Shaping Healthy + Active Cities in NYC

Skye Duncan
Senior Urban Designer, NYC Department of City Planning
Adjunct Associate Professor, Columbia University, GSAPP, NYC
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)

BEFORE the wide use of antibiotics!

1880: 57.1%
1940: 11.3%
2011: 2.3%

AFTER the wide use of antibiotics!
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  \[ ightarrow \]  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

(*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

(*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, 1998

(*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, 1999

(*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, 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

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, 86% of adults will be overweight or obese.
Today…… 70% of deaths in U.S. each year are from chronic diseases.

Source: U.S. Centers for Disease Control and Prevention (CDC)
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
Fit-City: Promoting Physical Activity Through Design

Fit-City 2: Promoting Physical Activity through Design

Intersectoral + Interagency Dialogue + Collaboration

Fit-City 3: Promoting Physical Activity Through Design

Fit City 5: Promoting Physical Activity through Design Implementation of the NYC Active Design Guidelines

Fit City 6: Promoting Physical Activity Through Design

Fit City 7: Promoting Physical Activity Through Design

2010
Intersectoral + Interagency Dialogue + Collaboration

Fit Nation
HEALTHY COMMUNITIES
THROUGH DESIGN

FIT WORLD SYMPOSIUM
NEW YORK CITY
May 22, 2012
Center for Architecture
536 LaGuardia Place
New York, NY 10012

Fit Nation/NOLA
HEALTHY COMMUNITIES
THROUGH DESIGN
May 14, 2013

Fit World
Follow up: Clinton Climate Initiative, Sao Paolo, London
Active Design Guidelines: Interagency + Interdisciplinary

Department of Design and Construction

Department of Health and Mental Hygiene

Department of Transportation

Department of City Planning
We also thank the many city agencies that gave input including the Depts of Parks and Recreation, Buildings, Housing Preservation and Development, School Construction Authority, Aging, and Mayor’s Offices of Long Term Planning and Sustainability, and of People with Disabilities.

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.
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
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
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
Consider a rich mix of uses

Adjacency of offices + residences promotes local walking (+ less auto trips)

Supermarkets and farmers markets encourage healthy nutrition

DCP Land Use Map
Stone Street, NYC
Farmers Market, NYC
Urban Design

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
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

Enliven sidewalks with **street cafes**

Integrate **public art** into streetscape

*The Highline*
Encourage use through development of interconnected bikeways

Provide attractive signage, wayfinding, and secure bike parking
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!!
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
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
Secure Bike Storage with Easy Access

Bicycle parking + storage
A YEAR-ROUND CONEY ISLAND 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:

On average, placing signage promoting stair use in locations such as near elevators or escalators has been shown to increase stair use by **50%**.
Maximize variety, detail, texture + continuity on the lower 1-2 floors of the building facade

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

Soho, NYC

Broadway, UWS, NYC

Park Slope, NYC
Carefully incorporate stairs and ramps into building design features when needed.

Design building massing to enhance pedestrian realm, thinking about vertical divisions, variety and rhythms from the pedestrian’s perspective.
Urban 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
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

<table>
<thead>
<tr>
<th></th>
<th>Fuel / Electricity Use</th>
<th>Air Quality</th>
<th>Obesity/Diabetes/Heart Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biking or walking</strong> rather than automotive transport</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Stairs</strong> rather than elevators and escalators</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Active recreation</strong> rather than television</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Safe tap water</strong> rather than bottled and canned beverages</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Fresh produce</strong> rather than unhealthy processed foods</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
## Co-benefits: Reduce infrastructure costs

More compact, walkable development patterns save money on avoided 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>
</thead>
<tbody>
<tr>
<td><strong>Sprawl</strong> Growth Scenario</td>
<td>45,866,594</td>
<td>$189.8</td>
<td>2,044,179</td>
<td>$927.0</td>
</tr>
<tr>
<td><strong>Compact</strong> Growth Scenario</td>
<td>41,245,294</td>
<td>$177.2</td>
<td>1,855,874</td>
<td>$817.3</td>
</tr>
</tbody>
</table>

**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

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.

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

Source: Political Economy Research Institute: June 2011
NOW WE MUST ADDRESS THE EPIDEMICS OF OBESITY AND CHRONIC DISEASES

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

(In progress at DCP)

1. Opportunities in Zoning
2. Best Practice Stair Study
3. Active Recreation Spaces
Adding features that support physical activity across diverse groups

Onsite Gardening

Building Fitness Center

Collaborate with local horticulture or school clubs

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

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

www.nyc.gov/adg
Focusing the development for **1 million** new people by the year **2030** near public transit access.
General Approach: Complete Neighborhoods

Walkable distance

- PARK
- TRANSIT
- SCHOOL
- FRESH FOOD
General Approach: Complete Neighborhoods

HOUSING FOR ALL  JOBS  LOCAL RETAIL  OPEN SPACE
We have been encouraging people to **change their behavior** through building healthier environments and by **changing policy**..

