Introduction
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Purpose  15
Background  16
Street Design Policy  18
Purpose

The Street Design Manual is New York City’s comprehensive resource on street design guidelines, policies, and processes. It aggregates a broad range of resources — from nationally recognized engineering and design guidelines and standards to federal, state, and local laws, rules, and regulations — to provide information on treatments that are allowed and encouraged on New York City streets. The Manual’s intended audience is diverse, consisting of design professionals, city agencies and officials, community groups, and private developers.

The Street Design Manual supplements rather than replaces existing engineering and environmental standards, requirements, or guidelines, such as 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 to the particular needs and opportunities created by the local context, uses, and dimensions of streets. The Street Design Manual leaves ample room for choice, and all designs remain subject to case-by-case DOT approval based on established engineering standards and professional judgment, with the safety of all street users being of paramount importance.

This Manual is New York City’s comprehensive resource on street design guidelines, policies, and processes.
Background

Until the early twentieth century, streets 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 streets with pushcart vendors, outdoor markets, children playing, and neighbors socializing. City streets were vibrant, though plagued by safety, sanitation, and mobility problems.

As Peter Norton explains in his book *Fighting Traffic: The Dawn of the Motor Age in the American City*, when motor vehicles were introduced into this mix, they were not accounted for by the laws, engineering and design practices, and public mores of the time. Pedestrian deaths and injuries from motor vehicle crashes were so frequent that the press across the country routinely vilified motorists, and citizens regularly staged parades commemorating the dead. Some municipalities even contemplated requiring speed controls on engines.

As early as the 1910s, automobile-owners’ associations and engineers’ groups launched public relations and legislative campaigns to address both the negative public sentiment and the alarming safety problems. They succeeded in getting new laws and

Over the last 15 years, best practices have increasingly favored street designs that support walking, bicycling, and public transit use.
Practitioners (and the public) have learned that investment in high-quality street infrastructure can yield benefits well beyond mobility.

Over the last 15 years, best practices have increasingly sought to address these issues by favoring street designs that support walking, bicycling, and public transit, as well as motor vehicle use. Practitioners (and the public) have also learned that street infrastructure can yield benefits well beyond mobility: enhanced public health, more pleasant environments, and increased economic activity.

This Manual builds on current thinking about street design, materials, lighting, and project implementation around the world to promote a great public realm. It advocates high-quality, sustainable design and encourages greater mode choice. Also, its creation led to the streamlining of DOT’s internal design-review processes, which has made project execution more efficient.
Planning and designing streets in accordance 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, should be used to resolve conflicting priorities for limited street space.
Goals & Principles

Streets, which take up over a quarter of the city’s land area, are a critical part of New York City’s infrastructure. The condition of these public spaces has a significant impact on the city’s environmental health and on the quality of life for its residents.

DOT’s overall goals and principles are:

1. Design for Safety
2. Design to Balance Access and Mobility
3. Design for Context
4. Design Streets as Public Spaces
5. Design for Sustainability
6. Design for Cost-Effectiveness

Accordingly, it is the policy of DOT that practitioners adhere to the following goals and principles when designing city streets, all with an eye to achieving the highest possible aesthetic standards.

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)
**Design for Safety**
The city’s efforts to enhance street safety through engineering, education, and enforcement have contributed to a dramatic drop in the number of pedestrian fatalities and serious injuries in the past 10 years. Designing safe streets will continue to be the first priority for DOT.

- **Prioritize safety for all street users,** particularly more vulnerable groups (children, the elderly, those with disabilities) and more vulnerable modes (walking, bicycling).

- **Design local streets for slower speeds** to reduce the number of crashes and to discourage cut-through traffic.

- **Research, test, and evaluate** innovative safety treatments, particularly those successfully adopted in other cities.

**Design to Balance Access and Mobility**
Street designs should provide efficient ways to move people and goods and improve the economic vitality of the city, but not at the expense of safety and community needs; street designs should therefore balance access within neighborhoods with mobility through them.

- **Provide safe, accessible, convenient, and comfortable facilities** for walking, bicycling, and transit, particularly on designated routes and at critical network connections.

- **Accommodate truck traffic and deliveries** while minimizing their negative impacts on neighborhoods.

- **Meet or exceed Americans with Disabilities Act (ADA) standards.**

- **Accommodate emergency-vehicle access.**

**Design for Context**
Streets help define the character of neighborhoods. Except for standard furniture, materials, and lighting, a street’s design should interact with the surrounding context, including its 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.

- **Maintain aesthetic consistency within neighborhoods and corridors.**
4 Design Streets as Public Spaces
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 for 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.

