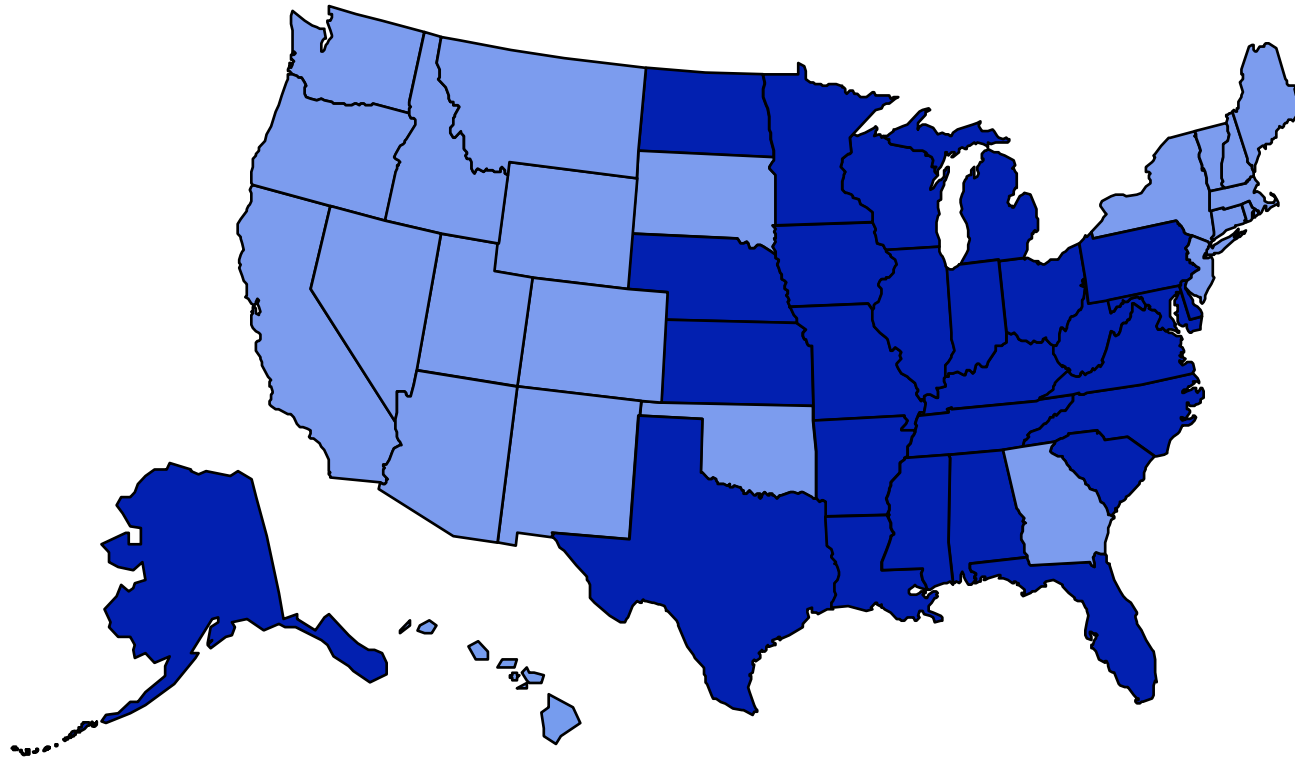


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1995

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

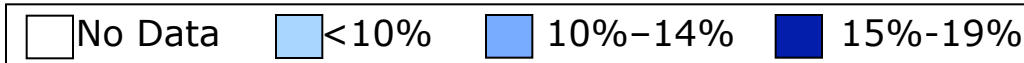
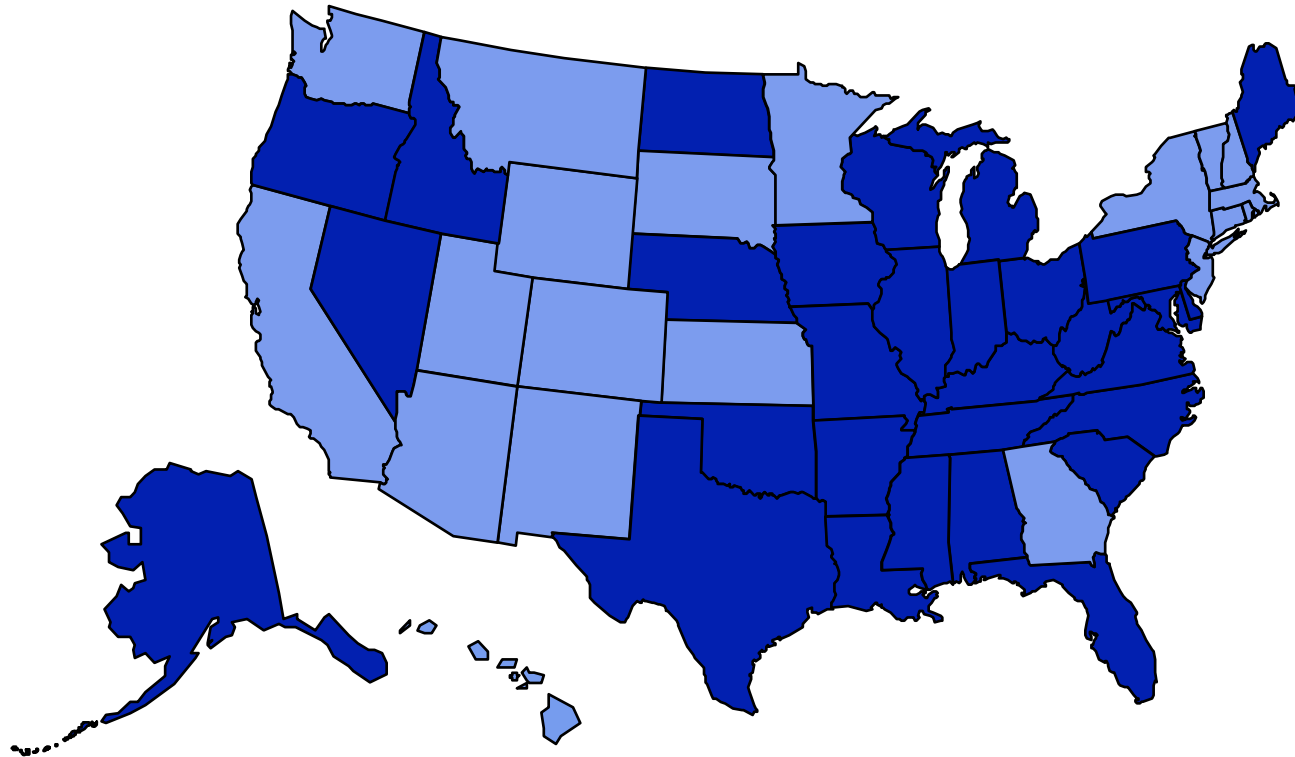


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1996

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

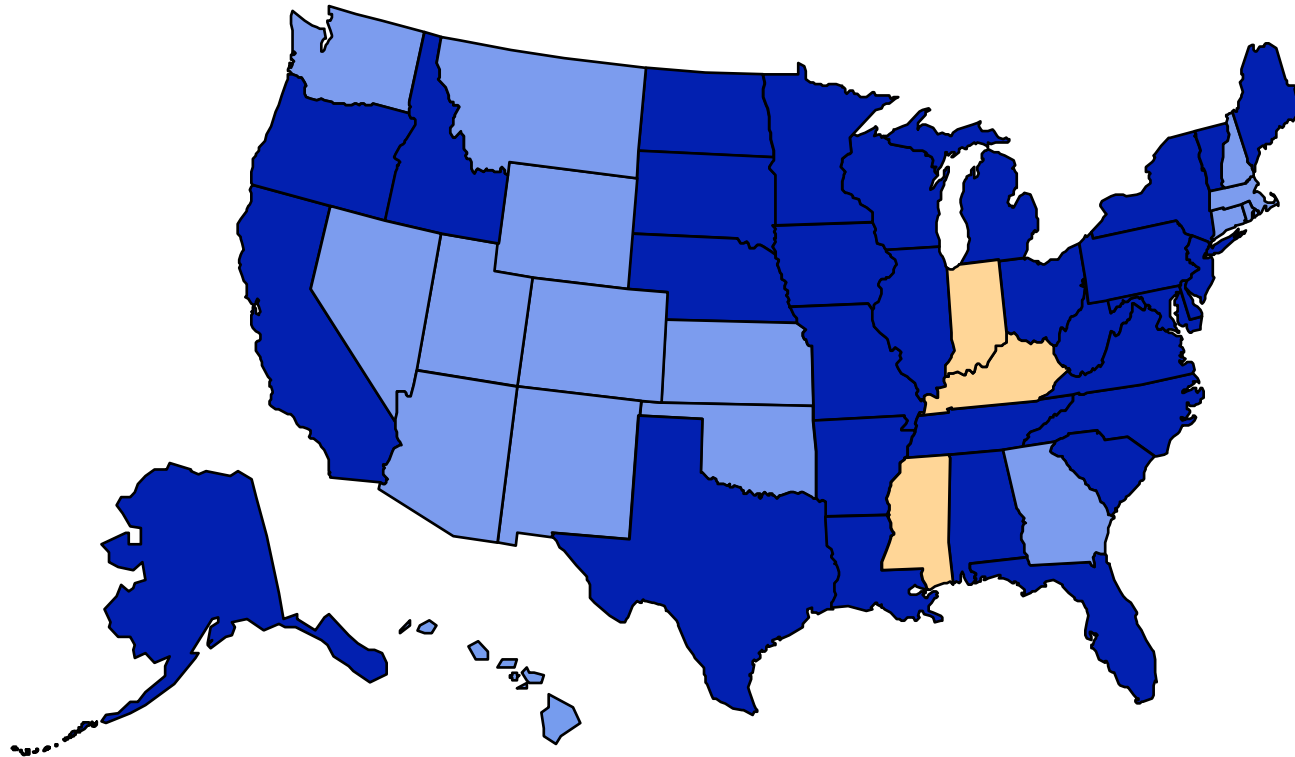


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1997

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



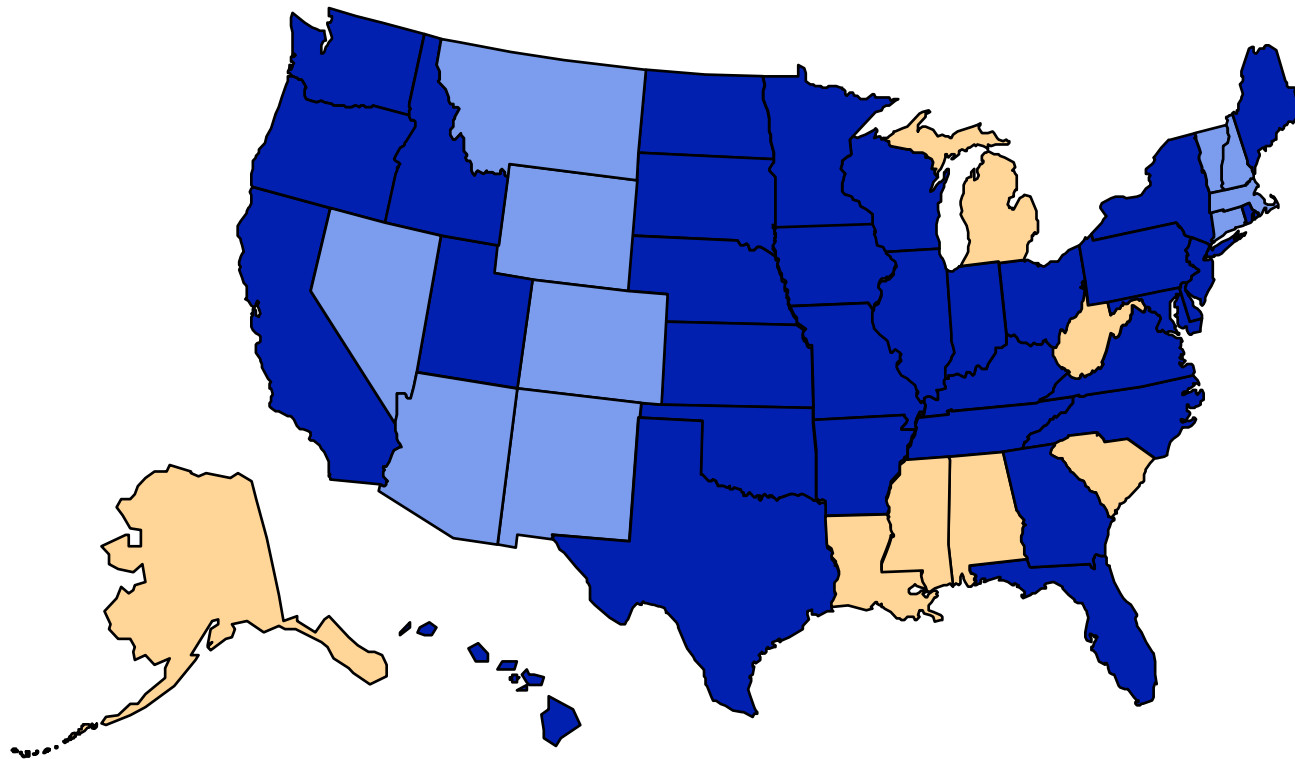
Legend: No Data, <10%, 10%-14%, 15%-19%, 20%+

Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1998

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



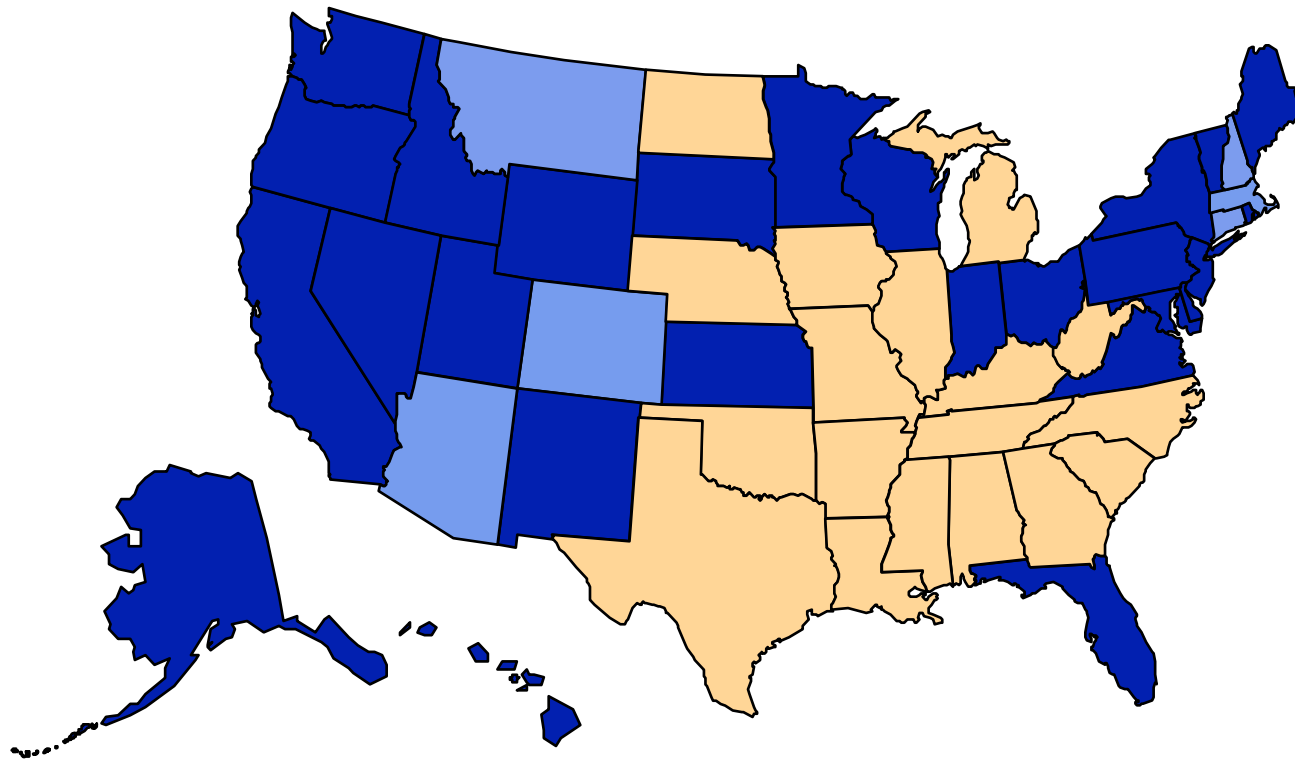
Legend: No Data, <10%, 10%-14%, 15%-19%, 20%+

Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 1999

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



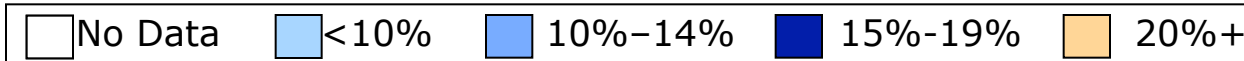
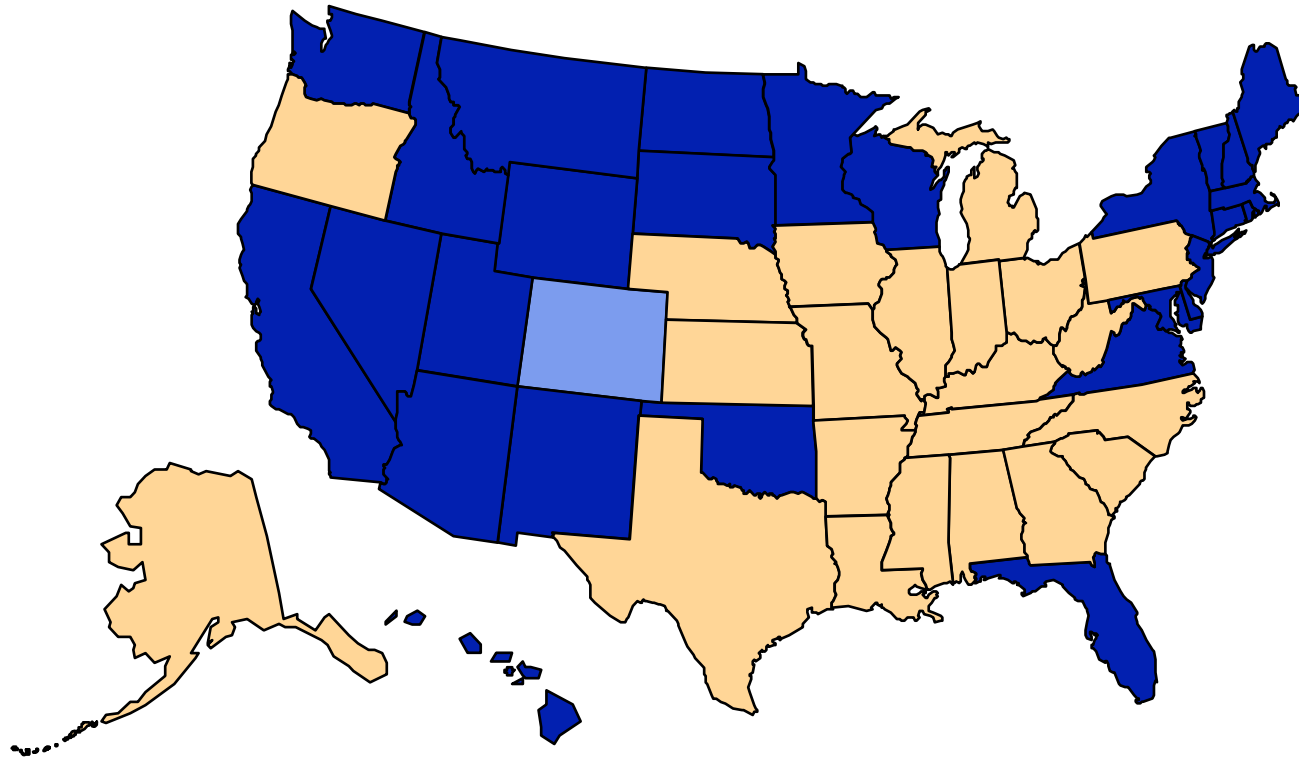
Legend: No Data, <10%, 10%-14%, 15%-19%, 20%+

Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2000

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

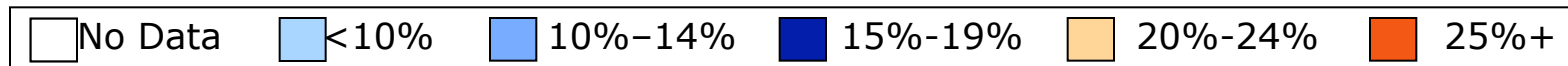
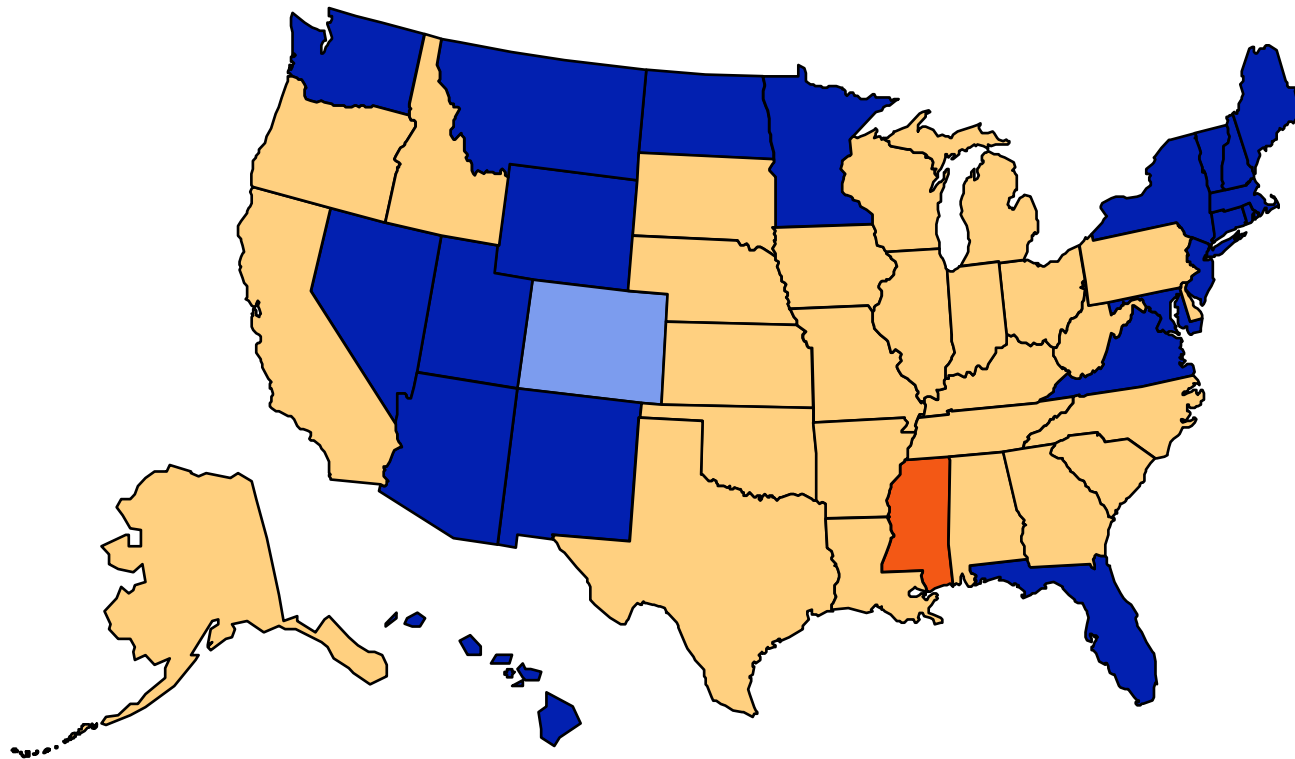


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2001

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

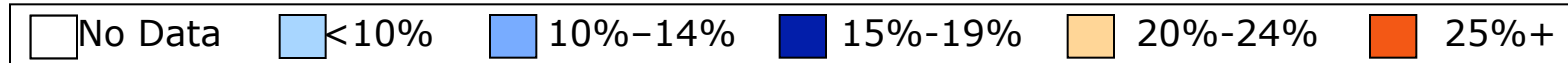
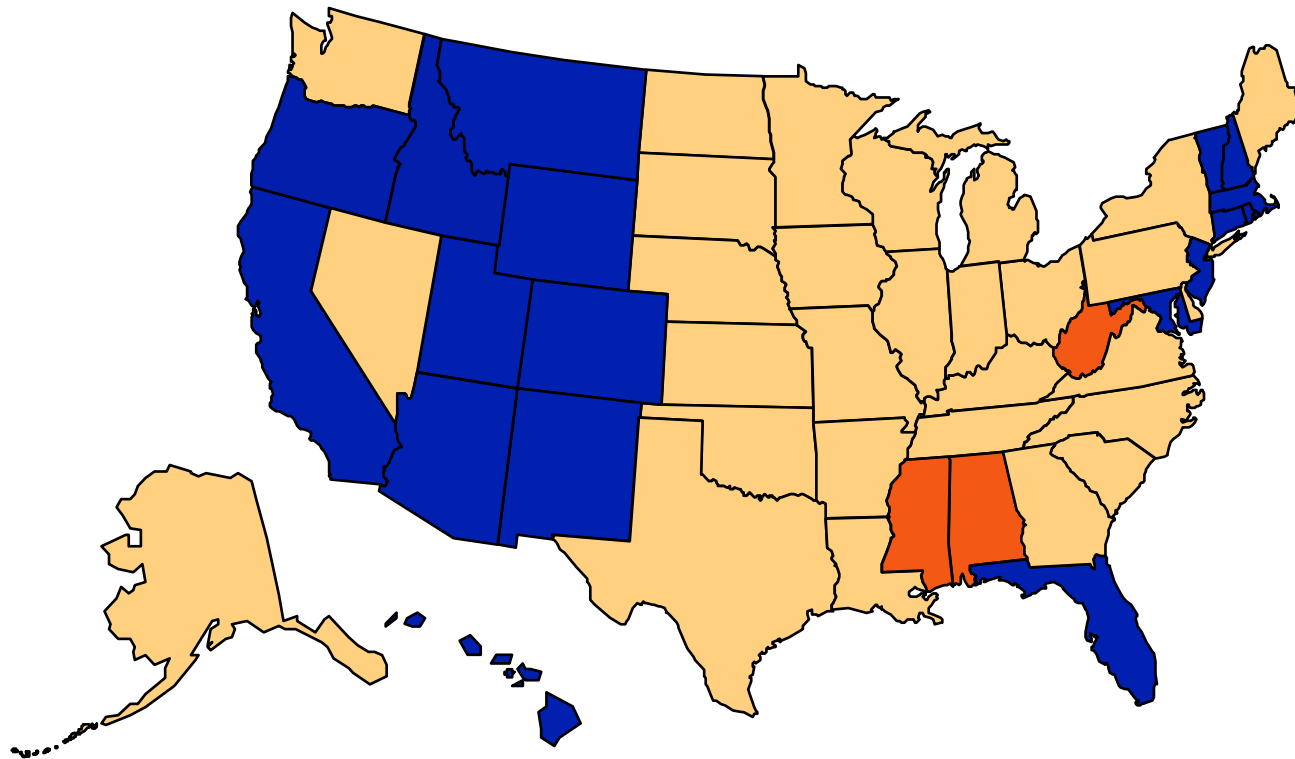


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2002

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

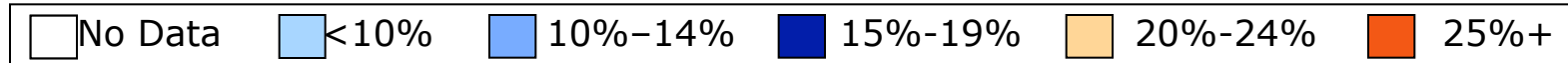
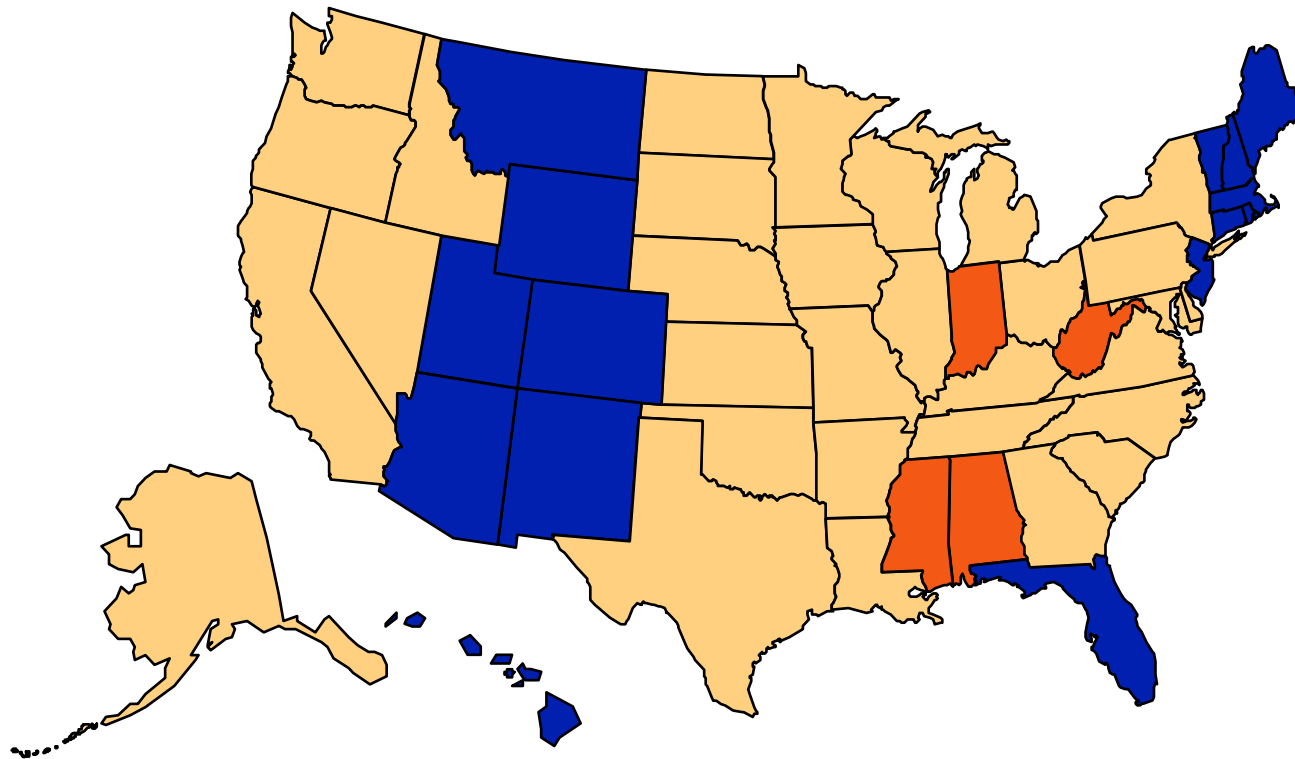


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2003

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

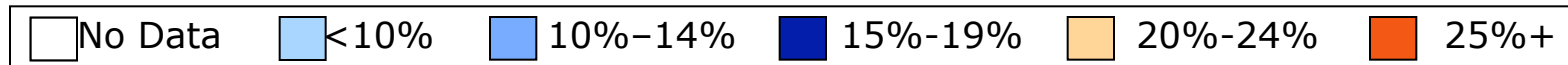
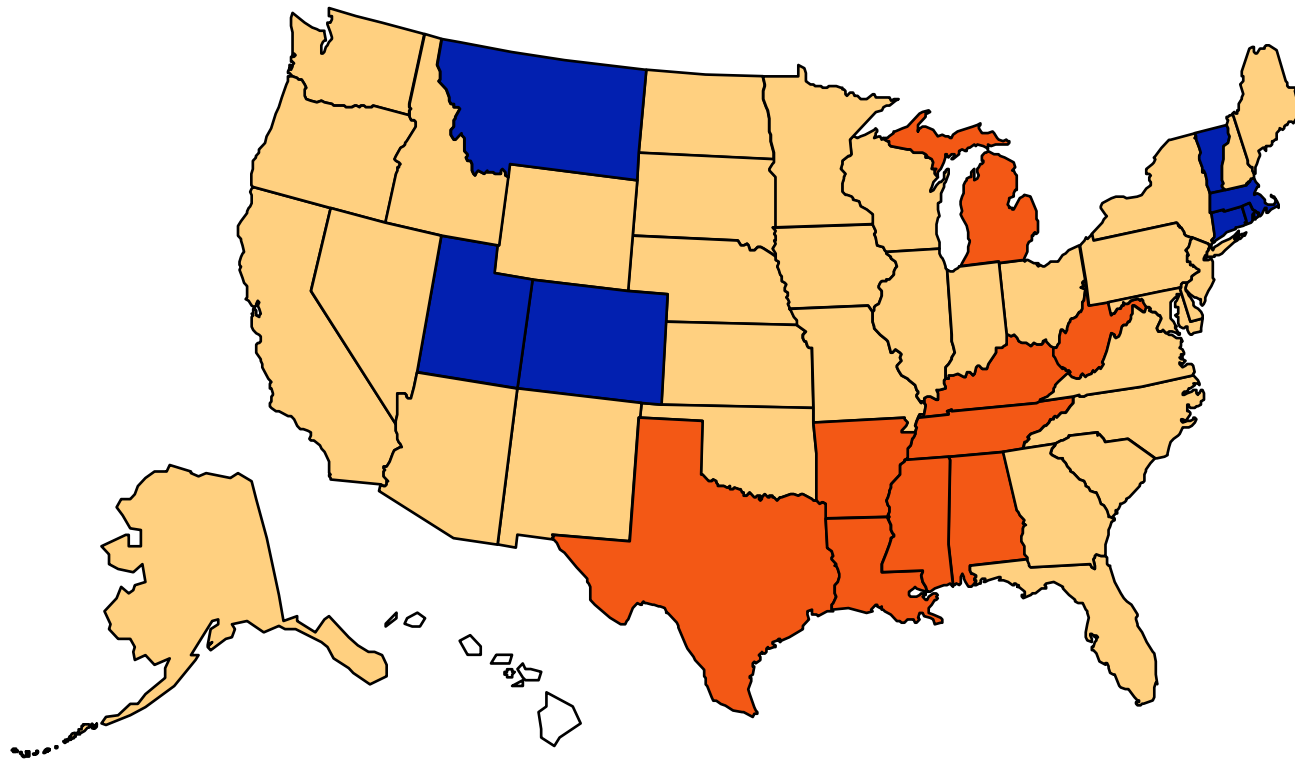


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2004

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

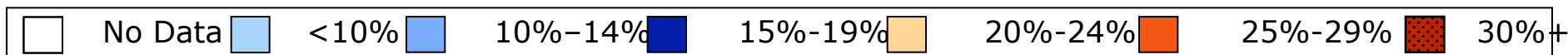
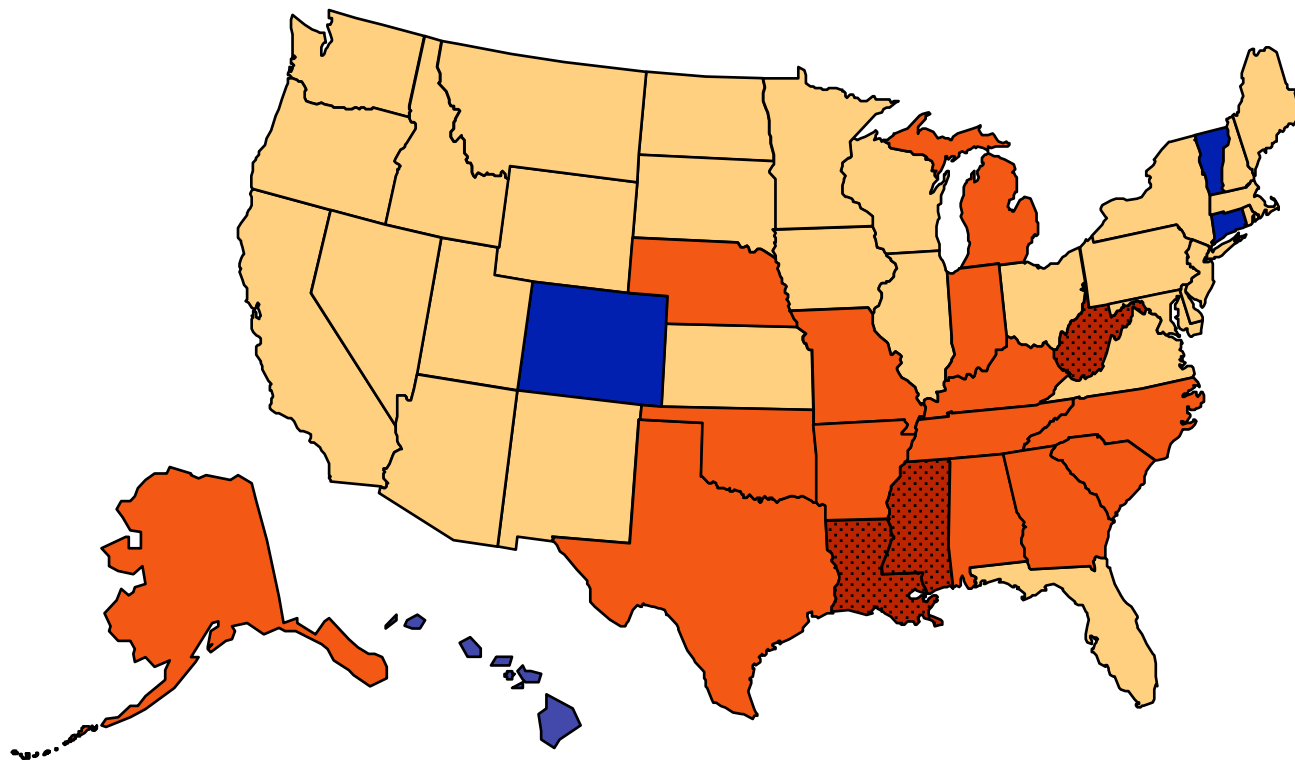


