

## Case Study — New York City Green Codes Task Force

### In Brief

<i>Location:</i>	New York City, New York
<i>Policy type:</i>	Building Codes, Building Rating & Disclosure, Climate Change Policy, Local & Community Initiatives, Retrofits, Water & Wastewater
<i>Start Date:</i>	2008
<i>Summary:</i>	A comprehensive review of city codes with the goal of reducing greenhouse gas emissions, energy use, and improving environmental health. 111 recommendations were made, nearly half directly relating to energy and more than a quarter relating directly to energy efficiency.
<i>Impact:</i>	Three years after the release of the recommendations, 46 of the recommendations have been adopted and another 18 are pending. The recommendations adopted so far will result in considerable energy savings and reduced energy costs for building tenants and owners.
<i>Published:</i>	March 2011
<i>Updated:</i>	October 2013

### Overview

On February 1, 2010, the New York City Green Codes Task Force, led by the Urban Green Council, released what is likely the most sophisticated and comprehensive analysis of building codes ever conducted by a municipality. Convened at the request of Mayor Michael Bloomberg and City Council Speaker Christine Quinn, the Task Force was charged with recommending changes to the laws and regulations affecting buildings in New York City, to bring them to the next level of energy and sustainability performance. New York City's buildings account for about 80% of the city's total [greenhouse gas](#) emissions, 95% of electrical consumption, and 85% of water usage. Therefore, promoting sustainable buildings is seen as essential to achieving the goals of [PlaNYC](#), the city's comprehensive plan that aims to reduce energy and water use and bring greenhouse gas emissions down 30% by 2030.

The report was prepared for the Mayor and City Council by assembling the work of more than 200 leading thinkers in [green building](#). Because the project was conceived by New York City, the resulting proposals focus entirely on actions that can be taken by the city. However, since the report's release, in addition to action by the city, a few of the recommendations have been acted upon by the federal government, and others are under consideration or have been enacted by state governments.



Cover of the February 2010 report, which included the recommendations of the Green Codes Task Force.

The Task Force's 111 recommendations impact new construction and renovations, and many remove current impediments to green practices. The proposals affect building codes as well as other codes, such

as zoning, health, consumer affairs, and environmental protection—aiming to create greener, healthier buildings for all New Yorkers. Urban Green Council is now advocating for full adoption of the recommendations. Three years after the release of the report, 64 recommendations have been implemented or are actively under consideration:

- 26 enacted by New York City Council
- 18 enacted by a New York City agency
- 2 enacted at federal or state level
- 18 pending as legislation or regulation

## Management and Funding

In July 2008, Mayor Bloomberg asked Urban Green Council, the New York Chapter of the U.S. Green Building Council (USGBC), to convene a task force to advise the city on how to change municipal codes to help reduce the city's greenhouse gas emissions, improve health, and reduce energy use. Eighteen months and more than 70 meetings later, the NYC Green Codes Task Force released a report offering 111 recommendations to adjust codes to help the city meet its 30% carbon reduction goal codified under the [Climate Protection Act \(Local Law 55\)](#) and PlaNYC goals more broadly. The Task Force's work also contributed to the passage of New York City's [Greener Greater Buildings Plan](#), which will require large buildings in the city to do annual benchmarking, install lighting upgrades and tenant sub-meters, and undertake an energy audit and retro-commissioning once every decade. The Green Codes initiative was funded by the Mertz Gilmore Foundation and New York Community Trust, with meetings hosted by the Steven L. Newman Real Estate Institute. The New York office of Fried, Frank, Harris, Shriver, & Jacobson LLP provided pro-bono legal review of legal language within the recommendations.

The project was overseen by nine Technical Committees, a Steering Committee, and an Industry Advisory Committee. Most of the Technical Committee members were building design professionals including architects and landscape architects, engineers, lighting and interior designers, construction experts, and representatives from city agencies. The Industry Advisory Committee provided feedback on the feasibility and coherence of proposals and included developers, building owners, contractors, unions, environmental organizations, universities, affordable housing experts, commercial tenants, and representatives from other professional and industry organizations. The Steering Committee included the chair of each Technical Committee and representatives from Urban Green Council, the Mayor's Office, the City Council Speaker's Office, and other key city agencies.

