

Conservation & Open Space

Environment



CONSERVATION & OPEN SPACE ELEMENT INTRODUCTION

Element Purpose

The purpose of the Conservation & Open Space element is to promote the conservation and public use of natural resources. These planning directives should ensure that West Melbourne's natural resources are supported and enhanced in balance with development.

West Melbourne recently celebrated its 50th year as a Florida community. The character of being a small city is supported by its natural resources and open spaces. While much of the community has been developed, the undeveloped portions of the City west of Interstate 95 continue to act as a buffer between Florida's agricultural heartland and developed Atlantic coastal communities.

West Melbourne is located on the western slope of the Atlantic Coastal Ridge, very near the plateau. Elevations range from approximately 23 feet to approximately 29 feet above the National Geodetic Vertical Datum of 1929 (NGVD).

The climate is subtropical, characterized by warm humid summers and dry mild winters. The average annual precipitation is 50.04 inches, mostly occurring in the rainy season from June to October. The climate has allowed tropical plant species to persist under the canopy of temperate zone trees in the hardwood areas.

The City's largest public environmental resource is Erna Nixon Park. The 52-acre park is home to a variety of native animal and vegetation. There is a large private conservation area west of I-95 which is home to wetland flora and fauna. The remainder of the City does not contain notable amounts of natural features which is due in part to the City's agrarian roots. Much of the City was pastureland and was owned by a few cattle and other livestock land rich families.

Through the data in this Element, this City will identify natural resources in the community and identify issues concerning the conservation of these resources and future establishment of natural open spaces. Objectives and policies will help foster West Melbourne's quality of life, future sustainability, and community vision by protecting, maintaining, and preserving open spaces and environmental amenities.

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Introduction

It is essential that the City of West Melbourne work in partnership with local, regional, and state partners, particularly Brevard County, to ensure that residents and businesses are able to receive the most efficient and effective delivery of services. Additionally, coordination is critical to the implementation of the City's future planning framework and achievement of its adopted community planning vision.

Some of the most important issues to address in the Conservation & Open Space Element are:

- Development practices that promote natural resources, conservation resources, and open space areas.
- Interlocal agreements and regional partnerships for coordination of conservation and open space resources.
- Balance between natural habitat, passive open space, and active recreation areas.
- Healthy environments for both people and natural species.

Evaluation and Appraisal Report: Identified Concerns

Issues related to Conservation & Open Space that were discussed in the following chapters of the 2009 Evaluation and Appraisal Report (EAR):

- **Chapter 1—Community Identity and Image:** relates to the qualities that provide West Melbourne its community identity, quality of life, and sense of place.
- **Chapter 2—Community Core, Neighborhood Centers, and Gathering Spaces:** addresses the need to create a central community area that provides West Melbourne a heart and unifying core.
- **Chapter 3—Integrated Development Patterns:** addresses the need to establish land development patterns that integrate neighborhoods, commercial areas, and public spaces together.
- **Chapter 6—Land Development Practices and Design Standards:** relates to the need to establish land development practices and design standards that promotes the community's quality of life, small town character, and sense of place.

A healthy environment and connected open spaces are essential components of a vibrant community. The EAR identified that West Melbourne's future is dependent on its ability to sustain its culture, way of life, and most importantly, its environment. To ensure that the City continues to benefit from a healthy

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environment, the EAR recommended that the Horizon 2030 Comprehensive Plan establish sustainable development practices.

The EAR found that sustainable development practices:

- Protect critical natural habitats and native environments.
- Prevent sprawl and habitat fragmentation.
- Direct development into established development areas.

Additionally, sustainable development practices help ensure there is a balance between the built (human) environment and natural environment. This balance enables the community to protect the quality of life of its citizens and natural communities while adding to the community's overall character and health.

According to the EAR, the fact that many of West Melbourne's development projects have followed a more suburban form of development is a problem. Suburban development patterns are land intensive and do not promote conservation or bringing the natural environment together with the built environment. Suburban development patterns:

- Produce air and water pollution as a result of burning fossil fuels, increases urban runoff, and loss of wetlands.
- Fragment native habitats by dispersing developments through wetlands, greenfields, and forestlands.
- Increase the amount of land used for development by spreading residential communities out and provide an incentive for continued sprawl with cheaper building material costs rather than infilling or enhancing developed areas, despite the increased costs to extend utilities and infrastructure.
- Accelerate the consumption of energy sources by increasing the demand for fossil fuels and electricity.
- Reduce water resources as landscaping, non-residential uses, and personal water demands increase.

In order to address these concerns, the EAR recommended that the Horizon 2030 Comprehensive Plan update policies to:

- Commit to sustainable forms of development.
- Consider the impact of development on native species and habitats through the site and development review process.
- Institute development practices that mitigate environmental impacts and prevent sprawl.

