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## INTRODUCTION

The Buffalo Green Code is a landmark revision of Buffalo's land use and zoning code that improves the urban environment, promotes investment, and facilitates job creation. The Buffalo Green Code is in the final stage of creating a Future Development Plan ("plan") that maps the entire city by type of place. Once complete, a Comprehensive Zoning Ordinance will create a new set of rules to encourage development that fits with the desired character of the place. The Buffalo Green Code's place-based land use plan and mixed use method of zoning focuses on sustainability. Sustainability is based on a simple principle: everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment.<sup>1</sup>

A revision to Buffalo's current land use plan and zoning code is necessary due to Buffalo's long history of loss of industry and flight to the suburbs and "sunbelt." Buffalo has the characteristics of a typical Rust Belt shrinking city: a politically distinct central city surrounded by generally more prosperous suburbs.<sup>2</sup> Other "rust belt" cities of the Northeast and Midwest have initiated similar efforts. One scholar coined the effort "New Renewal", whereby rust belt cities build on their strengths for economic development, "while adopting an array of innovative green uses for vacant and surplus land as a new way to revitalize the city and serve its residents."<sup>3</sup>

Section one of this paper examines why Buffalo should adopt the Buffalo Green Code approach to development. Section two looks at the environmental justice issues addressed by the

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<sup>1</sup> *Sustainability Basic Information*, Environmental Protection Agency, (visited November 12, 2011) <<http://www.epa.gov/sustainability/basicinfo.htm#sustainability>>.

<sup>2</sup> Catherine J. LaCroix, *Urban Green Uses: The New Renewal*, 63 *Planning & Environmental Law* 5, 3 (2011).

<sup>3</sup> *Id.*

Buffalo Green Code. Section three discusses the benefits and challenges of the various environmental components of the Buffalo Green Code. It will also discuss what the plan and code fail to address. The paper concludes that the Buffalo Green Code is an excellent tool in promoting an environmentally friendly city despite the challenges it faces and measures it neglects. Accordingly, for Buffalo to be successful and truly promote a green future, the Buffalo Green Code must address the challenges discussed and implement the additional measures outlined below.

## I. BUFFALO NEEDS A NEW LAND USE AND ZONING CODE

### A. Land Use and Zoning Codes

A land use plan is a development plan establishing the overall character, extent and location of various land uses and serves as a guide for a zoning code.<sup>4</sup> A zoning code contains rules guiding and directing the use of structures and land, and the form and location of structures of a city.<sup>5</sup> Zoning designates certain areas within a city with a permitted use, such as industrial, residential, commercial, retail or recreational.<sup>6</sup> Traditional zoning concepts and transportation planning in the United States encouraged a separation of land uses and low population density, which was exacerbated as sprawl became the norm following World War II.<sup>7</sup> This type of development is highly dependent on land consumption and transportation policies that prefer personal vehicle use to mass transit, bicycling, and walking.<sup>8</sup> Buffalo's zoning code was written

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<sup>4</sup> *Buffalo Green Code*, (visited October 1, 2011) < <http://www.buffalogreencode.com/questions-answers/>>.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> Patricia E. Salkin, *Sustainability and Land Use Planning: Greening State and Local Land Use Plans and Regulations to Address Climate Change Challenges and Preserve Resources for Future Generations*, 34 *Wm. & Mary Env'tl. L. & Pol'y Rev.* 121, 136 (2009).

<sup>8</sup> *Id.*

in 1951 and follows the aforementioned patterns. The city was booming industrially during that time period, but Buffalo experienced a dramatic economic downturn over the years.

A new approach to reinvigorate the city is essential. A new zoning code is needed to cure the many challenges that Buffalo currently faces, including vacant land, declining population, environmental damage, and an economy in transition.<sup>9</sup> Form-based codes are a means of regulating development to achieve a specific urban form.<sup>10</sup> Form-based codes, as opposed to Buffalo's conventional zoning, "reduce sprawl pressures by creating more compact development patterns and by encouraging infill development."<sup>11</sup> Furthermore, traditional zoning plans, like the one currently in Buffalo, cause a variety of environmental concerns such as natural resource depletion and high levels of emissions from vehicle travel.<sup>12</sup> A new sustainable land use plan and zoning code can conserve what resources Buffalo has, while also creating new opportunities for growth.

## **B. The Buffalo Green Code Effort**

The Buffalo Green Code creates a Future Development Plan that maps the entire city by type of place. The plan consists of a place-based development strategy, which looks at the character and feel of an area to determine land use, and a body of rules outlining the community's vision of the city's physical development over the next twenty years.<sup>13</sup> The plan serves as guidance for future land and building investments in Buffalo. The vision's implemented through a Comprehensive Zoning Ordinance consisting of a new set of rules

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<sup>9</sup> City of Buffalo, *Buffalo's Future Land Use Plan 2012/32 Draft Document* at 1 (2011).