- Design local streets to be traffic-calmmed environments that encourage walking, bicycling, and recreational activities.

- Expand the availability of public seating and bicycle racks.

5 Design for Sustainability
Streets present an extraordinary opportunity to improve the environmental health of the city. Collaborate across agencies in testing, evaluating, and standardizing new materials so that streets are constructed in an environmentally sound way.

- Minimize impermeable surfaces and maximize vegetation on streets. Street designs should use stormwater source controls wherever possible.

- Reduce streets’ rate of heat absorption by maximizing tree canopy cover.

- Minimize the overall lifecycle energy use and pollution associated with projects, including the extraction, transportation, construction, maintenance, and replacement of materials.

6 Design for Cost-Effectiveness
Reconstruction of city streets requires substantial financial resources. The list of worthy projects competing for a limited pool of funding is extensive. Street designs need to be cost-effective.

- Consider not only up-front capital costs, but also full lifecycle costs and benefits; certain options may cost more up front, but may have lower ongoing maintenance and operations costs and/or provide long-term benefits.

- Design streets to meet the city’s future needs. Because streets are reconstructed infrequently, consideration of future conditions and needs should be part of the planning process.

- Maintain a clear and consistent design-review process to streamline project review.

- Establish well-considered and clearly defined goals early in project development and focus on meeting those goals throughout planning and design.
The policies and guidelines in the Street Design Manual are the foundation of designs for all projects that significantly impact public and private streets in New York City. It should be used by agency staff, design professionals, community groups, and other entities involved in the planning and design of streets. DOT will review projects for consistency with the Manual.

Examples of applicable projects include Capital and Expense projects, such as street reconstructions and resurfacing; operational and traffic control treatments; street work associated with new or renovated buildings; and other public or private construction projects that include roadways, sidewalks, and plazas.

The guidance presented in the Street Design Manual does not supersede any existing federal, state or city laws, rules, and regulations. All projects remain subject to relevant statutes, such as the Zoning Resolution of the City of New York, City Environmental Quality Review (CEQR), and appropriate reviews and approvals of oversight agencies such as the Public Design Commission (PDC), Landmarks Preservation Commission (LPC), and Office of Management and Budget (OMB).

The Manual provides assistance in four areas:
The Street Design Manual is structured with six chapters and two appendices. Chapters 2 through 6 contain the bulk of the Manual’s design guidance.

**Chapter 1: Process**
How DOT projects are conceived, planned, designed, and implemented.

**Chapter 2: Geometry**
A “toolbox” of geometric street treatments to enhance safety, mobility, and sustainability.

**Chapter 3: Materials**
Specific materials with recommendations for use and references to appropriate specifications.

**Chapter 4: Lighting**
Street and pedestrian lights that meet energy efficiency, technical, and visual quality criteria.

**Chapter 5: Furniture**
Standard outdoor furniture, including DOT’s coordinated street furniture franchise.

**Chapter 6: Landscape**
General guidelines on plant selection, design, installation, and maintenance for typical applications in the public right-of-way (ROW).

**Glossary**
Definitions of frequently used terms and abbreviations.

**Appendix A: Agency Roles on the City’s Streets**
Agency responsibilities for particular street operations and infrastructure.

**Appendix B: Legal & Design Guidance References**
Reference to laws, regulations, and reference sources.
The Street Design Manual is focused on providing guidance for the design of streets. But the planning framework that establishes the context and priorities for each design, and the ongoing management and operation of streets once built, are also critical steps to create world-class streets (see below). DOT evaluates the costs and effectiveness of design treatments and management strategies to inform future designs and initiatives. This section provides an overview of the larger planning framework for street design. Appendix B includes a number of useful resources for best planning practices for streets.

<table>
<thead>
<tr>
<th>Community priorities</th>
<th>Target and design speeds</th>
<th>Speed limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land uses and types of users</td>
<td>Alignments and widths</td>
<td>Traffic controls</td>
</tr>
<tr>
<td>Demand and usage patterns, major trip generators</td>
<td>Horizontal and vertical geometric elements</td>
<td>One-way or two-way operation</td>
</tr>
<tr>
<td>Safety-related needs</td>
<td>One-way or two-way operation</td>
<td>Part-time or full-time access controls</td>
</tr>
<tr>
<td>Local vs. through traffic</td>
<td>Public spaces</td>
<td>Curbside regulation</td>
</tr>
<tr>
<td>Bus routes, bicycle routes, truck routes, critical connections</td>
<td>Grading and drainage</td>
<td>Maintenance/cleaning</td>
</tr>
<tr>
<td>Access management (driveways)</td>
<td>Utilities</td>
<td>Public space programming</td>
</tr>
<tr>
<td>Existing environmental and public space conditions</td>
<td>Materials</td>
<td>Short-term operational improvements utilizing temporary materials</td>
</tr>
<tr>
<td></td>
<td>Lighting</td>
<td>Enforcement</td>
</tr>
<tr>
<td></td>
<td>Furniture</td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION: STREET DESIGN POLICY

