

# West Palm Beach Green Task Force Recommendations



*June 1, 2010*

Revised April 1, 2010

*Sustainability is the condition where society meets the needs of the present without compromising the ability of future generations to meet their own needs.*

**Table of Contents:**

**Introduction**

**Eco-municipality and Natural Step**

**Environmental Management System**

**United Nations Urban Environmental Accords - Green Cities Declaration**

**Citywide Greenhouse Gas Inventory**

**Sustainability Themes:**

**Government Operations and Policies**

- **Green Procurement**

**Community Outreach and Empowerment**

**Urban Design, Green Building and Development**

- **Sustainable Construction**
- **Indoor Air Quality and Building Management**

**Urban Nature**

**Urban Agriculture and Community Gardens**

**Energy Conservation and Alternative / Renewable Energy**

**Water Conservation and Protection**

**Waste Management**

**Sustainable Transportation**

**Climate Change Resiliency and Adaptation**

**Appendices**

Revised April 1, 2010

## **Introduction:**

The West Palm City Beach Green Task Force was brought into existence by the Mayor as an all-volunteer citizens group charged with developing recommendations and assisting city government in developing goals that create and preserve a sustainable future for the residents of the City of West Palm Beach, Florida. The Task Force began their work on March 19, 2008 and completed their work June 1, 2010 by producing and delivering this comprehensive recommendations document to the elected representatives and decision makers of City government on behalf of the citizens of our City. In these 27 months the Task Force had 32 public meetings, and participated in two City sponsored sustainability conferences, to hear, learn, and gather a library of information from experts and the public. The recommendations document was written over (10?) public work sessions.

It is our intent that this set of recommendations be a living document that changes as technology and management techniques change and improve over time; and that our “greenprint” be reviewed and improved periodically by future citizen-volunteers on behalf of our community. Members of the City Green Task Force urge that this document provides not only the initial framework for government as it begins managing the various elements of sustainability but also as a call to action to the citizen-shareholders of our city as we collectively move from a culture of unsustainable resource consumption to one of balance, sustainability, and resiliency. Past generations have improved the human condition by providing us the health, conveniences, and quality of life we enjoy today. It is now our turn to ensure our high quality of life is fairly distributed to all, to improve upon our condition every chance we get, and to ensure that it lasts in perpetuity for future generations.

Lastly, we call upon our fellow citizens to learn how to live with less impact upon the earth we share together. Founding father Benjamin Franklin said: *“If you desire many things, many things will seem few.”* We are fortunate that we can live efficiently and with less material “stuff” and still have a very satisfying life. Reducing consumption reduces waste; recycling and composting everything you can, reduces waste further. Consider capturing rainwater in a cistern or rain barrel to irrigate your lawn and garden. This simple change reduces the energy required needed to treat and deliver water to your home and helps save our precious water resources. Consider planting native plants and creating a backyard habitat for birds and beneficial insects. Reduce or eliminate the harshest chemical and poisons from your home by purchasing “benign by design” products. Chemical toxicity does not necessarily correlate to a better product. Save money, reduce fuel consumption, and lower your carbon footprint by carpooling, walking, and riding a bicycle every once in a while. Its fun and improves your health.

Accept the challenge to incorporate the lifestyle changes necessary to benefit you, your family, and the environment. If we accept this challenge as a community we would accomplish the cultural shift we need to achieve a truly sustainable future.

Revised April 1, 2010

### **Eco-municipality and Natural Step:**

An **eco-municipality** is a municipal government jurisdiction that has adopted ecological and social justice values in its charter. These municipalities recognize that issues of sustainability are essential to all decisions made by government.

While many U.S. communities still carry out sustainability projects such as green buildings, affordable housing, smart growth, or any number of climate change driven development initiatives on a project-by-project basis, the eco-municipality model uses a *systems approach* that involves widespread community outreach, awareness-raising, and collaborative planning with its citizenry. All municipal departments work toward the same environmental, economic, and societal goals and seek collaboration on policy and actions with neighboring jurisdictions.

In becoming an eco-municipality, cities typically adopt a resolution that states the community's intention to become an eco-municipality and adopts the **Natural Step** sustainability principles and framework or the American Planning Association's (APA) sustainability objectives as their guide.

According to the *Institute for Eco-Municipality Education & Assistance* there are now more than twenty eco-municipalities in the U.S. that have officially passed resolutions adopting either the Natural Step or the APA sustainability objectives as official municipal policy.

The *Natural Step* sustainability principles and framework has the following objectives:

- Reduce dependence upon fossil fuels.
- Reduce dependence upon synthetic chemicals.
- Reduce encroachment upon nature.
- Meet human needs fairly and efficiently.

The Natural Step's framework for sustainability provides principles that are grounded in the sciences. This foundation combined with an understanding of the societal decision-making process makes the *Natural Step* framework a powerful tool in assisting a municipality's move toward sustainability. Because *Natural Step* principles are based on science they are **measurable** and progress toward goals **can be tracked**.

Revised April 1, 2010

The four APA sustainability objectives stress planning and **expand slightly** on the *Natural Step* objectives. They are:

- Reduce dependence upon fossil fuels, **extracted underground metals and minerals**.
- Reduce dependence on chemicals **and other manufactured substances that can accumulate in nature**.
- Reduce **dependence on activities that harm life-sustaining ecosystems**.
- Meet **the hierarchy of present and future** human needs fairly and efficiently.

The APA *Planning Actions toward Sustainability Guide* is included in this document as **Appendix A**.

***The City Green Task Force recommends that the City of West Palm Beach become an eco-municipality by officially passing a resolution adopting the Natural Step and / or the APA sustainability principles and objectives as official municipal policy and add language in the City's charter to reflect the community's ecological and social justice values.***

### **Environmental Management System:**

The most effective way to implement environmental and sustainability goals is to develop an *Environmental Management System* (EMS) based on widely published and accepted standards. The International Organization for Standardization (ISO) has developed over 18,000 international standards on a wide variety of subjects for business, government, and society.

The **ISO 14000** family of standards is one of the ISO's best known standards. It addresses the various aspects of environmental management. For example: ISO 14001 provides the requirements for an EMS; ISO 14004 gives general EMS guidelines, and ISO 14064 standards provide tools for assessing and supporting greenhouse gas reduction and emissions trading.

For a detailed summary the ISO 14000 family of standards please refer to: [http://www.iso.org/iso/theiso14000family\\_2009.pdf](http://www.iso.org/iso/theiso14000family_2009.pdf)

The **Plan – Do – Check – Act** (PDCA) cycle is the operating principle behind ISO's management system standards and is described briefly below:

**Plan** – establish objectives and make plans (analyze your organization's situation, establish your overall objectives, set your targets, and develop plans to achieve them).

Revised April 1, 2010

**Do** – implement your plans (do what you planned to).

**Check** – measure your results (measure/monitor how far your actual achievements meet your planned objectives).

**Act** – correct and improve your plans and how you put them into practice (learn from your mistakes and improve your plans in order to achieve better results next time).

ISO 14001 is essentially a system designed to help communities and organizations meet their environmental obligations and reduce the impact of their operations on the environment. Counties and municipal jurisdiction typically oversee a number of separate facilities and operations and an EMS can be used as a framework to help these operations improve their environmental performance and make greater use of pollution prevention approaches.

The ISO 14001 standard requires that a community or organization put in place and implement a series of practices and procedures that, when taken together, result in an environmental management system. ISO 14001 is not a technical standard nor does it set prescribed standards of performance for organizations. The intention is to provide a **framework for a holistic, strategic approach** to the organization's environmental policy, plans and actions.

In the context of ISO 14001, **certification** refers to the issuing of written assurance (the certificate) by an independent external body that it has audited a management system and verified that it conforms to the requirements specified in the standard. In the U.S. the certification body should be accredited by the ANSI-ASQ National Accreditation Board.

***The Green Task Force recommends that the City of West Palm Beach develops and implements an ISO 14001 Environmental Management System to comply with applicable environmental and sustainability related legislation, regulations, ordinances, policies and civic goals. The City should have the EMS audited and certified by an independent body to confirm that it conforms to ISO standards. The auditing and certifying body should be an ISO 17021 compliant accredited certifying body.***

Revised April 1, 2010

### **United Nations Urban Environmental Accords - Green Cities Declaration:**

The themes in this recommendations document follow the framework of the United Nations Urban Environmental Accords - Green Cities Declaration. The Urban Environmental Accords cover seven environmental categories that cities can address to enable sustainable urban living and improve the quality of life for urban dwellers. The seven categories are: energy, waste reduction, urban design, urban nature, transportation, environmental health, and water.

The Accords lay out 21 practical actions cities can take to meet the needs of the present without compromising the ability of future generations to meet their own needs, or the health of the planet. The 21 actions are included in this document as **Appendix B**.

Signatory cities shall work to implement the Urban Environmental Accords. Each year, cities shall pick three actions out of the list to adopt as policies or laws. (21 actions at 3 a year = 7 years to implement)

***The City Green Task Force recommends that the City of West Palm Beach become a signatory city to the United Nations Environment Programme - Urban Environmental Accords in order to provide a framework for prioritizing the City's environmental initiatives as well as establishing a national recognizable benchmark for its achievements.***

### **Citywide Greenhouse Gas Inventory:**

***NEED TO WRITE MORE HERE – Recommend the City conduct a GHG inventory as soon as possible***

A greenhouse gas inventory is an accounting of the amount of greenhouse gases emitted to **or removed** from the atmosphere over a specific period of time (e.g., one year). A greenhouse gas inventory provides information on the activities that cause emissions and removals, as well as background on the methods used to make the calculations. Policy makers use greenhouse gas inventories **to track emission trends, develop strategies and policies and assess progress.**

The principal greenhouse gases that enter the atmosphere from human activity are: Carbon Dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous Oxide (N<sub>2</sub>O), and Fluorinated Gases / Ozone-depleting substances (CFCs, HCFCs, and Halons)

Prioritization of this documents recommendations (to get the greatest reductions of GHG by sector)

Reference State of Florida GHG reduction target policy (executive order not legislative) and the Mayors Climate Change Agreement

Revised April 1, 2010

**Government Operations and Policies:**

- There should be a permanent standing citizens Sustainability (Advisory) Committee
- The City should support and fund the Office of Sustainability by staffing it at an appropriate level to assure adequate coordination, including but not limited to, the departments of Planning, Zoning, Public Works, and Building Departments, synergizing the City's Green Initiatives. A core function of the Office of Sustainability should be a robust and continuous effort to seek grant and private contributions to enhance its initiatives.
- The City **should** maintain and empower its inter-departmental Green Task Force. It **should** meet quarterly, or **more often** as appropriate, to evaluate the effectiveness of the City's operations and policies relative to energy conservation and sustainability. Other duties **should** include but not be limited to:
  - Develop office and administrative procedures "green manual" with milestones, goals and timelines, including meeting or exceeding the State's recycling target of 75%.
  - Establish an Environmentally Preferred Procurement Policy (EP3) including but not limited to:
    - Paper content requirement of 30% post-consumer waste paper products.
    - Environmentally preferable computer products.
    - Verification and certification of recycling electronic waste in an environmentally sustainable manner.
    - Cleaning Products / services requirements that do not impact negatively upon the Indoor Air Quality or health of occupants (see Indoor Air Quality Building Management Section).
    - Preference Energy star appliances and equipment when suitable and not to the detriment of the equipment's purpose.
    - Purchase furniture that does not contain CFC's or HCFCs and/or wood products certified by the Forest Stewardship Council whenever possible.
  - Develop criteria for evaluating governmental services contracts that provide points to "green certified" businesses.

Revised April 1, 2010

- Establish sustainable business operation guidelines for businesses submitting proposals or who do work with the City such as preferred non-peak drop off times for responses or alternate delivery and service work schedules.
- Develop data management system to monitor and track progress towards reaching GHG reduction goals with an Annual Report of City's emissions. This should be accessible to the public in some format.
- Create a prioritized list of capital improvements projects (dictated by GHG Inventory) to be integrated into the Capital Improvements Element of the Comprehensive Plan which focus on energy retrofits including City buildings, non-office facilities, recreational facilities, and transportation facilities.
  - Prioritize energy savings based upon largest energy savings first.
  - Develop public street lighting and building lighting retrofit priority strategy and timetable.
  - Establish a schedule of retrofits for computer equipment and appliances so that they meet or contribute to agreed upon energy conservation goals.
  - Develop adaptation and resiliency strategies coordinated with scheduled capital improvements.<sup>1</sup>
- Develop a financial implementation strategy including grants, financing districts, and revolving loan funds for commercial and residential properties.
- Support energy management approaches such as energy performance contracting to assure City facilities can be upgraded for more energy efficiency.
- Coordinate with the Solid Waste Authority to explore opportunities for centralized pickup of hazardous and electronic materials.
- Hold City-initiated conferences, workshops, or events at "Green Lodging" certified hotels as applicable.

