APOPKA PLANNING COMMISSION AGENDA

September 10, 2024 3:00 PM

Apopka City Hall Council Chambers

APOPKA PLANNING COMMISSION MEETING WILL BE LIVE-STREAMED ON YOUTUBE. TO WATCH, PLEASE VISIT:
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CALL TO ORDER

OPENING AND INVOCATION

PRESENTATION

1. Presentation on the proposed re-write of the Comprehensive Plan
   Presented by: Bobby Howell, Planning Manager

ADJOURNMENT

Individuals with disabilities needing assistance to participate in any of these proceedings should contact the City Clerk at least two (2) working days in advance of the meeting date and time at (407) 703-1704. F.S. 286.0105 If a person decides to appeal any decision or recommendation made by Planning Commission with respect to any matter considered at this meeting, he will need record of the proceedings, and that for such purposes he may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

Any opening invocation that is offered before the official start of the Planning Commission meeting shall be the voluntary offering of a private person, to and for the benefit of the Planning Commission. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the Planning Commission or the city staff, and the City is not allowed by law to endorse the religious or non-religious beliefs or views of such speaker. Persons in attendance at the Planning Commission meeting are invited to stand during the opening ceremony. However, such invitation shall not be construed as a demand, order, or any other type of command. No person in attendance at the meeting shall be required to participate in any opening invocation that is offered or to participate in the Pledge of Allegiance. You may remain seated within the City Council Chambers or exit the City Council Chambers and return upon completion of the opening invocation and/or Pledge of Allegiance if you do not wish to participate in or witness the opening invocation and/or the recitation of the Pledge of Allegiance.

City of Apopka
PLANNING COMMISSION STAFF REPORT

Section: PRESENTATION
Item #: 1.
Meeting Date: September 10, 2024
Department: Community Development

SUBJECT:
Presentation on the proposed re-write of the Comprehensive Plan

REQUEST:
Review of the proposed re-write of the City of Apopka Comprehensive Plan.

SUMMARY:
In 2021 the City hired the East Central Florida Regional Planning Council (ECFRPC) to conduct the re-write of the City's Comprehensive Plan, except for the Transportation Element, which was adopted by the City Council on August 7, 2024. The Comprehensive Plan is the main policy document that provides the policy foundation for local planning and land use decisions. All jurisdictions in the State of Florida are required to have a Comprehensive Plan per Florida Statute. City staff and ECFRPC staff will present the draft of the re-write of the Comprehensive Plan and will seek input and direction from the Planning Commission and City Council related to this document.

FUNDING SOURCE:

RECOMMENDED MOTION:

ATTACHMENTS:
1. Draft - Comprehensive Plan

FUTURE LAND USE ELEMENT

Land uses for a vibrant community

FUTURE LAND USE ELEMENT

GOAL 1

Ensure that land use patterns preserve open-space, foster a vibrant community, and protect the health, safety, and welfare of Apopka residents.

OBJECTIVE 1.1

Infill development, redevelopment, and new development proposals shall work in harmony with and be appropriate to the topography, soil conditions, and the availability of facilities and services.

Policy 1.1.1

New development or redevelopment must meet the adopted levels of service for public facilities as established by the Apopka Comprehensive Plan.

Policy 1.1.2

The public facilities that are needed to serve future development shall be provided by the applicant seeking a development permit and/or the City, in a timely manner that is concurrent with development.

Policy 1.1.3

Private or public electric utilities needed to support the future land use categories may be permitted by right or as a special exception in all land use designations.

Policy 1.1.4

Development will be encouraged in areas with excess capacities for public facilities, and discouraged in areas with deficient capacities for public facilities unless these facilities can be provided concurrently with development and adopted levels of service.

Policy 1.1.5

Public facilities and utilities shall be located to consider maximizing the efficiency of services provided, minimize their costs and minimize their impacts upon the natural environment.

Policy 1.1.6
The City shall require property which is within the Utility Service Area, adjacent to the city limits and receiving city sewer, and/or water, to annex, and properties which will receive said services but which are not adjacent to the city limits, but within the Utility Service Area, shall file a deed of encumbrance to annex when the property becomes contiguous to the city limits.

Policy 1.1.7
The City shall require all development which receives city water or sewer services to annex immediately following the time at which the property becomes contiguous to the Apopka City limits.

Policy 1.1.8
The City shall continue to implement flood water management requirements through the Land Development Code to compensate for floodwater displaced by development and ensure appropriate development and engineering strategies within the 100-year flood plain.

Policy 1.1.9
Commercial development shall be coordinated to have cross access agreements to promote a more walkable and connected community.

Policy 1.1.10
An assessment shall be made at the time of any and all Comprehensive Plan land use amendments of the soil conditions and topography of the subject property and the ability of the soils and topography to support the proposed density/intensity and land uses.

Policy 1.1.11
An analysis of proposed development and redevelopment based on recommendations, deemed appropriate by the City of Apopka, shall be contained in any existing or future hazard mitigation reports.

Policy 1.1.12
The City shall coordinate existing and future land use water supply planning with all applicable governmental agencies, including municipal, county and regional plans, St. Johns River Water Management District, and the Florida Department of Environmental Protection.

OBJECTIVE 1.2
The City shall promote redevelopment as designated by the Apopka City Council and defined by Florida Statutes.

Policy 1.2.1
The City shall work with Orange County towards extending the CRA for an additional time period to be determined.

Policy 1.2.2
The City will continue to apply for federal and state brownfields grants to assess and cleanup properties.

Policy 1.2.3
The City's Redevelopment Plan shall be utilized and updated every five to eight years during the budgetary process.

Policy 1.2.4
The City shall encourage building preservation and development in the Mixed-Use Downtown District based on the traditional character of the area and enforcement of the City of Apopka Development Design Guidelines.

Policy 1.2.5
The City shall utilize regional drainage facilities where available which can provide off-site retention for development and redevelopment in the Mixed-Use Downtown District and CRA area and promote the use of low impact development and green infrastructure onsite and in rights of way to assist in capture of rainwater and provide of increased character and quality of life.

Policy 1.2.6
The City of Apopka Community Redevelopment Plan for the Community Redevelopment Area shall preserve the mixture of uses necessary to promote the traditional character and function of the area.

Policy 1.2.7
The City shall promote the new development and redevelopment of properties within the Mixed-Use Downtown District.

OBJECTIVE 1.3
The City shall implement the Future Land Use Map and discourage the proliferation of urban sprawl by promotion of land uses which are consistent with its character and that are coordinated with planned and proposed regional and local transportation and other public facilities.

Policy 1.3.1

Each Future Land Use Map classification shall have a permitted primary use or uses and special exceptions in accordance with the LDC. All special exceptions shall be accompanied by a site plan.

The Planned Development process is a form of performance zoning which may be applied to any land use category and is designed to provide the following:

1. provide an alternate method of land development not available within the framework of other zoning districts to special projects which merit such treatment;
2. allow the development of sites that would normally be difficult to develop due to topography, soils, or other site-specific features;
3. promote the most compatible, beneficial use to adjoining neighborhoods;
4. preserve significant environmental, topographical, or natural features;
5. allow a variety of housing types;
6. accommodate mixed uses;
7. offer a maximum amount of open space and recreational amenities;
8. prevent urban sprawl through the use of infill development and maximum use of existing public facilities currently in place.

Planned Development may not be pursued simply as a means to circumvent traditional zoning requirements within the Land Development Code.

Policy 1.3.1.a Agriculture Estate

The primary designation of this land use category shall be single-family dwelling units not to exceed one unit per two acre or less (1du/2ac) designed to facilitate a definite agriculture component, supporting infrastructure and public facilities sites of less than two acres.

Policy 1.3.1.b Residential Estate

The primary use shall be single family dwelling units up to 1 dwelling unit per acre, supporting infrastructure and/or public facilities of less than two acres.

Policy 1.3.1.c Very Low Density Suburban Residential

The primary use shall be residential dwelling units up to 2 dwelling units per acre, supporting infrastructure of less than two acres, neighborhood parks.

Policy 1.3.1.d Low Density Suburban Residential

The primary use shall be residential dwelling units up to 3.5 dwelling units per acre, supporting infrastructure of less than two acres, neighborhood parks.

Policy 1.3.1.e Low Density Residential

The primary use shall be residential dwelling units up to 5 dwelling units per acre,

supporting infrastructure of less than two acres, neighborhood parks.

Policy 1.3.1.f Low-Medium Density Residential

The primary use shall be residential dwelling units up to 7.5 dwelling units per acre, supporting infrastructure of less than five acres, neighborhoods.

Policy 1.3.1.g Medium Density Residential

The primary use shall be residential dwelling units up to 10 dwelling units per acre, supporting infrastructure of less than five acres.

Policy 1.3.1.h High Density Residential -15 (HDR 15)

The primary use shall be residential dwelling units up to 15 dwelling unit per acre; supporting infrastructure of less than five acres.

Policy 1.3.1.i Commercial

Primary uses shall be for business, commerce, and convenience shopping which may be neighborhood or community oriented. The maximum floor area ratio shall be 0.5 gross floor area. Institutional land uses of less than five acres; and public facilities or utilities of less than five acres. Nursing homes, assisted living facilities, and independent living facilities to be consistent with a maximum intensity of up to 1.0 FAR-Floor Area Ratio, based on compatibility with the surrounding area, and shall be the primary use and a stand-alone development.

Policy 1.3.1.j Office

Primary uses shall be for business and professional offices or institutional land uses with a maximum floor area ratio of 0.5 gross floor area. Public facilities or utilities of less than five acres shall also be primary uses.

Policy 1.3.1.k Industrial

The primary use shall be industrial, intensive commercial, agricultural and business/research parks. Also allowed are public facilities and supporting infrastructure. The use of the Planned Development process shall be encouraged. The maximum floor area ratio shall be 1.0.

Policy 1.3.1.l Agricultural

The primary designation of this land use category is any agricultural land use and, particularly, horticultural nurseries or greenhouses and residential dwelling units not to exceed one unit per five acres.

Policy 1.3.1.m Parks/Recreation

Public and private recreation sites are the primary land use in this category. Public recreation sites shall be permitted by right or by special exception in all future land use

categories. Commercial recreation shall be permitted in the commercial land use category. The maximum floor area ratio shall be 0.20.

Policy 1.3.1.n Conservation

Conservation land uses are designated on the Future Land Use Map, and shall serve as a conceptual indicator of conservation and wetland areas. If the area or a portion of an area designated as Conservation on the map is determined not to be a wetland based on actual wetland delineation by the City, the Future Land Use Map designation shall be consistent with the remainder of the parcel. A formal Future Land Use Map amendment shall not be required to change the Future Land Use Map designation under the above circumstances. Residential land uses will be permitted at a density of one dwelling unit per twenty acres in any conservation area.

Policy 1.3.1.o Institutional/Public Use

Institutional land uses shall include public buildings and facilities. Existing public buildings and facilities and public education sites may be designated as institutional on the Future Land Use Map.

The maximum floor area ratio allowed in the Institutional/Public Use category shall be 0.50.

Policy 1.3.1.p Community Redevelopment Area Overlay District

The primary intent of the Community Redevelopment Area Overlay District shall be to encourage the development of residential, business, and commerce uses consistent with the City's Community Redevelopment Plan as adopted and administered by the City's Community Redevelopment Agency. Allowable uses shall include those permitted through the underlying land use and zoning designations. The maximum floor area ratio for non-residential uses shall be twice that permitted through the underlying land use designation. Residential densities shall be consistent with those of the underlying land use designation.

Policy 1.3.1.q Mixed-Use

The primary intent of the Mixed-Use land use category is to discourage low-density residential development and allow for a mixture of residential, office, commercial, industrial, recreation, institutional uses and public facilities uses to serve the residential and non-residential needs of special areas of the City. This mix of land uses may occur on a single parcel or multiple parcels in the form of: a permitted single use; a vertical combination of different permitted uses; or a horizontal mix of different permitted uses. The intensity of development within the mixed-use land use categories will vary depending on location and surrounding uses. Transit-oriented design elements shall be encouraged to promote multiple modes of transportation in pedestrian-friendly mixed-use categories.

The Land Development Code will establish zoning districts and/or zoning overlay areas with standards that define the appropriate location for various intensities/densities. The following maximum gross intensity/density standards shall not be exceeded. The maximum floor area ratio of 1.0 is permitted for non-residential development and a maximum density of 15 dwelling units unless approved through comprehensive land use change for any of the four special purpose districts and the Kelly Park Interchange Form-Based Code.

Policy 1.3.1.r Rural Settlement (Tier Density Max. 1 du/ac)

This land use designation is intended to apply within that area defined as the "Northern Area" in the Joint Planning Area Agreement between the City of Apopka and Orange County adopted on October 26, 2004 (or subsequent amendments), and other areas of the Wekiva Study Area as may be appropriate. The district is designed to facilitate development of single-family dwelling units and associated infrastructure which maximize the preservation of open space and promote the clustering of developments to both preserve and enhance the natural environment. This land use designation shall also include an agricultural component. Intensity of development within this land use category will vary depending upon the following framework:

a. Agricultural, not to exceed one residential unit per five acres (1 du/5 ac).
b. One residential unit per five acres (1 du/5 ac) with clustering required, with a minimum open space requirement of 25%.
c. Densities greater than one residential unit per five acres (1 du/5 ac) and less than one residential unit per one acre (1 du/1 ac) with clustering encouraged but not required, with a minimum open space requirement of 35%.
d. One residential unit per one acre (1 du/1 ac) in a development with an overall size of less than 25 acres, with clustering encouraged but not required, with a minimum open space requirement of 35%.
e. One residential unit per one acre (1 du/1 ac) in a development with an overall size of between 25 acres and 100 acres, provided the development is Planned Development (PD), with clustering required and a minimum open space requirement of 45%.
f. One residential unit per one acre (1 du/1 ac) in a development greater than 100 acres provided the development is greater than 100 acres and is a Planned Development (PD) with clustering required, with a minimum open space requirement of 50%.

Policy 1.3.1.s Agricultural Homestead

This land use category is intended to accommodate any agricultural or agricultural support use, particularly, farming operations, horticultural nurseries, greenhouses, agribusinesses, and residential dwelling units not to exceed one unit per ten acres (1 du/10 acres).

Policy 1.3.2
Development and redevelopment shall be integrated with the adjacent land uses through:
(1) the creation of like uses; or
(2) the creation of complementary uses; and
(3) mitigation of adverse impacts including noise, visual, odor, and vibration.

Policy 1.3.3
Established neighborhoods and emerging neighborhood units shall be protected by ensuring adequate public notice prior to land use designation and rezoning approvals of adjacent properties.

Policy 1.3.4
Residential development north of Ponkan Road and west of Rock Springs Road (Park Avenue) will be restricted to no more than two dwelling units per acre, unless otherwise authorized through the adopted Kelly Park Interchange Form-Based Code.

Policy 1.3.5
Upon annexation, properties north of Sebastian Springs Lane and east of Rock Spring Road shall be designated agricultural or rural settlement with a minimum of one dwelling unit per acre or the same density as indicated by Orange County's Future Land Use.

Policy 1.3.6
The City shall provide a vested rights determination as applicable to a landowner or developer in accordance with Land Development Code.

Policy 1.3.7
The City shall consider the following when evaluating land use amendments, especially changes from very low density categories to higher density categories and voluntary annexation requests:

- whether the amendment demonstrates a functional relationship of the proposed amendment to other more densely or intensely designated or development lands;
- the availability of public facilities and water supplies to service a more dense or intense land use;
- multi-modal transportation linkages between proposed residential use and neighborhood; and
- compatibility with surrounding land uses.

OBJECTIVE 1.4
The City shall preserve, protect, and enhance its natural resources.

Policy 1.4.1
The City shall provide for the protection of native trees as detailed in the tree canopy

retention standards of the Land Development Code.

Policy 1.4.2
The City shall protect surface water quality through implementation of its Land Development Code.

Policy 1.4.3
The City shall protect the habitats of endangered, threatened, or species of special concern, in the City through preservation, mitigation, or relocation through enforcement of the Land Development Code.

Policy 1.4.4
The City shall require in its Land Development Code that stormwater treatment facilities be designed so that the quality of the stormwater runoff will not degrade the receiving water quality below the minimum conditions necessary to assure the suitability of the water body for the designated use, in accordance with the classifications established by local, state, and/or federal regulations.

Policy 1.4.5
The City shall seek opportunities to protect open space and natural resources through parks, stormwater management systems, and preservation of natural habitats.

Policy 1.4.6
The Land Development Code shall address and limit activities which have the potential to contaminate air, water, or soil.

Policy 1.4.7
The City shall protect environmentally sensitive conservation areas in accordance with the Land Development Code.

Policy 1.4.8
The City shall protect specific rare natural communities within the City in accordance with the Land Development Code.

OBJECTIVE 1.5
The City recognizes its historic character and cultural resources and shall protect these for future generations.

Policy 1.5.1
The City shall utilize the Apopka Historical Society and the Museum of the Apopkans as a resource for protecting and preserving historic and cultural resources.

Policy 1.5.2
The study of land uses appropriate to the historic nature of the Mixed-Use Downtown District and the Community Redevelopment Area shall include recommendations based on incentives to reuse existing historic buildings where feasible.

Policy 1.5.3
The City shall continue to promote preservation of historical sites throughout Apopka by use of the Apopka Historical Properties Survey, the National Register of Historic Places (HRHP), and the Florida Master Site File.

OBJECTIVE 1.6
The City shall provide the most efficient use of public facilities and services by eliminating enclaves and providing consistent land uses for a cohesive community.

Policy 1.6.1
The City will continue to work towards eliminating enclaves.

Policy 1.6.2
The City shall work with Orange County to create an Interlocal Service Boundary Agreement (ISBA) to provide guidance for annexations and elimination of enclaves.

OBJECTIVE 1.7
The City shall ensure the availability of suitable land for utility and public facility use necessary to support proposed development through acquisition or dedication during the development process.

Policy 1.7.1
The provision and programming of needed public facilities shall consider the needs of the existing and developing urban and suburban areas.

OBJECTIVE 1.8
Planned Developments (PDs) shall be used to provide for innovative land development as set forth in the criteria and guidelines in the Land Development Code.

Policy 1.8.1
Planned Developments (PDs) shall provide effective integration methods to maximize mixed uses such as multimodal transportation corridors, open space areas, consistent architectural guidelines and/or materials, and consistent landscape guidelines.

Policy 1.8.2
Development proposals shall include effective multi-modal transportation systems which

may include provisions for carpooling, van pooling, mass transit, bicycling, and walking.

OBJECTIVE 1.9

The City shall protect the State-established Wekiva River Protection Area in conformance with Florida Statutes.

Policy 1.9.1

Setbacks within the Wekiva River Protection Area shall be protected in accordance with Florida Statutes.

Policy 1.9.2

The highest density/intensity of any development on property adjacent to the waterways or wetlands of the Wekiva River System shall be located farthest from those waterways, wetlands, or public land.

OBJECTIVE 1.10

The City shall coordinate with the Orange County School Board on school site selection.

Policy 1.10.1

The City shall collaborate with the Orange County School District and encourage siting provisions within the Land Development Code which encourage the siting and co-location of public schools and other public facilities such as parks, libraries and community centers compatible with surrounding development.

Policy 1.10.2

The City shall seek to co-locate public facilities, such as parks and recreation, community centers, and Orange County branch libraries, with schools to the greatest extent possible. In collocating facilities, the City shall use the following guidelines:

- Elementary Schools. Playgrounds may be co-located with elementary schools. In areas with densities high enough to support them, a neighborhood park with facilities for the elderly, a neighborhood recreation center, and a library sub-branch may be included.
- Middle Schools. Community parks and athletic fields are appropriate to be co-located with middle schools. A community center and a library sub-branch or branch may be included depending on the school's location and the population served.
- High School. Community parks with a community center and athletic fields may be co-located with high schools. A main branch library is also appropriate. If justified by the population to be served, a district park could be co-located with the school.
- School site combinations. Combinations of adjacent elementary, middle school, and high school sites may co-locate playgrounds, community parks, athletic fields,

community centers and a library sub-branch if justified by the location and the population to be served. Appropriate land uses should be considered to each combination.

OBJECTIVE 1.11

To ensure the protection of sensitive environmental resources, the City shall manage development in the Wekiva Study Area by utilizing the best available data and Best Management Practices from the St. Johns River Water Management District, the Florida Fish and Wildlife Conservation Commission, the Department of Environmental Protection and other agencies to review and amend land uses and design standards.

Policy 1.11.1

The City shall review all Future Land Use Map amendments which propose to increase densities/intensities in the Wekiva Study Area shall: optimize open space, and promote a pattern of development that adequately protects the natural resources, most effective recharge areas, karst features, and sensitive natural habitats of the area.

Policy 1.11.2

The City shall review all plans for development which have identified sensitive resources to ensure it will be protected through approaches which may include coordinated greenway plans, dedication of conservation easements, acquisition of property, clustering of residential development, density credits (as in Policy 1.3.1.r - Rural Settlement), and densities of two or fewer dwelling units per acre (2 du/ac).

Policy 1.11.3

Stormwater facilities may be counted toward meeting the required open space standards as defined in the Land Development Code.

Policy 1.11.4

All development of 10 acres or more shall abide by Article 6 - Environmental Standards in the Land Development Code.

Policy 1.11.5

Open space is defined as the land area that remains undeveloped or minimally developed, such as trails and boardwalks, as part of a natural resource preserve or passive recreation area and shall include land preserved for conservation purposes. Open space excludes water bodies, street rights of way, parking lots, and impervious surfaces. Open space areas may include stormwater management areas in accordance with the Land Development Code.

Policy 1.11.6

Priority for preservation and dedication of open space shall be given to the following

resources: most effective recharge areas, wetlands, springs, spring runs, sinkholes, surface and subsurface caves, karst features, karst features with a direct connection to the aquifer and sensitive natural habitats including Long Leaf Pine, Sand Hill, Xeric Oak Scrub and Sand Pine scrub vegetative communities.

Policy 1.11.7

The following maps are included in the Appendix and are hereby incorporated into the Future Land Use Map series as overlays: the Wekiva Study Area Boundary Map, the Recharge Range Map, the Karst Topography Features Map, and the Xeric Oak Scrub, Sand Pine Scrub, and Sandhill (Longleaf Pine Habitat) Map. These overlay maps also serve to delineate the most effective recharge areas, karst features, and sensitive natural habitats including Longleaf Pine, Sand Hill, Sand Pine and Xeric Oak Scrub. The overlay map series are based on the best available data and analysis.

OBJECTIVE 1.12

Site plans, subdivisions or their functional equivalent, such as Planned Developments, within the Wekiva Study Area shall meet the design standards as set forth in the following policies.

Policy 1.12.1

Conservation subdivisions or their functional equivalent, such as Planned Developments, shall include:

1) Clustering of units on small lots;
2) Establishment of open space, which shall be connected whenever possible, in recordable easements, plat or other recordable instrument. Open spaces percentages shall be as provided for in Policy 1.3.1.r - Rural Settlement;
3) Central water and sewer treatment facilities connected to the regional system; and
4) Minimal site disturbance.

Policy 1.12.2

Development shall be buffered from springs, spring runs, sinkholes, caves and other karst features as shown below. The minimum buffer area shall consist of a setback that retains all-natural vegetation within the buffer area.

Minimum Buffer From Springs, Sinkholes, Caves, and Karst Features	
Feature	**Minimum Buffer**
Springs	300 feet
Spring runs	150 feet
Sinkholes, with a direct connection to the aquifer	200 feet, measured from the drainage divide
Other sinkholes	100 feet, measured from the drainage divide

Minimum Buffer From Springs, Sinkholes, Caves, and Karst Features	
Feature	**Minimum Buffer**
Caves	One-half mile, measured on the surface from the centerline of the cave system
Other karst features with a direct connection to the aquifer (swallet or stream to sink)	200 feet, measured from the drainage divide

Policy 1.12.3
Where a lot of record is too small to accommodate development in compliance with the buffers set forth in Policy 1.12.2, an allowable use may be established provided that the building and associated paved areas are located the maximum distance possible from the karst features, and further provided that a swale and berm are located between the development and the karst feature. The swale and berm shall be designed to direct drainage away from the karst feature.

Policy 1.12.4
Development shall use joint or shared access to the maximum extent feasible in order to minimize impervious surfaces and minimize roadway access points.

Policy 1.12.5
The City shall promote Low Impact Design (LID) parking lot design to mitigate stormwater, improve surface and ground water quality, and reduce heat island effect.

Policy 1.12.6
Design of the built environment and other impervious surfaces shall minimize connections between impervious surfaces through Green Infrastructure (GI) and LID techniques shown on a site plan such as:

- Directing flows from roof drains to vegetated areas and downspout planters or to rain barrels or cisterns for reuse of the water;
- Directing flows from impervious surfaces so that they drain to vegetated buffers such as rain gardens, bioswales, natural areas, and open space; and
- Breaking up flow directions from large paved surfaces.

Policy 1.12.7
Permeable pavement materials, pervious concrete, and pervious asphalt shall be used to minimize the amount of impervious surface with new development and redevelopment.

Policy 1.12.8
Commercial and industrial development shall be designed to minimize site disturbance by limiting clearing to the minimum area necessary to accomplish development, as

follows:

- Avoid or minimize the removal of existing trees and vegetation;
- Minimize soil compaction by delineating the smallest disturbance area feasible; and
- Maximize disconnection of impervious surfaces to reduce water runoff flows and increase opportunities for infiltration.

Policy 1.12.9

Proposed amendments to the Future Land Use Map within the Wekiva Study Area shall demonstrate that the proposed land use category is the least intensive category that will meet a demonstrated need of the use; and All proposed land use amendments for properties over 10 acres in size will include an analysis to determine appropriate specific onsite Best Management Practices and compensatory treatment for nitrate/nitrogen reduction, both on-site and off-site, including, if necessary, through connection to central sanitary sewer. The analysis must demonstrate, when all factors are taken into account, that there is no increase in nitrate/nitrogen loading to groundwater and surface water.

OBJECTIVE 1.13

New development and redevelopment in the City shall incorporate walkable, mixed-use projects to create housing and transportation choices that lower household costs, reduce vehicle miles travelled, minimize emission of greenhouse gases, and discourage urban sprawl.

Policy 1.13.1

Development in the mixed-use categories, and where appropriate in other land use categories, shall provide pedestrian-friendly and complete street design to help facilitate walkability.

Policy 1.13.2

New development, as well as infill development where feasible, shall provide interconnected street grid networks to disperse traffic and encourage walkability. Developments may include a hierarchy of narrow streets, boulevards and alleys; high-quality pedestrian networks; designs that encourage a greater use of bicycles, rollerblades, scooters and walking as daily transportation; connectivity to public transit; and a land use mix that demonstrates reduced external trips by encouraging internal trips.

Policy 1.13.3

The City shall promote new infill development that includes both horizontal and vertical mixed-uses.

OBJECTIVE 1.14

Ensure development within the City of Apopka surrounding the SR 429/Kelly Park Road

Interchange will occur in a predictable, yet flexible manner consistent with the intent of the Wekiva Parkway and Protection Act, the community vision, and the City's economic development goals, and which will provide balanced land use that can accommodate economic and residential growth in the context of the environmental concerns identified within the Wekiva Parkway and Protection Act, and that can serve as the primary targeted area for greenfield development within the Wekiva Study Area.

Policy 1.14.1

The Kelly Park Interchange (KPI) Form-Based Code Area is generally comprised of a one-mile radius emanating from the interchange of SR 429 and Kelly Park Road. The exact configuration is based upon a logical, parcel-specific boundary consistent with the intent of capturing a one-mile radius as shown in *Map FLUE – Kelly Park Interchange*.

Policy 1.14.2

Properties outside the KPI shall not be included in the KPI original site unless they were consolidated or combined with the internal KPI site prior to March 2019.

Furthermore, additions to an existing development within the KPI that lay outside the KPI development shall not exceed two dwelling units per acre (2 du/ac) in compliance with the Wekiva River Protection Area (Objective 74 and associated policies).

Policy 1.14.3

The Kelly Park Form-Based Code identifies the approximate location of the character districts necessary to support the anticipated development program within the Form-Based Code Area. The location and/or boundaries of the character district are illustrative only, and it is the intent of the City that locations and boundaries can be refined through an administrative review, except where other review and approval procedures are specified, in either the Comprehensive Plan or the Kelly Park Interchange Form-Based Code. The specific boundaries and locations of character districts will be established through the approval of development plans, as established through the Kelly Park Interchange Form-Based Code procedures.

Policy 1.14.4

The Kelly Park Interchange Form-Based Code shall include the following community design elements:

- An interconnected network of streets and paths designed to encourage pedestrian and bicycle travel, with traffic calming where appropriate;
- A complementary mix of land uses, including residential, employment, educational, governmental and medical facilities, recreational, and civic/public;
- Appropriate densities and intensities of land uses within walking distance of transit stops; and
- Daily activities within walking distance of residences, public uses, streets and open spaces that are safe, comfortable and attractive for the pedestrian, with

adjoining buildings open to the street and parking designed so as not to interfere with pedestrian and bicycle travel.

Policy 1.14.5

Within the Kelly Park Interchange Form-Based Code Area, land uses shall be physically and functionally integrated, including a connected and continuous system of pedestrian facilities.

Policy 1.14.6

Development within the Kelly Park Interchange Form-Based Code Area shall be assigned a Mixed-Use Interchange future land use designation.

Policy 1.14.7

The City shall ensure that areas of greatest density and intensity within the Kelly Park Interchange Form-Based Code Area are located at and between the two major intersection nodes at Kelly Park Road/Golden Gem Road and Kelly Park Road/Plymouth-Sorrento Road, but not upon areas of Karst formations. Development at the outer edges of the mixed-use area shall maintain compatibility with the lands adjacent to the Wekiva Interchange Plan Area by reducing density and intensity or by providing substantial buffers, landscaping, height, and lighting controls. The City shall also allow transfer of development rights to maintain 20 percent open space in the overall Study Area, provided conservation lands are preserved. Densities and intensities allowed within the Kelly Park Interchange Form-Based Code Area character districts shall be as shown in the table below.

Table FLUE - 1 Kelly Park Interchange Form-Based Code Character District Standards

Kelly Park Interchange Form-Based Code Character District Standards				
Character District/ Purpose	**Uses**	**Minimum/ Maximum Acreage***	**Density (Units per Acre)**	**Open Space (min.)**
Village Center (VC) Safe, vibrant and pedestrian oriented village center that can support a variety of residential, retail, commercial, office and entertainment uses.	Residential, retail, commercial, office and entertainment uses. Horizontal mixed- uses shall be allowed, but vertically mixed-uses are preferred	**Min:** 200 **Max**: 380 (40 acres max. of VC Core in each village)	**Min:** 7.5 **Max:** 20 (25 with bonus*) **Zone Average:** 12	10% minimum in the form of public plazas and small park spaces that are urban in character
Neighborhood Provide a transition between medium density residential in the Transition zone and adjoining lower density neighborhoods outside the study area.	Single-family homes, small-scale residential support uses (schools, day care facilities, churches), no more than twenty percent (20%) may be occupied by age-restricted communities.	**Min:** 2,360 **Max:** 3,060	**Min:** 1 **Max:** 5	20% minimum in the form of neighborhood parks, playgrounds, green space, and public squares
Interchange Promote economic development while providing a transition between the pedestrian- oriented Village Center and the fast-moving traffic on the highway.	Highway-oriented uses, such as gas stations and drive-through facilities	**Min:** 175 **Max:** 380	**Min:** 0 **Max:** 10 (15 with bonus*)	15% minimum in the form of green space

Kelly Park Interchange Form-Based Code Character District Standards				
Character District/ Purpose	**Uses**	**Minimum/ Maximum Acreage***	**Density (Units per Acre)**	**Open Space (min.)**
Employment The primary intent of this zone is to promote economic development and diversification while ensuring the protection of Karst geologic features. The character zone allows development in a campus- like environment for a variety of office, industrial (clean industry), and large institutional uses (hospitals, educational facilities), which would provide much needed jobs in the area. Limited residential uses are also allowed in this zone.	Office, hospitality, clean industry, large institutional uses (hospitals, educational facilities), and large scale residential	**Min:** 190 **Max:** 380	**Min:** 0 **Max:** 5 (7.5 with bonus*)	20% minimum in the form of large parks, squares, plazas, and green space
MEdTech Campus Overlay The primary intent of the MEdTech – Medical, Education & Technology Campus Overlay District is for the development of major educational, governmental and medical facilities and other complementary and supporting uses such as office developments.	Educational, governmental and medical facilities and other complementary and supporting uses such as office developments.	**Min:** 40 **Max:** 100	**Min:** 0 **Max:** 10	20% minimum in the form of large parks, squares, plazas, and green space

Kelly Park Interchange Form-Based Code Character District Standards				
Character District/ Purpose	**Uses**	**Minimum/ Maximum Acreage***	**Density (Units per Acre)**	**Open Space (min.)**
Transition	-	**Min:** 380 **Max:** 770	**Min:** 5 **Max:** 10 (15 with bonus*)	15% minimum in the form of green space, squares, plazas, and playgrounds

* The acreages listed represent all land (incorporated and unincorporated) bounded by Ondich/Haas, Foliage Way, Appy Lane, Round Lake (see Wekiva Parkway Interchange Vision Map), not just the 1-mile radius.

Policy 1.14.8

Maximum allowable development within the Kelly Park Interchange Form-Based Code Area shall be allocated among land uses as follows:

- Single Family: 7,500 units
- Multi Family: 8,500 units
- Commercial/Services: 22 million square feet.

Policy 1.14.9

The character district regulations included in the Form-Based Code shall ensure densities and intensities are allocated as noted in Table FLUE - *1* (see Policy 1.14.7). The transfer of development rights system will allow increased densities in the Core area (noted as bonus density on the table). The average density/intensity for individual districts and the entire mixed-use area shall not exceed the average allowed.

Policy 1.14.10

Development within the Kelly Park Interchange Form-Based Code Area shall be planned in a manner that maximizes internal circulation and does not cause the Florida Strategic Intermodal System (SIS) to exceed its adopted Level of Service Standard without appropriate mitigation.

Policy 1.14.11

The City shall incorporate transportation demand management strategies into the transportation planning process to alleviate congestion in the Kelly Park Interchange Form Based Code Area. A range of techniques will be considered, such as vanpool/ridesharing programs, parking management and pricing, transit vouchers, telecommuting, flextime, and/or other appropriate trip reduction strategies.

Policy 1.14.12

Proposed development within the Kelly Park Interchange Form-Based Code Area shall contribute to providing a safe, convenient, comfortable, and aesthetically pleasing transportation environment that promotes walking, cycling, and transit use.

Policy 1.14.13
Developments within the Kelly Park Interchange Form-Based Code Area shall provide direct bicycle and pedestrian connections within and between residential areas and supporting community facilities and services, such as shopping areas, employment centers, transit stops, neighborhood parks, and schools.

Policy 1.14.14
Streets located within the Kelly Park Form Based-Code Area shall equitably serve the needs of the pedestrian, the bicycle, public transit, and the automobile based on a grid network system of roadways as described in Appendix A – Mixed-Use Kelly Park Interchange (MU-KPI) Form-Based Code, P. Street Standards, of the Land Development Code. The City shall support a multi-modal transportation environment that allows for various transit options.

Policy 1.14.15
Properties assigned the Mixed-Use Interchange future land use designation shall be rezoned to the Kelly Park Interchange Mixed-Use Zoning District.

Policy 1.14.16
The Community Development Director shall have the authority to approve uses not listed in the Kelly Park Interchange Form-Based Code if the proposed use is compatible with the listed permitted uses and/or will generate or support the development of employment opportunities and/or an increased tax base.

Policy 1.14.17
Large developments with 50,000 gross square feet or more and are adjacent to a major street, which is or may be used as a transit route, shall provide access for on-site public transit. The public transit stop shall include a bus pullout and shelter or alternate design as approved by the Development Review Committee.

Policy 1.14.18
Sites within the Kelly Park Interchange Form-Based Code Area, as well as right-of-way areas, shall be subject to the vegetation protection and water conservation landscaping policies contained in the City Comprehensive Plan.

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FUTURE LAND USE ELEMENT

INTRODUCTION

The Future Land Use Element (FLUE) provides guidance on how and where to develop, redevelop, and preserve. Focus is on sustainable and resilient growth management, addressing adequacy of land uses in relation to current and future population demands. Additionally, attention is given to providing equal access to safe, dynamic, equitable, convenient, attractive, and healthy environments in which residents of all generations can live, work, shop, learn, worship, socialize, and recreate.

The FLUE unifies the goals of the other Comprehensive Plan elements as applied to the land through its Goals, Objectives, and Policies (GOPs) and Future Land Use Map (FLUM). The FLUM depicts the desired pattern of land uses. The FLUE also provides the means for ensuring Comprehensive Plan consistency through implementation of the Land Development Code tied to its policies.