<sup>10</sup> *Id.*

<sup>11</sup> Richard S. Geller, *The Legality of Form-Based Zoning Codes*, 26 J Land Use & Envtl L 35, 76 (2010).

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

encouraging the development outlined in the plan. The land use plan will guide city investments and the zoning code will regulate what can be built and where.

Sustainability and “smart growth,” especially within the urban context, are the overarching themes of the Buffalo Green Code. Under the plan, sustainability is the use and design of buildings that encourages residents to make low-impact environmental choices.<sup>14</sup>

“Smart growth” is the use and design of buildings that contribute to the creation of compact and accessible development that reflect the character of the place in which they are located.<sup>15</sup>

The Buffalo Green Code advances environmental and economic sustainability by encouraging a more efficient use of energy and natural resources, minimizing the impact of human land uses, and endorsing compatibility with local climate and environmental systems. It promotes land use and transportation patterns that encourage compact development and advance a multitude of transportation choices that conserve energy and protect the air, water and soil quality. Additionally, the Buffalo Green Code seeks to preserve and expand Buffalo’s “green infrastructure” and support access to wholesome food.<sup>16</sup>

Due to control over zoning and other land use controls, local governments are often the most important players when it comes to protecting the environment. The Buffalo Green Code Effort is one example of this, and a huge step forward in securing the sustainability of Buffalo. It provides for a variety of mechanisms that, individually and jointly, substantially address environmental concerns, while also listening to the needs of the community. Local governments should be involved with environmental concerns because they are held accountable by their residents who are directly affected by any adverse decisions. As this paper will demonstrate, the

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<sup>14</sup> *Buffalo Green Code Effort*, (visited October 2, 2011) <<http://www.buffalogreencode.com>>.

<sup>15</sup> *Id.*

<sup>16</sup> City of Buffalo, *Buffalo’s Future Land Use Plan 2012/32 Draft Document* at 3 (2011).

Buffalo Green Code should be adopted in Buffalo because it is legitimate, viable, and will ultimately improve Buffalo for future generations.

## **II. How does the Buffalo Green Code address Environmental Justice Issues?**

Buffalo is a city plagued by poverty with vast disparities between class and race, which contains a disproportionate amount of contamination.<sup>17</sup> “Environmental justice is the idea that minority and low-income individuals, communities, and populations should not be disproportionately exposed to environmental hazards, and that they should share fully in making the decisions that affect their environment.”<sup>18</sup> The Buffalo Green Code, through its land use and zoning code, provides an opportunity to alleviate existing disparities while preventing future harm from occurring.

The Buffalo Green Code touches on environmental justice issues because it relies on the entirety on the Buffalo community for its creation. The vision presented in the plan was not one of big developers and out of town planners. For example, in Boulder, Colorado, the city’s planning commission, county commissioners, and land use department were the sole developers the plan.<sup>19</sup> Nor did Buffalo follow the traditional model of hosting a single public meeting to garner approval. Rather, in Buffalo, the residents directly contributed their vision of development through citywide meetings and workshops to share their hopes and concerns.<sup>20</sup> All ages, races, and socio-economic groups were included in the planning the future of Buffalo.

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<sup>17</sup> Western New York Environmental Alliance, *Environmental Alliance Submits Green Comments to Mayor Brown*, (December 1, 2011) <http://growwny.org/whats-new/1256-alliance-submits-green-comments-to-mayor-brown>.

<sup>18</sup> Michael B. Gerrard, *Environmental Justice and Local Land Use Decisionmaking* at 126, *Trends in Land Use Law from A to Z: Adult Uses to Zoning* (Salkin, ed.) (American Bar Association, 2001).

<sup>19</sup> *Id.*

<sup>20</sup> City of Buffalo, *Buffalo’s Future Land Use Plan 2012/32 Draft Document*, at 2 (2011).

Community organizations and non-profits were also key contributors. This collaborative, community based approach to planning is especially important for success and legitimacy because residents are in the best position to identify the goals residents wish to see in their neighborhoods and major challenges or potential problems under the plan.