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2005

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

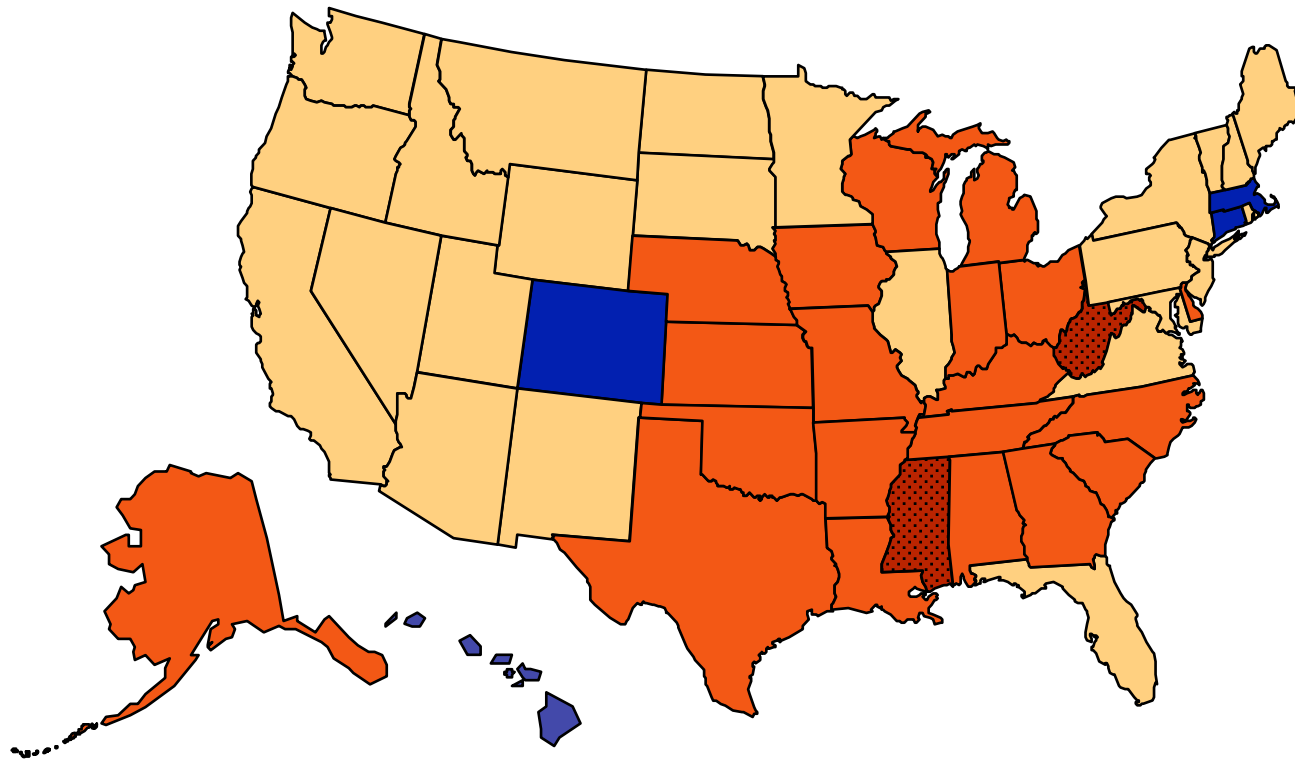


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2006

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

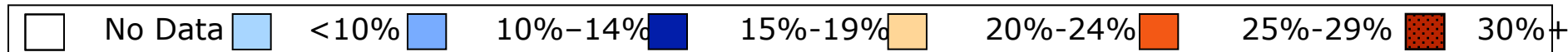
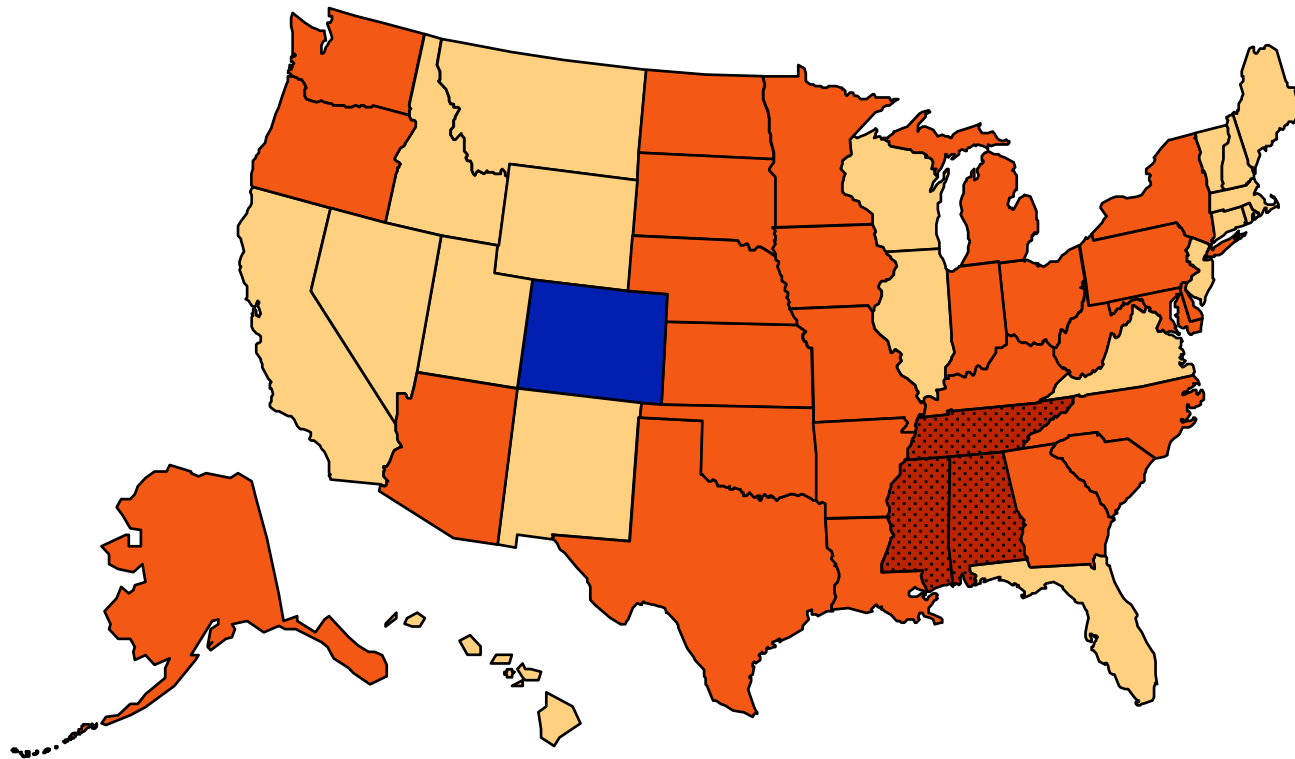


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2007

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

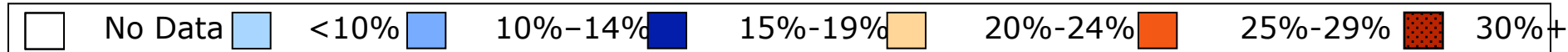
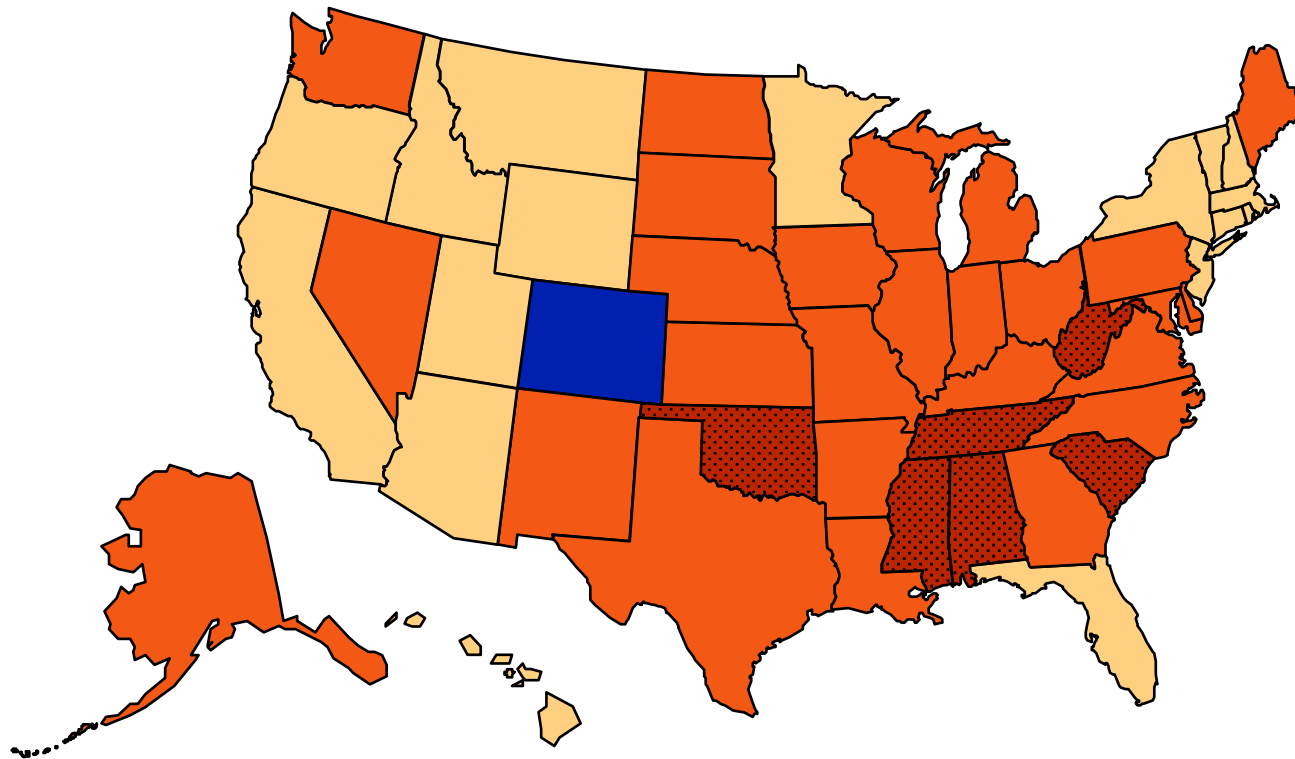


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

BRFSS, 2008

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

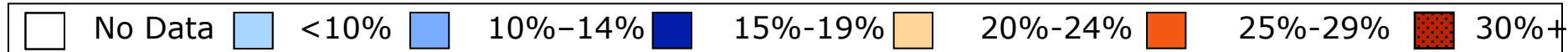
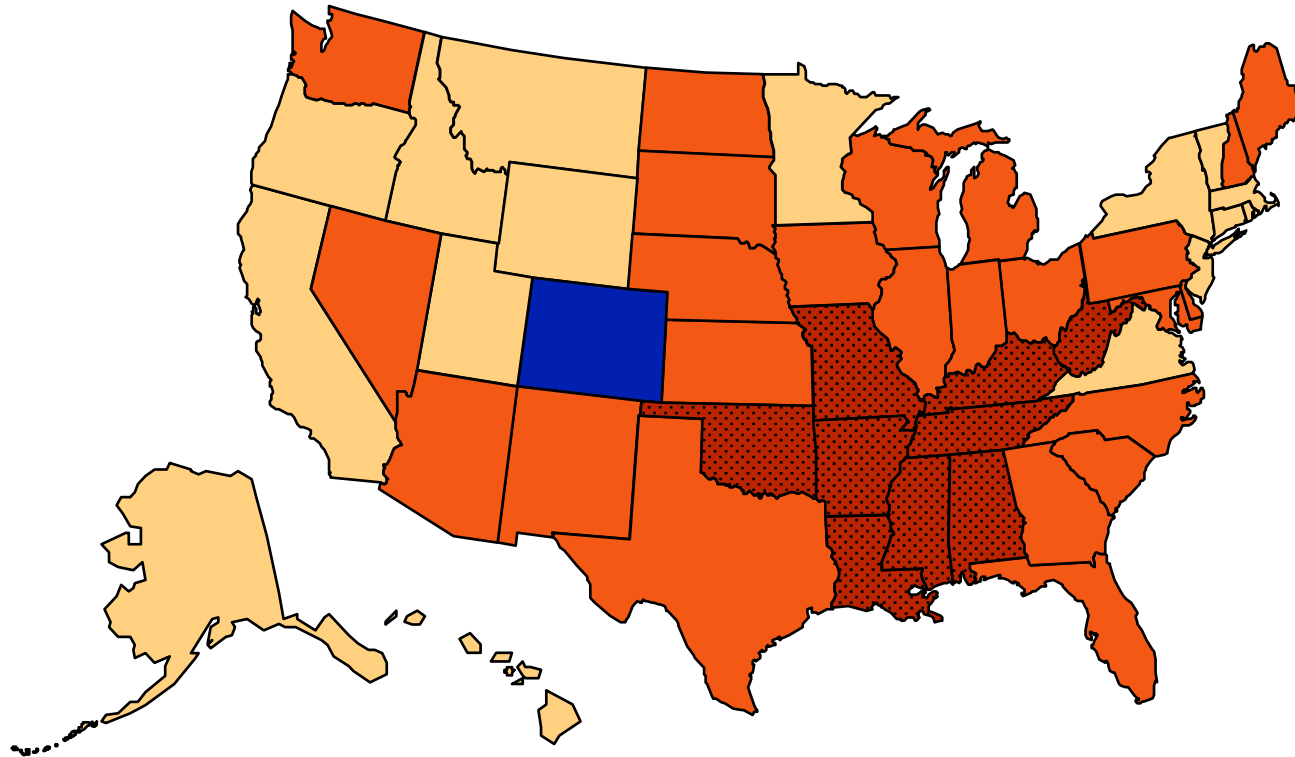


Source: U.S. Centers for Disease Control and Prevention (CDC)

Obesity Trends* Among U.S. Adults

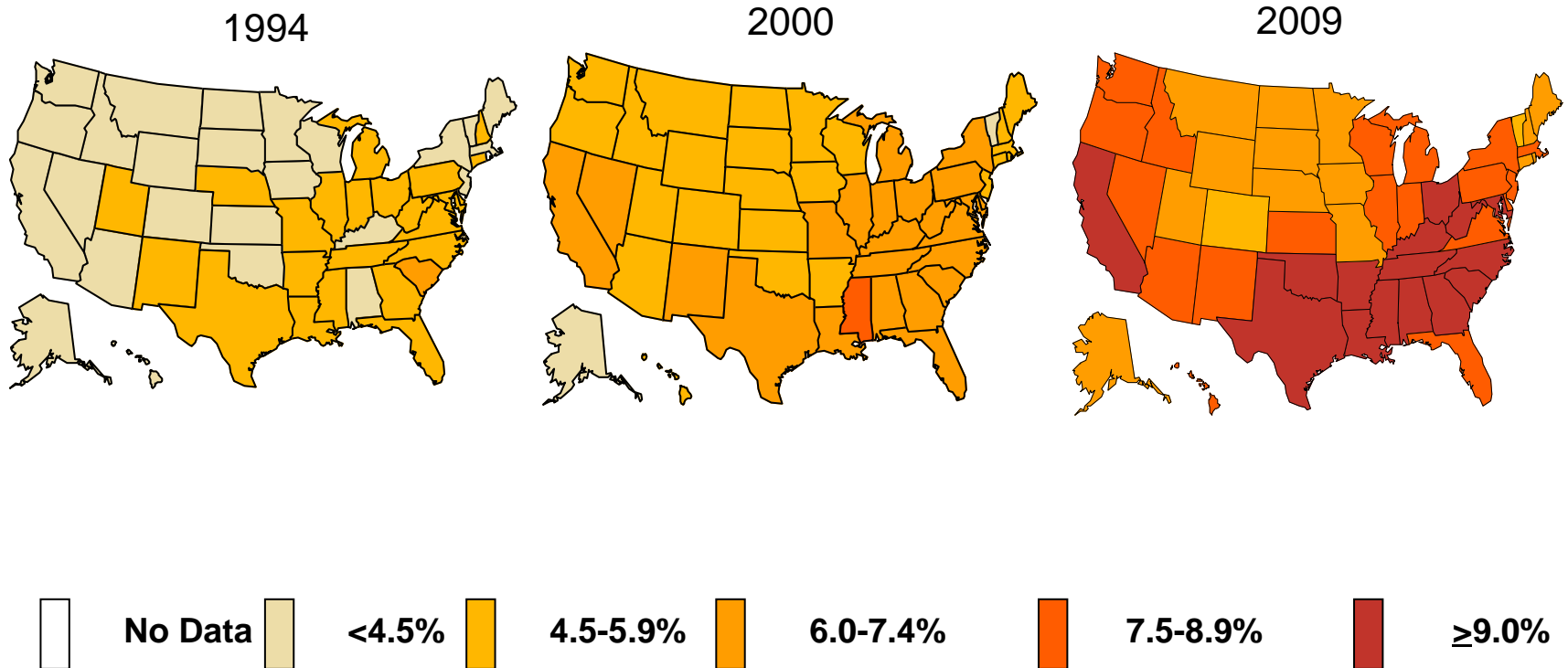
BRFSS, 2009

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



Source: U.S. Centers for Disease Control and Prevention (CDC)

Diabetes trends among U.S. adults



Source: CDC's Division of Diabetes Translation. National Diabetes Surveillance System available at <http://www.cdc.gov/diabetes/statistics>

We are now faced with a population where about

60% of adults and



40% of children



are overweight or obese

According to the CDC.....

the **medical costs**

attributable to obesity
today in the U.S. are estimated
to be

\$147
billion
per year.

By 2030,

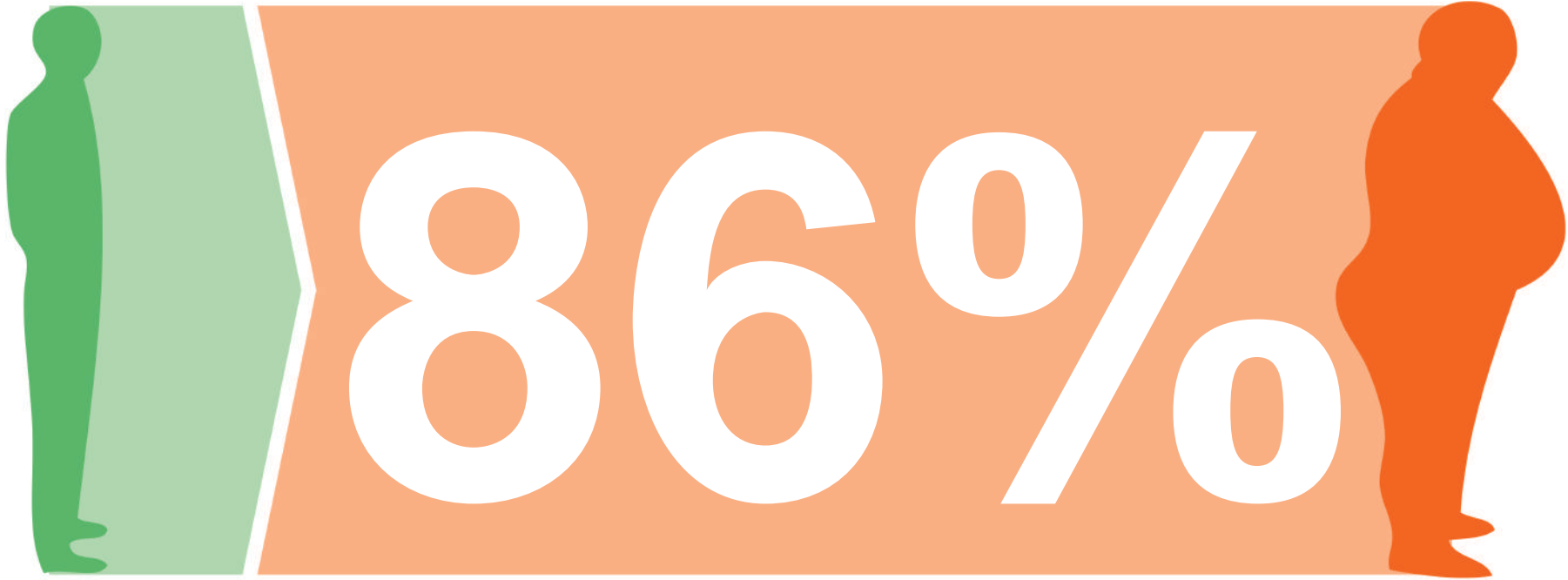
if obesity trends continue
as shown,

the total attributable health-care
costs will be

\$860-
\$956
billion
per year.
(6.5x...)

By **2030**,
if obesity trends continue

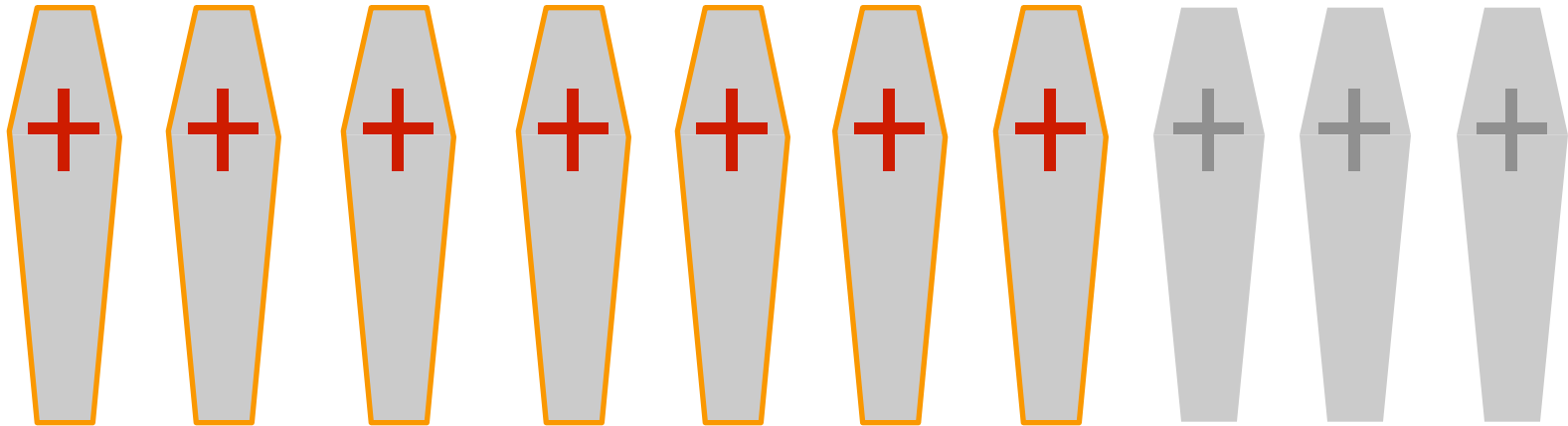
as shown,



of adults will be overweight or obese

Today.....

