

**CITY OF PALM BEACH GARDENS  
COMPREHENSIVE PLAN  
CONSERVATION ELEMENT  
SUPPORT DOCUMENT**

**Prepared by:**

**The City of Palm Beach Gardens**

**November 2019**

*Pursuant to Ordinance 2, 2020*

## I. INTRODUCTION

The City of Palm Beach Gardens continues to be committed to protect and preserve the City's natural resources in a manner that is balanced with the needs of the community. The abundant greenways and parkways, upland and wetland preservation areas, and open space areas all help to promote a sustainable city that identifies Conservation as one of its key priorities.



Photo: Florida Alligator. A listed species of Special Concern. City of Palm Beach Gardens

The City's Comprehensive Plan currently sets forth a number of Goals, Objectives and Policies that promote this vision. The City's existing Land Development Regulations help implement and enforce these Goals, Objectives and Policies. The Conservation Element as last amended in June 2005 provided for certain definitions to be included and to clarify alternative methods for ensuring protection of environmentally sensitive lands during the development review process. This amendment clarified that the City may approve either off-site mitigation or payment in lieu of preservation under appropriate circumstances.



Photo: Boardwalk in Frenchman's Forest. City of Palm Beach Gardens

The proposed EAR-based Comprehensive Plan amendments to the Conservation Element have been modified to "clean-up" certain existing policies that are more appropriately located in other locations within the element. Additionally, a number of minor modifications have been included to update the existing language in the Goals, Objectives and Policies to reflect existing conditions. New language has been included to further promote the vision of sustainability of the existing natural resources in the community. Finally, a new

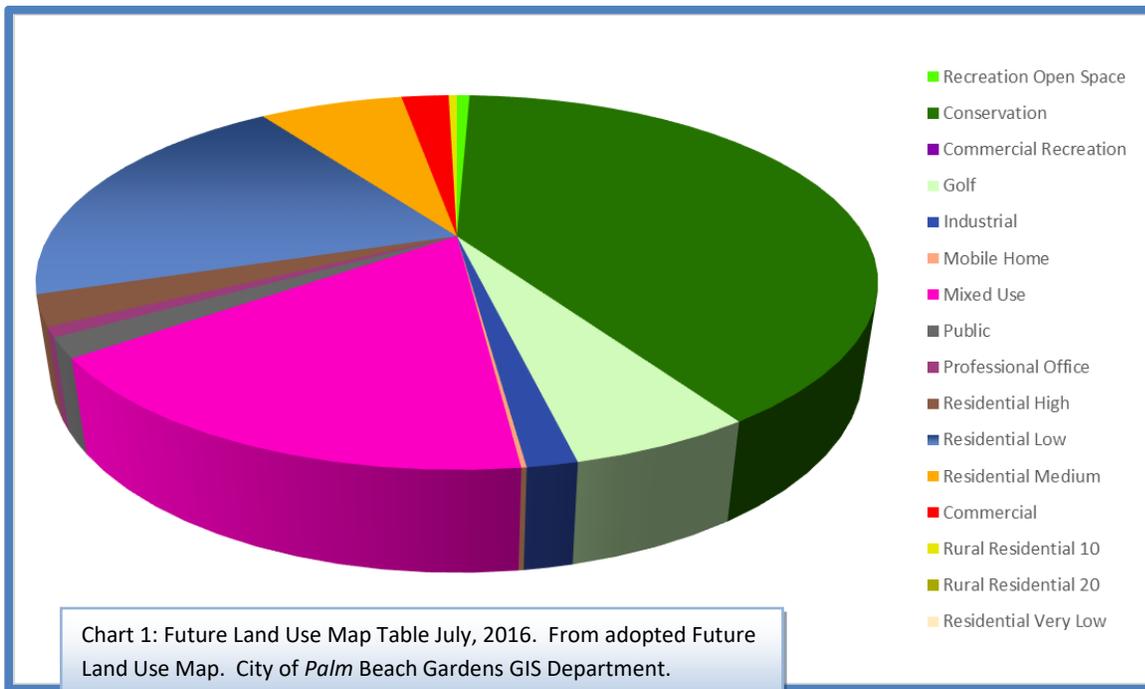
goal is being included to encourage a sustainable City through actions that reduce greenhouse gas emissions and other pollutants, and reduce the use of non-renewable resources.