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<sup>1</sup> Establish targets such as those from Intergovernmental Panel on Climate Change recommendations that analyzed 3 base cases for civil works projects affected by sea level rise rates of 1.2, 1.5 and 4.9 feet by 2060.

Revised April 1, 2010

- Reduce City's employee vehicle miles traveled and vehicle hours traveled. Facilitate internal ride share and carpool information exchange:
  - Adopt a city rideshare policy manual. Implement GIS-based employee rideshare program and electronic bulletin board.
  - Develop and adopt a high-occupancy vehicle incentive program through preferred parking incentives, etc.
  - Adopt a City policy for all City operations to reduce miles traveled and hours traveled by considering efficiencies in scheduled meeting times and locations.
  - Develop a vehicle idling policy for all applicable City vehicles.
  - Evaluate the provision of alternative and / or fuel efficient vehicles (such as Segways or Hybrid Vehicles) for trips made by City employees. Develop a fleet retrofit schedule to either hybrids or conversions to compressed natural gas vehicles. In the fleet retrofit strategy, prioritize first the change out of less fuel efficient vehicles. Assure adequate recharge or plug in facilities to service fleet. Develop return on investment and cost comparison analysis of same. The City should use biodiesel for their fleet of diesel vehicle and should promote biodiesel sales within the City at gas stations
  - Further research and provide recommendations regarding bicycle amenities for City staff as part of facilities planning and capital budget processes.
  - Further research and make a recommendation regarding "Shuttle" between the City and its City Offices.
  - Further research and provide future report on employee serving commercial uses and personal services at City facilities.
  - The City should develop and publish guidelines for the purchase of gasoline operated equipment. The City should adopt a policy that replaces gasoline engine lawn equipment with electric where feasible. The City should ban the use of internal combustion engine leaf blowers. The purchase of all internal combustion engine equipment should be subject to a high standard where the most efficient and least emitting are purchased.
- Review employee scheduling and measures to reduce energy use.

Revised April 1, 2010

- Implement compressed 4-day work week for City employees where possible. Evaluate (and adopt if feasible) a furlough policy.
- Adopt a City telecommuting policy.
- Establish a City purchasing program whereby the City would leverage its purchasing power for certain sustainable items e.g. LED light bulbs to take advantage of government materials rates so citizens could then purchase these items from the City.
- As an alternate to the above proposal, the City can assist in the creation of local neighborhood item and service purchasing cooperatives. This would allow groups of citizens to purchase sustainable items or services e.g. solar water heater installation at a volume discounted rate.
- Develop a method for the City to participate and profit from the carbon offset sales market. A communitywide greenhouse gas inventory would have to be completed based upon a protocol acceptable to enter into a market.
- Require all City staff to attend sustainability training; include sustainability in new employee orientation. [Implement a modular computer-based training solution as part of the Environmental Management System for employees, contractors, and, where applicable, permit seekers.](#)
- Sustainability challenges for City Departments: set up competitions / rewards / recognition to promote CO<sub>2</sub>/ energy / water savings.

**Green Procurement:**

*NEED TO WRITE SOMETHING HERE*

Revised April 1, 2010

**Chemical Policy:**

- Develop standards for **integrated pest management practices and alternatives to chemical pesticides**. (we need to define and elaborate) (benign-by-design chemicals)
- Adopt a “Green Housekeeping Policy” to improve the health and safety of building occupants, visitors, and maintenance workers based on the following principles :
  - Require cleaners procured under janitorial services contracts to have independent, non-profit third-party certification through the Green Seal Standard for Industrial and Institutional Cleaners (GS-37 or other appropriate standard). Products shall be free from toxic and environmentally damaging chemicals and chosen based on the following considerations:
    - Toxicity to, and chemical sensitivity for, both humans and aquatic life
    - Biodegradability
    - Corrosivity / pH
    - Volatile organic compounds levels
    - Availability in concentrated form
    - Utility for multiple cleaning purposes
    - Additives that may have an effect on biodegradability, worker health, and aquatic life.
    - Fragrance level, including recommendations for fragrance- free projects.
  - Products should be in refillable or recyclable containers in order to minimize waste generation.
- Reduce or eliminate lake chemicals to the extent possible because they generate organic wastes that sink to the bottom causing eutrophication. Undesirable lake vegetation should be removed mechanically or naturally.

Revised April 1, 2010

**Materials Policy:**

- Maintain a list of standards, manufacturers, and products for use in achieving targets set forth below.
- Create VOC standards for adhesives, sealants, coatings and paints, and composite wood products including agri-fiber products, hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building.
- Establish criteria for carpet and carpet cushion systems. (we should consider recommending NOT using carpet in City buildings)
- Investigate the feasibility of prohibiting HVAC, refrigeration and fire suppression systems that contain CFCs, Halons or HCFCs and review exceptions for small HVAC systems consistent with the Florida Building Code.
- Establish moisture control standards for buildings and the content of building materials. (Is there a published standard?)
- Where mechanical room walls are exposed to a living area, the insulation must be at least an R-11 rating. (explain why)
- Establish standards for furniture and seating systems. (What kind of standards?)

Revised April 1, 2010

### **Community Outreach and Empowerment:**

The growth and empowerment of our City is directly related to education and innovation.

Because educating students, residents, business owners, and government personnel to practice green and sustainable habits is vital to becoming a truly green city, community outreach programs are necessary to increase public awareness of environmental issues. Various incentives must be implemented to speed up the process.

Three co-dependent aspects to the educational system include educational opportunities, green jobs (both green collar and green tech), and renewable energy financing. The City must address all three aspects in order to effect positive change.

Forming partnerships with local education and conservation institutions will promote sustainability, in addition to saving the City's money. Since people learn in different ways, the availability of multiple educational resources will stimulate the learning process, promoting cultural change. Social equity is paramount.

Green industries grow the local economy. Therefore, green job training and retraining must be priority issues for the City. Funding green initiatives will create an active job market in environmental careers. Also, implementing internship programs (paid and volunteer) will enable the City to help mentor our future green leadership.

Encouraging renewable energy financing must be done by setting an example, beginning with city funded projects and involving city businesses.

- Develop citywide supported environmental education programs for all ages, areas, and groups by utilizing all available media. All communities must have education programs to establish (**reinforce**) social equity. Bring the educational program to the neighborhood. Involve City businesses in greening their offices and/or businesses (e.g.: *ICLEI Green Office Challenge*). Provide incentives through awards, recognition, and prizes.
- Create a "Grow local/buy local" logo. Provide education on CO<sub>2</sub> savings and the health benefits of eating locally and organically. Replace highly packaged foods. Offer City activities to educate citizens, explaining the difference between natural and organic- expounded on buy local program.
- Diversify educational programs. Use hands-on, workshops, lectures, etc., in addition to TV18.

Revised April 1, 2010

- Form [education and green job training](#) partnerships:
  - Contact local education/ conservation institutions to partner in promoting sustainability. Implement active internship programs, both paid and volunteer.
  - Encourage local colleges and universities to establish environmental (green) courses, curricula, and degrees.
  - Encourage building industry associations to offer education, training, and resources to contractors and design professionals regarding the City's green building requirements and initiatives.
  - Draw upon international expertise by forming "Sister Cities" for sustainability; also with traditional and non-traditional institutions.
- Adopt the state's recycling target of 75%. Expand the current recycling program with alternate methods of pickup and increase public awareness. Recommend that school classrooms have recycling programs and compost food waste.
- Build an education/recognition component into all City funded projects highlighting sustainable activity. For example, make it a requirement for contractors/vendors to report on and promote sustainable activities and CO2 reduction by using signage, interactive touch screens, etc. Create a marketing program that further educates the public on the environmental and cost benefits of energy/water efficiency, sustainable construction, and improved air water quality.
- Make E4 an annual event, highlighting the results of Annual GHG/Energy Efficiency Report. Provide copies of the report to citizens and make available for distribution online. Explore options for energy audits for residents as part of a learning process, free of charge. Provide workshops regarding conducting an energy/water audit along with other informational material and contact information.
- Develop a well orchestrated series of public service announcements utilizing all available media, including TV and the web, to promote sustainable activities and programs.
  - Publish monthly energy use in City on website. Utilize water bills (website too) to distribute conservation information.

Revised April 1, 2010

- Create (within the City's green area of the website) a personal carbon footprint calculator, list tips for maintaining cars and homes (keeping tires inflated etc.) to reduce emissions and energy consumption. Help citizens understand and develop their own plans to promote cultural change. Also provide links to financial resources for going green.
- Work with local banks to educate and to encourage lending for sustainable projects, marketing such programs through the City's website.
- Encourage citizens to reach out to their state and federal legislative delegations to support energy/water efficiency, renewable energy, and sustainable principles in legislative proposals.
- Include artistic expression of green design (eco art) in the educational process.
- Establish mentoring programs for businesses and neighborhoods which include incentives.
- Provide green job training for unemployed.
- Incentivize educational programs through rewards and access (free programs=rewards).
- Sponsor / support community education programs that are non-City, e.g.: *Envirothon*.
- Utilize City Library for sustainable education.

***Adopt a policy that creates environmentally beneficial jobs in low-income neighborhoods. By 2010, launch one or more "Green Job Training Center(s)" to help alleviate poverty and prepare marginalized persons for work in "green" enterprises.***

Revised April 1, 2010

**Urban Design, Green Building and Development:**

*NEED INTRODUCTORY LANGUAGE HERE*

***The City Green Task Force recommends that the City of West Palm Beach adopt urban planning principles that advance higher density mixed use, walkable / bikeable neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological reconstruction.***

***The Green Task Force further recommends that the City of West Palm Beach, upon completion of the appropriate community-wide inventories, prioritize and implement the following initiatives:***

- **Promote Regenerative Design** (we need to define this) with A) energy conservation, B) air quality standards/requirements, and C) reduced impact on infrastructure.
  - Develop disincentives for “greenfield” development and provide incentives for infill development (The City needs to utilize existing developed lands in urban areas e.g. brownfields, vertical development, etc.
- Create economic and similar other incentives to encourage environmental (green) businesses to relocate to the City.
- Assess total area of built environment and determine percentage mix of uses, energy consumption, greenhouse gas emissions, and vehicle miles traveled. This should occur through a community-wide greenhouse gas inventory based on an acceptable protocol including the following (why not all?) land uses:
  - Residential
  - Commercial
  - Industrial (this should be a particular focus due to the high energy consumption and ventilation issues associated with industrial buildings)
  - Institutional
  - **Other**
- Develop design criteria with specific green building characteristics and requirements as they pertain to diverse land uses regarding new construction and “major renovations”. Consult the Florida Building Code for consistency in requirements of

Revised April 1, 2010

new construction and major renovations of specific systems such as mechanical systems, additional space, and electrical systems.

- Review definition of “major renovations” to determine if modifications need to be made, with particular emphasis on completing such renovations in conjunction with electrical code upgrades.
  - Ensure that any zoning overlay criteria developed for sustainable purposes respects the City’s historic districts and individually **designated** historic sites, and is careful to balance green building criteria with historical preservation needs.
  - Review approval process for renovations on historical properties and create a checklist for possible “green” renovations. Streamline approval process where feasible. Review Historical Preservation Property Tax Exemption program to encourage “green” renovations and retrofits.
  - Overlay criteria must include reuse, recycling, and waste management policies and create incentives/disincentives for achieving certain sustainability targets.
  - Incorporate appropriate aesthetic controls which recognize green building principles and materials.
  - Explore options for a “sustainability review committee” to implement the various overlay criteria and designations similar to the Historic Preservation Committee.
  - Review ad valorem policies to assure that the implementation of green retrofitting projects does not increase tax obligations in such a way as to negate the upfront energy savings.
- Monitor rule development of **HB 697 Rule** by the Department of Community Affairs, in particular the definition of energy conservation areas where targeted retrofitting programs can be prioritized.<sup>2</sup>

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<sup>2</sup> The HB 697 Implementation Rule is still under development as of this writing.

