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The Greener, Greater Buildings of New York City

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New York City is home to eight million inhabitants and will be housing almost one million more by the year 2030. As the most populous city in the United States, it requires massive amounts of food, energy, and buildings in order to sustain the population. Recent studies of health and livability problems in New York City, including growing rates of asthma, along with awareness of the negative impact the city as a whole has on the environment, have led New York City government and local organizations to devise and enact plans and policies that will make it a more sustainable and environmentally-friendly city.

Various organizations have taken the initiative to help New York City become a greener city. The Pratt Center for Community Development assists in funding retrofits, and food organizations such as the Greenmarket Farmers Market aim to make it more convenient to obtain fresh, local food. With PlaNYC, which is New York City's sustainability plan, Mayor Bloomberg set goals to prepare the city for one million more inhabitants while reducing New York City's impact on the environment and improving the quality of life for its residents. Established with targets for the year 2030, this plan brought together over twenty-five agencies to work towards a greater, greener New York. The comprehensive plan includes all aspects of New York City life, from concerns with the water supply to solutions for alternative energies. Of the various areas discussed in PlaNYC, the section of greatest concern to New York and that is arguably the most detailed

is its plan for the greening of buildings.

The analysis that follows will first highlight the several areas of concern that PlaNYC focuses on in an attempt to create a greater, greener New York. I am going to discuss what makes this plan an example for other plans to follow, as well as examine its areas of strengths and the areas that could use more attention and more initiatives. In the second part, I will draw attention to the area that New York City is making great strides in and why it is of big concern to the city: its buildings. New York's buildings require a lot of focus, as they heavily impact the environment. What PlaNYC lacks in other areas of concern it makes up for in its initiatives and plans to make its buildings "green buildings."

About PlaNYC

PlaNYC is New York's complex sustainability plan that focuses on reaching goals in the next twenty years, which is when population is expected to reach nine million, one million more than right now. It highlights every area of main concern, from air quality to water supply. Although the plan's goals are forecasted for 2030, it is already putting into motion various solutions for short-term living. PlaNYC is bringing together "over 25 city agencies to work towards a vision of a greener, greater New York."¹ PlaNYC covers the major areas of concern that need to be addressed. Among these areas include housing and neighborhoods, parks and public space, brownfields, waterways, water supply, transportation, energy, air quality, solid waste, food, buildings, and natural systems.

What makes PlaNYC a model for other cities is the construction of the plan itself. It specifically mentions all the areas that need to be worked on and provides deadlines for when smaller projects in those areas need to be completed. Its main goal is to have its

initiatives completed by 2030; however, smaller, short-term goals have been set that will contribute to the overall goal. Each area of the plan clearly outlines what the key issues are and what the status quo is. It moves to a specific set of initiatives and steps necessary to complete those initiatives. Then the plan specifies a date when the projects mentioned should be completed and who they will be completed by. By having this sort of goal system with deadlines, it makes the initiatives listed a reality instead of ideas being thrown around but not necessarily being implemented. Overall, PlaNYC's design is to give us an idea of issues, goals to address these issues, ways to accomplish the goals, and time frames by when the goals are to be completed. It provides a structure for which New York City can work to become a greener city.

Although PlaNYC is taking great strides in shaping New York City into a green city, it has its weaknesses. There are some areas not necessarily covered as well as other areas even though they are just as important. Among those areas include food and energy.

Weaknesses: There are several community organizations that are trying to solve food crisis, such as the Greenmarket farmers market and City Harvest. The Greenmarket farmers market was created to allow farmers to sell locally grown produce directly to consumers and increase the availability of fresh produce to New Yorkers. It caters to low-income areas by accepting EBT or food stamps and also supports immigrant farmers and creates jobs. City Harvest is a food rescue organization dedicated to catering to those in need of food by food rescue and distribution and education. It is focused on solving the growing crisis of malnutrition and obesity by providing cheap, healthy foods in low-income neighborhoods. Some of the areas it focuses on are the South Bronx; Stapleton, Staton Island; and Bedford-Stuyvesant, Brooklyn. These two organizations,

along with several other organizations and programs, move New York into becoming more sustainable.²