While the Future Development Plan does reflect views from the community, which reflect different races and classes, it fails to explicitly define environmental justice. Given Buffalo's current status, a clear definition and future goal should be included in the plan. Furthermore, the plan fails to address the large amounts of legacy waste in Buffalo. Buffalo has a major industrial past; therefore many environmentally contaminated areas remain throughout the city, especially in destitute areas.<sup>21</sup> In Erie County alone, there are 24 schools within a half-mile of a Superfund site.<sup>22</sup> These contaminated areas must be addressed in the plan and monitored to ensure safety in the community, especially with respect to children.<sup>23</sup>

### **III. COMPONENTS of the Buffalo Green Code**

#### **A. Form Based "Mixed Use" Zoning**

The Buffalo Green Code provides a form-based code that determines the height, intensity, and design characteristics of development.<sup>24</sup> Thus, the Buffalo Green Code guides what can be built in Buffalo and where it can be built. Traditional zoning employs predominately single-use

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<sup>21</sup> Western New York Environmental Alliance, *Environmental Alliance Submits Green Comments to Mayor Brown*, (December 1, 2011) <http://growwny.org/whats-new/1256-alliance-submits-green-comments-to-mayor-brown>.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> City of Buffalo, *Buffalo's Future Land Use Plan 2012/32 Draft Document*, at 11 (2011).

zones, whereas a form-based code recognizes mixed uses.<sup>25</sup> The rationales for form-based zoning include: improved aesthetics, better public health and safety, more efficient traffic management, lower government expenditures, economic benefits, and environmental protection.<sup>26</sup> Form-based zoning's mixture of residential, retail, office, recreational, and natural makes a neighborhood attractive, safe, environmentally friendly and sustainable for the future.

Form-based, mixed-used zoning can take a number of forms within a community. For example, the American Planning Association created a model mixed use commercial zoning ordinance that promotes the growth of small, ground level commercial uses with residential units located on higher stories.<sup>27</sup> Another type of mixed-use development supports the conversion of underused commercial and industrial buildings into live/work units where business owners and employees can use their buildings jointly for residential, commercial, or manufacturing uses.<sup>28</sup> The Buffalo Green Code adopts similar forms for the Buffalo region. For example, in the Urban Core Neighborhoods, a full range of uses are allowed, including shops, offices, restaurants, theaters and apartments.<sup>29</sup>

## **B. Compact Development**

The Buffalo Green Code encourages compact development. Compact development includes development projects where structures crowd on small portion of the property, leaving the rest as open space.<sup>30</sup> This is the opposite of the typical residential development. Compact

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<sup>25</sup> *Id.*

<sup>26</sup> Richard S. Geller, *The Legality of Form-Based Zoning Codes*, 26 J Land Use & Envtl L 35, 37 (2010).

<sup>27</sup> Patricia E. Salkin, *Sustainability and Land Use Planning: Greening State and Local Land Use Plans and Regulations to Address Climate Change Challenges and Preserve Resources for Future Generations*, 34 Wm & Mary Envtl L & Pol'y Rev 121, 151-52 (2009).

<sup>28</sup> *Id.*

<sup>29</sup> City of Buffalo, *Buffalo's Future Land Use Plan 2012/32 Draft Document*, at 2 (2011).

<sup>30</sup> *Supra* at 149.



development benefits the environment by conserving plots of land, promoting agricultural use of land and protecting ecological diversity.<sup>31</sup> Compact development sustains “energy conservation and the use of renewable by encouraging developers to incorporate such factors as passive solar design and solar access into their plans.”<sup>32</sup> Finally, compact development encourages developers to minimize impacts on the natural ecosystem and retain natural vegetation instead of landscaping to provide for sustainability within the compact developments.<sup>33</sup>

While the Buffalo Green Code provides for compact development in certain areas, it can have a greater impact by providing incentives, such as density bonuses, in areas where compact development is not required.<sup>34</sup> Density bonuses permit developers to build more units at a site than regular zoning allows.<sup>35</sup> Density bonuses are provided in exchange for the developer’s agreement to build affordable housing on site.<sup>36</sup> They are also cost effective because local governments incur no costs for providing these bonuses.<sup>37</sup>

### **C. Transportation**

As Buffalo’s suburbs have grown and transportation improvements have made commuting long distances easier. Traditional, single-use zoning creates a significant decrease in one’s ability to walk or bike from their home to any place of interest.<sup>38</sup> The increased number of daily car trips to go to work or school, to go shopping, to go out to eat, or to see a movie have

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<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Washington Area Housing Partnership*, (visited December 4, 2011) <<http://www.wahpdc.org/densitybonus.htm>>.