Revised April 1, 2010

- Utilize land use and parking strategies that reduce reliance on automobiles, including but not limited to, short- term over long-term parking, promotion of park and ride and bike and ride areas and shared parking facilities, consistent with, and in furtherance of, the Transportation Demand Management Initiative.
- Expand and enhance the Transportation Demand Management Initiative with a focus on reducing single occupancy vehicle use.
- **Review** streetscaping requirements to assure that they facilitate the concept of “complete streets”. ([define complete streets](#))
- When evaluating mixed use developments, develop review criteria focusing on increased density where appropriate, connections to transit, shared parking, and reduction of vehicle reliance and vehicle miles traveled.

Revised April 1, 2010

**Sustainable Construction:**

Define sustainable construction and sustainable development including goals for these concepts.

- Establish a recognition program building upon existing green building certification programs for new construction and renovation. Feature on website and social networking. Develop appropriate signage for projects achieving rating. Assure the program includes principles from the Indoor Air Quality and Building Management section of these recommendations.
- Require a commitment for permit applicants to report on energy use for up to five years to qualify for City's green building designation.
- Explore increased targets for Energy Efficiency above those in the Florida Building Code: 15%; 30%; 50% more efficient than the most current state code requirement or national IECC (residential) & ASHRAE 90.1 (commercial) standard. Establish a percentage target for energy efficiency based on the point allocation system permitted by the Florida Code.
- Develop and require implementation of green building code provisions beyond just the downtown area such as, but not limited to, shading buildings with native vegetation, use of green roof or "white roof" systems, designs using building shapes and orientation to reduce heat gain, shading parking lots with native vegetation, pervious pavement, and providing more insulation than the minimum. Establish standards requiring the consideration of such principles when a building is having the roof either substantially or completely retrofitted.
- Develop code provisions to encourage (or not prohibit) renewable energy projects. Incentivize developments that include renewable projects that achieve a certain target.
- Develop code provisions and requirements for building energy efficiency improvements in leased spaces and properties (commercial and residential), and require that energy efficiency and usage information is provided to tenants.
- Develop energy efficient affordable housing (single and multi-family) recommendations guidelines. Coordinate efforts with the City's Community Redevelopment Authority.
- Look at requiring publication of energy efficiency rates and energy audits for rental properties.
- Explore the viability of requirements and/ or incentives for green roofs.

Revised April 1, 2010

Have a pilot project to study the effects and / or incentivize private entities to build outdoor green walls and indoor bio-walls. (Indoor bio-walls are used to clean air at the intake of an air handling system).

- Work with FPL to research incorporation of “smart metering” and “smart load management” devices into land development code.
- Define Energy Star ratings/Review Energy Star Building Standards and establish minimum Code criteria for new construction or major renovations requiring certain appliance energy ratings such as achieving an Energy Factor >0.82 OR a thermal efficiency of at least 90% (same target as Federal tax rebates).
- Create incentives to foster and encourage sustainable development for all types of building usage classifications:
  - Establish fast track permitting process for green projects based upon criteria to be developed that build upon nationally recognized green building certification systems. When development applications increase as the real estate market rebounds, assure there is a process in place to maintain the fast track approval process. Focus on a target for permit approval, not just targets for review. Also explore concurrent processing through various City review boards and utilize the pre-application meeting process to facilitate expedited review.
  - Examine Code and Comprehensive Plan for opportunities to allow appropriate flexible floor area ratios, building densities, parking requirements (or reductions), and other incentives.
  - Assist marketing projects that achieve the above referenced “City green certification” if necessary.
  - Review fee structures (over a certain level such as \$10,000) to create incentives (and other disincentives) on permits based on the scoring process employed in the Florida Energy Code. Assure permit fees cover costs of processing applications, but look for reductions where available.
  - Make energy reduction from an established baseline of the building type be a component of the Green Expedited Permit Review.
  - Develop a program for no or reduced cost energy and water efficiency audits in residential properties. Explore partnerships with local businesses and utilities for same.

Revised April 1, 2010

- Create a low interest revolving loan fund for energy efficient retrofits. Explore establishment of a special district to encourage and provide a financial mechanism for same.
- Support initiatives and alternatives allowing property owners to creatively finance energy retrofitting or renewable energy projects. Create an annual event to brief the construction industry on the City's green building code and gain feedback from the construction industry on green building techniques.
- Address sustainable construction principles on City facilities:
  - Add Chapter 255, F.S., requirements of constructing to LEED, Florida Green Building Coalition, NAHB or Green Globes standards for City facilities.
  - Develop sustainable building criteria for capital improvements that are less than whole buildings or are non-occupied facilities, such as infrastructure.
  - Track greenhouse gas reductions for construction. Include these metrics in the City's Annual Report on greenhouse gas emissions.
- Develop a **waste management policy** for construction projects. Determine the feasibility of submittal of a waste management plan as part of the application review process. [\(should this go under Government Operations and Policy section?\)](#)

Revised April 1, 2010

**Indoor Air Quality and Building Management:**

Due to the human health issues associated with Indoor Air Quality, the Green Building Sub-Committee recommends that all **15 points of the Leadership in Energy and Environmental Design (LEED)\*** be required for new construction. This includes the two Regional Pre-requisites. Other acceptable third- party green building rating systems can be reviewed to accomplish the same goal.

The City should also review certain types of uses, such as industrial or marine-oriented land uses, to determine if a more thorough set of air quality and building management standards is warranted.

Members of the Sub-Committee have done a significant amount of research on specific Indoor Air Quality standards, and, where appropriate, the Sub-Committee's recommendation may actually suggest an appropriate standard.

**\*Provide as an appendix and annotate or include in the intro to this section**

Definitions to be added to the land development regulations:

- Agri-fiber products
- Composite wood products
- HVAC Units, small/large to properly develop refrigerant standards for small and large systems.
- MERV: Filter minimum efficiency reporting value, based on ASHRAE 52.2-1999.
- VOC: Volatile organic compound is a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen, and other elements.

**Pre-Construction:**

- Require construction / demolition debris to achieve a 90% - 100% recycling rate as a matter of policy.
- Explore requirements for a pre- and post- construction indoor air quality management plan.
- Create a standard for ventilation during construction based on an appropriate number of air changes per hour.

Revised April 1, 2010

- Create standards to protect HVAC system openings from dust during construction.
- Establish standards for use of the permanent HVAC system during pre-construction and air filter standards and change out requirements for pre- and post-construction. Establish standards for filter replacement immediately prior to occupancy. Evaluate requirements for materials used to create duct systems, such as metal, to improve ability to clean and maintain the systems.
- Establish standards to protect onsite absorbent materials from moisture, including removal and replacement of any materials with evidence of moisture or mildew infiltration.
- Investigate requirements for storage of odorous and high VOC-emitting materials off-site to allow odors and VOCs to disperse, including installation of odorous and high VOC-emitting materials prior to those that are porous or fibrous.
- Create standards for cleaning of ducts before occupancy and coverage of all duct and other related air distribution component openings to reduce the amount of debris or dust which may collect in the system.

**Construction & Post-Construction:**

- Establish post-construction building flush-out standards with continuous ventilation from all air handling units based on duration, minimum temperatures, and humidity levels. Prohibit building “bake out” by increasing the temperature of the space.<sup>3</sup> Include ventilation monitoring requirements. Create incentives for increased ventilation.
- Minimize and control pollutant entry into buildings by establishing permanent entryway system requirements and methods.
- Develop procedures to exhaust and isolate rooms where activities produce hazardous fumes or chemicals, such as garages, janitorial or laundry rooms, and copy or printing rooms. Procedures could include requirements for exhausting spaces, self-closing doors, and deck to deck partitions or a hard ceiling.
- Develop standards for electromagnetic management of buildings.

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<sup>3</sup> Section 4 through 7 of ASHRAE Standard 62.1-2007 or more updated standard.

Revised April 1, 2010

- Prescribe certain air filtration criteria for buildings.
- Establish lighting and thermal control system requirements and verification of same.
  - Adopt standards for day-lighting requirements and create incentives to encourage same.
- Establish thresholds for smoking in relation to building entryways.<sup>4</sup>

Establish proper air delivery throughout homes and buildings by increasing standards for mechanically or naturally ventilated spaces.

- Joints in air distribution systems should be sealed with duct mastic.
  - Duct leakage shall be less than or equal to 5% of square footage served by unit or less than or equal to 10% if a fan flow high speed system is installed.
  - Exterior ventilation systems should be installed to perform at an appropriate standard.
  - Options and incentives should be provided for duct-mounted electronic/electrostatic air cleaners.
  - Central vacuum systems should exhaust outside.
  - Investigate the feasibility of requiring HVAC plenums on the supply side to be constructed of sheet metal with external insulation.
- Develop CO<sub>2</sub> monitoring parameters based on building type and occupancy. One detector should be hardwired per 1,000 square feet where the home has an attached garage or any combustion appliance.
  - Require thermal and indoor environmental monitoring targets and monitoring plans for their achievement.

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<sup>4</sup> USGBC uses a 25' standard on tenant spaces. USGBC has additional standards in multi-family housing and tenant spaces.

Revised April 1, 2010

### **Urban Nature:**

West Palm Beach has an obligation to environmentally enhance its open spaces and elevate citizen appreciation for the planet's peril. The City can take specific actions to improve environmental quality, combat global warming, and beneficially transform the environmental sensitivity of its residents. There are a number of ways we can achieve this effort. The health and sustainability of our natural areas are contingent upon our becoming more aware of what it means to be "green."

Unfortunately, a huge portion of our natural habitat has been destroyed because of development. One way we can reverse this long-standing trend is by reducing the vast areas of sod and replacing it, wherever possible, with native plants and trees. Grass has a very poor ecological return. It is a detriment to our water reserves and requires fertilizer and mowing. The City should discourage vast stretches of grass in our city parks and private landscapes.

Non-native plants are water hungry as opposed to drought tolerant natives. The City should only use nurseries that sell natives. Though people have been led to believe that natives are more expensive, the reality is that natives are far more cost effective in the long term. Natives can better withstand hurricanes, so they do not have to be replaced like non-natives, e.g. enormous loss of trees from Frances in 2004. Trees lost through death and destruction should be replaced by natives.

It also has been proven that native plants and trees require less maintenance. Native plants from local growers using locally harvested seed can greatly reduce the use of fossil fuel burned to transport, grow, and maintain landscape plants. A minimum amount of attention is required to maintain optimal appearance and health when planting natives. Densely planted trees, shrubs, and ground covers absorb rainfall. Native plants are better at filtering water that enters ponds, lakes, and riverfront (e.g. the intracoastal). More carbon dioxide is removed from the atmosphere with dense plantings of deeply rooted native plants. Landscapes with natives survive and thrive in droughts and water shortages. Finally, substituting plants that are labeled "Florida Friendly" does not measure up to the benefits of our native plants. Natives hold up better.

Another argument for making an effort to shift into more sustainable landscapes with native plants and trees is to restore and protect our ecological sites. We should support native species for the wildlife, the birds, the butterflies, and the insects. Unfortunately, too many people view plants merely as décor rather than a critical part of our life support system. Restoring and preserving natural habitat attracts and supports wildlife, preserves the ecosystems that supply our water, nourishes our soils, and moderates our climate. Vacant land now owned by West Palm Beach could be planted with natives. Such properties would require less maintenance, no mowing and no water. Working with the Mounts Botanical Garden, garden clubs, environmental organizations and

Revised April 1, 2010

citizen volunteers could accomplish this without significant expense. Planting and maintaining natives will significantly reduce our “carbon footprint.” A natural landscape is a sign of sustainability.

Care and concern for the community’s tree canopy must be addressed. An aggressive urban forestry plan beyond the current landscape code will improve the air quality. As an Arbor Day Foundation City, we should have a sustainable tree program. Invasive exotics should be replaced. Trails and greenways, wildlife corridors and areas near and around developments should be restored and established.

In order to achieve these goals, the City needs to establish and develop an interdepartmental Environmental Management Plan with a sustainable systems approach. For example, the Parks and Recreation Department could be integrated with Public Works for the purpose of focusing on projects that involve neighborhood restoration. A spirit of cooperation among departments in City Hall will manifest the effort to go Green. Partnerships can be formed with non-governmental organizations that have an interest in preserving natural spaces as well, e.g. colleges and universities.

An expanding natural landscape will be the City’s response to the environmental damage done to our planet in general and to our city in particular. An enlightened green infrastructure plan will have a major impact on the quality of life in West Palm Beach. Our city can set an example for other communities, and it can be a garden spot in Florida and our nation.