70% of deaths in U.S. each year are from **chronic diseases.**



**Our genetics have not changed in one generation,
our built environment has!**



Integrating Health into Urban & Building Design Policies & Practices

- The Need for **Partnerships Across Sectors**

- **Finding Synergies and Co-Benefits**

- **Complementary Roles of Partners**



- Health: Data on key health issues; evidence for interventions; helped organize meetings/conferences for cross-sector discussions; co-leader/partner in initiatives; health-related evaluations



- Transportation, City Planning, Design + Construction, Buildings, Housing, Parks, School Construction, Private Sector Architects/Developers: Ideas of what's feasible in the current local context; identifying opportunities and mechanisms, including and especially synergistic efforts; co-Leadership and participation in the efforts



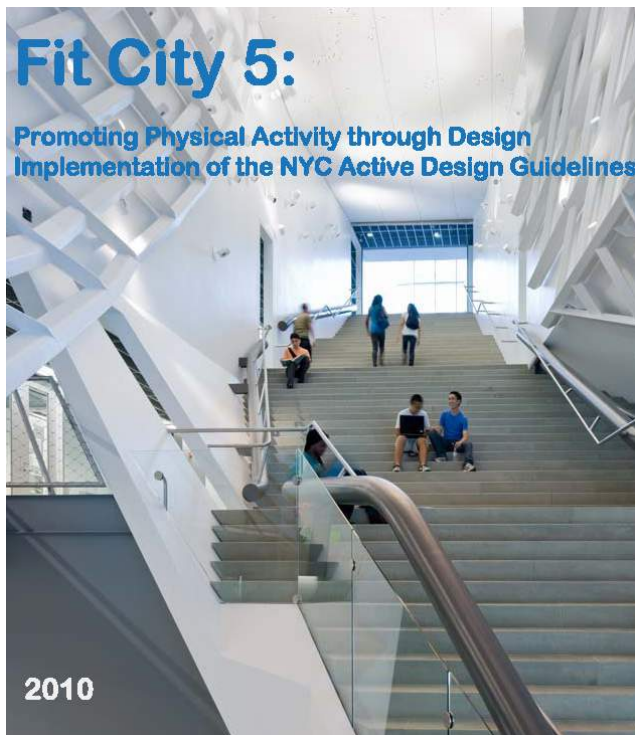
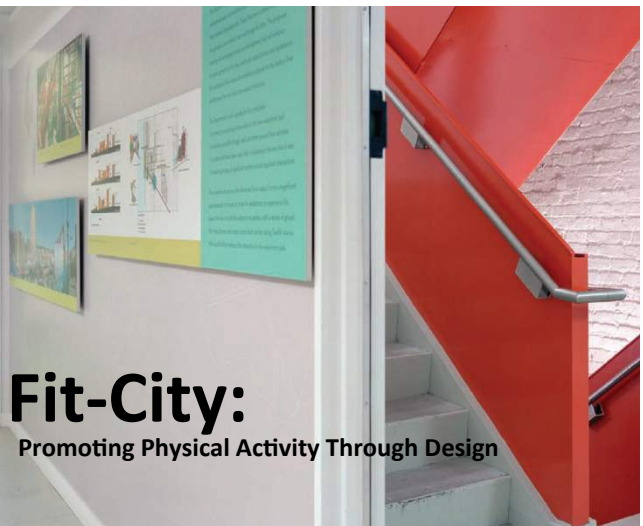
- Researchers: evidence reviews and synthesis, evaluation research

- Using **Evidence-Based and Best-Practice Strategies**

- Using **Annual Conferences as Strategic Milestones**

- E.g. Annual NYC Fit City Conferences – Fit City 8 June 24/25, 2013

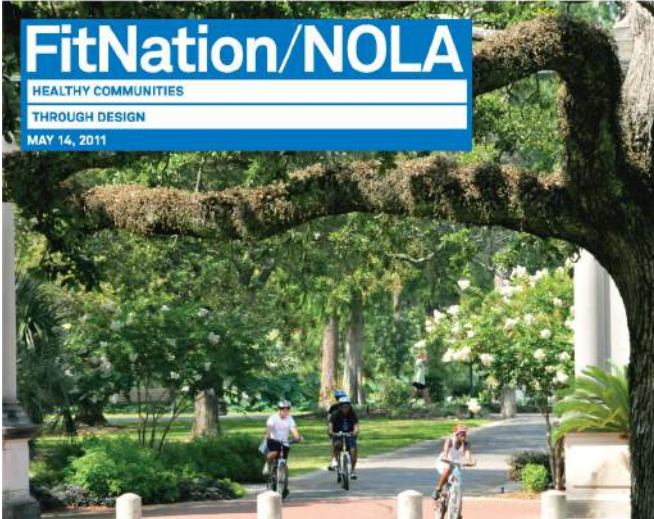
Intersectoral + Interagency Dialogue + Collaboration



Intersectoral + Interagency Dialogue + Collaboration

FitNation

HEALTHY COMMUNITIES
THROUGH DESIGN



FitNation/NOLA
HEALTHY COMMUNITIES
THROUGH DESIGN
MAY 14, 2011



FIT WORLD
SYMPOSIUM
NEW YORK CITY

May 22, 2012

Center for Architecture
536 LaGuardia Place
New York, NY 10012

Fit World

Follow up: Clinton Climate Initiative, Sao Paolo, London

Active Design Guidelines: Interagency + Interdisciplinary

NYC

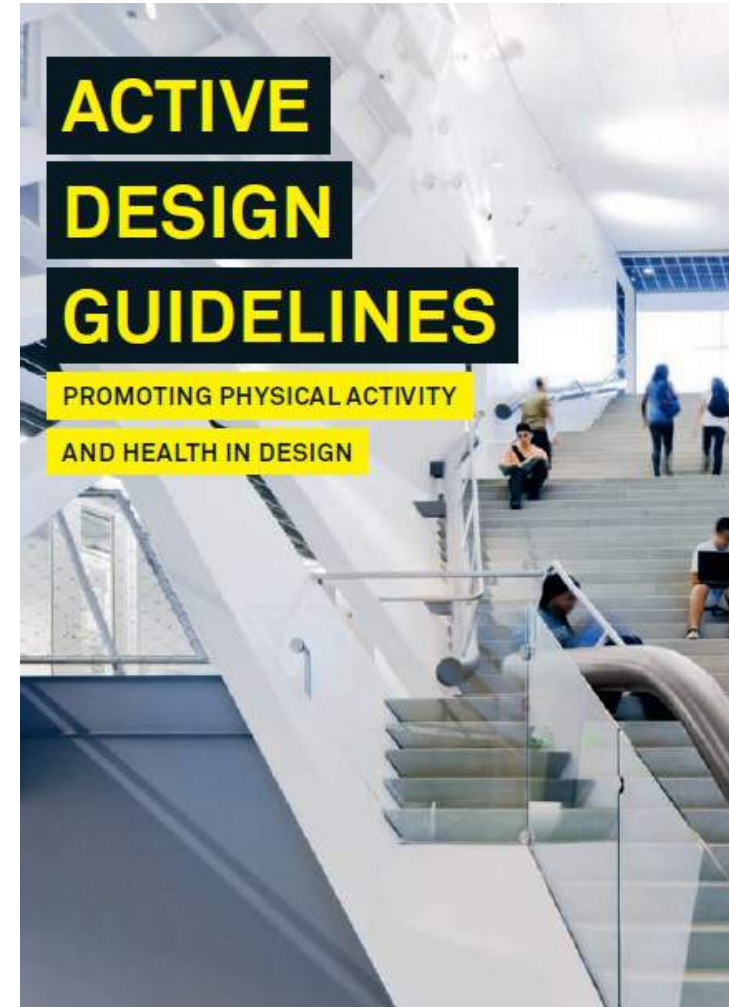
Michael R. Bloomberg
MAYOR

Department of **Design and Construction**

Department of **Health and Mental Hygiene**

Department of **Transportation**

Department of **City Planning**



Active Design Guidelines: Evidence Based Research



Strong Evidence

Indicates design strategies supported by a pattern of evidence from at least two longitudinal or five cross-sectional studies. The strength of the research allows us to discard alternative hypotheses and to conclude that there is a direct relationship between the suggested environmental intervention and the behavioral outcome.



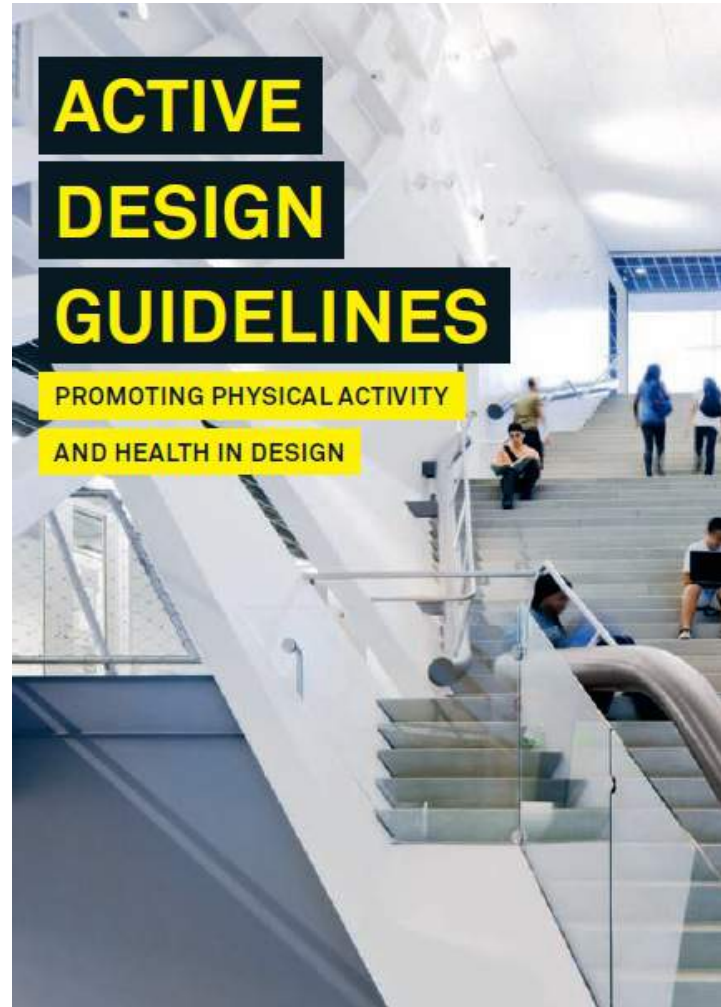
Emerging Evidence

Indicates design strategies supported by an emerging pattern of research. Existing studies give reason to believe that the suggested environmental intervention will likely lead to increased physical activity, but the research is not yet definitive.



Best Practice

Indicates design strategies without a formal evidence base. However, theory, common understandings of behavior, and experience from existing practice indicate that these measures will likely increase physical activity.



Active Design Guidelines: Evidence Based Research

Increase Physical Activity through Building, Street and Neighborhood Design:



Walking, Bicycling and Transit-oriented development

Designs to improve street safety and aesthetics (less crime and traffic / more greening), having sidewalks and bike paths connected to destinations, mixed land use, high population density

Median **increase in physical activity 35% to 161%**



Enhancing access to places for physical activity, such as creating walking trails or having onsite or nearby parks, playgrounds and exercise facilities (homes & worksites)

increases leisure-time activity and weight loss



Point-of-Decision stair prompts

Signs placed at elevators & escalators encouraging stair use, w/ info on benefits of stair use

Median **50% increase** in stair use

Design and aesthetic interventions

Music & art in stairwells

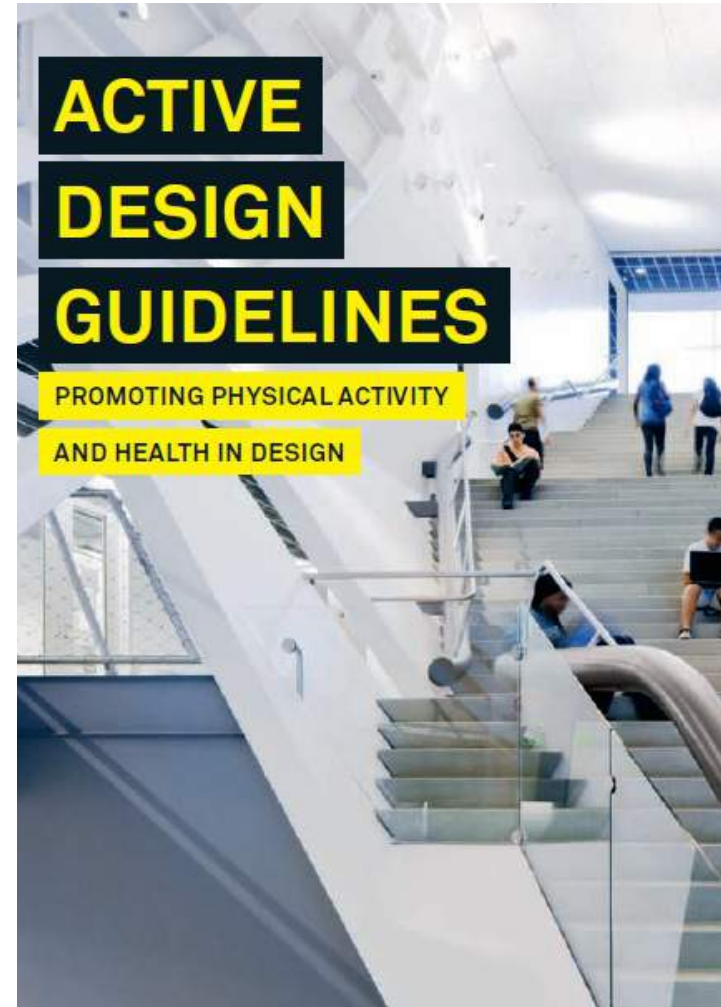
Design stairs to be more convenient and visible

Skip-stop elevators

3300% increase in stair use

Active Design Guidelines

We had some of the evidence, but
needed to start reaching the
**people who shaped the built
environment!**



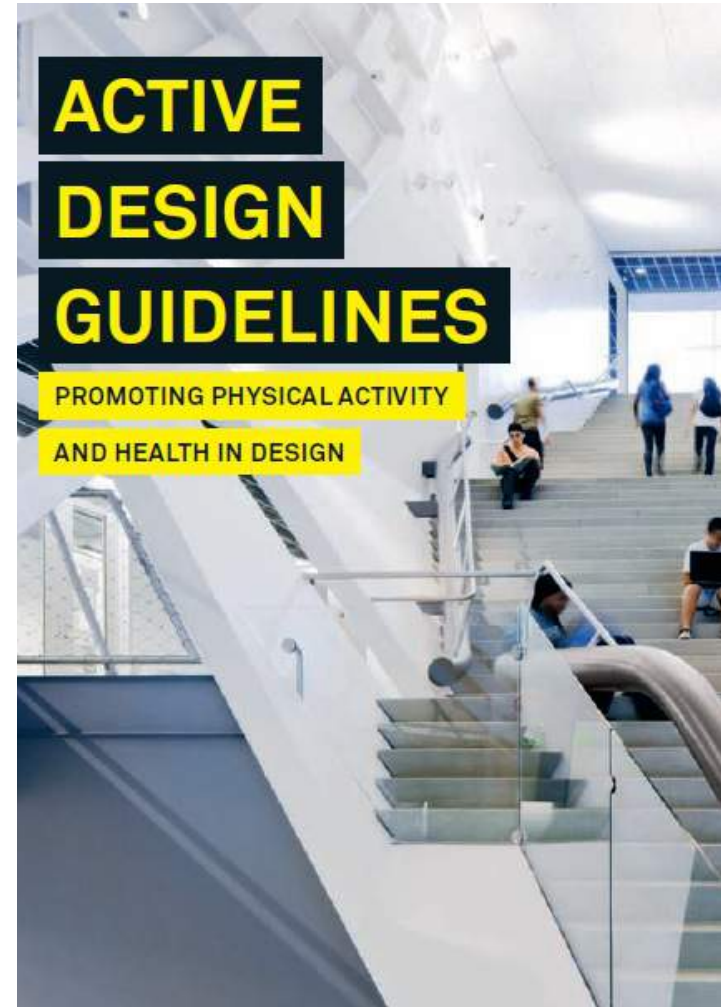
Active Design Guidelines

**1) Environmental Design and Health:
Past and Present**

2) Urban Design: Creating an Active City

**3) Building Design: Creating Opportunities
for Daily Physical Activity**

**4) Synergies with Sustainable and
Universal Design**



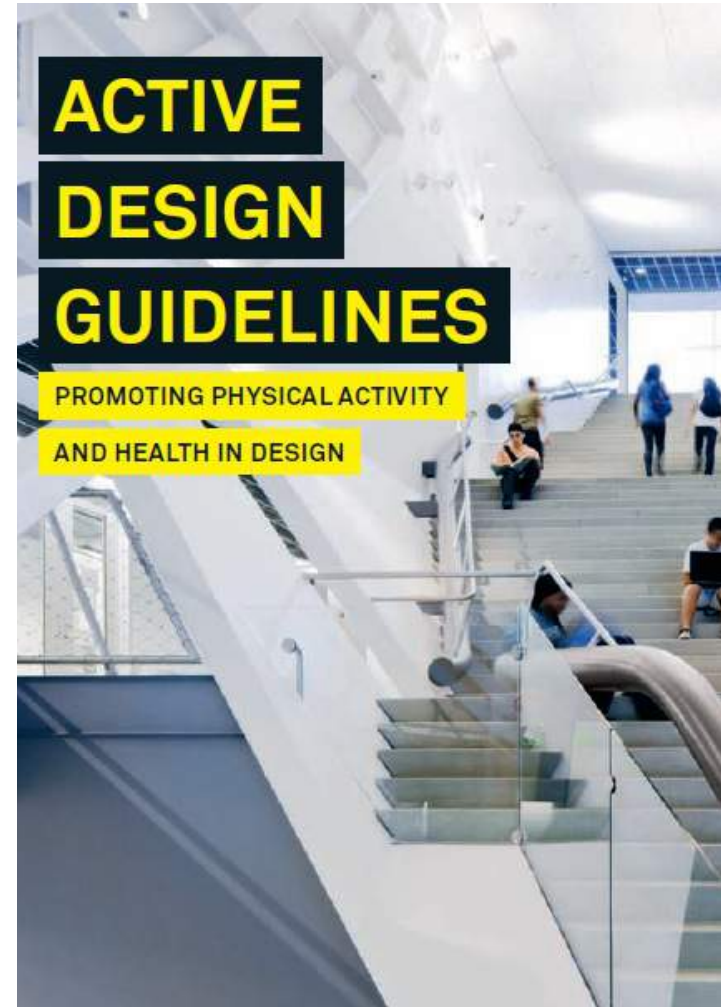
Active Design Guidelines

**1) Environmental Design and Health:
Past and Present**

2) Urban Design: Creating an Active City

**3) Building Design: Creating Opportunities
for Daily Physical Activity**

**4) Synergies with Sustainable and
Universal Design**



Urban Design Strategies

- **Land Use Mix**
- **Parks / Play Areas / Plazas**
- **Pedestrian Environment**
- **Bicycle Network and Infrastructure**
- **Transit Access**

Land Use Mix

Consider a **rich mix of uses**

Adjacency of offices + residences to services & amenities **promotes local walking** (+ less auto trips)

Supermarkets and farmers markets encourage **healthy nutrition**



DCP Land Use Map



Stone Street, NYC



Farmers Market, NYC

Parks/ Play Areas/ Plazas: Destinations to Walk To

Convenient parks and plazas
Encourage **active utilization**

Design parks for
local cultures and for
range of age groups

Attractive plazas have
mix of trees, lighting,
water fountains &
movable/ fixed seating



Marpillero Pollak Architects



Pedestrian Environment / Traffic Calming

Create **safe and attractive** spaces for walking and sitting



Reduce crossing distances with **median refuge islands**



Pedestrian Environment / Active Streetscape

Provide **places of rest** to complement active walking and jogging



The Highline

Enliven sidewalks with **street cafes**



Integrate **public art** into streetscape



Bicycle Network and Infrastructure

Encourage use through development of interconnected bikeways



Provide attractive signage, wayfinding, and secure bike parking



Transit Access

Provide **attractive and sheltered seating areas** to encourage use of transit routes

Separate **bus lanes from traffic** to make transit more convenient

MOST TRANSIT TRIPS BEGIN OR END WITH A WALK!!