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- Establish targeted development areas. Such development areas should allow for redevelopment of underutilized areas, infill development, and new development.

The following sections provide the data and analysis required to comply with the Florida Administrative Code Rule 9J-5, Florida Statute Chapter 163, and the East Central Florida Regional Planning Council (ECFRPC) policies, as well as providing the background for the resulting goals, objectives and policies as part of the EAR based comprehensive plan update.

Land Use – Transportation – Energy Planning Coordination

In 2008, the State of Florida adopted F.S. 697, which established new local planning requirements relating to energy efficient land use patterns, transportation strategies to address greenhouse gas reductions, energy conservation, and energy efficient housing. These new requirements became effective on July 1, 2008. As a result of this legislation, the state requires local governments to address the connection among land use, transportation, energy, and the reduction of greenhouse gas emissions. While this issue has been addressed throughout the plan, it is particularly addressed through the conservation and natural resource planning strategies established in the Conservation & Open Space Element.

The goals, objectives, and policies and analysis presented in this element have been designed to address the following planning concerns identified by the Florida Department of Community Affairs (DCA):

- Green house gas energy efficient practices.
- Natural resource and environmental asset protection.
- Green building strategies.

The City has already begun to encourage energy efficient building practices that go beyond the minimal code requirements determined by the Florida Building Codes. Specifically, the City has already prepared an incentive based code for its multiple family zoning that allows taller building heights if energy efficient devices and building materials are used. The City intends to expand this scope to allow commercial and other non-residential uses either development review fee waivers or changes to parking lot requirements or building height if the developers use energy efficient devices and building materials that go beyond the minimal insulation and efficiency required by the State building codes as adopted by each city.

The City will provide incentives in the way of site development fee reductions and height, lot size or other lot dimension criteria, if these waivers are consistent with the individual future land use designation and zoning district. Once the types of incentives and the timeframe for implementation

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have been studied and reviewed, the City will enact a “Green Building” ordinance to require new residential development to comply with the new Florida Statute requirements. As of 2010, the State of Florida has not created a set of rules in its Florida Administrative Codes to provide the guidance as to the items that must be addressed to promote energy conservation in new housing.

Data Assessment

The data addressed through this element contains information pertaining to how well established land development practices conserve vital natural resources, promote green building approaches, and protect natural assets. Specifically, as required by Florida Statute, the analysis includes an examination of data pertaining to:

- Analysis of conservation resources and assets.
- Green building issues.
- Natural habitats resources.

Policy Framework

To address the challenges identified through the EAR and data assessment related to establishment of a traditional development pattern, the following objective and policy series have been developed. The primary goal of this policy framework is to establish sustainable land development strategies which protect natural assets, utilize green building practices, and support the conservation of environmental resources. By achieving this goal, these objectives will achieve the directive of F.S. 697:

Objective 1 – Sustainable Development Practices: Support the health of the natural environment, minimize the degradation of native habitats, and promote clean air and energy efficient use of vital resources by implementing sustainable land development practices.

- Through this objective the City seeks establish development strategies based on green building practices, environmental protection strategies, and sustainable development principles.

Objective 3 – Habitats, Conservation Lands, and Natural Resources: Implement preservation strategies that protect natural habitats and vegetative conditions, conserve environmental lands and natural resources, and minimize environmental degradation.

- Through this objective the City ensures that future development practices protect the City’s vital natural resources, native habitats, and conservation assets that help minimize the impacts of green house gases and unsustainable land development practices.

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IDENTIFICATION AND EVALUATION OF CONSERVATION & OPEN SPACE

Water Bodies

The total water area within the corporate limits of the City is approximately 806.95 acres. Water bodies consists of natural wetlands and manmade lakes, canals and ditches. The Crane Creek drainage basin no longer exists, although it used to include part of West Melbourne as a result of the tributary located to the east of the City. Many of the drainage conveyance streams, ditches and canals are owned and maintained by various governmental entities. Another series of smaller canals and ditches drain the southern portion of the City into the Melbourne-Tillman Water Control District. The entire area is a part of the St. John's River basin.

Small lakes that once were surrounded by vacant land and are within the corporate limits have been included in various residential subdivisions. Several other lakes have been formed by borrow pits, including those existing on land annexed into the City. The City defers to the appropriate state agencies if the alteration or use of any water bodies is proposed.

Although they are not located within or adjacent to the City, the St. Johns River to the west (at least 9,000 feet from the city limits) and the Indian River Lagoon to the east (at least 10,000 feet from the city limits) are important water bodies. The St. John's River feeds Lake Washington, the main water supply to the City of Melbourne, and the Indian River Lagoon. The Lagoon provides commercial fishing activities and recreational features. Ongoing state and federal programs have been designed to improve the water quality in each water body.

No water bodies in the City contribute to the potable water supply because all are used for drainage conveyance. City owned canals and ditches are cleaned and maintained annually to promote free-flowing conveyance systems. The City has also assisted various private subdivisions during periods of record floods in pumping out flood waters.