It is recommended that the following priorities be implemented:

- Create green jobs
- Partner with various agencies
- Establish pocket parks
- Promote urban gardens – other area examples
- Prohibit removal of vegetation not necessary for the development of a site
- Set a goal - include (enough) green spaces (with ecosystem value) to reduce 90% (significant and measureable amount) of green house gases
- Include wildlife corridors and areas around development / request the development process
- Allow a regulated number of backyard egg laying hens and honey bees in individual backyard gardens

Revised April 1, 2010

- Preserve, create, protect, and promote wildlife habitat in open spaces and backyards
- Reduce sod (turf grass lawns, easements, and rights-of-way) wherever possible replacing with native plants and trees. Sod should be no more than 70% (let's discuss this) of the landscape
- Require littoral plants on all created water bodies

**Implementation Strategy Considerations:**

- Partner with various agencies, groups, businesses, and neighborhood associations regarding education (i.e. schools/re-entry program)
- Include Community Involvement Plan
- Provide incentives for certain sustainability items (i.e. green roofs)
- Provide signage to educate and identify open spaces, parks, urban gardens
- Conduct a community tree canopy (inventory) survey (tree canopy coverage)
- Determine the City's amount of pervious and impervious surfaces (is this an aquifer recharge issue or a request for pervious treatments?)
- Set a goal that increases the amount of green spaces to reduce greenhouse gases
- Include community agricultural programs (i.e. buy locally campaign, agriculture coordination program)
- Include provision for wildlife corridors and preserve areas around development - request during the development review/approval process and consider north & south flyways (bird resting areas)
- Include establishment of and maintenance of gopher tortoise populations and habitat (in natural area recipient sites like the golf course)
- Require conservation of native vegetation and habitat during the development review process

Revised April 1, 2010

## **Urban Agriculture and Community Gardens:**

### **Introduction:**

Around 15% of the world's food is now grown in urban areas.<sup>5</sup> Urban agriculture and community gardens provide a realistic and viable solution to growing problems such as increasing global carbon dioxide emissions, obesity, and food security within the United States.

### **CO2 Emissions:**

The average American diet creates 2.8 tons of CO2 emissions each year per person, which has now surpassed the 2.2 tons generated by transportation. Roughly one-third of all CO2 emissions can be traced back to the food supply<sup>6</sup>. The average food is traveling 1500 miles before it arrives on a meal plate.<sup>7</sup> There is a movement to reverse this trend in proactive cities throughout the United States. Keeping the food supply local and fresh reduces the need for excessive packaging and travel in addition to significantly reducing the amount of CO2 emission. The greatest reduction in CO2 emissions will be seen by those residing in cities with urban farms and community gardens where produce is available in a location that requires little transportation for the farmer to bring the product to market and for the consumer to acquire such as a neighborhood community garden, urban farm market, or a local city farming market.

### **Sustainable Agriculture:**

The USDA is currently promoting the new 'Know Your Farmer, Know Your Food' program that encourages sustainable agriculture practices that will protect and preserve soil, water, and air for future generations. Education is provided by the USDA for small and large farming operations to help reformulate conventional farming practices and move to sustainable practices.

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<sup>5</sup> USDA Farms and Community, Urban Agriculture and Community Gardening, <http://afsic.nal.usda.gov>

<sup>6</sup> Eshel G. and Martin P.A. Diet, Energy and Global Warming. Earth Interactions. 2006:10(9):1-17. Bon Appétit Management Company.

<sup>7</sup> Leopold Center for Sustainable Agriculture. "Checking the food odometer: Comparing food miles for local versus conventional produce sales to Iowa institutions". Iowa State University, July 2003.

Revised April 1, 2010

This education is provided through the Sustainable Agriculture Research and Education (NIFA) or the SARE program and is delivered through field days, workshops, conferences, and publications. The USDA is also encouraging local food systems and the utilization of farmers markets.

### **Community Health:**

In addition to the beneficial reduction in CO<sub>2</sub> emissions that urban farming and community gardens can bring, having local, fresh produce available through community garden projects and urban farm markets may aid with decreasing overweight/obesity as well as to help protect against chronic diseases. Currently in the United States, more than one-third of adults – over 72 million people - and 16% of children are obese.<sup>8</sup> Those that consume greater amounts per day of fruits and vegetables as part of a healthy diet have a decreased risk of overweight/obesity, stroke, cardiovascular disease, and certain cancers when compared to those that consumed only small amounts.<sup>9</sup> Adults with a household member who participated in a community garden consumed fruits and vegetables 1.4 more times per day than those who did not participate, and they were 3.5 times more likely to consume fruits and vegetables at least 5 times daily.<sup>10</sup> Making fruits and vegetables more accessible can promote the health and well being of our community. Low socioeconomic status in children and adults has been associated with greater prevalence of both obesity<sup>11</sup> and type-2 diabetes.<sup>12</sup> Community garden projects can provide adults and children fruit and vegetable choices at low or no cost that may otherwise be unaffordable due to income, transportation, convenience or all three.

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<sup>8</sup> Centers for Disease Control and Prevention, Obesity – Halting the Epidemic by Making Health Easier: At A Glance 2009.  
<http://www.cdc.gov/chronicdisease/resources/publications/AAG/obesity.htm>

<sup>9</sup> US Department of Health and Human Services, US Department of Agriculture. Dietary guidelines for Americans, 2005. 6th ed. Washington, DC: US Government Printing Office; 2005. Available at <http://www.health.gov/dietaryguidelines>.

<sup>10</sup> Fruit and Vegetable Intake among Urban Community Gardeners *Journal of Nutrition Education and Behavior*, Volume 40, Issue 2, Pages 94-101  
K. Alaimo, E. Packnett, R. Miles, D. Kruger

<sup>11</sup> Molarius A, Seidell JC, Sans S, Tuomilehto J, Kuulasmaa K. Educational level, relative body weight, and changes in their association over 10 years: An international perspective from the WHO, MONICA project. *Am J Public Health*. 2000; 90:1260-1268.

<sup>12</sup> Mokdad AH, Marks JS, Stroup DS, Gerberding JL. Actual causes of death in the United States, 2000. *JAMA*. 2004;291:12380-1245.

Revised April 1, 2010

**Food Security:**

The presence of urban farms and community gardens within a city also contributes to community food security.<sup>13</sup> Interaction between urban farmers and community gardeners and the community increase the awareness of local food options. This increased awareness is not just limited to food options but also conveys a message of healthy, sustainable, and secure food products and practices. Community gardens and urban farms provide fruit and vegetable food choices in urban areas deemed “food deserts”, urban areas without conventional grocery stores, where the only food choices may be through convenience foods and fast food establishments. The USDA is currently promoting several programs to expand access to local, nutritious foods. Funding is currently underway for community food projects to help communities become more self-reliant in maintaining sustainable food systems. There are also resources available through the USDA for the Farm to School Initiative, Farmers Market Promotion Program, Specialty Crop Block Grants, and Women, Infants and Children – Farmer’s Market Nutrition Program.

Encouraging sustainable agriculture through urban farms and community gardens within the City of West Palm Beach will decrease our City’s carbon footprint, improve the health of adults and children within the community, increase community involvement and learning, improve food security, and bring revenue to the City while preserving our natural resources for the next generation.

**The Urban Agriculture and Community Gardens Sub-committee:**

The Urban Agriculture and Community Gardens Sub-committee was created to address the need to change the paradigm regarding the acquisition of nutritious foods within the City. Our sub-committee was comprised of local farmers, local business owners, gardeners, City residents, and a Registered Dietitian. We met through the course of six-months and held deep discussions that would lead us to the following mission, vision, and recommendations that follow.

**Mission:**

To provide a sustainable and secure source of safe, easily accessible and affordable, foods of high nutrition quality grown on virtually any site close to its consumer market; to promote optimal health; that no one need go hungry.

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<sup>13</sup> Koc et al. 1999; Bellows and Hamm 2003; Hamm and Bellows 2003; Mann 2001.

Revised April 1, 2010

**Vision:**

To create a collection of community gardens and urban farm plots that can thrive and successfully provide the community with a source of freshly grown produce to promote the health and well-being of the local population, utilizing government and privately owned properties effectively thereby preventing urban blight; while at the same time providing an agriculturally sustainable, economically viable, environmentally responsible climate in which the community can flourish and prosper.

**Recommendations:**

For the City of West Palm Beach to:

- Decrease **blighted space within the City by 50%** by 2020 through the creation of community gardens.
  - Match property owners with interested gardeners.
  - Identify resources to aid with overhead costs.
  - Promote, install, and provide infrastructure for community gardens.
  - Create a self-sustaining model to cover overhead costs, such as selling excess produce.
- Provide economic incentives to commercial urban farming operations.
  - Encourage commercial urban farming projects to locate within the City by leasing vacant City land to commercial urban farming operations at a discount.
- Create and implement a training program to educate and promote sustainable farming practices and systems be utilized by community garden projects and commercial urban farming operations.
  - Create a land location within the City to provide hands-on farming education.
  - Educate City residents on how to grow food through neighborhood associations, church groups, homeowner's associations, and schools.
  - Educate the community on the benefits of community gardens and provide education on sustainable agriculture practices and systems through the City website, signage, and City television.
  - Provide Health Department demonstration gardens on food and health.
- Provide incentives to building owners and businesses and residents that reside in those buildings for creating and maintaining food-producing gardens on rooftops, patios, parking lots, or other non-conventional gardening space.
- Create a City composting program for all compostable food and paper waste and make participation mandatory for all restaurants and city buildings serving food.
  - Provided a program of incentives to promote sustainable farming practices and systems by using the organic City compost instead of synthetic fertilizers such as is being done with the San Francisco program by CUESA.
  - Provide composting locations and collection initiatives.

Revised April 1, 2010

- Provide compost to registered community gardens free of charge and to commercial urban farming operations at a minimal cost as an incentive to do business within the City and to promote sustainable farming practices.
- Offer registered community gardens within the City a free table at the City Green Market weekly to sell surplus produce.
- Offer commercial urban farms within the City a discounted table at the City Green Market each week as an incentive to do business within the City.
- Extend the City Green Market throughout the year.
  - To offer a venue for the sale of local produce all year.
- Allow the use of farm inputs such as the use of fish, bees for pollination, and the raising of worms and egg-laying hens for farming, providing natural fertilizer, and to be used as a food source.
  - To offer sustainable alternatives to synthetic fertilizer.
  - Allow natural pollination of plants.
  - Mentioned sustainable methods require no packaging and transport and thus produce no greenhouse gas.
  - Egg-laying hens provide an ideal protein source in addition to manure that can be utilized for natural fertilizer.
- Create a local label for foods grown and sold within the City.
- Initiate a local food purchase policy.
- Create a Community Food Council (CFC) ([could this function be served by the Sustainability Advisory Committee?](#)) represented by residents of the City that will meet quarterly to examine how the food system is operating and to develop recommendations on how to improve it.
  - Duties of the CFC may include but are not limited to:
    - Mapping and publicizing locally grown food resources and providing that information to City staff to transmit to City residents.
    - Reviewing and amending the sustainable farming education program in place for City residents.
    - Providing recommendations to the Mayor on how our City can improve food security and availability to all City residents, improve sustainable farming practices, and promote locally grown foods.
    - Providing an annual Food Security Report to the Mayor and City Commissioners the status of locally grown food within the City.

Revised April 1, 2010

**Energy Conservation and Alternative / Renewable Energy:**

Cool / Green roof Heat Island Mitigation Program

Revised April 1, 2010

**Water Conservation and Preservation:**

The City of West Palm Beach is reliant upon surface waters as its sole source of water to supply the entire water demand of the City as well as the Town of Palm Beach and South Palm Beach. This source is Grassy Waters Preserve, also known as the City's Water Catchment Area (WCA), the historic northeastern head waters of both the Everglades and the Loxahatchee River located just west of Beeline Highway on Northlake Boulevard and within the City of West Palm Beach. The area spans approximately 20 square miles and the rainwater-fed WCA was part of the vast Loxahatchee Slough wetlands that were once abundant with wildlife.

The area known as Grassy Waters Preserve was early identified as a freshwater resource and the Flagler Water System, established in West Palm Beach in 1894, incorporated that portion of the slough as part of its potential water source. In 1955 the City purchased the WCA from the Flagler Water System for its water department. In 1964 a special legislative act officially created the Water Catchment Area, known today as the "Grassy Waters Preserve", giving it special use as a water supply and environmental education area.

The U.S. Environmental Protection Agency (EPA) predicts that 37 states will have non-drought related water supply shortages of some type by 2013. EPA estimates also that water utilities will need \$277 billion for infrastructure construction, upgrades, and replacement during the next 20 years. Additionally, loads are expected to increase by 20% in the next 15 years due to increased populations and regulations for treatment.

