# Interagency and Interdisciplinary

<table>
<thead>
<tr>
<th>Core Active Design Guidelines Team</th>
<th>Collaborators</th>
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<tbody>
<tr>
<td>Department of Health and Mental Hygiene</td>
<td>Mayor’s Office of Long Term Planning and Sustainability</td>
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<tr>
<td>Department of Design and Construction</td>
<td>Department for the Aging</td>
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<tr>
<td>Department of Transportation</td>
<td>Mayor’s Office of People with Disabilities</td>
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<tr>
<td>Department of City Planning</td>
<td>Parks and Recreation</td>
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<tr>
<td>Office of Management and Budget</td>
<td>Housing Preservation and Development</td>
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<td>Department of Buildings</td>
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<tr>
<th>Academic Institutions</th>
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<tbody>
<tr>
<td>Department of Architecture, University of Texas San Antonio</td>
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<tr>
<td>Bloustein School of Planning and Public Policy, Rutgers University</td>
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<td>Department of Architecture, Georgia Institute of Technology</td>
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<th>Built Environment Non-profits</th>
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<tr>
<td>American Institute of Architects, New York Chapter</td>
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<tr>
<td>Transportation Alternatives</td>
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<tr>
<td>Hutton Associates</td>
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<td>1100 Architects</td>
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<td>Irene Cheng</td>
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<th>Built Environment Professionals</th>
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<tr>
<td>Robert Wood Johnson Foundation Active Living Research Program</td>
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<td>Milbank Memorial Fund</td>
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Today’s Agenda

Presentation: “Active Design 101”

1. Why Active Design?
2. Overview of the NYC Active Design Guidelines
3. NYC Policy Initiatives

Q&A

Group Discussion

Closing and Exit Questionnaires
Why Active Design?

• Brief History of Health and the Built Environment
• Today’s Epidemics: Obesity and Chronic Disease
• Benefits of Physical Activity
History of health and the built environment

- 100+ years ago, urban conditions in NYC were a breeding ground for disease epidemics

**Over-crowding:**
By 1910, the average density in lower Manhattan was 114,000 people/sq.mi; two wards reached densities > 400,000. (Today’s density: 67,000/sq.mi.)

**Inadequate systems** for garbage, water, and sewer, leading to pervasive filth and polluted water supplies.

**Major epidemics:**
- Air/droplet-borne diseases: TB
- Water-borne diseases: Cholera
- Vector-borne diseases: Yellow-fever
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 results

<table>
<thead>
<tr>
<th>Deaths</th>
<th>1880</th>
<th>1940</th>
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<tbody>
<tr>
<td>Infectious Diseases</td>
<td>57.1%</td>
<td>11.3%</td>
</tr>
<tr>
<td>- Contagion</td>
<td>12.5%</td>
<td>0.2%</td>
</tr>
<tr>
<td>- Diarrhea</td>
<td>9.6%</td>
<td>0.5%</td>
</tr>
<tr>
<td>- Tuberculosis (TB)</td>
<td>20.8%</td>
<td>5.0%</td>
</tr>
<tr>
<td>- Pneumonia</td>
<td>13.2%</td>
<td>5.6%</td>
</tr>
<tr>
<td>- Typhoid</td>
<td>1.0%</td>
<td>0.003%</td>
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</tbody>
</table>

Today, about 9% of deaths in NYC are due to infectious diseases.

**Chronic Disease** accounts for 75% of deaths.

In 2005, **133 million Americans** – almost 1 out of every 2 **adults** – had at least one chronic illness.

Source: U.S. Centers for Disease Control and Prevention (CDC)
**THE 19th CENTURY:**

Infectious disease

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

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**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
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

(*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, 1991

(*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, 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

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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)

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)
Obesity Trends* Among U.S. Adults

BRFSS, 2010

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

Source: U.S. Centers for Disease Control and Prevention (CDC)
The costs of obesity

- According to the CDC, the medical costs attributable to obesity in the U.S. are estimated to be **$147 billion per year**.

- **By 2030**, if obesity trends continue as shown, **86% of adults** will be overweight or obese and total attributable health-care costs will be **$860-956 billion per year**.

