

# **Transportation +** **Infrastructure** **Policy Framework**

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**AIA**  
New York

# INTRODUCTION

The American Institute of Architects New York Chapter (AIANY) represents over 5,500 architects and design professionals, and is committed to positively impacting the physical and social qualities of our City.

As part of its mission of advocacy for quality planning and design of transportation and infrastructure, the AIANY Transportation and Infrastructure Committee (AIANY T+I) developed this Policy Framework to support the goal of sustainable growth for the New York City Region. The framework builds on previous AIANY T+I outreach efforts related to New York City's 2007 and 2011 PlaNYC Sustainability Plans, Superstorm Sandy recovery recommendations, AIANY's 2013 A Platform for the Future of the City, public testimony on City & State legislation, and informal consultation with City agencies on proposed legislative and regulatory changes.

The movement of people, utilities and goods is essential to the quality of contemporary life. As the City approaches a population of nine million residents and a regional population exceeding twenty million, our aging infrastructure is increasingly strained to adequately serve the public.

AIANY continues its role in helping shape the built environment by engaging in a public dialogue surrounding the vitality of the City and region as it strives to provide a higher quality-of-life for its residents, workforce and visitors in the face of pressures of population growth, economic and social inequity, and environmental challenges. This Policy Framework is a snapshot in time of this dialogue.

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# GUIDING PRINCIPLES

The following principles frame the ongoing dialogue regarding the goals of AIANY to advocate for sustainable, responsible growth in the City and region. The principles are broad ideals that inform the specific transportation and infrastructure issues outlined in this framework.

1. **Plan for Preservation and Growth**  
Maintain and leverage the value of quality buildings, neighborhoods and infrastructure while maximizing opportunities for sustainable growth for the City.
2. **Plan for Jobs and Economic Development**  
Promote economic health, stability and continuing growth of the City and region.
3. **Plan Equitably**  
Promote social and economic diversity and equality, maximizing benefits and minimizing negative impacts to all segments of the population.
4. **Plan Inclusively**  
Develop ownership of policies and consensus for action through an open, transparent planning process with meaningful public and stakeholder participation.
5. **Plan for Quality**  
Incorporate objective data collection and research, successful “best-practice” case studies in other locales and innovative planning and design to achieve the highest quality policy initiatives and physical improvements.
6. **Plan for Environmental Sustainability**  
Promote energy efficiency, ecological integrity, open space preservation, healthy living conditions and conservation of resources.
7. **Plan at All Scales in a Regional Context**  
Adopt an integrated approach to physical planning involving public, private and civic stakeholders at a regional level, incorporating opportunities for action at all scales – from individual to neighborhoods, boroughs, city and regional context – and establishing a model for national and global response.
8. **Plan as a Continuing Process**  
Track, measure and report on funding and implementation at regular intervals, including re-evaluation of plan objectives and initiatives on an established schedule that transcends electoral cycles.

# CATEGORIES

The Policy Framework applies these Guiding Principles to transportation and infrastructure policies through thoughtful architectural, urban design, engineering and related design responses to the issues addressed within the following categories:

**Mobility**

**Placemaking**

**Sustainability**

**Building Smarter**

**Planning / Financing**

The issues discussed reaffirm the values of the AIANY T+I Committee and Chapter as we engage in public dialogue; stimulate public discourse (programs, testimony, workshops, policy statements, publications); and serve as a vehicle for advocacy with public agencies and officials to enact policies and legislation that we believe are in the best interest of a vital and equitable City and region.

# Mobility

In our daily lives we rely on a well-functioning and diverse range of transportation systems operating at different scales to effectively and safely move people, goods and services.

## **MODE PRIORITY POLICY**

By action or inaction, NYC government pursued an auto-first policy through the last half of the 20th Century. Examples of this are found in excessive off-street parking requirements, low and no fee on-street parking, the widening of roadways and narrowing of sidewalks, traffic signal timing set at speeds higher than the speed limit, not providing crosswalks at all legs of an intersection, passing ordinances against crossing a street midblock and enforcement against bicyclists in excess of the safety benefits. Some of these policies continue today, while some have been revisited.

### **Principle**

Mobility should be designed and operated as a balanced mix of all mode types – including pedestrian, bicycle, mass transit and automobiles – in ways that promote safe, efficient, equitable, complementary and sustainable transportation. Support active modes such as walking and bicycling that contribute to public health.