## II. EXISTING CONDITIONS

The City has been a tree City since 1984, and currently has over 137,799 lineal feet, (or 26.1 miles) in State-wide recognized green parkways. These parkways promote the buffering of adjacent developments; pedestrian and bicycle circulation between different land uses; and the preservation of wooded areas and isolated wetlands in linear greenways.

Approximately 13,967.16 acres are currently dedicated on the City's Future Land Use Map toward Conservation. Approximately 18,326 acres or 53% of the City's actual existing uses are dedicated toward Conservation (2016 City of Palm Beach Gardens GIS Department – See Table 1 and 2).

### **CHART 1. FUTURE LAND USE MAP DATA**



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**TABLE 1. FUTURE LAND USE MAP DATA**

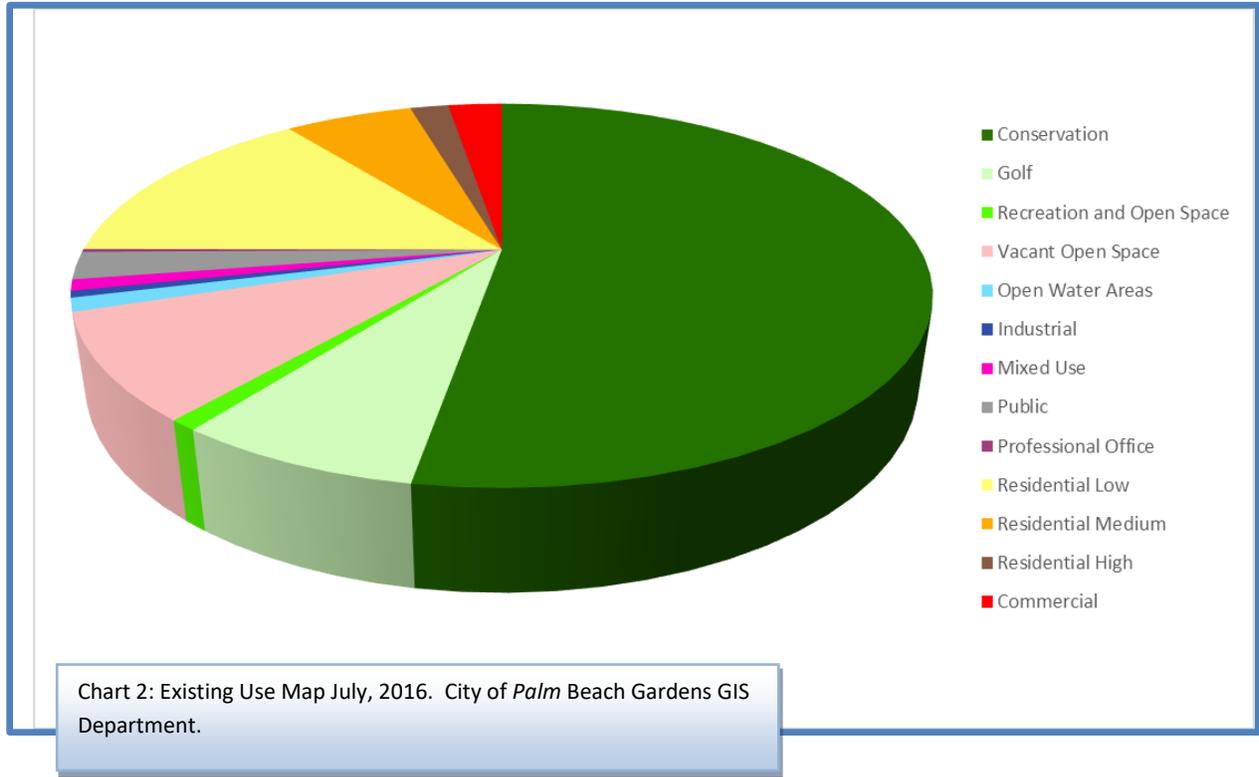
<b>Future Land Use Map</b>		
<b>Land Use Category</b>	<b>Acreage</b>	<b>Percentage</b>
<b>Recreation Open Space</b>	215.60	0.62%
<b>Conservation</b>	13967.16	40.14%
<b>Commercial Recreation</b>	0.00	0.00%
<b>Golf</b>	1957.50	5.63%
<b>Industrial</b>	539.52	1.55%
<b>Mobile Home</b>	55.78	0.16%
<b>Mixed Use</b>	5840.61	16.79%
<b>Public</b>	593.56	1.71%
<b>Professional Office</b>	295.02	0.85%
<b>Residential High</b>	910.72	2.62%
<b>Residential Low</b>	7046.18	20.25%
<b>Residential Medium</b>	2432.33	6.99%
<b>Commercial</b>	800.57	2.30%
<b>Rural Residential 10</b>	139.62	0.40%
<b>Rural Residential 20</b>	0.00	0.00%
<b>Residential Very Low</b>	0.00	0.00%
<b>Total</b>	<b>34794.17</b>	<b>100.00%</b>