There is a segment of the population that continually deposits debris into these stormwater conveyance systems. Code enforcement activities should be increased in this area to alleviate this problem. Code enforcement actions continue in the area of minor industrial users dumping hazardous wastes.

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Air Quality

No known industry or commercial activity within the City adversely affects air quality. The Florida Department of Environmental Protection (FDEP) has not designated anything in the City as an air pollutant.

The major air and noise pollutant in the area is the Melbourne International Airport, located east of the City. For these reasons, the City established an industrial zone within the city limits west of the airport. The City has no jurisdiction or authority to alleviate the air and noise pollution problems caused by the airport, thus the designation of the nearby industrial zone. Another source of pollution is automobile traffic.

The FDEP monitors air quality on a continuing basis. Overall, air quality in the City is good. The daily breezes from the Atlantic Ocean and the lack of a heavy industrial air pollutant provides a high quality of air.

Wetlands

Wetlands act as a natural filtration of stormwater runoff prior to being discharged to surface water bodies (see attached "Wetlands" map). There are several identified wetlands within the city limits. Pockets of perched wetlands and low areas are situated on a few private properties. There are also wetland areas within Erna Nixon Park, which are considered conservation land and will never be developed. Although most of the wetlands within city limits are small and perched, the City should carefully consider the compatibility of development in these areas and coordinate with the St. Johns River Water Management District (SJRWMD) and FDEP accordingly. The Wetlands map shows the areas of the City affected by wetland communities as documented by the National Wetlands Inventory (NWI).

Environmental reports are required by the City for those projects that may contain wetlands. If the report indicates that the subject property in fact contains wetlands and the SJRWMD determines that the wetlands are viable or can be enhanced, the wetlands must be either preserved or mitigated, with permitting and monitoring occurring by SJRWMD and other State regulatory agencies due to their expertise and extent of their jurisdiction. Review of wetlands is not handled by the City of West Melbourne. In some cases, the wetlands can be used as part of the design of retention areas for the development projects. Since the adoption of the 1999 Comprehensive Plan, several additional properties were determined to contain wetlands. The wetlands were preserved and integrated in the

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design of the associated development projects. The preservation of wetlands is an indication that the City's wetland policies have been effective and can be effective regardless of land use designations.

The State in its Objections, Recommendations and Comments report of the Horizon 2030 Comprehensive Plan required that additional policies be enacted to protect wetlands from uses that would impact these water bodies or would provide additional guidance as to the City's procedures for these natural assets. In accordance with the Florida Statutes, the City has provided a set of policies that outline the types of wetlands that might not be suitable for protection from development, the types of public uses that would remain a priority, and the system of coordination with other regulatory agencies after the City has received bona fide data in environmental reports, that can be reviewed by other agencies.

Since the City has historically grown from its inception as an agricultural area, the topography was altered years before a city was established in the area. The few wetlands that are not already protected with conservation easements or owned by a public entity will be subject to the set of policies contained in this element. The State of Florida also has extensive private property rights legislation, so the policies contained for this element strike to achieve a balance of private property rights and the preservation of unique environmental features while continuing to promote the vision of the City becoming a more compact and sustainable community.

Floodplains

The City relies on the Federal Emergency Management Agency's (FEMA) flood zone maps and elevation data. The City also follows the State of Florida requirements for flood zone and flood plain management. According to FEMA data, the vast majority of the land in West Melbourne lies in Zone X, areas to be determined to be outside the 500-year floodplain (see attached "Flood Zones" map). There are areas in the northwestern portion of the City that lie in Zone X (500 year), areas of 500-year flood, Zone AE, areas where base flood elevations have been determined, Zone FW, floodway areas along canals located in Zone AE.

Several parcels on both sides of Sheridan Road in the northwestern portion of the City were determined by survey and accepted by the FEMA to be at a higher elevation than depicted on the Flood Insurance Rate Map (FIRM). Letters of Map Revision (LOMR) were issued by FEMA for these parcels which effectively removed them from the AE flood zone designation. Other parcels in the same general area of Sheridan Road and also near John Rodes Boulevard are believed to also be higher than the elevation shown on the FIRM. As these parcels are surveyed, they may also be subject to flood map revisions. Most of the areas that were annexed north of US 192 and west of I-95 are protected by a berm that

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alleviates flooding. The SJRWMD has determined that one parcel, not protected by the berm, is not suitable for development. Until such time that a change to this occurs, the parcel is shown on the Future Land Use map as a conservation area with a corresponding CON-REC future land use designation.

The other areas in the 500-year flood plain are along Crane Creek, which is a tributary flowing west from the Indian River Lagoon and located in the City of Melbourne, east of Dairy Road, and not in the City limits of West Melbourne. One floodplain is located in the eastern portion of the City and the other in the central portion near Wickham Road. Development has already occurred in the Wickham Road area.