### **Action**

Create a coordinated mode priority policy by governing agencies and authorities that encourages walking over transit over cycling over commercial vehicles over automobiles. The policy would apply to policy (zoning), design (buildings, parks, streets) and operations (signal timing, driveway usage). An example can be found in Complete Streets Chicago, adopted by the Chicago DOT in 2013.

## **COMPREHENSIVE BIKE NETWORK**

Discontinuities in bike networks (routes, parking/storage, signage/markings) inhibit significant increases in ridership and create safety hazards to users.

### **Principle**

Provide a complete, well-designed bike network throughout the City that encourages the use of bikes as a safe, healthy and environmentally sound mode of transportation.

### **Action**

- Adopt ambitious goals to increase mode share of bicycle ridership across the City.
- Update and implement a masterplan that extends bike networks to all areas of the City.
- Fill gaps and inconsistencies in existing bike networks.
- Create protected bike routes to the greatest extent feasible.
- Expand bike share (Citi Bike) to medium- and high-density areas in each Borough.
- Enforce requirements for building operators to create secure indoor bicycle parking and allow building access to those with bikes.
- Develop policies that address hybrid personal transport technologies such as power-assist bicycles.

## **EXPANDED BUS SYSTEM**

The lack of sufficient convenient, reliable, high-capacity public transit options in many neighborhoods of the City relegates these areas to poor public transportation services.

### **Principle**

Bus rapid transit systems (BRT) provide an effective option to bridge the gap between heavy rail systems, local buses, private vehicles and walking/biking.

### **Action**

- Expand BRT system coverage to provide high quality express bus service to all neighborhoods.
- Upgrade BRT systems to incorporate fare pre-payment, all-door boarding, level boarding platforms and bus-priority traffic signals which increase convenience, average bus speeds and reliability.
- Expand local bus routes to increase access to mass transit to underserved residences, workplaces, services and recreation. Enhance intermodal connectivity.

## ***BUS SHELTERS***

Bus shelters are an essential part of a robust transit system, not mere amenities. Not only do they provide shelter for waiting patrons and convey schedule and route information, they also are a highly visible marker and advertiser for transit. Shelters need not be stand-alone structures but can be integrated with other street furniture within the public and private realm. Bus shelters in NYC are provided by an exclusive franchise agreement, which places them primarily in high traffic locations to maximize advertising revenue.

### **Principle**

Bus transit in NYC should be fully supported with bus shelters located at highly-used bus stops wherever feasible.

### **Action**

- Provide more bus shelters in NYC at locations determined by transit agencies in coordination with local community boards. Adjust private franchise agreement terms to incentivize placement of shelters at less lucrative locations.
- Expand the design criteria for bus shelters to be more flexible and adaptable to various locations and contexts.
- Enhance shelter functionality by incorporating real time bus arrival schedules and access to other digital information useful to users and the community.

## ***CONGESTION MITIGATION***

Congestion on the region's roads, streets, bridges, tunnels and sidewalks is a major factor in longer travel times, costly delays in commercial traffic and deliveries, impacts to safety, environmental degradation, and limitations to productivity and economic growth. It is the result of a complex interaction of factors that can be organized under several general categories – density and development patterns, network capacity and traffic management policies.

### **Principle**

Develop traffic management policies and methodologies that balance supply vs. demand and increase efficient use of transportation networks in an equitable, cost effective and sustainable way.

### **Action**

- Adopt mode-specific policies and traffic management methods that facilitate the most efficient transportation mode in high-density districts subject to peak period congestion.
- Adopt congestion mitigation policies incorporating elements of the Move NY Fair Plan including rebalancing MTA and City bridge and tunnel tolls, assessing a user surcharge for trips by taxis and shared transportation services, and providing a dedicated funding stream for improvements to City and MTA transportation networks.
- Develop policies that encourage use of the region's transportation facilities during off-peak traffic periods such as staggered work hours and night-time commercial deliveries.
- Increase the development of park-and-ride facilities at commuter railroad stations to encourage use of transit for commuting.

- Implement vehicle parking policies that incorporate dynamic pricing to discourage unnecessary driving during peak traffic periods. Evaluate the use of neighborhood parking permits in residential areas adjoining commercial districts to discourage on-street commuter parking in residential districts.
- Apply urban design best practices to the design of physical elements of traffic management technologies such as toll gantries.