The 111 recommendations of the Task Force fall into ten categories that were based on USGBC's [LEED](#) subject areas and modified to include areas of particular interest in New York City. The categories are: Overarching Code Issues (7 recommendations); Health & Toxicity (20); Energy & Carbon Emissions, subdivided into Fundamentals (17), Energy Efficiency (28), and Operations & Maintenance (6); Building Resilience (9); Resource Conservation (5); Water Efficiency (7); Stormwater (7); and Urban Ecology (5). Of the 111 recommendations, 19 are intended to remove existing impediments to green building practices, many of which are specific to New York City codes. The rest of the recommendations involve enhancing local codes that are often based on national model codes. In these cases, many of the recommendations are applicable to other municipalities. The recommendations from the Energy & Carbon Emissions categories make up nearly half of the recommendations, and Energy Efficiency recommendations alone more than a quarter.

Below is a sampling of proposals from each of the energy-related categories, as summarized by [Environmental Building News](#):

- *Overarching Code Issues (OC)*: Recommendations in this category focus on ensuring that existing codes are enforced, codes can expand to accommodate new technologies, building personnel are sufficiently trained, existing buildings are not exempted from requirements, and codes incorporate environmental protection as an overarching principle.

- *Energy & Carbon Emissions — Fundamentals (EF)*: The first of three energy and carbon categories, this section aims to clarify codes and lower building energy loads. It recommends adopting the latest version of [ASHRAE 90.1](#) for commercial buildings, requiring residential new construction to meet ENERGY STAR standards, promoting passive design strategies, and removing impediments to distributed and renewable energy.
- *Energy & Carbon Emissions — Energy Efficiency (EE)*: This section calls for improved energy modeling, increased use of sensor controls for more efficient operation of energy and lighting systems, and required commissioning in all large buildings. It also recommends more stringent equipment standards, limiting after-hours retail lighting and reducing lighting power requirements in offices. Temperature controls in individual living spaces would also eliminate the common practice of opening windows in winter to cool overheated apartments.
- *Energy & Carbon Emissions — Operations & Maintenance (EO)*: Proposals in this section are aimed at raising awareness of energy use among building management and tenants alike. Examples include required metering, performance monitoring, and regular inspections; training for operations staff; and setting new temperature minimums and maximums.
- *Water Efficiency (WE)*: These recommendations target wasteful water practices including prohibiting the use of potable water for cooling or cleaning sidewalks, increasing standards for plumbing fixtures, and requiring upgrades at the time of renovation. It also recommends sub-metering water use and facilitating water recycling and reuse.

All proposals include sample statutory language, an explanation of the background issues and rationale, analysis of costs and savings, precedents from other jurisdictions, comparison to LEED credits, and implementation information. Some of the recommendations are simply calls for further research, especially in relatively new areas like climate adaptation. Others require significant changes to building codes and construction practices — particularly those that deal with [HVAC](#) upgrades, envelope issues, and district-level infrastructure alterations. Still others would remove existing impediments to energy-efficient passive design strategies, such as the barring of awnings longer than 10 inches, a stipulation which seriously limits their efficacy.

Since the conclusion of proposal development, proposal implementation has been supported both by grants as well as from the advocacy operating budget. One full-time staff member was hired to assist with drafting and advocating for legislation, with other staff members putting in part-time effort. An outside attorney also provided part-time pro bono legal help throughout the implementation process.

## Performance

The cost and payback period for the Task Force proposals was analyzed pro-bono by Bovis Lend Lease with direction from the Mayor's Office of Economic Development. Because the recommendations influence different buildings and activities over different time periods and may not all be implemented, the total cost of implementing all recommendations was not analyzed. However, a detailed analysis of the cost of each individual recommendation, and savings and payback time for many of them, was made available in [Appendix A](#) of the report.

As of October 2013, 46 proposals have been implemented. These include a set of proposals called "[Zone Green](#)" that enact zoning amendments to promote energy efficiency and green design. It also includes several proposals that encourage better stormwater detention and retention, and improve maintenance of water management systems. The implementation of these items provide some examples of Task Force proposals that have been enacted via the rules of a city agency, and not through the building code.

