

NEW YORK CITY'S ENVIRONMENTAL POLICY IMPLEMENTATION - FROM THE PERSPECTIVE OF TECHNOLOGY AND INNOVATION

NYC

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NEW YORK CITY BACKGROUND

Settled 1624

Mayor – Bill de Blasio

5 Boroughs

- The Bronx
- Brooklyn
- Manhattan
- Queens
- Staten Island

Population 2018 (Est. 8.4 Million)

Elevation – 10 m



SUSTAINABLE DEVELOPMENT GOAL 11

SDG 11 – In 2015, close to 4 billion people — 54 per cent of the world's population — lived in cities and that number is projected to increase to about 5 billion people by 2030 (United Nations)

- More are projected to live in Cities in the future and they are often considered the greatest polluters of the environment
- Big Cities like New York and cities around the world need to work to reduce their impact on the environment



PROBLEM/CHALLENGES

1. New York City is expected to grow from a population of 8.4 Million to 9 Million by 2040.

- New York as a city needs to be able to handle this growth sustainably

2. NYC is surrounded by water and at risk of future sea level rise due to Climate Change.

- Currently - Heavily Impacted by Flooding during Hurricanes

3. Congestion/Traffic

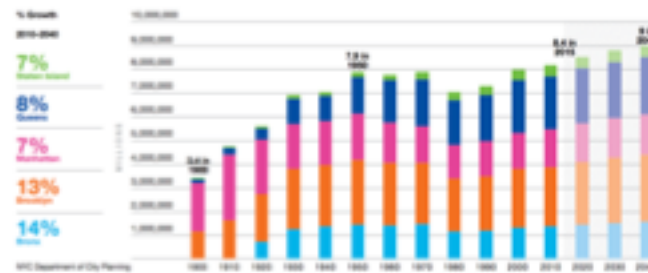
- Car Idling/Pollution/Taxis

4. Aging Infrastructure

- Inefficient Energy Systems

It is important for New York City to adapt smart Environmental policy and implementation of smart city technology to address these future challenges.

New York City population, 1900-2040 (projected)



Population Projections



Flooding (Hurricane Sandy)-2012



Road Congestion/Aging Infrastructure



Sea-Level Rise-
OneNYC Progress Report 2018

NEW YORK'S PLAN

OneNYC:

- Goal - to make New York the most resilient, equitable, and sustainable city in the world

This plan was made with the consultation of various stakeholders (Focus on Public Participation)

- 7,500 New Yorkers (Online Survey)
- 800 New Yorkers (Telephone Survey)
- 1300 + Residents attended more than 40 community meetings
- 177 civic organizations and 50 + elected official offices
- 15 leaders from neighboring cities and counties
- 125 representatives from over 70 city agencies developed the plan

This plan takes these inputs and aims for a Holistic Perspective in solving all of the cities problems and challenges. (5 pillars)

- Growth
- Equity
- **Sustainability**
- Resiliency
- Diversity & Inclusivity



NYC'S AMBITIOUS GOALS (SUSTAINABILITY)

Initiative 1 – 80x50

- Reduce the city's greenhouse gas emissions by 80 percent by 2050 relative to 2005 levels (80x50)

Initiative 2- Zero Waste

- Reduce Volume of DSNY-collected refuse by 90 percent relative to 2005 baseline of 3.6 tons
- Increase curbside and containerized diversion from a rate of 15.4 % in 2014

Initiative 3- Air Quality

- Air quality ranking amount major U.S Cities (Target is 1st)
- Disparity in SO₂ across city neighborhoods
- Disparity in PM_{2.5} Levels across city neighborhoods

Initiative 4 – Brownfields

- Number of Tax Lots Remediated Since January 1, 2014

Initiative 5- Water Management

- 0 Violations with Safe Drinking Water
- Backlog of catch basic repairs
- Combined Sewer Overflow Capture Rate

Initiative 6- Parks & Natural Resources

- Increase percent of New Yorkers living within walking distance to a park from 79.5 % to 85 percent by 2030

NYC PROGRESS REPORT (2018)

