###### **The Federal Environment Element**

POLICIES:

The following objective statement and policies are the adopted goals for the Environment Element of the Comprehensive Plan. Agencies should use them as guiding policies when planning, managing their facilities within the National Capital Region. Staff of the National Capital Planning Commission will use these polices as a guide in evaluating and crafting recommendations to the Commission on agency projects and for initiating new planning initiatives.

Objective: The Environment Element seeks to provide leadership in maximizing efficiency and increase sustainability by encouraging improved environmental design, development practices, and minimize the federal government’s impact on the environment.

SECTION A: Air Quality

Federal actions in the region should conform to the following policies:

1. Mobile sources of air pollutants should be reduced by:
* Encouraging federal, state, and local governments as well as private employers to support improvements to and utilization of public transportation systems.
* Further decreasing federal employee usage of single-occupant vehicles through operational policies, such as Transportation Demand Management techniques, and the location and design of workplace facilities.
* Encouraging further usage of alternative “clean” fuels (e.g., hybrid, fuel cell, compressed natural gas, and “clean” diesel fuels) and promoting the use of Alternative Fuel Vehicles (AFV’s). Alternative fuels are defined by Section 301 of the Energy Policy Act of 1992 (EPAct 1992) and may be modified by the Secretary of Energy.
* Support implementing alternative fueling locations that may be needed as the composition of the Federal transportation fleet changes to include more AFVs in the future.
* Encouraging the usage of aircraft that meet or exceed the current emission standards set by the U.S. Environmental Protection Agency.
1. Stationary sources of air pollutants should be reduced by:
* Minimizing power generation requirements, such as by utilizing best available “green” building systems and technologies.
* Utilizing non-polluting sources of energy (e.g., solar, geothermal, and wind).
* Encouraging the development and use of alternative energy sources to reduce the reliance on fossil fuels.
* Carefully controlling the incineration of waste materials, particularly those that may contain toxic substances.
1. Indoor air quality should be promoted by using environmentally friendly (“green”) building materials, construction methods, and building designs.
2. In response to Ozone Action Days, federal agencies should take measures to temporarily reduce the generation of emissions that contribute to ozone formation.

SECTION B: Water Quality

Federal actions in the region should conform to the following policies:

1. Strengthen storm water management practices for federal facilities and federal land to restore clean water, recover habitat, sustain fish and wildlife, conserve land, and increase public access

2. Avoid the use of pesticides, herbicides, fertilizers, chemicals, oil, salts, and other threats to prevent the pollution of groundwater and waterways.

3. Avoid actions that could have significant long-term adverse effects on aquatic habitats. Such actions include dredging and filling operations that disrupt and destroy aquatic organisms.

4. Preserve or restore predevelopment hydrology with regard to the temperature, rate, volume and duration of flow to meet a 95th percentile precipitation event or higher standard.

5. Require wastewater reduction through conservation and reuse in all new federal buildings and major federal renovation projects consistent with the Energy Independence and Security Act of 2007 and all other applicable policies.[[1]](#footnote-1)

6. Participate in regional agreements and programs that improve water quality and address watershed issues.

SECTION C: Water Supply

Federal actions in the region should conform to the following policies:

1. Encourage the natural recharge of groundwater and aquifers by limiting the creation of impervious surfaces, avoiding disturbance to wetlands and floodplains, designing stormwater swales and collection basins on federal installations, and using pervious surfaces wherever possible.

2. Promote water conservation programs and the use of water-savingtechnologiesincluding landscaping and irrigation strategies that conserve and monitor water consumption in all federal facilities.

3. Encourage the implementation of water reclamation programs at federal facilities for landscape irrigation purposes and other appropriate uses.

4. Reduce or eliminate the use of potable water for landscaping or water features.

SECTION D: Land Resources - Floodplains

Federal actions in the region should conform to the following policies:

1. Prohibit sensitive and hazardous activities (e.g., archival storage, or activities that generate potential pathogenic and toxic substances) in floodplain areas.

2. Encourage modification of existing developments to remove flood hazards and restore floodplain values and improve water management. If the necessary modifications cannot be accomplished, the buildings should be removed when feasible to allow restoration of floodplain values and the predevelopment hydrology.

3. Discourage investment in floodplain areas unless related to correcting flood hazards, restoring floodplain values, or supporting appropriate recreational or memorial uses.