## **SHARED MOBILITY**

Traditional public transportation systems cannot provide convenient, cost-effective service to all locations in the City such as within and between low-density neighborhoods, remote intermodal transportation connections and some last-mile originations/destinations. And the elderly and disabled are often not well-served by the available transportation options.

### **Principle**

On-demand shared mobility services such as taxis, paratransit (Access-A-Ride), car share (Zipcar/car2go), ride share (Uber/Lyft) and the emergence of autonomous vehicle technology can help fill this gap. The emergence of autonomous vehicles (AV) provides an opportunity for the City to guide its development as a shared mobility service rather than just a technology upgrade of the private vehicle.

### **Action**

- Develop policies, guidelines and regulations that anticipate and plan for the increasing shift to shared mobility services and technologies so that benefits to the public are maximized and negative impacts minimized.
- Adopt regulations that ensure that emerging AV technologies are as safe as or safer than existing technologies.
- Apply mode priority policies that reduce the reliance on single-occupancy automobiles as a primary means of mobility. Develop congestion mitigation policies and technologies that reduce empty vehicle cruising.
- Utilize incentives to shared mobility services to partner with and expand the public transit system's catchment, particularly in underserved areas.
- Shared AV subscriptions have the potential to dramatically reduce personal vehicle ownership. Plan for reduced on- and off-street parking demand coupled with increased curb-side drop-off/pick-up as private vehicle use is reduced.

## **AUTO PARKING**

Private automobile parking, especially off-street, has been shown to increase the cost of housing and increase car ownership and driving rates. Providing for parking in NYC has a deleterious effect on the streetscape (driveways), the building wall (garages), traffic volumes and safety. Encouraging excessive or subsidized parking is inconsistent with mode priority policies discussed above.

### **Principle**

By lowering minimum parking zoning requirements, valuable public and private space used for free or subsidized automobile storage can become available for more efficient modes of transportation, parks, playgrounds, community services and economic opportunities.

### **Action**

- Extend Manhattan core and LIC zoning off-street parking maxima requirements to other neighborhoods.
- Reduce overall minimum off-street parking requirements in neighborhoods based on proximity to transit modeled on NYC's recently enacted Zoning for Quality and Affordability Plan (ZQA) that

allows optional off-street parking for multi-family residential developments near public transportation stops (Transit Zone).

- Identify appropriate locations throughout the City where shared transportation vehicles can park and stage to provide mobility services on demand.

## ***FREIGHT AND COMMERCIAL DELIVERIES***

Freight and commercial deliveries in NYC are increasing as more and more people purchase and receive goods on-line. And the demand for commercial parking outstrips the supply. Thus, commercial vehicles often double park contributing to traffic congestion, or block bike lanes creating unsafe conditions. Freight/commercial traffic may be the most important non-emergency vehicle traffic in the city (from an economic perspective), and as such should have priority on street parking for loading/unloading (certainly in commercial districts). Large trucks are over-represented in crash statistics on city streets. Other cities have found success with smaller and human-powered delivery vehicles.

### **Principle**

Encourage the safest and most efficient commercial deliveries in NYC including the use of smaller vehicles, human-powered vehicles and other innovations.

### **Action**

- Prohibit oversize commercial freight and delivery trucks from city streets.
- Develop policies that encourage off-peak and night-time commercial deliveries in high density areas.
- Expand on-street commercial parking zones.
- Price on-street parking to favor commercial vehicles and active loading and unloading.
- Provide tax and parking incentives for human-powered and smaller delivery vehicles.

## ***REGIONAL CONNECTIONS***

The NYC metropolitan region is unable to fulfill its economic potential because critical connections to transportation networks serving regional, national and global destinations are inadequate or non-existent.

### **Principle**

World class cities depend on reliable, convenient and efficient transportation connections between population centers and major regional transportation hubs such as bus, rail and airport terminals.

### **Action**

Plan, fund and implement critical, large-scale transportation and infrastructure projects designed to increase capacity and reliability of the systems.

- Create plan to renovate Penn Station when Madison Square Garden Special Permit expires in 2023.
- Plan, fund and implement phased upgrades and improvements to the regional rail network anticipating Northeast Corridor High Speed Rail service by 2040.
- Improve connectivity to major regional airports.
- Improve connectivity, capacity and quality of facilities for inter-city and commuter bus service.



# PLACEMAKING

Forty percent of land in New York City is open space which includes streets, sidewalks, parks and other public spaces; 2/3 of this – twenty-seven percent – is comprised of streets and sidewalks (public ROW). This public commons is the connecting tissue of the City providing access and movement between our residences, places of work, commerce, recreation and services. It is also the staging area for social interaction of its residents, workers and visitors and should facilitate a diverse expression of public life.