Land development and the resulting population growth in our community and the region continue to impact not only water availability, but also protection of the water quality of the resource, as well as other water bodies in the area. Stewardship of this vital environmental and water resource is not only in the best interest of the community, but the responsibility of the public that not only reaps the benefits of the water resource but enjoys the environmental education and recreation resources the Preserve and the entire region have to offer.

The following recommendations have been identified by the Green Task Force as those which will assist to preserve and conserve the water resources of the City of West Palm Beach.

- Review consistency of existing permanent year-round water conservation regulations with those of the South Florida Water Management District.
- City's water conservation rate structure (It is a tiered rate structure now – we can add more tiers)

Revised April 1, 2010

- Requirements that new and replacement toilets, showerheads, and other water fixtures must be low flow consistent with EPA's *WaterSense* or *Energy Star* programs.
- Review the need to expand or revise the City's water conservation education program.
- Promote partnerships and consistent conservation policies and per capita use goals with all users within the City's water service area, including homeowner's and condominium associations.
- Commit to using water savings and efficient fixtures in all new construction of City facilities. The City could also institute a program for the conversion of water fixtures in City-owned facilities to water saving efficient fixtures.
- Develop an energy efficiency strategy for water utilities' operations and explore opportunities to incorporate renewable energy sources into the expansion or retrofit of water and wastewater infrastructure.
- Provide subsidy and/or rebate program, possibly supported by grants, which would retrofit interested West Palm Beach property owners with low flush toilet replacements, low water use washing machines, hot water recirculation devices, drip irrigation, rain sensors, and rain barrels.
- Develop a program which will provide incentives for single- family residents to enact their own gray water use practices with expansion to new commercial and residential development incorporating gray water use at some future date.

### **Landscape Irrigation**

- Adopt landscape requirements with a target established in the City's Comprehensive Plan and include new landscaping consisting of native species. (need to discuss ratio of Florida Friendly to Native)
- Analyze use of tree permitting and/or removal program as an enforcement mechanism for new landscaping policies. Consider establishing or reviewing thresholds for landscape plans required in new construction or replacement of landscapes.
- Adopt Florida Friendly landscaping principles in the land development code including identification of permitted and prohibited species. Emphasize and incentivize the use of true Florida natives over non-native species.

Revised April 1, 2010

- Adopt new ordinance provisions regulating the requirements for installation of rain sensors on automatic irrigation systems including maintenance and replacement of such systems consistent with new requirements in SB 2080 and HB 494.
- Amend the City's code to encourage rainwater harvesting and allow irrigation cisterns for applicable homes and commercial properties.
- Amend the City's landscape requirements to reduce the required area of planting water-thirsty grass lawns while at the same time ensuring adequate pervious surface for rain/storm water infiltration.
- Aggressively pursue a policy of removal of invasive non-native vegetation and have a program to replace them with appropriate native xeric vegetation. This should be coupled with an education program so citizens understand their role in saving water and preserving our environment.
- Review the City's policies on restricting certain types of pesticide products and use less harmful ones. Determine application of new policies citywide.
- Encourage, require and/or incentivize as appropriate landscaping requirements along roads that use native species. Consider signage to increase awareness of use of same.

### **Stormwater**

- Incorporate principles of low impact design to create innovative approaches for stormwater management in neighborhoods.
  - Utilize existing buffers (100%) ([What does this mean? We should elaborate](#))
  - Use of Bio Swales for storm water discharge points [wherever possible](#)
  - Prevent discharge of vegetation into water bodies ([prevent leaf blowers from blowing lawn clippings into the street](#))
  - Retrofit existing point source storm drains to provide pretreatment prior to discharge to water bodies
  - Continue baseline analysis of storm events to determine [water quality? \(WQ\)](#) trends

Revised April 1, 2010

- Enhance existing roadway exemption codes to include impacts to all county-federal and state roadways (*What does this mean?*)
- **Enforce** conservation easements
- Limit **the City's use of** fertilizer use during the rainy season
- **Disallow flushing of medicines** (*How is this enforced? Perhaps we should provide a way to collect this material at City events like the green market*)
- Promote use of cisterns & rain barrels
- Encourage use of irrigation quality (IQ) water
- **Educate & bring about incentives**
- **Compost to delimit waste streams**
- Coordinate with the South Florida Water Management District and the Department of Environmental Protection to support more flexible stormwater management rules that allow projects to incorporate principles of low impact design such as stormwater management calculations for green roofs and pervious pavement.
- Explore opportunities for storm water management and irrigation with onsite collection systems, bio-swales, (cisterns, etc.) and create incentives for incorporating such features into projects. Review the land development regulations to assure setback and other criteria to facilitate use of these techniques.

Revised April 1, 2010

**Waste Management:**

- Increase business recycling and provide incentives ([We should provide examples of incentives](#)) for retailers.
- Increase recycling at organized events. Examples are to use a theme; e.g. “*Sunfest Goes Green*”, to require food vendors to provide waste segregation and recycling, and to have a significant penalty for non-compliance.
- Boaters do not have adequate opportunities to recycle, and should be provided with appropriate receptacles for the proper segregation of waste and recyclables from the waste stream at boat docks.
- Electronic waste needs to be managed so that no electronic waste ends up in the landfill. City government should be an example, recycling 100% of their electronic waste effective immediately. Include an education and physical outreach component to ensure residential electronic waste is recycled through periodic pick-up programs, like neighborhood clean-ups. The amount recycled should be tracked to ensure that the waste doesn’t become someone else’s environmental problem.
- Create a plastic shopping bag ban, particularly for plastic grocery and chain pharmacy shopping bags. The City should review models of other progressive cities implementing such programs.
- The composting of food waste from restaurants should be allowed and encouraged. The compost generated from this effort can be used in community gardens.
- The amount of telephone books should be significantly reduced. Explore an “opt in” provision to receiving a phone book as opposed to an “opt out” provision.
- Styrofoam and polystyrene foam, including “peanut” packaging material, should be replaced with environmentally benign alternatives. All styrofoam / polystyrene foam should be recycled, similar to cardboard, aluminum, paper, etc., at the curbside and at businesses. Restaurants should be actively encouraged to discontinue polystyrene foam use as “doggy bags”.
- Collect a deposit for plastic (water, soda, etc.) bottles.

Revised April 1, 2010

- **Establish** “once a week” household garbage pickup, particularly given the new and larger containers provided to the public by the City.
- Imported products tend to be individually packaged, and thus over-packaged, as an import requirement. This policy should be reviewed and changed. The City should champion an effort to reduce over-packaged products that are imported into the country at the federal level. (...and should to the extent practicable use local and “made in USA” products)
- The City should facilitate the proper disposal of household hazardous (chemical) waste with education and periodic collection, like neighborhood clean-ups.

Revised April 1, 2010

### **Sustainable Transportation:**

Within the City of West Palm Beach there are a variety of modes of public transportation for residents and visitors. These include: County PalmTran buses, Tri-Rail and Amtrak trains, Greyhound Bus, air travel at Palm Beach International Airport, trolley rides, electric vehicles, South Florida Commuter Services car pools and van pools, public boat docks, biking, rickshaws, and walking.

West Palm Beach is well situated and suited for sustainable transit. Key elements, especially on the eastern coast, have the potential of making the City a model urban transit city within Palm Beach County and the rest of the country. Some of these fundamentals already in place include: high density neighborhoods, streets and sidewalks which follow a grid pattern, major bus and train stations, transit transfers locations, an Intermodal facility, an international airport, newly built public docks for boats and water taxis, bike lanes and bicycle racks on the front of buses, a free electric car service in the downtown area, trolleys which run between Clematis and City Place, many streets having sidewalks, and in some locations buildings with overhangs, which provide pedestrian protection from the sun or rain.

The four E's representing the elements of sustainability: the environment, economics, equity, and energy are best achieved through mixed use, transit-oriented communities. The more the city is able to encourage the design of urban transit communities, the less people will be dependant on cars, with the result of a reduction in CO<sub>2</sub> emissions. Communities which are mixed use will allow residents to meet their daily shopping and employment needs nearby, ideally within walking distance, by bike or electric car or shuttle service. With the addition of native shade trees and landscaping, and with little vehicular travel, communities can be designed to be carbon neutral environments. There will be equity as all residents can use the same modes of transportation. Economic and energy savings will occur because dependency on oil for transportation will be reduced to a minimum level.

Future new service or improvements in transit should include the following enhancements to the current modes of transportation.

- Encourage PalmTran to increase frequency (reduce headways) on its East/West corridors and to TriRail stations; wait times are currently too long.
- Encourage and support light rail passenger service on the FEC eastern rail corridor. This should include the adoption of the proposed stops at eight new train stations at the following locations: 45 St, 23-25 St, 13 St / Palm Beach Lakes Blvd, Government Center, Okeechobee Blvd, Belvedere Rd, Southern Blvd and Forest Hill Blvd.
- Support the CSX Corridor (Tri-Rail) and the FEC Corridor connection in Northwood, to accommodate enhanced transit services.

Revised April 1, 2010

- Request whistle-free zones at train crossings.
- Encourage elevated parking garages, instead of using valuable ground level parking where residences or stores can be located.
- Build more bus shelters and benches to accommodate mass transit riders.
- Resume water taxi service at the three new Downtown docks and at Currie Park.
- Promote electric car/shuttle service in gated communities, with drop off service for residents at bus stations.
- Design more bicycle routes and provide more bike racks.
- Provide more trolleys where density and local attractors are present.
- Promote expanded use of electric car service to serve as a shuttle between local points.
- When City vehicles need replacing, purchase or lease hybrid or high mileage cars.
- Design building setbacks to be closer to the street, because it is more pedestrian friendly.

In addition the following are recommended for implementation by the City: (should this be incorporated into government operations and policies section?)

- Add definitions of “vehicle miles traveled” to Comprehensive Plan and Code.
- The City shall establish an integrated network of non-motorized transportation corridors by including and utilizing existing rights of way that connect parks, linear parks, greenways, canals and waterways to increase the non-motorized transportation network.
- Connect the City’s bike and greenways plans to the Countywide Bike Plan and expand connectivity efforts beyond the downtown area.

Revised April 1, 2010

- To encourage the construction industry's use of public transit, consider requiring construction projects over a certain threshold to provide "changing and clean up facilities" for workers to utilize before using public transit at the end of the work day.
- Explore employer programs to offset the cost of public transit.
- Develop City-Wide Multi-Modal Map that Illustrates Deficiencies and Opportunities related to Transportation and Land Use Integration. The City shall work with Palm Tran and private developers in increasing the transit modal split for all trips and also work trips in the City.
  - City shall increase opportunities for park and ride facilities as a means to encourage greater use of transit and to increase opportunities for ridesharing.
- The City shall create incentives to be implemented in the development approval process for commercial projects that link directly to public transit alternatives such as Tri-Rail.
- Improve pedestrian continuity on downtown streets to decrease short trip automobile use and iterative parking, increase transit viability and require less parking.
- Provide or require bicycle and pedestrian ways for connecting residential areas to recreational areas, schools, shopping areas and employment areas.
- Evaluate and Improve City-Wide Bicycle Facilities Network and adopt a pedestrian and bicycle master plan by a certain targeted date.
  - Identify any missing links in the network to ensure all City streets have sidewalks
  - Special emphasis on streets located in downtown and single-family neighborhoods
- Promote bicycling and pedestrian facilities and incorporate the "complete streets" concepts to accommodate the needs of different transportation modes and users into the City's transportation plans and new projects proposed.
- Develop Comprehensive Planning Objectives and City Land Development Regulations to Support Federal Initiatives pertaining to Complete Streets. See "HB 697" Implementation Rule.

Revised April 1, 2010

- Accommodate automobiles, transit vehicles and non-motorized forms of transportation
- Safe and comfortable environment for diverse users
- Aesthetically pleasing
- City shall coordinate with Palm Tran and other transit providers on the provision and/or enhancement of transit services that connect the City's western communities with the downtown.
- Encourage utilization of Solar-Power and Light-Emitting Diode (LED) Equipment for Transportation Infrastructure and encourage alternative surfaces for parking lots, parks, and other paved facilities. The City should promote and incentivize solar (photovoltaic) parking lots and garages. Not only can the panels provide shade for the cars below, they can provide clean energy to the electrical grid, thereby increasing the City's percentage of renewable energy use.
- The City should require the best timing of traffic signals to reduce the amount of time drivers are stopped and idling at signalized intersections.
- Coordinate with Palm Tran to analyze the location and amenities associated with transit stops to potentially upgrade them with a goal of expanding transit ridership. Prioritize corridors where ridership could potentially increase, or existing stops may need to be relocated to facilitate increased ridership.
- Review and incorporate "20-Minute Complete Neighborhood Concept" where residents can safely walk a relatively short distance from home to most of the destinations and services they use every day within 20 minutes.
- Encourage and require accessible "plug in" locations for hybrid vehicles in new development projects or major renovations. Assure location is proximate to parking designated for hybrid vehicles.