**What is in our toolkit?**

<table>
<thead>
<tr>
<th>Incentivize (FAR + tax)</th>
<th>Protect</th>
<th>Mandate + relieve the burden (FAR)</th>
<th>Allow</th>
<th>Minimum design standards</th>
<th>Remove impediments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
City Policy + Implementation

Policy Mechanisms: Applicability

CITYWIDE POLICY CHANGES

PRIORITIZE TARGETED HEALTH ZONES

SPECIFIC BUILDING TYPES/ DENSITIES

<table>
<thead>
<tr>
<th>R1</th>
<th>R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family detached</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R3A*</th>
<th>R3X</th>
<th>R4A</th>
<th>R5A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single- &amp; two-family detached</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R3-1</th>
<th>R4-1*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single- &amp; two-family detached &amp; semi-detached</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R4B*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single- &amp; two-family detached, semi-detached &amp; attached</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R3-2</th>
<th>R4</th>
<th>R5</th>
<th>R5B*</th>
<th>R6–R10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached, semi-detached &amp; attached</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Retail</td>
</tr>
</tbody>
</table>
Understanding where people have **limited access to fresh produce**

+ where the **highest rates of diabetes and obesity** are
NYC FRESH Program:
Zoning and tax incentives for providing fresh food options in the city’s underserved areas
Zoning for Bicycle Parking: Increasing active transport by providing safe and secure parking for bike commuters
City Policy + Implementation

**Requiring Bicycle Parking through Zoning**

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
City Policy + Implementation

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)
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
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!
City Policy + Implementation

Thinking Comprehensively

VISION 2020

NEW YORK CITY COMPREHENSIVE WATERFRONT PLAN
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
Asks designers and policy makers to share the responsibility of shaping the sidewalk experience, and positively impact the walkability of neighborhood.

Active Design: Shaping the Sidewalk Experience

- **Active Design**: Shaping the Sidewalk Experience

- **Diagram**: Illustration of different aspects of active design, including ROOF, ROADSIDE, GROUND, and BUILDING WALL.

- **Diagram Explanation**: Experience is shaped by physical space, which is regulated by policies.
Active Design: Shaping the Sidewalk Experience

- Curbcuts
- Street trees (tree pits)*
- Green strips (planters)*
- Waste bins
- Street furniture
- Lighting/signage poles

* These elements are affected by zoning regulations

- Slope
- Pavement material/texture/pattern
- Subway grates
- Service access
- Width/clearance*
Active Design: Shaping the Sidewalk Experience

- Lighting/signage poles
- Street trees (tree pits)*
- Mail/newspaper boxes
- Street vendors/ Kiosks
- Parked cars
- Fire hydrants
- Green strips (planters)*
- Trash cans
- Bike racks
- Bike lanes

* These elements are affected by zoning regulations
Active Design: Shaping the Sidewalk Experience

- Above ground building setbacks*
- Street trees (canopy)*
- Lighting/lighting poles
- Landmarks
- Balconies/fire escapes*
- Overall building height*
- Signage*
- Awning/canopies*

* 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)
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

Create or Enhance a Public Plaza in every Community

Design for Livability

Making the Nation’s Safest Big City Even Safer
Injuries to motorists down 63%, pedestrian injuries down 35%
Improving public spaces by transforming underutilized parts of streets and refuge islands into pedestrian plazas.

Credit: Gehl Architects
Street Design Manual: Bicycling

before

after
A majority of all trips (54%) made in the city are less than two miles.

Around 100,000 annual members
STREET SEATS PROGRAM
Consistent Wayfinding
Consistent Wayfinding
Citi-Bench Program
Program Public Spaces: Summer Streets

[Map of Summer Streets route with children walking on the street]

[Photo of children walking on Summer Streets]

[Photo of Summer Streets with people cycling and walking]
Building great public spaces
Economic value and neighborhood vitality

Expanding an iconic space:
Union Square North (Manhattan)

- Speeding decreased by 16%, while median speeds increased by 14%
- Injury crashes fell by 26%
- 48% 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

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

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
Whether skyscrapers or sidewalks........

We always judge from the pedestrians’ perspective!