A sampling of recently implemented proposals includes:

- Analyze Strategies to Maintain Habitability During Power Outages (BR6)
- Promote Super-Insulated Exterior Walls (EF4)

- Allow External Insulation Beyond Zoning Limits (EF5)
- Increase Allowable Size of Solar Shades (EF6)
- Minimize Air Leakage through Buildings Exteriors (EF7)
- Reduce Summer Heat with Cool Roofs (EF11)
- Allow Large Solar Rooftop Installations (EF14)
- Remove Zoning Impediments to Alternative Energy (EF15)
- Remove Landmarks Impediments to Alternative Energy (EF16)
- Phase Out Dirty Boiler Fuels (HT9)
- Reduce Excessive Paving of Sites (SW1)
- Reduce Stormwater Runoff from New Developments (SW2)
- Send Rainwater to Waterways (SW4)
- Encourage Innovative Stormwater Practices (SW5)
- Maintain Site-Based Stormwater Detention Systems (SW6)
- Increase Biodiversity in Public Landscapes (UE1)

Nearly all of the policies adopted so far are low or no upfront cost with considerable monetary savings potential after the initial payback period due to energy savings. Even with these policy recommendations adopted, there still many more recommendations that will allow greater energy savings and lower energy costs for building residents and owners.

In 2012, Urban Green Council produced a two-year anniversary [report](#) for the Green Codes Task Force. It included a list of successes from the codes and proposals that had been implemented up until that time. Extrapolated over the life of PlaNYC (until 2030), the proposals enacted through 2012 will mean:

- 5% less CO<sub>2</sub> will be emitted citywide by 2030 from the green codes already passed. Adding in Task Force recommendations from the Greener, Greater Buildings Plan the reductions rise to 7%.
- \$400 million will be saved by the green codes enacted through 2012, substantially reducing New Yorkers' energy costs.
- 2,100 architects & engineers trained in order make sure those designing and retrofitting buildings receive customized training on the NYC Energy Code.
- The four laws passed on lighting efficiency by 2012 will reduce electricity used for lighting in the average office by 10%.
- Due to new standards for plumbing fixtures, by 2030 the water equivalent of 30 Central Park Reservoirs will be saved annually (30 billion gallons).
- 100,000 tons of asphalt will be saved due to new requirements for recycled asphalt, removing thousands of tons of waste from landfills each year.
- 15 million gallons of concrete rinse water will be treated by 2030. Each year, concrete mixer trucks send millions of gallons of rinse water, more caustic than Drano, into streets and sewers. Starting July 1, 2012 this rinse water must be treated.
- Starting in July 2013, carpet sold or installed in New York City must meet strict standards for chemicals that let off gas into rooms. The amount of carpet impacted each year will be enough to cover over 800 city blocks.

The value of most of these benefits has risen due to the proposals adopted since the 2012 report was published.

## Lessons Learned

The success of the Green Codes Task Force reflects the importance of collaborations among local government, the nonprofit advocacy community, and industry leaders. Because the project was initiated by the Mayor and City Council Speaker, it obtained legitimacy, recognition, and industry buy-in from the outset. Urban Green Council played a critical role as an independent advisor and convener for the project. The organization has strong ties with both city government and industry, and is viewed as having a practical approach to achieving environmental goals. As a result, the report was able to identify many changes that city agencies or the real estate industry may not have been willing to consider on their own.

In addition, Urban Green Council worked closely with the Technical Committee and Industry Advisory Committee members of the Task Force in an iterative process to ensure that the recommendations were feasible and executable. While architects and engineers were essential in identifying potential changes, the real estate industry provided important feedback relating to the feasibility of implementing changes in construction and ongoing building operations. Finally, Urban Green Council recognized that each recommendation would be considered independently by the City, so the report provides a justification and explanation for each recommendation, along with statutory language and implementation guidance. This last step of developing easily understandable explanations along with code-level language was one of the most resource-intensive, yet valuable, steps in the process.

As its sponsors, both the NYC Mayor's Office and City Council have been receptive to the results of the Task Force. However, an unexpected challenge to many of its provisions arose – Superstorm Sandy in October 2012. Urban Green Council was asked by the Mayor and Council Speaker to run a second task force, the [Building Resiliency Task Force](#), and to develop code provisions to improve the resiliency of buildings, as soon as possible after Sandy. This effort, combined with the delaying of the building code update cycle and the 2013 elections, has delayed the implementation of some proposals.

## **Related Resources**

Homepage of the Green Codes Task Force: <http://www.urbangreencouncil.org/GreenCodes>

A regularly updated summary of the Task Force proposals that have been enacted or proposed in City Council bills: <http://www.urbangreencouncil.org/ProposalStatus>

Details on New York City's Office of Long-Term Planning and Sustainability, including information on PlaNYC and the Greener Greater Buildings Plan: <http://www.nyc.gov/html/oltps/html/home/home.shtml>

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