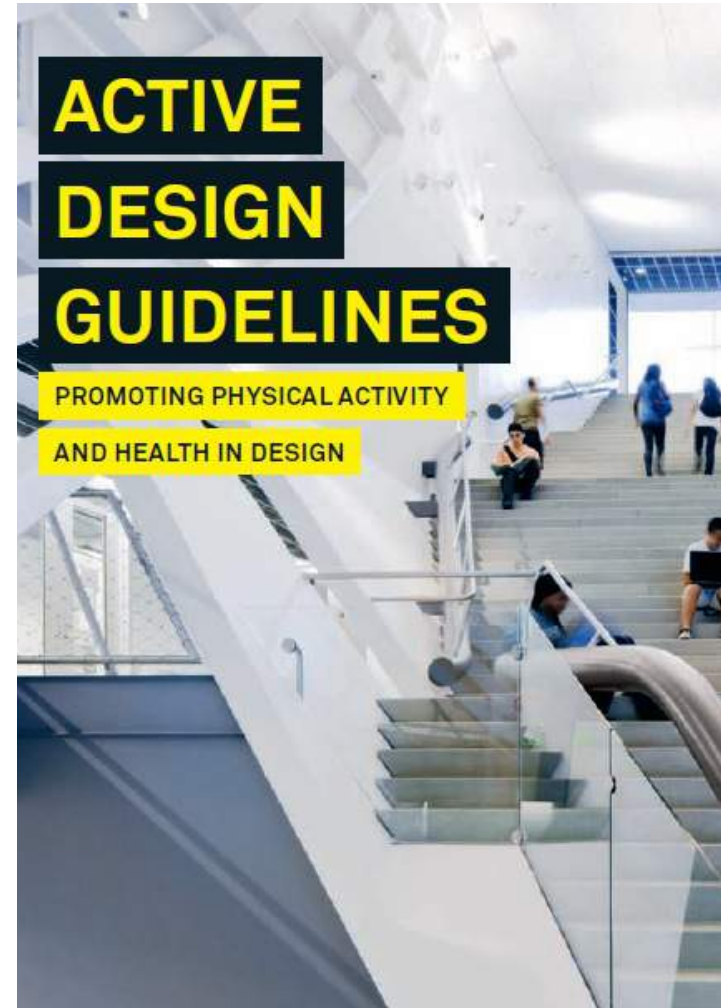
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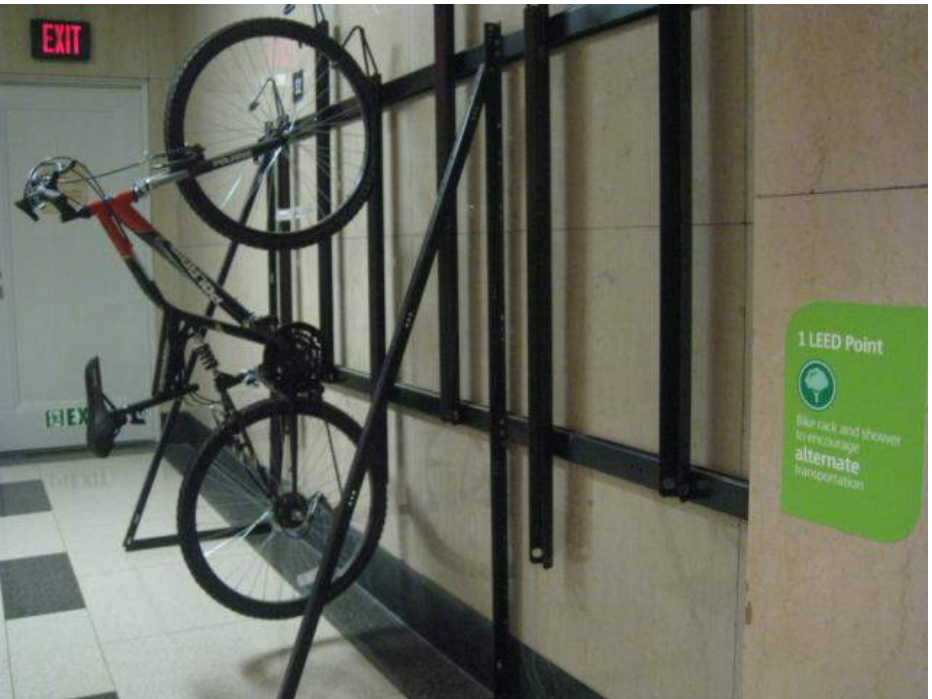
**4) Synergies with Sustainable and
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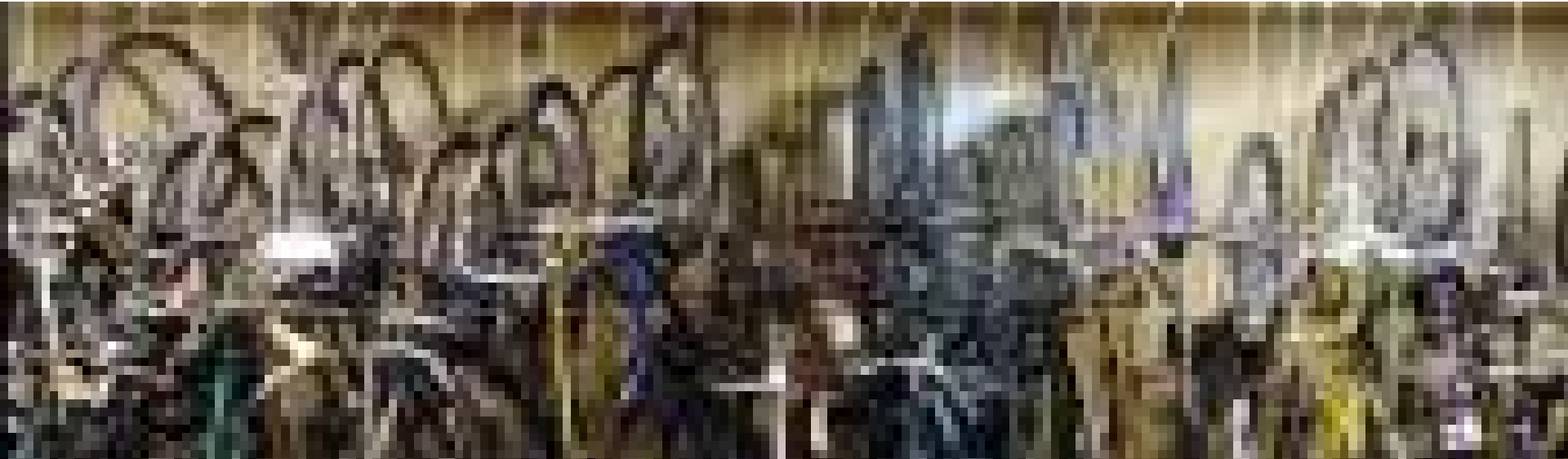
Building Design Strategies

- **Bicycle Parking and Storage**
- **Recreational Programming**
- **Stairs: Accessibility, Visibility, Convenience**
- **Stairs: Aesthetics**
- **Stairs: Signage and Prompts**
- **Building Exteriors: Contributing to the pedestrian realm**

Bicycle parking + storage



Secure Bike Storage with Easy Access



Recreational programming



Provides **fun and affordable** recreational opportunities

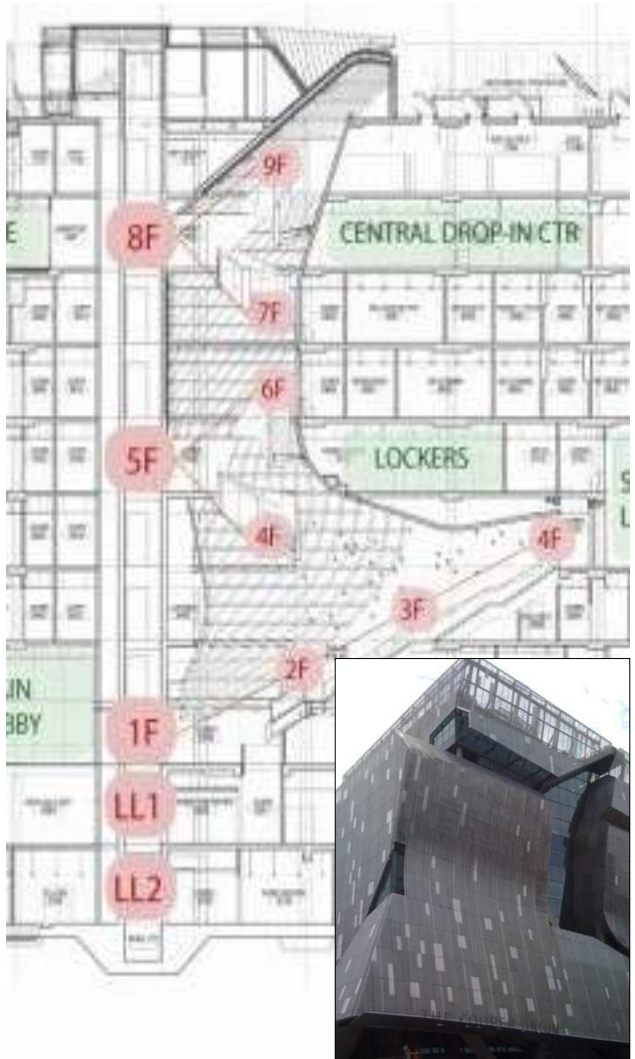
- Mary Walton Children's Center
- Public School 64, Queens
- 10 West End Ave, Manhattan

Stairs: accessibility, visibility, convenience

Stair of **Prominence** and **Visual Interest**



Skip Stop Elevators to increase stair use



Enclosed stairs that use **Fire Rated Glass** to Increase **Visibility**



Stairs: aesthetics

Stairs to Receive Plenty of **Natural Daylight**



Art in Stairs to **Increase Visual Interest**



Stairs **Designed to Invite Users**



Stairs: signage and prompts

Motivational Signage placed at points of decision:

On average, placing signage promoting stair use in locations such as near elevators or escalators has been shown to increase stair use by

50%



Burn Calories, Not Electricity



Take the Stairs!

Walking up the stairs just 2 minutes a day helps prevent weight gain. It also helps the environment.

Learn more at www.nyc.gov or call 311.

Michael R. Bloomberg
Mayor

NYC



REBNY

Building Exteriors: contributing to the pedestrian environment

Provide **multiple entries + appropriate transparency** along the street to help enliven the pedestrian environment



Maximize **variety, detail, texture + continuity** on the lower 1-2 floors of the building facade



Building Exteriors: contributing to the pedestrian environment

Design building massing to enhance pedestrian realm, thinking about **vertical divisions, variety and rhythms** from the pedestrian's perspective



Carefully **incorporate stairs and ramps** into building design features when needed



14 Townhouses, Brooklyn, Rogers Marvel

Diana Center, Barnard College, Weiss/Manfredi

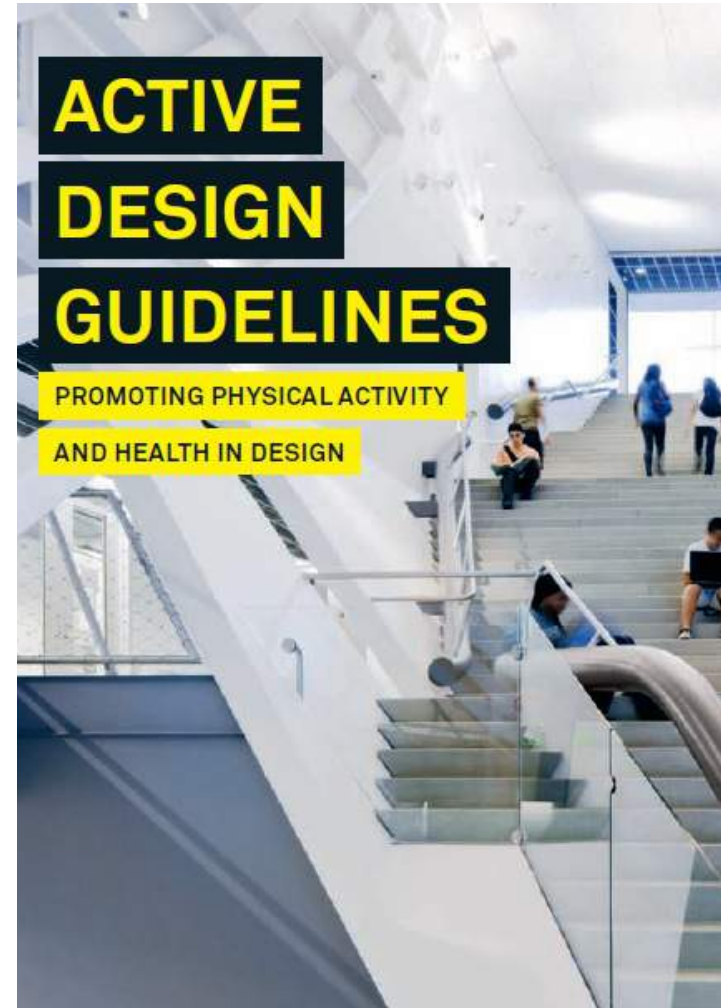
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Co-benefits: Create more accessible places for all

Creating **safer** places to walk, take transit, & for wheelchair travel



Making **elevators** more **available** for those who need them



Co-benefits: Improving the Environment



	Fuel / Electricity Use	Air Quality	Obesity/ Diabetes/Heart Disease
Biking or walking rather than automotive transport	✓	✓	✓
Stairs rather than elevators and escalators	✓	✓	✓
Active recreation rather than television	✓	✓	✓
Safe tap water rather than bottled and canned beverages	✓	✓	✓
Fresh produce rather than unhealthy processed foods	✓	✓	✓

Co-benefits: Reduce infrastructure costs

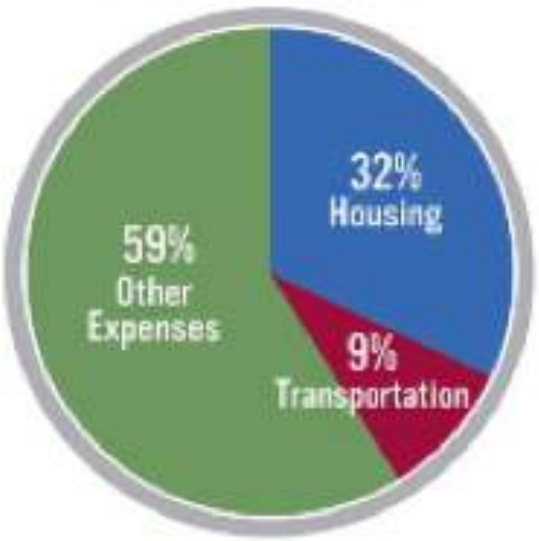
More compact, walkable development patterns
save money on avoided infrastructure costs

	Water & Sewer Laterals Required	Water & Sewer Costs (billions)	Road Lane Miles Required	Road Land Miles Costs (billions)
Sprawl Growth Scenario	45,866,594	\$189.8	2,044,179	\$927.0
Compact Growth Scenario	41,245,294	\$177.2	1,855,874	\$817.3
SAVINGS	4,621,303	\$12.6 (10.1%)	188,305	\$109.7 (6.6%)

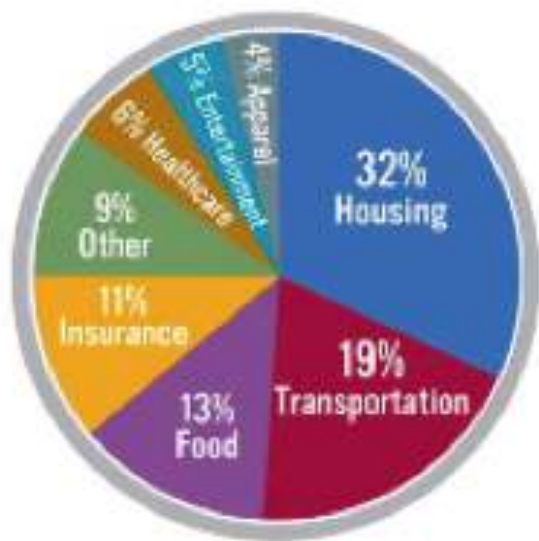
Sprawl Costs: Economic Impacts of Unchecked Development, Robert W. Burchell, Anthony Downs, Barbara McCann and Sahan Mukherji, Island Press, 2005

Co-benefits: Save people money

TRANSIT RICH NEIGHBORHOOD



AVERAGE AMERICAN FAMILY



AUTO DEPENDENT EXURBS



People in walkable, transit-rich neighborhoods spend only 9 percent of their monthly income on transportation costs; those in auto-dependent neighborhoods spend 25 percent.

Source: Center for Transit-Oriented Development

Co-benefits: Create more jobs

Building bicycle and pedestrian infrastructure creates more jobs per dollar invested, compared to road infrastructure only

Project type	Road	Bicycle	Pedestrian	Off-street trail	Number of projects	Direct jobs per \$1 million	Indirect jobs per \$1 million	Induced jobs per \$1 million	Total jobs per \$1 million
Total, all projects					58	4.69	2.12	2.15	8.96
Bicycle infrastructure only		•			4	6.00	2.40	3.01	11.41
Off-street multi-use trails				•	9	5.09	2.21	2.27	9.57
On-street bicycle and pedestrian facilities (without road construction)		•	•		2	4.20	2.20	2.02	8.42
Pedestrian infrastructure only			•		10	5.18	2.33	2.40	9.91
Road infrastructure with bicycle and pedestrian facilities	•	•	•		13	4.32	2.21	2.00	8.53
Road infrastructure with pedestrian facilities	•		•		9	4.58	1.82	2.01	8.42
Road infrastructure only (no bike or pedestrian components)	•				11	4.06	1.86	1.83	7.75



Built Envir & Obesity Work in Many U.S. Communities

Cross-Sector Partners in
15 Local Jurisdictions (incl. NYC):



- Public Health – 15
- Planning – 15
- Transportation – 14
- Education/School Construction – 12
- Parks and Recreation – 12
- Public Works – 8
- Housing Development or Management – 6
- Buildings – 3

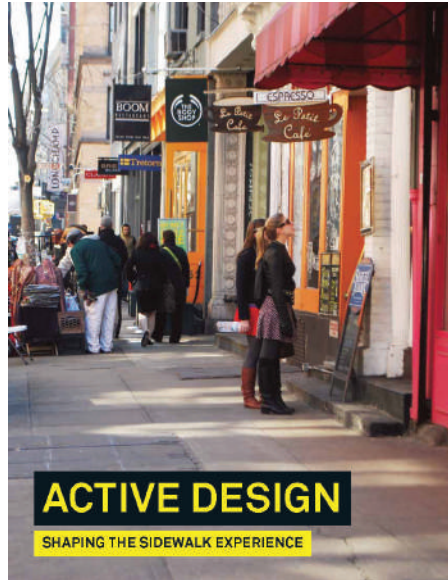


Boston MA ~ Cherokee Nation OK ~ Chicago IL ~ Cook County IL ~ Douglas County (Omaha) NE ~ Jefferson County (Birmingham) AL ~ King County (Seattle) WA ~ Louisville KY ~ Miami-Dade County FL ~ Multnomah County (Portland) OR ~ Nashville TN ~ Philadelphia PA ~ Pima County (Tucson) AZ ~ San Diego CA

Creation of Additional Resources: Active Design Supplement Documents

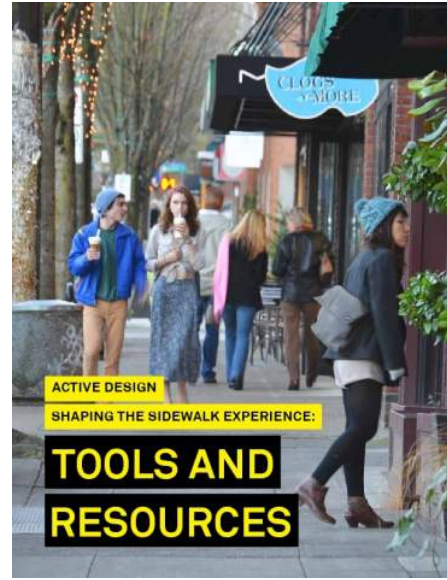
ACTIVE DESIGN GUIDELINES

PROMOTING PHYSICAL ACTIVITY AND HEALTH IN DESIGN



ACTIVE DESIGN

SHAPING THE SIDEWALK EXPERIENCE



ACTIVE DESIGN

SHAPING THE SIDEWALK EXPERIENCE:

TOOLS AND RESOURCES



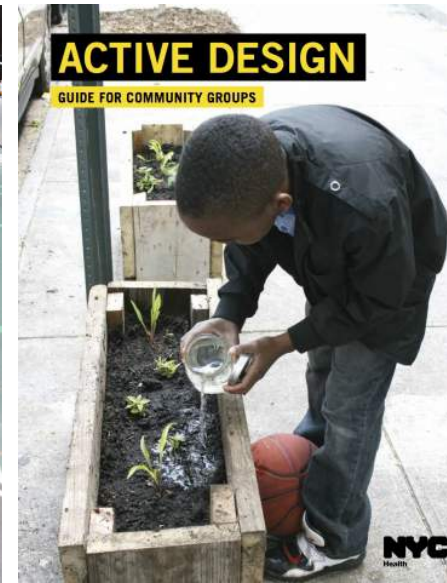
ACTIVE DESIGN

AFFORDABLE DESIGNS FOR AFFORDABLE HOUSING



ACTIVE DESIGN SUPPLEMENT

PROMOTING SAFETY



ACTIVE DESIGN

GUIDE FOR COMMUNITY GROUPS

NYC Health

(In progress at DCP)

