

## **SUSTAINABLE DC RECOMMENDATIONS AND RESOURCES**

### **Submitted by the Congress for the New Urbanism DC Chapter**

The Congress for the New Urbanism DC Chapter welcomes the opportunity to contribute to the Sustainable DC initiative. We offer comments in three parts. Part One presents general principles of sustainable development, useful as a checklist and as an operational framework for action. Part Two presents specific ideas, policies and design concepts suggested by CNU DC members and associates. Part Three presents the Charter of the New Urbanism, a powerful and enduring set of planning and urban design principles that provides guidance for creating more humane and sustainable built environments.

### **PART ONE: OPERATING PRINCIPLES FOR SUSTAINABLE DC**

The Congress for the New Urbanism DC Chapter proposes these encompassing operating principles for Sustainable DC. They provide action-oriented tools for addressing the challenges that face us in providing for the stewardship of all land and the full range of human settlement needs: water, food, energy, and shelter at all scales.

Together, the transportation and building sectors account for the majority of energy and nonrenewable resource usage, making the design and planning of the totality of the built environment essential in tackling sustainability.

#### **General**

1. Human interventions in the built environment tend to be long lived and have long-term impacts. Therefore, design and financing must recognize long life and permanence rather than transience. City fabric and infrastructure must enable reuse, accommodating growth and change on the one hand and long-term use on the other.
2. The economic benefits shall be realized by investing in built areas that both reduce future economic impacts of climate change and increase affordability. Patient investors should be rewarded by fiscal mechanisms that produce greater returns over the long term.
3. Truly sustainable design must be rooted in and evolve from adaptations to local climate, light, flora, fauna, materials, and human culture as manifest in indigenous urban, architectural, and landscape patterns.
4. Design must preserve the proximate relationships between urbanized areas and both agricultural and natural lands in order to provide for local food sources, maintain local watersheds, provide a clean and ready water supply, preserve clean air, allow access to local natural resources, conserve natural habitat, and to guard regional biodiversity.
5. Globally, human settlements must be seen as part of the earth's ecosystem.
6. The rural-to-urban Transect\* provides an essential framework for the organization of the natural, agricultural, and urban realms.

7. Buildings, neighborhoods, towns, and regions shall serve to maximize social interaction, economic and cultural activity, spiritual development, energy, creativity, and time, leading to a high quality of life and sustainability.

### **The Building and Infrastructure**

8. The primary objective of the design of new buildings and the adaptive reuse of older ones is to create a culture of permanence with well-crafted, sound, inspired, and beloved structures of enduring quality. Places shall promote longevity and the stewardship of both our natural and manmade environments.

9. Architecture and landscape design shall derive from local climate, flora, fauna, topography, history, cultures, materials, and building practice.

10. Architectural design should derive from local, time-honored building typologies. Building shells must be designed to be enduring parts of the public realm. Yet internal building configurations must be designed to be flexible and easily adaptable over the years.

11. The preservation and renewal of historic buildings, districts, and landscapes will save embodied energy, as well as contribute to cultural continuity.

12. Individual buildings and complexes shall conserve energy, and produce renewable energy wherever doing so promotes economies of scale and reduces reliance on fossil fuels and inefficient distribution systems.

13. Building design, configuration, and sizes must reduce energy usage and promote easy internal vertical and horizontal walkability. Approaches to energy design should include low-technology passive solutions that are in harmony with local climate to minimize unwanted heat loss and gain.

14. Renewable energy sources such as non-food source biomass, solar, geothermal, wind, and other nontoxic, non-harmful sources shall be used wherever they can make a net reduction in greenhouse gas emissions and contribute to energy affordability and reliability.

15. Water captured as precipitate, such as rainwater and water harvested in and around individual buildings, shall be cleaned, stored, and reused on site or within the neighborhood and allowed to percolate into local aquifers.

16. Water usage shall be minimized within structures and conserved through landscape strategies that mimic native climate, soil, and hydrology.