- City of Dallas: medical costs of an obese city employee are up to **6 times** that of a normal weight employee.
Obesity in New York City

Obesity

- 7.3% - 17.9%
- 18% - 22.5%
- 22.6% - 28.6%
- 28.7% - 39.2%

*Percentages are age adjusted.

Obesity is based on Body Mass Index (BMI), calculated from self-reported weight and height. A BMI of 30 or greater is classified as obese.

Source: NYC Community Health Survey 2007
Bureau of Epidemiology Services, NYC DOHMH
Only half of NYC elementary school children are at a healthy weight.

Risk factors contributing to obesity and chronic disease

In NYC, about 60% of adults and 40% of children are overweight or obese

Risk Factors must be addressed:
- Poor diets (food and beverages)
- Physical inactivity
- TV viewing
- Not breastfeeding
Benefits of physical activity

- Prevention of weight gain
- Weight loss (when combined with diet)
- Lowers risk of type-2 diabetes
- Lowers cardiovascular disease risk factors (high blood pressure, cholesterol, etc)
- Decreased risk of colon and breast cancers (up to 32% and 55%, respectively, in community-based physical activity programs)
- Reduced depression
- Better cognitive function (older adults)
- Lowers risk of falls by improving balance
- Strengthens bones
- Increases life expectancy (3.5-3.7 years)

Physical activity recommendations

- **Recommendations:**
  - Adults: **150 minutes of moderate activity** or **75 minutes of vigorous activity** per week
  - Children: 60+ minutes of physical activity daily

- **Less than half** of US adults meet recommendations
Most New Yorkers do NOT meet these recommendations

NYC Department of Health and Mental Hygiene, Community Health Survey, 2005
People have not changed – our environment has

If you go with the flow, you get overweight or obese
Design and physical activity

Encouraging stair use & active transportation

• Just **2 minutes** (about 6 floors) of stair climbing a day burns enough calories to prevent average U.S. adult annual weight gain.

• Men climbing 20-34 flights of stairs per week have a **29% lower risk of stroke**.

• Just **15 minutes of cycling** (2.5 miles) twice a day burns the equivalent of 10 lbs per year.

• Each hour spent in a car contributes a 6% increase in risk of obesity and chronic disease while each km walked **contributes a 5% decrease in risk**
Design and physical activity

Creating or improving access to places for physical activity
• Can result in **25% increase** in number of people who exercise at least 3 times per week

Creating a more enticing and walkable public realm
• Can result in **161% increase** in physical activity (e.g. walking and biking)
Co-Benefits: Promote environmental sustainability

Active transportation

Active play

Active vertical circulation
Co-Benefits: Promote environmental sustainability

A typical, non-regenerative elevator uses 3-5% of a building's energy, ~15,000 kWh/year, the equivalent of electrically heating a 1,900sf home.

A 20HP escalator operating 24hrs a day, will use 28,000 kWh annually, generating 43,000 pounds of CO₂ each year, equivalent to the emissions of four cars.

Cooper Union in NYC by Morphosis
Co-benefits: Reduce infrastructure costs

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Water &amp; Sewer Laterals Required</th>
<th>Water &amp; Sewer Costs (billions)</th>
<th>Road Lane Miles Required</th>
<th>Road Land Miles Costs (billions)</th>
</tr>
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<tbody>
<tr>
<td>Sprawl Growth</td>
<td>45,866,594</td>
<td>$189.8</td>
<td>2,044,179</td>
<td>$927.0</td>
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<tr>
<td>Compact Growth</td>
<td>41,245,294</td>
<td>$177.2</td>
<td>1,855,874</td>
<td>$817.3</td>
</tr>
<tr>
<td>Savings</td>
<td>4,621,303</td>
<td>$12.6 (10.1%)</td>
<td>188,305</td>
<td>$109.7 (6.6%)</td>
</tr>
</tbody>
</table>

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

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: Promote universal accessibility

- Creating safer places to walk & for wheelchair travel
- Making elevators more available for those who need them
Overview of the Active Design Guidelines