Revised April 1, 2010

## **Appendix A: APA Planning Actions toward Sustainability Guide:**

### **I. Land Use Actions toward sustainability:**

#### A. Reduced dependence upon fossil fuels, underground metals, and minerals by promoting:

1. Compact development that minimizes the need to drive
2. A mix of integrated community uses — housing, shops, workplaces, schools, parks, civic facilities — within walking or bicycling distance
3. Human-scaled development that is pedestrian-friendly
4. Development oriented around public transit
5. Home-based occupations and work that reduce the need to commute
6. Local food production and agriculture that reduces need for long-range transport of food.

#### B. Reduction of activities that encroach upon nature through:

1. Guiding development to existing developed areas and minimizing development in outlying, undeveloped areas
2. Maintaining a well-defined "edge" around each community that is permanently protected from development
3. Remediation and redevelopment of brownfield sites and other developed lands that suffer from environmental or other constraints
4. Promote regional and local designs that respect the regional ecosystems and natural functions which support human communities.
5. Creation of financial and regulatory incentives for infill development; elimination of disincentives

#### C. Meeting human needs fairly and efficiently by:

1. Eliminating disproportionate environmental burdens and pollution experienced by historically disadvantaged communities.

### **II. Transportation Actions toward sustainability:**

#### A. Reduced dependence upon fossil fuels through:

1. Reduction in vehicle trips and vehicle miles traveled through compact, infill, and mixed use development
2. Use of alternatives to the drive-alone automobile, including walking, bicycling, and public transit

Revised April 1, 2010

3. Development and use of vehicles powered by renewable fuel sources
4. Local street designs that encourage pedestrian and bicycle use and discourage high speed traffic
5. Street designs that support/enhance access between neighborhoods and to neighborhood-based commercial developments.

B. Meeting human needs fairly and efficiently, by:

1. Providing affordable, efficient transportation alternatives for everyone, especially low-income households, elders, and others comprising 30% of the national population that cannot or do not own cars

**III. Housing and Building Actions toward sustainability:**

A. Reduced dependence upon fossil fuels, extracted underground metals, and minerals through:

1. Solar-oriented design of development
2. Use of regenerative energy heating and cooling source alternatives to fossil fuels
3. Provision of housing near places of employment
4. Selection of building materials with low "embodied energy," which require less energy-intensive production methods and long-distance transport

B. Reduced dependence upon chemicals and unnatural substances through:

1. Use of chemical-free and toxic-free building materials
2. Reduction of waste and recycling of building waste materials and promoting recycling by residents
3. Landscape design standards that minimize the use of pesticides and herbicides

C. Reduction of activities that encroach upon nature, through:

1. Reuse of existing buildings and sites for development
2. Compact and clustered residential development, including reduced minimum lot sizes
3. Removal of code obstacles to using recycled materials for building
4. Water conservation measures, to minimize environmentally destructive side effects of developing new water sources
5. Responsible stormwater management that reuses and restores the quality of on-site run-off — (example, — constructed marsh or wetlands systems).

Revised April 1, 2010

6. Reduction or elimination of impervious paving materials
7. Use of recycled building materials, helping to minimize the mining of virgin materials
8. Use of "cradle-to grave" (life cycle) analysis in decision-making for materials and construction techniques.
9. Recycling of building construction waste materials and appropriate deconstruction techniques.

D. Meeting human needs fairly and efficiently, by providing for:

1. Communities and housing developments that are socially cohesive, reduce isolation, foster community spirit, and sharing of resources (example: cohousing)
2. Housing that is affordable to a variety of income groups within the same community
3. A diversity of occupants in terms of age, social, and cultural groups
4. Housing located near employment centers.

#### **IV. Economic Development Actions toward sustainability**

A. Encourage businesses that reduce dependence upon fossil fuels, extracted underground metals, and minerals; for example, businesses that:

1. Reduce employee and product transport vehicle trips
2. Use regenerative energy alternatives to fossil fuel, or that are working to reduce dependence on fossil fuel
3. Do not use or are reducing use of cadmium, lead, and other potentially toxic metals and minerals that can accumulate in the biosphere.
4. Are locally-based or home-based, reducing or eliminating the need to commute.

B. Encourage businesses that reduce dependence upon chemicals and unnatural substances; for example, enterprises that:

1. Actively seek ways to minimize the use of toxic manufactured substances
2. Meet or exceed clean air standards
3. Minimize or reduce use of chemicals and employ proper disposal and recycling mechanisms for these
4. Use agricultural methods that reduce or minimize use of pesticides, herbicides, and manufactured fertilizers
5. Use byproducts of other processes or whose wastes can be used as the raw materials for other industrial processes

Revised April 1, 2010

C. Encourage businesses that reduce activities that encroach upon nature; for example, enterprises that:

1. Use recycled or by-products of other businesses, minimizing the use of virgin raw materials
2. Prevent activities that emit waste or pollutants into the environment
3. Use agricultural approaches that build up rather than deplete topsoil, and conserve or minimize water use
4. Maintain natural terrain, drainage, and vegetation, minimizing disruption of natural systems
5. Re-use processed water.

D. Encourage businesses that meet human needs fairly and efficiently; for example, enterprises that:

1. Fulfill local employment and consumer needs without degrading the environment
2. Promote financial and social equity in the workplace
3. Create vibrant community-based economies with employment opportunities that allow people economic self-determination and environmental health
4. Encourage locally-based agriculture, such as community supported agriculture, providing a nearby source of fresh, healthy food for urban and rural populations

## **V. Open Space/Recreation Actions toward sustainability**

A. Reduced dependence upon fossil fuels, extracted underground metals, minerals, by:

1. Providing recreational facilities within walking and bicycling distance
2. Using local materials and native plants in facility design to reduce transport distances and reduce maintenance
3. Landscape and park maintenance minimizing use of equipment powered by fossil fuels

B. Reduced dependence upon chemicals and synthetic substances; for example by

1. Use alternatives to chemical pesticides and herbicides in park and facility maintenance (example: integrated pest management)

C. Activities that reduce encroachment upon nature, such as:

1. Funding for open space acquisition
2. Preservation of wilderness areas

Revised April 1, 2010

3. Urban gardens, community gardens
4. Preservation of wildlife habitats and biological diversity of area ecosystems
5. On-site composting of organic waste
6. Restoration of damaged natural systems through regenerative design approaches
7. Creation of systems of green spaces within and among communities
8. Development of responsible alternatives to landfilling of solid waste
9. Using regionally native plants for landscaping
10. Encouraging landscape and park maintenance that reduce the use of mowers, edgers, and leaf blowers

**VI. Infrastructure Actions toward sustainability:**

A. Reduced dependence upon fossil fuels, extracted underground metals, minerals, by promoting:

1. Facilities that employ renewable energy sources, or reduce use of fossil fuel for their operations and transport needs

B. Reduced dependence upon chemicals and synthetic substances, by promoting:

1. Treatment facilities that remove or destroy pathogens without creating chemically-contaminated byproducts
2. Design approaches and regulatory systems that focus on pollution prevention, re-use and recycling.

C. Reduction of activities that encroach upon nature, through:

1. Promotion of innovative sewage and septic treatment that discharges effluent meeting or exceeding federal drinking water standards while minimizing or eliminating the use of chemicals (example: greenhouse sewage treatment facilities)
2. Recognition of the "cradle to grave" costs of waste generation and disposal
3. Promotion of and removal of regulatory barriers to composting and gray water reuse systems

D. Meeting human needs fairly and efficiently, by:

1. Cleaning, conserving, and reusing wastewater at the site, neighborhood or community level, reducing the need for large, expensive collection systems and regional processing facilities

Revised April 1, 2010

**VII. Growth Management Actions toward sustainability:**

A. Reduced dependence upon fossil fuels, extracted underground metals, minerals, by promoting:

1. Development near existing transport systems; minimizing need for new road and highway construction

B. Reduction of activities that encroach upon nature, by promoting:

1. Appropriate development and population growth policies linked to carrying capacity of natural systems and community facilities
2. Development patterns that respect natural systems such as watersheds and wildlife corridors.

C. Meeting human needs fairly and efficiently, by promoting:

1. Fair and equitable growth management policies maintaining diversity in local populations and economies

**VIII. Floodplain Management Actions toward sustainability**

A. Reduction of activities that encroach upon nature, by:

1. Guiding development away from floodplains
2. Guiding development away from barrier beaches
3. Preserving or restoring wetland areas along rivers for natural flood control

**VIX. Watershed Planning/Management Actions toward sustainability**

A. Reduction of activities that encroach upon nature, such as:

1. Preservation and enhancement of water quality
2. Reduction in water use
3. Recharge of groundwater basins
4. Use of flood control and stormwater techniques that enhance and restore natural habitats
5. Prevention of wetlands destruction; restoration of degraded wetlands

Revised April 1, 2010

**X. Resource Conservation Actions toward sustainability:**

A. Reduced dependence upon fossil fuels, extracted underground metals, and minerals, by:

1. Minimizing energy use
2. Encouraging the development of renewable energy sources
3. Discouraging the use of products that utilize packaging derived from non-renewable, non-degradable resources
4. Promoting the recycling of waste materials derived from non-renewable, non-degradable resources.
5. Developing community gardens that reduce the need for long-range transport of food and associated consumption of fossil fuels.

B. Reduction of activities that encroach upon nature; for example, by:

1. Promoting the preservation and planting of trees and other vegetation that absorb carbon dioxide and air pollutants

**XI. Planning Processes/Education Actions toward sustainability:**

A. Support activities that reduce dependence upon fossil fuels, extracted underground metals, and minerals; for example, by:

1. Encouraging and enabling people to use transport other than gasoline-powered vehicles

B. Support activities that reduce dependence upon chemicals and unnatural substances; for example, by:

1. Educating citizens and public servants about both short- and long-term risks associated with the use and disposal of hazardous materials

C. Support activities that reduce encroachment upon nature; for example, through:

1. Educational efforts to reduce levels of consumption and waste generation at the household and community levels

D. Support meeting human needs fairly and efficiently by:

Revised April 1, 2010

1. Integrally involving local community residents in setting the vision for and developing plans for their communities and regions
2. Establishing avenues for meaningful participation in decision-making for all citizens and in particular for historically disadvantaged people
3. Providing for equitable educational opportunities for all members of society
4. Promoting retraining of those displaced in the short-term by a shift to a more sustainable economy

### **Appendix B: Framework for the Plan:**

The themes follow the framework of the United Nations Urban Environmental Accords - Green Cities Declaration.

Urban Environmental Accords cover seven environmental categories that cities can address to enable sustainable urban living and improve the quality of life for urban dwellers: energy, waste reduction, urban design, urban nature, transportation, environmental health, and water.

- Energy: Renewable Energy, Energy Efficiency, Climate Change
- Waste Reduction: Zero Waste, Manufacturer Responsibility, Consumer Responsibility
- Urban Design: Green Building, Urban Planning, Slums (Low income neighborhoods)
- Urban Nature: Parks, Habitat Restoration, Wildlife
- Transportation: Public Transportation, Clean Vehicles, Reducing Congestion
- Environmental Health: Toxics Reduction, Healthy Food Systems, Clean Air
- Water: Drinking Water Access, Source Water Conservation, Waste Water Reduction

The Accords lay out 21 practical actions cities can take to meet the needs of the present without compromising the ability of future generations to meet their own needs, or the health of the planet.

Signatory cities shall work to implement the following Urban Environmental Accords.

Each year, cities shall pick three actions out of the following list to adopt as policies or laws.

(21 actions / 3 a year = 7 years to implement)

Revised April 1, 2010

**Energy**

Action 1 - Adopt and implement a policy to increase the use of renewable energy to 10% of your city's peak load within seven years.

Action 2 - Adopt and implement a policy to reduce your city's peak load by 10% through energy efficiency, shifting the timing of energy demands, and conservation measures within seven years.

Action 3 - Adopt a citywide greenhouse gas reduction plan that reduces the jurisdiction's emissions by 25% by 2030, which includes a system for accounting and auditing greenhouse gas emissions

**Waste Reduction**

Action 4 - Establish a policy to achieve zero waste to landfills and incinerators by 2040. (Solid Waste Authority)

Action 5 - Adopt a citywide law that reduces the use of a disposable product category, starting with toxic materials (e.g. polystyrene), by at least 50% in seven years.

