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Washington, D.C.: Streetcar Initiatives amid Small Steps Towards Sustainability

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Across America, many cities are taking action to become more environmentally sustainable. Among them is Washington, D.C. As the nation's capital, the city is unique in the fact that its local government does not have to worry about state laws, and essentially it has autonomy to run its own affairs as a city. However, the city has not taken full advantage of its status. Failed policies and poverty have made many parts of the run down and led the city to focus on issues such as the crime rate and poverty reduction.

Regarding sustainability, D.C. could best be described as slightly above average in most areas. Although the city has no concrete plan that focuses on sustainability, all is not lost for the District. The main city plan has several sections that contain initiatives that will make the city more sustainable. Through initiatives like solar panel rebates, free energy audits, and many plans for transportation, D.C. is finding ways to improve its environmental footprint. Although D.C. remains behind many more progressive cities on sustainability issues, its strong transportation plans and systems make it a leader in that one area.

This paper will analyze the strengths and weaknesses of both the plan and the initiatives contained therein. Each of the initiatives that the District is considering will be described and analyzed. After the discussion of the plan, we will focus on the best practice of D.C., the

initiative that makes it stand out among other cities. For D.C., the best practice is their plan to install streetcars, which are environmentally friendly and encourage mass transit.

Sustainability Plans in D.C.

Washington, D.C., is an interesting city with regards to sustainability because the city does not have a defined, specific, sustainability plan. Rather, the city has a comprehensive plan that incorporates elements of sustainability. The plan includes sections on land use, transportation, housing, urban design, and infrastructure. The plan is vastly detailed and covers nearly every aspect of policy in the city, but within this plan there are several initiatives having to do with sustainability that will be examined.

The “Comprehensive Plan for the National Capital Region” grew out of the Home Rule Act of 1973. This act, passed by the federal government, gave D.C. much more autonomy in local affairs. D.C. was allowed to elect a mayor and a city council for the first time, and gained the ability to pass local laws and program. One of the provisions of the law required the District to form a Comprehensive Plan.¹ Thus, every couple of years the District revises its plan for the city. The most recent overhaul was in 2006; however, the city periodically updates the plan to incorporate new ideas. The remainder of this section will discuss the plans of Washington, D.C., in four areas: pedestrians, mass transit, alternative energy, and green jobs.

Pedestrians. Many of the initiatives of the plan have to do with transportation. One of the first foci is on pedestrians. This is beneficial because encouraging walking within a city takes cars off the streets and makes a city more livable and easier to get around, because one does not have to worry about parking or bus fares when one walks. The Comprehensive Plan extensively discusses the idea of improving pedestrian access throughout the city, but there are very few

specific initiatives planned. However, the plan does mention an “example” of redesigning the bridges over the Anacostia River to be more pedestrian and bicycle friendly.²

Despite this lack of information on pedestrians in the main plan, D.C. has a separate plan devoted to making the city more pedestrian friendly. The Pedestrian Master Plan has many technical details and goals; however, there are two main goals. According to the plan, the first is to “To reduce the number of pedestrians killed and injured in crashes with motor vehicles,” and the second is to “increase pedestrian activity by making walking a comfortable and accessible mode of travel throughout all parts of the District.”³ Because emissions from motor vehicles are the greatest source of emissions in D.C.,⁴ pedestrian friendly streets allow the reduced use of cars, which reduces the pollution in the District.

The District’s first priority in the Pedestrian Master Plan was to look for the areas that had the most fatalities for pedestrians and were the hardest to navigate by foot. The District used Portland, Oregon, as a model for how to approach the analysis.⁵ However, the main way that the District approached creating the master plan was through community input. The District Department of Transportation (DDOT) created an online survey that garnered over 4800 responses, interviewed 600 people as they walked along the main “arterial” roads that were identified as problem areas, and held meetings that sought community input.⁶ This community-based way of creating the plan and identifying problems was an excellent way to make sure that the program met the needs of the community. The methodology, although not giving a totally representative view of the District, nonetheless allowed views of many residents to be sought. The main survey that made the community input truly valuable was the interviews with the random pedestrians. This was an excellent way to make sure that input was received from people who actually walk.