Development activity in the flood prone areas will be carefully reviewed by the City who will enforce and stormwater management requirements. Requirements may include compensatory storage as a result of cumulative run-off effects from other developments.

Minerals

There are no known commercially valuable minerals within West Melbourne. Limestone deposits are found and mined in nearby areas, making it possible that small deposits could exist in the City. Marl, shell, and sand were mined at one time in the City. The resulting borrow pits have been filled by water. There have been no mining activities in the recent past. With the increase of residential development and in order to protect certain areas, the City prohibits mining through its zoning codes.

Soils

Soils in West Melbourne are mostly of the sandy type. The SJRWMD has not designated West Melbourne as having any major erosion problem. Most of the erosion in the City occurs along the manmade ditches and canals. West Melbourne is characterized mainly by three types of sandy soils: Eau Gallie, Myakka Sand, and Myakka-Urban Land Complex. The U.S. Soil Conservation Service defines these soils as "low to nearly level" and "level, poorly drained" soils. The soils are poorly drained due to the high water table. Other types of soils found on property annexed into the City since 1988 include Felda sand, Pomella sand, Anclote sand, and Basinger sand.

The City Code permits septic tanks only in outlying areas not serviceable by the sanitary sewer collection system or in times when capacity is not available at the sewer plant. In circumstances where septic tanks must be used due to unavailable capacity, the Code requires dry sewer lines to be installed and connection to the sanitary sewer collection system as soon as feasible. Older septic tank systems appear to be performing well, with very few inquiries as to the availability of sewer connection due to failing systems. Since 1988, the City has continued to expand its sewer service. All of the newer residential

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subdivisions constructed south of US 192 in the 2000s are connected to the sanitary sewer collection system.

Predominant soils in the areas of existing septic tanks include Eau Gallie Sand, Myakka-Urban Land Complex, and Myakka Sand. Due to the high water table, these soils are classified by the U.S. Department of Agriculture (USDA) as poorly drained with moderate to severe limitations for septic tanks. However, septic tanks are possible, and permits can be issued when conditions are corrected through soil replacement or when drain fields are elevated. Permitting for septic tanks is handled by the Brevard County Environmental Health Department. The County periodically checks with the City for updates to the location of sanitary sewer lines.

The types of soils found within West Melbourne are summarized as follows and have been provided by the USDA Soil Conservation Service (see attached "Soil Types" map):

Soil Types

- Anclote Sand
- Basinger Sand
- Chobee Sand Loam
- Eau Gallie Sand
- Eau Gallie, Winder, and Felda Soils
- Felda Soils
- Floridana Sand
- Immokalee Sand
- Malabar Sand
- Malabar, Holopaw, and Pineda Soils
- Myakka Sand
- Myakka Sand, ponded
- Myakka-Urban Land Complex
- Pomello Sand
- Quartzipamments, smoothed
- Riviera
- St. Johns Soils
- Tomoka Muck
- Valkaria



Flora and Fauna

West Melbourne is characterized by four ecological communities: the South Florida Flatwoods, the Wetland Hardwood Hammock, the Swamp Hardwoods, and the Slough. The most dominant ecological community is the South Florida Flatwoods, which can be further divided into the Mesic Flatwoods, the Wet Flatwoods, and the Scrubby Flatwoods.

The South Florida Flatwoods occur on nearly level land. Water movement is very gradual to the natural drainage ways, sloughs, wetland hardwood hammocks, and swamp hardwoods. During the rainy season, usually June through October, this community may have water on or near the soil surface. It is easily identified by the flat topography and palmetto vegetation. The soils are nearly level, deep, acidic, sandy, poorly to somewhat poorly drained and coarse-textured through or coarse-textured in the upper part and moderately coarse-textured or moderately fine-textured in the lower part. Representative soils may include Eau Gallie, Pineda, Immokalee, Malabar, Holopaw, and Myakka.

The landscape position of the South Florida Flatwoods affects plant-water relationships and causes slight differences in plant composition from wetter to drier areas. The Mesic Flatwoods are moist pinelands that rarely flood. They are composed of second-growth slash pines, with saw palmetto as the dominant understory plant.

The Wet Flatwoods occur on sites where water stands for a month or more each year. The canopy trees are second-growth slash pines, with redroot, saw grass, and/or wiregrass as the most abundant understory.

