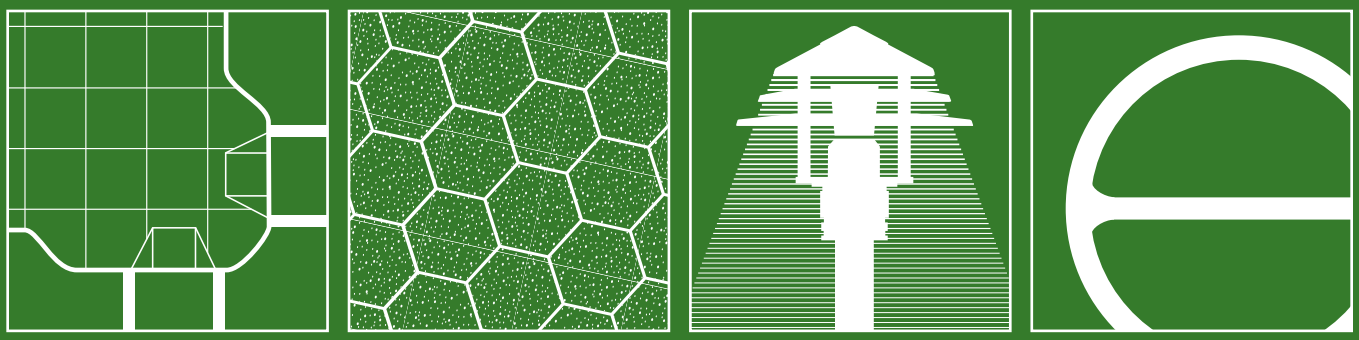
Street Design Manual



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Madison Square, Manhattan

OFO

PARKS
BRONX SCIENCE

Letter from the Mayor

Dear Friends,

The streets of New York are often seen as permanent fixtures of city life, and in some ways, they are. But our streets are also dynamic, and their character and uses can change as the City continually evolves and reinvents itself.

City government uses different designs for different types of streets, from bus-priority corridors and truck routes to commercial main streets and residential neighborhood blocks. In a city as large and richly varied as ours, one size does not fit all. In recent years, we have been working especially hard to tailor the streets to best fit the needs of individual neighborhoods and communities.

The New York City *Street Design Manual* is the culmination of the greater attention and creativity our Administration is bringing to its streetscape. It further expands our catalogue of street design features and allows for a new set of pre-approved materials, beyond the basic asphalt and concrete. It streamlines the process of designing and delivering street projects, and builds design excellence into each and every one of them. The manual also makes it easier for members of the public to better understand our goals for all the various types of street design elements and materials.

This Design Manual was created by our innovative Department of Transportation in cooperation with eight other City agencies. It will ensure that private developers, utility companies and city agencies all work from a single framework and playbook. Most importantly, the Manual will not only create more attractive, functional and coherently designed streets that will improve our quality of life, but it will also allow projects to be completed more quickly and less expensively.

Better service at a better price—that's effective government, and this manual is helping us bring it to life.

Sincerely,

Mayor Michael R. Bloomberg

Adams Street, Brooklyn

BROUWERS
BROUWERS

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Foreword from the Commissioner

The streets of New York are changing. Today, New Yorkers can enjoy dozens of new public plazas in places formerly occupied by speeding traffic; safely negotiate school zones, senior districts and the areas around transit stations in more friendly streetscapes; and ride along protected bicycle lanes.

This *Street Design Manual* formally establishes and standardizes all of these new elements. It also continues the spirit of the Bloomberg administration by laying out dozens of new ideas—approaches for innovative street designs that we will test in New York in the months and years ahead.

The *Street Design Manual* is a detailed guide to the city transportation policies that NYC DOT established in *Sustainable Streets*, the department's strategic plan, and *World Class Streets*, which describes our programs to improve the city's public realm.

For decades, the city restricted itself to a narrow approach to our streets. That has not only created a less interesting and attractive streetscape than New York deserves, but it also led to a riot of design exceptions as developers, business districts, and city project managers have sought to go beyond a bare–bones, utilitarian approach.

By simultaneously broadening our design horizons, establishing clear guidelines, and adopting a new palette of materials, we will create world–class city streets and a more predictable process for all of the public and private entities who carry out work related to our public rights of way. I believe this effort will represent a significant contribution to renewed growth and to the goal of a greater, greener New York that Mayor Bloomberg set forth in *PlaNYC 2030*.

The streetscape design guidance on the pages that follow distills the city's historic design precedents, our building traditions, and our visions for today's streets and the streets of the future into a common–sense vocabulary. It gives designers, planners, and residents the tools to create a more durable, safe, and attractive streetscape. It also contributes to environmental health, with street features that reduce stormwater runoff and add greenery.