## **GREAT PUBLIC SPACE**

The amount of public space allocated to the movement and storage of vehicles is disproportionate to other uses within the public ROW. The City has made progress in rebalancing these uses to improve the quality of the experience to the public. However, the public ROW is still dominated by motor vehicles which often create unsafe, unhealthy and unpleasant conditions for pedestrians and other users.

### **Principle**

Carefully planned, the public realm needs to accommodate a variety of uses while creating lively public spaces for residents, workers and visitors to move about safely and conveniently. Reframe the public ROW as the great public commons designed to accommodate the diversity of uses that enhance movement and social interaction. Plan elements of the public ROW that emphasize social, economic and environmental responsiveness and contribute to livable communities.

### **Action**

Encourage public policies that balance all uses within the public ROW with careful planning and high-quality design of urban infrastructure. Limit and regulate uses which encroach upon or impose other negative impacts on the public ROW.

- The common denominator of all public spaces is the pedestrian experience. Prioritize pedestrian movement and create a high-quality, human scaled environment.
- Design for safe, convenient access and movement for all users of the public ROW.
- Build on Complete Streets guidelines that reprioritize vehicular traffic management as but one of many functions that accommodate movement and social interaction within the public ROW. Implement Complete Streets designs for major crosstown streets in Manhattan and major thoroughfares in other Boroughs.
- Design elements of the physical infrastructure to be sustainable and resilient including increased street tree coverage, sustainable landscaping, permeable paving and high albedo surfacing materials which lower ambient temperatures, reduce energy usage, improve air quality and reduce storm water runoff.
- Expand the repurposing of public space in all Boroughs to incorporate pedestrian plazas, sitting areas, benches, wayfinding information and other public amenities that encourage public use and social engagement. Incorporate bike parking at locations with access to mass transit.
- Accelerate the conversion of successful temporary street plazas to permanent designs throughout the City.
- Adopt policies that encourage leisure and recreational activities within the public realm – both planned and spontaneous.
- Allow appropriate commercial uses which contribute to a lively urban environment but do not limit public access.

## **INTERSECTIONS**

There are many intersections within the public way – some physical and some metaphorical. These include public and private uses, pedestrian crosswalks within streets, protective barriers between vehicular lanes and bike lanes, the curb zone separating the sidewalk from the street-bed, the border between the public ROW and private property. They all represent zones where competing uses and modes merge and need to accommodate each other.

### **Principle**

The intersection of different modes of travel and the variety of public and private uses that coexist within the public way must balance safety and security, ease of movement and richness of experience.

### **Action**

- Develop spatial metrics for all uses and modes occupying the public ROW with conflicts resolved by applying mode priority policies favoring pedestrians/transit/bikes.
- Maintain an 8' minimum obstruction-free pedestrian walking zone at all sidewalks.
- Develop citywide minimum level-of-service (LOS) design criteria for pedestrian movement on sidewalks and increase sidewalk widths in congested areas to maintain the minimum LOS during rush hour and other congested periods. Consider the curb zone which separates sidewalks and streets to be a flexible zone which can be adjusted for temporary demand surges or permanent changes in the balance of uses.
- Design public infrastructure and sidewalk/street elements that provide full access for the mobility challenged.
- Redesign or relocate infrastructure and street furniture which restrict pedestrian mobility including catch basins located at crosswalks that are often impeded by ponding.
- Provide mid-block pedestrian crosswalks on major thoroughfares at blocks greater than 400 feet in length where appropriate for enhanced mobility.

## **ZONING AND SPECIAL PERMITS**

Zoning regulations are a powerful planning tool that can positively and equitably shape the interface between the public and private realms. Special permits that allow commercial activities within the public right-of-way can enliven the streetscape. District upzoning, zoning bonuses and special permits that allow new development at greater densities result in additional demands to already strained public infrastructure.

### **Principle**

Coordinate transportation and infrastructure planning with zoning regulations and incentives to enable improved access and mobility for all. Enact and enforce policies that balance the positive and negative impacts of beneficial commercial activities within the streetscape.