Action 6 - Implement "user-friendly" recycling and composting programs to provide alternative disposal options, with the goal of reducing per capita solid waste disposal to landfill and incineration by 20% in seven years (if such programs do not exist). (Solid Waste Authority)

**Urban Design**

Action 7 - Adopt a policy that mandates a green building rating system standard that applies to all new municipal buildings.

Action 8 - Adopt urban planning principles that advance higher density mixed use, walkable/ bikeable neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological reconstruction.

Action 9 - Adopt a policy that creates environmentally beneficial jobs in low-income neighborhoods. By 2010 launch one or more "Green Job Training Center(s)" to help alleviate poverty and prepare marginalized persons for work in "green" enterprises.

Revised April 1, 2010

**Urban Nature**

Action 10 - Adopt the goal to ensure that there is an accessible park or recreational open space featuring environmental education, arts and organic agriculture as an economic opportunity for lower income neighborhoods within half-a-kilometer of every city resident by 2015.

Action 11 - Conduct an inventory of indigenous natural ecosystems and develop a plan to protect and restore the indigenous ecological community.

Action 12 - Pass legislation that requires habitat corridors and favorable habitat characteristics (e.g. water features, food-bearing plants, shelter) utilizing indigenous species included within development projects.

**Transportation**

Action 13 - Develop and implement a policy to expand public transportation coverage and improve level of service via access (residents within half-a-kilometer of public transportation or 70% of population) by 15% in seven years.

Action 14 - Pass a law or implement a program that eliminates leaded gasoline (where it is still used) and that phases down sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses, taxis, and public fleets to reduce particulate matter and smog-forming emissions from those fleets by 50% in seven years.

Action 15 - Implement a policy to reduce the number of single occupancy vehicles by 10% in seven years.

**Environmental Health**

Action 16 - Every year identify three products, chemicals, or compounds that are used within your city that represent the greatest risk to human health and adopt a law to eliminate their sale and use in the city. This should start with municipal procurement to ensure that city government workers are not exposed to hazardous chemicals or materials.

Action 17 - Promote the public health and environmental benefits of supporting organic and sustainably grown foods, especially produce and products produced within the region. Ensure that 50% of the food served in public facilities is local and organic within seven years.

Revised April 1, 2010

Action 18 - Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by 10% in seven years the number of days categorized in the AQI range as "unhealthy" to "hazardous." (Health Dept)

**Water**

Action 19 - Develop a policy to provide adequate and safe drinking water to all its citizens consistent with the UN Millennium Development Goal 8. Such efforts should include improvements to the governance and oversight of municipal water supplies and involvement of citizens in the decision making process.

Action 20 - Adopt and implement a policy to reduce citywide consumption of potable water by 10% by 2020 in cities where per capita water consumption is greater than XXX. Ensure that additional water needs stemming from new growth are met through alternative sources of supply, demand management, and local resource development to protect the ecological integrity of the city's primary drinking water source (i.e., groundwater, rivers, lakes, wetlands and associated ecosystems).

Action 21 - Develop a sustainable water resource planning process that prioritizes alternative supply sources (e.g., recycled water, demand-side water management) and integrates sanitation, groundwater management, and rigorous pollution control targets. The process should be transparent and include participants of all affected communities and be based on sound economic, social, and environmental principles.

Revised April 1, 2010

**Appendix C – Proposed Zoning Regulations for Community and Urban Marker Gardens:**

**Community Gardens: Non-commercial only**

- (1) *Purpose and intent.* To allow a group of residents to grow produce and horticultural plants for their consumption and enjoyment, without creating adverse environmental impact or land use incompatibilities. To function effectively, a community garden shall have established operating rules and a garden coordinator.
- (2) *Definition.* Community garden means an area of land managed by an individual or a group of individuals growing and harvesting a mixture of food crops and/or non-food, ornamental crops, such as flowers, for personal or group use, consumption, or donation. Community gardens may be divided into separate plots for cultivation by one or more individuals or may be farmed collectively by members of the group. (Nashville, TN & Cleveland, OH)
- (3) *Exception.* This section pertains to community gardens that are a primary and singular use on the property and shall not be construed so as to apply to any private garden established as an accessory use to an existing principal residential use.
- (4) *General provisions.* Community gardens may be established on any residentially zoned parcel, excluding Residential Planned Developments (“RPD”), and Recreation and Open Space (“ROS”) zoning district with the expressed permission of the property owner, or as an accessory use to any religious place of assembly, institutional use, or community center located within the residential and ROS zoning districts.
- (5) *Additional application requirements.* Community gardens shall comply with the following specific requirements:
  - a. **Location.** Permitted in all Residential and Recreation and Open Space (“ROS”) Zoning Districts with extra requirements, excluding Residential Planned Developments (“RPD”), or permitted with extra requirements when accessory to any school, religious place of assembly, institutional use, or community center located within the residential or Recreation and Open Space (“ROS”) zoning district.
  - b. **Environmental assessment.** Any person or group who wishes to establish a community garden with plant beds that are not separated from the ground by a physical barrier shall be required to obtain a Phase I Environmental Site Assessment (“ESA”) to determine if any soil contamination exists. Such soil must be tested for any contaminants that would render it unsuitable for cultivating food on topsoil, including, but not limited to, lead and other toxic heavy metals; industrial solvents; gasoline; oils and greases; percloroethylene; and other chemicals that can be transmitted to people via soil contact or consumption of foods grown in such soil.

Revised April 1, 2010

If any historical sources of contamination are identified in the ESA then it is incumbent upon the applicant to conduct all appropriate testing to determine the type and level of contamination; and conduct the appropriate remediation procedures to ensure that soil is suitable for gardening. (National Policy & Legal Analysis Network to Prevent Childhood Obesity “NPLAN”, City of Detroit)

- c. **Operation limitations.** The community garden shall grow at least four (4) different food crops and/or non-food ornamental crops. No gardening activities shall take place before sunrise or after sunset. Motorized-powered equipment of greater than ten (10) horsepower is prohibited. (Leon County, St. Petersburg, FL)
- d. **Maintenance responsibilities.** The owner of the property on which the community garden is located shall be responsible for maintaining the property so that it does not become overgrown with weeds, infested by invasive exotic plants or vermin, or a source of erosion or stormwater runoff. (Leon County, FL)
  1. Abandonment – In the event that the community garden use is not in operation for 30 consecutive days or more, the site shall be restored pursuant to Section 94-450 of the ZLDR.
- e. **Organic Practices.** The use of pesticides, herbicides and weed killers, insecticides made from synthetic chemical materials and chemicals is prohibited. The use of materials and practices used for organic production found in the Organic Materials Review Institute (“OMRI”) guidelines is strongly encouraged.
- f. **Outdoor Storage of compost and organic matter.** Compost and organic matter to be used for the community garden shall be contained in appropriate containers, shall not be stored in open air, and shall have a 25-foot setback from all rights-of-way and a five (5) foot setback from all property lines. Such containers shall be maintained to prevent odors and prevent the harborage of rodents and pests.
- g. **Storage of toxic or flammable materials.** Toxic or flammable materials are regulated as follows:
  1. Only fuel used for the operation of lawnmowers or other combustion engine-driven gardening machinery is permitted and shall be kept in sealed containers in locked, ventilated structures in accordance of the National Fire Protection Association (“NFPA”) 30: Flammable and Combustible Liquids Code. No other flammable materials or chemicals are allowed;
  2. Tires shall not be stored on garden sites; and, <sup>[1]</sup>
  3. Toxic materials, such as pressure treated wood (creosote), shall not be used where they will come into contact with soils that are growing food.
- h. **Drainage.** The site shall be designed and maintained to prevent draining onto adjacent property.

Revised April 1, 2010

- i. **Sale of produce and horticultural plants.** A community garden is not intended to be a commercial enterprise; however, there may be occasions when surplus is available, which shall only be sold off the premises. (St. Petersburg, FL)
- j. **Sheds.** If provided, the sheds shall have a maximum square footage of four percent (4%) of the gross community garden area and shall have a front setback of a minimum of 50% of the lot depth and meet the accessory setback requirements for the side and rear as provided in the ZLDR. If located within a corner lot, it shall be placed on the non right-of-way side of the lot.
- k. **Required planting setbacks.** All planting shall be planted no closer than five (5) feet to the front, side or rear property lines. Cultivated area shall not encroach onto adjacent properties. All plantings shall comply with the visibility at intersections requirements, pursuant to Section 94-305(e) of the ZLDR. (St. Petersburg, FL & Bloomington, IN)
  - 1. The five (5) foot setback shall contain mulch (excluding red mulch or mulch made from toxic wood), sod, pavers or rocks and shall be contained within the property.
- l. **Parking.** No parking allowed on site.
- m. **Fencing.** All fencing shall comply with Section 94-302 of the ZLDR, except for the following: (St. Petersburg, FL)
  - 1. Hedges, if provided along the frontage line, shall not exceed four (4) feet in height and must be located outside the fence.
- n. **Signage.** Signs shall not exceed four (4) square feet in area and shall not exceed five (5) feet in height and shall be within and visible from the frontage line. The sign shall be limited to identification, information and directional signs, contact information of a garden coordinator and sponsorship information, if provided, shall be secondary to other sign information in terms of sign area and font size. (Cleveland, OH)
- o. **Prohibition on agricultural tax exemption.** A property owner shall be prohibited from seeking an agricultural tax exemption afforded by the local, state, or federal tax regulations.
- p. **Site plan approval required.** A Level I Site Plan approval is required for the establishment of a community garden pursuant to Section 94-35 of the ZLDR. The application requires property owner's consent.
- q. **Operating rules and garden coordinator.** The application shall include established operating rules addressing the governance structure of the garden and maintenance and security responsibilities, as well as the contact information of a garden coordinator who shall be responsible for the management of the community garden. The applicant shall be responsible for notifying the Planning and

Revised April 1, 2010

Zoning Department of any updated management contact information. A sample of operating rules is available at the Planning and Zoning Department. (NPLAN)

- r. **Livestock and animals prohibited.** The raising of poultry or other livestock, fish, and the keeping of bees shall be prohibited.
  - s. **Biennial review.** The regulations and standards for community gardens shall be reviewed on a biennial or more frequent basis as may be required by the City Commission to ensure their efficacy and fairness. The review shall document any outstanding issues and provide any recommendations for modifications to the standards and regulations set forth herein. (Leon County, FL)
- (6) Additional standards.
- a. **Size limitation.** A community garden shall not be greater in size than 12,000 square feet.

### **Urban Market Garden: Commercial only**

(1) *Purpose and intent.* To ensure that urban market garden areas are appropriately located and protected to meet the needs for local food production, reduce “distance to plate”, and to enhance community health, community education, garden-related job training, natural resource protection, preservation of green space, and community enjoyment. Because urban market gardens will typically exist in close proximity to residential and other uses, concern will be given to ensuring compatibility between uses. Urban market gardens are encouraged to practice organic farming methods to minimize its impacts on the environment and to further sustainable communities. (Madison Wisconsin, City of Vancouver)

(2) *Definitions:*

*Urban Market Garden* means an area of land managed and maintained by an individual or group of individuals growing and harvesting food crops and/or non-food, ornamental crops, such as flowers, for commercial sale, frequently sold directly to consumers and restaurants. Urban market gardens may be divided into separate plots for cultivation by one or more individuals or may be farmed collectively by members of the group and may include common areas maintained and used by group members. It is distinguishable from other types of farming by the diversity of crops grown on a small area of land, typically from under one acre to a few acres, or sometimes in greenhouses grown on site, including but not limited to using growing methods such as hydroponics. (Nashville, Tenn.)

*Hydroponics* means a method of growing plants using mineral nutrient solutions, in water, without soil. Terrestrial plants may be grown with their roots in the mineral nutrient solution only or in an inert medium, such as perlite, gravel, or mineral wool.

Revised April 1, 2010

*Greenhouse* means a building made of glass, plastic, or fiberglass in which plants are cultivated. (Cleveland, Ohio)

*Hoophouse* means a structure covered with translucent plastic, constructed in a “half-round” or “hoop” shape. (Cleveland, Ohio)

*Coldframe* means an unheated outdoor structure consisting of a wooden or concrete frame and a top of glass or clear plastic, used for protecting seedlings and plants from the cold. (Cleveland, Ohio)

*Organic farming* means a form of agriculture that relies on crop rotation, green manure, compost, biological pest control, and mechanical cultivation to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers and synthetic pesticides, plant growth regulators, livestock feed additives, and genetically modified organisms. Organic farming relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. (International Federation of Organic Agriculture Movements)

(3) *Exception.* This section pertains to urban market gardens that are a primary or accessory use on the property and where crops are grown on site. It does not apply to nurseries, botanical gardens or other uses that are otherwise listed pursuant to the Zoning and Land Development Regulations (“ZLDR”).