The FLUE, in conjunction with the City'sLand Development Code and other implementing mechanisms, is designed to guide the distribution of growth in Apopka to ensure that future patterns of land use are tailored to:

- Meet the statutory requirements of Chapter 163, Florida Statutes (F.S.), the Florida Comprehensive Plan, Chapter 179, (F.S.), and the East Central Florida Regional Planning Council (ECFRPC) Strategic Regional Policy Plan (SRPP);
- Discourage urban sprawl;
- Encourage infill development and redevelopment;
- Guide development and redevelopment to locations where essential public services are in place and where unit costs for public services and facilities are most affordable;
- Protect natural resources by guiding development away from wetlands and other natural resources;
- Ensure public safety;
- Promote public gathering spaces such as parks, squares, streets (as places), landmarks, markets, and multi-use destinations;
- Promote public health;
- Encourage job creation, capital investment, and economic development that will

strengthen and diversify the community's economy;
- Provide equitable access to opportunity for all;
- Strengthen community resilience and sustainability; and
- Enhance community character by protecting cultural resources and addressing compatibility issues.

RELATION TO OTHER ELEMENTS

Although the FLUE delineates the types and magnitude of development which the City foresees as its future, this element should not be viewed in isolation. The natural constraints to the land, the services needed to develop the land, the complete documentation of housing needs in the City, and the regional and state agencies which regulate the development and use of the land within Apopka are only briefly summarized in this element. More specific information is detailed in the following accompanying comprehensive plan elements:

Housing Element (HE) Housing quality, cost, tenure, as well as changes in housing characteristics are addressed in this element. An assessment of projected population growth and housing demand is included as well as an outline for providing for future needs in a timely and equitable manner. The FLUE provides support by summarizing the amount of land necessary for single family and multifamily development.

Infrastructure Element (IE) The amount and availability of infrastructure needed for proposed development, including potable water, aquifer recharge, sanitary sewer, stormwater management, and solid waste are identified.

Mobility Element (ME) The analysis of transportation and mobility concerns and opportunities are detailed, including the importance of land use patterns for mobility.

Conservation Element (CE) Natural resources are identified and mechanisms to conserve and protect these valuable natural resources, ensure water quality, and minimize threat to wetlands are detailed.

Recreation and Open Space Element (ROSE) The quality of parks and recreational opportunities available to Apopka residents are listed along with a discussion of policies and strategies to enhance existing recreational and open space amenities, improve access to parks, maximize the value added from community parks and open space, and strive to conserve future parkland and open space.

Capital Improvements Element (CIE) Mechanisms to finance the necessary transportation, infrastructure, and recreation to maintain level of service for the Community and future growth as envisioned in the FLUE are identified.

Intergovernmental Coordination Element (ICE) The processes by which other government agencies impact development decisions within the City and the methods

through which the City can improve the relationships with these agencies are assessed. The element uses this assessment to identify the best strategies for adhering to regional and state policies as well as enhancing land use compatibility and collaboration with local governments and agency partners in the region.

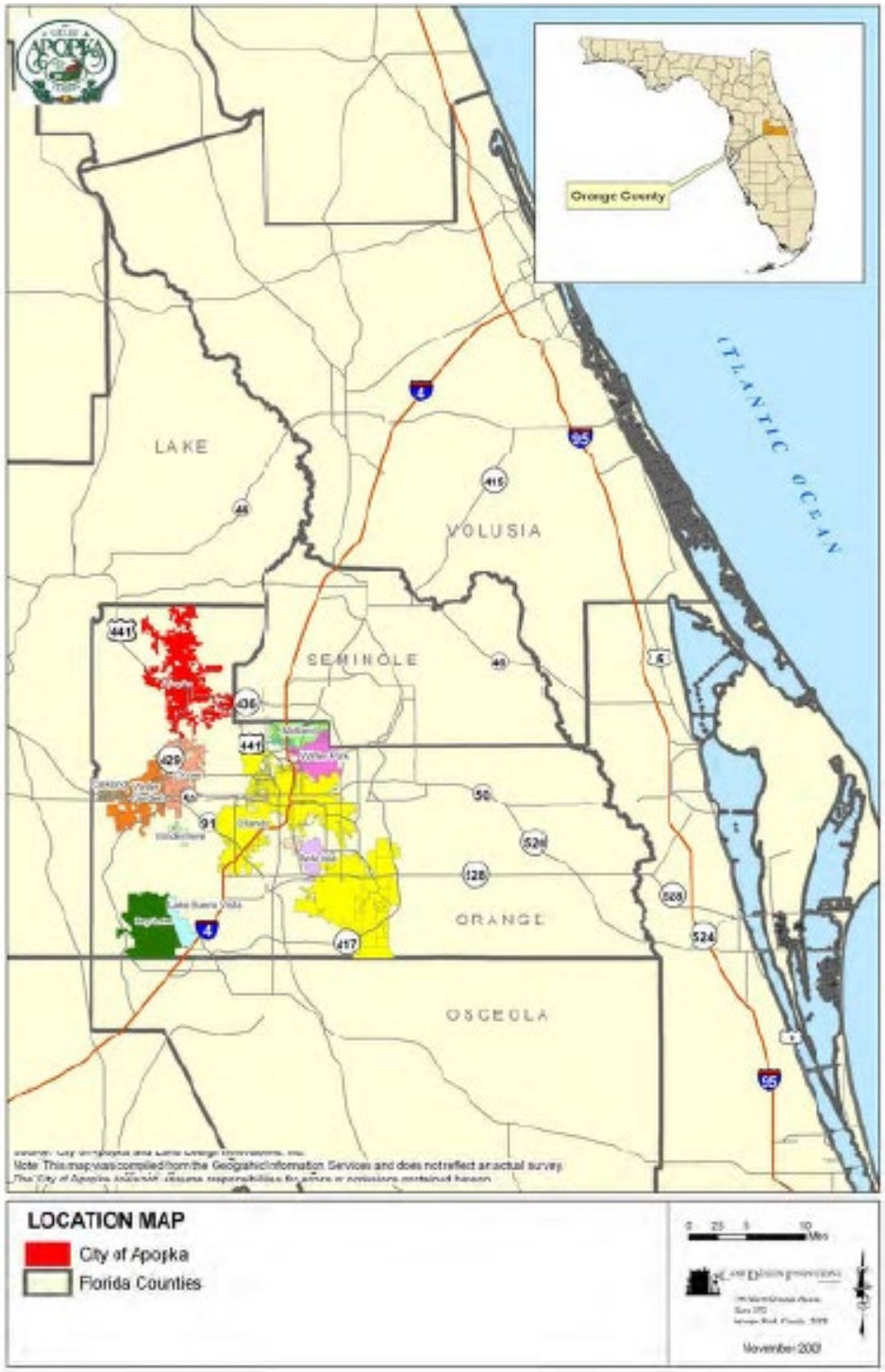
Property Rights Element (PRE) Requirement for the inclusion and adoption of a PRE became effective July 1, 2021 per Section 163.3177(6)(i), Florida Statutes. Private property rights are protected and considered in local decision-making.*Resilience and Sustainability Element (RSE)* This optional element addresses community resilience through the identification and mitigation of potential short-term shocks and long-term stressors to the City's environment (built and natural infrastructure), residents, and economy.

INVENTORY

GENERAL SETTING AND HISTORY OF APOPKA

The City of Apopka is located in northwest Orange County near the geographical center of the State of Florida. Lake County abuts the City limits to the north. The City borders Seminole County to the east and has incorporated portions of the Wekiva Springs State Park. U.S. Highway 441 (US 441) and State Road (SR) 436 intersect within the City and provide access to the Orlando metropolitan area. US 441 is also designated as both Main Street and SR 500. The multiple functions of this road are discussed in detail in the Mobility Element. SR 429, also known as the Daniel Webster Western Beltway, provides access to the Florida Turnpike, to the south. To the north, SR 429 becomes the Wekiva Parkway when it crosses US 441 in Apopka and is the final link in the Central Florida Beltway. The City's location in the State is shown in the figure below.

Figure FLUE - 1 Apopka Location Map



The history and prehistory of the Apopka area were documented by Jerrell H. Shofner in The History of Apopka and Northwest Orange County, (Tallahassee: Rose Printing Company, 1982). The following summary is an excerpted from Shofner's book:

> Chartered as the Town of Apopka in 1882, Apopka was already the trading center of the area which today comprises Northwest Orange County. It had evolved into a town because early settlers had been attending lodge meetings at Orange Lodge No. 36, F & AM, since the early 1850s. The City's location between the Wekiva River and Lake Apopka made it the logical town site for those interested in citrus culture, an amenable climate, and winter homes. Early agriculture consisted of citrus orchards which utilized the Wekiva River to transport produce to market. Many ofthe citrus growers had nurseries to supply their own seedlings, but commercial nurseries cropped up in the early 1880s. By the end ofthat decade several thriving nurseries were operating in the Northwest Orange County area.
>
> The first ornamental horticultural nursery was introduced in the area in 1913. The business grew only Boston ferns and by the 1920s had attracted enough area competition to convince City fathers to adopt the title "Fern Capital of the World". By the 1950s this title was transformed into the "Foliage Capital of the World" as more and more forms of ornamental plant materials were produced and sold from the Apopka area.
>
> As railroads gave way to automobile transportation in the early 20th century, Apopka's role as northwest Orange County's trading and cultural center was enhanced.

Though Apopka's history was based in agriculture, the City has evolved into Orange County's second-most populous jurisdiction, following Orlando, and has become a burgeoning regional logistics center. The Economic Element provides details on current trends.

EXISTING LAND USES

The pattern and mix of existing land uses is indicative of the market forces and natural resource constraints which have shaped existing development and are likely to influence future growth. The City's current distribution of existing land uses is summarized in Table FLUE - *1*. Table values were derived from the Orange County Property Appraiser's (OCPA) Geographic Information System (GIS) database identifying existing land use for each parcel based on Department of Revenue (DOR) codes. The City's existing land uses are shown on *Map FLUE - 1*.

The existing land use analysis serves as the basic framework for the future land use designations. Acreage tabulations were calculated utilizing GIS software with a total of 22,586 acres. The current land use breakdown in the City is approximately 35% residential, 18% agricultural, 15% institutional/public, 4% industrial, 3%

office/commercial, and 15% vacant. Undevelopable land consists of parks and recreation, conservation, water bodies, and right-of-way totals approximately 8% of City acreage.

Table FLUE - 1 Existing Land Use Acreage

Existing Land Use		
Existing Land Use	**2021**	
	Acres	**% of Acres**
Agriculture	4,126	18.3%
Residential	7,993	35.4%
Commercial	627	2.8%
Office	151	0.7%
Industrial	859	3.8%
Institutional/Public Use**	3,496	15.5%
Vacant	3,451	15.3%
Subtotal	**20,703**	**91.7%**
Conservation	373	1.7%
Park & Recreation*	1,383	6.1%
Water, R-O-W, Unclassified	127	0.6%
Subtotal Undevelopable	**1,883**	**8.3%**
Total	**22,586**	**100.0%**

Sources: OCPA, ECFRPC

Date Retrieved: December 2021

* Includes private parks and recreation facilities

** Includes some parks and recreation facilities

HISTORIC RESOURCES

The City of Apopka has a significant recorded history. There are also documented prehistoric sites in the surrounding unincorporated areas. The National Register of Historic Places (NRHP) recognizes five locations within Apopka. A National Registry listing does not provide any protection to a house or site other than economic incentives to maintain the historic character. Economic incentives may include tax deductions for restoration and/or increased property value.

Within the City of Apopka, there is single historic district area listed on the NRHP surrounding the Ryan & Company Lumber Yard (1924) located at 215 East Fifth Street. Four individual buildings are also on the NRHP:

- Carroll Building (1932), 407-409 South Park Avenue;

- Seaboard Airline Railway Depot (1918), 36 East Station Street;
- Mitchell-Tibbetts House (1887), 21 East Orange Street; and
- Waite-Davis house (1886), 5 Central Avenue.

Apopka National Register of Historic Places
Ryan & Company Lumber Yard (1924) and Mitchell-Tibbetts House (1887) Source: NHRP

The identified historical and cultural resources are shown on *Map FLUE - 1*. In addition, the City completed a Historic Properties Survey in 1992 which contains recommendations for historic preservation and potential National Register nominations. The study was completed to identify the City's significant historical resources and strategies to protect and enhance them. Over 190 sites were listed on the Florida Master Site File from the study which is on file at the City of Apopka Community Development Department.

NATURAL RESOURCES

This section briefly discusses the natural resources within the City of Apopka. The Conservation Element provides greater detail on the resources.

Groundwater Aquifer Recharge

Prime aquifer recharge areas are located within the Apopka City limits and utility service area. Groundwater recharge occurs as rain percolates into the ground and through the semi-permeable limestone confining beds. Soils, slope, and land use all affect the degree of aquifer recharge. The soils in the Apopka area are primarily sandy and well-drained. Land uses that allow for large amounts of impervious surfaces impede the percolation of water to the aquifer.

Soils and Topography

Soil conditions refer to those characteristics of the land havingspecial relevance and importance to urban development. Soils in the City of Apopka and surrounding planning

area are generally of the Lakeland-Blanton association characterized by nearly level to strongly sloping, well drained to somewhat excessively drained sandy soils interspersed with many lakes and ponds. Small areas of more poorly drained soils, or hydric soils, are found in the flatwooded and wet grassy flat areas scattered throughout the Apopka area, particularly bordering the lakes and ponds. There is little surface drainage pattern in the Lakeland-Blanton Association since most drainage is through the porous soil.

Floodplains

Floodplains are identified in conjunction with the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs). The National Flood Insurance Program (NFIP) is legislation that provides for the identification of flood hazard areas up to 100-year storm level and makes available federally subsidized insurance to property owners in such areas provided these communities have become participants and agreed to adopt and enforce minimum land use controls adequate to meet Federal Insurance Administration standards for future flood plain management. The City's programs that address stormwater management and drainage basins are detailed in the Infrastructure Element.

Wetlands

The City of Apopka contains a variety of wetland types. The largest concentration of wetlands is located in southwest Apopka.These wetlands are associated with Marshall Lake, Upper and Lower Lake Doe, and Lake Witherington. These wetlands are mostly freshwater swamp with areas of mixed wetland forest. Another area of wetlands, located only partially in the City, is located in the northeast area and surrounds Lake McCoy, with most of the wetlands outside the City limits. This area contains the largest variety of wetland types in the Apopka area. The third major area of wetlands is in northwest Apopka. Recognizing that all wetlands are environmentally sensitive areas, the City has assigned a conservation land use designation to all existing wetlands within the City limits.The City's wetlands protection programs and a wetlands location map are detailed in the Conservation Element.

Wekiva Study Area

The City is located within the Wekiva Study Area (WSA) designated by the state legislature in its Wekiva Parkway and Protection Act, Part III of Chapter 369, F.S. that was signed into law in 2004 and amended in 2005. The Wekiva Study Area and Wekiva Protection Area maps are located in the Conservation Element. Additionally, the Appendix includes a set of overlay maps adopted as part of the FLUM series and identify the natural resource features related to the WSA. The FLUM overlay maps include recharge areas, karst topography features (4,489.5 total acres), sensitive xeric oak scrub, sand pine scrub, and sandhill (longleaf pine) habitats, and Kelly Park Interchange.

The Comprehensive Plan safeguards the state-established WSA through land use strategies to optimize open space and promote a pattern of development on a jurisdiction-wide basis that protects the most effective recharge areas, karst features, and sensitive natural habitats. Additionally, the Comprehensive Plan ensures lands located within the Kelly Park Interchange Form-Based Code Area for Apopka and the Wekiva Interchange Land Use Plan Overlay for the County are consistent with the Wekiva Interchange Land Use Plan Overlay.

The LDC includes standards for establishing protective buffer zones, clustering of permitted development, prohibition of development which has potential to degrade groundwater quality, prohibition of septic tanks, minimization of native vegetation clearing for infrastructure, and native plant landscaping.

POPULATION PROJECTIONS

Projected population figures determine future facility needs and land requirements and must be taken into consideration in preparingthe FLUE "based on at least the minimum amount of land required to accommodate the medium projections." According to University of Florida's Bureau of Economic and Business Research (BEBR), the 2022 estimated population for Apopka is 57,930. Population projections were obtained from the University of Florida's Shimberg Center for Housing Studies and are shown in *Table FLUE - 2*. The forecasted population change over the twenty-year span shows a 51 percent increase with the rate of population growth predicted to slow through 2040. The City percentage of Orange County population is projected to increase by 0.6%.

Table FLUE - 2 Apopka and Orange County Population Estimate and Forecast

City and County Population Estimate and Forecast				
Year	City			County
	Total Population	Percent Change (5 year)	Percent County	Total Population
2020	54,873		3.8%	1,429,908
2025	63,296	15.3%	4.0%	1,577,698
2030	70,990	12.2%	4.2%	1,704,697
2035	77,380	9.0%	4.3%	1,806,996
2040	82,939	7.2%	4.4%	1,893,405

Sources: Shimberg, based on 2010 and 2020 U.S. Census data and population projections by BEBR

Date Retrieved: July 2023

LAND USE ANALYSIS

AVAILABILITY OF FACILITIES AND SERVICES

Before determining the appropriate amount of acreage to be assignedfor various land uses to accommodate future demand, it is important to evaluate infrastructure necessary to support the projected development. Infrastructure includes facilities for multi-modal transportation, sanitary sewer, reclaimed water, stormwater, aquifer recharge, potable water, and solid waste.

Mobility

Roads located in the City of Apopka include those under the responsibility of the Florida Department of Transportation (FDOT),Orange County and the City of Apopka. The major transportation routes serving Apopka are US 441 (SR 500), SR 436 (Semoran Boulevard) and SR 429 (Western Expressway). These roads are essential to regional mobility and a majority of the current congestion levels can be attributed to growth in the Lake/Orange/Seminole County area.

A portion of US 441 is listed as an FDOT Constrained Facility and aportion is listed as an FDOT Backlogged Facility. US 441 is one ofonly two roadways in the City that are currently operating at or below the adopted LOS standard. US 441, from Park Avenue to SR 436is operating at a LOS "F." The segment of Welch Road from Rock Springs Road to Thompson Road is operating at a LOS "E.". The Transportation Element analyzes the transportation system and proposes methods to address current and future roadway deficiencies.

With the 2009 passage of Senate Bill 360, Apopka has been designated a "Dense Urban Land Area" (DULA). This designation exempts the entire City from meeting State transportation concurrency requirements. This will allow the City to address deficiencies using a palette of comprehensive, multi-modal programsand facilities rather than focusing on individual roadway segmentsmeeting concurrency standards. The Transportation Element includespolicies related to the establishment of these programs.

The Apopka Orlando Airport, a general aviation field, is located within the City limits. Freight rail service is available, but nopassenger rail service is available at the present time. Transit service is provided by LYNX (Central Florida Regional Transportation Authority). Four routes presently service Apopka (Routes 17, 41, 44 and 405). These routes operate on approximatelyfifteen minute to one hour headways. Route 405 is a circulator connecting residential to shopping and businesses within the Apopka area. The routes have a central transfer stop (Apopka Superstop) at Central Avenue/7th Street. The passage of state legislation in December 2009 paves the way for development of the Central Florida Rail Corridor, which will provide high-speed rail service betweenTampa and Orlando within the planning timeframe.

The City does not provide a comprehensive system of bicycle facilities; however, a trailhead is located in downtown Apopka allowing access to the 22-mile West Orange Trail, a "rails-to- trails" multi-use path. The City has identified the need to develop a more comprehensive sidewalk/bicycle trail system for useof City residents as an alternative to vehicular use.

Sanitary Sewer and Reclaimed Water

The City of Apopka provides sanitary sewer services to the entire utility service area, including the municipal limits and parts of unincorporated Orange County. The system consists of collection systems and treatment facilities, with a current permitted capacity of 8.0 million gallons per day (mgd). The Water Reclamation Facility (WRF) underwent a full renovation, increasing capacity to meet projected needs through the 20-year planning timeframe. The reclaimed water system, known as Apopka Regional Reuse of Water (ARROW), supplied an average of 6.32 mgd of reclaimed wastewater to consumers in 2022. The city utilizes contractual agreements and shallow groundwater wells to augment reclaimed water services. Dual water distribution systems are being developed to beneficially use reclaimed water in residential areas, and future plant expansions will focus on producing reclaimed water suitable for reuse. The City is currently permitted by SJRWMD for a max average daily withdrawal of Floridan aquifer supplies of 16.0 mgd through 2031, this water will be used to satisfy the City's potable and reclaimed water system demands.

The City's master planned sanitary sewer facilities and treatment plant expansion are projected to accommodate anticipated new development, with additional capacity derived from beneficial reuse or storage in new reclaimed water facilities. Each new development is required to provide the infrastructure needed to support its respective development as well as add the development's proportional share of upgrades to the system as described in the City's Wastewater Master Plan. Based on population projections from the 2019 Wastewater System Utility Master Plan Update for the utility service area and utilizing the LOS standard of 100 gpcd, the City projects that the existing and planned sanitary sewer facilities will accommodate anticipated new development. It is expected that residences currently utilizing septic tanks will continue to use those facilities through 2040. Based on wastewater flow projections it appears that the City's most recent treatment plant expansion is adequate to cover the demands based on population growth. All future wastewater disposal capacity will be derived through beneficial reuse or storage at the newly constructed reclaimed water storage facilities when weather conditions do not permit irrigation. The scope and scheduling of plant improvements will be adjusted as necessary to stay current with the best available planning data. Details are provided in the Infrastructure Sanitary Sewer Sub-Element.

Stormwater

Stormwater management aims to control stormwater runoff quantity and quality, preserve surface water quality, and protect lives and property from flooding. The natural drainage system comprises landlocked basins, lakes, and depressions, with minimal inter-basin connections during normal rainfall events. New developments must comply with stormwater management regulations, ensuring the post-development peak rate of discharge does not exceed the pre-development rate. The City of Apopka's Land Development Code regulates the stormwater post-development peak rate of discharge must not exceed the pre-development peak rate of discharge for the 25-year, 24-hour storm (8.6 inches). The City's drainage master plan was updated in April 2019, focusing on regional stormwater management, and some completed improvements include the Railroad Drainage Basin and Lake Avenue Drainage Well projects. Further evaluation of the drainage system is provided in the Infrastructure Stormwater Management Sub-Element.

Aquifer Recharge

Urban development within critical aquifer recharge areas results in increased runoff to surface waters as opposed to percolation into the aquifer. Apopka is situated on porous sand hills where the most effective recharge areas are the ones also best suited for urban development. The City requires special performance criteria for development taking place in critical aquifer recharge areas.

Currently, the land use in the majority of Apopka's high recharge areas is low density residential, which limits impervious surfaces. Per SJRWMD recommendations, the City has instituted regulatory program enhancements and has included artificial recharge projects to further protect and augment our high recharge areas. The City has also adopted stormwater management and wellhead protection regulations that protect the aquifer from contamination. In addition to the wellhead protection regulation, the City adopted an additional ordinance that stipulates that all existing drain wells in the City be plugged and no new drain wells be constructed.

Potable Water

The City of Apopka provides all potable water within the utility service area through the use of the public water system comprised of three major components: 1) water production, 2) water treatment, and 3) water distribution. The system includes five water production and treatment plants, along with storage and distribution facilities, covering 368 miles of distribution lines to provide potable water for human consumption and firefighting purposes. The water system is managed under a Consumptive Use Permit (CUP) issued by the St. Johns River Water Management District allowing a maximum withdrawal of 5,840 million gallons per year, with an average of 16 million gallons per day (mgd), set to expire in 2031.

The capacity of the City's water treatment plants is based on an estimated well capacity of 24,900 gpm or 35.856 mgd. The maximum daily flow recorded in 2022 was 13.733 mgd. The City's maximum capacity of 35.856 mgd exceeds the 2035 projected total demand of 27 mgd. The projected level of service through 2035 presents a decreasing trend from 135 gpcd in 2020 to 121 gpcd in 2035. This trend in level of service is a direct effect of the estimated impact of the City's water conservation program and further extensions of the reclaimed water system throughout the service area. Replacement and maintenance considerations for equipment and structures at water treatment plants are also underway. The projected level of service will also be influenced by the amount of water consumption by new and existing commercial and industrial users and the amount of unaccounted for water loss in the system. The City will review and adjust these levels of service as necessary to stay current with the most recent planning data.

Solid Waste

Based on projections presented in the Solid Waste Sub-Element, Orange County currently has adequate landfill capacity to meet the City's solid waste disposal needs through the year 2040. Projections are based on the City continuing to use 3.2% of the County landfill. The City has increased residential recycling through its partnership with a national recycling program.

VACANT LAND SUITABILITY ANALYSIS

The ability of land to support development, also known as the carrying capacity, is a major determinant in land use patterns. Natural constraints to development include the presence of wetlands, 100-year floodplain areas, and critical environmental habitats. Man-made constraints to development include areas of historic or archaeological significance. Environmental permitting requirements restrict development in pristine natural areas and preserve wildlife habitats. The purpose of this section is to identify how much of the vacant land is constrained by natural and historical resources, and to determine the extent to which development can be directed away from these constraints.

Table FLUE - 3 shows the acreage of uncommitted vacant lands. This includes vacant subdivided lots, vacant land parcels, and vacant agricultural lands, which are cleared lands that have not been used for agricultural production in more than a year. *Map FLUE - 2* depicts vacant land with the assigned future land use classification and wetlands, sensitive land, overlay intended to show potential development constraints. Apopka has 2,333 acres (9.8%) of its future land use (excluding parks/recreation, conservation, and ROW) designated as vacant, with 2,195 acres (9.2%) developable. Less than one percent, 138 acres (0.6%), are designated as environmentally sensitive wetlands and are not available for development. The largest available developable lands occur in residential (36.4%), mixed-use (21.7%), and industrial (18.3%).

The greatest portion of existing land use (see Table FLUE - *1*) is residential (35.4%),

followed by agriculture (18.3%) and institutional (15.5%). Industrial, commercial, and office land uses account for just over seven percent of all land within Apopka. By comparison, nearly 34 percent of the land within the City is currently vacant (15.3%) or has agricultural uses (18.3%). Many of Apopka's newest residential corridors are within former agricultural areas, with few of these areas designated to meet the need for office space.

Table FLUE - *3* details the vacant and developable land within Apopka. Residential land uses top the list at 36.4 percent. This is followed by mixed-use (21.7%), industrial (18.3%) and commercial (9.5%). While building more housing is essential to accommodate the projected population growth, further increasing the proportion of land area in the City devoted to single-family residences reduces the opportunities for commercial growth while increasing the population in need of services. It also has important quality of life implications addressed in the Economic Element.

Table FLUE - 3 Vacant and Developable Land

Vacant and Developable Lands					
Future Land Use Categories	**Vacant**		**Env. Sensitive**	**Developable**	
	Acreage	**%**	**Acreage**	**Acreage**	**%**
Agriculture	37.09	1.6%	1.17	35.92	1.6%
Agriculture Estate	0.00	0.0%	0.00	0.00	0.0%
Agriculture Homestead	0.00	0.0%	0.00	0.00	0.0%
Residential:	924.71	39.6%	76.51	848.19	36.4%
Rural Settlement	29.44	1.3%	0.00	29.44	1.3%
Estate	35.01	1.5%	0.00	35.01	1.6%
Very Low Suburban	157.22	6.7%	2.10	155.12	7.1%
Low Suburban	216.79	9.3%	21.88	194.91	8.9%
Low	334.21	14.3%	40.93	293.28	13.4%
Medium Low	54.30	2.3%	1.19	53.11	2.4%
Medium	68.77	2.9%	10.42	58.36	2.7%
High Density	28.97	1.2%	0.00	28.97	1.3%
High Density (25)	0.00	0.0%	0.00	0.00	0.0%
**Mixed-Use	505.08	21.6%	28.71	476.37	21.7%
Office	44.32	1.9%	0.95	43.37	2.0%
Commercial	218.41	9.4%	9.38	209.04	9.5%
*Industrial	408.53	17.5%	5.88	402.65	18.3%
Institutional/Public Use	16.65	0.7%	9.10	7.55	0.3%
In-Progress	178.45	7.6%	6.46	171.99	7.8%
Sub-Total	**2,333.25**	**100.0%**	**138.16**	**2,195.08**	**100.0%**
Parks/Recreation	0.40	NA	0.00	NA	NA
Conservation	13.96	NA	3.00	NA	NA
Total	**2,347.60**		**141.16**		

Sources: OCPA, SJRWMD (wetlands)
Data Retrieved: OCPA January 20, 2022, SJRWMD June 2022
* IND + IND*
** MU + MU*

FUTURE LAND USE

This section projects the amount of land for different land uses necessary to accommodate future population growth. The methodology used to project the future demand for the various land uses was based on the current proportion of land use acreage to population.

Acreage for each use future land use category is detailed in Table FLUE - *4*. A comparison of existing and future land uses is depicted in Figure FLU*E* - *2*. Residential land use shows

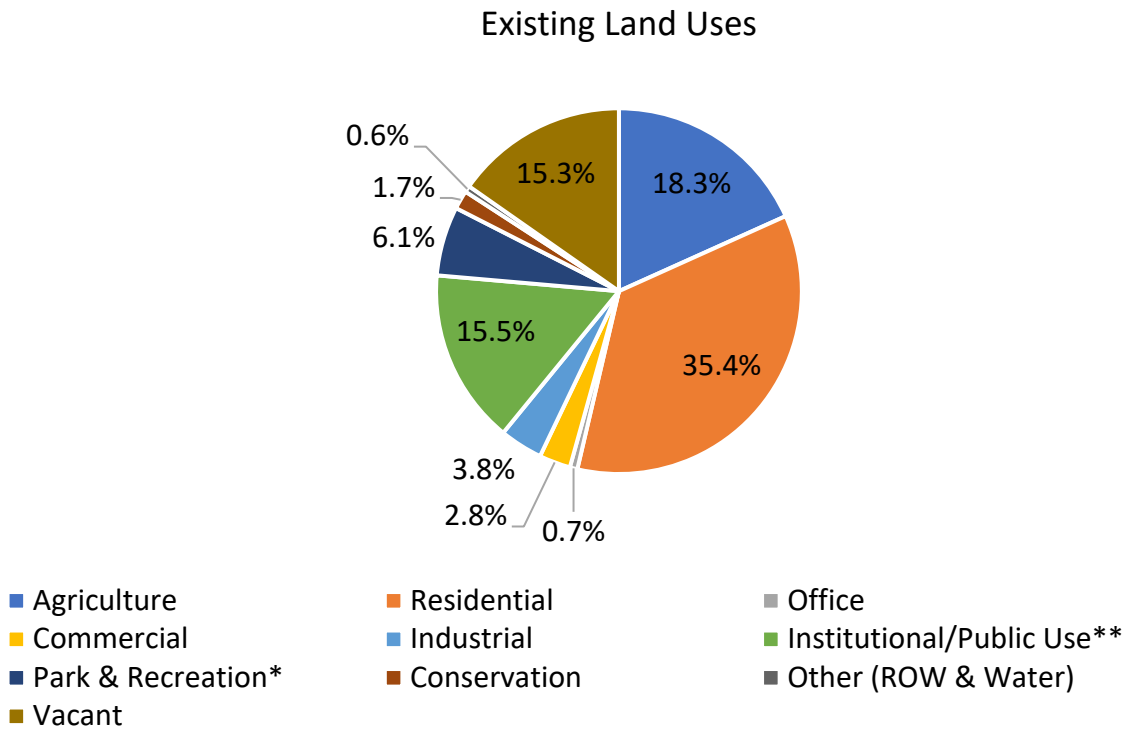
an increase of 58 percent, in line with the projected population growth of just over 50 percent (Table FLUE - 2) in two decades. Industrial land use more than doubles, providing the City with economic opportunity. Mixed-use emerges as a significant land use in the future with nearly 12 percent of the total acreage, showing a focus on developing areas that combine residential, commercial, and other land uses to create vibrant mixed-use neighborhoods. Descriptions and analysis for each future land use category follow.

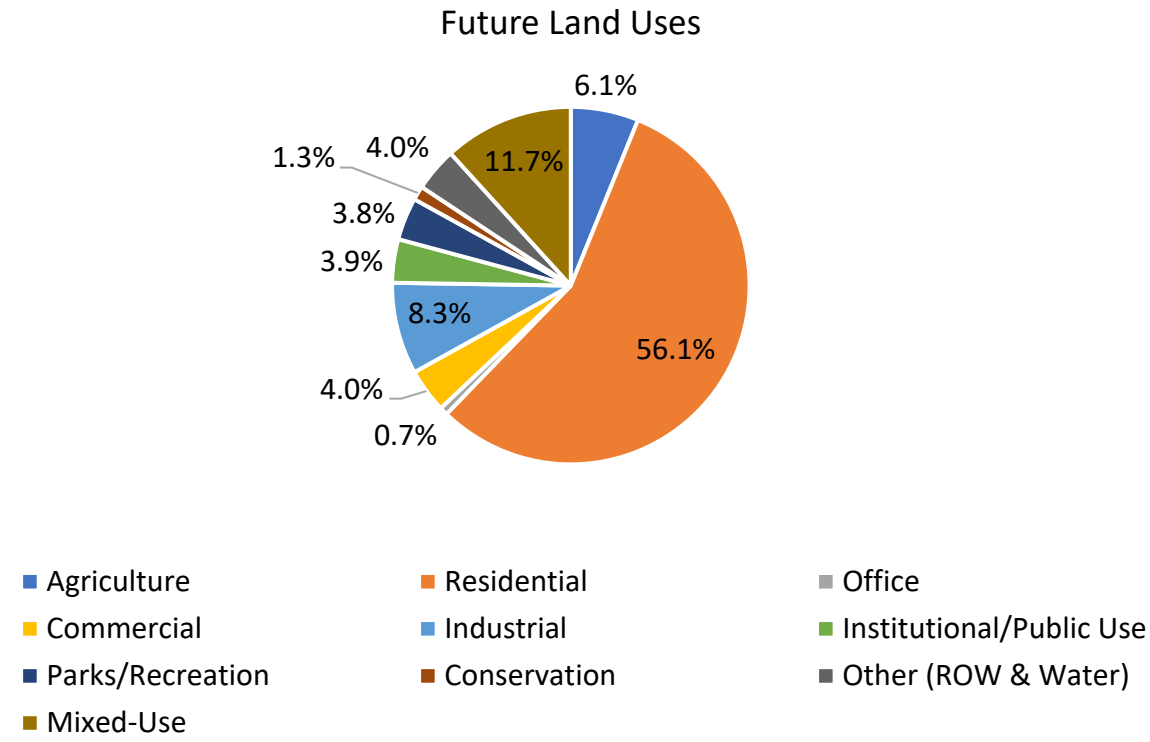
Table FLUE - 4 Future Land Use

Future Land Use			
Future Land Use Categories	**Maximum Density/Intensity**	**FLUM Acreage**	**Percent of Total Lands**
Agriculture	1 du/5 ac	852	3.3%
Agriculture Estate	1 du/2 ac	246	0.9%
Agriculture Homestead	1 du/10 ac	504	1.9%
Residential		14,640	56.1%
Rural Settlement	1 upa	*3,404*	*13.0%*
Estate	1 upa	*840*	*3.2%*
Very Low Suburban	2 upa	*1,249*	*4.8%*
Low Suburban	3.5 upa	*3,404*	*13.0%*
Low	5 upa	*4,423*	*16.9%*
Medium Low	7.5 upa	*579*	*2.2%*
Medium	10 upa	*491*	*1.9%*
High Density	15 upa	*250*	*1.0%*
Mixed-Use	15 dua/2.0 FAR	3,064	11.7%
Office	0.30 FAR	192	0.7%
Commercial	0.25 FAR	1,038	4.0%
Industrial	0.60 FAR	2,167	8.3%
Institutional/Public Use	0.50 FAR	1,027	3.9%
Sub-Total		**23,729**	**90.9%**
Parks/Recreation	0.20 FAR	1,002	3.8%
Conservation	Not Developable	332	1.3%
Other (ROW & Water)	Not Developable	1,032	4.0%
Total		**26,096**	**100.0%**

Sources: City of Apopka, ECFRPC
Date Retrieved: Jan 2022

Figure FLUE - 2 Existing and Future Land Use Comparison





Future Agriculture Land Use

Agriculture land use is expected to decrease over the planning timeframe as urbanization continues. This land use currently occupies almost 18.3 percent of the land in the City; however, it is expected to convert to other land uses with a total future agricultural land use of just over three percent.

Agricultural lands accommodate agricultural and nursery production, agricultural support uses, and low-density single-family detached dwellings in a rural setting. The district includes significant areas of open space, and a minimum lot area of two and one-half acres. District regulations discourage development that substantially interferes with agriculture production, nurseries, and the general rural character of the district.

Agricultural Lands

Future Residential Land Use

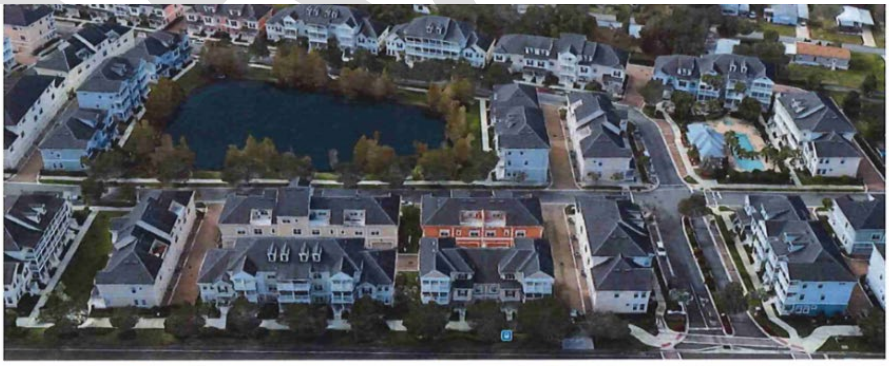
The City has designated 14,640 acres (56.1%) of residential land on the FLUM (*Map FLUE - 3*). The proportion of acreage of land use to population and the housing needs identified in the Housing Element were used to determine future residential land use needs. The Housing Element identified a need for a total of 27,973 dwelling units by 2040. This total dwelling unit number reflects current units plus the additional units needed to accommodate projected population growth. Of the 27,973 housing units, a need for 10,091 units for single-family and 986 units for multi-family has been projected. The distribution between single-family and multi-family is based upon the current distribution (90.5% single-family).