- Creation of the Guidelines
- Urban Design Strategies
- Building Design Strategies
Creation of the Guidelines

**Fit-City: Promoting Physical Activity Through Design**
Creation of the Guidelines

Process

Testing the guidelines through an interactive and interdisciplinary Design Charrette

Participants:
Agencies/ Developers/ AIA/ APA/ ASLA/ Engineers
Chapters
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

www.nyc.gov/adg
Urban Design Strategies

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

Land Use Mix

Take advantage of New York’s rich mix of uses

Adjacency of offices and residences to services & amenities promotes local walking

Supermarkets and farmers markets encourage healthy nutrition
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
Urban Design

Transit Access

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

Separate **bus lanes from traffic** to make transit more convenient.
Urban Design

Pedestrian Environment / Traffic Calming

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

Reduce crossing distances with **median refuge islands**.
Urban Design

Pedestrian Environment / Streetscape

Provide places of rest to complement active walking and jogging.

Attractive plazas have a mix of trees, lighting, and movable or fixed seating.

Integrate public art into the streetscape.

Enliven the sidewalk with street cafes.
Encourage use through development of interconnected bikeways

Provide attractive signage, wayfinding, and secure bike parking
Building Design Strategies

• Bicycle Parking and Storage
• Recreational Programming
• Promoting Stair Use
• Building Exteriors
Bicycle parking + storage

Secure bike storage with easy access
Provides fun and affordable recreational opportunities

- Mary Walton Children’s Center
- Public School 64, Queens
- 10 West End Ave, Manhattan
Site + Building Design

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
**Motivational Signage** placed at points of decision
Site + Building Design

Building Exteriors: contributing to the pedestrian environment

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

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

Soho, NYC

Broadway, UWS, NYC
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.

Duane Street, NYC

Diana Center, Barnard College, Weiss/Manfredi

14 Townhouses, Brooklyn, Rogers Marvel

Site + Building Design

Building Exteriors: contributing to the pedestrian environment
City Policy Initiatives
NYC FRESH Program

FRESH Food Store Areas where zoning and financial incentives apply

Additional areas where FRESH financial incentives may be available

Zoning and tax incentives for providing fresh food options in the city’s underserved areas with high health needs
Vision 2020: Comprehensive Waterfront Plan
89% of the road space for vehicles; 11% for people

City Policy + Implementation

Changing the form of the Public Right of Way

Pedestrian volumes up:
- 6% in Herald Square
- 11% in Times Square
Zoning for Bicycle Parking to increase active transport by providing safe and secure parking for bike commuters.
Bicycling

Annual NYC bicycle counts 2000-2010: 262%

the city’s fastest growing mode of transportation
City Policy + Implementation

Programming: Summer Streets and PlayStreets

[Map showing a 6.9 mile car-free route with images of people cycling and walking.]
30% reduction in traffic fatalities

10% growth in bus and subway ridership

262% increase in commuter cycling

5% reduction in motor vehicle registrations

25% decline in citywide traffic volumes (2000-2009)
Beyond NYC

CDC-Funded Partner Communities Effort

Boston MA ~ Cherokee Nation OK ~ Chicago IL ~ Cook County IL ~ Douglas County NE ~ Jefferson County AL ~ King County WA ~ Louisville KY ~ Miami-Dade County FL ~ Multnomah County OR ~ Nashville TN ~ Philadelphia PA ~ Pima County AZ ~ San Diego CA
What can you do today?

- Download and read the complete Active Design Guidelines www.nyc.gov/adg

- **Spread the word!** Discuss with colleagues, clients, professional associations. Consider ways to incorporate health and physical activity into your projects

- Stay in the loop about Active Design. Complete the **pink Interest Card** if you’re interested in guidance about specific issues
  - Training and curriculum development
  - Site-specific outreach / strategies for existing buildings
  - Plan review for future developments
  - Assistance with LEED Innovation Credit
  - Assistance with FRESH program
Thank you!

- Q&A
- Group Discussion
- Closing and Exit Questionnaires
Questions to Consider:

1. What **opportunities** do you see for integrating Active Design into your work?

2. What **constraints** do you see that could make implementation of Active Design challenging?