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> Patricia E. Salkin, *Sustainability and Land Use Planning: Greening State and Local Land Use Plans and Regulations to Address Climate Change Challenges and Preserve Resources for Future Generations*, 34 *Wm & Mary Env'tl L & Pol'y Rev* 121, 150 (2009).

increased transportation emissions and pollution.<sup>39</sup> The implementation of land-use regulations to make cities and suburbs less car-reliant is a great step towards combating climate change and encouraging healthy lifestyles.<sup>40</sup>

Walking, cycling and the transit are completely viable options for Buffalo's future. In fact, in 2009, thirteen percent took transit to work, six percent walked, and one percent biked.<sup>41</sup> These are among the highest rates of non-car commuting in the nation. Furthermore, a significant departure from car usage is practical because car dependency is already low. As of 2009, thirty percent of households were car-free, which is comparable to Chicago and San Francisco.<sup>42</sup>

Furthermore, the Buffalo Green Code components of form-based zoning and compact developments support environmentally friendly methods of transportation. Form-based zoning encourages pedestrian travel by locating residential, office, and commercial uses within reasonable walking distances.<sup>43</sup> Extensive adoption of form-based zoning "could also help the United States lessen its dependency on foreign crude oil from hostile or unstable countries."<sup>44</sup> Compact development places schools, retail outlets and employment within a safe walking distance of most residences, "reduce[ing] carbon and other vehicle pollutants by decreasing vehicle miles traveled by a least one fourth"<sup>45</sup>

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<sup>39</sup> *Id.*

<sup>40</sup> *Id.* at 151.

<sup>41</sup> City of Buffalo, *Buffalo's Future Land Use Plan 2012/32 Draft Document*, at 9 (2011).

<sup>42</sup> *Id.*

<sup>43</sup> Richard S. Geller, *The Legality of Form-Based Zoning Codes*, 26 J Land Use & Envtl L 35, 39 (2010).

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* at 77.

The Buffalo Green Code creates “clear minimum standards that ensure proper site design, comfortable urban form and walk-able transit friendly streets.”<sup>46</sup> It improves street design by providing sidewalks along both sides of general access streets, prioritizing ongoing sidewalk maintenance and maximizing on-street parking. Streets with narrow lanes, lined with shade trees, and with on street parking, reduced traffic speeds.<sup>47</sup> The Buffalo Green Code also provides for the introduction of timed pedestrians signals and curb extensions, which improve roadway safety.<sup>48</sup> It also encourages alternative forms of transportation and active lifestyles. Under the plan, bicycle facilities and racks will continue to be installed. The plan encourages sidewalk cafes throughout the city to increase pedestrian traffic and enhance street activity.<sup>49</sup> Finally, the Buffalo Green Code will promote transportation alternatives by focusing on compact neighborhood development and employment density in areas with high transit accessibility and increasing the service frequency of the current bus networks.

However, there are several challenges to this component of the Buffalo Green Code effort. The construction of new roads to implement bike paths is costly and the city already faces a tight budget. For example, the cost of installing a bike lane is approximately \$5,000 to \$50,000 per mile, depending on the condition of the pavement, the need to remove and repaint the lane lines, the need to adjust signalization, and other factors.<sup>50</sup> However, this can be avoided by repainting the lines of the streets instead of reconstruction. There is also the issue of weather. Buffalo’s winters are cold and snowy and not that conducive to biking and walking. Nevertheless, Minneapolis a city with a similar if not worse climate has an active bike community year

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<sup>46</sup> City of Buffalo, *Buffalo’s Future Land Use Plan 2012/32 Draft Document*, at 3 (2011).

<sup>47</sup> *Id.* at 9.

<sup>48</sup> City of Buffalo, *Buffalo’s Future Land Use Plan 2012/32 Draft Document*, at 34 (2011).

<sup>49</sup> *Id.* at 36.

<sup>50</sup> *Bicycle Lanes*, Pedestrian & Bicycle Information Center (visited November 24, 2011) <http://www.walkinginfo.org/engineering/roadway-bicycle.cfm>.

round.<sup>51</sup> Furthermore, compact development and form-based zoning address this problem by locating residential, industrial, and commercial areas close together.

While the Buffalo Green Code encourages alternative forms of transportation it should go further by implementing measures such as those in the Cleveland, Ohio green zoning code. The recently finalized code includes more flexible parking requirements on some residential and commercial properties and requires bike parking on all new parking lots.<sup>52</sup> These measures require minimal funding from local government because all that is needed is new signs and/or painted lines, yet they will have significant benefits in decreasing automobile reliance.