*City of Palm Beach Gardens Future Land Use Map, July 2016*

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## Existing Uses

### CHART 2. EXISTING LAND USE DATA



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**TABLE 2. EXISTING USE DATA**

<b>Existing Use Table</b>		
<b><u>Existing Land Use</u></b>	<b><u>Acreage</u></b>	<b><u>Percent of Total</u></b>
<b><u>Conservation</u></b>	<u>18326.09</u>	<u>52.65%</u>
<b><u>Golf</u></b>	<u>2612.73</u>	<u>7.51%</u>
<b><u>Recreation and Open Space</u></b>	<u>305.09</u>	<u>0.88%</u>
<b><u>Vacant Open Space</u></b>	<u>3067.45</u>	<u>8.81%</u>
<b><u>Open Water Areas</u></b>	<u>395.95</u>	<u>1.14%</u>
<b><u>Industrial</u></b>	<u>193.08</u>	<u>0.55%</u>
<b><u>Mixed Use</u></b>	<u>325.00</u>	<u>0.93%</u>
<b><u>Public</u></b>	<u>812.77</u>	<u>2.34%</u>
<b><u>Professional Office</u></b>	<u>90.23</u>	<u>0.26%</u>
<b><u>Residential Low</u></b>	<u>5072.65</u>	<u>14.57%</u>
<b><u>Residential Medium</u></b>	<u>2094.75</u>	<u>6.02%</u>
<b><u>Residential High</u></b>	<u>627.41</u>	<u>1.80%</u>
<b><u>Commercial</u></b>	<u>884.15</u>	<u>2.54%</u>
<b><u>Total</u></b>	<b><u>34807.34</u></b>	<b><u>100.00%</u></b>

As shown in Chart 2 and Table 2 above, the majority of existing land use is currently in conservation use (53%). All of the existing uses shown on Chart 2 in green hues represent the cumulative acreage of the City's total conservation, recreation and open space, and golf areas, which make approximately 61% of the City's total existing land use base.

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## Flora and Fauna

The diversity of natural ecological systems within the City has been greatly reduced by drainage, land development, and invasive exotic flora. The two basic categories for the City are uplands and wetlands. The upland communities include the pine flatwoods, which predominate, particularly in the vacant western and northern areas and remnants of the oak hammocks in the coastal area. The City uses the Native Plants of South Florida (NPSF) Database: Master List of Species by Family to source most native flora and fauna that grows in the City can be found in the Appendix Section.