1. Opportunities in Zoning
2. Best Practice Stair Study
3. Active Recreation Spaces

Seeing change in recently completed projects

Adding features that **support physical activity**
across diverse groups

Onsite Gardening



Collaborate with local horticulture or school clubs

Building Fitness Center



The Melody
(S. Bronx):
Exercise bikes for
teens have video
games

**ACTIVE
DESIGN**

Arbor House (S. Bronx): Co-locating activity
areas for different age groups

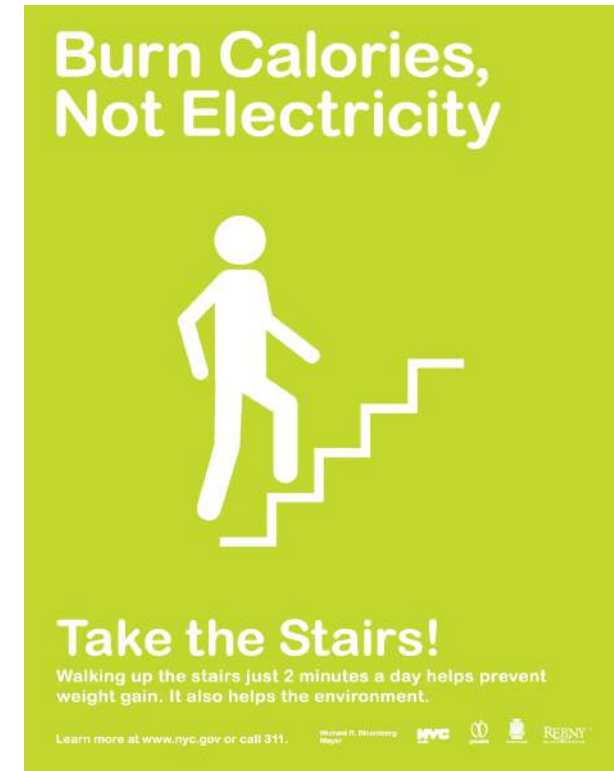
Simple Inexpensive Retrofits in Existing Buildings

Stair Promotion through:

- **Stair Prompt Signage at elevators and stairwells**
 - 10-story affordable housing building in S. Bronx: >40% increase in stair use at 9 months after posting
- **Art & Music in stairwells – e.g. Painting murals in stairs**
 - Current study to track increased use

Active Recreation Promotion through:

- Painting hopscotch and other activity-generating ground markings



What are some of the recent city policies that align with active design goals?

planNYC

A GREENER, GREATER NEW YORK

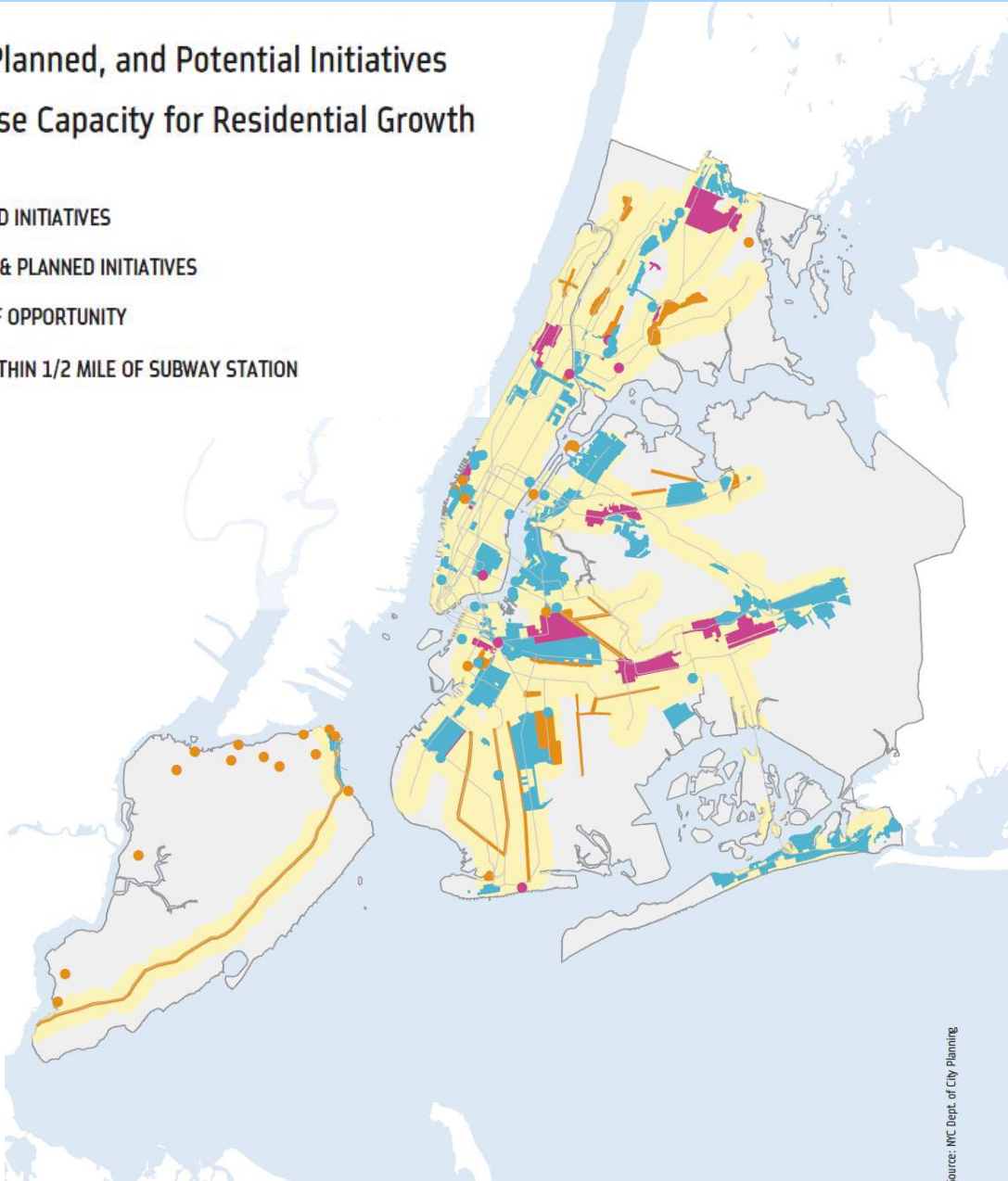


General Approach: Smart Growth

Focusing the development for **1 million** new people by the year **2030** near public transit access.

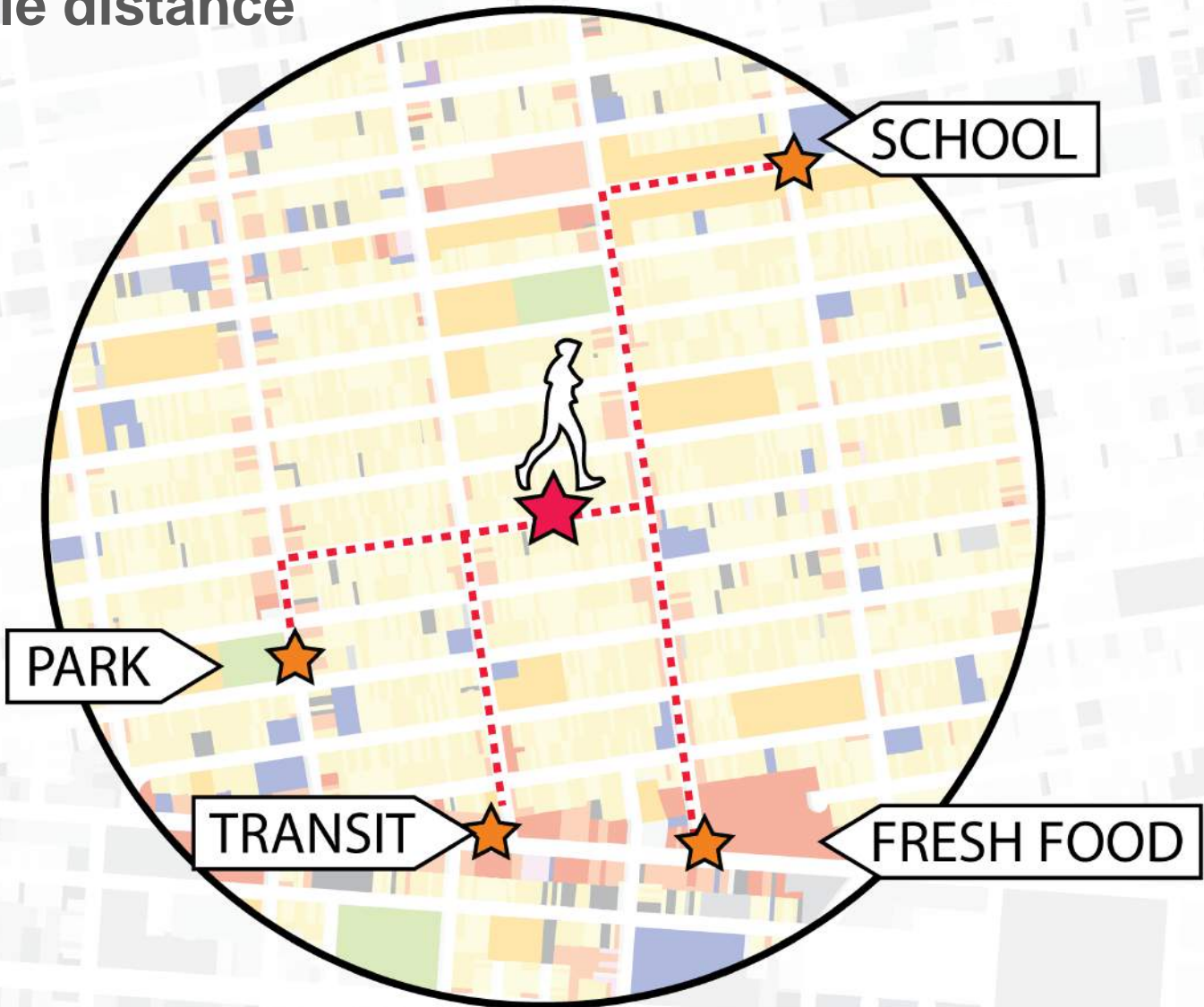
Recent, Planned, and Potential Initiatives to Increase Capacity for Residential Growth

- APPROVED INITIATIVES
- PENDING & PLANNED INITIATIVES
- AREAS OF OPPORTUNITY
- AREAS WITHIN 1/2 MILE OF SUBWAY STATION



General Approach : Complete Neighborhoods

Walkable distance



General Approach : Complete Neighborhoods

**HOUSING
FOR ALL**



JOBS



LOCAL RETAIL



OPEN SPACE



Policy Mechanisms: Toolkit

We have been encouraging people to change their behavior through building healthier environments and by changing policy

What is in our toolkit?

Incentivize
(FAR + tax)

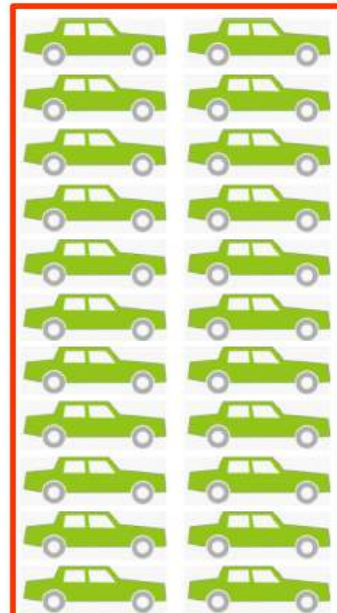
Protect

Mandate
+ relieve the
burden (FAR)

Allow

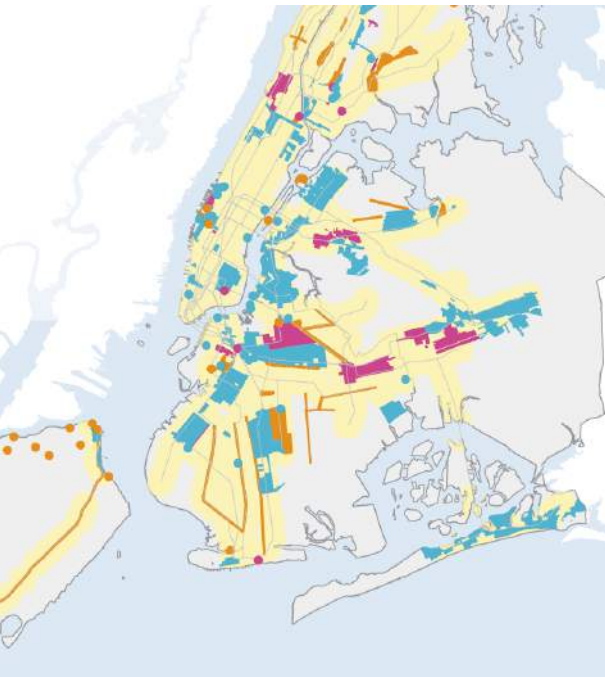
Minimum
design
standards

Remove
impediments



Policy Mechanisms: Applicability

CITYWIDE POLICY CHANGES



PRIORITIZE TARGETED HEALTH ZONES



SPECIFIC BUILDING TYPES/ DENSITIES

R1 R2 <i>Single-family detached</i>				
R3A* R3X R4A R5A <i>Single- & two-family detached</i>				
R3-1 R4-1* <i>Single- & two-family detached & semi-detached</i>				
R4B* <i>Single- & two-family detached, semi-detached & attached</i>				
R3-2 R4 R5 R5B* R6-R10 <i>Detached, semi-detached & attached</i>				
C1 <i>Local Retail</i>				

Incentivizing Access To Healthy Food

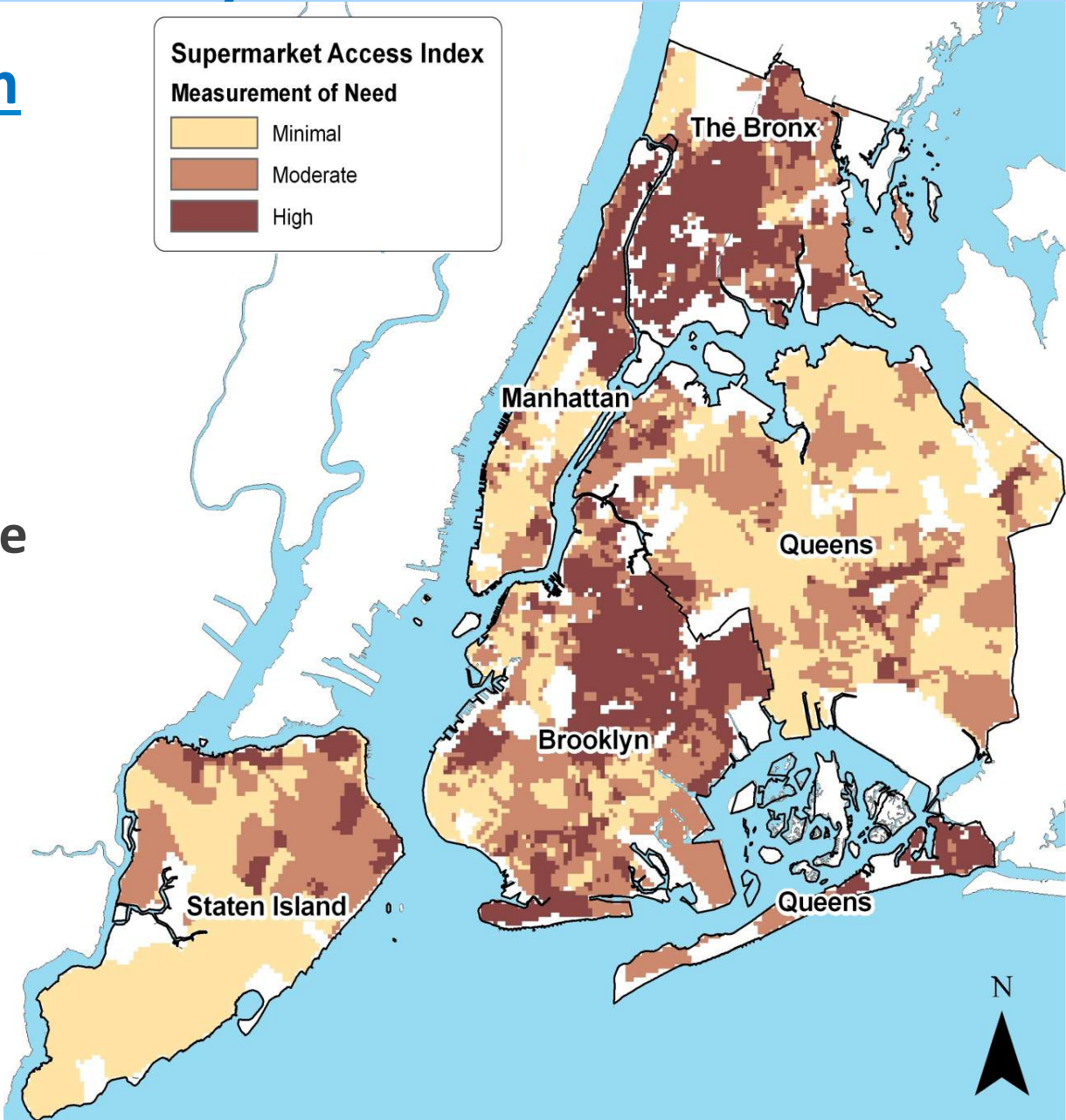
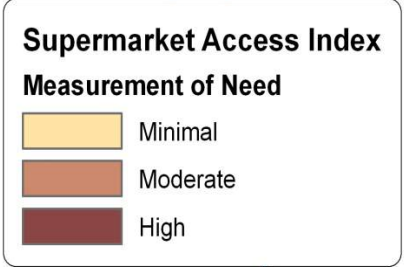
NYC FRESH program

Food Retail Expansion to Support Health

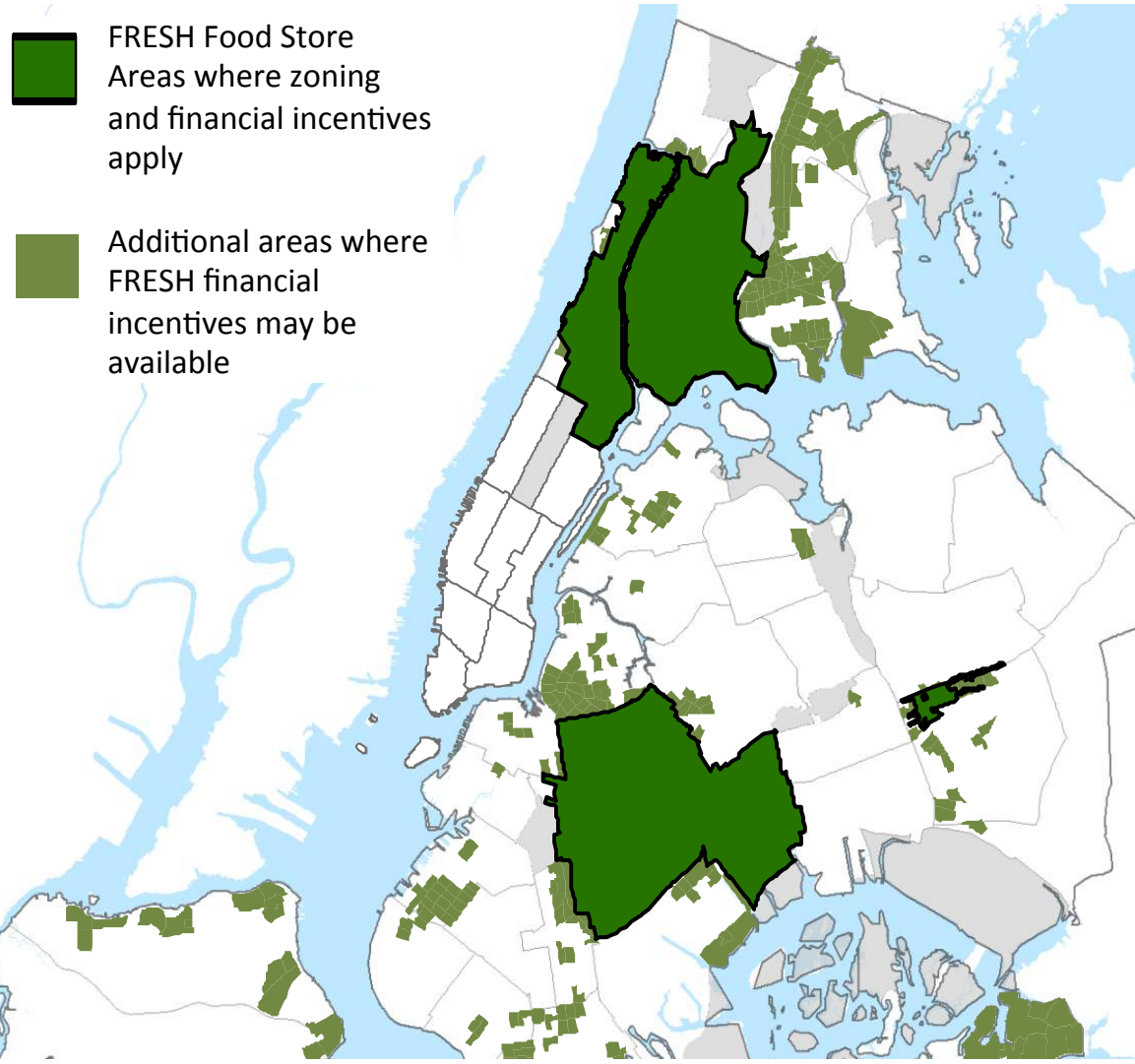
Understanding where people have **limited access to fresh produce**



where the **highest rates of diabetes and obesity** are



Incentivizing Access To Healthy Food



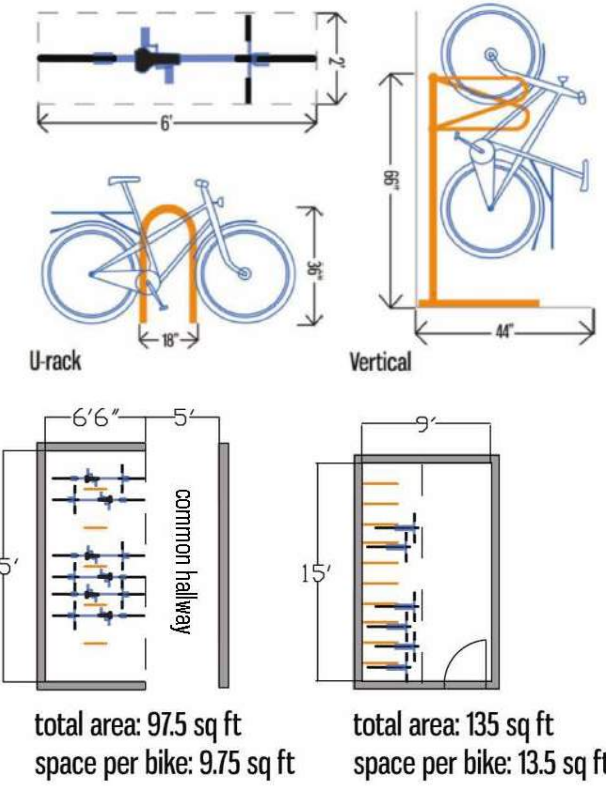
NYC FRESH Program:
Zoning and tax **incentives** for providing **fresh food** options
in the city's underserved areas