17. Building materials shall be locally obtained, rapidly renewable, salvaged, recycled, recyclable and have low embodied energy. Alternatively, materials shall be chosen for

their durability, exceptional longevity, and sound construction, taking advantage of thermal mass properties to reduce energy usage.

18. Building materials shall be nontoxic and non-carcinogenic, with no known negative health impacts when used properly.

19. Food production of all kinds shall be encouraged in individual buildings and on their lots consistent with their setting in order to promote decentralization, self sufficiency, and reduced transportation impacts on the environment.

### **The Street, Block, and Network**

20. The design of streets and the entire right-of-way shall be directed at the positive shaping of the public realm in order to encourage shared pedestrian, bicycle, and vehicular use.

21. The pattern of blocks and streets shall be compact and designed in a well-connected network for easy, safe, and secure walkability. This will reduce overall vehicular usage by decreasing travel time and trip length. Design shall strive to minimize material and utility infrastructure.

22. The positive shaping of the public realm shall focus on creating thermally comfortable spaces through passive techniques such as low albedo and shading with landscape and buildings. The techniques shall be consistent with local climate.

23. The design of the streets, blocks, platting, landscape, and building typologies shall all be configured for reduced overall energy usage and an enhanced quality of life in the public realm.

24. Roadway materials shall be nontoxic, and shall be permeable everywhere that conditions allow. Rights of way shall provide for rainwater management through percolation, retention, and detention. Green streets integrate sustainable drainage with the role of the street as defined public space. Their design shall maintain the importance of the building frontage and access to the sidewalk and roadway, balancing the desirability of surface drainage with the need for street connectivity and hierarchy.

25. A wide range of parking strategies (such as park-once districts, shared parking, parking structures, reduced parking requirements, minimized surface parking areas, and vehicle sharing) shall be used to constrict the supply of parking in order to induce less driving and to create more human-scaled, amenable public space.

### **The Neighborhood, Town and City**

26. The balance of jobs, shopping, schools, recreation, civic uses, institutions, housing, areas of food production, and natural places shall occur at the neighborhood scale, with these uses being within easy walking distances or easy access to transit.

27. Wherever possible, new development shall be sited on underutilized, poorly designed or already developed land. Sites shall be either urban infill or urban-adjacent unless the building is rural in its program, size, scale and character.

28. Consistent with #27, prime and unique farmland shall be protected and conserved. In locations with little or declining growth, additional agriculture, parklands and habitat restoration shall be promoted on previously urbanized, currently underutilized land.

29. Neighborhoods, towns and cities shall be as compact as possible, with a range of densities that are compatible with existing places and cultures and that hew tightly to projected growth rates and urban growth boundaries while promoting lively mixed urban places.

30. Renewable energy shall be produced at the scale that will best accomplish the goals of resiliency and minimal per-capita ecological footprint. Depending on context, this may be the individual building, neighborhood, city, or regional scale.

31. Brownfields shall be redeveloped, utilizing cleanup methods that reduce or eliminate site contaminants and toxicity.

32. Wetlands, other bodies of water, and their natural watersheds shall be protected wherever possible and the natural systems which promote recharge of aquifers and prevent flooding should be restored wherever possible, consistent with the rural-to-urban Transect\* and the desirability of urban waterfronts as public spaces of extraordinary impact and character.

33. Natural places of all kinds shall be within easy walking distance or accessible by transit. Public parklands and reserves shall be protected and the creation of new ones promoted.

34. Within neighborhoods, a broad range of housing types, sizes, and price levels for a population of diverse ages, cultures, and incomes can provide for self-sufficiency and social sustainability, while promoting compact cities and regions.

35. A steady source of water and the production of a wide range of locally raised foods within an easily accessed distance establish the self-sufficiency and overall size of neighborhoods and/or small towns. Nearby rural agricultural settlements shall be promoted to preserve local traditional foods and food culture.

36. Projects shall be designed to reduce light pollution while maintaining safe pedestrian environments. Noise pollution should also be minimized.

37. The design of neighborhoods and towns shall use natural topography and shall balance cut and fill in order to minimize site disturbance and avoid the import and export of fill.