However, the plan itself does a poor job in addressing the food situation. In the original version, for example, food sustainability was not even included. The current vision mentions it, but only briefly in two pages. The plan's primary concern is increasing the community and school gardens and the availability of fresh, local food in low-income areas. New York City's Department of City Planning has made it possible to compile a list of the issues the city is facing and to devise a plan to reconcile these issues. The Department of City Planning conducts analyses in order to create policies and zoning regulations for individual neighborhoods, businesses, and the city government. One issue that arose was about neighborhoods not having enough markets. The mayor requested that City Planning in conjunction with the Housing, Economic and Infrastructure Planning division conduct a study of shortages of markets. The analysis measured areas of greatest need for fresh food based on neighborhoods with high levels of diet-related disease and largest populations with limited opportunities to buy fresh food. The study was necessary to aid in the development of policies that could address the high crisis of diabetes and obesity. In addition to promoting healthy lifestyles, the policies would be accompanied by more jobs and an increase in property value in the city.³

Unlike the food situation, energy is actually mentioned extensively in the plan. However, most of the plan's initiatives on energy feed back into its plans to green New York's buildings. Actually trying to find out what New York is doing to move to more renewable energy is difficult. New York is ahead of the national average for clean-energy consumption, primarily due to its use of hydroelectric power and nuclear power.

However, the possible closure of Indian Point, the nuclear power plant located in Buchanan, New York, could possibly drive the city to invest in other resources.⁴

Strengths: Although PlaNYC has its faults, it has other areas that are more detailed and comprehensive, such as addressing parks and public space in New York City. The overall goal for parks and public space is to have all New Yorkers living within a ten-minute walk of a park. The parks serve the city by increasing the overall health of an individual, by providing a place for community development, and by having an effect on the economy in terms of raising property values. The big initiatives in this plan are to target high-impact projects in neighborhoods underserved by parks, create destination-level spaces for all types of recreation, re-imagine the public realm, promote and protect nature, and ensure the long-term health of parks and public space. These sound like ideas with no sustenance to them, but the plan goes into greater depth with each area. For example, planting one million trees is part of promoting and protecting nature, and a website is set up to advertise this initiative and discuss what has been done and what is to come in the future.⁵

Another area PlaNYC is doing a great job of addressing is transportation. The plan's main initiative with its transportation system includes expanding sustainable transportation choices and ensuring the reliability and high quality of their transportation network. The main focus is to improve the efficiency of their public transportation. New York City seeks to expand the options of transportation and decrease traffic congestion, hoping to expand and improve services such as subways, commuter rails, and buses. The city is more concerned with less use of personal vehicles and the shift to public services and alternative transportation such as biking and walking than it is with greening

transportation, although it is making moves in that direction. New York City's Department of Capital Program Management is seeking to green the public transportation system to provide better air quality. So although not necessarily mentioned in the plan, transportation is being worked on in terms of being greened.⁶⁷

The Greener, Greater Buildings Plan

Amongst all of PlaNYC's areas of concern, its plans to make New York City's buildings green are perhaps the most extensive and comprehensive of all the plans for the other areas. Greening buildings is a major focus of New York City because its buildings account for almost eighty percent of carbon emissions. Furthermore, one percent of its buildings are producing more carbon emissions than the city's cars and trucks combined.⁸ Because of the buildings' carbon footprint, the city "has enacted a set of efficiency requirements" for existing buildings. To respond to the carbon emissions of buildings, the city has developed four policy reforms to remove loopholes in the energy code and authorize a set of cost-effective energy upgrades and evaluations.

The Laws: The first law, Local Law 84, enforces the act of benchmarking buildings. Benchmarking refers to measuring "the total electricity, natural gas, steam and fuel oil consumed in a building and adjusts for other factors so that the city can understand which facilities are operating inefficiently."⁹ Benchmarking allows the city to prioritize which buildings need to be addressed first and to appropriate investments according to the buildings that are the most in need.