### **Action**

- Require that proposed changes in zoning and bulk requirements are coordinated with transportation and infrastructure networks to anticipate increased demands with appropriate improvements planned, funded and implemented.
- Where private developments will significantly benefit from zoning bonuses or special permits that increase density, require that developments fund an equitable share of improvements to public spaces and transportation and infrastructure systems impacted by the developments (including ongoing maintenance support).
- Expand the use of transit overlays in high-density zoning districts that require easements for off-street transit system entrances and other transit support facilities in new or substantially renovated developments.

- Provide incentives for above- and below-grade linkages to major transportation facilities in new and substantially-renovated developments in high-density zone districts.
- Require that equitable fees be assessed for temporary or permanent commercial encroachments into the public way (sidewalk cafes, vendors, advertising/promotion, filming and other commercial activities). Periodically review policies for allowable public encroachments and Revocable Consent agreements to ensure that negative impacts are minimized.
- Enforce penalties on private owners who impede public access to amenities for which they have obtained a bonus or other incentives

# SUSTAINABILITY

New York City, with its dense urban fabric and robust transportation options, is probably the most “sustainable” city in the United States.

## ***SUSTAINABLE AND TRANSIT-ORIENTED DEVELOPMENT***

Decision-makers and the populace base their decisions on where to live and work in large part relative to the ease and efficiency of access established by the transportation systems available to them. Low-density development contributes to over-reliance on private vehicles for transportation, carbon dioxide emissions and smog, costly and inefficient use of public resources and infrastructure, long commute times, and social isolation.

### **Principle**

Dense, mixed-use communities served by robust transportation and infrastructure systems reduce our reliance on natural resources and generation of unnecessary waste by-products. Integrated climate change mitigation and adaptation strategies should form a core element of urban transportation and infrastructure planning.

### **Action**

Coordinate transportation and infrastructure planning with economic development policies to encourage sustainable, equitable growth and development for all communities. Manage development to conserve open space for environmental benefits (flood control, carbon absorption, plant and wildlife diversity) and recreational use.

## ***RESOURCE RESPONSIBILITY***

The accumulation of greenhouse gases, primarily carbon dioxide, released into the earth’s atmosphere contributes to the effects of climate change including global warming, rising sea levels and related extreme weather conditions. Inefficient use of natural resources is costly, creates inequitable distribution and generates unsustainable waste by-products.

### **Principle**

Protect and improve the health, quality-of-life and economic viability of the City through policies that support conservation, environmental quality and efficient use of natural resources.

### **Action**

Adopt policies and technologies that will meet and surpass the binding goals of the Paris Agreement on Climate Change, Dec. 2015 to reduce greenhouse gas emissions 80% from 2005 levels by 2050. Cooperate with other jurisdictions, the state government and the federal government to implement policies of the Clean Water Act, Safe Drinking Water Act, Clean Air Act and Clean Power Plan that protect the environmental quality of water and air.

- Reduce the use of carbon fuels in buildings and vehicles to lower greenhouse gas emissions.
- Fulfill Zero Waste goals outlined in NYC’s OneNYC (2015) to reduce solid waste and over-production through more robust recycling programs and the development of alternative waste disposal technologies that eliminate landfill waste by 2030.
- Generation of electricity in the U.S. is responsible for more than one third of greenhouse gas emissions nationally. Provide incentives for more efficient, renewable electric power generation and distribution. Accelerate the shift to renewable power generation by increasing solar, wind, hydroelectric and sustainable co-generation energy production. Transition to microgrid power distribution to more efficiently deliver electricity and reduce the frequency and impact of power outages.

## **BUILDING SMARTER**

Providing a high-quality transportation experience as defined by sufficient system capacity, on-time performance, reasonable waiting times, environmental comfort, ease of wayfinding, clarity of information and high-quality facilities encourages greater use by the public. Priorities need to be established that protect existing capital assets, improve existing systems and expand for future growth and development. Design guidelines should reflect high standards of quality, safety, reliability, functionality and maintainability.

### ***MAINTENANCE AND MODERNIZATION OF EXISTING INFRASTRUCTURE***

Properly functioning public infrastructure is intrinsic to supporting the basic conditions of our daily lives and a vital economy. If not maintained well, the cost to replace these critical facilities would be many times that of the original and disruptions could be enormous. Allocating funds for adequate maintenance, repair and modernization of existing critical transportation and infrastructure systems is the most efficient, cost-effective use of limited infrastructure resources.

#### **Principle**

The best use of the first dollar of infrastructure spending is to maintain and improve existing infrastructure systems. Prioritize the allocation of resources for robust maintenance and modernization of existing transportation and infrastructure systems to bring them to a state-of-good-repair. Design with best-practices to current or better standards.