ID	Indicator Name	Latest Data	Previous Data	Target
3.0.1	Greenhouse gas emissions reductions relative to 2005	15% reduction from 2005 levels (2018)	14% reduction from 2005 levels (2016)	80% reduction relative to 2005 (2050)
3.0.2	Volume of DSNY-collected refuse (excluding material collected for reuse/recycling) relative to 2005 baseline of ~3.6M tons	3,213,400 tons (2017)	3,196,200 tons (2016)	90% reduction by 2030 from 2005 baseline of 3,588,600 tons
3.0.3	Reduce risk of stormwater flooding in most affected communities	1.8% backlog of catch basin repairs (2017)	0.65% backlog of catch basin repairs (2016)	Maintain < 1%

Vision 3: 80 x 50

3.0.1	Greenhouse gas emissions reductions relative to 2005	15% reduction from 2005 levels (2018)	14% reduction from 2005 levels (2016)	80% reduction relative to 2005 (2050)
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Vision 3: Zero Waste

3.0.2	Volume of DSNY-collected refuse (excluding material collected for reuse/recycling) relative to 2005 baseline of ~3.6M tons	3,213,400 tons (2017)	3,196,200 tons (2016)	90% reduction by 2030 from 2005 baseline of 3,588,600 tons
3.2.2	Curbside and Containerized Diversion Rate	17.4% (2017)	16.9% (2016)	Increase
3.2.3	Citywide diversion rate (including all streams of waste: residential, commercial, construction and demolition, and fill)	Data Not Available	Data Not Available	Increase

Vision 3: Air Quality

3.3.1	Air-quality ranking among major U.S. cities	5th (2014-2016)	5th (2013-2015)	1st (2030)
3.3.2	Disparity in SO ₂ across city neighborhoods	0.5 ppb range in winter average across community districts (2016)	1.6 ppb range in winter average across community districts (2016)	50% reduction (2.25 ppb) (2030)
3.3.3	Disparity in PM _{2.5} levels across city neighborhoods	5.4 µg/m ³ range, annual average across CDs (2016)	5.1 µg/m ³ range in winter average across CDs (2016)	20% reduction (5.32 µg/m ³) (2030)

ID	Indicator Name	Latest Data	Previous Data	Target
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Vision 3: Brownfields

3.4.1	Number of tax lots remediated since January 1, 2014	756 (2014-2018)	577 (2014-2017)	750 (2018)
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Vision 3: Water Management

3.5.1	Violations with Safe Drinking Water Act	0 violations (2017)	0 violations (2016)	No SDWA violations
3.5.2	Backlog of catch basin repairs	1.8% (2017)	0.65% (2016)	Maintain < 1%
3.5.3	Combined Sewer Overflow capture rate	78.4% (2017)	76.8% (2016)	Increase

Vision 3: Parks & Natural Resources

3.6.1	Percentage of New Yorkers living within a walking distance of a park	81.5% (2016)	81.5% (2017)	85% (2030)
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* data adjusted in 2018

** updated the indicator methodology to include 3-neighborhood zip codes that were previously omitted

*** indicator name changed in 2018

Performance Improving or Stable

Performance Declining (< or = 10%)

Performance Declining (> or = 10 or Zero Tolerance*)