Photo: American Beauty Berry (native plant). City of Palm Beach Gardens

Wetlands are located in the inland slough which has been severely disturbed by drainage. However, development at the PGA Resort Community has completed construction of drainage modifications and improvements that will restore the hydroperiod and promote the wetland communities near the original slough boundary. Mirasol has been developed with two key components that help drainage and the environment. Due to the Seacoast Utility Authority (SUA) well draw down of the ground water, volume lift pumps have been installed to help supplement the lakes, littoral shelves and adjacent wetlands. Also, the finish floor elevation for buildings was set taking into consideration the future and now existing C-18 canal and G-160 control structure. Another positive note, the Mirasol Property Owners Association gave all the Mirasol wetland and upland preserve lands to Northern Palm Beach County Improvement District, in fee simple title, to manage the lands. The Evergrene community was developed by WCI and received Audubon International certification, and there is a very highly ranked "Greenhouse" constructed in Evergrene.



Photo: Mangrove Swamp. City of Palm Beach Gardens

Much of the City east of the Turnpike has been cleared and developed, eliminating all but the primary species in some areas. Likewise, within each of the mapped communities, small pockets of other types of communities may be present.

The majority of the vacant land in the City is characterized by pine flatwoods or wetlands. The Loxahatchee Slough is the major natural resource and topographical feature within the City limits. Other large natural preservation areas include the Frenchman's Forest Eco-site and the preserve area that is part of the Frenchman's Creek DRI, the Sandhill Crane and Hungryland Slough which fall under multiple jurisdictions, and the recently approved conservation area of the Avenir project totaling 2,407 acres. Dune remnants exist in the Frenchman's Reserve PUD and Sanctuary PUD. Isolated wetlands exist

throughout the City; however, the abundance of wetlands is associated with the Loxahatchee Slough ecosystem. See Map A.12. that illustrates these natural areas in the City. The vast majority of these conservation lands within the City were purchased with Palm Beach County and South Florida Water Management District subsequent to the MacArthur Foundation purchase. The acquisitions of these conservation lands have provided for the opportunity for large areas of ecological diversity and habitat in addition to eco-corridors to provide connections throughout the City.

The Loxahatchee and Hungryland Slough natural areas also provide natural passive recreation opportunities with long distance hiking trails, canoe and kayak opportunities. These trail systems, managed by Palm Beach County Environmental Resource Management and the Florida Trail Association, traverse some of the finest examples of South Florida's natural communities.

### **Endangered and Threatened Species**

The endangered and threatened plant and wildlife species and species of special concern are listed in the Appendix Section. This document is issued by Florida Fish and Wildlife Conservation Commission, who through the Army Corps of Engineers, the US Fish and Wildlife Service, function as the key regulatory agencies for endangered or threatened species on new development permits. However, all protected species, plants and animals fall under the regulations of the City's natural resources code, and must be protected or relocated during construction and land alteration. Section 14-2 in the City Code of Ordinance designates the City as a bird and wildlife sanctuary which makes it unlawful for anyone in the City to kill, injure, molest, or harm any bird or animal wildlife within the City. The Loxahatchee Slough ecosystem serves as a rookery for wading birds and Sandhill cranes. In other areas of the City, the gopher tortoise is the protected species most likely to be found.



Photo: Gopher Tortoise. A listed threatened species. City of Palm Beach Gardens

## **III. TRENDS AND CHALLENGES**

### **Management of Conservation Lands**

Charts 1 and 2 above indicate the large percentage of conversation lands the City has as part of its jurisdiction. One of the key challenges with having such a large area of existing lands dedicated toward conservation is the need to adequately manage the areas to ensure long term protection of living ecology within these systems. For example, the Resolution signed between the City of Palm Beach Gardens and the South Florida Water Management District in March 2004 to help adopt a forest management plan for the Sand Hill Crane Tract. Since many of the areas within the City are owned and operated by

Palm Beach County, the Conservation Element contains policies to further promote effective intergovernmental coordination. These policies include:

**Policy 6.1.6.3.:** *The City shall continue to cooperate with the SFWMD and Palm Beach County, through the exchange of technical information and informal coordination, in order to make a concerted effort to protect and conserve unique vegetative communities that exist in areas such as the Loxahatchee Slough, Sandhill Crane and Hungryland Slough and which fall under multiple local jurisdictions. Further, the City shall assist in the Loxahatchee Slough, Sandhill Crane and Hungryland Slough ecosites' protection by designating complete ecosites with Conservation land use and a consistent zoning district, and assisting with management activities.*

**Policy 6.1.6.4.:** *After the acquisition of new lands by agencies intended to conserve ecosites, the City shall coordinate with Palm Beach County and other applicable outside agencies in order to obtain a Management Plan for the ecosite, and designating the appropriate properties with a Conservation land use and a consistent zoning district.*

## Water Restrictions

In February 2007, Florida Water Officials declared that the Everglades water body, a source that supplies more than 800 million gallons of water a day, could no longer support additional demand, and cities like Fort Lauderdale and Miami were required to explore alternate sources to meet future water needs. In terms of District-wide rainfall, 2006 was the sixth-driest year on record dating back to 1932, and the dry trend has continued into 2007, with sporadic rainfall that was substantially below normal through April 2007.



In October 2007, Lake Okeechobee was about 4 feet below its historical average for the time of year. (Source: [www.sfwmd.gov](http://www.sfwmd.gov)) Consequently, the issue of water conservation was the subject of much discussion at the local level in South Florida, and the lack of rainfall in the region causing record low levels of Lake Okeechobee resulted in the South Florida Water Management District imposing strict drought restrictions at that time.

At that time, as part of the City's intergovernmental coordination efforts, the City cooperated with restrictions imposed by the South Florida Water Management District. The City actively enforced SFWMD's Modified Phase II water restrictions, and placed a number of useful links on its website to assist residents to better understand the limitations of the drought restrictions. The City continues to enforce its water conservation and wastewater reuse regulations as provided in the City's Code of Ordinances and Land Development Regulations. Specifically, Article II. Water

Conservation, Section 74-36 through 74-43, and Article IV. Water Shortage Regulations, Sections 74-77 through 74-77. These code sections address the restriction of irrigation to the hours of 5:00 p.m. to 9:00 a.m.; requires water sensing devices on new irrigation systems; and assists the South Florida Water Management District (SFWMD) in the implementation of its water shortage plan. The City will evaluate its Code of Ordinances related to water conservation and shortages to include any necessary best management practices for water conservation. In addition, the City will review its operations related irrigation and address any potential updates that may be necessary for compliance with Rule 40E-24.201 by 2025.

## **Infill & Re-development**

Conservation Goals, Objectives and Policies are included in a number of additional Elements in the Comprehensive Plan. One of the key concepts that go hand-in-hand with conservation is the acknowledgement to provide sustainable growth that promotes the mixture of land uses, multi-modal transportation, infill, and redevelopment. The supporting data of Future Land Use Element provides more detail on what measures the City is taking to promote this concept.

Essentially, infill & re-development should support superior projects within the Cities' urban landscape. These buildings are encouraged to be mixed use, energy efficient, appropriately landscaped, and aesthetically pleasing. Infill redevelopment should allow flexible design while maximizing the potential use of a building or site. The very nature of infill redevelopment promotes higher densities and best uses while discouraging sprawling development upon green space, suburban, and rural land.

The ability to live, work, and play within one's own neighborhood is vital for infill redevelopment's success. The use of energy efficient appliances, environmentally friendly materials, superior architecture, and native landscaping provide the foundation for infill redevelopment initiatives. On-site water quality can also be significantly improved by infill redevelopment. Surface water from impervious surfaces (rooftops, sidewalks, and parking lots) currently is diverted to water retention and/or detention areas.