The *Street Design Manual* is the result of two years of hard, focused work. I could not be more pleased with the result. The talented and energetic staff at DOT who brought the project to fruition are the best in the business. The level of cooperation between city agencies and the generosity of my fellow commissioners and their staffs in sharing expertise, reviewing priorities, and moving the effort to completion was unprecedented. I am extremely grateful for all of their support.

Janette Sadik–Khan
Commissioner

Grand Army Plaza, Brooklyn

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Agency Acronyms

DC
New York City Design Commission

DCA
New York City Department of Consumer Affairs

DCAS
New York City Department of Citywide Administrative Services

DCP
New York City Department of City Planning

DDC
New York City Department of Design and Construction

DEC
New York State Department of Environmental Conservation

DEP
New York City Department of Environmental Protection

DOB
New York City Department of Buildings

DOHMH
New York City Department of Health and Mental Hygiene

DoITT
New York City Department of Information Technology and Telecommunications

DOT / NYC DOT
New York City Department of Transportation

DPR
New York City Department of Parks and Recreation

DSNY
New York City Department of Sanitation

EDC
New York City Economic Development Corporation

FDNY
New York City Fire Department

FHWA
The Federal Highway Administration

LPC
New York City Landmarks Preservation Commission

MOPD
Mayor's Office for People with Disabilities

MTA
Metropolitan Transportation Authority

NYCT
New York City Transit, an MTA agency

NYPD
New York City Police Department

NYS DOT
New York State Department of Transportation

OCPD
Mayor's Office of Capital Project Development

OLTPS
Mayor's Office of Long–Term Planning and Sustainability

OMB
Mayor's Office of Management and Budget

SAPO
The Street Activity Permit Office within the New York City Office of Citywide Event Coordination and Management

SBS
New York City Department of Small Business Services

US DOT
U S Department of Transportation

Introduction

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Public Parking
PARK
HERE
ENTER
We accept
Wooster St

Purpose and Background

This manual builds on the experience of innovation in street design, materials, and lighting that has developed around the world. It is designed to be a flexible document that will change and grow, incorporating new treatments as appropriate after testing.

The *Street Design Manual* provides policies and design guidelines to city agencies, design professionals, private developers, and community groups for the improvement of streets and sidewalks throughout the five boroughs. It is intended to serve as a comprehensive resource for promoting higher quality street designs and more efficient project implementation by streamlining the design and review processes.

The *Street Design Manual* is the product of an inter–agency task force headed by the Department of Transportation (DOT), and joined by the Departments of Design and Construction (DDC), City Planning (DCP), Environmental Protection (DEP), Parks and Recreation (DPR), Buildings (DOB), the Economic Development Corporation (EDC), the Landmarks Preservation Commission (LPC), the Design Commission (DC), and the Mayor's Office. The task force was initially convened in the fall of 2007 to make a practical assessment of problems, needs, and opportunities in a broad range of street conditions. Over the course of a year, agency representatives visited sites throughout the city, reviewed existing conditions, and assessed the performance of street materials, as well as lighting and geometric treatments. The group evaluated potential new materials and treatments that required further study and considered sustainability issues and stormwater impacts. This effort led to a decision to expand the responsibilities of the task force to create a manual that would provide design direction for streets.

The *Street Design Manual* is intended to supplement rather than replace existing engineering and environmental standards and requirements, including but not limited to the *Manual on Uniform Traffic Control Devices* (MUTCD) and *AASHTO Policy on Geometric Design of Highways and Streets* ("Green Book"). In a city with as many varied and complex conditions as New York, designs must be tailored for the particular needs and opportunities created by the local context, uses, and dimensions of streets. Therefore, the *Street Design Manual* leaves ample room for choice, and all designs remain subject to case–by–case NYC DOT approval based on established engineering standards and professional judgment, with the safety of all street users being of paramount importance.

Grand Street, Manhattan

While there were clear benefits to accommodating automobile movement through the city, the negative effects became increasingly evident over the last forty years.

Urban streets have always fulfilled multiple functions. Early in the twentieth century, they served not only as transportation routes but as the front yards and public squares of cities. Horse–drawn carriages, people on foot or horseback, and, later, bicycles and streetcars shared the streets with pushcart vendors, outdoor markets, children playing, and neighbors socializing. As vibrant as it was, this diverse set of uses and users of the street created a variety of problems for safety, sanitation, and mobility. Reformers of the day effected changes in street design and zoning, stormwater management, sanitary sewers, and traffic controls to improve safety and sanitation and to promote mobility and economic growth.