The Pedestrian Master Plan also analyzed the pre-existing walking conditions in the city. It noted that 12% of residents of the District walk to work, which is twice the national average.⁷ The problem was that many of the streets in the city had “sidewalk gaps” that did not allow pedestrians to walk all the way down a block. Also, there were issues with intersections. The walk signal often did not last long enough for all pedestrians to cross, and skewed intersections made it difficult for pedestrians because motorists could take the turns at higher speeds.⁸

Thus, the Pedestrian Master Plan laid out initiatives to fix these problems. New countdown lights were installed at 95% of the intersections in the city, and the times for crossing were adjusted. Finally, new flashing lights were added at several intersections warning motorists about the pedestrians.⁹ In addition to these measures, the plan also makes many recommendations about how to improve pedestrian safety, including educational campaigns, redesign of crosswalks, and stricter fines and penalties for motorists who endanger pedestrians. Importantly, the plan also has the concrete goal of reducing pedestrian fatalities by 5% every year and increasing the number of residents who walk or bike to work every year. There are also plans to assess the progress of these goals.¹⁰

However, the best plan in the world is no good if it does not work. Therefore, the question is whether the plan actually met its goals. According to *The Washington Post*, a pedestrian or cyclist is hit four times a day in the District, and the number of pedestrian or cyclist accidents has risen by 25% since last year.¹¹ However, the number of cyclists and pedestrians has increased by 68% over the past three years, so this may explain the rise.¹² Nonetheless, it is clear that the District needs to do more work on protecting its pedestrians, because it has achieved its goal of having more people bike and walk. To achieve this goal, the *Post* article notes that D.C. has begun a new pedestrian safety program, although it is too early to know if the

program will achieve results. However, the effort is necessary because promoting walking and cycling is one of the best ways to make a city more sustainable and reduce its emissions.

Overall, the Pedestrian Master Plan is well designed. It sets specific goals, contains actions to help achieve those goals, and includes ways to measure the progress made toward these goals. It seems to have failed to decrease injuries from cars striking pedestrians; however, the city has learned from this and is trying a new measure, which is the hallmark of a good, flexible plan.

Mass Transit. Washington, D.C., is a leader in mass transit. According to the Comprehensive Plan, the District has the “second largest rail transit system and the fifth largest bus system in the United States.”¹³ However, the main mode of transportation in the city, the Metro, is not effective in connecting neighborhoods within the city. It is also extremely expensive to construct new subway lines. The District plans to solve the problem by installing streetcar lines and rapid transit buses. More detail on the streetcars will come in Section II, but for now it will suffice to say that they are powered by electricity and are environmentally sustainable. Bus Rapid Transit essentially makes buses run like subways. The buses run in dedicated lanes so that they are not late and don’t get caught in traffic. They also have special signals to synchronize with the lights in the city so that they can quickly pass through the lights. This makes riding a bus a more attractive alternative than driving because it is faster. Buses hold many people, and thus the carbon emissions are less than if all the commuters were to take separate cars.

One of the elements of the plan that aims to make buses a more attractive option is renovating the bus stops. The District plans to use GPS in bus stops to notify those waiting for

the bus when the next one will arrive and adding a real-time scheduling system, as well as making the bus stops more comfortable and ensuring that they are well-lit and safe.¹⁴

The District also plans to improve mass transit further by installing water taxis. These will run across the Anacostia River and will provide a way for people to get to work when traffic is heavy on the bridges or bus or Metro service is disrupted. Although water taxis are not as environmentally sustainable as buses or subways, they still encourage residents to forgo the use of cars because they provide yet another alternative to automobiles.

Overall, there is little in the plan about the Metro. This is because the Metro already does a stellar job of connecting the outskirts of the city with the central areas. The Metro is run with electricity, so it is more sustainable than a bus, and will be even more sustainable once D.C. gets more of its energy from renewable power in the future.