Requiring Bicycle Parking through Zoning



Zoning for Bicycle Parking: **Increasing active transport** by providing safe and secure parking for bike commuters

Requiring Bicycle Parking through Zoning



Background – Types of Bicycle Parking

Types of Bicycle Parking

- Class 1: Indoor, secure, longer-term parking
- Class 2: Outdoor, less secure, short-term parking

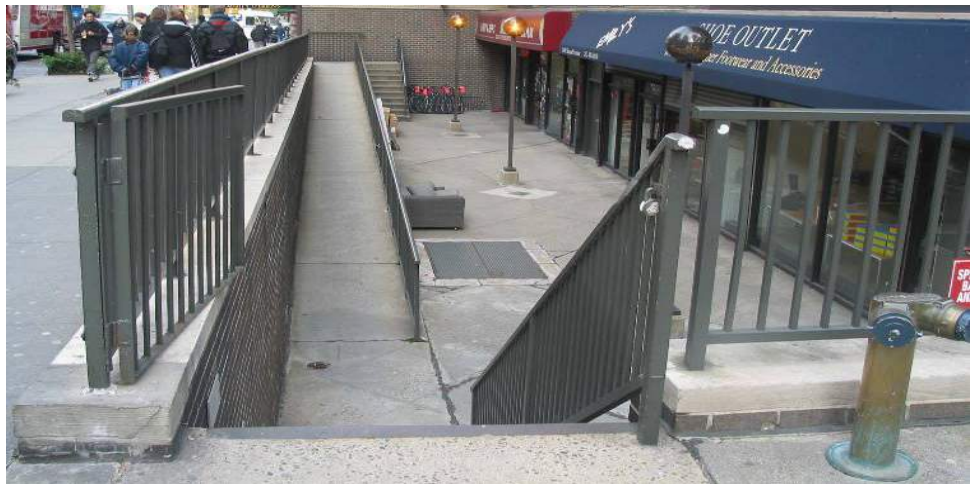
This project focuses on secure, longer-term bicycle parking.



Bicycle parking now required for new buildings, enlargements, conversions and public parking garages (floor area is discounted)

Design Guidelines for High Quality Public Open Spaces

Privately Owned Public Spaces (POPs)



Revised outdated design guidelines



Design Guidelines for High Quality Public Open Spaces

Privately Owned Public Spaces (POPs)



- Seating Variety
- No. Trees
- Groundcover
- Lighting

- Signage
- Entries on Spaces
- Orientation



Design Guidelines for High Quality Public Open Spaces

Privately Owned Public Spaces (POPs)



Ensuring City Codes are Current and Appropriate

NYC: Car Share Zoning Text Amendment

APRIL 26, 2010



The off-street parking regulations in the City were written nearly a half century ago, when car share did not exist. In order to allow for more efficient and economic option alternatives to owning a car, we needed to:

1. Define 'car share' in the zoning resolution
2. Establish rules for quantity and location

Ensuring City Codes are Current and Appropriate

NYC: Car Share Zoning Text Amendment

12 car share vehicles would eliminate demand for an estimated **28-154** cars in the area

Up to 40% of total spaces



EXAMPLE

Size of facility : 40 spaces

Car sharing vehicles : up to 12 cars

Studies show people drive less, therefore taking more cars off the streets, reducing pollution and traffic congestion, and making a friendlier environment for the pedestrian to WALK!

Thinking Comprehensively



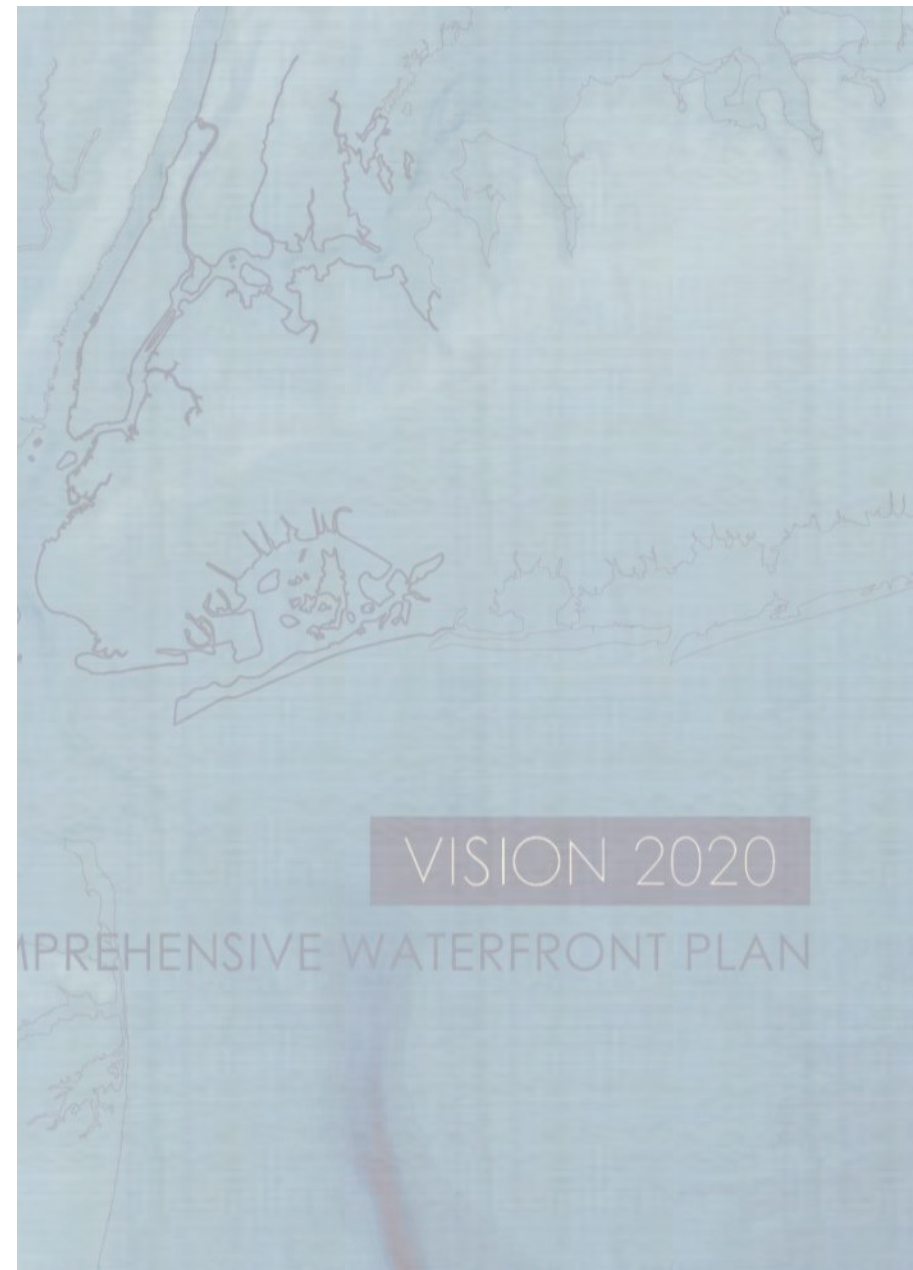
VISION 2020

NEW YORK CITY COMPREHENSIVE WATERFRONT PLAN

Thinking Comprehensively

VISION 2020 GOALS

1. Expand public access.
2. Enliven the waterfront.
3. Support the working waterfront.
4. Improve water quality.
5. Restore the natural waterfront.
6. Enhance the Blue Network.
7. Improve government oversight.
8. Increase climate resilience.

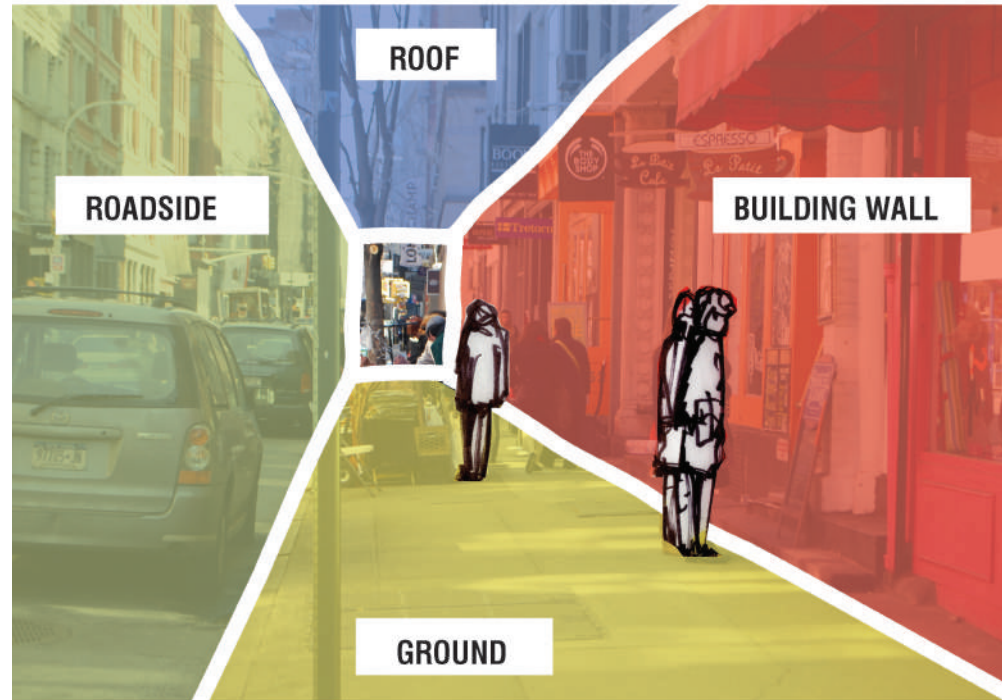
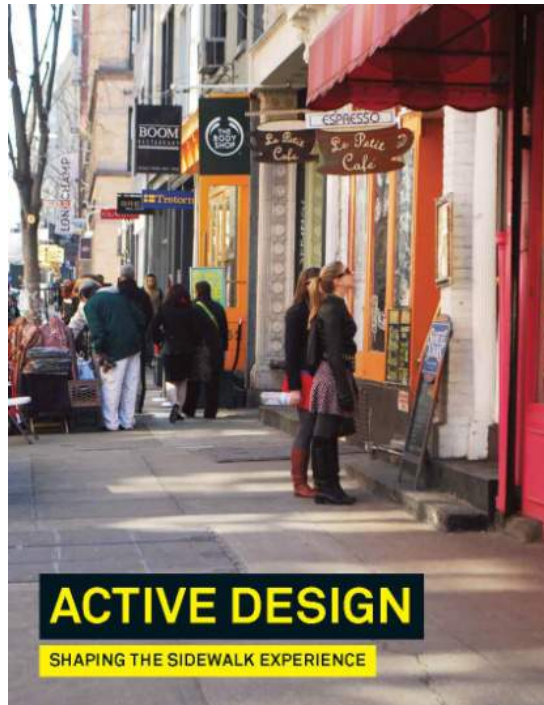


City Policy + Implementation

Thinking Comprehensively



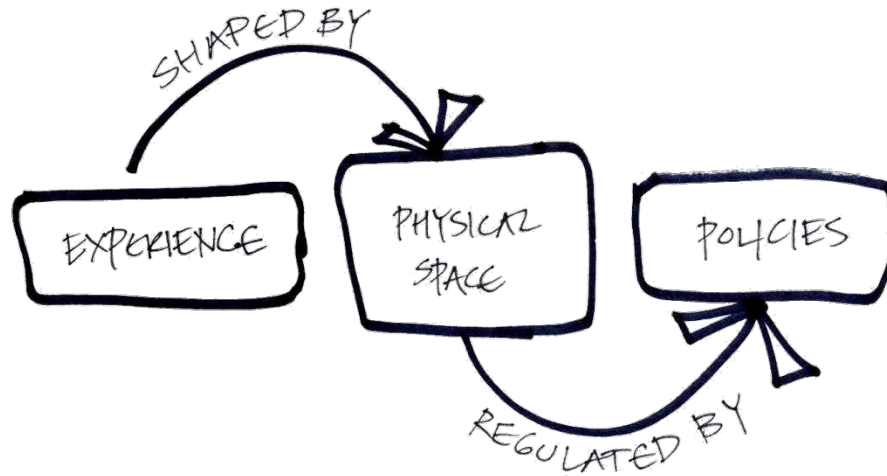
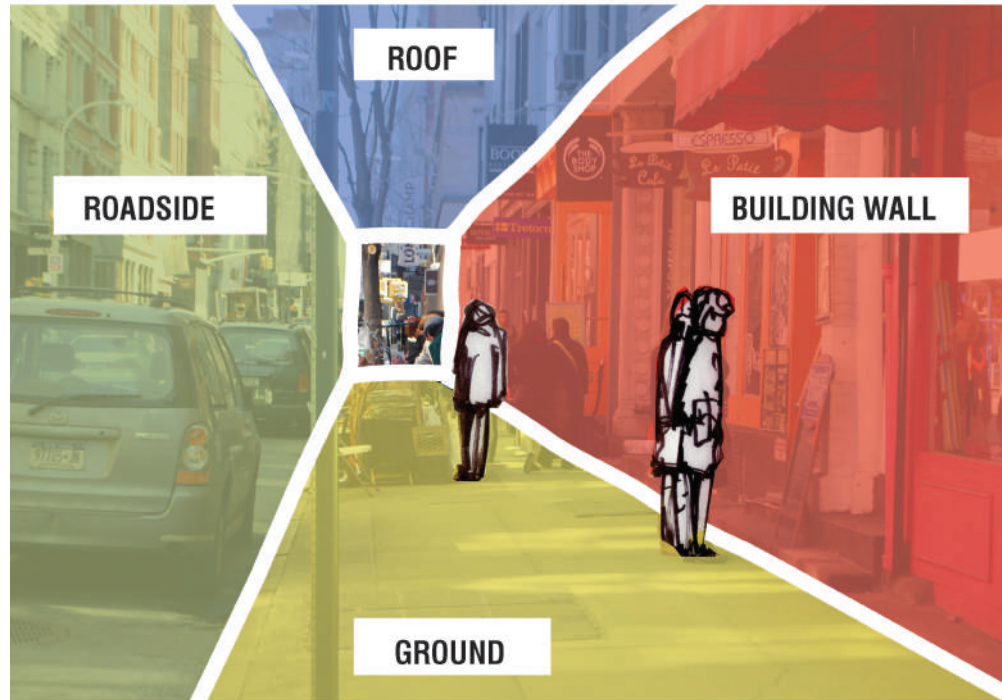
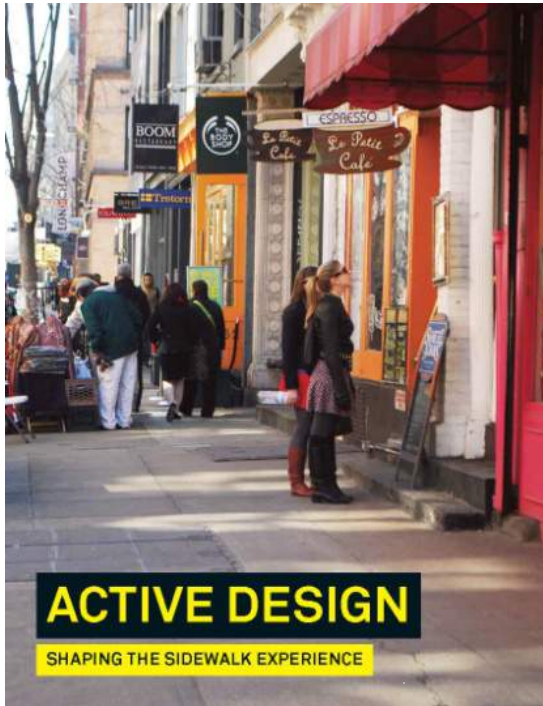
Active Design: Shaping the Sidewalk Experience



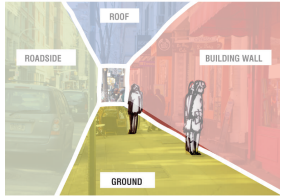
Asks designers and policy makers to share the responsibility of shaping the sidewalk experience, and positively impact the walkability of neighborhood.