#### **Action**

The list below identifies major infrastructure systems in need of continual maintenance and modernization to function safely and effectively to current standards.

- Bring City and regional roads and bridges to a state-of-good-repair.
- Bring transit tunnel, track and station infrastructure to a state-of-good-repair.
- Complete subway system signal Communications Based Train Control (CBTC).
- Install countdown clocks at all transit and bus stations.
- Improve transit tunnel and underground station ventilation systems.
- Accelerate the rate of constructing new bike lanes – both protected and unprotected where protected not feasible.

### ***NETWORK EXPANSION***

Transportation networks in the NY region are increasingly strained to meet current demands, and with few exceptions have not been expanded to meet projected demands from population growth, demographic changes, economic shifts, and related needs for more residential and commercial development. Efficient transportation infrastructure is a critical element to relieve congestion and support growth in more sustainable and responsible ways.

#### **Principle**

Build for future capacity, standards and technologies – not just replacement to existing level. Transportation planning should fill gaps or deficiencies in existing networks, expand networks to create opportunities for sustainable growth, and shift transportation priorities where appropriate to meet future needs and demands as societal needs change.

#### **Action**

The following table lists several representative projects which will significantly expand an existing network or extend service to previous underserved areas. The examples are heavily weighted to transportation since

these have the most obvious direct impact to the public. However, other less visible improvements to power, communications, water, sewer and waste disposal networks are equally important to realize the potential for sustainable growth.

Agency	Transportation Projects	Status
MTA	East Side Access Project Bringing LIRR to Grand Central Terminal	C
MTA	2 <sup>nd</sup> Avenue Subway Phase II to 125 <sup>th</sup> Street	D
MTA	2 <sup>nd</sup> Avenue Subway Phase III to Hanover Square	P-D
Amtrak	Gateway Hudson Tunnel Project to Penn Station	D
MTA	Penn Station Access Project along Amtrak Line to Coop City	P-D
MTA	3 <sup>rd</sup> Track on LIRR Main Line Extension	D/C
PANYNJ	Enhanced Rail Float Alternative to Cross-Harbor Rail Tunnel	P-D
PANYNJ	Manhattan West Side Bus Terminal with Increased Capacity	P-D
PANYNJ	Reconstruction of Newark Airport Terminal A	P-D
PANYNJ	Extend PATH from Newark Penn to Newark Rail Link Station	P-D
PANYNJ	AirTrain Linking LaGuardia Airport to LIRR/Subway Service	P-D
NJ Transit	Expansion of Hudson-Bergen Light Rail	D/C
NYCDOT	Brooklyn-Queens BQX Streetcar or Bus Rapid Transit Alternative	D
NYCDOT	Permanent East River Ferry System	D/C
NYCDOT	Year Round Ferry Service to Governor's Island	N
Agency	Other Infrastructure Projects	Status
NYCDOT	City Water Tunnel #3	C
NYCDOT	City Water Delaware Aqueduct Bypass Tunnel Below Hudson River	C

Status Key:

C	In Construction
D	In Design
P-D	In Pre-Design
D/C	In Design and Construction
N	Not Known

## CRITICAL VULNERABILITIES

The impacts of Superstorm Sandy exposed critical vulnerabilities in our transportation and infrastructure systems to increasingly frequent extreme weather events and long-term risks of rising sea levels from climate change. Risks of major disruptions from security threats, accidents and partial system failures due to fragilities of aging infrastructure also contribute to vulnerabilities.

### Principle

Most existing large-scale infrastructure systems were designed to meet standards that are no longer adequate to prevent major disruptions from current and future environmental, mechanical and societal risks. Anticipate vulnerabilities from climate change, sea level rise and other major disruptions to communities, streetscapes and transportation/infrastructure systems.

### Action

- Establish high-level design standards for transportation and infrastructure systems that provide robust protection against current and potential risks. Design for redundancy in networks and systems for optimal safety, reliability, access and convenience.
- Design interconnections within existing transportation networks that allow system resiliency in cases of localized shutdowns or disruptions as well as providing more convenient transfers to users of the systems.