The energy code, comprising of laws Local Law 1 and Local Law 48, "require upgrades to meet code for any renovation or alteration project, instead of those only

affecting more than 50% of the building system.”¹⁰ The previous code only required buildings where more than half of the building’s system was being renovated. However, most of the buildings in New York undergo renovations that contain less than fifty percent of the building’s system. Therefore, the energy efficient gains that could have been made in these buildings did not happen. The new energy code affects any building undergoing renovation without regard to how much of the building is being renovated.¹¹

Local Law 87 requires buildings to undergo energy audits every ten years and to retro-commission buildings to ensure they are running efficiently. Before the law, several buildings were not undergoing audits that would have resulted in energy savings. Now, the audits are required of those buildings not exempt and the audits “must include all of the base building systems, including building envelope, HVAC systems, conveying systems, and electrical and lighting systems.”¹² The law requires that the buildings also undergo retro-commissioning comprising of an analysis of all required base systems of a building.¹³

The final law, Local Law 88, requires that non-residential buildings undergo retrofits of the lighting systems to upgrade to more energy-efficient lighting. Because such advancements have been made in energy-efficient lighting, the law requires buildings to take advantage of the new technology that will result in lower energy costs and energy consumption. The law also requires buildings to install electrical sub-meters so that energy consumption can be monitored more effectively. Before this law, buildings were only using one meter and being billed a standard rate regardless of how much energy was actually used. Therefore, buildings were unaware of how much energy was being consumed, and now that buildings are required to have more than one meter, energy can be effectively monitored.¹⁴

A solution to make buildings in compliance with requirements of the laws is retrofitting, which is the renovation of homes and buildings to make them “green.” Retrofitting is the art of making a building both sustainable and environmentally friendly by upgrading old systems with new appliances, equipment, etc. Not only do large buildings emit carbon, they also produce most of the waste and consume most of the water supply in New York. Switches will be made to alternative energy sources, such as solar panels, and equipment will be installed that will reduce much of the waste, water consumption, and energy used. For example, many of New York’s buildings are required by the Greener, Greater Buildings Plan to use Energy Star equipment and appliances. (Energy Star appliances are more energy efficient appliances that emit less than regular appliances.) Buildings will also be renovated to have a cleaner and more environmentally friendly environment, thereby increasing employee productivity. From improving light quality to adding plants, the retrofits will have a positive impact on the work environment.¹⁵

Financial Support: Although the requirements set forth by the Greener, Greater Buildings Plan will lead to energy savings and efficiency, spending is necessary to acquire the savings. Help for funding the investments include The Pratt Center for Community Development with their Retrofit NYC program and the New York State Energy Research and Development Authority (NYSERDA). The Pratt Center for Community Development offers professional skills in order to aid communities in building a more sustainable environment. “Retrofit NYC Block by Block brings six neighborhoods in four boroughs into an unprecedented campaign to get New Yorkers to reduce their energy use through smart investments in their homes.”¹⁶ It basically influences residents to make

retrofits to their homes and assists in helping property owners track their energy use, calculate their energy savings, and schedule retrofit work. In general, Retrofit NYC is about building community trust in order to exert influence. NYSERDA is aiming to combat the costs of retrofitting by assisting in financing the purchases of new equipment such as solar panels, lighting, and other energy-efficient equipment. In particular, their FlexTech program provides funding “for comprehensive, customized energy studies for commercial, industrial, institutional and government buildings.”¹⁷ Those interested can receive fifty-percent funding for energy audit and retro-commissioning studies. The Pratt Center and NYSERDA are just two of several organizations and programs that can reduce the costs associated with making buildings more energy efficient.¹⁸¹⁹

Conclusion

New York City is well under way toward building a more sustainable city with enacting plans to become a greener city. Initiatives ranging from the city government’s plan to organizations being developed have driven New York closer to its goal. PlaNYC has laid out a basic framework to mold New York into a more sustainable city by outlining goals to be reached and making headway in several of those goals. Aside from PlaNYC, organizations such as the Greenmarket Farmers Market have made it a priority to provide healthier foods grown by local farmers to consumers, whether they have cash or food stamps. These efforts are part of a mobilization to make New York City a sustainable and environmentally friendly city while housing nine million people.