4. If construction in a floodplain is necessary: (a) preserve natural drainage where possible; (b) elevate structures above base flood level; (c) use best available flood proofing and protection measures; and (d) return the site as closely as possible to its natural contours.

SECTION E: Land Resources – Wetlands and Watersheds

Federal actions in the region should conform to the following policies:

1. Avoid any physical or ecological destruction of or damage to wetlands and riparian areas.

Avoid development of areas that contain wetlands, including isolated wetlands. Enhance degraded wetlands to compensate for any wetland or other natural values lost as part of site development.

2. Avoid any intensive land uses within or adjacent to wetlands and riparian areas. Appropriately sized open space buffers should be maintained around wetlands or riparian areas.

3. Coordinate wetland activities with federal, state, and local government programs and regulations and with special programs such as the Chesapeake Bay Program.

4. Support local and regional watershed implementation plans and regulations.

5. Utilize the highest quality or standard in project development requirementsto minimize adverse impacts when project construction in a wetland is deemed to be the only practical alternative.

SECTION F: Land Resources - Soils

Federal actions in the region should conform to the following policies:

1. Discourage development in areas of identified high erosion potential, on slopes with a gradient of 15 percent and above, and on severely eroded soils. Excessive slopes (25 percent and above) should remain undeveloped.

2. Employ “Best Management Practices” to reduce the potential for soil erosion and the transport of sediment, consistent with state and local requirements.

3. Limit uses on highly unstable soils to passive recreation and open space.

4. Locate and design buildings to be sensitive to the natural groundwater flows. Avoid development in areas where mineral resources, such as diabase clay and shale, are located.

5. Identify and protect soil protection zones. As feasible, healthy soil should be conserved by mapping soils on site, performing tests of disturbed soils, conserving the healthiest soils in topsoil salvage areas, and limiting work activities to appropriate locations for building construction.

6. Create and utilize an erosion control plan that should be implemented during construction so as to prevent damage or loss of critical soils during and after site construction.

7. Avoid soil compaction during construction and maintenance.

8. Minimize tree cutting and other vegetation removal to reduce soil disturbance and erosion, particularly in the vicinity of waterways and steep slopes. When tree removal is necessary, trees, shrubs, and other vegetation must be replaced to prevent a net vegetation loss in the context of soil structure, with the objective being to minimize any reduction in the soil structure content, form (slope geometry and geologic content), and location. Existing vegetation and surrounding area plant communities can inform the project limitations, opportunities, and long term ecological goals. Work with soil bioengineers and plant experts, such as botanists, silviculturalists, or landscape architects to select the most appropriate plant species and amount of plant material.[[2]](#footnote-2) All work should adhere to the U.S. Department of Agriculture, *Natural Resources Conservation Service Engineering Field Manual* guidelines for the use and installation of soil bioengineering methods (USDA, 1992, 1995 and updates)[[3]](#footnote-3).

SECTION G: Land Resources - Vegetation

Federal actions in the region should conform to the following policies:

1. Preserve existing vegetation, especially large stands of trees. When tree removal is necessary, trees should be replaced to prevent a net tree loss to the project area being developed. An evaluation of potential tree loss will be made prior to any removal to determine if reforestation or afforestation represents reasonable compensation for the total value of the lost resource. Trees of 10" diameter or less will be replaced on a one-for-one basis. Significant trees (diameter greater than 10") will be replaced at a rate derived from a formula of the International Society of Arboriculture, or as required by the local jurisdiction tree replacement ordinance that will be applied to the federal project.

2. Incorporate new trees and vegetation to moderate temperatures, minimize energy consumption, and mitigate stormwater runoff. This includes the use of vegetation in the design and development of ‘green roof’ projects where feasible and consistent with local regulations.

3. Enhance the environmental quality of the National Capital by replacing existing trees where they have died or where they have been removed due to development. Tree replacement should adhere to the standards and guidelines of the local jurisdiction environmental/ecoregion requirements.

4. Maintain and preserve woodlands adjacent to waterways, especially to aid in the control of erosion, sediment, and thermal pollution.

5. Encourage the use of native plant speciesand remove invasive plants, where appropriate.

1. Protect and preserve all vegetation designated as special status plants (SSP)[[4]](#footnote-4).

7. Conserve plant communities native to the ecoregion of the site to contribute to regional diversity of flora and provide habitat for native wildlife. Protect and or restore areas containing native plant communities, and provide habitat corridors connecting to off‐site natural areas or buffers adjacent to off‐site natural areas for migrating wildlife.