- Plan for and provide back-up systems for transportation and infrastructure construction and maintenance that disrupt normal service to users including the physically challenged.
- Plan, fund and implement protection systems against coastal storms and inland flooding that rely on the resiliency of natural ecosystems supplemented with robust man-made adaptations.
- Design streetscapes that store, control and reduce runoff of storm water into the sewer system. Eliminate the diversion of untreated storm sewer water overflow into natural water bodies surrounding the City. Transition from a combined to separate storm and sewage water control systems.
- Upgrade resiliency to risks from security threats to critical transportation and infrastructure networks.

## ***INNOVATIVE MANAGEMENT AND OPERATIONS***

Traditional management structures and technologies form the basis of most of our infrastructure systems. The inherent constraints to sustain these systems with large capital outlays over long life-cycles combine to discourage experimentation and innovation. In a rapidly changing society, more reliable, responsive and efficient approaches are needed to solve many of our infrastructure problems.

### **Principle**

Support innovation as a way to uncover low-cost/high-benefit alternatives to supplement traditional infrastructure systems and networks.

### **Action**

Create pilot programs and seed-funding mechanisms to test the feasibility of the non-traditional approaches and technologies. Incorporate successful results to help transform the next generation of long-term solutions.

- Cities are the incubator for new approaches to urban design problem solving. Learn from successful initiatives in other cities with similar challenges and opportunities.
- Empower governmental, non-profits and private groups to develop non-traditional pilot programs to test and jump-start new approaches and technologies. Typically, pilot programs allow a small number of projects to move forward on a test basis. When pilot programs are found to be effective, they can be used on a wider basis
- Support programs to finance innovative programs through grants such as the USDOT Smart Cities Initiative.
- Embrace increased use of public-private sector partnerships to leverage public resources and tap into private entrepreneurial potential to jump-start innovative programs.
- Expand City pilot programs to test street design strategies that provide for balanced modes of transportation, increase safety and reduce congestion.
- Utilize robust open-data collection to break down information gaps and spread best-practices knowledge for informed public policy decision-making.
- Use real-time data generation technologies to optimize user access and efficiencies to public transportation systems.
- Develop strategies to provide reliable low-cost, high-speed internet connectivity to all neighborhoods. Create incentives for the installation of buried fiber-optic cable networks for commercial and residential users.

## **PLANNING / FINANCING**

As with most urban centers, New York City exists within a vibrant metropolitan region which relies on the interdependent relationship of the various governing bodies to assure good housing, jobs and services. Opportunities for growth and an enhanced quality-of-life for residents rely on cooperation in governing, planning and the ability to implement agreed-on priorities that benefit the region as well as individual jurisdictions.

### **REGIONAL PLANNING / FUNDING**

Effective planning in the NYC metropolitan region has often been hampered by the lack of a regional planning perspective which could mediate among the myriad overlapping local, state and interstate interests. In addition to municipal, county and state governments, the region's major transportation agencies – MTA and PANYNJ – operate within their own defined jurisdictions. While a single comprehensive regional planning authority that could bridge these jurisdictions may not be politically viable, it is reasonable to expect greater cooperation among the agencies and authorities with similar missions.

#### **Principle**

To achieve optimal effectiveness, local planning activities need to co-exist within a larger regional framework which transcends geographical, political and jurisdictional boundaries. Planning for land use, sustainability, transportation and infrastructure needs to operate across micro- and macro-scales to be most effective.

#### **Action**

- Promote a dialogue among independent non-governmental groups such as professional organizations, not-for-profit planning groups and educational/research institutions to develop a consensus for a regional planning framework.
- New York City recently created the position of Regional Planning Office Director within the Department of City Planning to coordinate planning policy with other governing bodies within the New York Metropolitan region. We support this step to recognize the importance of a regional focus within NYC government and urge other regional jurisdictions to create equivalent offices.
- Consolidate specific funding responsibility for regional transportation and infrastructure initiatives within a coordinating organization that has the authority to set policy, establish priorities and disperse public funding. The mandate of the New York Metropolitan Transportation Council (NYMTC) could be expanded to include the adjacent metropolitan regions of New Jersey and Connecticut and empowered with the responsibility to disperse federal transportation funding and loans in accordance with regional planning priorities through the creation of a regional infrastructure bank under its management.

### **ENVIRONMENTAL REVIEWS**

Federal, state and local environmental review processes are an important tool in assessing the potential impact of government-funded projects that affect the quality of the environment. Mandated procedures required to produce the Environmental Impact Statement (EIS) can be overly rigid and cumbersome to the goal of conducting a well-considered objective evaluation. The process often leads to overly complex, formulaic documents that discourage public debate. It is susceptible to manipulation by the sponsoring agency since regulations do not require that the environmentally preferred option be selected or that other mitigation measures be adopted. And the process can be subject to long delays as public comments are resolved with resultant increases in project costs. Litigation is common.