Alternative Energy. One of the major flaws with the Comprehensive Plan in regards to sustainability is that it does not address renewable energy at all. This may be because the Comprehensive Plan is not focused on environmental issues, and thus merely looks at electrical generation from a pragmatic standpoint. The plan simply states that the District will continue to electricity from the Potomac Electric Power Company (PEPCO). PEPCO uses two oil-burning power plants to generate electricity. However, with updates to the grid, most of D.C.'s power now comes from coal-burning plants in Maryland, which also create environmental burdens.¹⁵ However, despite the lack of alternative energy plans in the Comprehensive Plan, D.C. is sponsoring some initiatives to encourage the use of renewable energy in the District.

One of the simplest ways to encourage the use of renewable energy is rebates on solar panels. This is exactly what the D.C. local government is offering. If a person in D.C. elects to purchase solar panels, they get a \$1.50 rebate per watt of capacity¹⁶. This is in excess of the

rebates and credits that the federal government already offers, so it greatly reduces the cost of solar for citizens in Washington, D.C. The program began in late 2011, so there is no data on how well it is working yet, but with the greater initiatives for solar, it is hoped that it will be a success and encourage more people and especially businesses to install solar electricity.

Another interesting initiative that D.C. is exploring is giving consumers the option to pay extra on their utilities in order to receive their power solely from wind farms. Wind power, of course, is much more sustainable than fossil fuels. However, the main problem with wind power, and indeed with all forms of renewable energy, is that the initial costs are much higher than they are for an existing coal or oil plant, for example. This program helps to provide the wind companies a way to pass some of this high initial cost onto the consumer. Basically, the program targets upper-middle class consumers of electricity who want to “go green.” These consumers can pay an extra fee on their utility bill (usually it is higher, but on occasion the wind is cheaper and the consumer pays less) in order to get the building’s power either 50% or 100% powered by wind energy from West Virginia, Pennsylvania, or even Indiana. The extra money is reinvested into the wind farms in order to promote the growth of this green energy source.

Green Jobs. Noticeably absent from the Comprehensive Plan is any mention of green jobs or businesses. This is perhaps unsurprising, because the plan focuses on the general city, not specifically on sustainability. However, green jobs are an important part of any plan to make a city more sustainable, this once again demonstrates the District’s need for a sustainability plan. Despite the lack of government support, there are still several business organizations in D.C. that promote environmentally friendly businesses.

One organization that attempts to establish connections among businesses nationally is Green Business Network (GBN), an organization that is extremely active in Washington D.C.

The GBN states that its goal is to “link businesses to a growing market of value driven consumers.”¹⁷ One of the primary ways that they attempt to achieve this goal is through their green seal of approval program. Businesses have to meet several requirements in order to get the seal of approval. They have to “focus on using business as a tool for positive social change,” first and foremost.¹⁹ Just as importantly, however, businesses with the seal of approval have to be socially and environmentally responsible in the way that they make their products.

Of course, the Green Business Network does more than simply certify businesses as green. In the D.C. area, many businesses are members, mostly restaurants and retailers. The GBN organizes events for the local businesses, such as a happy hour between three organic restaurants.²⁰ Also, they organize programs to raise awareness for sustainability, such as a bike ride between New York and D.C.

However, as a national organization, GBM cannot have as much impact as a local organization can. This is where the Sustainable Business Network of Washington (SBNW) comes in. The SBNW is an organization that aims to foster connections between local businesses that are, once again, value-driven.²¹ The main benefit of the Network is the connections that it fosters between members. The members are encouraged to connect through seminars and networking events that SBNW sponsors. These links are valuable to community businesses because often they can refer each other. For example, a local restaurateur who serves Italian food could refer a customer who asks to a local sustainable steak restaurant, who would do the same for him. Or an electrician who works on solar panels could refer a plumber who installs heat-saving pipes when he is done with his work. This is one of the major benefits of small business networks in general, not just the SBNW, in fact, but SBNW is unique in that it only contains businesses that are committed to sustainability, and thus allows consumers to shop at sustainable

businesses, as well as letting business owners draw inspiration and ideas from other like-minded owners.