#### **D. Use of Vacant Land**

While Buffalo has many strong and vibrant neighborhoods, abandonment plagues others.<sup>53</sup> This is common among cities, like Buffalo and Detroit, which had a strong industrial boom followed by a major bust. The new zoning ordinance minimizes the regulatory barriers to adaptive reuse of vacant properties.<sup>54</sup> Therefore, these large tracts of land can be used in a variety of ways. The land can be used for pilot projects, such as aesthetically pleasing constructed forest reserves, habitats and wetlands, which will reduce City maintenance expenses.<sup>55</sup> The land can be also used to employ residents in silviculture, and other forms of urban farming, provide areas for producing new forms of renewable energy, and address the city's stormwater problems.<sup>56</sup> Finally, the vacant land can be used to expand parks, recreation, and municipal gardens that the entire community can benefit from.<sup>57</sup> Parks and open spaces

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<sup>51</sup> Steve Friedman, *#1 Bike City: Minneapolis*, *Bicycling Magazine*, (visited December 5, 2011) <http://www.bicycling.com/news/featured-stories/1-bike-city-minneapolis>.

<sup>52</sup> Lindsay Betz, *Cleveland Heights Continues Green Zoning Review Process*, *Sunpress*, January 21, 2011 [http://blog.cleveland.com/sunpress/2011/01/cleveland\\_heights\\_continues\\_gr.html](http://blog.cleveland.com/sunpress/2011/01/cleveland_heights_continues_gr.html).

<sup>53</sup> City of Buffalo, *Buffalo's Future Land Use Plan 2012/32 Draft Document*, 1 (2011).

<sup>54</sup> *Id.* at 34.

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 32.

<sup>57</sup> *Supra.*

provide tangible environmental benefits as well as economic and social benefits. The use of vacant land for community purposes such as parks, creates unity within a neighborhood while also increasing land values and thereby property taxes.<sup>58</sup>

There are some challenges to making productive use of vacant lands. The first is gaining legal control over the property.<sup>59</sup> Vacant or abandoned land often contains two characteristics: tax delinquency and clouded title.<sup>60</sup> The Buffalo Green Code should include a land bank that offers a valuable tool for cities interested in gaining legal control over abandoned or vacant properties within their borders.<sup>61</sup> A land bank is a governmental entity that takes title to tax-delinquent property, secures the property and at times demolishes structures on it, and then identifies the best long-term use for the land.<sup>62</sup> However, a city that wishes to establish a land bank must have authorizing legislation at the state level.<sup>63</sup> On July 29 2011, New York passed the Land Bank Act, which allows city's like Buffalo to "absorb and repurpose vacant, abandoned or tax-delinquent properties."<sup>64</sup> The second challenge is funding. The Draft Plan fails to address where funding for such projects would from.

### **E. Increase in Open Space**

The Buffalo Green Code operates to protect open space, support an accessible and incorporated network of open spaces, and ensure that no residence is located more than a quarter mile from an open space. The Buffalo Green Code advances this goal by making an inventory of

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<sup>58</sup> *Why Protect Urban Green Space*, The Bodine Street Community Garden, (visited December 3, 2011) <http://bodinestreetgarden.org/why-protect-urban-green-space/>.

<sup>59</sup> Catherine J. LaCroix, *Urban Green Uses: The New Renewal*, 63 *Planning & Environmental Law* 5, 3 (2011).

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> Michael Vass, *New York Land Bank Act, Did you notice it?* (August 2, 2011) <http://www.mvass.com/2011/08/02/new-york-land-bank-act-did-you-notice-it/>.

the stable open spaces in the city and creating protections for them in the zoning code to ensure their permanency. Furthermore, the unique characteristics of the aforementioned open spaces will be identified and reinforced through the provisions in the zoning code. For example, an area that contains a large grassy area and park facilities will be re-zoned in the same manner. Finally, open space investments, such as parks in neighborhoods lacking parks or recreation, areas are prioritized in the Buffalo Green Code.

Parks and open spaces provide substantial environmental, economic and social benefits. Green spaces provide habitats for a variety of birds, fish, and animals and insects. Green spaces can also reduce noise pollution, by the dense screens of trees and shrubs.<sup>65</sup> It also provides recreational use: places to play, gather, eat, and sleep.

#### **F. Enhancement of Natural Resources**

The Buffalo Green Code seeks to enhance natural resources by protecting and restoring sensitive habitats. This goal is accomplished by a variety of mechanisms including: reconnecting fragmented ecosystems with linear open space systems and creating buffer requirements to ensure protection, encouraging native landscaping and tree planting, incorporating old growth tree protection and replacement in kind (i.e. replacing oak tree with oak tree) provisions into the zoning code.<sup>66</sup>

The plan also seeks to enhance riparian (i.e. stream-side) environments. Riparian environments benefit the environment by protecting water quality and improving wildlife habitats.<sup>67</sup> The Buffalo Green Code seeks to enhance riparian environments by creating controls

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<sup>65</sup> *Why Protect Urban Green Space*, The Bodine Street Community Garden, (visited December 3, 2011) <http://bodinestreetgarden.org/why-protect-urban-green-space/>.