## **Principle**

Initial planning and review of transportation and infrastructure projects need to be open and transparent to the public with information presented thoroughly, concisely and objectively. The process should lead to decisions that are consistent with results of the analysis.

## **Action**

Initiate reforms to City and State environmental review process (EIS) to provide for more transparency and public input to enable a more responsive, less burdensome and more equitable public planning process.

## **BUDGETING AND REPORTING**

There are a number of different stakeholders in and around the NYC regional transportation and infrastructure funding stream, including USDOT, NYSDOT, MTA, PANYNJ and various City agencies. Understanding how funds are budgeted and spent by the various agencies on the multiplicity of capital projects, operations and maintenance can be daunting.

## **Principle**

An accounting of the amount budgeted and spent per mode across the region using consistent methodologies would foster better understanding of needs and priorities by the public and allow planners to more effectively allocate limited resources in an equitable and sustainable way.

## **Action**

Authorize regional and City transportation and infrastructure planning agencies to adopt consistent criteria and methodologies to produce an annual mode-specific analysis of the resources budgeted and allocated within their agency.

## **REVENUE AND FINANCING**

Traditionally, capital programs for public transportation infrastructure have been financed primarily through a combination of state and local taxes, user fees, loans secured through government-issued bonds and Federal grants or subsidies based on national motor fuel taxes. The availability of adequate capital funding has been closely tied to the overall state of the economy, political conditions and competition from other capital programs. In addition, political resistance to adjust fuel taxes to the rate of inflation coupled with increasing fuel efficiency of vehicles have combined to significantly reduce tax revenue from this source over the years. Because of competing demands on scarce public resources, state and local governments are faced with the challenge of inadequate funding to meet growing transportation needs, and critical projects may face years or decades of delay before funding is available.

## **Principle**

Support equitable tax and funding mechanisms to maintain and build robust transportation and infrastructure networks. Expand sources of revenue by utilizing alternative finance techniques to leverage conventional financing.

## **Action**

- Adopt user fees and taxes that recognize the externalities and secondary costs of energy production and consumption. Examples on the production side are carbon taxes or cap-and-trade programs. Examples on the consumption side are taxes and fees that encourage greater efficiency or reduced energy consumption.
- Provide financial relief from taxes, user fees and other sources of revenue that have a disproportionate effect on disadvantaged segments of the population through tax credits and subsidies.

- Replace the fuel tax as a means to fund infrastructure improvements with a vehicle miles traveled (VMT) tax indexed to the rate of inflation.
- Encourage co-development of mixed-use private real estate and public transportation facilities.
- Support policies that fund public infrastructure improvements through value capture offsets associated with private real estate developments such as tax increment financing (TIF).
- Identify secondary revenue streams from transportation facilities through vendor subleases, franchises and licensing rights.
- Identify potential sources of alternative financing for capital projects where revenues or enhanced value attract involvement by the private sector.

## **ALTERNATIVE PROJECT DELIVERY**

The public sector may not always be in a position to respond effectively to the need for critical infrastructure improvements due to funding limitations, inadequate personnel resources or other institutional constraints. The private sector operates in a competitive environment which rewards successful management of risk with financial gain. A public-private partnership, or P3, is an alternative approach to infrastructure procurement that allows the public sector to transfer some or all of the project development, design, construction, operational, maintenance and revenue risk to a private entity in exchange for a substantial return on investment to the private entity.

### **Principle**

Identify appropriate opportunities for the public sector to utilize P3 procurement to develop large-scale, complex infrastructure improvements that might not be achievable under conventional project delivery methods.

### **Action**

- Utilize P3 agreements selectively where the benefits to the public outweigh the costs of conventional project delivery. Provide effective public management to assure that project goals are attained.
- P3 agreements must ensure that a high level of quality is provided in design and construction, and that schedule and service targets are achieved.
- Operating and maintenance partnerships need to protect the value of the infrastructure assets beyond the life of the agreement and ensure reasonable costs to users.

## **GOING FORWARD**

We consider this to be a living document, intended to spur discussion and engagement with the public. The ideas presented are only the beginning; and though the principles endure, the specific issues and actions will evolve over time with new issues rising to the fore. Now more than ever, our collective voice is critical to civic discourse.

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