The final organization in D.C. that I would like to discuss is the local Business Alliance for Local Living Economies (BALLE) chapter, Think Locals First. The chapter contains 401 local D.C. businesses.²² Although BALLE is not strictly oriented towards businesses that are committed to sustainable practices, the mere fact that they support local businesses does help with environmental issues. This is because local businesses are more involved in the community, and therefore have more of an interest in community response to environmental problems that the company may cause. BALLE has many programs for its members. On the website of Think Locals First, there are announcements of farmer's markets, happy hours, and seminars.²³ BALLE has many of these activities, as well as networking events among local businesses, to help grow the localist business movement in D.C.

Thus, we see that even though the Comprehensive Plan does little to support green jobs from a governmental side, there are still many private organizations in D.C. that support businesses that follow an environmentally sustainable pathway.

The Best Practice – Streetcars

Although D.C. often looks bad compared to other cities when it comes to environmental issues, one of the ways that it stands out is through its plan to install streetcars throughout the city. However, some people oppose the installation of the streetcars on aesthetic grounds. Even though the installation of the streetcars is still being debated, their potential for sustainability and their potential to connect the city make them Washington, D.C.'s best practice.

There are numerous reasons why streetcars are good for cities. First and foremost is the environmental benefit. Streetcars are powered by electricity, which is much more efficient and clean than diesel or petroleum. Even when the streetcar is powered by coal electricity, it still emits less carbon per person than a comparable bus, and much less than a gas-powered car. Even if one considers the emissions from coal, one has to remember that buses and cars emit their pollution at street level, in the middle of a dense urban area. The pollution from streetcars is much farther away from population centers. Of course, the real benefit of the use of electricity is the potential to use renewable energy. Although Washington, D.C., does not get much of its electricity from renewable energy, in the future it likely will. This will make streetcars a virtually zero-emission form of transportation.

There are also more practical reasons for D.C. to install streetcars. As the NGO Streetcars4dc points out, the Metro provides access to downtown from the suburbs, but “does not always meet the needs of those traveling [within] the District, and does not serve all areas.”²⁴ Also, many of the bus routes are overcrowded.²⁵ Finally, buses are not as environmentally sustainable as streetcars, and the buses emit their exhaust directly into the city's air.

There is also the economic side of streetcars to consider. The DDOT official website states that “fixed rail lines have demonstrated that they can be catalysts” for economic

investment.²⁶ There are noticeably more businesses around Metro stations, and the same effect should hold for streetcars. The web site also notes that many of the public transportation options in D.C. are operating at full capacity. This means that they will not be able to adapt to the projected 32% increase in public transportation use.²⁷ Thus streetcars have both environmental and logistical benefits for the District.

However, there are negative sides to streetcars. To the casual observer, the aesthetics of a city may seem to be secondary to its practicality, but in Washington, D.C. this is not the case. The federal government, which has always exerted special control over the District, is against the streetcar plan because of the overhead wires that go along with streetcars. The federal government believes that these wires will ruin the city's iconic views of the Capitol and the monuments that define D.C.²⁸ Although D.C. is a historic city, the benefits of streetcars far outweigh the aesthetic issues. At worst, the streetcars could simply not run in areas where they would obstruct the view of monuments. However, the overhead wires of the streetcars would not unduly obstruct the views of the Capitol and other historic buildings, since they would be seen as simply part of the street.

A case study of how streetcars can revitalize an area can be seen on H Street in D.C., where tracks have already been installed and streetcars will be running by 2013.²⁹ *The Washington Post* notes that new shops and restaurants are already beginning to open on the street, and these businesses combined with new sidewalks and redone landscaping have totally changed the once rundown area.³⁰ Although improvements this drastic cannot be expected in all cases, it still demonstrates the potential streetcar lines have to attract investment.