http://www.nyc.gov/html/dcp/html/sidewalk_experience/index.shtml

Active Design: Shaping the Sidewalk Experience



Active Design: Shaping the Sidewalk Experience



Curbcuts

Street trees(tree pits)*

Green strips (planters)*

Waste bins

Street furniture

Lighting/
signage poles

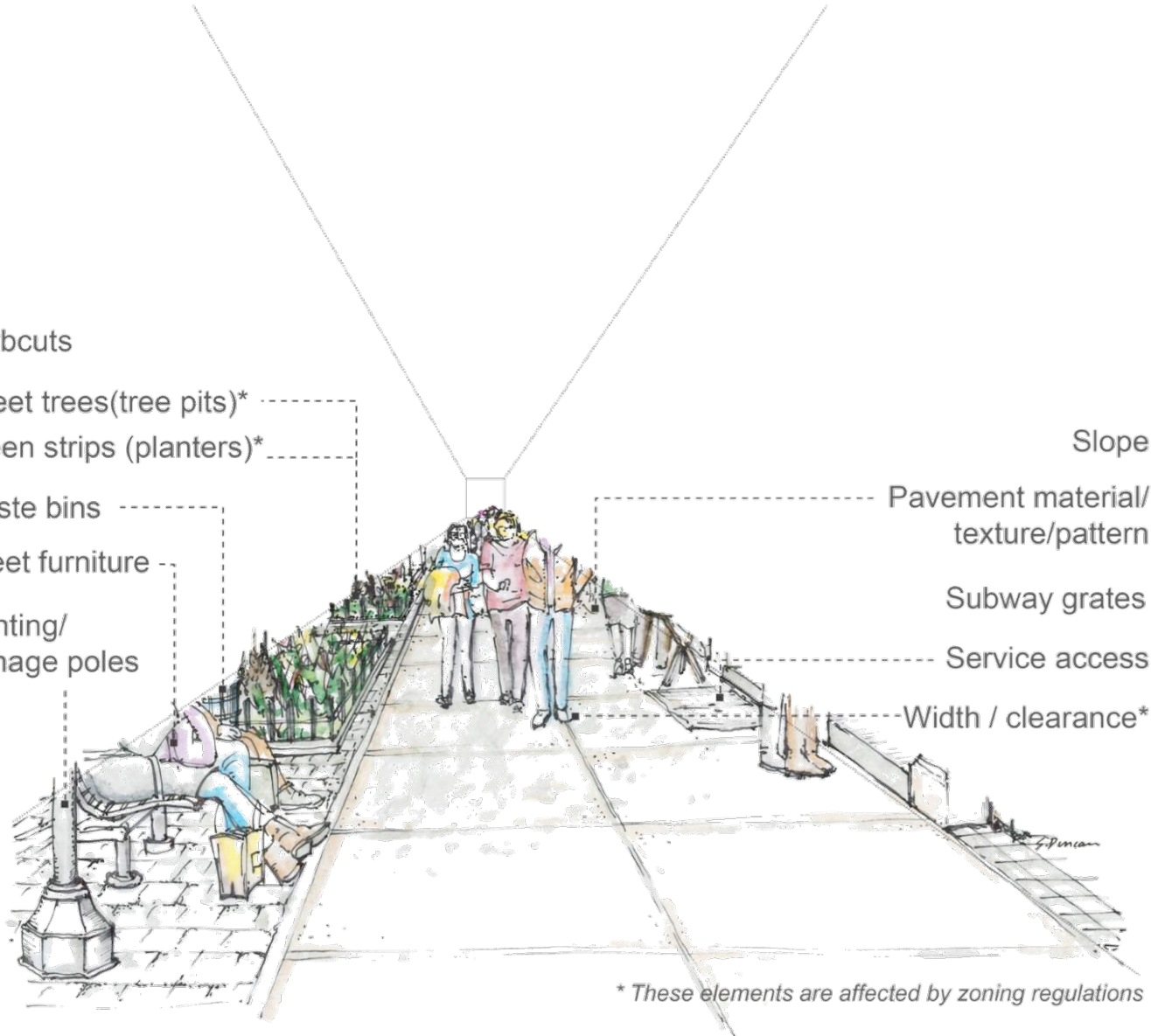
Slope

Pavement material/
texture/pattern

Subway grates

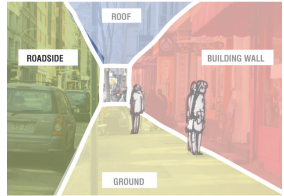
Service access

Width / clearance*



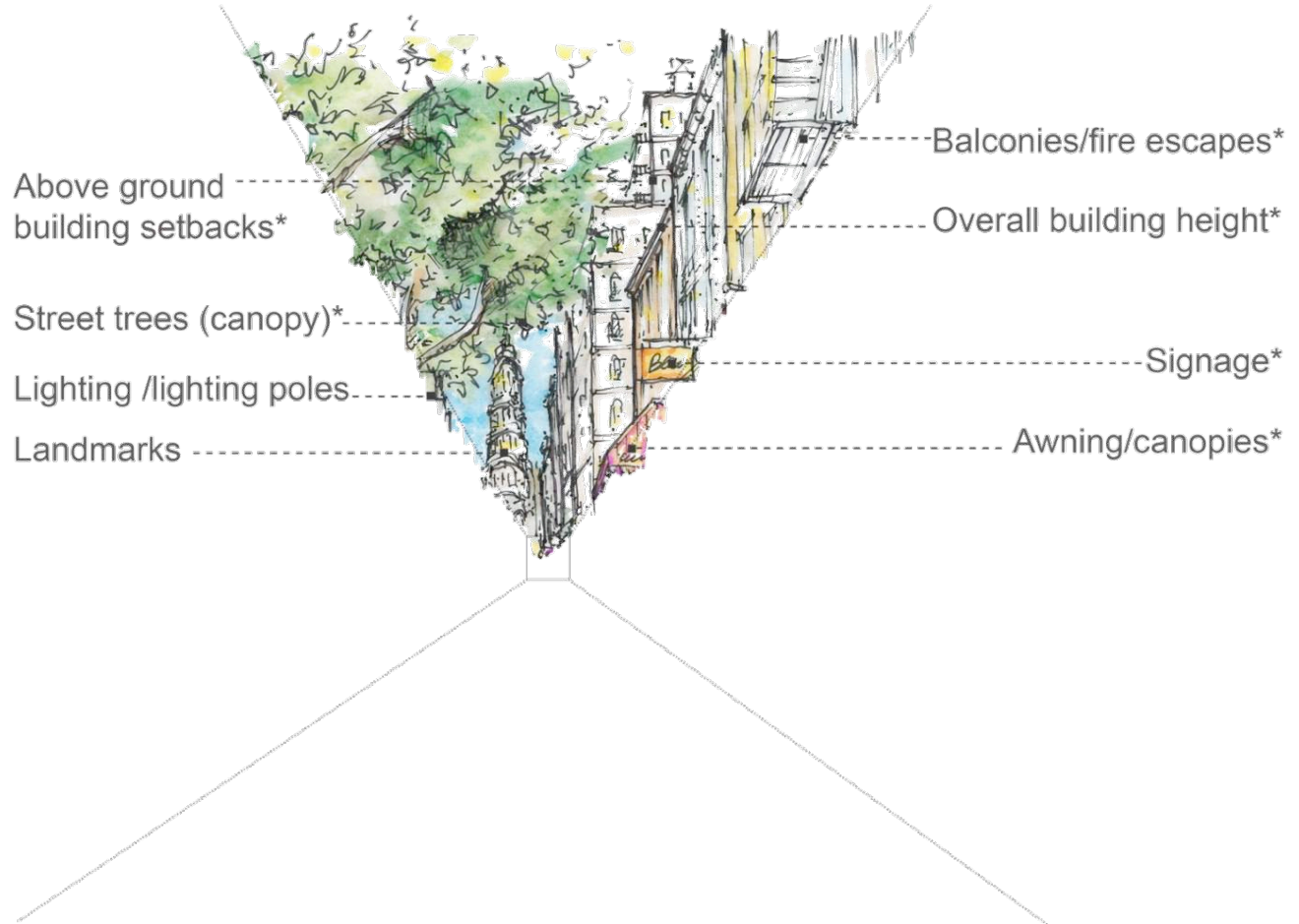
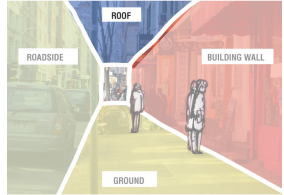
* These elements are affected by zoning regulations

Active Design: Shaping the Sidewalk Experience



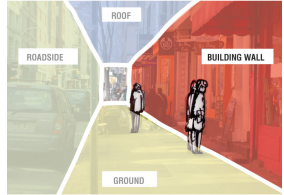
* These elements are affected by zoning regulations

Active Design: Shaping the Sidewalk Experience



* These elements are affected by zoning regulations

Active Design: Shaping the Sidewalk Experience



Fire escapes and balconies*

Building height and setback*

Lighting

Shading devices*

Signage*

Canopies/awnings*

Entrances*

Security gates*

Transparency*

Architectural articulation*

Outdoor uses*

Land use*

Length of lots/frontages*

Front yard planting*

Off-street parking*

Ground floor setback*



* These elements are affected by zoning regulations



**“Re-imagine the
public realm”**

**From moving cars to
moving PEOPLE**

A PARADIGM SHIFT:

There are more cars than space, so how do we find ways to move people who take up less space



(MOVING 60 PEOPLE)





41 AV

TURNING
Cycles
TO



WAIT
FOR
WALK
SIGNAL

匯款中國
Mone
護照
護照快相
PASSPORT
PHOTO

NYC DOT Maintains...

- 19,000 lane miles of roadway
- 789 bridge structures

- 6 tunnels

- 300,000 streetlights

- SI Ferry with 65,000 daily passengers

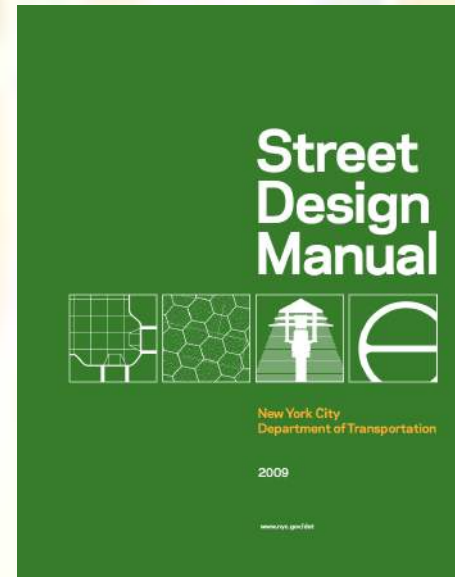


City Policy + Implementation

Reimagining the City



Design for Livability



Create or Enhance a Public Plaza in every Community

Making the Nation's Safest Big City Even Safer



**Injuries to motorists down
63%, pedestrian injuries
down 35%**





NYC Plaza Program

Application Guidelines

2011





Improving public spaces by transforming underutilized parts of streets and refuge islands into pedestrian plazas.

Credit: Gehl Architects



BEFORE

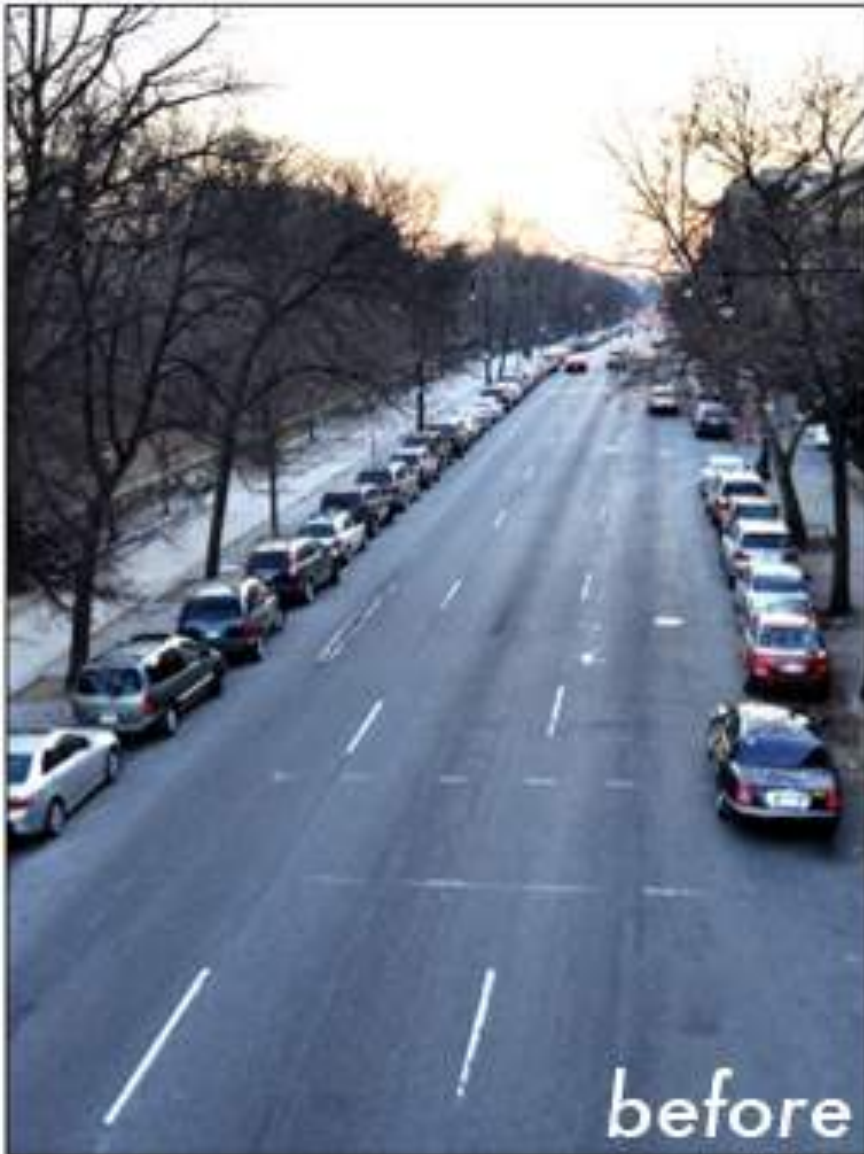
Credit: DOT



AFTER

Pearl Street Plaza, Brooklyn

Street Design Manual: Bicycling



Street Design Manual: Bicycling



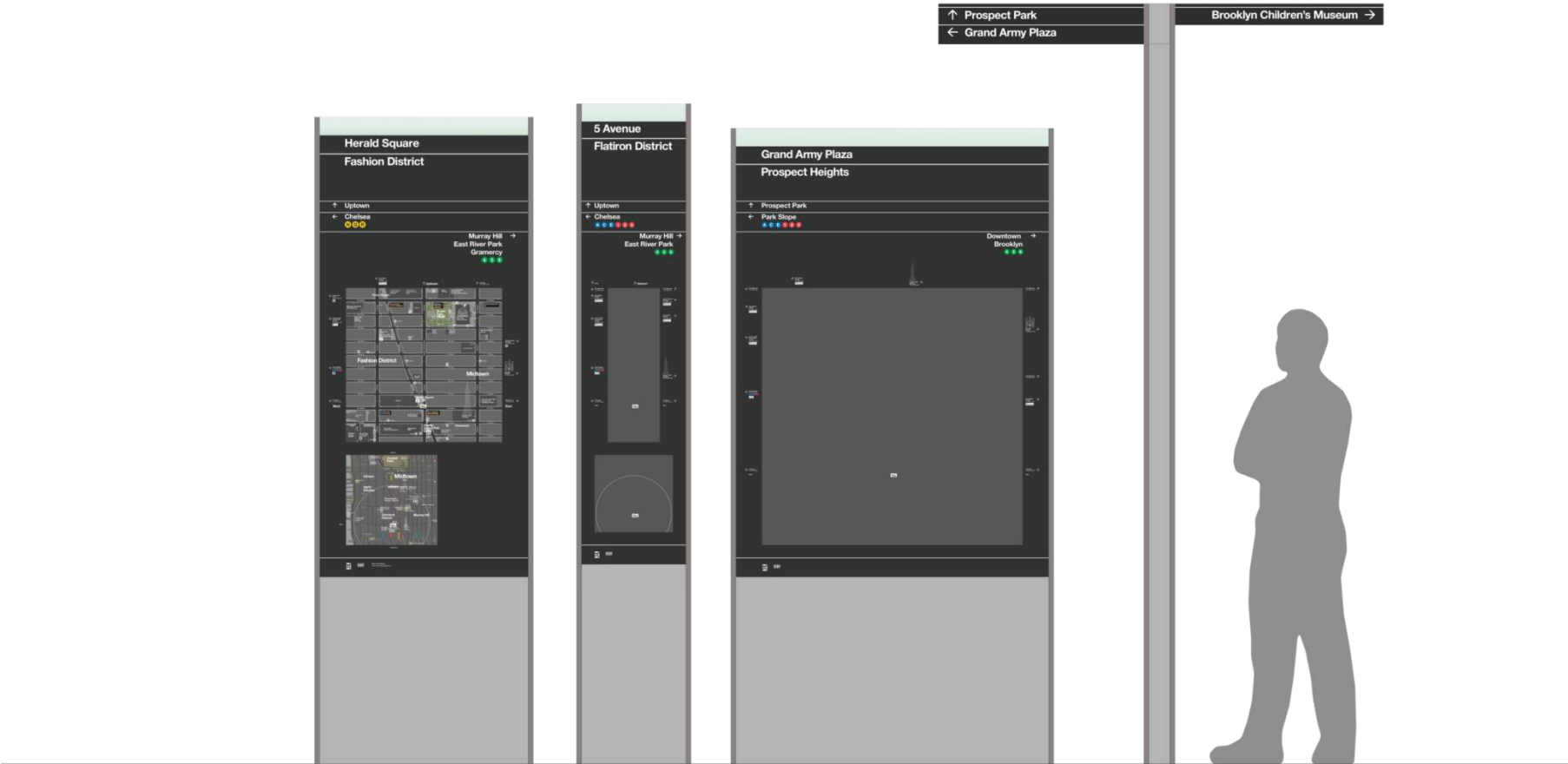
Bike Share (May 2013)



STREET SEATS PROGRAM



Consistent Wayfinding



Consistent Wayfinding



Citi-Bench Program



Citi-Bench Program



Program Public Spaces: Summer Streets





Measuring the Street:

New Metrics for 21st Century Streets



Building great public spaces

Economic value and neighborhood vitality

New York's streets serve more functions than simply moving people and goods. In such a densely populated city, the streets and sidewalks are places to congregate, relax, and enjoy being out in public. We have focused on creating great public spaces that serve individuals and groups large and small. Local organizations who maintain and program our public spaces help us ensure that these spaces will remain functional and useful for all users.

KEY METRICS

- Economic vitality (sales tax receipts, commercial vacancies, number of visitors)
- User satisfaction, revealed through surveys
- Number of users

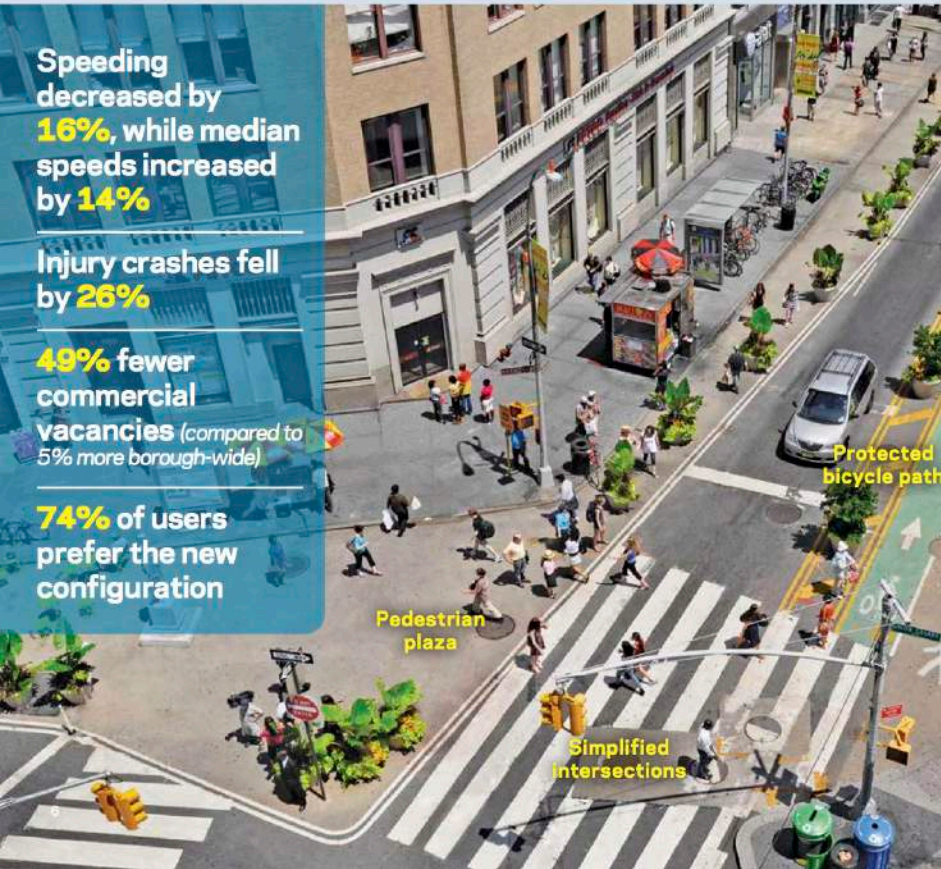
Expanding an iconic space: Union Square North (Manhattan)

Speeding decreased by **16%**, while median speeds increased by **14%**

Injury crashes fell by **26%**

49% fewer commercial vacancies (compared to 5% more borough-wide)

74% of users prefer the new configuration



Transforming an underused parking area: Pearl Street (Brooklyn)

172% increase in retail sales (at locally-based businesses, compared to 18% borough-wide)

BID held **27** public events in 2012



Creating a seating area out of curb lane: Pearl Street (Manhattan)

77% increase in seated pedestrians

14% increase in sales at fronting businesses



Designing safer streets

Safe and attractive options for all users

The City's streets are unique because of the mix of people using the same space. Planning for safety, which is at the heart of every DOT initiative, means helping pedestrians, motorists, bus riders, and cyclists coexist safely. Here our focus has been on organizing the different streams of traffic - by simplifying intersections; by creating dedicated lanes for turning drivers and for cyclists; and by setting aside signal time and safe space for crossing pedestrians.

KEY METRICS

- Crashes and injuries to motorists and other vehicle occupants, pedestrians, cyclists, and motorcyclists
- Vehicle speeds

First protected bicycle lane in the US:
8th and 9th Avenues (Manhattan)

35% decrease in injuries to all street users (8th Ave)

58% decrease in injuries to all street users (9th Ave)

Up to 49% increase in retail sales (Locally-based businesses on 9th Ave from 23rd to 31st Sts., compared to 3% borough-wide)



Neighborhood traffic calming:
East 180th Street (Bronx)

67% decrease in pedestrian crashes

29% decrease in eastbound speeding

32% decrease in westbound speeding



New York City from 2000 to 2011

37% reduction in traffic fatalities

5% reduction in motor vehicle registrations (2010)

1.5% decline in citywide traffic volumes (2000-2010)

12% growth in bus ridership on M15
SBS after implementation of new bus lanes

289% increase in commuter
cycling

Safer City = Active City = Healthy City

HEALTH IMPACTS

Started Reversing Childhood Obesity (also in Philadelphia and San Diego!)

Adults meeting physical activity (PA)

recommendations 29% in NYC compared with 11% in the rest of the US (measured PA); much of this is achieved by active transportation

Life expectancy in NYC rising more rapidly than rest of the US,

Also other environmental, economic and traffic impacts

Safer City = Active City = Healthy City

City Policy + Implementation

General Approach



**ACTIVE
DESIGN**

General Approach

Whether skyscrapers or
sidewalks.....

We always judge from the

**pedestrians'
perspective!**