8. Use vegetation to minimize building heating and cooling requirements. Strategically placed vegetation can lower energy use associated with indoor climate control.

9. Use trees and other vegetation to offset emissions of greenhouse gases from operations: plant and maintain trees and other vegetation to achieve long‐term storage of carbon dioxide following accepted protocols that ensure offsets are permanent and verifiable.

10. Support sustainable practices in federal landscape development to include but not be limited to:

 - Use of sustainable soil amendments,

 - Reduced irrigation runoff,

 - Reduced greenhouse gas emissions,

 - Use of Integrated Pest Management practices,

- Reduced potable water consumption, and recycling all

 organic matter

11. Maintain existing federal historic landscapes and plantings to protect cultural resource properties, extend the life cycle of existing plant stock, conserve resources, and reduce waste. Character‐defining[[5]](#footnote-5) invasive plants are to be actively managed to prevent spread.

12. Use of grass species as lawn should be limited to recreational areas so that major reductions in water, chemicals, maintenance energy, pollution, noise, and labor occur. Where turf grass is used, species and cultivar selection should reflect the local climate and growing conditions.

SECTION H: Land Resources – Wildlife Habitats

Federal actions in the region should conform to the following policies:

1. Discourage locating intensive land uses within or adjacent to designated and important wildlife habitats.

2. Encourage facility design and landscaping practices that provide cover and food for native wildlife.

3. Discourage development or significant alteration of areas used by migratory wildlife.

4. Encourage the restoration of degraded water and land habitats, in coordination with federal and local agencies.

5. Create and maintain inventories of species and natural resources and establish regional cooperation to protect natural areas and species.

6. Develop green infrastructure protection plans, with performance goals and measurements that protect critical natural wildlife habitats.

SECTION I: Human Activities – Environmental Justice

Federal actions in the region should conform to the following policies:

1. Identify and address any disproportionately high and adverse health or environmental effects on minority and low-income populations resulting from agencies’ programs, policies, and activities. Consider the indirect, multiple, and cumulative effects of actions on the cultural, social, historical, and economic characteristics of an affected community.

2. Analyze and consider, as prescribed by the National Environmental Policy Act, the demographics of a potentially affected area to determine whether such communities are characterized by low-income levels or high minority populations.

3. Establish effective public outreach programs so that the affected community can participate in decisions that will impact its future.

4. Prioritize and support the re-use of brownfield sites for federal or private-sector redevelopment.

5. Adhere to the federal guidelines where appropriate of the Department of Housing and Urban Development’s *Site and Neighborhood Standards* which strongly encourages development to be located in areas having access to amenities like transportation, educational, and health facilities.

SECTION J: Human Activities – Solid Waste and Hazardous Materials Management

Federal actions in the region should conform to the following policies:

1. Development projects should reuse or recycle salvaged building and organic materials to conserve resources and encourage procurements that increase the purchase and use of products containing recycled content.

2. Implement waste reduction measures that extend the life of waste disposal systems and reduce energy demand, including recycling programs, composting, and utilizing biodegradable products.

3. When incineration of hazardous materials is necessary, select a site with consideration of (a) the projected effect of atmospheric conditions and land features on wind patterns and the dispersal of emissions; (b) requirements for special engineering and facility design to ensure acceptable dispersion of air contaminants and compliance with air quality requirements; and (c) an assessment of the impact of hazardous materials on surrounding land uses.

4. Avoid locating and operating federal facilities that produce hazardous waste and toxic materials in heavily populated or environmentally sensitive areas (e.g., unstable ground, high-value groundwater recharge areas, floodplains, and wetlands).

5. Consider the following in designing and constructing facilities that use or produce hazardous materials, as part of a thorough regulatory review process: (a) physical characteristics of the site; (b) design procedures (e.g., underground tanks, EPA guidelines for cleaning/filtering materials that release toxins) to protect the quality of surrounding air, soil, and groundwater; and (c) operating conditions and adequate technology to handle, transport, treat, or dispose of waste.

6. Monitor and conduct periodic testing to detect and avoid leaks or spills from structures that hold hazardous materials (e.g., underground storage tanks, pipes, and retention areas), and remediate groundwater contamination.

7. Manage and dispose of hazardous wastes and toxic substances in a safe manner in accordance with national, state, and local regulations.

8. Implement procedures and appropriate design specifications to safeguard against accidental or terrorist related release of hazardous materials during usage, storage, and transportation.