Residential Single Family

Residential land uses offer the following benefits to the community:

- Support and preserve the development pattern and character of established neighborhoods;
- Provide a range and diversity of housing choices, with varying densities, types, and designs, to meet the needs of the City's residents;
- Provide for safe and efficient vehicular, bicycle, and pedestrian access and circulation, and neighborhoods that promote multiple forms of mobility;
- Protect residential neighborhoods from incompatible development;
- Protect residential districts from flooding and other adverse environmental impacts;
- Provide for the public services and facilities needed to serve residential development;
- Maintain the City's neighborhoods as safe and convenient places to live;
- Ensure compatible infill development; and
- Promote green building practices in terms of energy efficiency and conservation, the use of alternative energy, greenhouse gas reduction, water supply and water quality protection, food security, materials recycling, and similar goals.

While building more housing is essential to accommodate expected population growth, further increasing the proportion of land area in the City devoted to single-family residences reduces the opportunities for commercial growth while increasing the population in need of services. The mixed-use category encourages the development of high density residential development in conjunction with retail or office developments. That increase in available lands for higher density residential development, in addition to



Residential Multi-Family

expected future annexations of residential lands, will address the future demand for residential land use.

Future Mixed-Use Land Use

The FLUM designates over three thousand acres (11.7%) to mixed-used development. Future growth focuses on a strategy that incorporates infill/redevelopment principles in addition to expansion of jurisdictional boundaries through annexation. An infill/redevelopment strategy will result in increased development densities and intensities, which will need to be directed to the appropriate areas, where public facilities and services can support it. The mixed-use category is designed to create diverse neighborhoods with a mix of land uses that align with the community's character. It promotes a balanced housing-jobs ratio, varied housing options, transportation accessibility, environmental protection, parks, and sustainable building practices. Additionally, the mixed-use designation has been structured to ensure that it is compatible with existing and projected surrounding land uses.

Mixed-use districts include Downtown, Residential, East Shore, and Kelly Park Interchange, each with specific development guidelines to support pedestrian-friendly, attractive, and multi-modal mobility environments. The districts cater to various uses such as offices, retail, residential, industrial, and mixed-use, fostering innovative land use techniques and environmental conservation for a sustainable and thriving community.

Mixed-Use

Future Commercial and Office Land Uses

The FLUM designates 1,230 acres to commercial (1,038 acres) and office (192 acres) land uses which is sufficient for future needs based on the current ratio of land use to population. The ratio is currently 13.4 commercial/office acres per 1,000 residents using the existing acreage in Table FLUE - *1* and the 2022 population estimate of 57,930. Applying the 2022 ratio to the projected 2040 population (Table FLUE - *2*), the City would need a total of 1,111 commercial/office acres.

Commercial

Office land use accommodates a broad range of office (medical and dental, professional, and other general offices) typically in locations where visibility and good access are important. Commercial land uses provide a wide range of retail, office, service, employment, and related development to meet the needs of the City's residents, and more specifically to:

- Strengthen the City's economic base, and provide employment opportunities close to home for City residents;
- Provide appropriately located lands for a full range of business and commercial uses needed by the City's residents, businesses, and workers;
- Create suitable environments for various types of mixed-use development, where business, office, retail, and residential development is designed and integrated in compatible ways;
- Encourage, support and ensure a high-quality design in retail, office, service, employment, and related development in the City;
- Accommodate new infill development and redevelopment, especially along certain of the City's older commercial corridors;
- Ensure commercial development is located and designed to protect and preserve the character of single-family neighborhoods; and
- Create suitable environments for various types of businesses, and protect them from the adverse effects of incompatible development.

Office

Future Industrial Land Use

The FLUM designates 2,167 acres to industrial use, just over double existing the existing share. The FLUM acreage is sufficient for future needs based on the current ratio of land use to population. The ratio is currently 14.8 industrial acres per 1,000 residents using the existing acreage in Table FLUE - *1* and the 2022 population estimate of 57,930. Applying the 2022 ratio to the projected 2040 population (Table FLUE - *2*), the City would need a total of 1,228 industrial acres. Industrial land uses offer several benefits to the community:

- Strengthen the City's economic base, and provide employment opportunities;
- Create suitable environments for various types of light industrial and industrial development, and protect them from the adverse effects of incompatible development;
- Ensure industrial development is located and designed to protect and preserve the character of existing single-family districts and neighborhoods;
- Provide a place to locate uses that are generally incompatible with other uses.

Industrial

Future Recreational Land Use

The FLUM designates just over one thousand acres for recreation and open space uses. Based on a level of service of eight acres of park land per 1,000 residents, the 2040 projected need of 664 acres is satisfied.

Recreational land use provides lands to accommodate the preservation and protection of publicly owned active park and recreation lands, passive open space lands, and publicly owned lands that preserve significant natural features and environmentally sensitive areas. District standards limit development in these areas in order to preserve the City's natural, scenic, and recreational assets, ensure their proper functioning, and promote visitor enjoyment.

Recreational

Future Public/Institutional Land Use

Institutional lands accommodate institutional uses typically developed on larger sites such as schools, cultural facilities, government offices, post offices, and colleges. Development may include the grouping of multiple institutional buildings, and inter-related public, private, and nonprofit development. District standards are intended to protect surrounding residential uses from incompatible development.

It is difficult to forecast a need for public and institutional uses because the provision of these uses is based upon such unknown factors as funding for capital facilities, long-range public school needs and other factors. The City has determined that the current public/institutional acreage, along with the acreage allowed in almost all the other land

Institutional

use categories, is appropriate to ensure that such facilities and services are located near the population they are intended to serve.

Growth in this land use category will come from schools, churches, day care, hospitals and clinics, and governmental services. There are no planned expansions of governmental services at this time. Expansion of the City's wastewater treatment facility will occur at the present plant location. The Orange County School Board estimates a potential need for two additional schools in the Apopka area, and the City will work closely with the School Board to accommodate this need. With regard to health care facilities, Florida Hospital has expanded its Apopka facility on the present site so no additional land is needed.

Future Conservation Land Use

Conservation land use experienced little change at 1.3% of City lands. This land use category includes those lands that contain valuable and threatened natural resources such as floodplains, estuarine properties, and unique ecological communities. Several areas in the City have already been designated as conservation, but there may be other noteworthy areas identified in the future for conservation designation. Additional conservation lands can be anticipated with annexations of natural resources.

Wetland vegetation (Source: FDEP, Florida Wetlands Delineation Manual)

REDEVELOPMENT

The City of Apopka faces significant redevelopment needs in several key areas within the City and Orange County Joint Planning Area. Redevelopment efforts are focused in the following areas to revitalize and enhance its urban landscape.

Community Redevelopment Area

The City of Apopka established a Community Redevelopment Agency (CRA) in accordance with Chapter 163 Part III, F.S., to revitalize a 633-acre area with substandard or inadequate structures, a shortage of affordable housing, inadequate infrastructure, insufficient roadways, and inadequate parking. The CRA administers the Redevelopment Plan, updated in 2017, to improve blighted properties and enhance economic viability. Projects and programs are funded through the Community Redevelopment Trust Fund using Tax Increment Funds (TIF). The CRA's duration typically spans 30 years, extendable up to 60 years. As the CRA sunsets in 2024, the City plans to work with Orange County to extend its redevelopment efforts.

Mixed-Use Downtown District

The Mixed-Use Downtown District spans 186 acres and consists of thirty-six blocks within the original City limits. It holds historical significance, with buildings dating back to the late 19th and early 20th centuries. A key priority is reclaiming Main Street (US 441) as a local commercial street, as some segments fall below acceptable traffic standards due to heavy traffic flow from Lake County to Orlando. While the historic structures are protected, the area is prime for infill development and redevelopment.

South Apopka

South Apopka, designated as a Community Development Block Grant Target Area by Orange County, includes residential, commercial, and industrial land uses extending south of US 441 and east of Bradshaw Road within the City limits. The county area encompasses residential development beyond the southern part of the CRA area and the Mixed-Use Downtown District. With development dating back to the late 19th century, the area has a significant minority population, low-income residents, and a high number of vacant and substandard housing units. Redevelopment efforts will focus on neighborhood-oriented approaches in alignment with the Housing Element policies.

United States Highway 441 Corridor

US 441, or Orange Blossom Trail, stretches through Apopka from Plymouth to the southeast corner near the Seminole County line, serving as the city's commercial and industrial hub with easy access to major arterial roads. Despite its long-standing establishments, the corridor requires significant redevelopment due to deteriorating structures and open industrial storage. Factors contributing to blight include heavy traffic, vacant lots, lack of continuity in setbacks, complex intersections, multiple driveway cuts in close proximity to each other, excessive signage, and conflicting land uses between Apopka and Orange County. To foster more cohesive development, coordination and

annexation efforts are needed to align land use categories and zoning requirements along the corridor.

State Road 436 Corridor
SR 436, or Semoran Boulevard, is facing similar challenges to US 441, but to a lesser extent. It serves as a key arterial road connecting Apopka to Interstate 4 and extends east from the downtown intersection of Main Street and US 441 to the Orange/Seminole County line. The corridor is primarily commercial and office-oriented, featuring business centers and shopping plazas, with fewer heavy commercial or industrial uses than US 441. Many existing buildings in this area require renovation. However, being within both City and County jurisdictions leads to inconsistency in design, setbacks, and land uses.

Historically Underutilized Business (HUB) Zone
A program of the U.S. Small Business Administration, the HUBZone program fuels small business growth in historically underutilized business corridors to promote job growth, capital investment, and economic development. The program's goal is to award at least three percent of federal contract dollars to HUBZone-certified companies each year. Properties located south of East Main Street and bounded by Bradshaw Road (West), Sheeler Avenue (East), and Cleveland Street (South) are eligible to apply for the program.

Low Tax Opportunity Zone
Low Tax Opportunity Zones enhance a community's ability to attract businesses, developers, and financial institutions to invest in targeted areas. Federally established Opportunity Funds allow investors to defer capital gains taxes, encouraging long-term investment and job creation. The designated Opportunity Zone is located south of East Main Street and bounded by Bradshaw Road (West), Sheeler Avenue (East), and Cleveland Street (South).

NONCONFORMING USES

Nonconforming uses are generally considered incompatible with permitted uses in their zoning district and the regulations of this LDC. Nonconforming uses cannot be extended, expanded, or relocated, except within the existing structure designed for the nonconforming use. Nonconforming uses may be converted to other nonconforming uses through a special exception permit, subject to certain criteria. Alternatively, nonconforming uses can be changed to a use permitted in their zoning district, but once converted to a conforming use, they cannot revert to a nonconforming use. If a nonconforming use is discontinued or abandoned for six consecutive months or more, it cannot be reestablished and must be replaced with a conforming use. However, time spent renovating or repairing a structure housing the nonconforming use is not considered a discontinuance, provided certain conditions are met.

GREENHOUSE GAS REDUCTION AND ENERGY CONSERVATION

Rapidly increasing concentrations of greenhouse gases (GHGs) are contributing to a rise in global temperatures. To combat global warming, the Florida Legislature adopted energy conservation and greenhouse gas reduction comprehensive planning requirements for local governments through chapter 2008-191, Laws of Florida. Chapter 163.31776(a), F.S., requiring the Future Land Use Element to discourage sprawl and develop greenhouse gas reduction strategies and energy efficient land use patterns. GHG reduction and energy conservation are also addressed in the Resilience and Sustainability, Conservation, Mobility, and Pubic Services Elements.

Land use patterns significantly impact reducing vehicle miles traveled (VMT) and energy consumption, leading to lower greenhouse gas emissions. Strategies such as compact and high-density development, transit-oriented development, and mixed-use areas promote pedestrian, bicycle, and transit use, thereby reducing VMT. Green building standards contribute to energy conservation, and protecting green spaces acts as natural carbon sinks, mitigating carbon emissions. The City of Apopka's comprehensive plan includes policies to, reduce urban sprawl and VMT, encourage mixed-use development, preserve green space, educate residents and businesses on energy conservation, promote energy-efficient design and construction, and embrace renewable energy.

HOUSING ELEMENT

Ensure safe, quality housing for all Apopkans

HOUSING ELEMENT

GOAL 1

The City shall strive to foster an equitable provision of healthy, safe, and quality housing at an attainable cost for all income levels for present and future residents.

OBJECTIVE 1.1

The City shall designate in the Future Land Use Element adequate amounts of land to accommodate a total of 10,091 new single-family units and 986 new multifamily units by 2040.

Policy 1.1.1

The City shall analyze and amend its Land Development Code (LDC) as needed to eliminate barriers for residential redevelopment proposals and support the development of a variety of new housing types that better accommodate a wide range of incomes.

Policy 1.1.2

Review and amend City policies as needed to enable redevelopment proposals that increase residential density and prioritize:

- Mixed-use development that incorporates mixed-income housing
- Increased housing supply in desired, targeted areas of the City
- Redevelopments that propose higher density development
- Complete Streets and or Transit-Oriented Development

Policy 1.1.3

Create strategies and policies as needed to retain naturally occurring affordable housing and housing types that are typically not developed by the marketplace, such as accessory dwelling units (ADU) and missing middle housing.

Policy 1.1.4

Identify environmental and socioeconomic issues that disproportionately affect specific populations and disinvested areas (i.e., heat, flooding, housing displacement) to better address those issues and recognize solutions.

Policy 1.1.5

Implement new and existing housing rehabilitation programs through the City's Community Redevelopment Agency (CRA) in order to prevent the loss of housing,

rehabilitate aging housing supply, and enable housing renovations that make units more accessible to disabled and senior residents.

Policy 1.1.6

Assess and identify City properties that are ideal for higher residential densities and mixed-use development in order to develop an inventory of public-owned lands that would be ideal for affordable housing. With the surplus land inventory, implement best practices in managing surplus lands, such as ensuring long-term affordability of new affordable units and establishing effective criteria for the receipt of land.

OBJECTIVE 1.2

The City of Apopka shall encourage and assist in the provision of safe, affordable housing for households earning a moderate income or less.

Policy 1.2.1

The City shall coordinate with private and non-profit developers to ensure that all means of meeting the need for 1,307 new affordable housing units accessible to households earning 120% or less of Area Median Income (AMI) are met by the year 2040.

Policy 1.2.2

The City shall coordinate with agencies like the Orange County Housing Finance Authority as well as local housing providers, nonprofits, and community groups to pursue all available federal, state, and local funding opportunities.

Policy 1.2.3

The City of Apopka shall coordinate with the Orange County Housing and Community Development Division in facilitating its housing programs, such as the HOME Investment Partnership Program (HOME) and the Emergency Solutions Grant (ESG) Program.

Policy 1.2.4

Strive to coordinate with housing developers and nonprofits, such as Habitat for Humanity and Homes in Partnership, to support residential development that leverages the development of affordable housing units.

Policy 1.2.5

Support and engage in local and regional housing initiatives that help create new affordable housing units in the City, such as community land trusts or housing task forces.

Policy 1.2.6

Assess and implement regulatory, administrative, or financial incentives as redevelopment opportunities present themselves to better encourage the participation of

the private sector in the development of affordable housing units. Refer to Live Local Act for examples of potential incentives.

Policy 1.2.7

Review the LDC and the residential permitting process as needed to ensure that regulations do not constitute exclusionary zoning practices or impede the development of affordable housing units unnecessarily.

Policy 1.2.8

The City LDC shall encourage that affordable housing units are located in close proximity to a collector roadway or higher, and provide access to the following facilities and services through an interconnected system of sidewalks, bicycle lanes and transit stops and amenities:

- Employment centers
- Convenient neighborhood amenities and retail offering household goods and services
- Medical or health services
- Public parks, recreational facilities, and trails.

Policy 1.2.9

Encourage and standardize the act of requesting technical assistance from state and regional agencies to support the implementation of new affordable housing policies, programs, and development projects as needed.

OBJECTIVE 1.3

The useful life of the City's existing housing stock shall be conserved through the effective implementation of regulatory programs directed toward preserving neighborhood quality. This includes the conservation of native and natural resources, maintenance and replacement of community facilities as needed, and implementation of effective code enforcement.

Policy 1.3.1

The City will inform and impose code enforcement requirements as a means to ensure the maintenance of high-quality housing standards, consistent with Florida Statutes, and the mitigation of substandard residential units.

Policy 1.3.2

Target code enforcement activities in neighborhoods where substandard housing is most prevalent and collaborate with code enforcement as needed to mitigate persistent neighborhood issues.

Policy 1.3.3
Encourage the rehabilitation of existing housing and seek federal and state funds to rehabilitate or demolish housing for which rehabilitation is not economically feasible.

Policy 1.3.4
The City shall minimize potential blighting influences within residential or mixed-use areas by prioritizing the use of best management practices in community planning, public outreach, and urban design, in development review processes.

Policy 1.3.5
In order to continuously facilitate residential and community facility enhancements needed within the City, the City shall continue to enable its existing housing assistance programs through the CRA, and coordinate with Orange County's Community Development Department on the implementation of their CDBG, HOME programs, and other programs as they become available.

Policy 1.3.6
Identify and assess all funding opportunities that support the creation, revitalization, or mitigation of local housing to enhance local communities and create a more resilient housing stock.

Policy 1.3.7
The City shall continue its process of reviewing development proposals to: ensure adequate secondary or emergency access; buffer higher intensity uses in developments adjacent to residential areas; ensure access to adequate recreational and open spaces; ensure safe and adequate pedestrian access, multimodal access, etc.

Policy 1.3.8
Empower and support the development of collaborative groups, such as neighborhood task forces and working groups that seek to address local housing issues, to enable communication between communities facing similar challenges.

Policy 1.3.9
Employ brownfield programming to enable residential infill development and rehabilitation that eliminates dilapidated structures and neighborhood blight.

Policy 1.3.10
Consistently monitor the number of substandard residences in the City to better address units that increase risks of exposure to lead, mold, extreme heat or cold, poor ventilation or sunlight, or pests.

OBJECTIVE 1.4
The City will continuously support the preservation of historically significant City residences by supporting nominations to the National Register of Historic Places of all

eligible housing units.

Policy 1.4.1
Provide support to owners of historically significant housing in applying for and utilizing state and federal assistance programs.

Policy 1.4.2
The City shall utilize the Apopka Historical Society and the Museum of the Apopkan's as resources for historic preservation opportunities.

Policy 1.4.3
Consistently encourage private investment in historically significant housing by providing information, technical assistance and program services as available.

Policy 1.4.4
Take advantage of all opportunities to preserve local historically significant residential properties to better respect the historic fabric of the City of Apopka, including identifying properties, supporting placemaking activities, and conducting public outreach.

Policy 1.4.5
Promote the rehabilitation and preservation of well-designed residential units that have a significant connection to the community, underscore existing neighborhood character and charm, and can potentially support local tourism.

OBJECTIVE 1.5
Strive to encourage resident involvement in community improvement initiatives for neighborhoods experiencing high levels of crime, neighborhood instability, and negative quality of life conditions that are connected to housing issues.

Policy 1.5.1
Identify and assess available funding and partnership opportunities that will support the creation of a City program that will facilitate the development of neighborhood improvement plans and public outreach activities.

Policy 1.5.2
Methods of funding, such as CDBG, shall be investigated and sought after to help facilitate neighborhood improvements where they are needed.

Policy 1.5.3
Identify and monitor disinvested or rapidly changing residential areas of the City to better address inequities in the distribution and supply of adequate local housing. This includes tracking affordable housing units by location (especially those that will soon lose their affordability due to expiring subsidies) to identify neighborhoods that require the creation

of new affordable housing units to maintain community stability and quality and avoid residential displacement.

Policy 1.5.4
The City shall review development proposals for community residential facilities to ensure that adequate infrastructure and services are available to help support improved quality of life.

Policy 1.5.5
Provide opportunities for residents to voice their concerns and ensure that redevelopment better reflects the desires of the affected community.

Policy 1.5.6
Utilize research, partnerships, and professional growth opportunities in order to stay abreast of the latest public engagement strategies that the City can employ to improve public participation in the City.

Policy 1.5.7
When housing must be removed as a result of City actions, the City shall assess the feasibility of relocating lost housing units to preserve local housing and prevent resident displacement.

Policy 1.5.8
Monitor data provided by the American Community Survey (ACS) to assess and address issues such as changes in the number of substandard housing units, overcrowding, and housing lacking utilities.

Policy 1.5.9
Support the provision of public educational opportunities and materials in the City to help residents better understand the value of having a diverse range of housing options and the social and economic benefits it provides.

Policy 1.5.10
Assess and identify strategies from the newly revised State Housing Strategy that can support the City's long-term housing goals.

OBJECTIVE 1.6
Prioritize healthy, resilient housing and improved pathways to homeownership to increase neighborhood quality and stability.

Policy 1.6.1
Strive to apply a "health lens" to the City's development review process to foster an equitable provision of safe, quality housing for all residents regardless of age, physical ability, ethnicity, or socioeconomic status in Apopka.

Policy 1.6.2
Support the following types of development near residential uses to stabilize neighborhoods and deliver better community-serving infrastructure and services:

- Mixed-use development with health-promoting commercial uses
- Innovative housing such as “Missing Middle”
- Parks and trails
- Safe Routes to School or Safe Routes to Parks
- New types of infill development like brownfield redevelopment and adaptive reuse.

Policy 1.6.3
The City of Apopka shall continue to permit Accessory Dwelling Units (ADUs) as outlined in Sec. 4.2.3. of the LDC and will assess and consider extending the permissibility of ADUs in denser residential zoning districts where feasible.

Policy 1.6.4
Identify and implement policies and programs that help preserve housing affordability, housing education and counseling, rental assistance, and down payment assistance programs.

Policy 1.6.5
Support the implementation of initiatives that increase housing resilience in the City by participating in resilience projects with neighboring local governments, staying abreast of related funding opportunities, and developing or distributing existing educational materials to City residents.

Policy 1.6.6
Encourage the integration of housing hazard mitigation in the development of City emergency management and housing policy frameworks (State Housing Improvement Program, Local Mitigation Strategy, etc.), and also consider conducting a Housing Vulnerability Assessment in order to better protect housing supply against natural hazards, increase funding opportunities for housing mitigation, and reduce time needed to bounce back from natural disasters.

Policy 1.6.7
Encourage the assessment of housing needs for marginalized populations, such as seniors, disabled persons, and those aging out of foster care, in order to better house those groups.

Policy 1.6.8
Consider implementing strategies that improve the housing stability of renters to help buffer the impacts of rising rents on an increasingly housing cost-burdened population,

such as eviction prevention programs that educate renters on credit, household budgets, or the eviction process.

Policy 1.6.9

Strive to better understand how increases in short-term rental properties and investor-owned properties in local communities impact the City's housing market and homeownership opportunities for long-term residents.

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HOUSING ELEMENT

INTRODUCTION

The Housing Element is a data assessment of housing trends and existing conditions of residential uses in the City of Apopka completed with the intention of identifying and better understanding current and future housing needs of Apopkans, as well as the opportunities for mitigating housing issues that arise with population growth, such as supply, quality, accessibility, and affordability. Projected population size and subsequent housing needs are assessed to support data analysis and inform policy development. This element seeks to use local housing data alongside a thorough review of housing opportunities that are possible through plan making, programming, and residential development found in housing best practices research to enable policy that's supports the equitable and healthy supply of housing for all City residents up until the year 2040.

Housing has been and remains to be a leading policy area that poses a challenge for local governments like the City of Apopka. Years of implementing standard Euclidean style zoning practices has left many Floridian municipalities with a unique set of housing issues. With increased housing demand brought on by the continuous migration of people into the state as retirees, new families, young professionals, and various others, these housing issues are further impacted. Consequently, cities face shortages of housing supply in the face of steadily increasing housing demand, issues with housing affordability, as well as housing instability brought on by increased housing cost burden and stagnant wages.

HOUSING AS A SOCIAL DETERMINANT OF HEALTH

Central Florida has experienced significant population growth in the past 20 years. A recent study released by the Orlando Economic Partnership in 2021 found that nearly 1,500 residents move into Central Florida each week and 1,000 make Orange County their home. Being the second largest City in Orange County, the City of Apopka is not exempt from this growth or its implications. Since the year 2010, the number of households in Apopka has increased by 17%. Similar to the marked high rates of population growth, Apopka is also experiencing housing issues related to population growth that have impacted local governments across the state, such as aging housing, decreased affordability and higher rents, housing quality, and cost burden.

Striving to accomplish the City's goal of adequately housing all of its residents while also addressing these issues is critical not only for managing growth, but also for maintaining a healthier population and reducing exposure to low quality housing. Aging, blighted, or dilapidated housing poses significant health risks for residents who inhabit them. This is

due to the fact that housing is a critical Social Determinant of Health (SDOH), or environmental factor that is linked to physical and mental health and well as quality of life. Residents spend the majority of their time in their home, and without a safe, quality residence where one can live, learn, work (since more people work from home following COVID-19) play, worship, and age, they may be subject to the negative health and socioeconomic outcomes associated with living in substandard housing. Similarly, without a healthy neighborhood with access to quality parks and green space, public transportation, schools, and neighborhood retail like grocery stores, residents are less able to make healthier decisions that support good health and wellness. Considering these health determinants while assessing housing data will enable more health-informed housing policy and program implementation.

Cost Burdened Households and County ALICE Scores

Assessing housing cost burden first requires an understanding of Area Median Income (AMI) and affordable housing. The City will refer to Florida Statutes s. 420.00004(3) to define affordable housing to mean that monthly rents or monthly mortgage payments, including taxes, insurance, and utilities, do not exceed 30% of that amount which represents the percentage of the median adjusted gross annual income for extremely low to moderate income households. Further, the City recognizes that affordable housing is good quality housing, that is safe, healthy, and decent for all to occupy, regardless of age, physical ability, ethnicity, or socioeconomic status.

The median income is determined by the Department of Housing and Urban Development (HUD) by county or by Metropolitan Statistical Area (MSA). According to the Shimberg Center for Housing Studies (Shimberg), in 2023, the median income assessed by HUD for Orange County was $85,700. Housing affordability is informed by household income, or the percentage of AMI earned by the household, to determine that households income eligibility. Households earning less than 30% of AMI is considered extremely low income. Households earning between 30% and 50% AMI are considered very low income. Households earning 50% to 80% AMI are considered low income, and those earning between 80% and 120% are considered moderate income.

A household that is experiencing housing cost burden is a household that is spending more than 30% of its income to cover its housing expenses. According to Shimberg, in 2022 the City of Apopka had a total of 6,288 cost burdened households. The majority of these households are low income with a total of 2,503 households, alongside very low income households with a total of 1,507 households, and then extremely low income households with 1,153 households. About 712 moderate income households (earning between 80% and 100% AMI) were cost burdened and only 413 households earning more than 100% AMI were cost burdened.

These findings show that lower-income households are more prone to housing cost burden despite being employed (see ALICE Scores below). Tables HE – 17 and HE – 18

further describe housing cost burden in the City. Table HE – 19 provides projection data on extremely cost burdened households. Extreme housing cost burdened arises when the household is paying more than 50% of its income on housing. Table HE – 19 shows that the City will increase from a total of 2,793 extremely cost burdened households in 2022 to a total of 4,100 households by 2040. This represents and increase in 1,307 households; the City should strive to create 1,307 new affordable housing units by 2040 to meet the needs of its growing population.

Housing cost burden is a rising issue for communities across the country but is especially impacting those in Florida due to increasing housing demand, stagnate wages, and a decreasing supply of affordable housing stock. Housing cost burden can in extreme cases prevent residents from being able to afford the household needs they require, and may lead to tradeoffs that impact quality of life. Residents may be put into the situation where they will have to choose to pay their rent instead of purchasing healthy, nutritious foods, medication, or their utility bills so they have electricity and or water in their home.

According to the United for ALICE (Asset Limited and Income Constrained, Employed) 2021 County Profile data for Orange County, 15% of households were below the poverty threshold and 32% of households were considered ALICE households. Although this shows a decrease in the percentage ALICE households in Orange County since the 2018 report (35%), this still concludes that despite being employed and working earnestly for a living wage, many households were still struggling to make ends meet and afford household needs due to cost burden, that can relate to utilities, transportation, or medical costs, but are generally tied to housing costs.

EXISTING CONDITIONS AND CHARACTERISTICS OF APOPKA'S HOUSING STOCK

Table HE - 1 shows that in 2021 the City had a total of 17,650 households according to the American Community Survey (ACS) 2021 5-year estimates. It also shows that the increase in the total number of occupied households in the City from 2010 to 2021 was greater than the County's increase by nearly 3%. Similarly, the increase of households with children was much higher for the City (26.2%) than it was for the County (13.3%), nearly doubling it. And similar to most Floridian communities, the increase in households with seniors was high for both communities. However, the City had a higher increase in this type of households, with a 66.1% increase for the City from 2010 to 2021. The percent

of households with one or more seniors in the City was also greater than the percentage of households with one or more children, showing the senior population is only slightly larger than population of children in the City.

Table HE - 2 provides a description of the changes in housing characteristics in the City from 2010 to 2021. The data shows that total family households increased substantially compared to nonfamily households with a 28% increase. This is especially true for single-parent households, with single-mother led households (71.5%) comprising the majority of those households in 2021 compared to single-father led households (28.5%). Nonfamily households saw a slight decrease by -1.7%. Nonfamily households where the householder is not living alone saw a 40% increase, showing that more residents who are not related are living together. However, the table also shows that nonfamily households with the householder living alone still comprise the majority of nonfamily households, though it did decrease from 3,508 to 3,220. This is not a substantial decrease but it worth noting that the data also showed that in 2021, 1,270 of these households had a householder that was over the age of 60 years old.

Table HE - 1 Housing Growth in Apopka (2010 - 2021)

Housing Growth in Apopka						
	Total Occupied Households		Households with One or More People Under 18 Years		Households with One or More People 60 Years or Over	
Year	County	City	County	City	County	City
2010	406,002	14,739	139,259 (34%)	5,159 (35%)	103,531 (26%)	3,994 (27%)
2015	434,319	15,688	143325 (33%)	5,930 (38%)	124,215 (29%)	5,224 (33%)
2020	468,075	17,312	155,401 (33%)	6,336 (37%)	152,124 (33%)	6,579 (38%)
2021	475,292	17,650	157,797 (33%)	6,513 (37%)	156,371 (33%)	6,636 (38%)
Percent Change (2010-2021)	17.1%	19.8%	13.3%	26.2%	51.0%	66.1%

Source: 2021 ACS 5-Year Estimates

Date Retrieved: June 2023

Table HE - 2 Changes in Housing Characteristics in Apopka (2010 – 2021)

Changes in Housing Characteristic in Apopka							
		Family Households			Nonfamily Households		
Year	Total Households	Total	Married-Couple	Single-Parent	Total	Not Living Alone	Living Alone
2010	**14,739**	**10,641 (72%)**	8,563 (58%)	2,092 (14%)	**4,097 (28%)**	575 (4%)	3,508 (24%)
2020	**17,312**	**12,822 (74%)**	9,572 (55%)	3,250 (19%)	**4,490 (26%)**	949 (6%)	3,541(20%)
2021	**17,650**	**13,624 (77%)**	10,134 (57%)	3,490 (20%)	**4,026 (23%)**	806 (5%)	3,220 (18%)
Percent Change*	19.8%	28.0%	18.3%	66.8%	-1.7%	40.2%	-8.2%

* 2010-2021

Source: 2021 ACS 5-Year Estimates

Date Retrieved: June 2023

When assessing changes in dwelling units by type in the City from 2010 to 2021, little change over time can be observed. Single-Family homes dominate the City's housing supply by 86.3 %, and saw only a 0.5% increase. The County also saw a small change in its total single-family homes with an increase of 0.8% over 11 years. The City's supply of multifamily homes did increase just slightly more than single-family homes with an increase of 0.7%, however its supply of mobile homes decreased more substantially, from a total of 796 units to 754 units. From Table HE – 3 it is safe to say that single-family homes are the main type of housing in the City.

Housing tenure has seen some significant changes in the City from 2010 to 2021. First, the data shows that the total housing structures increased from 15,958 to 18,881, with a total 17,650 occupied households by 2021, a 20% increase in occupied units. Total vacant units saw very little change, with a small increase from 1,219 units (7.6% of total housing structures) to 1,231 units (6.5% of total housing structures). Though the total of single-family homes in the City increased since 2010, the total owner-occupied units saw a 6% decrease from 81% of units to only 75%, which is greater than what the County saw (3% decrease). Total renter-occupied units saw an increase from 2,800 units (19%) to 4,589 units (26%). In summary Table HE – 4 illustrates that renter-occupied units have increased at a higher rate in the City than it has in the County since 2010.

Table HE - 3 Dwelling Units by Type in Apopka (2010 and 2021)

Dwelling Units by Type								
	2010				2021			
	County		City		County		City	
Housing Type	Units	%	Units	%	Units	%	Units	%
Total 1-Unit Housing Structures (Single-Family Homes)	268,367	66.1%	12,646	85.8%	313,357	66.9%	15,225	86.3%
Total 2-or-More-Unit Housing Structures (Multifamily Homes)	120,177	29.6%	1,297	8.8%	145,926	31.2%	1,671	9.5%
Total Units That are a Mobile Home, or Other	17,864	4.4%	796	5.4%	16,009	3.4%	754	4.3%
Total Occupied Housing Units	406,002	100.0%	14,739	100.0%	468,075	100.0%	17,650	100.0%

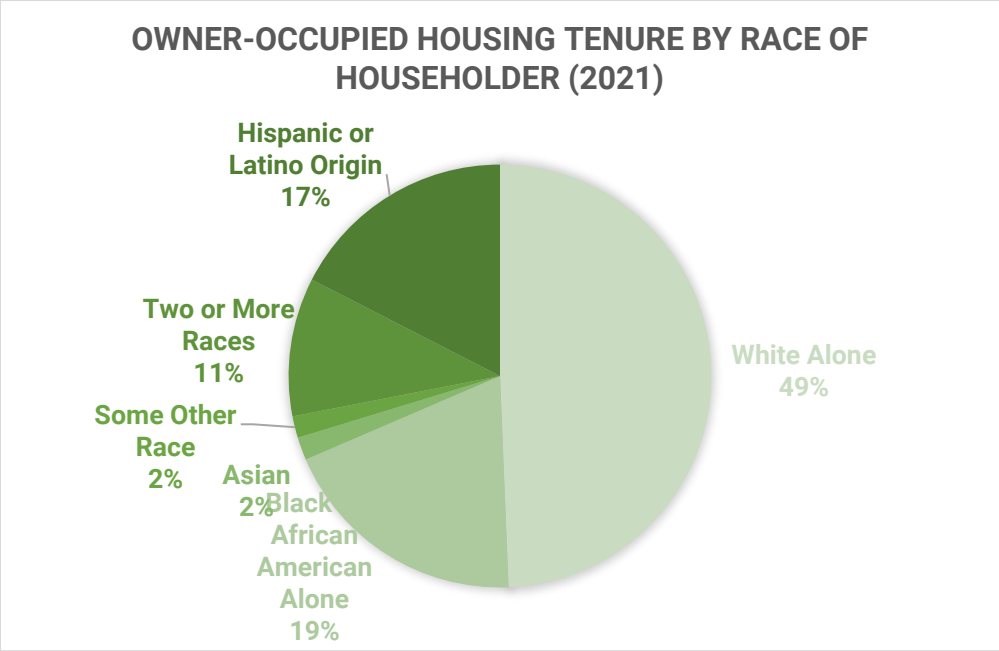
Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Table HE - 4 Dwelling Units by Tenure in Apopka (2010 and 2021)

Dwelling Units by Tenure				
	2010		2021	
	County	City	County	City
Total Housing Structures	474,757	15,958	554,517	18,881
Total Occupied Housing Units	406,002	14,739	475,292	17,650
Total Vacant Housing Units	68,755	1,219	79,225	1,231
Total Housing Units that are Owner-Occupied	243,195 (60%)	11,939 (81%)	268,761 (57%)	13,226 (75%)
Total Housing Units that are Renter-Occupied	162,807 (40%)	2,800 (19%)	209,531 (43%)	4,424 (25%)

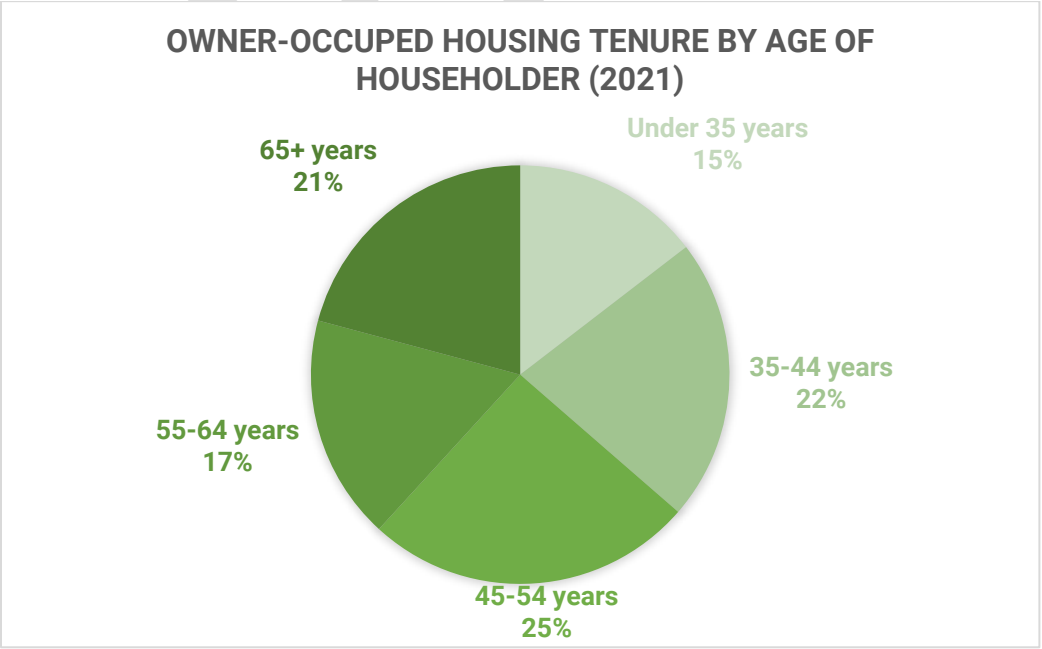
Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Figure HE - 1 Housing Tenure by Race of Householder in Apopka (2021)



Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Figure HE - 2 Housing Tenure by Age of Householder in Apopka (2021)



Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Information on housing tenure can help characterize home-ownership within a community. Homeownership is an effective way to build capital and wealth for most households. Identifying where homeownership levels differ across age and racial lines can inform and support policies and programs aimed at improving homeownership opportunities. According to ACS 2021 5-year estimates, the majority of owner-occupied housing units in the City were occupied by White residents (49%), with a significant amount being occupied by Black residents (19%) along with Hispanic residents (17%). Smaller percentages of owner-occupied housing units were occupied by residents of Two or More Races (11%), residents of Some Other Race (2%), and Asian residents (2%). Similarly, residents between the age of 35 and 54 and who were 65 years old or over were occupying the majority of owner-occupied housing. Younger residents under the age of 35 occupied only 15 of units, and residents between the ages of 55 and 64 only owned 17% of units.