The Scrubby Flatwoods are the driest, with a scattered canopy of second-growth longleaf pine. The scrubby under story is composed of a mixture of Mesic and Scrub species, such as sand live oak, chapman oak, myrtle oak, saw palmetto, lyonias, and wiregrass. The following list of plants characterizes the three (3) types of Flatwoods, as provided by the USDA:

Trees

- Slash Pine, *Pinus elliottii*
- Longleaf Pine, *Pinus palustris*
- Live Oak, *Quercus virginiana*
- Laurel Oak, *Quercus laurifolia*
- Sand Live Oak, *Quercus geminata*
- Myrtle Oak, *Quercus myrtifolia*

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- Red Bay, *Persea borbonia*
- Dahoon Holly, *Ilex cassine*

Shrubs

- Gallberry, *Ilex glabra*
- Saw Palmetto, *Serenoa repens*
- Tarflower, *Befaria racemosa*
- Shiny Blueberry, *Vaccinium myrsinites*
- Shiny Sumac, *Rhus Capallina*
- Wax Myrtle, *Myrica cerifera*
- Fetterbush, *Lyonia ferruginea*
- Shiny Lyonia, *Lyonia lucida*

Herbaceous Plants and Vines

- Broom-sedge, *Andropogon virginicus* var. *glacus*
- Wiregrass, *Aristida stricta*
- Bracken, *Pteridium aquilinum*
- Blazing Star, *Liatris gracilis*
- Florida Tickweed, *Coreopsis leavenworthii*
- Vanilla Plant, *Carphephorus odoratissimus*
- Grassleaf Golden Aster, *Pityopsis graminifolia*

The South Florida Flatwoods have a diverse and numerous wildlife population. Common species of mammals include the eastern grey squirrel, cotton rat, marsh rabbit, raccoon, opossum, and grey fox. Birds found here are the bobwhite quail, pileated woodpecker, red-bellied woodpecker, northern cardinal, Carolina wren, mockingbird, screech owl, and chuck-will's widow. Dominant reptiles include the eastern diamondback rattlesnake, yellow rat snake, black racer, coral snake, and green anole. Amphibians found here are the oak toad, chorus frog, and pinewoods tree frog.

The Wetland Hardwood Hammock lies in depressions or on lower elevations than the Flatwoods. Erna Nixon Park lies within this community. This community is a wetland climax forest on poorly drained soil, with high water tables. It has an evergreen appearance since it is dominated by laurel oaks, live oaks, sweet bay, and cabbage palms. Red maple and American elm also occur but are not dominant. These hammocks are not inundated by local rainfall for as long a period of time as are associated with swamp hardwoods.

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Soils associated with this community are nearly level, somewhat poorly and poorly drained, with loamy subsoil and sandy surfaces. Many of these soils have very thick sandy surfaces and subsurface layers which are slightly acid to moderately alkaline throughout. A representative soil is the Felda.

The Wetland Hardwood Hammock community supports a luxurious growth of vegetation with a diversity of species. Although supporting plants are found in both wetter and drier sites, this community has definite flora characteristics. Plants which characterize this community are shown in the following list, as provided by the USDA:

Trees

- Cabbage Palm, *Sabal palmetto*
- Laurel Oak, *Quercus laurifolia*
- Live Oak, *Quercus virginiana*
- Red Bay, *Persea borbonia*
- Red Maple, *Acer rubrum*
- Sweetbay, *Magnolia virginiana*

Shrubs

- Wax myrtle, *Myrica cerifera*
- Beauty bush, *Callicarpa americana*
- Saw Palmetto, *Serenoa repens*

Herbaceous Plants and Vines

- Cinnamon Fern, *Osmunda cinnamomea*
- Royal Fern, *Osmunda regalis*
- Poison Ivy, *Toxicodendron radicans*
- Virginia Creeper, *Parthenocissus quinquefolia*
- Longleaf Chasmanthium, *Chasmanthium sessiliflorum*
- Low Panicum, *Panicum* spp.

Mammals found in this community include the skunk, opossum, raccoon, and grey squirrel. Several birds may be found here, including owls, the red-shouldered hawk, woodpeckers and numerous song birds. Reptiles associated with this community are the green anole and the rough green snake, and amphibians include the green tree frog.

The Swamp Hardwoods also occur in the area preserved as Erna Nixon Park. This community is a basin which is normally submerged or saturated part of the year. The canopy of this climax forest is primarily

deciduous trees. Periodic flooding is characteristic of the community. Soils associated with this community are nearly level, very poorly drained, dark colored and have coarse to medium textured surfaces underlaid by finer textured material, or are organic, and are slightly acid to mildly alkaline. Representative soils are Anclote, Chobee sandy loam, and Copeland Complex.