(4) *General provisions.* Urban market gardens may be established on any Neighborhood Commercial (“NC”), General Commercial (“GC”), Community Service (“CS”) and Industrial (“I”) zoned parcel with expressed permission of the property owner; or as an accessory use to any religious place of assembly, institutional use (i.e. school, hospital), or community center located within these zoning districts.

(5) *Additional application requirements.* Urban market gardens shall comply with the following specific requirements:

a. **Location.** Permitted in Neighborhood Commercial (“NC”), General Commercial (“GC”), Community Service (“CS”) and Industrial (“I”) zoning districts with extra requirements; or permitted with extra requirements when accessory to any religious place of assembly, institutional use (i.e. school, hospital), or community center located within these zoning districts.

1. Planned Developments - Permitted with a Class B Special Use Permit in Residential Planned Development (“RPD”), Commercial Planned Development (“CPD”), Community Service Planned Development (“CSPD”) and Industrial Planned Development (“IPD”) zoning districts.

b. **Environmental assessment.** Any person or group who wishes to establish an urban market garden with plant beds that are not separated from the ground by a physical barrier shall be required to obtain a Phase I Environmental Site Assessment (“ESA”) to determine if any soil contamination exists. Such soil must be tested for any contaminants that would render it unsuitable for cultivating food on topsoil, including, but not limited to, lead and other toxic heavy metals; industrial solvents; gasoline; oils and

Revised April 1, 2010

greases; perchlorethylene; and other chemicals that can be transmitted to people via soil contact or consumption of foods grown in such soil.

If any historical sources of contamination are identified in the ESA then it is incumbent upon the applicant to conduct all appropriate testing to determine the type and level of contamination; and conduct the appropriate remediation procedures to ensure that soil is suitable for gardening. (National Policy & Legal Analysis Network to Prevent Childhood Obesity “NPLAN”, City of Detroit)

- c. **Operation limitations.** No gardening activities shall take place before sunrise or after sunset. The sale of produce shall be limited to no later than 9 PM. Motorized-powered equipment for cultivating or maintenance purposes of greater than ten (10) horsepower is prohibited. (Leon County, St. Petersburg, FL)
- d. **Maintenance responsibilities.** The owner of the property on which the urban market garden is located shall be responsible for maintaining the property so that it does not become overgrown with weeds, infested by invasive exotic plants or vermin, or a source of erosion or stormwater runoff and shall meet the requirements as applicable through the City of West Palm Beach Code of Ordinances. (Leon County, FL.)
  - 1. Abandonment – In the event that the urban market garden use is not in operation for 30 consecutive days or more, the site shall be restored pursuant to Section 94-450 of the ZLDR; and,
  - 2. Class B Special Use Permit Abandonment – If the urban market garden use was approved through a Class B Special Use Permit and is abandoned for 30 days or more, then the Class B Special Use Permit shall be considered null and void and the site shall be restored in accordance to Section 94-450 of the ZLDR.
- e. **Organic Practices.** The use of pesticides, herbicides and weed killers, insecticides made from synthetic chemical materials and chemicals is prohibited. The use of materials and practices used for organic production found in the Organic Materials Review Institute (“OMRI”) guidelines is strongly encouraged.
- f. **Outdoor storage of compost and organic matter prohibited.** Compost and organic matter to be used for the urban market garden shall be contained in appropriate containers, shall not be stored in open air, and shall have a 25-foot setback from all rights-of-way and a five (5) foot setback from all property lines. Such containers shall be maintained to prevent odors and prevent the harborage of rodents and pests.
- g. **Storage of toxic or flammable materials.** Toxic or flammable materials are regulated as follows:

Revised April 1, 2010

1. Only fuel used for the operation of lawnmowers or other combustion engine-driven gardening machinery is permitted and shall be kept in sealed containers in locked, ventilated structures in accordance of the National Fire Protection Association (“NFPA”) 30: Flammable and Combustible Liquids Code. No other flammable materials or chemicals are allowed;
  2. Tires shall not be stored on garden sites; and, <sup>[1]</sup>
  3. Toxic materials, such as pressure treated wood (creosote), shall not be used where they will come into contact with soils that are growing food.
- h. **Drainage.** The site shall be designed and maintained to prevent draining onto adjacent property.
- i. **Sale of produce and horticultural plants.** The produce and horticultural plants grown in the urban market garden may be sold on or off the premises and shall obtain a Business Tax/Certificate of Use pursuant to the City Code of Ordinances.
- j. **Structures.** All structures shall meet the provisions of the City of West Palm Beach Code of Ordinances for height, setbacks, etc. The following uses and structures may be permitted in an urban market garden:
1. Greenhouses, hoopouses, coldframes, and similar structures used to extend the growing season; and,
  2. Sheds, shade pavilions, farm stands, restrooms, offices or other structures that are not used for cultivating crops; the combined area of all structures listed in j.2. shall not exceed fifteen percent (15%) of the gross urban market garden area. (Cleveland, Ohio & City of Detroit)
- k. **Required planting setbacks and buffer requirements.** All planting shall be planted no closer than ten (10) feet to the front, side or rear property lines. Cultivated area shall not encroach onto adjacent properties. All plantings shall comply with the visibility at intersections requirements pursuant to Section 94-305(e) of the ZLDR. (based on St. Petersburg, FL & Bloomington, IN)
1. A minimum five (5) foot wide perimeter landscape buffer and right-of-way landscaping that comply with the ZLDR is required; and,
  2. The remaining setback shall contain mulch (excluding red mulch or mulch made from toxic wood), sod, pavers or rocks and shall be contained within the property.
- l. **Parking.** Required parking shall be as follows:
1. The urban market garden shall have a minimum of two (2) on-site parking spaces per acre or fraction thereof; and, (City of Detroit)

Revised April 1, 2010

- 2. One (1) on-site parking space per 200 square feet of building/structure, excluding sheds, greenhouses, hoopouses, or coldframe. (PBC ULDC, ZLDR)
  - m. **Fencing.** All fencing shall comply with the requirements for the applicable zoning district, set forth in the Fence, Wall and Hedge Regulations of the ZLDR.
  - n. **Signage.** For the expressed use of an urban market garden, high freestanding signs pursuant to the ZLDR, Article XIII are prohibited. All other signs may be permitted pursuant to the ZLDR, Article XIII.
  - o. **Prohibition on agricultural tax exemption.** A property owner shall be prohibited from seeking an agricultural tax exemption afforded by the local, state, or federal tax regulations.
  - p. **Site plan approval required.** A Level I Site Plan approval is required for the establishment of an urban market garden pursuant to Section 94-35 of the ZLDR. The application requires the property owner's consent.
  - q. **Livestock and animals prohibited.** The raising of poultry or other livestock, fish, and the keeping of bees shall be prohibited.
  - r. **Biennial review.** The regulations and standards for urban market gardens shall be reviewed on a biennial or more frequent basis as may be required by the City Commission to ensure their efficacy and fairness. The review shall document any outstanding issues and provide any recommendations for modifications to the standards and regulations set forth herein. (Leon County, FL)
- (6) Additional standards.
- a. **Size limitation.** An urban market garden shall not be greater in size than four (4) acres.
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1. Tires can transmit toxic heavy metals such as lead and cadmium into soils. (City of Detroit supplement, April 2004, 16.)

Revised April 1, 2010

**Appendix D - Green Task Force Recommendations to date:**

- October 15, 2009: The Green Task Force recommends that the Mayor move forward on the creation of urban farms and community gardens with consideration for water and other resources, and to seek out available grant funds to accomplish this project.
- October 15, 2009: The Green Task Force recommends to the Mayor that a letter and/or resolution from the City Commission be sent to NOAA/National Marine Fisheries Service and any other agencies determined by the Mayor or City Commission to move the Critical Habitat Designation boundary for *Acropora* coral North to the Lake Worth Inlet in support of the petition filed by Palm Beach Reef Rescue.
- August 6, 2009: The Green Task Force recommends to the Mayor that the City accept free “*turn off the lights*” light switch stickers from FPL for City buildings that do not have automated lighting and to promote distribution of stickers to other businesses and organizations in the City.
- August 6, 2009: The Green Task Force recommends to the Mayor that the City develop a tree planting program which allows citizens to donate native trees for planting within the City.
- July 2, 2009: The Green Task Force recommends to Mayor Frankel that the following Water Conservation measures be adopted:
  - To provide subsidy and/or rebate program, possibly supported by grants, which would retrofit interested West Palm Beach property owners with low flush toilet replacements, low water use washing machines, hot water recirculation devices, drip irrigation, rain sensors and rain barrels.
  - To amend the City’s code to encourage rainwater harvesting and allow irrigation cisterns for applicable homes and commercial properties.
  - To require rain sensors with automatic shut-off for new irrigation systems and to phase into existing irrigation systems.
  - To amend the City’s landscape requirements (as part of our building code) to require the use of native and xeric plants and reduce the required area of planting water-thirsty grass lawns while at the same time ensuring adequate pervious surface for rain/storm water infiltration.

Revised April 1, 2010

- To aggressively pursue a policy of removal of invasive non-native vegetation and have a program to replace them with appropriate native xeric vegetation. This should be coupled with an education program so citizens understand their role in saving water and preserving our environment.
- July 2, 2009: The Green Task Force recommends to the Mayor that native plants be included, to the extent possible within the existing budget, in the landscaping of the Waterfront Pavilion.
- May 7, 2009: The Green Task Force recommends to the Mayor that the following Energy Efficiency and Conservation projects be considered for funding:
  - (1) Comprehensive Green Model Home to include Greening Your Home; and Youth Green Corps initiatives
  - (2) City Center Solar Project with solar charging stations
  - (3) Green Pavilion with recommendations of water conservation with water shortage as priority, solar hot water system and to investigate geo-thermal heat pumps
  - (4) Retrofit Lighting in Parking Garages: to look at best lighting alternatives to maximize energy conservation
  - (5) Solar Litter Container Collection improvements
- May 7, 2009: The Green Task Force supports and recommends that the Mayor to take all due and applicable emergency action to endorse a larger comprehensive water conservation action plan, including Phase 3 water restrictions, if deemed necessary.
- November 20, 2008: The Green Task Force recommends to the Mayor that the city make its best effort to support the accelerated implementation of the east- west express rapid transit bus route from the Wellington / Royal Palm Beach area to downtown West Palm Beach via Okeechobee Blvd.
- November 20, 2008: The Green Task Force recommends to the Mayor that the City make its best effort as a matter of public safety and environmental responsibility to proceed with the installation of additional facilities to increase the City's fuel storage capacity from the current level to five days and to include E85 fuel capability.
- October 16, 2008: The Green Task Force supports the recommendation that Grassy Waters Preserve be designated or recognized within the new City Center.'

Revised April 1, 2010

- August 21, 2008: The Green Task Force recommends to the Mayor that the City to pursue participation in the Florida's Clean Marina Program and requests periodic reports from the City on their progress.
- July 17, 2008: The Green Task Force recommends to the Mayor that the City include "snipe" signs within the definition of litter under the City's anti-litter ordinance.
- July 17, 2008: The Green Task Force recommends to the Mayor that the City accept the invitation to participate in the Carbon Disclosure Project.
- July 17, 2008: The Green Task Force recommends that the Committee of Neighborhood Presidents reconvene to mobilize against the proposed Roebuck Road extension.
- July 17, 2008: The Green Task Force recommends to the Mayor that City Departments stop dispensing non-biodegradable plastic bags to the public.
- July 17, 2008: The Green Task Force recommends that the Mayor pursues establishing an Office of Sustainability, with a Manager of Sustainability, without any increase in the City Budget and that its future justification is based on savings generated.
- June 19, 2008: The Green Task Force is in support of the Intracoastal Island Proposal, South Cove Restoration Project, as presented on April 28, 2008, subject to the project manager furnishing a design description, periodic updates and notification of any proposed changes.
- April 17, 2008: The Green Task Force recommends to the Mayor that the City of West Palm Beach urge Palm Beach County to seek alternatives to the proposed construction of the Roebuck Road extension so as to preserve and protect the City's natural resources and sensitive surface water supply, and to save critical tax dollars for necessary projects.

**Include in appendices:**

- [US Mayors Climate Agreement](#)
- [State of Florida executive order on GHG reduction \(target / goal\)](#)
- [Anything that comes out of the Florida legislature when the session ends \(May 2010\)](#)