As a technical matter, streetcars are very easy to fit into existing streets. D.C. plans on using, according to DDOT, "a unique shallow 12-inch deep track slab design" that will allow the

track to be installed without disturbing the utility lines to an undue extent.³¹ Also, the vehicles that the District will be using are narrower than conventional streetcars. This allows the track to be fitted to existing slopes and reduces sharply the amount of construction required on the streets.

In conclusion, the streetcars are an environmentally friendly form of transportation that allows local areas to be revitalized and encourage the use of mass transit within the city, replacing cars as it does so. Thus D.C.'s streetcars are its best environmental practice, and one that could be emulated across the country.

Conclusion

D.C. has a limited range of sustainability initiatives, but the District's excellent plans to install streetcars may enable the city to develop a best practice that other cities can emulate. The most likely reason why the District is not an urban sustainability leader is that it is far from prosperous. There are high crime rates and poverty, and these are the priorities, not environmental issues. Furthermore, as a national capital, the city is focused on national issues, and the local issues sometimes take a backseat.

The bottom line is that D.C. needs better planning and initiatives to become an environmentally sustainable city. The city lacks governmental plans for green jobs and local food, although private groups are working to fill this gap. There is no plan that focuses on environmental sustainability at all. The first step in any plan to fix the city should be to create a sustainability plan that states goals for air and water quality, as well as for waste produced and carbon emitted/electricity consumed. The plan should include elements of renewable energy, mass transportation, and urban design, as well as sustainable food and green jobs. Then, the city should find ways to ensure that it reaches the benchmarks in its plan, and evaluate its progress as the plan goes on. Of course, D.C. has a problem finding political will to achieve these goals, because the citizenry is much less supportive of environmental programs than in other cities. However, by organizing initiatives similar to the ones the District is currently pursuing and coordinating them, as well as by adding some of the best ideas from other cities, Washington, D.C., could, over time, become a much more environmentally sustainable.

Endnotes

- ¹ Flowers, Brian. "District of Columbia Home Rule Act." Sept 1999. 9 Nov 2011. <<http://www.abfa.com/ogc/hrtall.htm>>
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- ³ District of Columbia Department of Transportation. *District of Columbia Master Plan*. Washington, D.C.: Toole Design Group, 2009. Page 3-4
- ⁴ Ibid. Page 5
- ⁵ Ibid. Page 9
- ⁶ Ibid. Page 10
- ⁷ Ibid. Page 12.
- ⁸ Ibid. Page 14.
- ⁹ Ibid. Page 17.
- ¹⁰ Ibid. Page 29.
- ¹¹ Klein, Allison. "Campaign to protect pedestrians, cyclists as number of crashes in the District rises." *The Washington Post*. 30 Mar 2011.
- ¹² Ibid
- ¹³ Black, Gale et. al. *The Comprehensive Plan for the National Capital: District Elements*. Washington, D.C.: DC Office of Documents and Administrative Issues, 2007. Section 4, Page 12.
- ¹⁴ Ibid. Section 4, Page 19.
- ¹⁵ Ibid. Section 13, Page 18.
- ¹⁶ Green Energy D.C. "Renewable Energy Incentive Program." 10 Nov 2011. <<http://rrc.dc.gov/green/cwp/view,a,1244,q,461562.asp>>
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- ²⁷ Ibid
- ²⁸ "Washington D.C. Seeks to Build Streetcar Network." *All Things Considered*. NPR. WAMU, Washington, D.C. 22 Dec 2010. Radio.
- ²⁹ Halsey, Ashley. "DC Wants Streetcars to Roll by Mid-2013." *The Washington Post*. 10 November 2011.
- ³⁰ Ibid
- ³¹ DDOT. "DC Streetcar Vehicles." 10 Nov 2011. <<http://www.dc.gov/DC/DDOT/On+Your+Street/Mass+Transit+in+DC/DC+Streetcar/DC+Streetcar+Vehicles>>

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