SECTION K: Human Activities – Noise Pollution

Federal actions in the region should conform to the following policies:

1. Avoid locating activities that produce excessive noise near sensitive natural resources, and sensitive human uses such as residential areas, hospitals, and schools.

2. Locate, design, and construct improvements to roads, driveways, loading docks, and parking lots for federal facilities in a manner that is sensitive to existing adjacent land uses.

3. Ensure that construction activities comply with local noise ordinances, and coordinate with local government and the community to establish limits on the intensity and hours of noise generation.

4. Ensure that noise-generating activities at federal facilities, such as loading dock operations, festivals, and concerts, are sited and scheduled with sensitivity to the surrounding environment and community.

5. Maintain aircraft flight procedures for fixed-wing aircraft and helicopters to minimize adverse noise levels on noise-sensitive land uses.

SECTION L: Human Activities – Radiofrequency Radiation and Electromagnetic Fields

Federal actions in the region should conform to the following policies:

1. Evaluate the possibilities for joint-use of antennas and collocating antennas to reduce aesthetic impacts and limit the area of radiofrequency (RF) exposure. Federal agencies should also evaluate the cumulative effect of multiple transmitters at one location to ensure that the combined radiofrequency emissions continue to meet Federal Communications Commission guidelines.

2. Follow a practice of “prudent avoidance” of RF exposure. Federal agencies should reduce the exposure of workers and the public to RF fields where they may be prevalent, including those from power lines, antennas, equipment, and other recognized sources of RF and electromagnetic field emissions.

3. Incorporate adequate interior building attenuation measures to reduce RF field penetration into the habitable areas of buildings.

4. Require adequate communication of potential risks where occupational/controlled exposure may be present.

5. Utilize advances in technology, such as fiber optics, cooperative antenna technologies, and teleports; and monitor changes in standards and guidelines for the installation of antennas.

6. Minimize visual impacts of telecommunication antennas proposed for the rooftop of a building with historic value by using a variety of tools including but not limited to matching building colors and design, incorporating screens, moving antennas away from the building’s edge, etc. All measures should be coordinated with local historic preservation requirements.

SECTION M: Human Activities – Climate Change[[6]](#footnote-6)

Federal actions in the region should conform to the following policies:

1. Implement sustainable building design and transportation to address the challenges of climate change and advance projects that will minimize fossil fuel consumption and reduce greenhouse gas emissions.

2. Support research into the best practices to prepare for effects of climate change.

3. Establish compact, transit oriented development to reduce greenhouse gas emissions.

4. Pursue opportunities with vendors and contractors to reduce greenhouse gas emissions (i.e., transportation options and supply chain activities).

5. Decrease and where possible eliminate use of chemicals directly associated with greenhouse gas emissions.

6. Develop and implement innovative, agency-specific policies and practices to reduce scope 3 greenhouse gas emissions in agency operations.

7. Ensure all new federal buildings that enter the planning process in 2020 and thereafter are designed to achieve zero-net-energy standards by 2030.

8. Assist in the development of regional climate adaptation and resilience (also called reliability and risk management) plans to assist the National Capital Region localities with vulnerability assessments, adaptation planning, and emergency preparedness. Many climate impacts arise not specifically from climate hazards alone, but from a combination of factors.

9. Support the analysis of impacts on and risks to the region’s transportation infrastructure, buildings, and populations in low-lying areas, and in particular federal lands and facilities adjacent to the Potomac and Anacostia Rivers.

10. Institute aggressive development of energy districts in federal project construction involving multiple buildings and/or other physical assets. Increase renewable energy and renewable energy generation on agency property.

11. Ensure that climate change impacts are addressed in long range plans and in the review of development proposals for consistency with the federal interest, particularly:

* More frequent flooding
* Increased levels of pollutants in runoff
* Soil erosion
* Increased stormwater runoff
* Temperature extremes
* Impact to tree viability and vegetation (in urban areas)

SECTION N: Human Activities – Light Pollution

Federal actions in the region should conform to the following policies:

1. Sources of light pollution should be reduced by:

* Encouraging federal, state, and local governments to select the appropriate design illumination levels at their facilities.
* Use of Illuminating Engineering Society of North America (IESNA) certified cutoff or full-cutoff luminaires in the location and design of facility exterior lighting.
* Supporting further usage of alternative light sources, but preferential with regard to 4100K correlated color temperature fixtures and light emitting diode—LED lights, to promote better energy usage and more effective lighting.
* Providing controls, like time clocks, photo cells, motion detectors, or pager controls, to operate lights only when needed or to dim them as appropriate.