## **The Region**

38. The finite boundaries of the region shall be determined by geographic and bioregional factors such as geology, topography, watersheds, coastlines, farmlands, habitat corridors, regional parks, and river basins.

39. Regions shall strive to be self-sustaining for food, goods and services, employment, renewable energy, and water supplies.

40. The physical organization of the region shall promote transit, pedestrian, and bicycle systems to maximize access and mobility while reducing dependence on automobiles and trucks.

41. The spatial balance of jobs and housing is enabled at the regional scale by extensive transit systems. Development shall be primarily organized around transit lines and hubs.

42. The siting of new development shall prefer already urbanized land. If undeveloped land is used, then the burden for exceptional design, demonstrable longevity and environmental sensitivity shall be more stringent and connections to the region shall be essential.

43. With priority to #42, sensitive or virgin forests, native habitats, and prime farmlands shall be conserved and protected. Imperiled species and ecological communities shall be protected. Projects to regenerate and recreate additional agricultural areas and natural habitat shall be promoted.

44. With priority to #42, wetlands, other bodies of water, and their natural watersheds and habitats shall be protected.

45. With priority to #42, development shall be avoided in locations that disrupt natural weather systems and exacerbate heat islands, flooding, fires, and hurricanes.

46. Everyone needs and has a right to access and experience wilderness and agricultural areas. Provide accessible and affordable transportation choices that allow those with the least resources to travel to and enjoy the bay, the rivers, the mountains, the woods, and farms. This will foster an understanding of the ecosystem and the food sources that support, enrich, and nourish our lives.

*\* Transect – This term refers to a classification of natural and human environments, which ranges on a spectrum from wilderness to intensively urban, and which focuses on walkable urban patterns. The basic Transect classifications are: natural, rural, sub-urban, general urban, urban center, urban core.*

## PART TWO: SPECIFIC IDEAS, POLICY SUGGESTIONS, AND DESIGN CONCEPTS

The following recommendations were collected from CNU DC members and associates for submission to the Sustainable DC initiative.

1. Sustainable DC should recognize the uniqueness of the DC urban fabric. This would necessitate a thorough survey of the strengths and weaknesses of the existing fabric.
  - Recognize and develop DC's existing alleyway into more organized pedestrian and bicycle networks that cut through vehicular grids.
  - Decrease city traffic by expanding and enhancing the DC trolley system.
  - Establish community incentives for installing rainwater retention on their properties. This includes green walls and bioswales.
  - Reduce heat island effect by continuing and expanding the DC initiative for an increased tree canopy and creating productive green spaces for the community, as parks, gardens, and "outdoor rooms."
  - Consolidate existing parking lots into multi-story garages that are designed to enhance the urban streetscape.
  - In order to increase the vibrancy of visual memories and create a sense of place for DC dwellers, way finding on the pedestrian scale shall consist of establishing site lines to landmarks, monumental buildings and towers.
  - Encourage diverse development across different age and income groups.
  - Encourage local businesses that source locally and create jobs.

(Quiroga and Ayala)

2. That MWCOG prioritize/rank transportation investments according to a set of sustainability indicators...that is, to what extent would each proposed transportation project reduce VMT, encourage use of alternative transportation modes, and/or promote compact land use/urban form? A checklist could be developed and tested against each project in the region's long-range transportation plan. This could be applied to any MPO and be a very useful tool. (Sirota)

3. The idea is to repurpose below-grade expressways in DC for stormwater detention. I was thinking of I-395 just east of downtown. It could be decked over in places, and then used to store excess stormwater. Is this too crazy? (Firestone)

4. The District of Columbia should prioritize and pursue a program of citywide traffic signal coordination. This would have several sustainability benefits. It would encourage steady, moderate-speed auto traffic, instead of jackrabbit dashes to the next intersection. It would reduce waiting and idling at signals and the pollution that results. Since it would help reduce aggravating congestion, it would be popular with the public and with Congress, and could have a good chance of receiving funding. Most importantly for transit, it could support a coordinated system of signal priority for streetcar, rapid bus, and regular bus service. This would help prevent transit vehicles from getting stuck in traffic, while at the same time maintaining a reasonable level of service for private autos.