Planning
Every street is inseparable from its surrounding community and land uses, and also a part of the larger transportation network of the city and region. Streets should be designed with an understanding of their role in both the local and larger planning contexts. The planning of street projects should begin with the setting of clearly defined goals. Projects should seek to address not only pre-existing issues that have been identified by the community or the city, but also policy objectives or other needs of the city and stakeholders. Appropriate stakeholders should be involved in projects from conception to implementation.

Design
The Street Design Manual’s design guidance includes options for geometric, material, lighting, furnishing, and landscape treatments (Chapters 2–6); in most cases it does not prescribe which specific treatments must be used and in which combination. It also does not dictate which treatment should receive priority when there is a conflict between design alternatives. Rather, it gives users the flexibility to determine which overall design is most appropriate and practical in light of the goals and priorities established through the planning process and the policies enumerated in this Manual. The Design Considerations list in the next section can be a particularly helpful tool for this decision-making process.

Management
Well-functioning, high-quality streets are not just a product of their planning and design—the way a street is operated and managed once built is just as important as its design. For example, curbside regulations and traffic controls (signs, signals, and markings) are a central factor in determining how streets operate and the quality of the public realm. Likewise, access to a street can be limited to pedestrian traffic on certain days or for certain hours, and vehicular traffic can be limited to transit and/or commercial vehicles some or all of the time. Finally, maintenance of street materials, furnishings, and plantings is critical to the long-term success of street designs.

At the first public workshop for a plaza, participants share their ideas for the space: Ozone Park, Queens
Design Considerations

To define context, set project goals, and help give appropriate thought to the full range of factors that should inform a street’s design, refer to this list of design considerations. Projects submitted to DOT for approval will be reviewed with respect to these topic areas.

**Street Context**

- **History & Character**
  Describe for the specific project area

- **Land Use**
  Predominant land uses and densities within the project area (e.g., light residential, dense commercial), any historic districts or special zoning districts, proximity to transit

- **Network Role**
  The role of the street in the neighborhood, city, and regional transportation system

- **Major Sites**
  Identify major sites, destinations, and trip generators within or proximate to the project area, including prominent landmarks, commercial, cultural and civic institutions, and public spaces

- **Street Width**
  Available space and how its allocation will be prioritized

**Street Operations**

- **Walking**
  Pedestrian safety, volumes, comfort and convenience of movement, crash history, important walking connections, and quality of the walking environment

- **Bicycling**
  Bicycle safety, volumes, comfort and convenience of movement, existing or proposed bike routes and other important bicycling connections, crash history, and bicycle parking

- **Motor Vehicles**
  Motor vehicle safety, volumes, access, crash history, important motor vehicle connections, appropriateness of motor vehicle traffic to street scale (e.g., local vs. through traffic), and ways to reduce the negative impacts of motor vehicle traffic

- **Transit**
  Bus routes and operations, subway or other transit station access, and transit usability

- **Trucks/Freight**
  Truck routes, safety, volumes, access, mobility, and ways to reduce the negative impacts of truck traffic

- **Access**
  Access or mobility needs of the disabled, elderly, and children, ADA compliance, and any school- or senior-safety zones within the project area

**Curbside Conditions**

- **Curbside Demand and Usage Patterns**
  Allocation of space for through movement, meter parking, non-metered parking, loading, deliveries, and pedestrian space

- **Public Space**
  Opportunities for making streets within the project area better public spaces through such measures as traffic calming, pedestrian seating, appropriate lighting, and art

- **Drainage**
  Stormwater flow patterns, catch basins, and sewer connections

**Greening**

- **Street Trees**
  Tree coverage within the project area

- **Greenstreets & Vegetation**
  Existing Greenstreets within the project area and opportunity sites for Greenstreets or other planted areas

- **Stormwater Control**
  Stormwater runoff conditions, permeability of underlying soil, stormwater source controls

- **Flooding**
  Flooding conditions within the project area

- **Maintenance Partner(s)**
  Potential and/or committed maintenance partners (e.g., BIDs, DPR) and level of commitment (e.g., watering, weeding, pruning, litter removal, replacements)

- **Permits**
  Wetlands or coastline areas within 100 feet of the project area; requirements for New York State Department of Environmental Conservation or the Army Corps of Engineers permits