Swamp hardwood forests are characterized by hardwoods, a high percentage of which are deciduous. Common dominants are the Laurel Oak, Red Maple, American Elm, Black Gum, and Cabbage Palm. The species composition is largely determined by the kind of soils that occur. Plants which are characteristic of this community are shown in the following list, as provided by the USDA:

Trees

- Laurel Oak, *Quercus laurifolia*
- Red Maple, *Acer Rubrum*
- Black Gum, *Nyssa sylvatica* var.
- Hackberry, *Celtis laevigata*
- Twinberry Stopper, *Myrcianthes fragrans*
- Sweetbay, *Magnolia virginiana*

Shrubs

- Marlberry, *Ardisia escallonioides*
- Myrsine, *Rapanea punctata*
- Swamp Dogwood, *Cornus Foemina biflora*
- Wild Coffee, *Psychotria nervosa* and *P. sulzneri*

Herbaceous Plants and Vines

- Boston Fern, *Nephrolepis exaltata*
- Golden Plypody, *Phlebodium aureum*
- Jack-in-the Pulpit, *Arisaema triphyllum*
- Climbing Milkweed, *Matelea suberosa*

Animals found in this community are adapted to wet conditions and must withstand the flooding that occurs periodically. Dense vegetation provides good cover and food sources. Dominant mammals include the grey squirrel and raccoon. Birds found here are the barred owl, hawks, the horned owl, pileated woodpecker, and various song birds. Reptiles include turtles and various snakes.

The Slough ecological communities vary widely in size. Most serve as drainage ways for water during periods of heavy and prolonged rainfall. This community appears as an open expanse of grasses,

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sedges, and rushes in an area where the soil is saturated during the rainy season. Most sloughs are relatively long and narrow and slightly lower in elevation than the surrounding flatwoods or hammocks. In West Melbourne, the Slough is located in Erna Nixon Park. This particular Slough has been altered and cut down in size due to development in surrounding areas.

Soils commonly associated with this community are nearly level and poorly drained with coarse textured surfaces underlain by clay or sand. Representative soils include Anclote, Arzell, Basinger, Charlotte, Placid, and Pople (of which only Anclote is in the City).

Grasses are the most common plants found in sloughs. Sedges and rushes also occur, with scattered shrubs in some locations. Plants which characterize this community include the following, as provided by the USDA:

Shrubs

- St. Peters wort, *Ascyrum stans*
- Sundew, *Drosera* spp.
- Marsh pink, *Sabatia* spp.
- Meadowbeauty, *Polygala* spp.
- Milkwort, *Polygala* spp.
- Yellow-eyed grass, *Xyris* spp.
- Herbaceous Plants and Vines
- Pickerel weed, *Pontederia cordata*

Grasses and Grasslike Plants

- Beak rushes, *Rhynchospora* spp.
- Blue maidencane, *Amphicarpum muhlenbergianum*
- Bluejoint panicum, *Panicum tenerum*
- Bottlebrush threeawn, *Aristida spiciformis*
- Panicum, *Dichanthelium dichotomum*
- Low panicum, *Panicum* spp.
- Sand cordgrass, *Spartina bakeri*
- Sloughgrass, *Scleria* spp.
- Soft rush, *Juncus effuses*

Mammals found in Sloughs include the bobcat, deer, grey fox, marsh rabbit, opossum, cotton rat, and raccoon. Birds in the community include the bobwhite quail, cranes, egrets, herons, ibis, meadowlark, red shouldered hawks, and snipe. Frogs and salamanders are examples of amphibians. Reptiles found in

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Sloughs are the cottonmouth moccasin, eastern diamondback rattlesnake, pigmy rattlesnake, ringneck snake, and yellow rat snake.

The last three communities accentuate the importance of Erna Nixon Park. The park is a valuable natural asset for the City and should continue to be protected. Development in the surrounding areas of the park has had an adverse affect on the natural habitat in the park. The area north of the park is zoned for industrial use in Brevard County, while the area to the east is zoned industrial in the City of Melbourne. Residential development in the Town of Melbourne Village and West Melbourne is located to the west and south of the park. The City should continue to coordinate with Brevard County, Melbourne and Melbourne Village to protect and preserve the remaining habitats in the park area.

Brevard County is home to several endangered and threatened species. This fact combined with the types of ecological communities found in West Melbourne provides a method to determine species possibly existing in the City. The following species are designated by federal and state agencies as endangered or threatened, as provided by the USDA:

Reptiles

- American Alligator
- Eastern Indigo Snake
- Gopher Tortoise
- Florida Pine Snake

Mammals

- Bobcat
- Florida Mouse

Amphibians

- Flatwoods Salamander

Birds

- Kirtland's Warbler
- Little Blue Heron
- Louisiana (Tricolored) Heron
- Florida Sandhill Crane
- Bald Eagle
- Migrant Loggerhead Shrike
- Bachman's Sparrow

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- Southeastern Kestrel
- Bachman's Warbler
- Snowy Egret
- Osprey
- Marsh Hawk
- Reddish Egret
- Tricolored Heron
- Wood Stork