Here is an example of exciting work being done in the industry:

“Adaptive Traffic Lights Could Achieve ‘The Green Wave’ ”  
<http://www.wired.com/wiredscience/2010/09/traffic-lights-adapt/>  
(Aurbach)

5. When creating new city fabric, it is important to design compact, well-connected street networks. However, we should also acknowledge that in much of DC, the issue is not designing a network, but reallocating the space within the existing (and well-connected) rights of way. So, for example, we can be widening sidewalks, installing cycle tracks, and inserting dedicated transit ways.

Parking and pricing. We've only begun to explore the possibilities of using prices to manage demand for curbside parking in DC. This applies to both the RPP program (where we could use prices to discourage multiple-car households and get residents to pay closer to the market value of the space we use) and metered parking, which we should price to encourage rapid turnover for short-term retail customers and better utilization of existing garage capacity.

6. A dense network of bicycle lanes should be implemented throughout Washington DC. By dense I mean every third or fourth street. On every sixth or seventh street, the bike lane should be fully separated from car traffic through median strips or other means. This network would transform commuting and the character of the city. Washington DC would be a model for other U.S. cities. (Herre)

7. DC should give greater consideration to the process of finding long-term environmental and social solutions to sustainability. In addition to really good ideas and the related funding to implement these projects, it will take the “buy-in” of many dispersed organizations and the long-term promotion of a strong vision. My suggestion is that DC undertake a strategic branding effort, one which might be leveraged through a high-profile idea competition. The city could articulate pillars of sustainability (i.e. urban planning and development, resource preservation, transportation innovations, and community lifestyle & engagement). From there, DC could assemble a well-respected panel of judges and allow firms and individuals to present design ideas, lifestyle strategies, or specific interventions. DC is one of the most visible cities in our nation – such a leadership role could be a catalyst for sustainable practices throughout the country. A strong campaign for sustainability might also lead to corporate sponsorship of new ideas and developer involvement in specific projects. (Sigal)

8. To accomplish a more Sustainable DC, my suggestion mainly involves the creation of pedestrian-only streets and the adoption of a zero-waste plan. I am using Adams Morgan as my case study (18th St. between Columbia and Kalorama). This neighborhood is known its vibrant nightlife. We could increase the lively environment during the day by doing the following:

- Close the street to vehicular access from Columbia Street to Kalorama Street. Change paving materials and adopt pervious ones.
- Add trees in the middle to provide shade and cool on summer days. Increase urban furniture (benches, lamps, and trash devices).

- Rehabilitate the tennis courts and other areas surrounding the Community Center to add greenery and drop-off areas for pedestrians. Bike racks and other urban elements to be incorporated.
- Rehabilitate the park at the corner of Champlain St. and California St.
- Restore historic buildings on 18th St. to bring back the character of the place. Currently all stores/restaurants are painted in different colors and fight among themselves to get the attention of the consumer.
- Adopt green roofs and ways for buildings to store rainwater. The collected water to be used for irrigation purposes.
- Install water filtration systems that could clean gray water and that could be reused for sanitary purposes.
- For the street network, particular vehicular transportation elements will have to be adjusted. Allow emergency traffic on the pedestrian-only 18th Street. Create underground parking under the existing tennis courts for extra parking.

Adams Morgan has a good mix of uses within walking distance and accessible to all users. A central gathering place is missing in this neighborhood. Closing a portion of 18th Street will give the community a place to enjoy and connect. This will also improve the sense of identity for the region. The new public space will have definite boundaries and the surrounding areas will promote the environment and livelihood of the place.