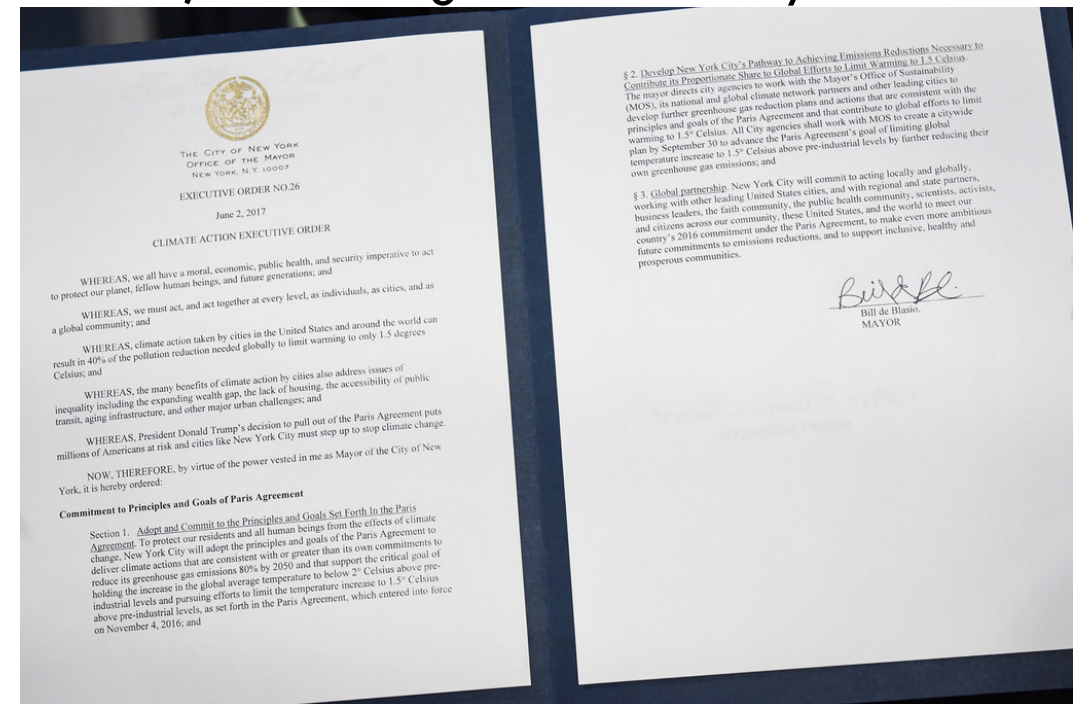
New Indicator or No Data Available This Year

PARIS CLIMATE AGREEMENT

June 1, 2017 – President Trump announced his intention to withdraw from the Paris Agreement

June 2, 2017 – Mayor de Blasio signs executive order 26, committing New York City to the Paris Agreement (Direct Defiance to Trump)

- This is an example of Top-Down Decision Making



NEW YORK'S TECHNOLOGY PLAN

New York is very aggressively leveraging technology and aiming to be the “smartest city” in the world to achieve these policy goals/targets

Building a Smart + Equitable City (2015)

- Published by Mayor's Office of Technology and Innovation
- 10 Case Studies on how NYC is leveraging Smart City Technology

Sustainability related cases: (IoT – Internet of Things utilized)

- Smart Indoor Lighting (Over 110 energy saving projects across 18 city agencies)
- Wireless Water Meters (Connecting residents to their water usage data online)
- Responsive Traffic Management (Real Time Analysis on Roads to improve flow of traffic and decrease carbon emissions)
- Smart Waste Management (NYC has the world's largest sanitation department and they are deploying smart trash cans with wireless sensors that detect trash levels to optimize waste collection)
- Water Quality Monitoring (Constant Real Time Quality Monitoring)
- Air Quality Monitoring (Data-driven air quality management)

2016 Best Smart City Award – Smart City Expo World Congress – Spain



NEW YORK EXAMPLES OF PUBLIC PARTICIPATION THROUGH TECHNOLOGY

NYC Open Data

- Being Informed is key to Public Participation - Gives Chances for normal citizens to look up statistics and data related to their community and direct environment
- Empowering people in the digital age - Gives opportunities to entrepreneurs to utilize data and build innovative tools for the city
- Increased Transparency – All Environmental Datasets (Air Pollution, Water Quality, Traffic Flow Data Etc.) are available as well as current targets and progress

Smart Cities NYC – North America’s leading global conference for smart cities – Addressing challenges of cities around the world

- Smart Cities NYC 2017 – Focused on importance of Citizen Participation in making cities “Smart”
- Objective: “Facilitating Access to Public-Private Partnerships to Build Smart and Resilient Cities”

Urban Tech NYC (NYC Mayor’s Office of Tech + Innovation)

- New York’s Entrepreneurship Ecosystem that facilitates innovation by supporting entrepreneurs who make the city more sustainable, resilient, and livable.
- Innovation Lab



CONCLUSION

New York's Environmental Policy is quite progressive in the United States and I look forward to monitoring their process towards achieving their goals.

Their method of measurement (Environmental KPI's) helps promote transparency and public participation in many stages from citizen to entrepreneur

New York is taking some innovative approaches to ensure they are not only a smart and sustainable city in the future but also a city that is desirable to live in for potential intellectual capital who could contribute even further to development of the city

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