Over time, street design focused primarily on motor vehicle movement, and the emerging discipline of traffic engineering worked to safely integrate cars and trucks into pre–existing urban forms. While there were clear benefits to accommodating automobile movement through the city, the negative effects became increasingly evident over the last forty years. The focus on autos resulted in unsustainable land development patterns, fewer transportation choices, increased noise, pollution, and greenhouse gases, as well as a decline in social, civic, physical, and economic activity on streets.

Lower East Side, Manhattan (1910)

9th Avenue, Manhattan after "complete street" improvements

Practitioners (and the public) have learned that investment in high–quality street infrastructure can yield benefits well beyond simple mobility.

Engineering, planning and urban design best practices over the last ten years have emphasized a more balanced idea of street design, giving equal weight to transportation, community, and environmental goals. Practitioners (and the public) have learned that investment in high–quality street infrastructure can yield benefits well beyond simple mobility: public health, improved physical environment, and (particularly relevant in lean fiscal times) economic benefits in the potential for increased residential and commercial property values and retail activity.

The *Street Design Manual* builds on the experience of innovation in street design, materials, and lighting that has developed in New York City and around the world. It is designed to be a flexible document that will change and grow, incorporating new treatments as appropriate after testing. The use and continued development of the *Street Design Manual* will assure that New York City remains a leading innovator in the public realm as it becomes a greater, greener city.

Street Design Policy

Planning and designing streets in accord with the goals and principles of this section will contribute to a consistent level of quality and functionality for New York City's streets. This policy, along with the project's planning framework (see Chapter 1), should be used to resolve conflicting priorities for limited street space.

Goals

At over a quarter of the city's land area, streets are a critical part of New York City's infrastructure. They provide the bulk of its public space and have wide–ranging impacts on both its environmental health and the quality of life of its neighborhoods.

Accordingly, it is the policy of NYC DOT that the following goals and principles be adhered to when designing city streets.

Overall goals are:

1 **Design for Safety: Move people and goods safely.**

2 **Design for Access and Mobility: Accommodate all street users, giving priority to the most energy– and space–efficient modes.**

3 **Design for Context: Respond to neighborhood character.**

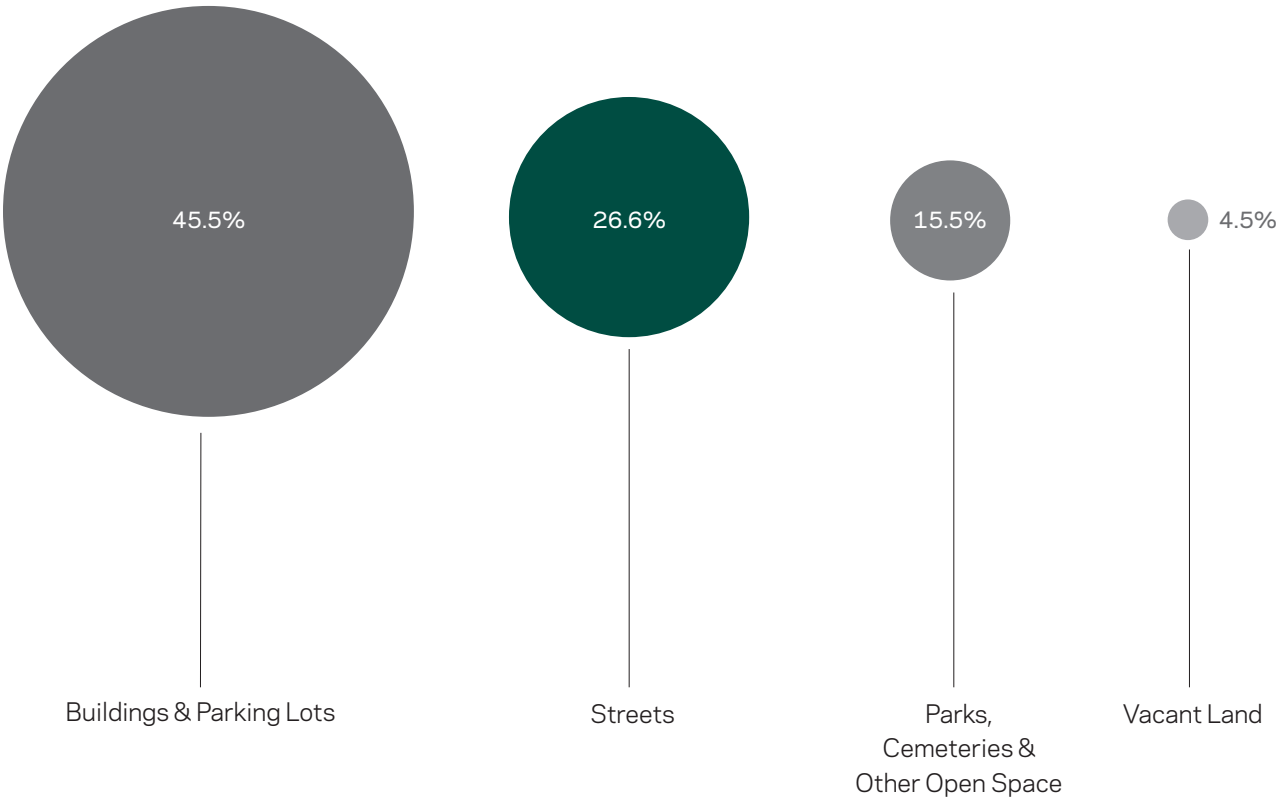
4 **Design for Livability: Create a vibrant public realm with high–quality public spaces.**