Zero waste: Create a culture for recycling by providing appropriate trash cans in the pedestrian area. Educate stores and restaurants to reduce their water usage and energy consumption, and generate zero waste by recycling and reuse of products to reduce the growth of landfills. (Molina)

9. Sponsor a series of public-space charrettes to provide alternative design and policy solutions for specific problem areas of the city plan. (Bothwell and Thadani)

10. A few quick thoughts re: DC sustainability strategies:

- DC should encourage neighborhoods and residents to plant community/allotment gardens either in public parks or in lots owned by city. The city should incentivize urban agriculture for private properties as well.
- The city should consider starting a "Shading Public Places" campaign to raise awareness of heat-island effect and to continue to beautify public spaces.
- The city should consider incentives/grants (on a first-come, first-serve basis) for homeowners to green their homes, including methods from encouraging drought-tolerant landscaping to installing Energy Star-rated appliances, etc. (Khoury)

11. DC should organize urban agriculture, community garden, and residential and commercial vegetable and fruit garden workshops, and develop a support system to promote the development, maintenance, and distribution of local food production. The support system should include provision of composted materials, regular debris pickup, water provision, and materials for basic infrastructure such as fencing and raised beds as needed.

All over the country, cities, and neighborhoods are rediscovering and reinventing their public space in extraordinary ways. This has not occurred on any scale in DC, where the overwhelming majority of parkland is owned by the federal government and is not well designed or programmed to meet the needs of residents, businesses, and visitors. A series of workshops, an appropriate allocation of federal and local dollars, and an implementation schedule to retrofit these spaces into beautiful, dynamic, and functional space for the enjoyment of all are needed.

Everyone needs and has a right to access and experience wilderness and agricultural areas. Provide accessible and affordable transportation choices that allow those with the least resources to get to and enjoy the bay, the rivers, the mountains, the woods, and farms. This will foster an understanding of the ecosystem and the food sources that support and nourish our lives.

Develop the capacity of DC residents and public officials to effectively participate in community processes for sustainability initiatives. This would involve holding community workshops organized and taught by subject experts at regular intervals across the city. These workshops would include subjects such as basic drawing and map-reading techniques, fundamentals of planning, urban design and form-based codes, and the history of the city plan; and would have inclusive meeting processes and decision-making techniques. (Bothwell)

### **PART 3: CHARTER OF THE NEW URBANISM**

The Charter of the New Urbanism provides a powerful and enduring set of planning and urban design principles for creating more sustainable neighborhoods, buildings and regions. It has provided guidance to policy makers, planners, urban designers and citizens seeking to address the impact of our towns and cities on the natural and human environment. Meaningful change has been achieved by simultaneously engaging urbanism, infrastructure, architecture, landscape design, construction practice and resource conservation in the creation of humane and engaging places that can serve as models.

#### **Charter of the New Urbanism**

The Congress for the New Urbanism views disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage as one interrelated community-building challenge.

We stand for the restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy.

We recognize that physical solutions by themselves will not solve social and economic problems, but neither can economic vitality, community stability, and environmental

health be sustained without a coherent and supportive physical framework.

We advocate the restructuring of public policy and development practices to support the following principles: neighborhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions; urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology, and building practice.

We represent a broad-based citizenry, composed of public and private sector leaders, community activists, and multidisciplinary professionals. We are committed to reestablishing the relationship between the art of building and the making of community, through citizen-based participatory planning and design.

We dedicate ourselves to reclaiming our homes, blocks, streets, parks, neighborhoods, districts, towns, cities, regions, and environment. We assert the following principles to guide public policy, development practice, urban planning, and design:

### **The region: metropolis, city and town**

Metropolitan regions are finite places with geographic boundaries derived from topography, watersheds, coastlines, farmlands, regional parks, and river basins. The metropolis is made of multiple centers that are cities, towns, and villages, each with its own identifiable center and edges.

The metropolitan region is a fundamental economic unit of the contemporary world. Governmental cooperation, public policy, physical planning, and economic strategies must reflect this new reality.

The metropolis has a necessary and fragile relationship to its agrarian hinterland and natural landscapes. The relationship is environmental, economic, and cultural. Farmland and nature are as important to the metropolis as the garden is to the house.