<sup>66</sup> City of Buffalo, *Buffalo's Future Land Use Plan 2012/32 Draft Document*, at 39 (2011).

<sup>67</sup> *Id.*

protect slops, flood, coastal waters, and streams from unsuitable development.<sup>68</sup> However, the plan fails to address what specific controls will be used or how they will be regulated and enforced. The plan also establishes standards for maintaining streams, riverbanks and removing overgrowth. It seeks to restore naturalized edges on nonworking waterfront, minimize impervious surfaces, and allow the use of permeable pavement.<sup>69</sup> Finally, the Buffalo Green Code allows for continued testing of green infrastructure solutions such as constructed wetlands, bioswales, green streets, rain gardens and blue roofs to minimize Buffalo's sewer overflow problems.<sup>70</sup>

### **G. Waterfront Access and Usage**

The Buffalo Green Code supports waterfront access and usage by supporting planning initiatives for the Niagara River Greenway, Buffalo River Greenway, among many others.<sup>71</sup> The plan establishes a pedestrian-scaled framework of streets, blocks, and development parcels at the foot of Erie street.<sup>72</sup> It also considers the implementation of a buffer zone into the zoning code along nonworking waterfronts to ensure public access.<sup>73</sup> Finally, the plan requires development to recognize both the water and street as primary frontages, to avoid treating either entry as a "back door".<sup>74</sup>

### **H. Storm Water Solutions**

The Buffalo Green Code looks at testing the effectiveness of green roofs in combating Buffalo's storm water and sewer overflow problems. Storm water runoff from "developed areas can impact water quality in receiving waters, hinder navigation and recreation, and disrupt

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<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *Id.* at 42.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

aquatic life.”<sup>75</sup> A green roof is a system of self-sustaining vegetation grown on top of buildings, which replaces conventional roofing materials with a waterproof membrane, drainage layer, lightweight growing medium, and plant life.<sup>76</sup> Its main function is storm water retention because unlike the conventional impervious roofing materials, the vegetative layers retain, detain, and filter rainfall. Green roofs also slow the rate at which runoff enters sewer systems, and improve water quality.<sup>77</sup> A green roof has the potential to combat climate change, improve urban air quality, and reduce energy demands by insulating the building.<sup>78</sup> The Buffalo Green Code also looks at collecting rainwater to effectively conserve water while also controlling storm water.<sup>79</sup>

There are other techniques for curbing Buffalo’s storm water problems that are not mentioned in the Buffalo Green Code. These methods are effective and have a multitude of environmental benefits. For example, low impact development manages storm water by preserving natural vegetative cover, collecting and draining storm water on site, and minimizing impervious surfaces.<sup>80</sup> Low impact development also advances other sustainability goals by encouraging the preservation of natural habitats and discouraging pavements and other impermeable surfaces that contribute to the heat island effect.<sup>81</sup>

Another sustainable water initiative is “xeriscaping,” a holistic approach to landscaping that involves planning and design, selection of appropriate plant species, water efficient

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<sup>75</sup> *Green Development: Drafting Plans and Regulations to Promote Environmentally-Friendly Projects*, SL005 ALI-ABA 669, 674.

<sup>76</sup> *Reducing Urban Heat Islands: Compendium of Strategies: Green Roofs*, U.S. Env’tl. Prot. Agency, 14-16 (2008), <<http://www.epa.gov/hiri/resources/pdf/GreenRoofsCompendium.pdf>>.

<sup>77</sup> City of Chicago, *Chicago’s Water Agenda: A Guide to Stormwater Best Management Practices*, 6, (2003) <[http://www.cityofchicago.org/content/dam/city/depts/doe/general/NaturalResourcesAnd-WatetConservation\\_PDFs/Water/guideToStormwaterBMP.pdf](http://www.cityofchicago.org/content/dam/city/depts/doe/general/NaturalResourcesAnd-WatetConservation_PDFs/Water/guideToStormwaterBMP.pdf)>.

<sup>78</sup> *Id.*

<sup>79</sup> Patricia E. Salkin, *Sustainability and Land Use Planning: Greening State and Local Land Use Plans and Regulations to Address Climate Change Challenges and Preserve Resources for Future Generations*, 34 Wm & Mary Env’tl L & Pol’y Rev 121, 164 (2009)

<sup>80</sup> *Id.* at 166-67.