In 2021 the majority of housing units in the City were built between 1980 and 1999. Table HE – 5 shows that a total of 7,231 housing units were built in this timeframe, meaning that a little over 40% of the City's housing stock was nearly 45 years old in 2021. Less than 15% of the housing stock is older, with 1,849 units being built between 1960 and 1979, and only 687 being built before 1960. With an increasing older housing stock, it would benefit the City to consistently maintain and utilize housing rehabilitation and repair programs to ensure residents have quality housing. The largest percentage of the City's housing was built after the year 2000, with 5,448 being bult between 2000 and 2009.

Table HE - 5 Age of Housing Stock in Apopka (2021)

Age of Housing Stock in Apopka				
	County		City	
Year Built	Units	%	Units	%
2010 or later	59,409	12.5%	2,435	13.8%
2000-2009	99,152	20.9%	5,448	30.9%
1980-1999	178,180	37.5%	7,231	41.0%
1960-1979	92,082	19.4%	1,849	10.5%
1959 or earlier	46,469	9.8%	687	3.9%
Total Occupied Units	475,292	100.0%	17,650	100.0%

Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

The City maintains good quality housing for the majority of its residents according to Table HE – 6. In 2021 only 18 units were without complete plumbing facilities, 87 had incomplete kitchen facilities, and only 173 had no fuel used. However, about 10% of units were without an internet subscription, and 2% were without telephone services. Further,

in 2021, a total of 210 occupied households had 1.01 -1.50 occupants per room (11,405 for Orange County), and a total of 134 occupied households had 1.51 or more occupants per room (5,658 in Orange County). This means about 2% of the households in the City were experiencing overcrowding.

Table HE - 6 Dwelling Units Lacking Complete Facilities in Apopka (2021)

Dwelling Units Lacking Complete Facilities (2021)						
Year	Occupied Housing Units	Units Without Complete Plumbing Facilities	Units Without Complete Kitchen Facilities	Units With No Fuel Used	Units Without an Internet Subscription	Units Without Telephone Service
2021	17,650	18 (0.1%)	87 (0.5%)	173 (1%)	1,778 (10%)	391 (2%)

Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

According to Table HE – 7, housing values for homes with a mortgage increased, while homes without a mortgage saw a very slight decline in value. Between 2010 and 2021, more of the City's housing units with a mortgage moved into the $300,000 - $400,000 value bracket and out of the $100,000 - $299,999 value bracket. The Less than $99,999 value bracket saw a small decrease also, while the $500,000 or More bracket increased by 2%. Similarly, the median housing value for homes with a mortgage increased quite a bit from 2010 ($225,700) to 2021 ($275,400). 2021 ACS 5-Year Estimates also show that just between 2020 ($255,300) and 2021, these values increased by about $20,000. Housing units without a mortgage saw a decrease in total numbers between 2010 (3,081) and 2021 (2,739), but saw very little change in values aside from median value. In 2010 these housing units had a median value of $207,500, and though they jumped to $237,700 in the year 2020, they decreased to $228,500 the next year in 2021.

Table HE - 7 Housing Values in Apopka (2021)

Housing Values in Apopka				
	Owner-Occupied Housing Units with a Mortgage Values		Owner-Occupied Housing Units without a Mortgage Values	
Value Range	**2010**	**2021**	**2010**	**2021**
Less than $99,999	647 (7%)	439 (4%)	493 (16%)	485 (19%)
$100,000 - $299,999	5,894 (67%)	5,906 (56%)	1,793 (58%)	1,463 (57%)
$300,000 - $499,999	2,074 (23%)	3,612 (34%)	653 (21%)	673 (21%)
$500,000 or More	257 (3%)	530 (5%)	142 (5)	118 (3%)
Total Owner-Occupied Units	8,872	10,487	3,081	2,739
Median Value	$ 225,700	$ 275,400	$ 207,500	$ 228,500

Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Nursing homes and Assisted Living Facilities, or ALFs, provide a vital supply of housing in any community. They house and support the City's elderly residents who require extra care and medical assistance where it otherwise would not be easy to provide. Table HE – 8 lists the various nursing homes and ALFs within the City and their address. In 2023, there were a total of 11 facilities in operation in the City of Apopka.

Table HE - 8 Assisted Living Facilities and Nursing Homes in Apopka (2023)

Assisted Living Facilities and Nursing Homes in Apopka	
Facility Name	**Address**
Beryl's Place	2777 Spicebush Loop
Devoted Home Care And Support	1132 Osprey Way
Harblin Assisted Living Facility	1691 Parkglen Cir
Bella Group Home	719 E Magnolia St
Central Florida Recovery Center	1124 S Park Ave
Blessing Heart Group Home	8 E Summit St
Active Care Assist Living Fac	2436 Lake Jackson Cr
Agape House Corp.	2009 Tournament Dr
Omelda Home Care LLC.	541 Shirley Dr
Apopka Health & Rehab Center	2001 Alston Bay Blvd
Vineyard Group Home LLC.	3 E Nightingale St

Source: City of Apopka
Date Retrieved: October 2023

ANALYSIS OF LATEST POPULATION AND HOUSING PROJECTION DATA

Population projection data from Shimberg shows that past population growth was very high from 2010 to 2020, jumping from 41,542 to 54,873. This equaled an increase of 32%, which was higher than the population growth that the County experienced in the same timeframe (24.7%). The City is expected to experience similar population growth (25%) from 2021 to 2030 when it reaches a projected population of 70,990 residents. By 2040 the population will reach a projected total of 82,939 residents, which is a 46% increase from the total estimated in 2021. The County's population is not projected to increase at a higher rate than the City, and by 2040 will only have increased its population by about 30%, increasing to 1,893,405 residents.

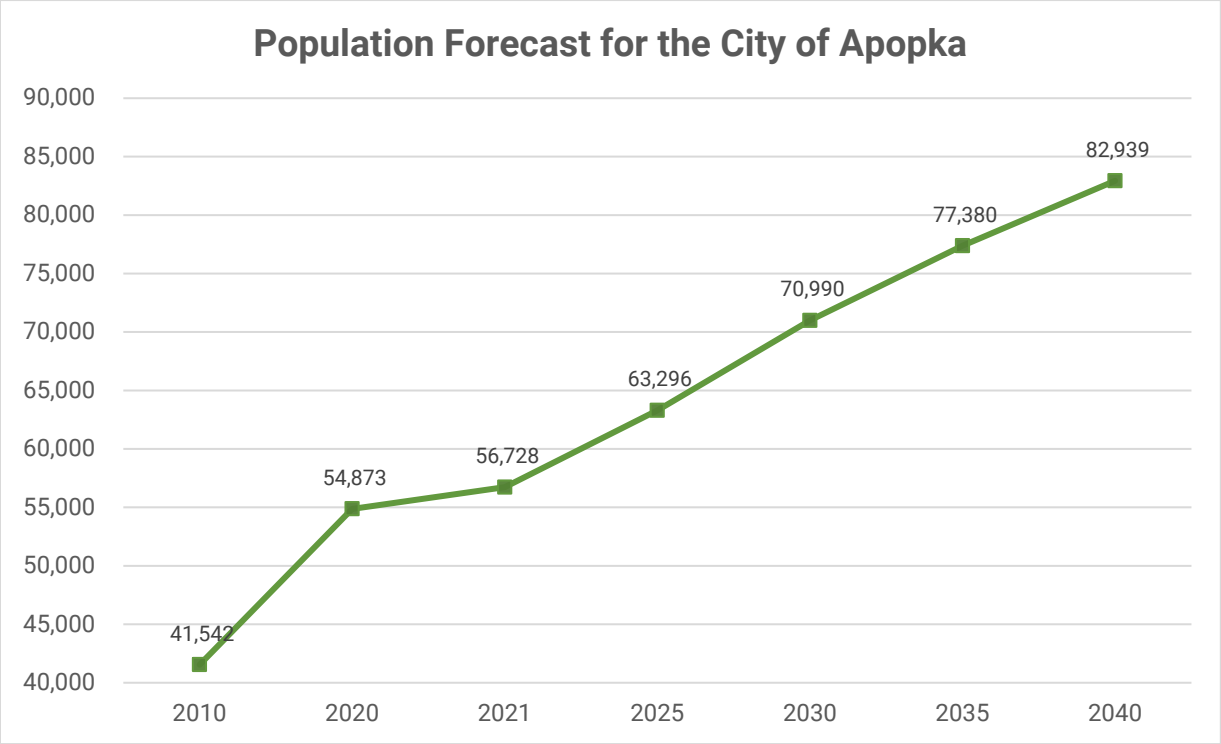
Table HE - 9 Population Estimate and Forecast for Apopka (2010 - 2040)

Population Estimate and Forecast for Apopka (2010 - 2040)				
Year	County		City	
	Total Population	Percent Change	Total Population	Percent Change
2010	1,145,956	-	41,542	-
2020	1,429,908	24.78%	54,873	32.09%
2021	1,457,945	1.96%	56,728	3.38%
2025	1,577,698	8.21%	63,296	11.58%
2030	1,704,697	8.05%	70,990	12.16%
2035	1,806,996	6.00%	77,380	9.00%
2040	1,893,405	4.78%	82,939	7.18%
Total Population Increase 2010-2021	435,460	29.87%	26,211	46.20%

Source: Shimberg Center for Housing Studies Data Clearinghouse (2023), BEBR (2023)

Date Retrieved: June 2023

Figure HE - 3 Population Forecast for the City of Apopka (2010 – 2040)



Source: Shimberg Center for Housing Studies Data Clearinghouse (2023) projections, BEBR (2023) estimates through 2021
Date Retrieved: June 2023

Table HE - 10 Estimated and Projected New Housing by Type in Apopka (2021 - 2040)

Estimated and Projected New Housing by Type (2021 - 2040)				
	Projected Demand for Single-Family Housing*		Projected Demand for Multifamily Housing	
Year	County	City	County	City
Total Households 2021	313,357	15,225	145,926	1,671
2025	391,031	19,032	177,328	1,998
2030	424,857	21,511	192,667	2,258
2035	453,332	23,552	205,581	2,472
2040	477,942	25,316	216,741	2,657
Total New Units Demanded	164,585	10,091	70,815	986

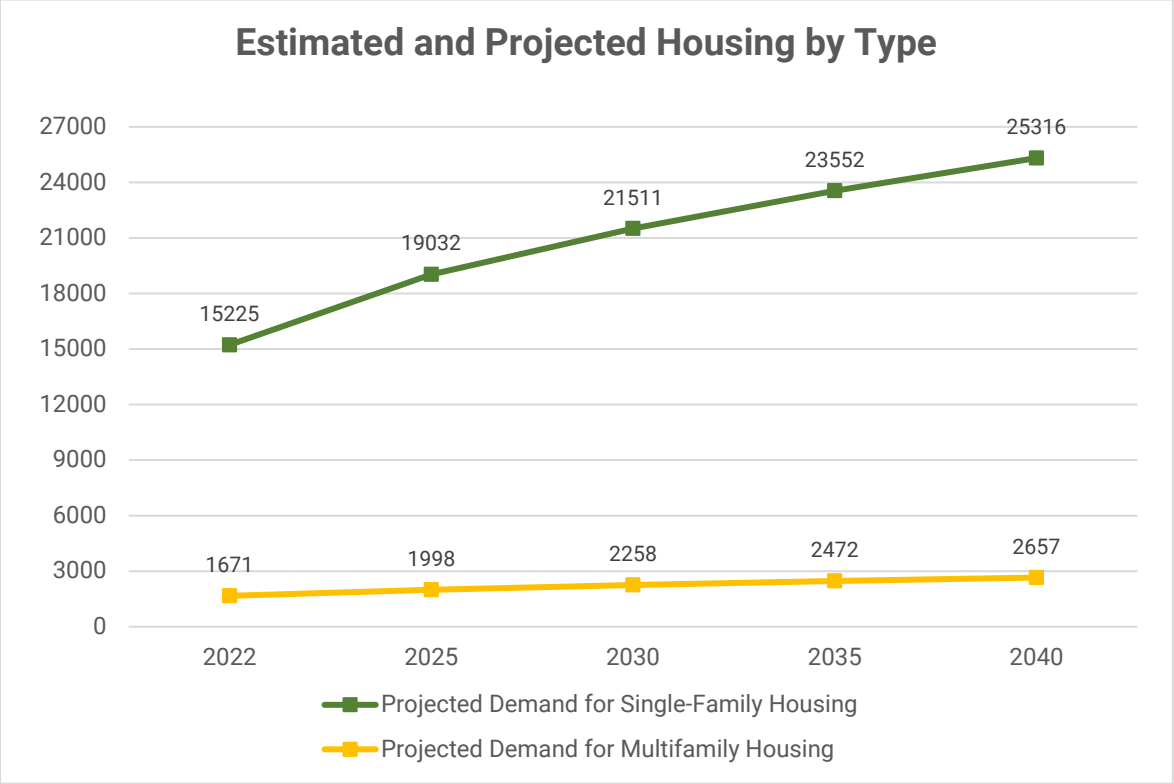
Source: 2021 ACS 5-Year Estimates, Shimberg Center for Housing Studies Data Clearinghouse (2023)

Date Retrieved: June 2023

* Single-Family Housing demand includes Mobile Homes

Projection data in Table HE – 10 shows that the total households needed in the City by the year 2040 comes up to 11,077 household units, according to 2021 ACS 5-year estimates. Of those, a total of 10,091 single-family units will be needed by 2040, alongside a total of 986 multifamily units.

Figure HE - 4 Estimated and Projected Housing Demand by Type in Apopka (2022 – 2040)



Source: 2021 ACS 5-Year Estimates, Shimberg Center for Housing Studies Data Clearinghouse (2023)
Date Retrieved: June 2023
* Single-Family Housing demand includes Mobile Homes

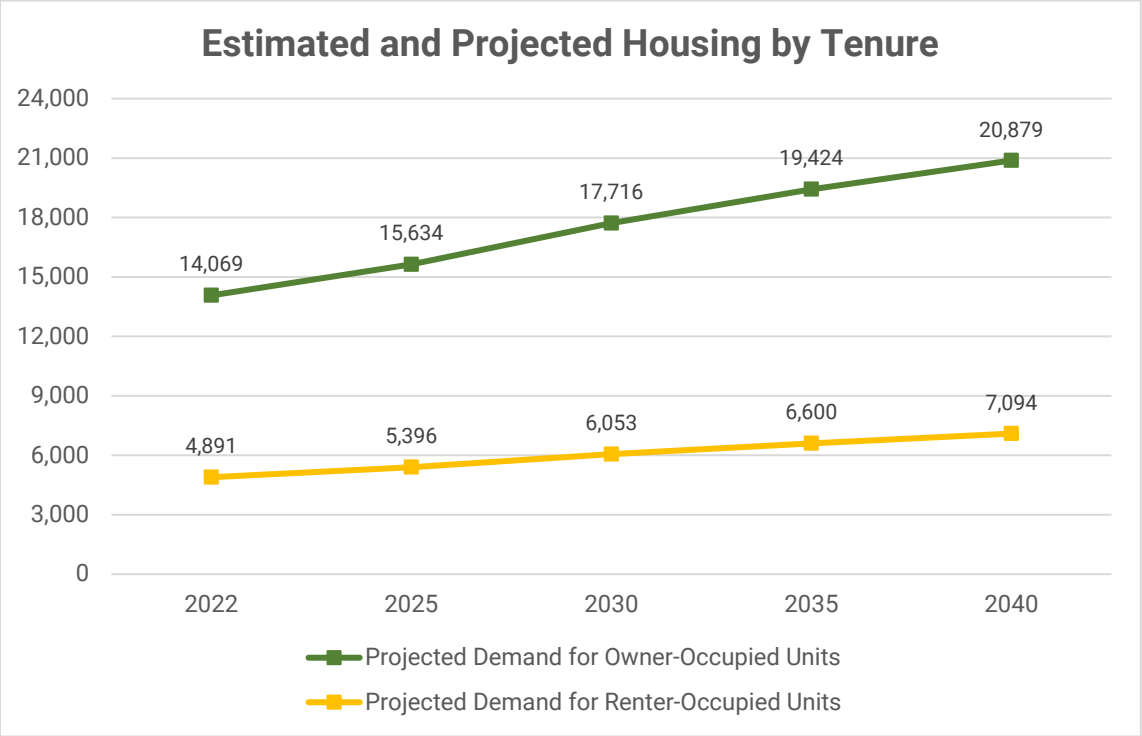
Table HE - 11 Estimated and Projected New Housing Tenure in Apopka (2021 - 2040)

Estimated and Projected New Housing by Tenure (2021 - 2040)				
	Projected Demand for Owner-Occupied Units		Projected Demand for Renter-Occupied Units	
Year	County	City	County	City
Total Households in 2021	268,761 (57%)	13,226 (75%)	209,531 (43%)	4,424 (25%)
2025	306,692 (54.0%)	15,634 (74.3%)	261,667 (46.0%)	5,396 (25.7%)
2030	335,719 (54.4%)	17,716 (74.5%)	281,805 (45.6%)	6,053 (25.5%)
2035	361,017 (54.8%)	19,424 (74.6%)	297,896 (45.2%)	6,600 (25.4%)
2040	382,239 (55.0%)	20,879 (74.6%)	312,444 (45.0%)	7,094 (25.4%)
Total New Units Demanded	113,478	7,613	102,913	2,670

Source: 2021 ACS 5-Year Estimates, Shimberg Center for Housing Studies Data Clearinghouse (2023)
Date Retrieved: June 2023

According to Table 2-11, the City is expected to see an increase of 7,613 owner-occupied homes and 2,670 renter-occupied homes by the year 2040, for a total of 10,238 new households. The county on the other hand is expected to see an increase of 113,478 owner-occupied homes and 102,913 renter-occupied homes by the year 2040, for a total of 216,391 new households. Projected new housing by tenure also considers future vacant housing.

Figure HE - 5 Estimated and Projected Housing Demand by Tenure in Apopka (2022 – 2040)



Source: 2021 ACS 5-Year Estimates, Shimberg Center for Housing Studies Data Clearinghouse (2023)
Date Retrieved: June 2023

Table HE - 12 Estimated and Projected New Households by Income in Apopka (2021 - 2040)

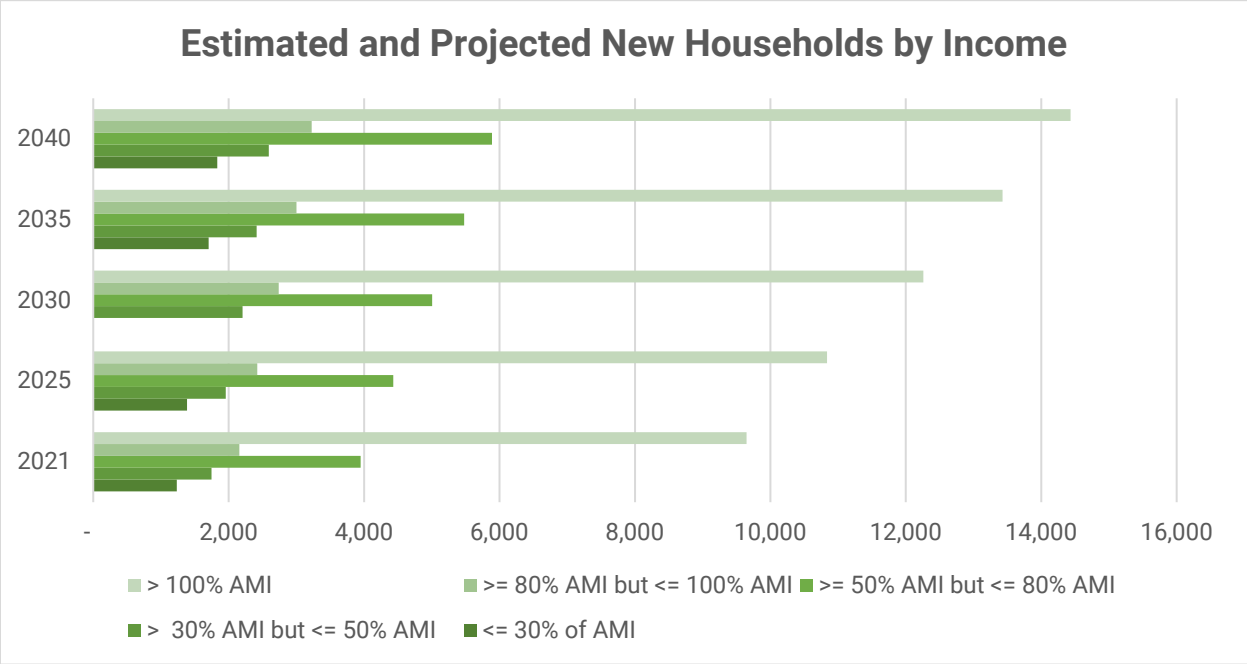
Estimated and Projected New Households by Income (2021)						
Income Range	**2021**	**2025**	**2030**	**2035**	**2040**	**Total New Units**
<= 30% of AMI	1,234 (6.6%)	1,384 (6.6%)	15,59 (6.6%)	1,705 (6.6%)	1,832 (6.5%)	598
> 30% AMI but <= 50% AMI	1,747 (9.3%)	1,957 (9.3%)	2,206 (9.3%)	2,412 (9.3%)	2,593 (9.3%)	846
>= 50% AMI but <= 80% AMI	3,948 (21.1%)	4,430 (21.1%)	5,004 (21.1%)	5,477 (21.0%)	5,889 (21.1%)	1,941
>= 80% AMI but <= 100% AMI	2,157 (11.5%)	2,423 (11.5%)	2,740 (11.5%)	3,001 (11.5%)	3,225 (11.5%)	1,068
> 100% AMI	9,648 (51.5%)	10,836 (51.5%)	12,260 (51.6%)	13,429 (51.6%)	14,434 (51.6%)	4,786

Source: Shimberg Center for Housing Studies Data Clearinghouse (2023)

Date Retrieved: June 2023

Table HE – 12 shows that each income range that residents are categorized in will increase at a steady rate from 2021 to 2040. According to the data, moderate to higher income households (greater than 100% AMI) are projected to increase more than the other income brackets; by 2040 there will be 4,786 new units in this income bracket. Low-income households (between 50% and 80% AMI) will increase by 1,941 households, and moderate-income households (between 80% and 100% AMI) will increase by 1,068. Very low (30% to 50% AMI) and extremely low households (less than 30% AMI) will increase by smaller amounts, adding a total of 846 and 598 new households, respectively.

Figure HE - 6 Estimated and Projected New Households by Income in Apopka (2021 – 2040)



Source: Shimberg Center for Housing Studies Data Clearinghouse (2023)
Date Retrieved: June 2023

Table HE - 13 Residential Building Permit Activity in Apopka (2018 - 2022)

Residential Building Permit Activity in Apopka		
Year	Total Residential Permits Approved	
	Single-Family	Multi-Family
2018	235	40
2019	256	48
2020	340	24
2021	476	258
2022	478	0

Source: City of Apopka (2023)
Date Retrieved: August 2023

APOPKAN HOUSEHOLD INCOMES, HOUSING COSTS, AND COST BURDEN

In 2021, the bulk of Apopkan households had earned over $50,000 in household income in the past 12 months. Households earning between $100,000 and $149,000 were the largest income bracket, comprising 21% of all households, with households earning more (over $150,000) being the second largest income bracket, followed by households earning $50,000 to $74,900. Residents in income brackets earning less than $35,000 a year comprised a smaller amount of the City's households, which illustrates that residents on average earned higher incomes than they did lower incomes in the past 12 months. Similarly, the median household income in 2021 was $75,736, which is higher than was estimated the year before in 2020 ($69,343). This increase in median income shows that incomes across the board in the City are somewhat steadily increasing.

Table HE - 14 Apopka Household Incomes in the Past 12 Months (2021)

Household Incomes in the Past 12 Months (2021)		
Income Range	**Total Households**	**Percentage**
$14,999 or Less	1,038	5.9%
$15,000 - $24,999	952	5.4%
$25,000 - $34,900	1,574	8.9%
$35,000 - $49,900	2,424	13.7%
$50,000 - $74,900	2,769	15.7%
$75,000 - $99,900	2,218	12.6%
$100,000 - $149,900	3,700	21.0%
$150,000 or Higher	2,975	16.9%
Total Households	17,650	
Median Household Income (2021)	$ 75,736	

Source: 2021 ACS 5-Year Estimates

Date Retrieved: June 2023

Table HE - 15 Apopka Monthly Housing Costs (2021)

Monthly Housing Costs in Apopka (2021)				
	County		**City**	
Monthly Costs for Units with a Mortgage	**Total Units**	**%**	**Total Units**	**%**
Less than $600	2,683	1.3%	237	2.3%
$600 - $999	20,171	9.9%	738	7.0%
$1,000 - $1,449	51,955	25.6%	2,822	26.9%
$1,500 - $1,9999	53,213	26.2%	3,452	32.9%
$2,000 - $2,999	54,311	26.7%	3,018	28.8%
$3,000 or Higher	20,760	10.2%	220	2.1%
Total With Mortgage	203,093	100.0%	10,487	100.0%
Monthly Costs for Units Without a Mortgage				
Less than $400	23,628	26.8%	634	23.1%
$400 - $599	25,177	28.5%	914	33.4%
$600 - $999	28,367	32.1%	854	31.2%
$1,000 - $1,299	5,798	6.6%	299	10.9%
$1,300 - $1,499	1,304	1.5%	20	0.7%
$1,500 or more	3,973	4.5%	18	0.7%
Total Not Mortgaged	88,247	100.0%	2,739	100.0%

Source: 2021 ACS 5-Year Estimates

Date Retrieved: June 2023

Table HE – 15 shows that the monthly cost of most Apopkan households with a mortgage is more than $1,500, with 33% costing between $1,500 and $2,000 and 29% costing between $2,000 and $3,000. A good percentage of households with a mortgage cost between $1,000 and $1,500 a month, and only a small percentage costs less than $999 a month (9.3%). On the other hand, households without a mortgage saw lower monthly housing costs in 2021. The majority of these households paid less than $999 a month on housing costs (88%) and only 12% paid more than $1,000 a month on housing costs. Further, in 2021 median monthly housing costs for homes with a mortgage was $1,645, while homes without a mortgage had a median cost of $570 a month.

Table HE - 16 Comparison of Apopka Monthly Gross Rent Changes (2015 - 2021)

Comparison of Monthly Gross Rent Changes (2015 - 2021)						
	County			City		
Cost Range	2015	2020	2021	2015	2020	2021
Less than $500	6,262	5,179	4,898	103	31	84
$500 - $999	82,234	41,060	31,194	1,768	780	613
$1,000 - $1,499	77,467	91,872	86,410	1,351	1,593	1,394
$1,500 - $1,999	19,615	45,790	55,362	536	1,356	1,357
$2,000 - $2,499	2,905	12,468	17,117	64	391	641
$2,500 - $2,999	772	2,763	4,610	-	79	128
$3,000 or Higher	810	1,514	2,043	-	-	49
No Rent Paid	5,354	5,188	4,897	45	188	158
Total Occupied Units Paying Rent	190,065	200,646	201,634	3,822	4,230	4,266

Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Table HE – 16 shows that units with higher monthly gross rents (greater than $1,000) have increased since 2015 while units with lower monthly rents (less than $1,000) have decreased. This is especially true for the County, with rental units costing between $500 and $999 a month dropping from 82,234 in 2015 to 31,194 in 2021, and units costing between $1,500 and $1,999 a month increasing from 19,615 to 55,362. For the City, rental units costing between $1,500 and $1,999 increased from 536 to 1,357, while units costing between $500 and $999 dropped from 1,768 to only 613. In the City, rental units costing between $2,000 and $2,499 jumped from only 64 units to 641 units, multiplying by nearly

10 in just a six-year span. Similarly, the data shows that the median gross rent for the City was $1,012 in 2015, and in 2021 it had increased to $1,515.

Table HE - 17 Apopka Monthly Household Costs as a Percentage of Household Income (2016 - 2021)

Monthly Household Costs as a Percentage of Household Income (2016-2021)				
	Housing Units with a Mortgage		Housing Units without a Mortgage	
Year	Households Spending Less than 29% of Income	Households Spending More than 30% of Income	Households Spending Less than 29% of Income	Households Spending More than 30% of Income
2016	5,600	2,708	2,991	415
2017	5,700	2,619	3,151	444
2018	6,036	2,573	2,989	305
2019	6,478	3,001	2,490	329
2020	7,179	2,946	2,352	380
2021	7,633	2,846	2,398	337

Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Table HE – 17 shows that owner-occupied households experiencing cost burden increased in 2019, but since has slightly decreased, and the same can be said for households without a mortgage in 2017. However, Table HE – 18 shows that renters saw an increase in cost burden beginning in 2018, and has fluctuated since then.

Table HE - 18 Apopka Gross Rent as a Percentage of Household Income (2016 - 2021)

Gross Rent as a Percentage of Household Income (2016 - 2021)		
Year	Households Spending Less than 29% of Income	Households Spending More than 30% of Income
2016	2,060	2,074
2017	2,063	2,304
2018	1,966	2,826
2019	1,810	2,744
2020	1,492	2,588
2021	1,155	2,971

Source: 2021 ACS 5-Year Estimates
Date Retrieved: June 2023

Table HE - 19 Estimated and Projected Extremely Cost Burdened Households in Apopka (2021 - 2040)

Estimated and Projected Extremely Cost Burdened Households (2023)					
Household Type	**2021**	**2025**	**2030**	**2035**	**2040**
Renters Paying 50% or More of Income on Housing	1,294 (30%)	1,446 (27%)	1,622 (27%)	1,769 (27%)	1,901 (27%)
Owners Paying 50% or More of Income on Housing	1,464 (11%)	1,648 (11%)	1,867 (11%)	2,048 (11%)	2,199 (11%)

Source: Shimberg Center for Housing Studies Data Clearinghouse (2023)
Date Retrieved: June 2023

According to Table HE – 19 the City is projected to see a 61% increase in renter households that are extremely cost burdened from 2022 to 2040. Extremely cost burdened owner-occupied households are projected to increase by 65% in the same timeframe. This shows that projected income levels will not be able to effectively cover the increase in housing costs that the City is projected to experience, and that the City may prepare to supply a total 1,307 affordable housing units to meet the housing needs of future residents. According to Table HE – 20, in 2021, the City had a total of 850 subsidized, or affordable, housing units within its limits. However, the City is, as it has in the past, striving to create opportunities for the development of affordable housing in its limits. In 2023 the City had two housing projects in the pipeline for development, which will create about 192 affordable housing units in the City. With the Live Local Act and its accompanying funding and policy support coming online in October, 2023, the City anticipates that more affordable housing projects like these will be developed in the future.

Table HE - 20 Assisted Housing Inventory in Apopka (2023)

Assisted Housing Units (2023)		
Complex Name	**Address**	**Number of Subsidized Units/Bedrooms**
Life Concepts Group Home I	27 W 1st St., 32703	6
Life Concepts Independent Living I	251 Alabama Ave., 32703	9
Main Ave Apts	499 Plymouth Rock Pl., 32703	39
Main Avenue Villas	500 Plymouth Rock Pl., 32703	40
Palm Key	518 Lake Bridge Ln., 32703	328
Willo Lake Apartments	500 Monica Rose Dr., 32703	428
Total Units		850

Source: Apopka Community Development Department, Shimberg Center for Housing Studies Data Clearinghouse (2023)

Date Retrieved: August 2023

INFRASTRUCTURE ELEMENT

Providing safe, dependable public services to meet existing and future needs

INFRASTRUCTURE ELEMENT

GENERAL PUBLIC INFRASTSRUCTURE

GOAL 1

To provide adequate public infrastructure to support new growth and maintain existing development in a timely and fiscally responsible manner.

OBJECTIVE 1.1

The City shall continue to coordinate the orderly provision of public infrastructure with public and private development activities in a manner that is environmentally sound and is compatible with the fiscal resources of the City.

Policy 1.1.1

The City will ensure that the necessary facilities and services that deliver the adopted level of services for potable water, wastewater, reclaimed water, stormwater, and solid waste shall be in place at the same time a development order is issued and/or included in the City's Capital Improvements Budget.

Policy 1.1.2

Public facilities and utilities shall be located to:

- Maximize the efficiency of services provided;
- Minimize their cost;
- Minimize their impacts upon the natural and historical environments; and
- Minimize social and neighborhood disruptions.

Policy 1.1.3

The City shall pursue the development of appropriate incentives for the dedication or improvement of public infrastructure.

Policy 1.1.4

The extension of public facilities and utilities into areas of the City which are underserved or without service shall be guided by the City's Capital Improvements Element, to ensure adequate capacity and land is available for public infrastructure to support new development, and the use of land in the City shall be managed by approving development proposals only if the public infrastructure provided is concurrent with the impacts of development.

Policy 1.1.5

To stay consistent with State Statutes, public health and safety, all sanitary sewer, solid waste, drainage, adequate water supplies, and potable water facilities shall be in place and available to serve new development no later than the issuance of a certificate of occupancy.

Policy 1.1.6

The City shall coordinate growth consistent with the adopted master plans for potable water, wastewater, reclaimed water, and stormwater. These plans will be updated at minimum of every five years.

Policy 1.1.7

The City shall, at a minimum, establish and maintain a current five-year schedule of capital improvements for the improvement, extension, and/or increase in capacity of the potable water, reclaimed water, and stormwater facilities.

POTABLE WATER SUB-ELEMENT

GOAL 2

To provide and conserve a safe, dependable, efficient, and cost-effective water supply that follows local, state and federal regulations, and that will be sufficient to meet the existing and future needs

OBJECTIVE 2.1

The City shall operate, monitor, and maintain existing and future potable water supply, treatment, and distribution facilities in accordance with local, state, and federal regulations to satisfy the existing and projected demand in a safe and dependable manner.

Policy 2.1.1

The City shall sufficiently fund the cost of operations and maintenance to sustain the adopted potable water system level of service (LOS) standards.

Policy 2.1.2

The City shall drill all future water production wells into the Lower Floridan aquifer and shall expand well production capacity as needed to serve projected maximum daily demands for potable water with in the utility service area and as allowed by the current SJRWMD CUP.

Policy 2.1.3

The City's potable water supply, treatment and distribution facilities shall be operated and maintained under the supervision of state certified operators and in accordance with all permits issued by local, state and federal regulatory agencies.

Policy 2.1.4

The City shall inspect all potable water facilities and conduct at minimum an annual evaluation of the performance of each water treatment plant. Deficiencies identified through this inspection shall be evaluated and corrective actions shall be prioritized and implemented according to the objectives and policies of the Capital Improvements Element.

Policy 2.1.5

The City shall continue its valve exercise and pipe flushing program on as needed basis.