PlaNYC lacks developed plans for moving towards alternative energy. There are plans to retrofit buildings with solar energy; however, not many moves have been made to

rely more on alternative energy sources, primarily due to the fact that New York City uses hydroelectric and nuclear power. New York is above the national average in using cleaner forms of energy, but with the possibility of Indian Point closing, it needs to develop plans to move away from nuclear energy to alternative energies.

Not only is energy a weakness, but food is not extensively planned out in PlaNYC. The original plan did not even discuss the issue of sustainable food. And whereas there is a section on it now, it is covered in two pages and not well-developed. Community organizations are working to reconcile the issue of local food, but the city government itself is lacking in addressing the problem.

Out of New York City's many initiatives, creating its greener, greater buildings is its best practice. New York has structured a well-developed plan for greening its buildings, making retrofits to its buildings being of top priority. The idea is to make building energy efficient and improve the work environment of businesses, and NYSERDA along with other organizations make funding retrofits more affordable, thereby influencing homeowners and business owners to invest in retrofits. As the most populous city in the United States, New York has a hard time being green and accommodating its residents at the same time, and addressing its many buildings in the way that PlaNYC has laid out brings New York one step closer to being environmentally friendly.

Even though this plan has its weaknesses, PlaNYC is the epitome of a strategic plan to make a city more sustainable, and thus is a model that other cities could follow. Not only is it well laid-out and detailed, it includes deadlines and a grading system that gives the impression that the plan is serious and is going to be followed out. Initiatives that New

York is taking to make its buildings greener could be effective for other cities depending on the resources they have to undertake this task and depending on how much in need a city is for these initiatives.

¹ The City of New York. 2011. PlaNYC 2030 - About PlaNYC.
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² GrowNYC. "Greenmarket Farmers Market." <http://www.grownyc.org/greenmarket>.

³ NYC Department of City Planning. "Socioeconomic & Housing - Going to Market: New York City's Neighborhood Grocery Store and Supermarket Shortage."
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⁴ The Huffington Post. 17 Oct. 2011. "Indian Point Nuclear Plant Should Be Closed, Report Says." <http://www.huffingtonpost.com/>.

⁵ The City of New York. "PlaNYC 2030 - The Plan - Parks and Public Space."
<http://www.nyc.gov/html/planyc2030/>.

⁶ The City of New York. "PlaNYC 2030 - The Plan - Transportation."
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⁷ "Mta.info | Facts and Figures." *Mta.info | Home Page*.
<http://www.mta.info/nyct/facts/ffenvironment.htm>.

⁸ Silverman, Isabelle. "Bloomberg State of City Pledge to Green Dirty Heating Oil Will Cut Pollution Linked to Disease." *Environmental Defense Fund*. Environmental Defense Fund, 20 Jan. 2010. Web.
<<http://www.edf.org/news/bloomberg-state-city-pledge-green-dirty-heating-oil-will-cut-pollution-linked-disease>>.

⁹ The City of New York. "PlaNYC 2030 - About - Greener, Greater Buildings Plan."
<http://www.nyc.gov/html/planyc2030/>.

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵"Bloomberg State of City Pledge to Green Dirty Heating Oil Will Cut Pollution Linked to Disease | Environmental Defense Fund." *Home | Environmental Defense Fund*. Environmental Defense Fund, 20 Jan. 2010. <http://www.edf.org/news/>.

¹⁶ Pratt Center. "Retrofit NYC Block by Block | Pratt Center." <http://prattcenter.net/retrofit-nyc-block-block>.

¹⁷ New York State Energy Research and Development Authority. 2004. "NYSERDA - Green Building Services." <http://www.nyserda.org/programs/>.

¹⁸ Pratt Center. "Retrofit NYC Block by Block | Pratt Center." <http://prattcenter.net/retrofit-nyc-block-block>.

¹⁹ New York State Energy Research and Development Authority. 2004. "NYSERDA - Green Building Services." <http://www.nyserda.org/programs/>.