Plants

- Pigmy-Pipes
- Florida Beargrass
- Celestial Lily
- Golden Leather Fern
- Rein Orchid
- Catesby Lily
- Snowy Orchid
- Big Yellow Milkwort
- Wild Coco
- Fragrant Ladies Tresses
- Slender Ladies Tresses
- Spring Ladies Tresses
- Giant Wild Pine
- Tampa Vervain
- Simpson Zephyr Lily
- Giant Leather Fern
- Mosquito Fern
- Bearded Grass Pink
- Marsh Fern
- Royal Fern
- Downy Shield Fern
- Netted Chain Fern
- Rose Pogonia
- Nodding Club Moss

Currently, there are no known active bald eagle's nests existing within the city limits. During the approval process of a proposed development with an active bald eagle nest, the City and developer will coordinate with state and federal officials to ensure that all regulations are adhered to concerning the

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nest. It is difficult for the City to monitor the movements of animal species that are endangered or threatened that may exist in our city limits, however , environmental reports are required for the projects that could contain endangered or threatened species. The land development regulations require that, if an endangered or threatened species exists on land proposed for development, a protection and/or relocation program must be approved by the City prior to issuing development orders.

The City is proactive with regard to the protection of trees. Tree surveys are required to be submitted for all projects, and the design of the project must include protection measures for the most desirable trees. Also, the retention of native vegetation other than trees is encouraged and incorporated into projects when feasible.

Water Quality

Potable Water

The City of West Melbourne purchases drinking water in bulk from the City of Melbourne. The water treatment plants that determine the quality of West Melbourne’s water are owned and operated by the City of Melbourne, and the water sources, Lake Washington and well fields, are located just west of the Melbourne corporate limits near Lake Washington, which is west of I-95 and north of Eau Gallie Boulevard. West Melbourne owns and maintains the water distribution mains and lines within the City, and therefore, the City has been declared by the FDEP and SJRWMD as a secondary water supplier. These water mains are repaired and replaced on an as-needed basis with funds budgeted annually. The quality of drinking water is the responsibility of the owner of the treatment plant, which is the City of Melbourne. For information concerning Melbourne’s water treatment plants and water source, refer to the Public Facilities Element of this Comprehensive Plan.

Groundwater sources in West Melbourne are a very minor source of potable well water and are privately owned. The City of West Melbourne is not a supplier of potable water as mentioned in the paragraph above. Since there is a public potable water system supplied through the City of Melbourne, there are very few potable water wells in the City of West Melbourne for private use. There are no agricultural users of potable water, as existing ponds on the properties with livestock are used for watering of the stock.

Water Conservation

The City has a reuse district south of US 192 and has reclaimed water mains in this area (see attached “Water Conservation” map). All new residential subdivisions that are developed in the reuse district

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must have reclaimed water lines installed for landscape irrigation purposes. All new commercial or other non-residential projects in the reuse district must either connect to the reuse system, if available, or provide stub-outs from the irrigation system to the right-of-way for future connection. These programs lessen the burden on the potable water supply since residents can rely on reclaimed water for landscape irrigation. For more information regarding the City's reclaimed water system, refer to the Public Facilities Element.

The City shall promote water conservation by requiring that all new construction and major remodeling activities utilize fixtures conforming to the Florida Building Code standards for water efficiency and conservation. The SJRWMD recommends the following water conserving fixtures for new construction:

- Low volume water closets.
- Low volume urinals.
- Water efficient showerheads.
- Water efficient faucets.

The City has a water conservation ordinance that does not implement SJRWMD's landscape irrigation restrictions. The City will adopt a revised ordinance that implements SJRWMD's restrictions and shall keep the public informed of these restrictions.

Groundwater Recharge Area

As determined in the Public Facilities Element data, there are no groundwater recharge areas in West Melbourne as shown on the Groundwater Discharge Areas map. If in the future, any part of the City is in a groundwater recharge area, then sufficient separation in ground water recharge, as determined by the City and concurrent with the rules of the SJRWMD, shall be provided between stormwater management structures and conservation areas. Examples of the separation of such area include properties assigned the Conservation land use designation, conservation easements, and similar properties in order to insure that no adverse impact occurs to the hydrologic regime of the conservation areas. Appropriate stormwater management and treatment systems would at that time be required to protect water quality in the groundwater recharge areas. Where limited percolation capacity limits use of dry retention, wet detention as defined by the SJRWMD would be required for those groundwater recharge areas.

Upland buffers

Upland buffers from property which is assigned the Conservation-Recreation (CON-RES) future land use designation or which has been designated a conservation area, shall provide a conservation easement or similar which averages 50 feet in width (but not less than 25 feet in width) shall be provided. Whenever determined to be feasible by the City, upland buffers shall connect with one another and with larger

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natural systems. Density or open space credits for upland buffers shall be encouraged and may be awarded in accordance with local, regional, and state regulations and restrictions. Upland buffers shall be established pursuant to the granting of conservation easements and on forms acceptance to the City. Upland buffers shall be required adjacent to wetlands and areas of CON-REC future land use and shall be incorporated into larger corridors when possible.