5 **Design for Sustainability: Contribute to a healthier and more sustainable environment.**

6 **Design for Visual Excellence: Create coherent and harmonious streetscapes.**

7 **Design for Cost–Effectiveness: Provide the greatest possible value to the public.**

Percent of New York City Land Area by Use
Streets make up over a quarter of the city's land area. (Source: PlaNYC Sustainable Stormwater Management Plan, 2008)



Principles

1

Design for Safety

The city's efforts to enhance street safety through engineering, education and enforcement have helped contribute to the lowest number of pedestrian fatalities and serious injuries since the city began keeping such statistics in 1910. Designing safe streets will continue to be the first priority for NYC DOT.

- **Prioritize safety** for all street users, particularly more vulnerable groups (children, the elderly, those with disabilities) and more vulnerable modes (walking, bicycling).
- **Design streets serving primarily local trips for slower speeds** to reduce crashes and injuries and discourage cut–through traffic.
- **Research, test, and evaluate innovative new safety treatments**, particularly those successfully adopted in other cities.

2

Design for Access and Mobility

With a growing population and limited right–of–way, street designs should provide efficient ways to move people and goods and improve the economic vitality of the city.

- **Prioritize walking, bicycling, and transit** by providing safe, accessible, convenient, and comfortable facilities for these modes, particularly on designated routes and at critical network connections.
- **Accommodate truck traffic and deliveries** while minimizing their negative impacts on neighborhoods.
- **Strive to meet accessibility standards.**
- **Accommodate emergency vehicle access**.

3

Design for Context

Streets help define the character of neighborhoods. Their design should refer to the surrounding context, including the history, land uses, and nearby landmarks.

- **Preserve the unique character** of neighborhoods.
- **Support connections to adjacent land uses** by providing gathering spaces and pedestrian access to and from major destinations.
- **Design local streets to be green, traffic–calmed environments** that encourage walking, bicycling, and recreational activities.
- **Design through–streets to balance the accommodation of traffic** with safety and community needs.

4

Design for Livability

Beyond their use for moving people and goods, streets comprise an extensive network of public open spaces that can facilitate social, civic, and economic interactions.

- **Expand usable public open space** by reallocating underutilized roadway space to create pedestrian plazas, expanded sidewalks, corner and mid–block curb extensions, and opportunities for green planted areas.
- **Design streets to encourage physical activity** for all ages and populations by making walking, bicycling, and transit attractive and convenient.
- **Include public seating** when there is an appropriate maintenance partner.

5

Design for Sustainability

Streets present an extraordinary opportunity to improve the environmental health of the city.

- **Collaborate across agencies in testing new materials** so that our streets are constructed in an environmentally sound way.
- **Minimize impermeable surfaces and maximize vegetation** on streets. Street designs should use stormwater source controls and other best management practices (BMPs) wherever possible.
- **Reduce the heat absorption of streets** by maximizing tree canopy cover and utilizing paving materials with high Solar Reflectance Index (SRI) values when possible.

6

Design for Visual Excellence

Great cities are defined by the visual quality of their streets. New York City's streets should be designed to the highest aesthetic standards possible, maintaining consistency in their character in order to achieve a coherent and harmonious streetscape.

- **Improve the coherence of streets** by using consistent materials.
- **Consider long term maintenance.** Materials should be selected that are readily maintained and durable over an extended period of time.

7

Design for Cost–Effectiveness

Reconstruction of city streets requires substantial financial resources. The list of worthwhile projects competing for a limited pool of funding is extensive. It is therefore important to ensure that street designs are cost–effective.

- **Consider full lifecycle costs and benefits** when developing street designs. Besides their initial capital outlays, the measurable long–term economic, environmental, safety, health, and other benefits of well–designed, well–managed streets should be taken into consideration.
- **Design streets to meet the city's future needs**. Streets are reconstructed very infrequently. Consideration of future conditions and needs should be part of the planning process.
- **Implement a clear and consistent design review process** to streamline project review.