## **Climate Change**

As described in detail in the supporting data within the Future Land Use Element, climate change is a key focus for the City. A number of policies exist in the various elements within the Comprehensive Plan to address the need to reduce greenhouse gas emissions. Conservation is a key element to prevent climate change in the City. The following initiatives are encouraged to promote sustainable growth:

- Conserve, reuse, recycle
- Walk, bike, carpool, or use mass transit
- Building 'green' energy efficient buildings
- Encourage mixed land uses
- Provide incentives for business/residential responsibility

- Sustain water quality
- Limit dependence on oil
- Educate individuals on the aforementioned items

### **Conservation & Green Building**

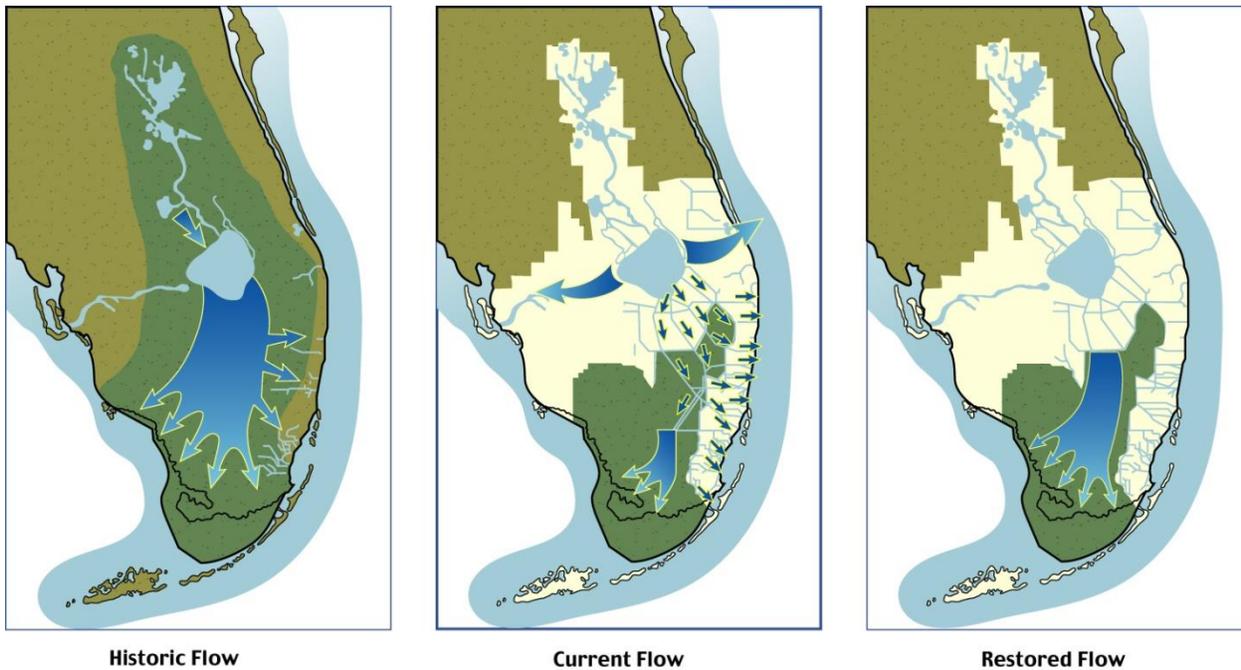
The Conservation Element is an integral component to fulfilling green building standards, and the Future Land Use Element also includes objectives and policies to support green building standards. A number of Green Building certification programs include as part of their checklists direct incentives to conserve lands that have native upland and wetland habitats in addition to open space and green space areas. Green building standards furthermore encourage quality site design measures including clustering to allow for the preservation of the natural areas along with multi-modal transportation opportunities.