Policy 2.1.6

The City shall evaluate pressure complaints at least annually. Improvements needed to correct areas with deficient levels of service shall be identified.

Policy 2.1.7

The City shall seek cost-effective methods to correct any deficiencies and incorporate these projects into the Capital Improvement Element for implementation.

Policy 2.1.8

The City, shall protect its potable water service by enforcing a wellhead protection zone, consisting of a 200' radius from the wellhead, in which potentially high-risk land uses (i.e.: industrial and manufacturing which use or store hazardous materials as defined by the U.S. Resource Conservation and Recovery Act and implemented by EPA are prohibited) and development activities as defined by the Land Development Code are prohibited.

Policy 2.1.9

The City shall conduct periodic (at minimum of every three years per the CUP) potable water audits in an effort to maintain and unaccountable water loss of 10 percent or less of the total water pumped into the distribution system. These audits allow the City to detect and correct any deficiency in the system that might be causing a greater water loss.

Policy 2.1.10

The City shall utilize and outside contractor to annually verify the calibration of the well and distribution flow meters at the water treatment plants. These meters will be repaired or replaced based on the contractor's recommendation.

Policy 2.1.11

The City shall continue the practice of meter replacement for large scale water users on an as needed basis.

Policy 2.1.12

The City shall continue its meter testing and exchange program for all potable water meters. Meters shall be replaced on a zero-reading report.

OBJECTIVE 2.2

The City shall provide the following minimum levels of service to meet existing and future potable water system needs.

Policy 2.2.1

The minimum level of service for the potable water system expressed as a per capita flow to be supplied, treated and distributed shall be 135 gallons per capita per day as listed in the 2019 Potable Water System Master Plan. This level of service is an average daily flow based on the population served by the system and the system wide flows generated

within the utility service area. The per capita rate of gallons per day includes water demands for commercial, residential and unaccounted-for water.

Policy 2.2.2

The minimum level of service for system pressure, under normal operating conditions, shall be 30 pounds per square inch (psi), as measured in the water main. During emergency conditions, power failures and/or fire flow conditions, water pressure shall be maintained at a minimum level of 20 psi or greater.

Policy 2.2.3

The City shall provide sufficient water storage facilities to store a fire volume equal to four hours of fire flow, plus necessary operational storage requirements outlined by Florida Department of Environmental Protection (FDEP).

Policy 2.2.4

Expansion of the design capacity of the Water Treatment Plant(s) will be consistent with the goals, objectives, and policies of the Comprehensive Plan and multi-jurisdictional water planning efforts in northwest Orange County.

OBJECTIVE 2.3

The City shall appropriately plan for and expand the City's Potable Water Facilities and supply sources to address current and future demands in accordance with the Capital Improvements Element. This expansion will serve projected new development and/or redevelopment with LOS that meet or exceed those levels adopted by the City.

Policy 2.3.1

The City will identify, evaluate, and select the most cost-effective means of ensuring an adequate quality potable water supply, maximize the use of reclaimed water to reduce groundwater well augmentation for irrigation, enforce measures for potable reduction and conservation, through system integrations, public outreach, and education.

Policy 2.3.2

The City shall ensure that all public water facilities and extensions to the potable water system are planned in a consistent manner with the City's Comprehensive Plan, the latest Potable Water System Master Plan update, the latest hydraulic models, and in accordance with local, state, and federal regulations.

Policy 2.3.3

The City shall ensure the Water Facilities are planned with the actions defined in the Regional Water Supply Plan prepared by the Central Florida Water Initiative (CFWI) and any CUP permits that have been issued for named facilities.

Policy 2.3.4

The internal potable water facilities within future developments and/or redevelopments shall be the responsibility of the applicant seeking a development permit and shall be designed and constructed in accordance with the most current edition of the Land Development Code.

Policy 2.3.5

The City shall review the Land Development Code annually for sufficiency of the potable water guidelines and be updated at least every three years to reflect advancements in engineering, products and materials, construction, and other innovations.

Policy 2.3.6

All amendments to the Future Land Use Element map shall demonstrate that adequate potable and non-potable water supplies and related facilities and sanitary sewer capacity are available to meet projected growth demands associated with the amendment.

OBJECTIVE 2.4

The City shall conserve water resources by using appropriate water conservation techniques and implementing the Water Conservation Plan submitted to SJRWMD.

Policy 2.4.1

The City shall continue to enforce the Florida Building Codes and the City's Land Development Code requiring the use of low volume plumbing fixtures for construction and/or redevelopment projects.

Policy 2.4.2

The City shall provide incentives for incorporating green building features that support water conservation and water quality (e.g., green roofs, rain gardens, street-side swales, pervious pavement) as defined in the Land Development Code.

Policy 2.4.3

The City of Apopka shall continue to participate in water conservation projects or programs that will demonstrate to the public the use of drought tolerant landscape materials to achieve water conservation.

Policy 2.4.4

The City shall require the use of Water-Wise irrigation and vegetation standards in required landscaping areas as defined in the Land Development Code.

Policy 2.4.5

The City shall educate residents on conservation practices, water quality, and the importance of water as a resource through one or more of the following outreach methods:

- Presentations,
- Displays,
- Handouts,
- City utility billing system,
- City website and social media,
- Webinars,
- City newsletters, and
- St. Johns River Water Management District conservation materials.

Policy 2.4.6

The City will continue its use of the potable water conservation rate structure which is updated on an annual basis and to utilize the mid-month high consumption notice program listed in the water conservation plan submitted to SJRWMD. Notices are sent to potable water customers half way through their billing cycle that have a usage which at the present trend will put them into the highest conservation rate structure.

Policy 2.4.7

The City will continue to utilize the City's Automatic Meter Reading (AMR) system to assist customers with indoor and outdoor leak detection. The AMR provides customers and city staff with the ability to monitor usage tracking, real time consumption reading, and leak detection, through the water consumption portal website and app for the smart phone.

Policy 2.4.8

The City shall continue to implement the Water Conservation Plan Incentive Program that provides incentives for both commercial and residential water customers to retrofit existing inefficient and high use irrigation systems to be more effective and efficient. Incentives may include financial assistance, equipment, services, or other mechanisms to promote the reduction in the use of water and the protection of the environment and natural resources as detailed in the Land Development Code.

OBJECTIVE 2.5

The City shall provide cost-effective fire protection using the potable water system to protect the lives and property of the citizens living within the utility service area.

Policy 2.5.1

The potable water system shall be an integral part of the City's fire safety program. Fire flow standards shall be identified by the Fire Chief based on ISO recommendations and incorporated into the Potable Water System Master Plan.

Policy 2.5.2

The City shall continue the practice of testing fire hydrants in accordance with National Fire Protection Association Standards.

OBJECTIVE 2.6

The City shall identify any sources of water that can be used to meet existing and future needs identified in the Water Supply Facilities Work Plan.

Policy 2.6.1

The City shall update the Water Supply Facilities Work Plan within 18 months of updates to the Regional Water Supply Plan that affects the City. The City's Comprehensive Plan will be amended as necessary to incorporate changes to the background information and the adopted goals, objectives, policies, maps, and capital improvement schedules relative to the work plan update.

Policy 2.6.2

In conjunction with the SJRWMD and other local governments, the City shall seek the development of efficient, cost- effective and technically feasible water sources that will supplement future demands without causing adverse impacts to water quality, wetlands and aquatic systems. These sources may include, but are not limited to, surface water, reclaimed water, and brackish groundwater.

Policy 2.6.3

The water Supply Facilities Work Plan shall be used to set priorities and coordinate the expansion and upgrade of the facilities used to withdraw, transmit, treat, store, and distribute potable and non-potable water to meet future demands.

Policy 2.6.4

The City shall maximize the use of existing potable facilities through research on best management practices and the implementation of management techniques that can enhance a source of supply, sustain water resources, and related natural systems and/or optimize water supply yield. These techniques may include, but are not limited to, surface water, reclaimed water, system interconnects, and water conservation.

Policy 2.6.5

The City's annual water consumption shall be equal to or less than the amount allocated under the SJRWMD-issued consumptive use permit.

Policy 2.6.6

The City shall, through the use of a concurrency evaluation, asses the availability of an adequate water supply and related facilities to serve the proposed development by the date of issue of the certificate of occupancy, development order, or other milestone or functional equivalent, in advance of occupancy as determined by the City.

SANITARY SEWER SUB-ELEMENT

GOAL 3

To provide for the reliable collection, treatment, and beneficial reuse of wastewater in an environmentally safe and cost-effective manner that also protects public health and safety and will sufficiently meet the existing and future needs of the citizens residing in the utility service area.

OBJECTIVE 3.1

The City shall operate, monitor, and maintain existing and future wastewater collection, treatment, and reclamation distribution facilities in accordance with local, state and federal regulations to satisfy existing and projected demand in a safe and dependable manner.

Policy 3.1.1

The City shall sufficiently fund the cost of operations and maintenance sustain the adopted wastewater and reclaimed water systems level of service (LOS) standards.

Policy 3.1.2

The City's wastewater collection, treatment, reclamation, and distribution facilities shall be operated and maintained under the supervision of state certified operators and in accordance with all permits issued by local, state and federal regulatory agencies.

Policy 3.1.3

Industrial discharges to the City's collection system shall receive adequate pretreatment in accordance with city code so that such industrial discharges do not adversely affect the operations of the City's wastewater treatment nor cause any violation of the permits issued by local, state and federal regulatory agencies.

Policy 3.1.4

The City shall continue to implement a comprehensive preventative maintenance program for all equipment in the wastewater system.

Policy 3.1.5

The City shall inspect all wastewater and water reclamation facilities including collection and distribution elements as minimum of once a year to evaluate condition and performance. Deficiencies identified in these or other evaluations shall be investigated

and corrective actions shall be prioritized and implemented according to the objectives and policies of the Capital Improvements Element.

Policy 3.1.6

The City shall conduct annual reclaimed water audits calculating unaccountable water loss to be reported to FDEP and SJRWMD. These audits allow the City to track reclaimed water sources and destinations as well as the detection and corrections of any deficiencies in the system that may be causing water loss.

Policy 3.1.7

The City shall continue to annually inspect all lift stations for the integrity of structures and equipment and shall conduct evaluations of lift station operating conditions.

Policy 3.1.8

The City shall as part of ongoing quality assurance, continue to evaluate and inspect sewer systems which are suspected to be contributing infiltration and inflow using video inspection techniques.

Policy 3.1.9

The City shall update the wastewater collection system master plan every five years at a minimum.

OBJECTIVE 3.2

The City's existing and future wastewater collection and treatment system shall provide the following minimum levels of service (LOS) in the 2019 Wastewater System Master Plan update.

Policy 3.2.1

The minimum level of service for the City's wastewater system, expressed as a per capita flow to be collected, treated, and reclaimed shall be 100 gallons per capita per day. This level of service is an average daily flow based on the population served by the system and the system wide flows generated within the utility service area.

Policy 3.2.2

Peak design flows for the wastewater collection facilities shall range from 1.29 to 1.5 times the average daily flow per the 2019 Wastewater System Master Plan Update. These criteria shall be included in the Land Development Code. Peak hydraulic design flows for wastewater treatment facilities shall be based off the peak hourly flows (PHF) from the master plan update, and shall range from 2.5 to 4.0 PHF as calculated using the minimum level of service stated in Policy 3.2.1.

OBJECTIVE 3.3

The City shall assign the highest priority to cost- effective, beneficial uses of reclaimed water when developing future effluent disposal plans.

Policy 3.3.1

All future wastewater treatment facilities shall incorporate the necessary levels of treatment that will produce a cost-effective, reclaimed water that is acceptable to local, state and federal regulatory agencies for irrigation on areas which are accessible to the public.

Policy 3.3.2

The City shall continue to require the construction of dual water systems in future developments located within the reclaimed water service area which have access or are anticipated to have access to reclaimed water.

Policy 3.3.3

Where available, the owner of every lot or parcel of land within the City utility service area developed for residential, public, commercial office, industrial, warehousing, or multifamily use shall connect the premises or cause the premises to be connected with the reclaimed water distribution system. The connection charge for reclaimed water service will consist of the tap fee and the fee for installing a backflow prevention device on each potable water service present on the site. A meter fee shall be required for metered connections.

Policy 3.3.4

Within areas not already served by reclaimed water, the City of Apopka shall identify large potential users (i.e., golf courses, parks, recreational areas) and implement sustainable irrigation practices where practicable and financially feasible. Potential sites shall be evaluated independently on a case-by-case basis based on actual conditions.

Policy 3.3.5

The City shall continue to require that new development reuse distribution points be connected to the reclaim water system.

Policy 3.3.6

The City will continue to use the reclaim water conservation rate structure that is reassessed annually.

Policy 3.3.7

The City shall continue to actively promote the use of reclaimed water by educating the public through use of the social media, educational programs at schools and civic organizations, and through other appropriate means.

OBJECTIVE 3.4

The City shall discourage urban sprawl by ensuring that wastewater facilities are in place to accommodate new development, redevelopment, and population growth within the utility service area and maintaining the levels of service that have been adopted by the City.

Policy 3.4.1

The City shall monitor development and will determine improvement needed to provide wastewater service to new development or redevelopment area. Extensions to the wastewater collection and reclaimed water distribution systems shall be conducted in accordance with the appropriate master plan and the Capital Improvements Element.

Policy 3.4.2

The wastewater collection, treatment, and reclamation facilities shall be provided by the applicant seeking a development permit and/or the City, in a timely manner that is concurrent with the impacts of development as required in the City's Concurrency Management System.

Policy 3.4.3

The internal wastewater facilities within future developments and/or redevelopments shall continue to be the responsibility of the applicant seeking a development permit and shall be designed and constructed in accordance with the most current edition of the Land Development Code.

Policy 3.4.4

Development within the City shall connect to the City's wastewater collection system with the special exception of residential properties identified in the Land Development Code.

Policy 3.4.5

The Apopka Land Development Code shall be reviewed annually for sufficiency of the wastewater guidelines and be updated at least every three years to reflect advancements in engineering, products and materials, construction, and other innovations.

Policy 3.4.6

The City will not issue building permits for any new development or redevelopment using septic tanks within the City limits except on an interim basis, not to exceed five years, at the sole discretion of the City.

Policy 3.4.7

Package plants shall not be permitted for any development within the City.

Policy 3.4.8

Where onsite sewage treatment and disposal systems are permitted, protection of the environment shall be ensured through Florida Department of Health in Orange County

standards for onsite sewage treatment and disposal systems; Sec. 381.0065, F.S., and Chapter 64E-6, F.A.C..

STORMWATER MANAGEMENT SUB-ELEMENT

GOAL 4

To manage stormwater through a cost-effective program which will minimize degradation of surface and ground water, preserve natural drainage and wetlands, and prevent flooding.

OBJECTIVE 4.1

The City's existing and future stormwater management facilities shall be provided consistent with the adopted level of service standards in the Land Development Code.

Policy 4.1.1

All new and redevelopment, private and public, shall provide for retention and/or detention of stormwater runoff as set forth in the Land Development Code.

Policy 4.1.2

The level of service standard for flood protection within the City shall be 100-year - 24-hour storm event. The City shall continue to require the finished floor of all habitable structures be constructed at least two feet above the 100-year - 24-hour storm elevation.

Policy 4.1.3

The level of service standard for primary stormwater management facilities within the City shall be the 25-year, 24-hour storm event.

Policy 4.1.4

The level of service standard for storm sewer systems within the City shall be the 10-year storm event.

Policy 4.1.5

The Land Development Code shall provide that no subdivision shall be platted, nor shall construction commence for any multifamily, commercial, industrial, or institutional project until the drainage design providing for the retention and/or detention of stormwater runoff for such project has been approved by the city engineering division. The design shall meet or exceed design standards and the policies and procedures established by the SJRWMD, FDEP, FDOT, and the design criteria contained therein.

OBJECTIVE 4.2

The City shall restrict development within the 100-year flood plain to those uses that will not adversely affect the capacity of the flood plain to store water.

Policy 4.2.1

The City shall continue to require compensating storage for all flood water displaced by development below the elevation of the 100-year Base Flood Elevation (BFE) flood plain as set by the Federal Emergency Management Agency (FEMA).

Policy 4.2.2

The City shall continue to require the finished floor of all inhabitable structures be located one-foot above the 100-year BFE flood plain as set by the FEMA.

Policy 4.2.3

The City shall require where feasible the use of flood plain as conservation, open space and recreation in order to preserve the natural flood plain and vegetation.

Policy 4.2.4

The City shall promote the conservation and implementation of natural vegetation, especially of native and filtering plants, in flood plain areas for the purpose of storing stormwater runoff.

OBJECTIVE 4.3

The City shall properly operate and maintain drainage facilities within the City in accordance with local, state, and federal regulations.

Policy 4.3.1

The City shall sufficiently fund the cost of operations and maintenance necessary to operate and maintain drainage facilities.

Policy 4.3.2

The City shall maintain neglected private stormwater management facilities and the City's cost of maintenance shall be recovered from the private owner and/or operator of the facilities.

Policy 4.3.3

As a permitee of the National Pollutant Discharge Elimination System (NPDES) Stormwater Program, the City shall continue to conduct annual inspections of public and private stormwater systems, as well as, provide adequate maintenance on publicly maintained stormwater systems.

OBJECTIVE 4.4

The City shall require erosion control practices to protect waterbodies and wetlands from siltation resulting from land that has been cleared for construction.

Policy 4.4.1

The City shall require developers to protect with an adequate barrier, lands that are not to be disturbed. Natural vegetation shall be retained and protected from damage.

Policy 4.4.2

The City shall require that erosion and sediment control practices be used to protect water bodies, water courses, and wetlands from siltation due to runoff from construction activities and/or from lands that have been cleared for construction. All sediment shall be retained on the site of construction.

Policy 4.4.3

The City shall continue its street sweeping program to control the transport of sediments and any other materials by stormwater.

Policy 4.4.4

The City shall maintain waterbody and wetlands protection guidelines found within the Land Development Code.

Policy 4.4.5

The City shall research and utilize best management practices, such as silt fences and sediment basins, to retain sediment on site.

OBJECTIVE 4.5

The City shall expand the beneficial uses of stormwater management areas as parks and other recreational uses per the Land Development Code.

Policy 4.5.1

The City shall encourage innovative planning of stormwater retention/detention areas to include facilities for parks and recreation.

Policy 4.5.2

The City shall encourage the use of wetlands and other unique natural areas in stormwater management plans to ensure their viability and preservation.

OBJECTIVE 4.6

The City shall implement the stormwater facilities projects identified in the Capital Improvements Element.

Policy 4.6.1

The City shall conduct annual inspections in accordance with the NPDES MS4 permit. Any deficiencies identified shall be corrected or corrective measures incorporated into the Capital Improvement Element.

OBJECTIVE 4.7

The City shall expand stormwater management facilities to serve projected new developments and/or redevelopments that meet the levels of service established in the Land Development Code.

Policy 4.7.1

Stormwater management facilities shall be provided by the applicant seeking a development permit and/or the City, in a timely manner that is concurrent with the impacts of development as required in the concurrency management system.

Policy 4.7.2

The internal stormwater management facilities within future developments and/or redevelopments shall be the responsibility of the applicant seeking a development permit and shall be designed and constructed in accordance with the most recent edition of the Land Development Code.

Policy 4.7.3

The City shall not permit the construction of drainage wells for future projects.

Policy 4.7.4

The City shall review the Apopka Land Development Code annually for sufficiency of the stormwater guidelines and be updated at least every three years to reflect advancements in engineering, products and materials, construction, and other innovations.

Policy 4.7.5

The City shall evaluate improvements to its maintenance programs based on the information presented in the Master Stormwater Management Plan, any periodic updates to this plan, and familiarity with this program.

OBJECTIVE 4.8

The City shall create a source of revenue to fund necessary capital improvements to solve existing drainage problems, operations and maintenance costs attributed to the drainage system, and other appropriate costs.

Policy 4.8.1

The City shall continue to use the stormwater utility as authorized by the City Council using the non-ad valorem fee collection method as provided in Section 403.0893, F.S., as the source to fund the capital improvement projects.

Policy 4.8.2

The City shall continue a dedicated funding source, such as the stormwater utility fee, that can be used for planning, implementation and operations and maintenance of projects within the Wekiva Study Area. Additionally, the City will seek alternative funding sources (i.e., grants) and joint partnerships that will result in more efficient construction or an improved level of service.

OBJECTIVE 4.9

The City shall educate the citizens of Apopka on the environmental effects of stormwater runoff, the stormwater management needs of the community, and ways in which the public can help in managing stormwater runoff.

Policy 4.9.1

The City shall continue the public education program on stormwater management through use of the educational programs at schools and civic organizations, utility billing statement, social media, webinars, and newsletters.

OBJECTIVE 4.10

The City recognizes that stormwater management issues transcend corporate and jurisdictional boundaries and that coordination with other local governments may be necessary to provide the required level of service and protection.

Policy 4.10.1

The City shall coordinate with adjoining local governments to address stormwater issues of mutual concern.

NATURAL GROUNDWATER AQUIFER RECHARGE SUB-ELEMENT

GOAL 5

To ensure sufficient quantity and quality of that potable water supply now and in the future, by recharging, maintaining, and protecting the Floridan and surficial aquifers groundwater supply.

OBJECTIVE 5.1

The City shall continue to protect the aquifer by updating and enforcing the Land Development Code and any other State or Local regulations related to aquifer recharge.

Policy 5.1.1

The City shall continue to enforce the Land Development Code's regulations in regards to runoff in new developments unless, it is demonstrated that that post development recharge is equal to or greater than per development recharge per F.A.C..

Policy 5.1.2

The City shall, within 18 months of SJRWMD updating the Regional Water Supply Plan, (or every five years, whichever is shorter), update the Land Development Code with regards to aquifer recharge areas and the groundwater basin.

Policy 5.1.3

The City shall direct incompatible land use away from high recharge areas, including mining as well as industrial and commercial uses with extensive impervious surfaces.

Policy 5.1.4

The City shall use best management practices and performance standards to maximize open space, limit impervious surfaces and turf grass areas, promote protection of natural vegetation, promote the use of pervious parking areas, and treat stormwater to protect water quality.

OBJECTIVE 5.2

The City shall coordinate with other governmental entities regarding groundwater pollution through the establishment or continuation of programs and technical assistance.

Policy 5.2.1

The City shall cooperate with the SJRWMD to prepare a Groundwater Basin Resource Availability Inventory.

Policy 5.2.2

The City shall continue working together in an ongoing effort with SJRWMD to eliminate potential sources of pollution to the aquifers (i.e., improperly installed or malfunctioning septic tanks) by requiring property owners who fail to correct system deficiencies to connect to the wastewater system in a timely manner.

Policy 5.2.3

The City shall only allow the use of new septic tanks within City limits for residential users that meet the requirements listed in the City's Land Development Code. All other uses of septic tanks are prohibited.

Policy 5.2.4

The use of septic tanks within environmentally sensitive lands shall be prohibited.

Policy 5.2.5

The approval for and conditions for the use of septic tanks on an interim basis shall be at the sole discretion of the City as defined in the Land Development Code.

Policy 5.2.6

The City shall require all underground storage tanks to be installed per the City's Land Development Code and Chapters 489 and 376, F.S. so that they are "either elevated or situated upon an impermeable surface, or which is located in an accessible underground area and either elevated or situated upon an impermeable surface therein, in such manner that any leak in such container may be readily detected."

Policy 5.2.7

In order to protect groundwater resources, all new development shall be required to demonstrate that pre- and post-development aquifer recharge shall be at minimum equal, or that post-development recharge shall be greater.

OBJECTIVE 5.3

The quality of the City's groundwater resources shall be maintained at or above state standards.

Policy 5.3.1

The City hereby adopts the FDEP water quality standards and shall cooperate with the FDEP and SJRWMD to monitor groundwater quality and levels on time frames set by those entities.

OBJECTIVE 5.4

The City shall protect the functions of ground water recharge areas through the enforcement of the Land Development Code.

Policy 5.4.1

New development will be required to maintain surface and groundwater flow rates and volumes at pre-development levels so that the natural function of groundwater recharge areas is maintained.

Policy 5.4.2

Substantial redevelopment projects shall comply with the standards for stormwater runoff that apply to new development as defined in the Land Development Code.

Policy 5.4.3

Best management practices (BMPs) shall be used in combination as part of a BMP treatment train to protect water quality and minimize flooding. BMPs shall be researched and the Land Development Code updated to implement recent BMPs.

SOLID WASTE SUB-ELEMENT

GOAL 6

To provide safe and efficient solid waste collection services to accommodate existing and future demands while protecting the natural environment and public health.

OBJECTIVE 6.1

The City shall provide adequate and cost-effective solid waste collection routes, equipment, and manpower to accommodate existing and future demands.

Policy 6.1.1

The City shall maintain a rate structure that is fair to the consumer and which covers the cost of operating the solid waste collection and disposal system. Funds shall be provided by means of user fees and available county, state, and federal funds.

Policy 6.1.2

The City shall use a level of service standard of four pounds per capita per day for residential and 13.7 pounds per capita per day for 1,000 square feet of commercial development to determine the availability of facility capacity for solid waste disposal services (this total includes residential and non-residential generation).

Policy 6.1.3

The City shall coordinate with Orange County to ensure adequate transfer station facilities are provided to accommodate northwest Orange County needs in an efficient and cost-effective manner.

Policy 6.1.4

The City shall provide equipment and manpower necessary to accommodate the collection standard of curbside collection, twice per week, for residential class customers and as needed, available one to seven days per week, to commercial class customers.

OBJECTIVE 6.2

The City shall maintain a recycling rate consistent with the requirements of the Florida State Solid Waste Management Act through the development of cost-effective measures that reduce the amount of waste requiring disposal. Such measures will aim to increase recycling programs and participation.

Policy 6.2.1

The City shall expand the current voluntary residential recycling program and educate residents on recycling benefits and practices through outreach methods such as utility billing statement, social media, webinars, and newsletters.

Policy 6.2.2

The City will continue to cooperate with Orange County and other local municipalities and organizations to develop new recycling programs and to pursue new technologies for collecting and processing recycled material.

OBJECTIVE 6.3

The City shall protect the health, safety, and welfare of the public from the harmful effects of hazardous wastes for both humans and the environment, by instituting a robust education program and by being in full cooperation with the Florida Department of Environmental Protection (FDEP) and the Orange County Environmental Protection Departments (OCEPD) on the regulation and disposal of hazardous wastes.

Policy 6.3.1

The City will continue to coordinate with the City's Fire Department and Orange County, utilizing their emergency response plans, to handle any accidents involving hazardous wastes.

Policy 6.3.2

The City shall continue to coordinate with OCEPD to hold household hazardous waste round up programs in the Apopka area and to educate our citizens in where they can dispose of these items between events.

Policy 6.3.3

The City shall distribute educational material to City solid waste customers regarding the proper disposal and recycling of hazardous wastes. Education will follow FDEP guidelines and be accomplished through outreach methods including City website, utility billing statement, social media, webinars, and newsletters.

Policy 6.3.4

The Land Development Code shall require evidence of compliance with Orange County Small Quantity Generator Notification Program prior to issuance of an occupational license.

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INFRASTRUCTURE ELEMENT

INTRODUCTION

PURPOSE AND SCOPE

The purpose of the Infrastructure Element is to provide for necessary public facilities and services correlated to future land use projections. This element addresses potable water, sanitary sewer, reclaimed water usage, stormwater management, and solid waste facilities provided by the City of Apopka within its corporate limits or within an established service area. This element also identifies areas of prime or high natural groundwater aquifer recharge areas and the City's programs to protect the function of these valuable resources.

For purposes of the Infrastructure Element, the population projections used to estimate future demands on the facilities are developed for each type of service (potable water, sewer, reclaimed water, stormwater, and solid waste) located within the utility service area. Population details are provided in the Future Land Use Element.

REGULATORY FRAMEWORK

The enforcement of potable water, sanitary sewer and stormwater management infrastructure falls under the regulatory framework ofthree government agencies - the Florida Department of Environmental Protection (FDEP), the St. Johns River Water Management District (SJRWMD), and the Florida Department of Health (FDOH).

Florida Department of Environmental Protection (FDEP)

To assure that public water systems supply drinking water which meets the minimum requirements, the federal government enacted PL 93-523, the "Safe Drinking Water Act". The Florida legislature enacted the "Florida Safe Drinking Water Act" sections 403.850 through 403.864, Florida Statutes (F.S.). Chapter 62-550, Florida Administrative Code (FAC), sets the drinking water standards, monitoring requirements, and treatment techniques to be met by public water systems and the testing protocols required for certified laboratories.

According to Chapter 403 (F.S.), unless exempted by rule or statute, any facility or activity

that discharges wastes into waters of the State, or which will reasonably be expected to be a source of water pollution must obtain a permit from FDEP to discharge. Persons who intend to collect, transmit, treat, dispose, and/or reuse wastewater are required to obtain a wastewater permit. A wastewater permit issued by FDEP is required for both operation and certain construction activities associated with domestic and/or industrial wastewater facilities or activities. A FDEP permit must also be obtained prior to construction of a domestic wastewater collection and transmission system.

Wastewater facilities that are authorized to discharge to surface water are subject to the FDEP's federally authorized National Pollutant Discharge Elimination System (NPDES) permitting requirements. However, many of these NPDES facilities also discharge to groundwater. The remaining facilities are authorized solely as groundwater discharges through land-application, beneficial reuse of reclaimed water, or deep well injection.

St. Johns River Water Management District (SJRWMD)

Florida's five water management districts develop regional water supply plans (RWSPs) to identify sustainable water supply for all water uses while protecting water resources and related natural systems. The St. Johns River Water Management District (SJRWMD) is part of the Central Florida Water Initiative (CFWI), formed in 2009, consisting of a planning area that includes all of Orange, Osceola, Seminole, and Polk counties and southern Lake County. The first CFWI RSP was approved in 2015 with legislation codified in Section 373.0465, F.S., that addresses water supply planning in the CFWI. The statute directs continuation of the collaborative process in the CFWI Planning Area among the state and regional agencies, regional public water supply utilities, and other stakeholders

The 2020 Central Florida Water Initiative (CFWI) RWSP was jointly developed by the SJRWMD, South Florida Water Management District (SFWMD), and Southwest Florida Water Management District (SWFWMD) (Districts) in coordination with the FDEP and Florida Department of Agriculture and Consumer Services (FDACS), representatives from utilities, agriculture, environmental, industry, and other stakeholders and input from the public. The 2020 CFWI RWSP, based on a planning horizon through 2040, concluded that traditional resources alone cannot meet future water demands or currently permitted allocations without resulting in unacceptable impacts to water resources and related natural systems. To meet current and future water demands while protecting the environment and water resources, the 2020 CFWI RWSP identified water conservation efforts, water supply and water resource development project options, and recognized prevention or recovery strategies for targeted minimum flows and minimum water levels (MFL) water bodies.

Florida Department of Health (FDOH)

Section 381.0062, F.S., gives general supervision and control over all private water systems, multifamily water systems, and public water systems not covered or included in the Florida Safe Drinking Water Act (part VI of chapter 403) to the Florida Department

of Health (FDOH). FDOH interprets this as meaning that it has supervision and control of all water systems which meet all of the four exception criteria and which also have at least 15 service connections or which regularly serve at least 25 individuals daily at least 60 days out of the year. FDOH also interprets Section 381.0062, F.S., as meaning that it has supervision and control of all water systems that have less than 15 service connections or which regularly serve less than 25 individuals daily at least 60 days out of the year, or at least 25 individuals daily less than 60 days out of the year.

UTILITY SERVICE AREA

The City of Apopka provides potable water and sanitary sewer collection, treatment, and reuse distribution to its municipal limits and to lands outside the City boundary within its utility service area that includes adjacent unincorporated areas. The current boundary of the water service area is shown in *Map IE-1*, while the sanitary sewer service area is shown in *Map IE-2*. The utility service area boundary was established in the "City of Apopka/Orange County Water, Wastewater, and Reclaimed Water Agreement", Amended and Restated December 16, 2004. This agreement allows for the expansion of the service areas should City limits expand beyond the delineated area. Other exceptions dealing with existing service and the ability to provide service are incorporated into this interlocal agreement. The County may also serve utility customers within the Adjacent Territorial Area, even if they are annexed into the City. Currently there is a small area that is still served by Orange County within the City limits. Water demands for these sections are not calculated as part of the City calculations because they are included in the Orange County plans. This agreement does not address stormwater management or solid waste services. The City does not reserve future water and sewer capacity for specific uses within the City or in the Orange County portions of the utility service area. Water and sewer capacities are allocated by the City as applications are received irrespective of the applicant's location within the utility service area

POTABLE WATER SUB-ELEMENT

INTRODUCTION

The traditional source of potable drinking water for Central Florida and most of the South Eastern United States is the Floridan aquifer. This is an artesian aquifer that covers approximately 100,000 square miles and supplies the majority of the State with its potable water. As with all sources if fresh water, the Floridan aquifer is a limited resource.

The Florida Water Resources Act, Chapter 373, F.S., establishes that all water in Florida, on the surface or in the ground, is a public resource managed by the department and the five water management districts. Every five years, each district creates a Regional Water Supply Plan. The Central Florida Water Initiative is a collaboration of the St. Johns River, South Florida, and Southwest Florida Water Management Districts. This multijurisdictional collaborative planning process ensures the protection of natural resources and sustainable water supplies. Water management challenges in the CFWI include reaching sustainable groundwater limits, multiple demands on the area's water resources, and overlapping regulatory programs. Fresh traditional groundwater resources alone cannot meet future water demands or current permitted allocations without resulting in unacceptable impacts to water resources and related natural systems. Regional water supply plans include a water supply development component, in which water conservation and alternative water supply sources are used to augment the traditional water supply sources, along with a water resource development component, where regional water resource management is formulated and implemented. Without these planning efforts, the districts project that existing sources of water will not adequately meet the reasonable-beneficial needs for the next 20 years.

Each local government within the area subject to the Regional Water Supply Plan is required to adopt their own Water Supply Facilities Work Plan (WFSWP) covering at least a ten-year period and to update affected comprehensive plan element. Florida Statutes (Section 163.3177(6)(c)3) require the WFSWP be updated, at a minimum, every five years within eighteen months of the governing board approval of the updated Regional Water Supply Plan. The City's Water Supply Facilities Work Plan was updated in 2023 to address the future needs of the City through 2035 and is scheduled for update again in 2025.

EXISITING WATER SYSTEM CONDITIONS

Operational Responsibility

The City owns, operates, and maintains five water plants having an interconnected water distribution system. The City's water system has two important purposes including the provisions of water for human consumption and for firefighting purposes. The City Public Services Department is responsible for the operations and maintenance of the central public water system.

Public Water System Facilities

The City operates the public water system under a Consumptive Use Permit (CUP) issued by the SJRWMD. Per the current permit 3217-15, the City can withdraw a maximum of 5,840 million gallons per year, with an average of 16 million gallons per day (mgd). The City's CUP expires in 2031 and will require renewal at that time.

The quality of the water produced by the City is monitored by the FDEP. The City reports to FDEP at regular intervals (monthly, quarterly, annually, and triennially), depending on the parameter being measures. The City submits monitoring reports to the FDEP in accordance with all state regulations.

The City provides all potable water within the utility service area through the use of the public water system. The City's public water system has three major components: 1) water production, 2) water treatment, and 3) water distribution. The system is comprised of five water production and treatment plants, with associated storage and distribution facilities as well as 368-miles of distribution lines. The locations of the City's water plants are shown on *Map IE-1.* Four of the five water plants are located within the Municipal City boundaries -- the Jack G. Grossenbacher Plant, the Myrtle Rogers Womble Plant, the Sheeler Oaks Plant, and the Plymouth Regional Water Plant. The Mount Plymouth Regional Water Plant is located outside of these current limits.

The City began construction on the largest production capacity water plant in 1965. Initial construction of the Jack G. Grossenbacher Water plant was completed in 1969 with 1 ground water well and a 500-thousand-gallon storage tank. In 1976, a second ground water well was added, this time drawing water from the deep Floridan aquifer. The plant, located west of Park Avenue on Grossenbacher Dr., was expanded and upgrades were completed in 1986 to include a high service pump station and a 1-million-gallon storage tank. A third deep ground water well was added in 1989 to further meet supply demands. Currently in the planning stages is deepening of the original well to the lower Floridan aquifer, with an anticipated completion date in late 2024.

The second largest production capacity water plant, also the City's newest plant, is the Myrtle Rogers Womble Water Plant (also known as the Northwest Water Plant) located at 3100 Pitman Road in the northwestern part of the City. Construction of this plant was completed in 1999 with lower Floridan ground water well and a 1-million-gallon storage and treatment tank. A second, deep water well was added in 2004.

The City's third largest production plant is the Sheeler Oaks Water Plant, located in the Sheeler Oaks subdivision. The Sheeler Oaks Plant completed construction in 1984 and at that time consisted of one lower Floridan aquifer ground water well and a 1-million-gallon treatment and storage tank. In 2002 a second, deep aquifer well was added to this plant to meet the growing supply demands of the City.