Development patterns should not blur or eradicate the edges of the metropolis. Infill development within existing urban areas conserves environmental resources, economic investment, and social fabric, while reclaiming marginal and abandoned areas. Metropolitan regions should develop strategies to encourage such infill development over peripheral expansion.

Where appropriate, new development contiguous to urban boundaries should be organized as neighborhoods and districts, and be integrated with the existing urban pattern. Noncontiguous development should be organized as towns and villages with their own urban edges, and planned for a jobs/housing balance, not as bedroom suburbs.

The development and redevelopment of towns and cities should respect historical patterns, precedents, and boundaries.

Cities and towns should bring into proximity a broad spectrum of public and private uses to support a regional economy that benefits people of all incomes. Affordable housing

should be distributed throughout the region to match job opportunities and to avoid concentrations of poverty.

The physical organization of the region should be supported by a framework of transportation alternatives. Transit, pedestrian, and bicycle systems should maximize access and mobility throughout the region while reducing dependence upon the automobile.

Revenues and resources can be shared more cooperatively among the municipalities and centers within regions to avoid destructive competition for tax base and to promote rational coordination of transportation, recreation, public services, housing, and community institutions.

### **The neighborhood, the district and the corridor**

The neighborhood, the district, and the corridor are the essential elements of development and redevelopment in the metropolis. They form identifiable areas that encourage citizens to take responsibility for their maintenance and evolution.

Neighborhoods should be compact, pedestrian-friendly, and mixed-use. Districts generally emphasize a special single use, and should follow the principles of neighborhood design when possible. Corridors are regional connectors of neighborhoods and districts; they range from boulevards and rail lines to rivers and parkways.

Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.

Within neighborhoods, a broad range of housing types and price levels can bring people of diverse ages, races, and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community.

Transit corridors, when properly planned and coordinated, can help organize metropolitan structure and revitalize urban centers. In contrast, highway corridors should not displace investment from existing centers.

Appropriate building densities and land uses should be within walking distance of transit stops, permitting public transit to become a viable alternative to the automobile.

Concentrations of civic, institutional, and commercial activity should be embedded in neighborhoods and districts, not isolated in remote, single-use complexes. Schools should be sized and located to enable children to walk or bicycle to them.

The economic health and harmonious evolution of neighborhoods, districts, and corridors can be improved through graphic urban design codes that serve as predictable guides for change.

A range of parks, from tot-lots and village greens to ballfields and community gardens, should be distributed within neighborhoods. Conservation areas and open lands should be

used to define and connect different neighborhoods and districts.

### **The block, the street, and the building**

A primary task of all urban architecture and landscape design is the physical definition of streets and public spaces as places of shared use.

Individual architectural projects should be seamlessly linked to their surroundings. This issue transcends style.

The revitalization of urban places depends on safety and security. The design of streets and buildings should reinforce safe environments, but not at the expense of accessibility and openness.

In the contemporary metropolis, development must adequately accommodate automobiles. It should do so in ways that respect the pedestrian and the form of public space.

Streets and squares should be safe, comfortable, and interesting to the pedestrian. Properly configured, they encourage walking and enable neighbors to know each other and protect their communities.

Architecture and landscape design should grow from local climate, topography, history, and building practice.

Civic buildings and public gathering places require important sites to reinforce community identity and the culture of democracy. They deserve distinctive form, because their role is different from that of other buildings and places that constitute the fabric of the city.

All buildings should provide their inhabitants with a clear sense of location, weather and time. Natural methods of heating and cooling can be more resource-efficient than mechanical systems.

Preservation and renewal of historic buildings, districts, and landscapes affirm the continuity and evolution of urban society.

### ***Acknowledgements***

*Part One of this document has been adapted from the Congress for the New Urbanism's "Canons of Sustainable Architecture and Urbanism," accessed from <http://www.cnu.org/canons>. Part Three of this document, "The Charter of the New Urbanism," is accessed from <http://www.cnu.org/charter>.*

*The Congress for the New Urbanism DC Chapter gratefully acknowledges and thanks all of its members and associates who have contributed to this document.*