For example, the Florida Green Building Coalition certification checklist provides specific number of criteria that promotes Conservation. The first Category is entitled, “Protect Ecosystems and Conserve Natural Resources”, and includes a point system with incentives such as:

- Develop management plan for preserved, created or restored habitats
- Conduct tree, topographic, soil and wildlife surveys prior to design
- Create conservation areas and nature parks
- Preserve the most valuable spaces for biodiversity
- On-site conservation plan for a specific wildlife species
- Maintain or provide wildlife corridors
- Preserve upland buffers to enhance preserved wetlands
- Preserve or provide aquifer recharge areas in uplands
- Restore native wildlife habitat

### **Long Term Water Management**

As part of the City’s efforts to be a participating and active agency on this issue, co-ordination began in 2008 with the SFWMD on its Comprehensive Everglades Water Restoration Program (CERP). In February 2008 a presentation was made to the City of Palm Beach Gardens by the SFWMD regarding the status of the CERP program as it relates to Northern Palm Beach County. The presentation included an overview of the Regional Plan, which directly includes the areas within the City.



CERP program. From February 2008 presentation made by the SFWMD. City of Palm Beach

One of the elements within the CERP program is the G-160 Loxahatchee Slough Structure that is located within the City of Palm Beach Gardens. This structure, currently in operation since 2007, provides SFWMD the ability to raise the water level of the Loxahatchee Slough ultimately to a historic level. Collectively, with the purchase of water flowage easements over private lands and additional purchases of privately owned lands in the Loxahatchee Slough, SFWMD and Palm Beach County has spent millions of dollars removing exotic invasive vegetation, filling in old agriculture ditches, and correcting the water table. This work will restore the fauna and flora of the Sandhill Crane Natural Area, Hungryland Slough and the Loxahatchee Slough, which is over 12,000 acres in the City of Palm Beach Gardens. As an update to this project, the SFWMD website as of July 2016 ([www.sfwmd.gov](http://www.sfwmd.gov)) reports that completed components include the G-160 and G-161 structures. The replacement feature for the L-8, known as the Mecca shallow impoundment, is in preliminary design.



G-160 Structure (Loxahatchee Slough Structure. City of Palm Beach Gardens)

## Waste Management/Recycling

Another effort that is linked directly to Conservation is the modification to promote better waste management and recycling standards within the City. The Infrastructure Element of the Comprehensive Plan, and specifically the Solid Waste Sub-Element, addresses much of the detailed plans required to adequately maintain these systems. The City of Palm Beach Gardens does not own or operate a solid waste disposal facility. Residential and non-residential waste as well as vegetative waste is collected by a private sanitation firm for disposal at a facility that is owned and operated by the SWA.



It is the policy of the Solid Waste Authority (SWA) that Integrated Solid Waste Management principles are utilized to conserve landfill capacity, while recovering energy and material resources from the solid waste stream through a well-planned and operated system using source reduction, recycling, composting, combustion and landfill.

The SWA has goals that address the “source” of waste that set forth the development and maintenance of programs that encourage residents to reduce of waste through rental, repair, reuse, reduction of unwanted direct mail and reduction of single-use and disposable products where practicable; expand existing educational and incentive programs for source separation and composting as an alternative to disposal of vegetative waste; development of educational programs informing residents of less or non-toxic alternatives to household chemical products; develop programs to assist businesses with source reduction efforts and development of quantitative methods to evaluate the effectiveness of source reduction activities.

The Recycling goals provide for reduction in the waste stream by recovering recyclable materials to the maximum extent practical; provide a convenient recycling program to encourage source separation of materials; provide sufficient processing capacity for source-separated recyclable material; encourage the procurement of goods mad all or in part from recycled materials; assist in the development and expansion of secondary materials markets at the local, regional, state and national levels and maximize materials recovery, revenues and market stability, through pursuing programs with municipal and commercial customers, selling of recovered materials and pursuing long term marketing arrangements with consumers or brokers.

The City participates city-wide in recycling through use of the blue and yellow recycling containers through SWA. In addition, City Hall and all City recreational facilities provide recycling receptacles for bottles and cans, and City Hall offices include paper-recycling bins.