Stormwater Management

A stormwater management plan and a SJRWMD permit are required for all site plan and subdivision projects within the City. A minimum volume of the first inch of stormwater runoff over the entire site is required to be retained on the site of development, and the post-development runoff conditions cannot exceed pre-development conditions. Other design requirements include slopes, erosion control, discharge rates, peaks and volumes, sediment containment and prohibition of direct channeling of runoff.

The purpose of the stormwater management requirements is to protect and enhance groundwater resources and to eliminate the adverse effects of on-site generated erosion, sedimentation, and runoff. The stormwater management requirements assist in groundwater recharge, maintaining and improving quality of water in receiving bodies and controlling erosion.

Hazardous Waste

There are no major hazardous waste producers in the City. There are the usual small quantity waste generators in the City, such as automotive repair facilities, service stations, trucking companies, photography shops and small businesses in the industrial area. Also, residents with little knowledge of hazardous wastes may dispose of them improperly.

City Code prohibits any hazardous waste disposal into the sanitary sewer system, ditches, and canals. The wastewater treatment operator monitors any hazardous waste that may enter the system and the City takes appropriate action if hazardous wastes are detected. Also, any business proposing a use with possible hazardous wastes must show a method of safe storage and disposal during the site plan and building construction phases.

Grease traps are required to be installed for all automobile repair facilities, restaurants and any business that would potentially use oil. Inspections by the building department and fire department are required for any new use proposed in an existing building.

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The City's involvement in hazardous waste education is through Brevard County and the State of Florida. A program to inspect the small number of hazardous waste generators has been instituted. Notices are posted and the public is informed of hazardous waste amnesty days conducted by Brevard County.

Commercial Uses of Natural Resources

There are no commercial users of natural resources in West Melbourne. As stated earlier, the City has banned mining operations, including borrow pits (except for those conducted by a government agency for infrastructure improvements) in its codes.

Conservation and Recreational Uses of Natural Resources

Erna Nixon Park is a passive recreation site that is also a conservation area. Uses other than passive recreation will be permitted at this Park.

Pollution Problems

At one time, the largest contributor to pollution was the sanitary sewer treatment plant. However, a deep well injection system was installed in 1986 and there is no discharge into canals or ditches. Generally, the City is fortunate that there is very little pollution concerns. Prior to 1986, the U.S. Environmental Protection Agency (EPA) and FDEP ordered the City to cease discharge of treated effluent into the Indian River which caused the City to install the deep well injection system at the sewer plant.

The SJRWMD also ordered the City to dispose of wastewater by means other than deep well injection alone. The City constructed a sanitary sewer reuse facility at the sewer treatment plant. In 2007, the expansion was completed per the requirements in the SJRWMD's 2005 Water Supply Plan for alternate water supply. A large sanitary sewer main is located south of US 192 and connections to the reuse system have been in existence for many years in most of the residential subdivisions that exist in the reuse district.

Fisheries and Marine Habitats

There are no fisheries within the city limits. The only marine habitats are the wetlands, canals and ditches previously discussed in this section. These water bodies are not for commercial use and are not intended for public recreational use, although residents do fish from some of these water bodies.



INVENTORY OF EXISTING CONDITIONS: OPEN SPACE AREAS

Overview

The City contains public parks that provide open space and contribute to the sense of open space in West Melbourne.

Public Open Space Features and Uses

A number of parks provide open space in West Melbourne. The largest of these parks include Erna Nixon Park, Max K. Rhodes Park, Tallwood Park, and Westbrooke Park. These parks, particularly Erna Nixon Park, can be considered open space areas.

Private Open Space Features and Uses

Golf Courses

In addition to public parks, the City of West Melbourne is in close proximity to a number of open space areas in the form of private golf courses. Some of these properties are not publicly accessible while others are owned by adjacent cities and these provide visible open space which contributes to the overall quality of life for the community.

Private or Gated Neighborhood Facilities

Private or gated parks located in subdivisions, in addition to shared easements and lake frontage, also provide open space for residents and some habitat. While these are private lands with managed use, they do provide aesthetic and ecological value for the associated neighborhood. In the future, the City will work through the development process to provide improved access for all community members to such resources.

INVENTORY OF EXISTING CONDITIONS: CONSERVATION AREAS

Erna Nixon Park

The City of West Melbourne has one park facility that acts as a conservation resource: the County owned and operated Erna Nixon Park. Erna Nixon Park is a 52-acre County owned special use park and

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conservation area located in the northern portion of the City. While the majority of the park has been left in its natural state, there are passive park resources including nature/walking trails, a nature boardwalk, and pavilion facilities.

The attached "Conservation Lands" map indicates the conservation areas as identified by the East Central Florida Regional Planning Council (ECFRPC) during the "How Shall We Grow" process and then refined by the City of West Melbourne based on existing land uses.