<sup>81</sup> *Id.*



irrigation techniques, and other sustainable practices to make landscaping more sustainable.<sup>82</sup>

Specific benefits include “reduced water use, decreased energy use (less pumping and treatment required), reduced heating and cooling costs because of carefully placed trees, decreased storm water and irrigation runoff, fewer yard wastes, increased habitat for plants and animals, and lower labor and maintenance costs.”<sup>83</sup>

### **I. Healthy Food Production and Distribution**

The Buffalo Green Code aims to reduce barriers to developing grocery stores, outdoor markets, healthy corner stores, farmers’ stands and community gardens in convenient locations across Buffalo, by allowing for land access for these uses and mixing residential areas within these zoned areas. The aforementioned uses can bring produce and healthy foods to communities underserved by grocery stores. Entities such as markets and stands provide economic benefits because they offer direct sales, thereby reducing food markups.<sup>84</sup> Community gardens are economically and socially beneficial because they complement food budgets and generate modest revenues for urban farmers. Urban consumers benefit because they have affordable access to fresher and healthier fruits and vegetables.<sup>85</sup> Furthermore, community gardens can cover asphalt, impermeable surfaces, and vacant areas with vegetation, improving Buffalo’s storm water runoff problems.<sup>86</sup>

Additionally, smaller local farms may have fewer environmental impacts from pesticides, fertilizers, and wastes than industrialized agricultural operations that produce large-scale crops.<sup>87</sup>

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<sup>82</sup> *Id.*

<sup>83</sup> *Id.* at 165.

<sup>84</sup> Patricia E. Salkin, Amy Lavine, *Regional Foodsheds: Are Our Local Zoning and Land Use Regulations Healthy?*, 22 *Fordham Envtl L Rev* 599, 617 (2011)

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.* at 602.

Small local farms also help preserve undeveloped land, and transportation needs are lowered with an increase in outdoor markets and farmer's stands, bringing decreases in traffic, vehicle pollution, and greenhouse gas emissions.<sup>88</sup> In addition, the Buffalo Green Code will implement guidelines on the design of greenhouses and hoop houses (green house with a plastic roof wrapped over flexible piping), among other ideas to allow small-scale urban agriculture. Long and short-term use guidelines for quality design and strict standards for the safety of urban agriculture in high-vacancy areas are also included.<sup>89</sup>

While zoning can encourage certain land uses for open space, the actual development of land is generally dependent on private investment. A lack of interest to invest for example, in creating a community garden, can provide a serious impediment to the Buffalo Green Code's success. Therefore, subsidies, incentives, and technical assistance from the city, county, state and/or federal government must complement the Buffalo Green Code. For example, the City of Milwaukee and the federal Housing and Urban Development Agency gave a \$425,000 grant to a local green organization to fund the construction of 150 hoop houses and create 150 new jobs for beginning urban farmers.<sup>90</sup> As the grant was given in the spring of 2011, the plan's overall success has yet to be determined but highly anticipated.<sup>91</sup>

While the plan encourages healthy food and living, the zoning code can go further in ensuring healthy food production and distribution. In the same way that the current zoning code restricts conflicting or potentially harmful uses (such as liquor stores) with a determined radius

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<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Growing Power Initiative to Create 150 New Jobs Aimed at African American Males*, Milwaukee Courier, (April 16, 2011) <<http://milwaukeecourieronline.com/index.php/2011/04/16/growing-power-initiative-to-create-150-new-jobs-aimed-at-african-american-males>>.

<sup>91</sup> *Id.*

of schools, the land use code should also designate zones of the city that restrict development of unhealthy food options such as fast food restaurants.<sup>92</sup>

### **III. Missing Components**

While the Buffalo Green Code Effort identifies a multitude of environmental as well as social and economic concerns, there are two environmental areas where the plan is lacking, climate change and green building.

#### **A. Climate Change**

Many human behaviors release greenhouse gases into the atmosphere.<sup>93</sup> The levels of greenhouse gases have increased at an unprecedented rate.<sup>94</sup> Climate change refers to any significant change in climate lasting for a prolonged period of time.<sup>95</sup> Greenhouse gases trap heat and thus lead to an increase in temperature.<sup>96</sup> Current increases in global temperatures will significant long-term effects on the environment. For example, a significant increase in climate can devastate a multitude of habitats.<sup>97</sup>

The creation of a new land use plan and zoning code that focuses on compact development and mixed uses can address climate change by decreasing greenhouse gas emissions. For example, the Buffalo Green Code promotes alternative transportation alongside

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<sup>92</sup> *Environmental Alliance Submits Green Comments to Mayor Brown*, Western New York Environmental Alliance, (December 1, 2011) < <http://growwny.org/whats-new/1256-alliance-submits-green-comments-to-mayor-brown>>.