In 2006, the City purchased two existing water treatment plants from Orange County, the Plymouth Regional Water Plant and the Mt. Plymouth Regional Water Plant. The Plymouth Regional Water Plant is located off Joshua Ridge Lane near the corner of Yothers Rd. and Plymouth Sorrento Rd. in the western portion of the utility service area. This plant was constructed in 1992 with three ground water wells and 750-thousand-gallon treatment and storage tank. The plant was upgraded by the City in in 2014 with an additional deep water well and pumps. Plans are in place to deepen at least one of the existing original three wells to the lower Floridan with an estimated completion in 2024. The Mount Plymouth Lakes Water Plant is located in the northwestern portion of the service area off of Prevo Dr. near Mt Plymouth Rd. This plant was constructed in 1984 with two ground water wells and a 500-thousand-gallon storage and treatment tank. In 2021 the City completed updates to this plant by deepening both wells to the lower Floridan aquifer.

The facility well and pump capacities at each of the City's water plants are summarized in *Table IE - 1*. All of the water plants operated by the City provide chlorination treatment for disinfection. Like most wells drilled into the Floridan aquifer in Central Florida, hydrogen sulfide is present in the well water. The Myrtle Rogers Womble, Mount Plymouth, Sheeler Oaks, and Grossenbacher plants provide aeration and detention treatment for hydrogen sulfide removal. Water is pumped out of the wells, through an aeration device, and into the storage tanks. Water is pumped from the storage tanks into the water distribution system by the high service pumps. The City's water plants are interconnected by pipe throughout the distribution system. If a single plant were to be taken out of service in the event of maintenance or an emergency, water can be supplied to the plant's general service area from one of the other plants.

Storage is an important component of the City's water system. The Grossenbacher plant has 1.5 million gallons of storage capacity; the Sheeler Oaks Plant has 1.0 million gallons of storage; and the Myrtle Rogers Womble Plant has 1.0 million gallons of storage. Plymouth Regional has 0.75 million gallons and Mouth Plymouth Lakes has a 0.50-million-gallon storage capacity. All storage capacity is provided by reinforced concrete tanks. The water in these tanks is available for emergency conditions such as fire flow demands and for operational purposes. Within the City's distribution system there are a total of six ground storage tanks (GSTs) with a combined capacity of 4.75 million gallons.

Water plants are designed to supply and treat a maximum daily flow of water or capacity. Generally, the capacity of a water plant is determined by either a well pumping capacity or a treatment capacity. The capacity of the City's water treatment plants is based on an estimated well capacity of 24,900 gpm or 35.856 mgd. The maximum daily flow recorded in 2022 was 13.733 mgd. *Table IE - 1* provides a summary of the maximum daily flows. The projected water demand through 2035 is shown in *Figure IE - 1*. The City's maximum capacity of 35.856 mgd exceeds the 2035 projected total demand of 27 mgd. Total demand incudes potable water demand (14.5 mgd for 2035) and reclaimed water demand (12.5 mgd for 2035).

Table IE - 1 Existing Water Facilities Capacity

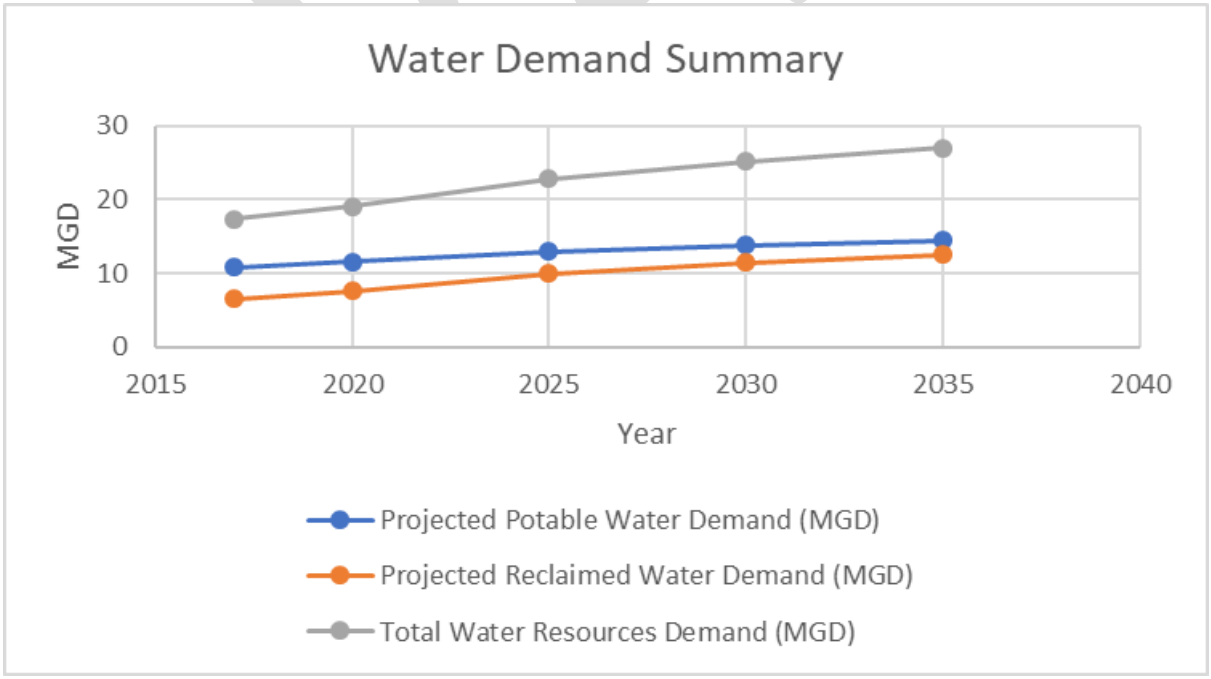
Existing Water Facilities Capacity							
Plant	**Total Well Pump Capacity (gpm)**	**Firm Well Capacity (gpm)**	**Total HSP Capacity (gpm)**	**Total Firm HSP Capacity (gpm)**	**Type of Storage**	**Storage Capacity (mgal)**	**Treatment**
Myrtle Rogers Womble (Northwest)	7,000	3,500	8,000	5,000	Ground	1	Aeration and Chlorination
Grossenbacher	8,000	4,500	12,900	9,400	Ground	1.5	Aeration and Chlorination
Sheeler Oaks	5,000	2,500	6,650	4,700	Ground	1	Aeration and Chlorination
Plymouth Regional	2,900	1,800	4,400	2,600	Ground	0.75	Chlorination
Mount Plymouth	2,000	1,000	3,580	2,580	Ground	0.5	Aeration and Chlorination
System Total	**24,900**	**13,300**	**35,530**	**24,280**		**4.75**	

HSP - High Service Pumping

Source: City of Apopka 2023 Water Supply Facilities Work Plan

Date Retrieved: September 2023

Figure IE - 1 Water Demand Summary



The high service pumps located at each water plant are used to maintain water pressure by pumping water into the distribution system. High service pump capacity is typically rated by assuming the largest pump is out of service. This is done to provide a better degree of reliability for the water system. In addition to normal demands for water, the high service pumps must also be capable of sustaining emergency water demands for firefighting purposes. Emergency power generators are located at each of the water plants to provide limited capacity during a power outage. The expected service life for the mechanical equipment such as the high service pumps is 15 to 20-years depending on the level of maintenance provided. Some equipment items may be replaced more frequently as part of routine maintenance. The dates pumps were placed into service are listed in *Table IE - 2*. Fifteen of the pumps were installed before 2016 and are due for replacement based on expected service life.

The expected service life for reinforced concrete structures and buildings at the water plants is 30 to 50-years, depending on the level of maintenance provided. The age of the City's water treatment plant tanks is listed in *Table IE - 2*. With the exception of the Northwest Plant's tank, all of the concrete tank structures are 30 to 50-years old and replacement needs to be addressed.

Table IE - 2 Water Plant Pump Service Start Dates and Storage Tank Ages

Water Plant Pump Service Start Dates and Storage Tank Ages		
Water Treatment Plant	**Pump Service Start Date**	**Storage Tank Age (Years)**
Grossenbacher	4 pumps: 2 – 1996 1 – 2016 1 – 2022	2 tanks: 1 mg tank – 36-years 0.5 mg tank – 53-years
Northwest	3 pumps: 1 – 2001 2 – 2017	1 tank: 1 mg tank – 23-years
Sheeler Oaks	4 pumps: 4 – 1986	1 tank: 1 mg tank – 38-years
Plymouth Regional	4 pumps: 4 – 1990	1 tank: 1 mg tank – 30-years
Mount Plymouth	4 pumps: 4 – 1989	1 tank: 1 mg tank – 38-years

Source: Apopka
Date Retrieved: March 2022

Distribution System

The existing water distribution system contains pipes ranging in diameter from one to 36-inches, fire hydrants, and isolation valves. Generally, the water mains installed in recent years have been six-inches or larger in diameter. The City currently uses ductile iron (DI) pipe, high density polyethylene (HDPE) pipe, polyvinyl chloride (PVC) pipe, galvanized steel (GS) pipe, and cement lined asbestos pipe materials for all of the water mains. The service life for a water main is variable and depends on pipe material, soil conditions, construction methods, and other factors. The majority of the pipes in the City's water system have a remaining useful life expectancy of 20 to 50-years.

Operation and Maintenance

Proper operations and maintenance are essential to providing a safe and reliable water system. The City's water facilities are operated and maintained under the supervision of State of Florida certified operators. City crews routinely exercise valves throughout the water distribution system. This process involves several cycles of opening and closing the valves to verify that they are operating freely. Any valves that are not preforming to standard during these checks are repaired or replaced. Routine flushing of the water system is another of the techniques that the City employs to obtain better performance and increase water quality throughout the distribution system. This routine flushing protocol helps to clean the water pipes and remove any materials that may restrict flow.

Unaccounted for Water

Unaccounted for water (water loss) is the difference between the volume of water entering the distribution system after treatment and the volume of water that is billed plus the known usage of water that is unbilled. Unbilled water uses include services such as fire protection, utility flushing, fire hydrant flushing, and other utility maintenance. For medium sized water system such as the City of Apopka, an accepted range of annual average water loss if ten to fifteen percent of the total water entering the distribution system. In 2022, the average daily volume of water entering into the distribution system was 9.14 million gallons. The daily average of billed and other accounted water in 2022 was 6.93 million gallons. The total average daily water loss for the City in 2022 was 2.01 million gallons which equates to an annual average of 21.9%. This level of water loss falls outside the acceptable range for a system of this size.

Potential reasons for water loss include:

- non-metered illegal connections,
- undetected leakage in the water system, and
- improperly working water meters in the distribution system.

The City is taking, or has already taken, the following steps to improve water accountability:

1. Water Company of America was hired to complete a total audit of distribution system meters to detect malfunctioning meters.

2. An electronic leakage detection program, Sensus Analytics, was instituted to help track water leakage issues in real time.
3. An automatic meter reading (AMR) meter change-out program was instituted for the remaining users that are not already on the electronic leakage detection program.
4. Defective meters were repaired and/or replaced based on warnings from the electronic leak detection program.
5. Aging meters are being replaced. In 2022, 852 meters were replaced. An additional 900 meters were budgeted to be replaced in 2023. The meter replacement program will continue until all meters are replaced.
6. Distribution and groundwater well flow meters at the five water treatment plants are professionally calibrated by an outside contractor annually.
7. Staff is improving procedures for estimating the amount of water lost during line breaks and/or meter replacements.
8. Non-permitted and/or non-metered illegal connections are identified and eliminated.

The Sensus Analytics program allows customers to view their water consumption in real time so they can notify the City of any concerns and repairs can be made. Additionally, customers can monitor their historical usage to evaluate personal water consumption. This helps promote water conservation practices in the home.

There are many benefits to finding and correcting the causes for unaccounted water loss. Accountability auditing helps staff determine where to focus efforts. For example, if an audit identifies leakage in the City's pipelines as a major component of annual water loss, cost effective repairs can be made rather than focusing on meter replacements to eliminate the loss. Water recovered from the accountability steps listed can be used to satisfy future water demands.

Water Conservation

Water conservation benefits the City in multiple ways including:

1. helps preserve the valuable resource of the Floridan aquifer for future use,
2. prolongs the ability of existing water treatment and distribution facilities to meet future needs by reducing unneeded stresses to the systems, and
3. helps reduce the volume of water entering the sewer system, prolonging the life span of the wastewater collection, treatment, and reclaimed water distribution facilities.

Water conservation plans and programs identify the most cost-effective water conservation measures based on varying situational needs. Common water conservation measures that address multiple causes include:

1. Public education programs on water wise use and conservation, such as using native and drought tolerant landscaping materials, only watering on specific days

and between certain hours, and using the appropriate type of irrigation based on the types of vegetation used;
2. Retrofitting existing homes and businesses with flow limiting devices;
3. Requiring all new construction to use water saving plumbing fixtures and water limiting devices;
4. Requiring all new construction to irrigate with reclaimed water, if available in that area; and
5. Structuring water rates so that excessive users of water are financially penalized.

The City supports the need to conserve our water resources and has a formal multiscale water conservation element as part our CUP with SJRWMD. In 2019, the City renewed and revised its landscape ordinance to include restricting the use of fertilizers effecting stormwater, lakes, and groundwater resources. This further supports the 2008 ordinance that mandates waterwise irrigation and the application of Florida friendly landscape practices. The City runs a landscape irrigation incentive program, where upon customer request, City personnel evaluate a homeowner's irrigation system and provide them with tips and base tools to conserve water in their yards. City personnel also complete building construction plan reviews including irrigation inspections of all new construction to comply with City ordinances. The City promotes water conservation by publishing public education information on the City website, social media platforms, in the bi- monthly newsletters, and through pamphlets at City offices and events. The water conservation program also has a high user notice program that mails letters to all residential users that consume more than 15,000 gallons of either potable or reclaimed water in a billing cycle. These users can contact the City's Water Conservation Specialist for an audit of their irrigation and/or total usage to find areas in their homes and yards where they can conserve water.

Aquifer Recharge and Wellhead Protection

As cities have grown rapidly across the nation, many have neglected infrastructure projects and paved over green spaces that once absorbed rainwater. *Charles Duhigg*

Aquifer recharge areas are sections of open earth that are characterized by porous soils, allowing direct rainfall and stormwater runoff migrate through the earth and replenish the ground water supply. The areas are also prime development sites, which then restricts the land's recharge capacity by covering it with impervious surfaces such as roads, parking lots, and buildings. One of the City's primary goals is protection of ground water quality and the valuable Floridan aquifer recharge areas. The City has adopted the SJRWMD's regulations for groundwater recharge requirements.

Wellhead protection focuses on regulating potential sources of groundwater contamination in the vicinity of water supply wells. Some business activities require the use of chemicals and the disposal of wastes. There is a potential for groundwater contamination by the improper use of chemicals and/or the improper disposal of chemicals and wastes. The City has adopted an ordinance to regulate land use and/or

business activity in the vicinity of water supply wells to minimize potential threats to the quality of the groundwater.

Financing and Implementing the Water System Expansion

The City's water treatment and distribution system was expanded in accordance with the current Potable Water Utilities Master Plan (Master Plan) completed in 2019. Expansions resulting from new housing or business growth are typically paid for by the developer. If a water main must be extended to serve a new development project and it is considered cost effective, the City may enter into a pipe oversizing agreement with the developer to have the water main constructed at the size specified in the Master Plan. In such oversizing agreements, the City typically only pays for the difference in the cost of materials between the pipe size needed to serve the development project and the pipe size called for in the Master Plan.

All costs associated with the water distribution system within a development site are the responsibility of the developer and must be designed and constructed in accordance with Apopka's Land Development Code (LDC). The City takes ownership and control of the maintenance of the on-site facilities after they have been deeded to the City by the developer. In addition, the City collects impact fees from the developers to pay for the design and construction of new water treatment facilities. Fees are also collected by the City to set water meters and activate service to the individual units being constructed. Operation and maintenance costs for the City's water treatment and distribution system are recovered through the City's water rate structure.

POTABLE WATER DATA AND ANALYSIS

Evaluation of the Existing Water Distribution System

Fire flows are an important parameter that must be considered when establishing design criteria for new water system facilities. Generally, these flows are determined using the guidelines published by the Insurance Service Office (ISO), a fire insurance rating organization. The City's Fire Department has a goal of providing fire flows of 4,000 gpm for light commercial areas and 6,000 gpm for heavy commercial and/or industrial areas. The Fire Department monitors fire flow capacity of the water distribution system through the fire hydrant testing program and records this data using its ESO Fire Department software.

Existing Level of Service

A convenient method for the expression of the level of service for the water system is in terms of gallons furnished per person. Per capita water flows (*Table IE - 3*) were used to estimate the level of service provided in 2020, 2021, and 2022. The average level of service for these three years was 147.2 gallons per capita per day (gpcd). It is important to note the flows expressed as gpcd include water used by all categories including, residential, commercial/industrial, public use, and unaccounted for water.

Table IE - 3 Estimated Per Capita Water Flow

Estimated Per Capita Water Flow					
(a)	(b)	(c)	(d)	(e)	(f)
Year	Average No. Residential Units *	Estimated No. of Persons Per Residential Unit	Estimated No. of Persons Served ** (b x c)	Estimated System Average Daily Flow (mgd)	Per Capita Flow (e/d) (gpcd)
2020	21,065	2.8	58,982	9.973	152.2
2021	21,901	2.8	61,323	9.023	147.1
2022	22,917	2.8	64,168	9.140	142.4
				Average	**147.2**

Source: Apopka Public Services
Date Retrieved: August 2023

* Includes multi-family units. Represents an estimate of the average number of residential units connected to the water system.
** Includes residential, commercial/industrial, common area irrigation, fire, water utility, and unaccounted water demands.

Development of Future Levels of Service

The future level of service provided by the City's water system will be influenced by the following factors:

1. The effects of the implementation of the Water Conservation Plan on user consumption,
2. The amount of water consumption by new and existing commercial and industrial users, and
3. The amount of unaccounted for water loss in the system.

Residential Water Usage

Based on the water usage in 2022, approximately 60.75% of the pumped water was used for residential purposes. This is down from 85.80% in 2006, indicating that the City's Water Conservation Plan implementation is having a positive effect on residential conservation. The City is anticipating that continued implementation of the Plan will lower this value in the future. The projected residential demands for water based on the 2019 Potable Water Utilities Master Plan are shown in *Table IE - 4*.

Table IE - 4 Projected Potable Water Supply Sources

Projected Potable Water Supply Sources						
Year	Average Daily Flows			Maximum Daily Flows		
	Projected Flow ADF (mgd)	CUP Allowed Average Flow (mgd)	Other Water Supply needed (mgd)	Projected Flow ADF (mgd)	CUP Allowed Average Flow (mgd)	Other Water Supply needed (mgd)
2022*	9.07	16	0	13.7	16	0
2025	12.9	16	0	19.4	16	3.4
2030	13.8	16	0	20.7	16	4.7
2035	14.5	16	0	21.8	16	5.8

Note: *2022 ADF based on actual values for the year. All other projected flow data is from the 2019 Potable Water Utilities Master Plan.

Source: Apopka Public Services Water Supply Facilities Work Plan 2019 (Table 6)
Date Retrieved: September 2023

Projected water consumption is summarized in *Table IE - 5*. These projections are based on the following assumptions:

- the City stays consistent with the SJRWMD water use criteria for public supply,
- lower than historical per capita use rates,
- the City's continued commitment to use reclaimed water as an alternative irrigation source, and
- the City's trend towards more aggressive water conservation initiatives.

Table IE - 5 Projected Water Consumption

Projected Water Consumption				
Water Consumption (mgd)	Year			
	2021	2025	2030	2035
Residential Water Use (mgd)	5.806	10.432	11.160	11.726
Commercial/ Industrial Water Use (mgd)	1.246	1.781	1.906	2.002
City Irrigation of Public and Common Areas (mgd)	0.066	0.094	0.100	0.106
Water Utility flushing/Fire Department Testing (mgd)	0.144	0.205	0.220	0.231
Unaccounted for water (mgd)[1]	1.759	0.387	0.414	0.435
Projected Daily Average Flow (mgd)	9.0	12.9	13.8	14.5
Projected Maximum Daily Flow (mgd)	17.2	19.4	20.7	21.8
Projected Peak Hourly Flow (2.7 x ADF) (mgd)	24.35	34.83	37.26	39.15

1 Unaccounted for water estimated to be equal to 3% of accounted for water in a given year for 2025, 2030, and 2035.

Sources: City of Apopka Potable Utility Audit 2021, City of Apopka, and 2019 Potable Water Utilities Master Plan
Date Retrieved: March 2022

Commercial/Industrial Water Usage

Based on 2022 flow analysis, the Commercial/Industrial usage was 1.329 mgd, accounting for 14.6% of the City's daily flow. The 2019 Potable Utilities Master Plan used the City's 2016 flow analysis, University of Florida's Bureau of Economic and Business Research (BEBR) medium series population projections, and a fill in value 54 gpd/1000 sq. ft. to project the water usage for the Commercial/Industrial category. The fill in value refers to projected demand associated with existing developed areas that will grow and fill available properties in the existing service area.

Businesses have financial incentives to minimize water consumption. Water conservation helps to reduce the cost of their operation and to minimize the amount of wastewater they generate. A reduction in water use due to water conservation in the Commercial/ Industrial category has not been incorporated into the water use projections.

Water Utility Flushing and Fire Department Testing Water Usage

In 2022, water utility flushing and fire department testing usage was 0.201 mgd. The water used in this category consists of all water quality flushing, fire hydrant testing, and the estimated loss while repairing issues in the system. Projected usage was based on this value staying consistent at 1.59% of the average daily flow. *Table IE - 5* contains these water usage projections for the utility service area.

Unaccounted Water Usage

In 2022, the unaccounted-for water usage was 21.9% or 2.01 mgd. The 2019 Potable Utilities Master plan based the future projections of unaccounted for water to 3.0% of accounted for water.

Future Demand Factors

The maximum daily flow (MDF) and peak hourly flow (PHF) are important flow parameters for a water system. As previously mentioned, the City's water production and high service capacities must be equal to or greater than the MDF and the PHF. Typically, as a water system expands, the MDF and PHF growth will not be as pronounced as the average daily flow (ADF). Therefore, the factors that were used to project to MDF and PHF decreased slightly through the planning period as shown in *Table IE - 5*.

Discussion of Projected Levels of Service

Projected levels of service for the planning period are summarized in *Table IE - 6*. The

projected levels present a decreasing trend from 135 gpcd in 2020 to 121 gpcd in 2035. This trend in level of service is a direct effect of the estimated impact of the water conservation program and further extensions of the reclaimed water system throughout the service area. Both of these improvements lower the City's demand on potable water through the planning period. The levels listed in *Table IE - 6* are sourced from the 2019 Potable Utilities Master Plan and have been used to help design the City's future water system. These numbers allow the City to adopt a minimum level of service as the comprehensive plan is implemented. The City will review and adjust these levels of service as necessary to stay current with the most recent planning data.

Table IE - 6 Projected Potable Water Levels of Service

Projected Potable Water Levels of Service			
Year	**Total Estimated Population Served**	**Projected Average Daily Flow (mgd)**	**Projected level of Service (gpcd)**
2021 *	53,117	9.02	150
2025	71,749	12.9	128
2030	78,090	13.8	124
2035	83,569	14.5	121

Note: 2021 based on U.S. Census and the Apopka Potable Utility Audit 2021

Source: 2019 Potable Utilities Master Plan
Date Retrieved: March 2022

FUTURE POTABLE WATER FACILITIES

Water Treatment Plants

Based on the update to the 2019 Potable Utilities Master Plan, multiple enhancements and upgrades will be needed to serve the utility service area by 2040. The proposed changes will include constructing one new water plant, extensive upgrades to three existing water plants, and closing of two water plants. The flow generated by the two plants being eliminated will be reallocated to other plants. The projected capacities of the water plants which will serve the utility service area through 2040 as listed below (*Table IE - 7*):

Table IE - 7 Projected Water Plant Capacity

Water Plant Projected Capacity	
Water Plant	**2040 Projected Capacity (mgd)**
Jack G. Grossenbacher	9
Sheeler Oaks	0
Myrtle Rogers Womble (Northwest)	6
Southwest	5
Plymouth Regional	4
Mount Plymouth Lake	0

Source: 2019 Potable Water Utilities Master Plan
Date Retrieved: March 2022

The City water treatment plants have maximum treatment capacity (well capacity) of 24,400 gpm or 35.1 mgd, which will potentially serve AADF demands beyond 2030. However, the infrastructure as a whole at the existing water plants is aging and has already surpassed its life expectancy, or soon will. Capacity upgrades to water production, treatment, distribution, and storage facilities will be absolutely necessary during the next ten years.

The plans are to construct the Southwest Water Plant by the year 2028 consisting of two 3,500 gpm wells, three 3,500 gpm high service pumps (HSP), and two 1.5-million-gallon ground storage tanks. Upon completion of the Southwest plant, the Sheeler Oaks plant can be taken out of service. Additionally, at this time, the Grossenbacher plant can be reconstructed to include one additional high service pump, replacement of the two existing older HSPs, construction of two new 1.5 million-gallon GSTs, upgraded treatment and disinfection equipment, and upgraded security measures to the entire site. When work is completed at the Grossenbacher site, upgrades and refurbishments can begin at the Plymouth Regional facility. All of the HSPs at Plymouth Regional need to be replaced, and one needs to be added. The three-existing upper Floridan aquifer wells can be replaced with a single lower Floridan well that has a minimum 1500 gpm capability, a second GST will need to be added at equal to or greater than the existing 0.75-million-gallon tank, treatment and disinfection technologies will need to be upgraded, and security measures enhanced. When work is completed at Plymouth Regional, the Mt Plymouth plant can be taken out of service. Finally, the Myrtle Rogers Plant needs an additional 1-million-gallon GST, all of the existing HSPs need replacement, and treatment and disinfection technologies need to be updated. The updates to the Myrtle Rogers plant are currently planned to be congruent to updates of the other plants.
The treatment and disinfection technologies need to be updated at all of the plants due

to the presence of higher hydrogen sulfide levels in the lower Floridan aquifer. SJRWMD mandated that all of the wells need to be deepened. The proposed technologies involve converting to either forced draft aeration or ozone treatment. The technology selected for each plant will depend upon additional water quality assessments.

The City's 2040 storage capacity requirements have been estimated based on providing a total volume equal to four hours of fire flow (1500 gpm x 4 hrs. = 0.36 mgal) plus operational storage for a total of 5.8 mgal. Operational storage is defined as the volume equal to the difference between the maximum day flow and the peak hour flow over an eight-hour period [(39.2 mgd -21.8 mgd) / 3 = 5.8 mgal)]. Proposed expansion of the City's storage capacity will result in 9.5mgal total covering the City well into the future.

Based on the water flow projections, the following schedule for phasing the expansion of existing water plants and construction of new plants is shown in *Table IE - 8*. As the City implements the comprehensive plan, the scope and scheduling of plant improvements should be adjusted as necessary to stay current with the best available planning data.

Table IE - 8 Water Plant Phasing Plan

Water Plant Phasing Plan							
Water Plant	**Existing Capacity (mgd)**	**Phase 1 Capacity (mgd)**	**Year Phase 1 Complete**	**Phase 2 Capacity (mgd)**	**Year Phase 2 Complete**	**Phase 3 Capacity (mgd)**	**Year Phase 3 Complete**
Jack G. Grossenbacher	11.52	11.52	-	15.12	2032	15.12	-
Sheeler Oaks	7.20	0	2028	-	-	-	-
Myrtle Rogers Womble (Northwest)	10.08	10.08	-	10.08	-	10.08	-
Southwest	0	10.08	2028	10.08	-	10.08	-
Plymouth Regional	3.46	3.46	-	3.46	-	4.32	2037
Mount Plymouth Lake	2.88	2.88	-	2.88	-	0	2037

Source: Apopka Public Services

Date Retrieved: March 2022

Water Distribution Mains

Based on the 2019 Water Master Plan update, over 15-miles of water mains ranging in diameter from 8-inches to 16-inches will need to be constructed to serve the projected needs of the utility service area through the planning period. The Water Master Plan update lists water main projects through 2040, prioritizing service to the areas where growth is expected to occur. As the City implements the comprehensive plan, the scope and scheduling of water distribution improvements will be adjusted to stay current with

the most recent planning data. There is currently no elevated storage serving the distribution system. Pipes 12-inches in diameter and smaller are typically made of polyvinyl chloride (PVC) construction whereas larger pipes are constructed from ductile iron. Improvements to the distribution/transmission system have followed the recommendations outlined in the most recent Water Master Plan, with the timing of specific projects dependent on development patterns.

SANITARY SEWER SUB-ELEMENT

INTRODUCTION

The purpose of the Sanitary Sewer Sub-Element is to provide for necessary sanitary sewer facilities and services correlated to future land use projections. The collection and disposal of wastewater is necessary for the protection of public health, safety and welfare. Congress enacted the Clean Water Act (CWA) in 1948, which established the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Congress significantly reorganized and expanded the act in 1972 and have made multiple defining updates throughout the last 50-years. Under the CWA, the Environmental Protection Agency (EPA) has implemented pollution control programs such as setting wastewater standards for industry. The CWA has also set water quality standards for all contaminants in surface waters.

The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, without a permit. The EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or excavated ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not require an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

SANITARY SEWER EXISTING CONDITIONS

Operational Responsibility

The City owns, operates, and maintains a public sanitary sewer system, including a wastewater treatment plant, called the City of Apopka Water Reclamation Facility (WRF). The City's Public Services Department is responsible for the operations and maintenance of the central public sanitary sewer system.

Service Area

The Utility Service Area for the Apopka sanitary sewer system is described in the Introduction for the Infrastructure Element and shown in *Map IE-2*.

Wastewater Collection System

The City's wastewater collection system consists of gravity sewers, lift stations, and force mains. The gravity sewers typically convey wastewater by gravity flow to lift stations. The lift stations contain pumps that pump the wastewater through pipes (i.e., force mains) to master lift stations for repumping or directly to the treatment plant.

The City's existing collection system includes eleven master lift stations:

1. Master lift station LS57, located in the Rocksprings Ridge Neighborhood combines the flow from the neighborhood into an eight-inch pressurized force main. This eight-inch line transitions through a series of pipe size increases to an 18-inch line that combines flow form the entire northern section of the City at master lift station LS73.
2. The LS73 transitions into a 14-inch main that runs along Vick road and meets up with flow from LS29.
3. The Errol neighborhood main lift station, LS29 serves the entire Errol Estates development in the northwestern section of the utility service area.
4. The combined flow from the 14-inch fed by these two master stations dumps into a 24-inch diameter gravity sewer that connects to the Bradshaw Road master lift station, LS77.
5. Master lift station LS95 in Zellwood Station directs flow from the northwestern portion of the City through a 12-inch force main. This 12-inch main combines with the remainder of the northwestern City lines at master station LS83 off Schopke Lester Rd. The 12-inch force main off this station eventually feeds into the 24-inch gravity main that feeds LS77.
6. LS77 at Bradshaw Rd then directs all of this flow through a 20-inch main directly to the WRF off of Cleveland St.
7. Master Lift Station LS60 combines and directs the flow from the Northeastern portion of the City to a 16-inch main that feeds LS17.
8. The Forest Avenue master lift station LS17 pumps about 30% of the wastewater currently being conveyed to the City of Apopka Water Reclamation Facility (WRF) through an 18-inch force main.
9. Master lift LS009 off Piedmont Wekiva near 436 combines the flow from the Southeastern portion of the City through a 12-inch force main to the WRF.
10. Master lift station LS51 off of Binion Rd transmits the flow from the Western portion of the City to a 12-inch force main and then to a 20-inch gravity main that feed LS67.
11. Master lift station LS67 off Keene Rd then feeds a force main directly to the WRF.

The Forest Avenue Lift Station is located at the site of the City's former wastewater treatment plant, which was replaced by the City of Apopka WRF located on Cleveland Street. The Forest Avenue Lift Station was installed to pump wastewater approximately two-miles through an 18-inch diameter force main to the City of Apopka WRF.

Presently, there are 66 lift stations that pump into the 24-inch gravity sewer that feeds into the Bradshaw Road Lift Station. These lift stations range in capacity from the Bradshaw Road Lift Station, with a design capacity of 2,156 gallons per minute (gpm), to the Northwest Recreation Complex Lift Station, with a design capacity of 78 gpm. There are 17 lift stations that connect to the 18-inch force main between the Forest Avenue Lift Station and the City of Apopka WRF.

The majority of the City's gravity collection system consists of 8- inch diameter pipe. This

is the minimum size of gravity sewer allowed under Apopka's Land Development Code. The service life for force mains and gravity sewers is variable and depends on pipe material, soil conditions, construction methods, and other factors. The majority of pipes that compose the City's wastewater collection system are expected to have a remaining useful life of 20 to 50-years.

Infiltration and Inflow

Infiltration/Inflow (I/I) refers to sources of water other than wastewater that enter into the wastewater collection system and are not desirable since they consume collection and treatment capacity. Infiltration is groundwater that enters a wastewater collection system through broken pipes, leaky pipe joints, and leaky manholes. Infiltration generally does not become evident until the rainy season when the groundwater table rises. Inflow refers to stormwater runoff that enters the wastewater collection system through leaky manhole covers and non-permitted stormwater connections. Inflow problems generally are indicated when treatment plant flow increases dramatically following a rainfall event.

Based on the City's 2019 Wastewater Collection System Master Plan, I/I do not represent a significant volume of the flow recorded at the treatment plant. I/I when viewed on a system wide basis is relatively low; however, I/I is most like concentrated in small areas of the collection system. The City identifies problem areas by closely monitoring lift station run times. Lift stations that operate for unusually long periods after rainfall events generally are suspected of receiving I/I. Sewer system evaluation measures such as smoke testing and televising are also undertaken in suspected collection systems areas to further document problem areas for repair.

Wastewater Treatment Facilities

The City of Apopka's Water Reclamation Facility (WRF) and effluent spray field site is located southeast of the City limits near the intersection of Cleveland Street and Old Apopka Boulevard. The City's WRF operating under Permit # FLA010818 completed a full renovation in the fall of 2018 that increased the plant capacity from 4.5 mgd to 8.0 mgd. The newly expanded facility consists of a preliminary treatment structure with influent screening, grit removal, odor control (screening, grit, removal and odor control are contained in a new influent structure), flow equalization, two individual activated sludge treatment trains (anoxic/aeration), with secondary clarification, chemical feed, filtration, and chlorination. The facility is split into an eastern treatment train and a western treatment train due to the plant being originally constructed in 1972 and expanded in 1989. After the most recent renovation the current capacity of the West Plant and East Plant is 3.0 mgd and 5.0 mgd, respectively.

The primary means of effluent disposal for the WRF is through providing unrestricted public access reuse water to customers and restricted access spray irrigation at permitted land application sites. From the chlorine contact tank, effluent is either pumped to on-site ground storage tanks or discharges to two (2) sets of on-site storage ponds.

The upper ponds (9.0 MG) serve the existing restricted access spray field system. The lower ponds (16.0 MG) serve the reclaimed water system. Water contained in the lower ponds may be pumped directly to the ground storage tanks or to the high-level disinfection process (filtration plus disinfection) for re-treatment. The City uses effluent from the ground storage tanks for its reuse system that distributes reclaimed water for irrigation on public access areas. The effluent from the upper storage ponds is pumped into the irrigation systems that serve the restricted access spray field. The City's 51.6-acre restricted access spray field is located adjacent to the plant site. The shallow groundwater beneath the spray fields is monitored by the City in accordance with FDEP regulations on a quarterly basis. Generally, the quality of the groundwater flowing away from the land application site has been equal to or better than background water quality. The shallow groundwater table is confined in this area and therefore separated from the underlying Floridan aquifer. The Floridan aquifer is the chief supply of potable water in the Apopka area.

Biosolids (sludge) produced from the plant is dewatered to reduce the overall volume and transported and disposed of by a contracted independent hauler at an offsite location. These biosolids are typically used a soil conditioner and fertilizers by the agriculture industry.

The expected service life for the reinforced concrete structures for the wastewater treatment plants is 30 to 50-years depending on the level of maintenance that is practiced. The expected service life for the mechanical equipment at the two plants is 5 to 15-years depending on the level of maintenance provided to the equipment. Some equipment items may have to be replaced more frequently as part of routine maintenance.

Reclaimed Water System

The City's reclaimed water program is known as Project ARROW. Arrow is an acronym that stands for Apopka Regional Reuse of Water. Project ARROW is made up of multiple components located throughout the City Service Area including the following:

1. City of Apopka's Wastewater Treatment and Reclamation Facility on Cleveland Avenue
2. Northshore Reclamation Water Facility off Lust Rd.
3. Northwest Reclamation Facility off Firehouse Ln.
4. Golden Gem Reservoir Facility off Golden Gem Rd.

The City currently provides reclaimed water service for both commercial and residential consumption. Commercial accounts include golf courses, nurseries, schools, other businesses, landscape medians, City greenspaces, and other recreational facilities. Residential accounts include multiple subdivisions as well as apartment complexes, and other single-family homes not located in subdivisions. Reclaimed water consumption of billed customers for 2022 was an average of 6.32 mgd.

The City's main source of reclaimed water is the City's WRF plant, it produced a daily average of 3.18 mgd in 2022. To augment the City's demand for reclaimed water services, the City entered into contractual agreements with Sanlando Utilities, the City of Altamonte Springs, and Orange County Utilities. In addition to the contracts, the City also has three shallow groundwater wells through the CUP with SJRWMD that allow further augmentation of the reclaimed system. These three wells are located at the WRF and have a decreasing capacity use through the life of that permit. In 2022, the City can withdraw an average 1.2 mgd, in 2023 an average 0.8 mgd, and for 2024 through 2031 an average of 0.4 mgd.