2. Exterior lights should be fully evaluated as to their effectiveness and receive periodic review for maintenance and energy use.

3. All exterior lighting should be switched off when not required for the purposes that it has been designed and developed for.

SECTION O: Human Activities – Energy Conservation

Federal actions in the region should conform to the following policies:

1. Federal agency efforts to reduce energy consumption at their facilities are to meet a variety of federal energy reduction requirements. These requirements include Executive Order (EO) 13514, the Energy Independence and Security Act of 2007 (EISA), the 2009 Omnibus Appropriations Act which codified EISA into law and should sustain compliance with energy reduction goals.

2. In support of federal law, the Commission will require implementation of sustainable buildings in the National Capital Region that achieve, in new or renovated agency building designs, reductions in fossil fuel-generated energy consumption by 55 percent compared to an FY 2003 baseline as reported by the U.S. EPA. The required reduction under law increases consistent with EISA, with designs for new buildings or major renovations begun in FY 2030 meeting reductions in fossil fuel-generated energy consumption by 100 percent compared to an FY 2003 baseline.

3. At least 30 percent of hot water demand in new or renovated federal buildings must come from solar hot water heating, if life-cycle cost-effective. Existing buildings with minor renovations must incorporate the most energy-efficient designs, equipment, and controls.

4. Upgrade existing heating, ventilation, and air conditioning (HVAC) systems at federal facilities to make them more energy-efficient using both appropriated budgets and the energy savings performance contracting mechanism to fund these upgrades.

5. Improve the environmental performance, and reduce costs in existing federal buildings through targeted energy improvements, such as:

* Optimizing the efficiency of heating, ventilation, and cooling (HVAC) systems with more efficient boilers, motors, and variable-speed drives.
* Reducing energy and maintenance costs by installing centralized energy management systems.
* Improving indoor air quality and federal worker comfort.

6. Undertake commissioning of new facilities at the start of the design process, to ensure the functions of the systems being designed meet the performance requirements. Commissioning during construction ensures that the equipment installed is the equipment specified and is installed appropriately.

7. Utilize recommissioning as a check to ensure that building systems are still functioning as originally planned, constructed, and delivered, and to identify where periodic operating procedure changes or drifts in control calibrations have affected building mechanical system performance in a previously commissioned building and maintain recommended energy efficiencies.

8. Locate and construct federal facilities to minimize energy loss in long-distance energy transmission. Adoption of Smart Grid solutions and technology including generation, transmission, distribution, and consumption will improve federal facility operations. Modify patterns of electricity usage including the timing and level of electricity demand. Increase the possibilities of distributed generation, bringing generation activities closer to end user locations and needs.

1. The Energy Independence and Security Act of 2007 (EISA) reinforces the energy reduction goals for federal agencies put forth in Executive Order 13423,Strengthening Federal Environmental, Energy, and Transportation Management, as well as introduces more aggressive requirements. [↑](#footnote-ref-1)
2. Lisa Lewis, Soil Scientist National Riparian Service Team USDA Forest Service, September 2000, *Soil Bioengineering An Alternative for Roadside Management, A Practical Guide* [↑](#footnote-ref-2)
3. Chapter 18, Soil Bioengineering for Upland Slope Protection and Erosion Reduction is one of the 18 chapters of the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Engineering Field Handbook, previously referred to as the Engineering Field Manual. [↑](#footnote-ref-3)
4. Special status plants (SSP) are those plants that are legally protected under the federal Endangered Species Act (ESA), or other federal and state regulations, along with species considered sufficiently rare by the scientific community to qualify as defined by the Council on Environmental Quality recommendations, *Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes.* [↑](#footnote-ref-4)
5. A quality of historic resources as defined by the National Historic Preservation Act, Section 106 and discussed under the Criteria of adverse effect. [↑](#footnote-ref-5)
6. Climate change, as used here, is a term established by the U.S. EPA and refers to major changes in temperature, rainfall, snow, wind, and storm patterns lasting for decades or longer and includes a significant and persistent change in the mean state of the climate or its variability. Both human-made and natural factors contribute to climate change as established by various federal agencies including the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the U.S. EPA, and the National Academy of Sciences. [↑](#footnote-ref-6)