<sup>93</sup> *Back to Basics: Frequently Ask Questions about Global Warming and Climate Change*, U.S. Env'tl. Prot. Agency, (visited December 10, 2011) < [http://www.epa.gov/climatechange/downloads/Climate\\_Basics.pdf](http://www.epa.gov/climatechange/downloads/Climate_Basics.pdf)>.

<sup>94</sup> *Id.*

<sup>95</sup> *Id.*

<sup>96</sup> *Id.*

<sup>97</sup> *Impacts of Global Warming on Wildlife and Habitat*, Defenders of Wildlife, (visited December 10, 2011) [http://www.defenders.org/programs\\_and\\_policy/global\\_warming/wildlife\\_and\\_global\\_warming/](http://www.defenders.org/programs_and_policy/global_warming/wildlife_and_global_warming/).

compact development and mixed-use zoning. Under this framework, individuals are likely to own fewer cars and take fewer car trips, thus mitigating greenhouse gas emission.

The land use plan in Marin County, California contains strategies relating to climate change that the Buffalo Green Code does not specifically outline. Some of the strategies include: “lowering greenhouse gas emissions by . . . protecting forests and other natural carbon sinks, using energy efficient building techniques by emphasizing renewable energy, reducing methane emissions from landfills, encouraging agricultural operations to adopt methane recovery technology, evaluating carbon emissions during the land use approval process, directing development toward existing urban corridors, and studying and preparing for the impacts of climate change.”<sup>98</sup> It provides incentives for projects such as xeriscaping.<sup>99</sup> The Buffalo Green Code could look into implementing the aforementioned components into its current plan and code in order to better combat climate change and energy concerns.

## **B. Green Building**

Another component the Buffalo Green Code fails to significantly address is green building. Buildings in the United States are responsible for 40 percent of energy consumption, 39 percent of carbon dioxide emissions, 13 percent water consumption and 15 percent of GDP per year.<sup>100</sup> “Green Building” presents a major environmental and economic opportunity. Green buildings can reduce energy use by up to 50 percent, reduce carbon dioxide emissions by as

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<sup>98</sup> *Environmental Alliance Submits Green Comments to Mayor Brown*, Western New York Environmental Alliance, (December 1, 2011) < <http://growwny.org/whats-new/1256-alliance-submits-green-comments-to-mayor-brown>>.

<sup>99</sup> *Id.*

<sup>100</sup> *Maryland First to Adopt Buffalo Green Code*, Industry IQ, (May 2011) [http://www.navigant.com/insights/library/industry\\_news/the%20impact%20of%20new%20model%20green%20codes](http://www.navigant.com/insights/library/industry_news/the%20impact%20of%20new%20model%20green%20codes).

much as 39 percent, use 40 percent less potable water, and eliminate almost 70 percent of solid waste.<sup>101</sup>

While, the Buffalo Green Code states that Buffalo must ensure that development in housing and commercial areas must meet high standards. It lacks a significant plan for “green building”. The plan states that “[a]s part of the zoning ordinance, the city will consult with residents about adopting standards such a LEED-ND in these vacant areas to ensure high quality development”.<sup>102</sup> Thus, “green building” largely remains vague and completely voluntary. To further promote “green building”, the Buffalo Green Code should incentivize environmentally sensitive building methods in new construction, changes of use, and substantial renovations.<sup>103</sup>

### **CONCLUSION:**

Changes are needed to address the environmental, economic and social problems Buffalo faces. A new land use and zoning code presents the city with an excellent tool to promote sustainable land use and growth. The Future Development Plan draft components of compact development and mixed-use zoning when coupled with the transportation, open space, healthy food production, natural resource, vacant land and stormwater provisions, provide an excellent framework for Buffalo’s future sustainability. However, there are legitimate questions about the environmental justice focus and the lack of explicit climate change and green building requirements. In addition, there are legal and monetary challenges to the Buffalo Green Code effort’s implementation. However, the environmental, social and long-term benefits far outweigh these challenges and should weigh in favor of adoption. Furthermore, while Future Development Plan draft encourages and promotes environmentally sustainable practices, to be

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<sup>101</sup> *Id.*

<sup>102</sup> City of Buffalo, *Buffalo’s Future Land Use Plan 2012/32 Draft Document*, at 29 (2011).

<sup>103</sup> *Environmental Alliance Submits Green Comments to Mayor Brown*, Western New York Environmental Alliance, (December 1, 2011) <<http://growwny.org/whats-new/1256-alliance-submits-green-comments-to-mayor-brown>>.

truly “green” it must be proactive by requiring, or at the very least incentivizing, the main components of the plan. If the Buffalo Green Code implements the measures discussed throughout this paper, Buffalo’s environment will yield substantial benefits.