Sanlando and Altamonte supply their reclaimed water directly into the ground storage tanks located at the WRF, where it mixes with the City's reclaimed effluent. This mixed reclaimed water is then distributed through the City's starting with the high service pumps located onsite. There are additional high service repump stations located at the Northshore and Northwest sites that help to distribute the reclaimed water further throughout the City.

The Apopka WRF has an onsite covered ground storage tank capacity of 6 million gallons (2- 1 million GSTs and 2- 2 million GSTs) as well as two lined storage ponds with a total capacity of 16 million gallons for public access reuse water. The WRF also has an additional 9 million gallons of lined pond storage capacity located on site for restricted access spray field use or recirculation back through the treatment plant. The Northshore reclaimed water facility has one 3 million-gallon GST for storage and a high service repump station for distribution to the public system. The Northwest Reclamation Facility is made up of 4 million gallons of onsite covered GSTs and a High service repump station. The GSTs throughout the service area are filled during the day when the demands for reclaimed water is low.

The City has other reclaimed water storage facilities within the reclaimed water system. There are four lined ponds in the Rock Springs Ridge neighborhood totaling 33.59 million gallons. The City's North West Recreation Complex currently uses one of these ponds as the source for their irrigation needs. Currently located at the North West complex are three interconnected ponds totaling 172.82 million gallons of storage. The City is in the design phase for separating one of the ponds as a stormwater/ reclaimed mixed use pond. The pond will be directly used for irrigation of the facility site eliminating the City's usage of the Rock Springs Pond. The remaining two ponds will be re-piped so the reclaimed water can be put into the GSTs off Firehouse Ln. to augment the reclaimed demand during times of the year when the City has higher demand than production. The City's third lined storage pond site off of Golden Gem Rd. completed its phase one construction in 2021. Phase one included the creation of a 300 million gallon lined reclaimed water storage pond. Future phases currently in design are the creation of a high service repump that will pull directly form the pond, the addition of at least one GST, and a second lined pond at 49 million gallons. This site will primarily be used to store

reclaimed water during periods of the year when the City creates an excess. The reclaimed water can be used during the dry season to meet customer demand. The City's North Shore Water Reclamation Facility is also set up to augment reclaimed water supplies in times of extreme demand by drawing stormwater from a canal connected to Lake Apopka. This facility can filter and treat up to 5.0 mgd.

Table IE - 9 Reclaimed Water Pumping and Storage Facilities

RECLAIMED WATER PUMPING AND STORAGE FACILITIES				
Facility	**High Service Pumps (gpm)**	**Total High Service Pumping Capacity (gpm)**	**Ground Storage (mg)**	**Pond Storage (mg)**
Apopka WRF	1,400	18,000	1	16
	1,400			
	1,400		1	
	1,400			
	2,600		2	9
	2,600			
	3,600		2	
	3,600			
North Shore Facility	4,500	13,500	3	
	4,500			
	4,500			
Northwest Reclamation Facility	3,750	7,500	2	71.6
				83.02
	3,750		2	18.2
Golden Gem Facility	4,500 *	27,000 *	3 *	300
	4,500 *			
	4,500 *			
	4,500 *			
	4,500 *		3 *	50 **
	4,500 *			
	4,500 *			
Rock Spring Ridge Neighborhood				6.94
				12.64
				7.37
				6.63
Totals	**39,000**	**39,000**	**13**	**581.4**

Source: Apopka Public Services

Date Retrieved: March 2022

* Proposed in planning stages. High service pumps and 1 tank to be completed fall of 2024.

** This storage facility is currently under construction.

The current reclaimed water distribution system, not including on- site piping at the pump stations, consists of pipes ranging in diameter from 1-inch to 36-inches. Generally, pipes 12-inches in diameter and smaller are of polyvinyl chloride (PVC) construction whereas larger pipes are constructed from ductile iron (DI). Improvements to the distribution/transmission system have generally followed the recommendations outlined in the most recent reclaimed water master plan, with the timing of specific projects dependent on development patterns.

Large scale users of water will continue to play a major role in the City's reclaimed water system for many years to come. However, it is realized that the City's customer base could potentially change overnight due to a business failure or a catastrophic freeze. Project ARROW must be dynamic, flexible, creative and self-perpetuating. These characteristics are evident as the City plans Project ARROW's future.

The City is committed to the development of dual water distribution systems so that reclaimed water can be beneficially used in residential areas. The term "dual water system" refers to water distribution that involves the use of two pipes or mains. One piping system distributes potable water and the second piping system distributes reclaimed water. The City Code requires developers to install dual water systems where reclaimed water is available. If reclaimed water is not available, the City may choose to extend a pipeline to the developer's property. Future treatment plant expansions also will incorporate the necessary treatment technologies to produce reclaimed water that is acceptable for beneficial reuse.

The City’s existing SJRWMD CUP permits the use of groundwater to augment the City’s reclaimed water distribution system. The City is currently pursuing several projects to augment the City’s reclaimed water supply by storing excess reclaimed water into lined ponds during periods of low demand for usage during periods of high demand. When these resources are available, the City plans to discontinue the use of groundwater wells for reclaimed water augmentation. The City is currently permitted by SJRWMD for a maximum average daily withdrawal of Floridan aquifer supplies of 16.0 mgd through 2031, this water will be used to satisfy the City’s potable and reclaimed water system demands. As shown in *Table IE - 10*, the reclaimed demand for the City is expected to increase over the next twenty-years.

Table IE - 10 Projected Reclaimed Water Demand

PROJECTED RECLAIMED WATER DEMAND				
Year	Projected Service Population	Projected Total Daily Residential Reclaimed Water Demand (mgd)	Projected Total Daily Commercial Reclaimed Water Demand (mgd)	Projected Total Average Daily Reclaimed Water Demand (mgd)
2022*	22,996	7.01	1.24	8.2
2025	24,842	9.83	1.09	10.9
2030	30,549	10.26	1.14	11.4
2035	35,480	11.25	1.25	12.5

Note: *2022 ADF based on actual value for the year. All other projected flow data is from the 2019 Reclaimed Water Systems Master Plan.

Source: City of Apopka 2019 Reclaimed Water System Master Plan

Date Retrieved: August 2023

Operation and Maintenance

Proper operation and maintenance are essential to providing a safe and reliable wastewater system. The City's wastewater collection, treatment and reclamation facilities are operated and maintained under the supervision of operators who are certified by the State of Florida. The wastewater system relies on mechanical equipment such as pumps; therefore, it is critical that all lift station pumps, treatment equipment and other facilities be in good working condition. The City ensures that this equipment stays in good working condition through its preventative maintenance program.

Use of Septic Tanks within the Utility Service Area

Septic tank systems provide on-site wastewater treatment for both residential and small-scale commercial development. Septic tanks discharge to a drain field, where the effluent percolates into the soil. Accordingly, soil permeability and the localized depth to the water table are the limiting factors on septic tank performance. There are an estimated 5,302 septic systems in operation within the Apopka utility service area (*Map IE- 6*), with 2,932 located in the City jurisdictional area. This number was derived using the Orange County Florida Department of Health estimated septic tank data and the 2020 Census results for estimated number of dwellings within in the City. Rule 62-6, F.A.C. states that drain fields shall not be installed in soils with textures finer than sand, loamy sand, or sandy loam (when the soil moisture content is above the point at which the soil changes from semi-solid to plastic) to prevent soil smear and excessive soil compaction. *Table IE - 11* lists suitable soils and *Map IE-3* shows the distribution of the soils suitable for septic tank disposal systems in the utility service area. The suitability for the use of septic tanks is determined by Orange County in accordance with Rule 62-6, F.A.C., which contains the standards for on-site sewage disposal systems as developed by the Department of

Health.

Table IE - 11 Soil Texture Limitations for Sizing Drainfields

SOIL TEXTURE LIMITATIONS FOR SIZING OF DRAINFIELDS		
U.S. Department of Agriculture Soil Texture Classification	**Soil Texture Limitation (Percolation Rate)**	**Comments**
Sand; Coarse Sand not associated with a seasonal water table of less than 48-inches; and Loamy Coarse Sand	Slightly Limited (Less than 2 min/inch)	
Loamy Sand; Sandy Loam; Coarse Sandy Loam; Fine Sand	Slightly Limited (2-4 min/inch)	
Loam; Fine Sandy Loam; Silt Loam; Very Fine Sand; Very Fine Sandy Loam; Loamy Fine Sand; Loamy Very Fine Sand; Sandy clay loam	Moderately Limited (5-10 min/inch)	
Clay Loam; Silty Clay Loam; Sandy Clay; Silty Clay, Silt	Moderately limited (Greater than 15 min/inch but not exceeding 30 min/inch)	
Clay; Organic Soils; Hardpan; Bedrock	Severely limited (Greater than 30 min/inch)	Unsatisfactory for standard subsurface system
Coarse Sand an estimated wet season high water table within 48-inches of the bottom of the proposed drainfield; Gravel or Fractured Rock or Oolitic Limestone	Severely limited with (Less than 1 min/inch and a water table less than 4 feet below the drainfield)	Unsatisfactory for standard subsurface system

Source: Chapter 64E-6 F.A.C.
Date Retrieved: March 2022

The City does not have the authority to require areas within the county on septic tanks to connect to the sanitary sewer system. Rule 62-6, F.A.C. requires that lot sizes be adequate and specifically does not permit use of septic tank systems if subdivisions are developed with a net density of two units per acre (1/2 acre lots) or greater.

The City currently has an estimated 134 private wells and 5,302 septic tank systems in use within the utility service area. The City jurisdictional area contains 2,932 of the septic systems. Private wells and septic tank systems are not regulated by the City as they are

reviewed by the Florida Department of Health Orange County.

The areas shown in *Map IE-3* exhibit soil conditions that are compatible with septic tanks and existing septic tanks are predominantly located within these areas. Presently, there are no locations within the utility service area where septic tanks are known to be failing. If septic tanks begin to fail within the unincorporated areas of the City's Utility Service Area, then the City and the county will develop a mutually acceptable plan to resolve the problem.

SANITARY SEWER FACILITIES ANALYSIS

The City has master planned sanitary sewer facilities to effectively manage growth. Each new development is required to provide the infrastructure needed to support its respective development as well as add the development's proportional share of upgrades to the system as described in the City's Wastewater Collection System Master Plan. The City has completed construction on the City's WRF to expand the capacity to 8.0 mgd.

Currently, there are four private wastewater treatment facilities within the City's utility service area boundary, but outside the City's limits. At present, the City is working on grants to reduce the connection charges for these facilities to be connected to our system. These connections will eliminate these package plants and the City will treat the wastewater at the WRF.

Level of Service (LOS) Standard

The level of service (LOS) standard of 100 gpcd has been adopted by the City based on the 2019 Wastewater Collection System Utility Master Plan Update prepared by Wright Pierce.

FUTURE WASTEWATER FACILITIES

Operation and Maintenance of Sanitary Sewer Facilities

The City's wastewater collection, treatment, and reclamation facilities are operated and maintained under the supervision of licensed operators certified by the State of Florida. The existing wastewater facilities currently exhibits no significant deficiencies. Minor deficiencies of the system include infiltration/inflow, which occurs when groundwater enters a wastewater collection system through broken pipes, leaky pipe joints and leaky manholes, or because of stormwater runoff that enters the collection system through leaky manhole covers and illicit storm sewer connections to the wastewater collection system.

The City has its own video camera to perform video inspection of sewer lines. City crews perform line cleaning and video inspections on a daily basis. The City's lift stations are equipped with supervisory control and data acquisition (SCADA) and telemetry equipment which can notify City personnel in the event of a lift station failure. Ten of the

City's pump stations are equipped with emergency standby generators. The remaining 133 existing pump stations are equipped with receptacles which permit the connection of a portable standby power generator. The City visits each pump station daily and frequently gives thorough mechanical and electrical inspection and preventive maintenance.

Future Sanitary Sewer Facility Needs

Based on population projections from the 2019 Wastewater System Utility Master Plan update for the utility service area and utilizing the LOS standard of 100 gpcd, the City projects that the existing and planned sanitary sewer facilities will accommodate anticipated new development. *Table IE - 12* provides a summary of the current and projected wastewater flows and the associated levels of service.

Table IE - 12 Projected Wastewater Flows

PROJECTED WASTEWATER FLOWS				
Wastewater System	**2020**	**2025**	**2030**	**2035**
Service Population	64,807	71,749	78,090	83,569
Adopted LOS (gpcd)	100	100	100	100
AADF (mgd)	3.801	4.746	5.306	5.749
Permitted Wastewater Treatment Plant Capacity (mgd)	8	8	8	8
Surplus (Deficiency)	**4.199**	**3.254**	**2.694**	**2.251**

Source: Apopka 2019 Wastewater System Utility Master Plan

Date Retrieved: March 2022

Based on the 2019 Wastewater System Utilities Master Plan, it is estimated that the service population connected to the City sewer system will reach 83,569 by 2035. It is expected that residences currently utilizing septic tanks will continue to use those facilities through 2040. Based on wastewater flow projections, the City's most recent treatment plant expansion is adequate to cover the demands based on population growth.

All future wastewater disposal capacity will be derived through beneficial reuse or storage at the newly constructed reclaimed water storage facilities when weather conditions do not permit irrigation. The scope and scheduling of plant improvements will be adjusted as necessary to stay current with the best available planning data.

STORMWATER MANAGEMENT SUB-ELEMENT

INTRODUCTION

The purpose of the Stormwater Management Sub-Element is to provide for necessary public facilities and services that will control the quantity and quality of stormwater runoff, preserve the quality of the surface waters that receive stormwater runoff, and protect lives and property from the threat of flooding.

Stormwater runoff is recognized as a major polluter of our nation's surface waters. This concern prompted Congress to include stormwater discharges under the National Pollution Discharge Elimination System (NPDES) contained in Section 402 of the Clean Water Act of 1987. The City is required to obtain an NPDES permit for stormwater and complies with the NPDES requirements outlined in the permit.

Floodplain management is also important. When a lake, river or stream swells due to heavy rainfall, the floodplain accepts the augmented volume of water, where it is stored until it gradually discharges. Any attempt to fill in portions of the floodplain for development will ultimately reduce the capacity of the floodplain to store water, leading to an increased risk of flooding, increased erosion, and possible property damage due to higher stream velocities. Wetland vegetation that may be indigenous to a floodplain is also important because it helps to naturally filter and treat stormwater runoff.

STORMWATER MANAGEMENT EXISTING CONDITIONS

Stormwater management systems are typically comprised of a series of interconnected channels, conduits, inlets, culverts, bridges, and storage facilities that convey runoff through a watershed area (basin) to its outfall. The appropriate management of stormwater involves:

1. Treatment of stormwater runoff prior to discharge into surface waters;
2. Stormwater discharge rate and volume attenuation to ensure that post-development runoff does not exceed pre-development runoff; and
3. Where applicable, the design of stormwater management facilities shall promote recharge to the underlying aquifer system. The Aquifer Recharge Sub-Element more fully addresses these design issues.

Drainage Features

The natural surface water drainage system in the vicinity of Apopka consists of a large number of landlocked basins that may be either lakes or historically dry depressions, each with relatively small drainage areas. Normal rainfall events generate runoff that is directed to these depressions either by naturally occurring swales and conveyance

channels, or through man-made conveyance systems constructed as part of the City's drainage system. For the most part, these depressions are not connected. During extreme rainfall events like those associated with tropical storms or hurricanes, there may be some inter-basin connections.

The City's downtown area sits on a broad ridge with elevations reaching 150 feet above mean sea level (MSL). The surrounding terrain generally slopes northeast toward the Wekiva River at elevation 25 feet above MSL and southwest to Lake Apopka at elevation 65 feet above MSL. As noted, very little flow occurs between the closed basins; therefore, little direct runoff reaches the Wekiva River system or Lake Apopka. One exception is the drainageway associated with Greenwood Cemetery. Runoff is directed to the ravine at this site through a man-made conveyance system, then surface flows are directed to the north under Votaw Road to Lake McCoy. Under tropical storm conditions, this lake could discharge to a normally dry depression known as Lake Coroni, and possibly to Lake Prevatt, which is connected to the Wekiva River and is classified as an Outstanding Florida Waterway.

Regulatory Framework

The protection of surface water quality and the regulation of stormwater management is the responsibility of municipalities, counties and the state under the umbrella of federal law. Specifically, to protect the quality of surface waters, the federal government enacted Section 208 of the Water Pollution Control Act for stormwater management. Additionally, Section 405 of the Federal Clean Water Act required that the Environmental Protection Agency (EPA) establish permit regulations for stormwater discharge, thus creating the National Pollutant Discharge Elimination System (NPDES) permit program. As of May 1, 2003, federal regulations required that all small construction activities disturbing one to five acres apply for an NPDES construction general permit.

Recognizing the importance of water to the state, the Legislature passed the Water Resources Act, Chapter 373, F.S., and the Air and Water Pollution Control Act, Chapter 403, F.S. The State of Florida addresses surface water management in Chapter 62-40 of the Florida Administrative Code (F.A.C.), defining state permitting requirements and stormwater management responsibilities. Section 62-40.432 (Surface Water Management Regulation), F.A.C. states: "The Department (Environmental Protection) and the Districts (Water Management Districts), pursuant to Section 373.418, F.S., shall, when adopting rules pertaining to stormwater management systems, specify design and performance criteria for new stormwater management systems which shall be designed to achieve an 80% reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards." The code also states that stormwater management systems "shall be designed to achieve at least 95% reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards in Outstanding Florida Waters."

Enforcement of stormwater management regulations within the City falls under the SJRWMD, the Florida Department of Transportation (FDOT), Orange County, and the City of Apopka. Depending on the location of a project, it is conceivable that permits could be required from up to three of the four agencies.

St. Johns River Water Management District (SJRWMD)

The SJRWMD operates under the rules of Chapter 40C-42, F.A.C., which govern stormwater management systems that are designed and constructed or implemented to control discharges necessitated by rainfall events. These systems may incorporate methods to collect, convey, store, absorb, inhibit, treat, use or reuse water to prevent or reduce flooding, over drainage, environmental degradation and pollution, or otherwise affect the quality and quantity of discharges. The SJRWMD has jurisdiction in regards to stormwater ponds, floodplain management and finished floor elevations within their district. In addition, if development projects have 4,000 square feet or more of impervious surface, the water management district requires an Environmental Resource Permit (ERP).

Requirements for Issuance of Permits

In order to obtain a standard general or individual environmental resource stormwater permit, an applicant must give reasonable assurance that the stormwater management system:

1. will not result in discharges from the system to surface and ground water of the state that cause or contribute to violations of state water quality standards,
2. will not adversely affect drainage and flood protection on adjacent or nearby properties not owned or controlled by the applicant,
3. will be capable of being effectively operated and maintained, and
4. meets any applicable surface water management basin criteria contained in Chapter 40C-41, F.A.C.

Peak Discharge (Stormwater Attenuation)

The post-development peak discharge rate must not exceed predevelopment rates for the mean annual 24-hour storm for systems serving both of the following:

1. new construction area greater than 50% impervious (excluding water bodies) and
2. projects for the construction of new developments.

The post-development peak rate of discharge must not exceed the predevelopment peak rate of discharge for the 25-year frequency storm in other areas.

Volume

For systems discharging to land-locked lakes adjacent to properties under more than one ownership, the post-development volume of direct runoff shall not cause an increase in the total pre-development flood stage. This can be accomplished through retention with

percolation or, if the soil conditions are not sufficient for percolation, then through wet or dry detention for a duration sufficient to mitigate adverse impacts on flood stages. In determining the volume of direct runoff, a 25-year, 24-hour duration storm is to be used.

Storage and Conveyance

Floodways and floodplains, and levels of flood flows or velocities of adjacent streams, impoundments or other watercourses must not be altered to adversely affect the off- site storage and conveyance capabilities of the water resource.

1. A system may not cause a net reduction in flood storage within a 10-year floodplain except for structures elevated on pilings or traversing works. Traversing works, works or other structures shall cause no more than a one-foot increase in the 100-year flood elevation immediately upstream and no more than one tenth of a foot increase in the 100-year flood elevation 500 feet upstream. A system will not cause a net reduction in flood storage within a 10-year floodplain if compensating storage is provided outside the 10-year floodplain.
2. A system may not cause a reduction in the flood conveyance capabilities provided by a floodway except for structure elevated on pilings or traversing works. Such works or other structures shall cause no more than a one-foot increase in the 100-year flood elevation immediately upstream and no more than one tenth of a foot increase in the 100-year flood elevation 500 feet upstream.

Water Quality

State water quality standards must not be violated.

Hydrologic Basins

The City of Apopka lies within two hydrologic basins - the Ocklawaha River Hydrologic Basin and the Middle St. Johns River Hydrologic Basin. The boundaries are shown in *Map IE-4*. In addition to the criteria described above, the SJRWMD requires that systems in specific hydrologic basins meet additional criteria.

1. Ocklawaha River Hydrologic Basin
   a. Storm Frequency: The system shall meet applicable discharge criteria for 10-year and 25-year frequency storms. On-site storage and outlet capacity should be designed for the 25-year storm. Outlet capacity design should be checked and further refined, if necessary, for the 10-year storm.
   b. Runoff Volume: For systems utilizing pumped discharges, the post-development discharge volume during the four-day period beginning the third day of the four-day duration storm may not exceed the pre-development discharge during the same period.
2. Middle St. Johns Hydrologic Basin
   a. Runoff Volume: Projects or portions of projects in the most effective recharge areas must retain three-inches of runoff from the directly connected pervious

area within the project area or applicants may demonstrate that the post-development recharge will be equal to or greater than the pre-development recharge. Those soils determined by the Soil Conservation Service (SCS) to be in the type "A" Hydrologic Soil Group (HSG) shall be considered to be most effective recharge areas.

Erosion and Sediment Control Plan

An erosion and sediment control plan must be submitted as part of the permit application for a project which is wholly or partially located within a water quality protection zone or serves a project with a total land area equal to or exceeding 120 acres. A water quality protection zone shall extend one half-mile from the Wekiva River, Little Wekiva River north of State Road 436, Black Water Creek, Rock Springs Run, Seminole Creek and Sulphur Run, and shall also extend one quarter-mile from any wetland abutting an Outstanding Florida Water.

Florida Department of Transportation (FDOT)

FDOT has jurisdiction of stormwater management ponds and drainage conveyance facilities that are adjacent to or drain directly to FDOT road rights-of-way and drainage facilities. FDOT also constructs and maintains the necessary stormwater systems to control the quantity, quality, and rate of drainage run-off generated by FDOT facilities. FDOT operates under an assumption that off-site (private property or other non-FDOT property) stormwater runoff management has occurred prior to reaching the road right-of-way. However, when it is not feasible to maintain drainage from other properties separate from FDOT property and rights-of-way, FDOT promotes joint use and/or regional facilities to serve all affected parties.

Section 334.044, F.S., sets forth the powers and duties of the FDOT to develop and adopt uniform minimum standards and criteria for the design, construction, maintenance, and operation of public roads. This includes the ability of the FDOT to specify the design of open channels, to require minimum standards for the design of FDOT stormwater systems, and to develop standards and procedures for the hydraulic design of cross drains including culverts, bridge- culverts and bridges.

Orange County

Orange County has jurisdiction over the connection of any stormwater facility or structure to county-owned stormwater conveyance, retention, and wet or dry detention facilities. As such, new development or redevelopment that requires new driveways onto county roads or impacts county roads and stormwater systems must obtain county approval.

City of Apopka

All new development or redevelopment projects within the City limits must obtain stormwater management approval from the City. The City is also responsible for maintaining its stormwater management structures and facilities. The City of Apopka's

Land Development Code regulates stormwater management as follows:

1. The post-development peak rate of discharge must not exceed the pre-development peak rate of discharge for the 25-year, 24-hour storm (8.6-inches).
2. Pollution abatement will be accomplished by retention or detention with filtration of one-half-inch of runoff from the developed site.
3. When the project discharges to land-locked lakes that have no positive outfall, on-site stormwater facilities shall be designed to detain the 100-year, 24-hour design storm (11.8-inches).
4. Storm sewer system design is to be based upon a ten-year frequency event.
5. The minimum size of pipe to be used in a storm sewer system is 15-inches in diameter.

Operation and Maintenance of Stormwater Facilities

The City maintains drainage ditches, storm sewer pipes, catch basins, and other similar facilities. The City does not accept the responsibility to maintain retention ponds, which is the responsibility of the property owner or a homeowner's association. Without proper maintenance, retention ponds can potentially become ineffective as well as eyesores. While many privately-owned facilities receive the proper amount of maintenance, there are some which are not adequately maintained. When private retention ponds are not well maintained, the City provides maintenance based on reports from residents.

STORMWATER MANAGEMENT FACILITIES NEEDS ANALYSIS

Stormwater management is a regional issue that transcends political boundaries. The study area for the City of Apopka Drainage Master Plan update (2009) included the City's utility service area. Analysis conducted outside the City limits was primarily focused on future regionalization of stormwater management facilities. Specific infrastructure improvements have not been recommended for stormwater management outside the City limits.

Located within the corporate limits of the City of Apopka, there are drainage facilities that serve county, state, and federal roadways. These facilities have been designed to handle stormwater runoff generated by the immediate drainage basin in which the road is located. It is the policy of the agencies that are responsible for these roads that connections to their drainage facilities shall not adversely affect capacity. Therefore, best management practices must be employed to mitigate potential adverse impacts.

Drainage Basins

The City is divided into 15 major drainage basins which are sub-divided into 130 sub-basins. Drainage divides between major basins and sub-basins are determined from United States Geological Survey (USGS) topographic maps. The drainage basins are shown in *Map IE-5*. Of the 130 sub-basins that were analyzed, it was determined that 61 of the sub-basins have positive outfalls and the remaining 69 sub-basins are landlocked.

Operational Improvements to Drainage Systems

Several improvements which were addressed in the previous drainage master plan have been completed. These improvements included the Railroad Drainage Basin Project and the Lake Avenue Drainage Well Project.

Stormwater Utility

The City Council adopted a stormwater utility in 1992. The revenues are used to fund drainage capital improvements and other programs relating to stormwater.

NATURAL GROUNDWATER AQUIFER RECHARGE SUBELEMENT

INTRODUCTION

The purpose of this subsection is to describe measures the City of Apopka takes to protect and preserve the natural aquifer recharge areas. This is critical because, like most jurisdictions in Florida, the City relies on the aquifer as the sole source of drinking water.

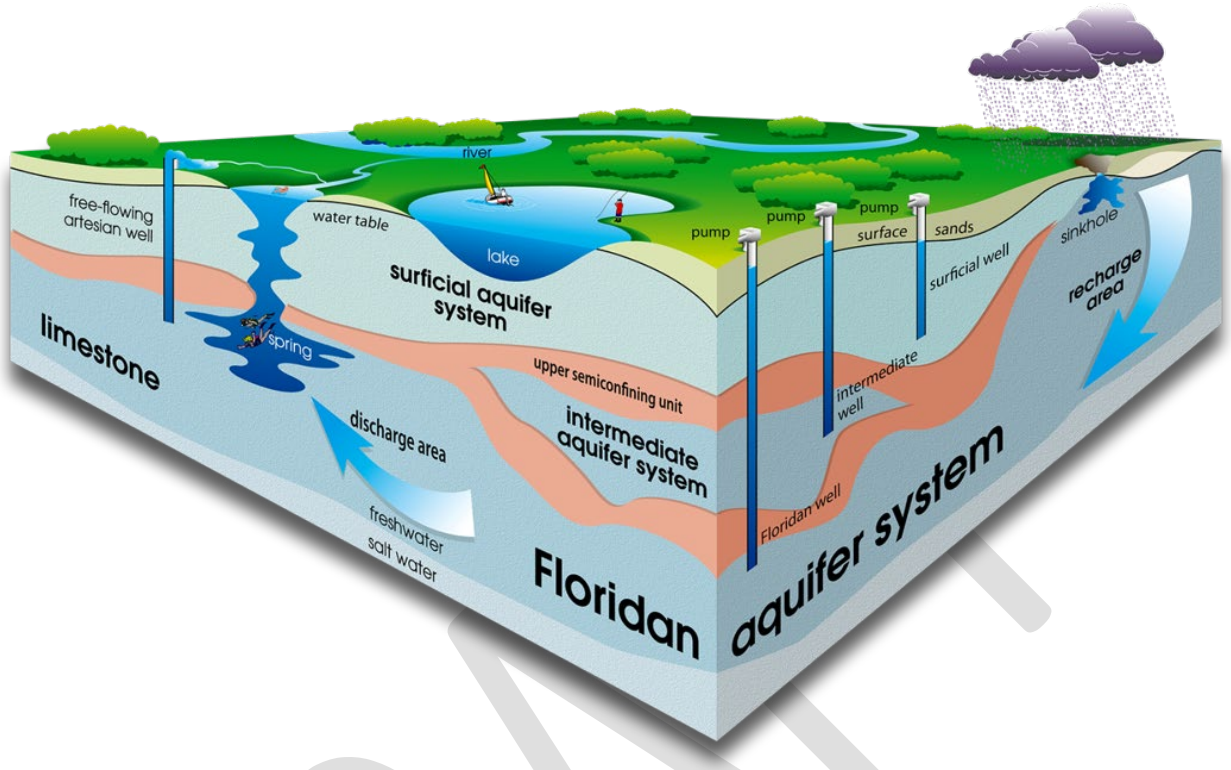
The Floridan Aquifer

An aquifer is a subsurface zone that contains and allows fresh water to move from one area to another. Aquifers contain large quantities of fresh water capable of yielding billions of gallons per day. If these resources are not properly managed, then the supply can be exhausted; or more likely, contaminated. Protection and preservation of these aquifers are important to ensure the supply of potable water is available to future generations.

Recharge is simply the process of replenishing the aquifer. Recharge usually occurs naturally through percolation of rainfall. Under the force of gravity, rainfall moves through the porous surface soils of the earth to enter the aquifer strata. Because of the variable permeability of different soil types, the rate of aquifer recharge from rainfall may vary from one location to another.

The Floridan aquifer is the primary source of potable water for Apopka. This aquifer system is a principal aquifer for the United States and is one of the most productive aquifers in the world. This aquifer covers over 100,000 square miles including all of Florida, and the southern parts of Alabama, Mississippi, Georgia, and South Carolina. *Figure IE - 2* depicts the general structure of the Floridan aquifer. Not all of the 50 to 55-inches of rainfall Florida receives each year reaches the aquifer. Most of the rainfall (approximately 37-inches) evaporates or runs off the land into surface waters before it has a chance to soak into the ground, leaving approximately 13-inches available for aquifer recharge. This aquifer can be up to 3,000-feet thick and begins 100 to 200 feet below the surface of the earth. Between the top of the Floridan and the earth's surface lies the surficial aquifer system. This aquifer if found at depths of 60 to 150-feet and has the primary function of storing surface and rain water before its infiltration into the Floridan aquifer. Under the majority of Orange County lies an upper semi-confining unit called the Hawthorne Formation. This formation restrains the movement of water from the surficial aquifer to the underlying Floridan aquifer. The thinnest portion of the Hawthorne Formation is under the City, making Apopka a high area of aquifer recharge.

Figure IE - 2 Floridan Aquifer System



Source: Central Florida Water Initiative (CFWI)
Date Retrieved: March 2022

AQUIFER RECHARGE ANALYSIS

Aquifer recharge areas are vulnerable to reduced capacity from development. Development increases the amount of impervious surface and alters the natural topography, vegetation, and runoff patterns for stormwater. Stormwater is the primary recharge source for the Floridan Aquifer. Covering a recharge area with impervious surfaces, such as roads or buildings, reduces the available area for rainfall percolation and lowers the rate and volume of recharge. Development of an aquifer recharge area potentially increases the chances of groundwater contamination. High recharge areas may experience groundwater contamination from both point source and non-point source pollutants, such as those found in stormwater runoff. Limiting the percentage of these surfaces in high recharge areas and encouraging preservation in land development regulations aid in maintaining the recharge levels.

Currently, land use in the majority of Apopka's high recharge areas (*Map FLUE – 7*) is low density residential, which limits impervious surfaces. Per SJRWMD recommendations, the City has instituted regulatory program enhancements and has included artificial recharge projects to further protect and augment our high recharge areas. The City has

also adopted stormwater management and wellhead protection regulations that protect the aquifer from contamination.

GROUNDWATER SOURCE PROTECTION

Groundwater recharge is vital for providing adequate, quality groundwater supplies for future uses. The City coordinates the production quality and the water consumption of its public supply groundwater wells with SJRWMD. SJRWMD performs all required well suitability assessments, permits the construction of and production from these wells, and requires significant environmental documentation as to the composition of the soils, ecology around the wells, and to what impact these wells will have on the surrounding areas.

The City has adopted the State of Florida's wellhead protection rules in Rule 62-532, F.A.C. This rule defines a "Wellhead Protection Area" as an "area designated by the Department consisting of a 200-foot radial setback distance around a potable water well where groundwater is provided the most stringent protection measures to protect the ground water source for a potable water well and includes the surface and subsurface area surrounding the well." Measures within 62-521 also include rules for governing:

1. new domestic wastewater treatment facilities,
2. New domestic wastewater residual for land application site,
3. new discharges to ground water sources,
4. new solid waste disposal facilities,
5. new generators of hazardous waste,
6. new hazardous waste treatment, storage, disposal, and transfer facilities, and
7. new above ground and underground tankage of hazardous wastes.

In addition to the Wellhead Protection regulation, the City adopted an additional ordinance that stipulates that all existing drain wells in the City be plugged and no new drain wells be constructed. Development regulations related to drainage and stormwater management are further explained in the Conservation Element and the Stormwater Sub-Element.

SOLID WASTE SUB-ELEMENT

INTRODUCTION

Solid waste, or garbage, is the unwanted and/or useless refuse that is produced as a result of daily human life. The proper removal and disposal of solid waste is vital to environmental and human health and safety. The City strives to manage the solid waste output in a low cost, energy efficient, and environmentally compatible way. The top priority of any solid waste management system is to reduce the overall amount of solid waste produced. The City achieves this through its recycling program.

EXISITING CONDITIONS ANALYSIS

Orange County is the primary entity responsible for providing solid waste disposal facilities for Apopka and the rest of the county. The City provides solid waste collection service for residential household and commercial users within its entire corporate limits. No services are provided to adjacent jurisdictions or to the unincorporated county area.

Collection System

The City's Sanitation Division is responsible for the collection and delivery of both residential and non-residential solid waste to the county transfer stations or landfill and for monitoring solid waste activity. As of 2022, the City has 794 commercial customers (including multi-family residential) and 18,858 residential customers.

Overall, the City has reduced costs and saved energy by instituting an automated garbage collection system that relies on trucks powered by natural gas. These trucks use an automated mechanical, robotic arm that that lifts and empties the City provided trash containers, called carts, directly into the truck. These trucks speed up the collection process as the driver never has to leave the cab of the truck to dump containers. The City issues carts for regular household trash and for recyclables.

Level of Service

The City adopted level of service (LOS) standards of four pounds per capita per day for residential waste and 13.7 pounds per 1,000 square feet of commercial development. Commercial pick up is based on the needs of individual accounts and is available from one to seven days a week. Residential customers receive curbside collection twice per week and a once-a-week yard waste pick up. In 2022, the City collected a daily average of 118.26 tons of solid waste (*Table IE - 13*). Residential customers generated 49.0% of solid waste destined for the landfill. Recycling accounted for 5.4% of Apopka's total solid waste. With a 2022 population of 57,930 (U.F. Bureau of Economic and Business Research), solid waste collection (including recycling) resulted in 2.11 pounds per capita per day, well within the LOS.

Table IE - 13 Solid Waste Generated

Solid Waste Generated	
Solid Waste Type	**Average Daily Collection (Tons)**
Landfill	111.84
Commercial	57.07
Residential	54.77
Recycling	6.40
Total	**118.26**

Source: Apopka Public Services
Date Retrieved: August 2023

Recycling

The City offers bi-weekly curbside collection of mixed-materials (i.e., newspaper, cardboard, glass, cans, and plastics). In 2020 the City partnered with the Recycling Partnership in its "Recycling Anti-Contamination: Feet on the Street" pilot program to educate residents on what can and cannot be recycled. The City has joined Orange

County in the mandatory Commercial Recycling Program for all businesses and multi-family developments.

Hazardous Waste

The City does not collect or dispose of any hazardous wastes; however, it is conceivable that some small amounts of household hazardous waste are disposed of in the landfill due to homeowners mixing household hazardous wastes such as pesticide cans, waste oil, and paint cans with their household refuse. The Florida Department of Environmental Protection (FDEP) and Orange County's Environmental Protection Department (OCEPD) are responsible for any hazardous wastes found or collected within the City limits including small quantity generators, households, farms, and businesses.

All Orange County residents are able to participate in the county's Household Hazardous Waste community collection events, or to take their waste directly to the landfill drop-off locations. Information on these sites, the types of waste taken, and how to package the waste are located on the Orange County website.

Solid Waste Facilities

There are no solid waste disposal locations within the City. Solid waste material collected by franchised haulers is delivered to Orange County's Transfer Stations or to the landfill. Recycling material is delivered to the Orange County landfill.

FUTURE CONDITIONS ANALYSIS

Levels of Service and Financial Feasibility

The City does not anticipate any major revisions to the current solid waste collection and disposal program. The City's solid waste activities are supported by an enterprise fund. Service charges are evaluated annually or at the time of landfill charges (tipping fees) and are increased to ensure sufficient revenue is generated to fund all required operations, maintenance, and capital costs. In order to continue to promote recycling and environmental sustainability, the rate charges for solid waste and recycling will be evaluated more frequently and increases will be applied annually to the rate structure.

Recycling

The City will continue offering residential recycling of newspapers and mixed recyclables. The City will continue to cooperate with Orange County to increase the recycling effort for commercial material. Additionally, the City will coordinate with Orange County and other local municipalities to pursue new technologies for collecting and processing recyclable materials.

There is no such thing as 'away'. When we throw anything away it must go somewhere. *Annie Leonard*

The City plans to increase the solid waste education budget to create and distribute content for the household recycling program. This will include information on what can and cannot be recycled in the household carts, how this material will be prepared by the recycler, and what to with the items that cannot be disposed of in the cans. Promoting

recycling education is the best way to reduce the number of reusable products ending up in the landfill.

The City is in the planning stages for a food waste recycling program that will explore community composting sites for commercial food waste and education on at home composting. This program has the potential to reduce solid wastes volumes across the board and to promote the environmental message of reducing wastes.

Hazardous Wastes

The City will continue to assist the FDEP and OCEPD in eliminating improper household hazardous waste disposal by continuing to assist OCEPD in their Household Hazardous Waste Round-Up programs throughout the county and by distributing FDEP provided educational information. The City also publishes information regarding hazardous waste recycling and other disposal programs.

Solid Waste Facilities

The City will continue to rely on Orange County for the disposal of solid waste materials in accordance with Chapter 403.706, Florida Statutes (F.S.). There is currently no formal agreement establishing any specific proportional capacity to the City. *Table IE - 14* details the City's projected solid waste disposal needs. The City and County's population projections are similar so no change in the City's percentage of the county landfill is expected.

Table IE - 14 Projected Solid Waste Disposal Needs

PROJECTED SOLID WASTE DISPOSAL NEEDS					
Year	**Service Population**	**Projected City Tonnage [1]**	**Percent of County Landfill**	**Projected Recycle Tonnage [2]**	**Percent of County Landfill**
2020	53,117	29,086	3.20%	2,380	2.40%
2025	71,749	30,255		2,596	
2030	78,090	31,466		2,694	
2035	83,569	32,724		2,856	

Source: Apopka Public Services

Date Retrieved: March 2022

(1) Tonnage deposited in the Orange County Class I Landfill (includes residential and commercial waste from regularly scheduled can and dumpster pickup – no white goods, yard waste or hazardous waste)

(2) Tonnage deposited at the Orange County Landfill and distributed to either the recycling separation facility, the white goods facility or the landscape waste facility

* Tonnage based on actual figures for October 1, 2019 to September 30, 2020.

CONSERVATION ELEMENT

Conserving and protecting natural resources for future generations

CONSERVATION ELEMENT

GOAL 1

Conserve and protect the City of Apopka's natural resources, ensure quality water resources, and minimize threat to wetlands.

OBJECTIVE 1.1

The City shall conserve potable water resources and ensure the quality of surface water and ground water meet the state standards as detailed in Florida Administrative Code (F.A.C.).

Policy 1.1.1

The City shall continue to require that stormwater treatment facilities be designed so that the quality of the stormwater runoff will not degrade the receiving water quality below the minimum conditions necessary to assure the suitability of the water body for the designated use in accordance with the classifications established in F.A.C..

Policy 1.1.2

Any clearing operation shall be required to ensure surface water quality will not be degraded by such actions and obtain a permit from the City. Each applicant adjacent to water bodies must address and submit a plan pursuant to requirements established in the City's Land Development Code.

Policy 1.1.3

Development within the City shall connect to the City's wastewater collection system except for residential lots meeting the conditions regulated in the Land Development Code where a septic tank is permissible. Development in environmentally sensitive areas shall be required to connect to the City's sanitary sewer system.

Policy 1.1.4

The City shall cooperate with the St. Johns River Water Management District (SJRWMD) to educate and notify City water customers of water restrictions imposed during SJRWMD declared water shortages. The City shall notify SJRWMD of any known violations of water restrictions.

Policy 1.1.5
The City shall continue to incorporate development restrictions directed toward preserving natural systems from the harmful impacts of hazardous waste. The City shall continue to work with appropriate state, regional, and county agencies in developing an improved areawide solid waste management program which includes more innovative solid and hazardous waste management technologies to effectively manage hazardous waste.

Policy 1.1.6
The City shall conserve water resources as detailed in the Potable Water Sub-Element by using appropriate water conservation techniques, implementing the Emergency Water Conservation Plan submitted to SJRWMD, and educating residents in water conservation practices.

OBJECTIVE 1.2
The City shall protect its natural resources including wetlands, upland buffers, floodplain storage, and identified threatened and endangered species and species of special concern.

Policy 1.2.1
The City shall protect habitat for semi-aquatic or water-dependent terrestrial species of wildlife through the maintenance of native upland vegetation consistent with SJRWMD policy.

Policy 1.2.2
Activities which destroy or degrade the functions of a wetland shall be required to mitigate the adverse effects within the same watershed, through demonstrably successful creation or preservation of wetland whose functional values are equal or greater to those lost, pursuant to SJRWMD and Florida Department of Environmental Protection (FDEP) regulations.

Policy 1.2.3
The City shall work with developers to prioritize and protect wetlands and their functionality and environmentally sensitive areas within and adjacent to the site during the development process.

Policy 1.2.4
Except as expressly provided by this Plan, no development activity shall be undertaken in or directly adjacent to any environmentally sensitive areas. Wetland and shoreline setbacks shall continue to be regulated in the Land Development Code.

Policy 1.2.5

The City shall continue to require confirmation from state agencies of stated wetland boundaries, as well as any authorization of any proposed encroachment prior to authorization of construction for any approved development plan.

Policy 1.2.6

The City shall continue to adopt regulations which protect and conserve wetlands consistent with state law. Such regulations shall include criteria for identifying the significance of wetlands. The regulations shall also identify to what extent the conservation area is allowed to be altered and the mitigation requirements for unavoidable loss. Environmentally sensitive lands shall mean Class I Conservation Areas where Conservation Areas are classified within three (3) classes:

> Class I Conservation Areas – Wetland and surface waters that have a hydrological connection to natural surface water bodies; or a lake littoral zone; or are large isolated uninterrupted wetlands 40 acres or larger; or provide critical habitat for federal and/or state listed threatened or endangered species.
>
> Class II Conservation Areas – Isolated or formerly isolated wetlands and surface waters which by way of man's activities have been directly connected to other surface water drainage, and are greater than or equal to 5 acres; and do not otherwise qualify as Class I conservation areas.
>
> Class III Conservation Areas – Isolated wetlands and surface waters less than 5 acres which do not otherwise qualify as Class I or Class II conservation areas.

Policy 1.2.7

Conservation areas as defined by Policy 1.2.6 and their functions shall be protected and conserved by restricting direct and indirect development impacts as regulated in the Land Development Code.

Policy 1.2.8

Upland buffers are considered an integral component of a functioning wetland and shall be afforded the same types and levels of protection as the wetland itself as regulated in the Land Development Code.

Policy 1.2.9

Exceptions to Policies 1.2.7 and 1.2.8 above involving buffers and isolated wetlands require an environmental assessment as regulated in the Land Development Code.

Policy 1.2.10

The City shall protect identified wetland areas and existing wildlife habitat through the

control and maintenance of invasive non-native (exotic) plants on City-owned environmentally sensitive lands.

Policy 1.2.11

The City shall continue to seek innovative partnerships and opportunities to preserve and conserve its natural resources that ensure multiple and compatible uses of land while providing just compensation to the landowner.

Policy 1.2.12

The City shall revise, adopt, and implement land development codes to require site plan review as recommended by the development review committee where a development project is directly contiguous to wetlands and involves disturbances of wetlands so as to ensure that no wetland is disturbed except in accordance with the following standards:

a. No wetland may be disturbed unless the City Council makes a finding (supported by the site plan application and documentation) that no reasonable alternative (such as clustering development on upland portions of the site) is available to avoid a taking, and that the nature and degree of disturbance is the minimum possible to achieve development that is otherwise compliant with the goals, objectives, and policies of the Comprehensive Plan.

b. Compensating storage with requirements from the City Engineer may be required.

c. All rules of the FDEP and SJRWMD for jurisdictional wetlands shall be met.

d. Pre-development/pre-disturbance water flow and quality shall be maintained or improved on site.

Policy 1.2.13

The City shall cooperate with the FDEP, SJRWMD, East Central Florida Regional Planning Council, and Army Corps of Engineers to comply with federal and state dredge and fill permitting process.

Policy 1.2.14

The City will prohibit stormwater discharge from development from discharging into wetlands, sinkholes, bays or rivers without prior treatment that will protect existing water quality.

Policy 1.2.15

The City shall utilize the best available data to identify and protect recharge areas and sensitive upland habitats, including wetlands, Longleaf Pine, Sand Hill, Sand Pine, and

Xeric Oak Scrub. These provisions shall apply to all land use amendments.

OBJECTIVE 1.3

Where listed species are found, the City shall maintain necessary habitat for the protection of such species, either through preservation, mitigation or relocation.

Policy 1.3.1

Development habitat studies based on the evaluation criteria regulated in the Land Development Code shall be required for all developments of more than 10 acres.

Policy 1.3.2

If the habitat survey indicates the presence of listed species, the Florida Fish & Wildlife Conservation Commission (FWC) will be notified and allowed 30 days to submit comments or recommendations.

Policy 1.3.3

The City shall coordinate with the FWC on an as needed basis for technical assistance to ensure protection regulations for listed species and habitats are concurrent with updated laws.

Policy 1.3.4

The City shall require development which destroys native trees to replace cleared trees with similar species and maturity levels on a one-to-one ratio within practical limitations, for all areas of the City.

Policy 1.3.5

The City shall require development to preserve native vegetation and retain tree canopy coverage as regulated in the Land Development Code.

OBJECTIVE 1.4

The natural functions of the 100-year floodplain will be protected in order to ensure the natural flood storage and carrying capacity.

Policy 1.4.1

The City shall continue to require compensating storage for all flood water displaced by development below the elevation of the base 100-year flood.

Policy 1.4.2

The City shall require where feasible the use of floodplains as conservation, open space and recreation in order to preserve the natural flood plain and vegetation.

Policy 1.4.3
The City shall prohibit the clearing of native vegetation within the 100-year floodplain in accordance with the Land Development Code.

OBJECTIVE 1.5
The City shall encourage practices that improve air quality which meet or exceed minimum air quality standards as set forth in the Clean Air Act and Title 40 of the Code of Federal Regulation.

Policy 1.5.1
The City shall require the planting of native species of trees and vegetation to help reduce the amount of carbon dioxide in the air.

Policy 1.5.2
The City shall continue to include within the Land Development Code requirements which incorporate innovative multi-modal transportation systems and new vehicle technologies to reduce vehicle emissions.

Policy 1.5.3
The City shall encourage citizens and local businesses to utilize green building features and practices that support sustainability and resiliency through Leadership in Energy and Environmental Design (LEED) certification or a comparable green building rating system.

OBJECTIVE 1.6
The City shall regulate the operation, maintenance, and reclamation of mining facilities to ensure protection of natural resources.

Policy 1.6.1
Mining shall be defined as the removal of resources from their location, so as to make them more suitable for commercial, industrial, or construction use, but not including excavation for the sole purpose of aiding on-site farming or on-site construction, or the process of prospecting or investigating for resources. Mining shall be permitted, when complete reclamation is ensured, subject to regulation by the Land Development Code.

Policy 1.6.2
Peat mining shall be permitted only if it shall be beneficial to the lake or wetland ecosystem subject to regulation by the Land Development Code.

Policy 1.6.3
Any party wishing to extract mineral resources shall be required to submit a reclamation plan and proof of financial responsibility. Reclamation plans must be determined to be consistent with the reclamation standards outlined in F.A.C..

OBJECTIVE 1.7
The City shall maintain the Wekiva River Hydrologic Basin standards and design criteria as detailed in Florida Administrative Code (F.A.C.) within the Wekiva River Protection Area.

Policy 1.7.1
The alteration or filling of wetlands within the Wekiva River Protection Area shall be prohibited.

Policy 1.7.2
The City shall permit clustering of residential development within the Wekiva River Protection Area if it promotes protection of environmentally sensitive areas and ensures that residential development in the aggregate is rural in density and character.

Policy 1.7.3
The subdivisions of land which interfere with the required setbacks of protection zones pursuant to Section 373.415, F.S. shall be prohibited.

Policy 1.7.4
Lands within the Wekiva River Protection Area shall be evaluated for transfer of development right eligibility as needed to preserve and prevent development in these environmentally sensitive lands.

Policy 1.7.5
Septic tanks shall be prohibited within the Wekiva River Protection Area.

Policy 1.7.6
The density and intensity of permitted development should be clustered or concentrated on those portions of the parcel or parcels which are furthest from the surface waters and wetlands of the Wekiva River system.

Policy 1.7.7
The clearing of native vegetation within the 100-year flood plain shall be prohibited within the Wekiva River Protection Area.

Policy 1.7.8
The City shall ensure the preservation of sufficient habitat for feeding, nesting, roosting, and resting so as to maintain viable populations of species designated pursuant to rules 39-27.003, 39-27.004, and 39-27.005, Florida Administrative Code, within the Wekiva River Protection Area.

OBJECTIVE 1.8
The City shall protect the most sensitive resources within high recharge areas and establish programs to educate the public about how to protect them.

Policy 1.8.1
The City will utilize, when possible, acquisition funding programs such as the Florida Forever Program, Florida Community Trust, Rural and Family Lands Protection Program and others to acquire fee simple or less-than-fee ownership through conservation easements on land within the delineated high recharge area that has been identified as a critical or sensitive resource.

Policy 1.8.2
The City will utilize, when feasible, innovative approaches to protect sensitive resources, such as the transfer of development rights, performance zoning, open space zoning, on-site density transfer and other techniques to maximize the establishment of open space areas.

Policy 1.8.3
All new development proposals which are 10 acres or greater in site area shall be required to include a habitat analysis on the sensitive natural habitats that include Longleaf Pine, Sand Hill, Sand Pine, and Xeric Oak Scrub.

Policy 1.8.4
The City shall conserve and protect Florida's ground and surface waters and natural resources by implementing guidelines for managing existing and future lawns and landscapes at all City facilities following the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Florida-Friendly Landscaping, FDEP, and SJRWMD principles and Best Management Practices.

Policy 1.8.5
The City shall require that all golf courses implement FDEP Best Management Practices (BMPs) for the Enhancement of Environmental Quality on Golf Courses for management, maintenance, and environmental monitoring. All new golf courses shall follow FDEP BMPs for the Enhancement of Environmental Quality on Golf Courses for siting, design, and construction.

Policy 1.8.6

The City shall coordinate with the SJRWMD, Orange County, and other appropriate agencies to develop and maintain programs to educate and encourage homeowners and private land owners to use best management practices to protect natural habitat and to protect water quality, especially on land within the mapped recharge areas of first magnitude springs.

Policy 1.8.7

The City shall make available to local residential, agricultural, and commercial land owners and developers, information related to Best Management Practices that minimize the use of water, fertilizers, herbicides and pesticides, and that reduce erosion.

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CONSERVATION ELEMENT

INTRODUCTION

The Conservation Element is designed to identify environmentally sensitive areas, areas which can support little or no urban development, and to provide development guidelines to protect these areas. This required element was prepared in accordance with the Community Planning Act, Chapter 163, Florida Statutes. The element addresses the conservation, use, and protection of natural resources in the area, including air, water, water recharge areas, wetlands, water wells, estuarine marshes, soils, beaches, shores, flood plains, rivers, bays, lakes, harbors, forests, fisheries and wildlife, marine habitat, minerals, and other natural and environmental resources, including factors that affect energy conservation. There are no known fisheries in the City and Apopka whichis inland; therefore, fisheries and marine habitats are not discussed in this element. The data collection for this element was based on the review of existing documentation.

INVENTORY OF NATURAL RESOURCES

SURFACE WATER

There are two major watersheds in Apopka which run along a high sandy ridge between the Ocklawaha River Basin to the west and the Middle St. Johns River Basin to the east. Each contains several sub-basins which are connected during floods (Map IE - 4). In addition, numerous local, landlocked drainage basins exist that are not connected by surface flow with any of the major basins. Each local basin contains its own small lake, depression or sink-hole. Many boundaries between local basins have been altered by development; however, most basins have retained their identity. The location of the drainage basins is detailed in the Stormwater Management Sub-Element of the Infrastructure Element.

There are approximately 100 small lakes located completely or partially within the City limits of Apopka. These lakes cover a surface area of approximately 1,036 acres within the City limits and are depressional and primarily fed by surface water runoff. The lakes within the City are

relatively small and shallow.

The federal Clean Water Act provides the statutory basis for state water quality standards programs. Florida's surface water quality is regulated by the Florida Department of Environmental Protection (FDEP) standards system published in the Florida Administrative Code (F.A.C.). If the FDEP, St. Johns River Water Management District (SJRWMD), or the Orange County Environmental Protection Department should determine surface water quality within Apopka to be below applicable standards, the City cooperates with these agencies to develop management and restoration plans.

GROUNDWATER

The Floridan aquifer is the primary source of potable water for Apopka. Principally, the water in the aquifer is derived from rainfall, which averages 52.8 inches annually. This aquifer has a thickness of up to 2,000 feet in some areas and occurs 100 to 200 feet below the land surface. A secondary surficial aquifer is also present at depths of 60 to 150 feet below the land surface with the primary function of storing water before its infiltration into the Floridan aquifer.

Groundwater recharge occurs as rain percolates into the ground and through the semi-permeable limestone confining beds. Soils, slope, and land use all affect the degree of aquifer recharge. Course, sandy soils promote percolation of water to the aquifer, while clay-like soils inhibit percolation. The soils in the Apopka area are primarily sandy and well drained. Land uses that allow for large amounts of impervious surfaces impede the percolation of water to the aquifer. The Natural Groundwater Aquifer Recharge Sub-Element of the Infrastructure Element further discusses recharge conditions within the City.

WETLANDS

There are approximately 844.5 acres of wetlands within the City of Apopka (Map CE-1). These wetlands are isolated and are scattered throughout the City. The SJRWMD has regulatory authority over isolated wetlands. SJRWMD designates wetlands through the use of three criteria: hydrologic conditions, a vegetative index, and a soil index. Hydrological conditions are the most accurate indicators of wetland areas; however, this information is usually not readily available. The Soil Conservation Service has designated certain soils to be hydric. Hydric soils support wetland vegetation. The SJRWMD has compiled a vegetative index that includes plant species indicative of wetland habitats.

The wetland system in the northwest area of the City includes Lake Merril, Lake Wolf, and Lake Cora. The remaining wetlands and the surrounding uplands have remained in their natural state. In this northwest area, the wetland has been identified as a freshwater marsh and is adjacent to a variety of upland communities including grasslands, scrub, and hardwood forests.

The wetlands in the southwest portion of the City are associated with Marshall Lake, Upper and

Lower Lake Doe, and Lake Witherington.The development located in the area of these wetlands is strictly residential; with the completion of the SR 429 Western Expressway development pressures in this area are increasing. Thelarger southern portion of this wetland has undisturbed uplands to both the east and west. This wetland system would make an excellent managed conservation area, as it offers both marsh and forested wetland varieties and is adjoined by grass and scrub land type uplands as well as a hardwood forest.

COMMERCIALLY VALUABLE MINERALS

Peat is the only commercially valuable mineral found within the City of Apopka. There are no active peat mining operations within the City.

FLOODPLAINS

Floodplains may be divided into floodways and special flood hazard areas. The floodway portion of the floodplain is the most critical area, as this cross-sectional area carries the flood flows. Undisturbed floodplains are a valuable ecological resource and can provide a rich diversity of vegetation and wildlife. They also serve an important function in filtering stormwater runoff and Floridan aquifer recharge. When natural floodplains are maintained and managed as parks or open space, they provide recreational and wildlife habitat preservation opportunities. Apopka includes measures within its Land Development Code delineating criteria for the preservation of the natural floodplain.

Flood-prone areas are shown on Map CE-2. The City instituted a floodplain management program and became eligible to participate in the National Flood Insurance Program (NFIP) Community Rating System(CRS) in 1987. Under this program, residents in the City purchase flood insurance through the federal government and the City is eligible for federal disaster assistance. As participants in the NFIP CRS, the City is required to enforce 100-year floodplain elevations for new developments in identified special flood hazard areas. Should development be permitted in special flood hazard areas, regulations require compensating stormwater storage and finished floor elevations at least two feet above flood elevation.

SOILS

Soils provide several resource functions including drainage, stormwater filtration, water storage, aquifer recharge, ecologic service for wildlife, and ground stabilization. Soil types in the City are shown in Map CE-3 and detailed in the table below. Drainage class identifies the natural drainage conditions of the soil and refers to the frequency and duration of wet periods. Concrete corrosion indicates the susceptibility of concrete to corrosion when in contact with the soil. Steel corrosion indicates the susceptibility of uncoated steel to corrosion when in contact with the soil.

The predominant soil in Apopka is Candler, representing over half (51%) of the City's total

acreage. Candler soils consist of very deep, excessively drained, very rapidly to rapidly permeable soils on uplands often used for citrus crops and tame pasture. Native vegetation consists of oak and pine with a sparse understory. Their well-drained nature can be advantageous for construction, making them suitable for building foundations. However, their low water-holding capacity may require irrigation for landscaping in urban areas. Conservation efforts in areas with Candler soils should focus on preserving and restoring native vegetation. These soils may be susceptible to erosion, so erosion control measures are essential to prevent soil degradation and protect water quality. Tavares soil represents nearly a quarter (24%) of the City's total acreage and is very deep and moderately well drained. A few areas use it for citrus, corn, vegetable crops, watermelon, and improved pasture. In most places the natural vegetation consists of pine with a few scattered oaks and an undercover of wiregrass. Tavares soils can be suitable for development, provided proper drainage and water management systems are in place. They may require irrigation for landscaping due to their well-drained nature.

Small areas of more poorly drained, hydric soils representing 6% of the total acreage are found in the flat areas scattered throughout Apopka, usually bordering lakes and ponds. Hydric soils are often found in wetlands and are indicative of areas prone to flooding. Conservation efforts can protect these ecosystems to preserve biodiversity and support threatened and endangered species.

Table CE - 1 Apopka Soil Types

Apopka Soil Types						
Soil Type	**Hydric**	**Drainage Class**	**Corrosive Concrete**	**Corrosive Steel**	**Category Frequency**	**Total Acreage**
Archbold	No	Moderately well drained	High	Low	15	326.6
Arents	No	Somewhat poorly drained	High	Low	8	154.2
Basinger	Yes	Very poorly drained	High	Moderate	95	900.6
Candler	No	Excessively drained	High	Low	196	10,025.9
Candler	No	Well drained	High	Low	109	1,622.2
Canova	Yes	Very poorly drained	Low	High	2	14.6
Emeralda	Yes	Poorly drained	Moderate	High	1	6.1
Felda	Yes	Poorly drained	Moderate	High	1	14.1
Florahome	No	Moderately well drained	High	Moderate	23	289.3
Floridana	Yes	Very poorly drained	Low	High	1	13.1
Floridana	Yes	Very poorly drained	Low	Moderate	1	38.6

Apopka Soil Types						
Soil Type	**Hydric**	**Drainage Class**	**Corrosive Concrete**	**Corrosive Steel**	**Category Frequency**	**Total Acreage**
Gator	Yes	Very poorly drained	High	High	1	0.0
Hontoon	Yes	Very poorly drained		High	1	3.5
Immokalee	No	Poorly drained	High	High	9	85.1
Lake	No	Excessively drained	High	Low	14	792.0
Lochloosa	No	Somewhat poorly drained	Moderate	High	2	15.9
Malabar	Yes	Poorly drained	Moderate	High	1	46.1
Millhopper	No	Moderately well drained	High	Low	2	46.8
Okeelanta	Yes	Very poorly drained	Moderate	High	5	34.0
Ona	No	Poorly drained	High	High	6	21.6
Pits	Unranked				9	9.1
Placid	Yes	Very poorly drained	High	Moderate	3	2.5
Pomello	No	Moderately well drained	High	Moderate	25	226.4
Samsula	Yes	Very poorly drained	High	High	7	43.8
Sanibel	Yes	Very poorly drained	Moderate	High	19	240.0
Seffner	No	Somewhat poorly drained	Moderate	High	16	101.2
Smyrna	No	Poorly drained	High	High	9	310.7
St. Johns	No	Poorly drained	High	High	13	71.5
St. Lucie	No	Excessively drained	Moderate	Low	25	341.1
Tavares	No	Moderately well drained	High	Low	145	5,419.4
Terra Ceia	Yes	Very poorly drained	Moderate	High	2	10.6
Urban land	Unranked				3	173.4
Water	Unranked				107	820.4
Zolfo	No	Somewhat poorly drained	High	Moderate	17	593.1
				Totals	**893**	**22,813.2**

Source: FDEP Florida Soil Survey Geographic Database (SSURGO), Data Updated: August 2017
Date Retrieved: September 2023

VEGETATIVE AND WILDLIFE COMMUNITIES

Native vegetation that exists on less urban or undeveloped lands within Apopka can be classified into two broad categories -- uplands and wetlands. The two categories are further classified into several sub-categories. The uplands can be classified into forested uplands and non-forested uplands. Wetlands can be classified into mixed wetland hardwoods, cypress, wetland forested mixed, freshwater marshes, wet prairies, and emergent aquatic vegetation.

There is currently no data on the location of specific plant and animal species within Apopka as the City has not conducted a study to determine whether species that are endangered, threatened, or species of special concern are located within its limits. A habitat survey is required for all development applications of ten acres or more. The survey requires use of Florida Fish and Wildlife Conservation Commission (FWC) methodology and must include listings of all potential listed species, population estimates, and occupied habitat boundaries.

The Florida Cooperative Land Cover Map (CLC) is a partnership between the FWC and Florida Natural Areas Inventory (FNAI) to develop ecologically-based statewide land cover from existing sources. The dataset is updated annually with FWC maintaining the Cooperative Land Cover map and FNAI providing guidance for the classification of natural communities and site-specific data sources based on their mapping and revision efforts. This provides a framework for understanding the distribution patterns of land cover and serves as a tool for managing and conserving Florida's natural resources. Map CE-4 shows the general ranges of vegetative communities and land cover types. The table below summarizes acreages for Apopka's 66 vegetative and land cover types.

Table CE - 2 Apopka Vegetative and Land Cover Types

Apopka Vegetative and Land Cover Types		
Florida Land Cover Category	**Category Frequency**	**Total Acreage**
Artificial Impoundment/Reservoir	67	169.7
Basin Marsh	5	103.0
Cemeteries	3	27.3
Citrus	20	433.3
Commercial and Services	157	772.0
Communication	4	20.3
Community rec. facilities	3	160.8
Coniferous Plantations	47	1,527.5
Cultural - Terrestrial	1	6.6
Cypress	1	2.7
Depression Marsh	5	7.4
Ditch/Artificial Intermittent Stream	1	1.1
Extractive	24	298.1

Apopka Vegetative and Land Cover Types		
Florida Land Cover Category	**Category Frequency**	**Total Acreage**
Feeding Operations	1	13.8
Field Crops	11	151.7
Flatwoods/Prairie/Marsh Lake	6	29.1
Floating/Emergent Aquatic Vegetation	36	94.5
Golf courses	18	482.3
High Intensity Urban	24	83.4
Hydric Hammock	2	14.2
Improved Pasture	58	1,417.0
Industrial	30	415.2
Industrial Cooling Pond	3	9.8
Institutional	58	425.3
Lacustrine	47	341.4
Low Intensity Urban	11	67.4
Marshes	73	433.3
Mesic Flatwoods	6	27.3
Mesic Hammock	11	75.3
Mixed Hardwood-Coniferous	140	1,053.2
Mixed Hardwood-Coniferous Swamps	44	219.2
Mixed Scrub-Shrub Wetland	73	256.6
Mixed Wetland Hardwoods	10	35.5
Orchards/Groves	1	9.0
Ornamentals	111	1,569.3
Parks and Zoos	3	21.0
Residential, High Density > 5 DU/AC	197	1,044.3
Residential, Low Density	185	546.1
Residential, Med. Density - 2-5 DU/AC	420	2,971.6
Rural Open	93	1,513.0
Rural Open Forested	4	8.7
Rural Structures	85	476.3
Sandhill	5	207.1
Sandhill Lake	4	125.0
Scrub	3	10.4
Sewage Treatment Pond	2	76.1
Shrub and Brushland	12	44.8
Sinkhole Lake	1	1.1
Specialty Farms	16	431.7
Spoil Area	2	19.2
Stormwater Treatment Areas	100	281.0

Apopka Vegetative and Land Cover Types		
Florida Land Cover Category	**Category Frequency**	**Total Acreage**
Strip Mines	1	0.9
Successional Hardwood Forest	2	14.1
Transportation	15	2,373.7
Tree Nurseries	1	10.0
Unimproved/Woodland Pasture	37	810.1
Upland Coniferous	1	0.1
Upland Hardwood Forest	29	299.4
Urban Open Forested	4	39.4
Urban Open Land	44	227.3
Urban Open Pine	1	1.5
Utilities	17	259.5
Vineyard and Nurseries	2	5.6
Wet Flatwoods	1	3.4
Wet Prairie	69	179.6
Xeric Hammock	4	57.5
Totals	**2,472**	**22,813.3**

Source: FWC Florida Cooperative Land Cover V3.6, Published: November 2022
Date Retrieved: September 2023

UPLANDS COMMUNITIES

Apopka has a wide variety of undisturbed uplands. These uplands serve as wildlife habitats and may act as buffers surrounding wetlands. They may also provide habitats for endangered or threatened species of animals and plants. Upland communities that provide these wetland buffers and habitats for dwindling species are more susceptible to development pressures than wetlands, as they are not given the special protection that is given to wetlands by state and federal agencies. The following is a description of upland communities found in Apopka as identified in the Florida Land Cover Classification System.

Hardwood Forested Uplands

This habitat, dominated by an upper layer of hardwood trees, thrives in various conditions from sloping to level terrain. Tree species encompass laurel oak, live oak, red maple, and more. Shrubs and plants like American beautyberry, wax myrtle, and saw palmetto are also present. Wildlife includes southern flying squirrels, white-tailed deer, indigo snakes, box turtles, raccoons, skunks, bobcats, and more.

High Pine and Scrub

This community thrives in well-drained sands with a level to sloping land contour. It's fire-

dependent, burning every 20 to 40 years. Many endangered species inhabit this warm, dry area, including the Florida scrub jay, sand skink, and Florida mouse. The trees here are mainly sand pines with an understory of myrtle oak, chapman oak, and sand live oak. Other plants comprise dwarf huckleberry, gopher apple, prickly pear, and various grasses. Wildlife includes Florida scrub jays, sand skinks, gopher tortoises, fox squirrels, black racers, and deer.

Pine Flatwood and Dry Prairie

These upland forests are dominated by Longleaf or Slash Pine and are typically found on level ground. Surface water is present during the rainy season (June - September), while the soils remain fairly dry at other times. These areas feature scattered pines with grasses and saw palmetto in the understory, often encircling small wetlands. Fire plays a vital role here, preventing the transition to hardwood communities. Tree species include longleaf and slash pines. Other plants comprise saw palmetto, wax myrtle, ground blueberry, gallberry, and various grasses. Wildlife includes gray squirrels, rabbits, raccoons, snakes, and woodpeckers.

Mixed Hardwood-Coniferous

This community contains a mix of hardwood and coniferous trees where neither is dominant.

Shrub and Brushland

This community includes a variety of situations where natural upland community types have been recently disturbed through clear-cutting commercial pinelands, land clearing, or fire, and are recovering through natural successional processes. Various shrubs, tree saplings, and lesser amounts of grasses and herbs dominate the community. Common species include wax myrtle, sumac, elderberry, saw palmetto, blackberry, gallberry, along with oak, pine and other tree seedlings or saplings. Wildlife includes cotton rats, red-tailed hawks, yellow rat snakes, Bachman's sparrows, and Florida mice.

WETLANDS COMMUNITIES

Wetlands provide a habitat for many varieties of plants and animals including several threatened and endangered species. These areas are characterized by their unique hydrology, with water levels that fluctuate seasonally and often have saturated or submerged soils. Wetlands also aid in the protection of water quality. Pollutants in stormwaterare often washed into wetlands, which can trap nutrients before thewater is discharged into lakes and streams. Wetlands store water during floods and then slowly release it during dry periods. The vegetation in wetlands can also help prevent erosion along surfacewater shorelines. Vegetative species include cypress trees, cattails and pickerelweed providing a habitat for alligators, wading birds (great blue heron, egrets, wood storks), amphibians, reptiles, and fish.

ENDANGERED SPECIES, THREATENED SPECIES, AND SPECIES OF SPECIAL CONCERN

The City has a number of undisturbed uplands and wetlands suitable for listed species of flora and fauna; however, the City has not conducted a study to determine whether listed species are located within its limits. Coordination with the FWC, SJRWMD, and the Florida Department of Forestry are required to determine precise data. The FNAI maintains Florida's Natural Heritage database documenting the location and ecological status of the state's rare plant and animal species. Orange County's endangered species, threatened species, and species of special concern are potentially located in Apopka and are listed in Table CE - 1. In total, there are 56 listed plant and animal species in the Orange County. This list includes 39 plants and lichens, no invertebrates, and 17 vertebrates.

Threatened Species Left: Gopher Tortoise and Burrow (Source: FWC), Right: Eastern Indigo Snake (Source: Florida Museum, Todd Pierson) The indigo snake is commensal of the gopher tortoise with females often depositing their eggs in gopher tortoise burrows.

Table CE - 3 Florida Natural Area Inventory (FNAI) Listed Species, Orange County

Florida Natural Area Inventory (FNAI) Listed Species, Orange County			
Scientific Name	**Common Name**	**State Rank**	**State Status**
Plants and Lichens			
Asplenium verecundum	Modest spleenwort	S1	E
Bonamia grandiflora	Florida bonamia	S3	E
Calopogon multiflorus	Many-flowered grass-pink	S2S3	T
Carex chapmannii	Chapman's sedge	S3	T
Centrosema arenicola	Sand butterfly pea	S2	E
Cheiroglossa palmata	Hand fern	S3	E
Chionanthus pygmaeus	Pygmy fringe tree	S2S3	E
Coelorachis tuberculosa	Piedmont jointgrass	S3	T
Coleataenia abscissa	Cutthroat grass	S3	E
Deeringothamnus pulchellus	Beautiful pawpaw	S2	E
Eriogonum longifolium var. gnaphalifolium	Scrub buckwheat	S3	E
Glandularia tampensis	Tampa vervain	S2	E
Illicium parviflorum	Star anise	S2	E
Lechea cernua	Nodding pinweed	S3	T
Lechea divaricata	Pine pinweed	S2	E
Lupinus aridorum	Scrub lupine	S1	E
Lythrum flagellare	Lowland loosestrife	S3	E
Matelea floridana	Florida spiny-pod	S2	E
Monotropa hypopithys	Pinesap	S1	E
Najas filifolia	Narrowleaf Naiad	S2	T
Nemastylis floridana	Celestial lily	S2	E
Nolina atopocarpa	Florida beargrass	S3	T
Nolina brittoniana	Britton's beargrass	S3	E
Ophioglossum palmatum	Hand fern	S2	E
Paronychia chartacea var. chartacea	Paper-like nailwort	S3	E
Pecluma plumula	Plume polypody	S2	E
Pecluma ptilota var. bourgeauana	Comb polypody	S2	E
Platanthera integra	Yellow fringeless orchid	S3	E
Polygonella myriophylla	Small's jointweed	S3	E
Prunus geniculata	Scrub plum	S3	E
Pteroglossaspis ecristata	Giant orchid	S2	T
Salix floridana	Florida willow	S2S3	E
Schizachyrium niveum	Scrub bluestem	S1S2	E

Florida Natural Area Inventory (FNAI) Listed Species, Orange County			
Scientific Name	**Common Name**	**State Rank**	**State Status**
Sideroxylon alachuense	Silver buckthorn	S1	E
Sideroxylon lycioides	Buckthorn	S2	E
Spiranthes brevilabris	Small ladies'-tresses	S1	E
Stylisma abdita	Scrub stylisma	S3	E
Warea amplexifolia	Clasping warea	S1	E
Zephyranthes simpsonii	Redmargin zephyrlily	S2S3	T
Invertebrates			
Vertebrates (Fishes)			
Pteronotropis welaka	Bluenose Shiner	S3S4	ST
Vertebrates (Amphibians)			
Notophthalmus perstriatus	Striped Newt	S2	C
Vertebrates (Reptiles)			
Alligator mississippiensis	American Alligator	S4	FT(S/A)
Drymarchon couperi	Eastern Indigo Snake	S2?	FT
Gopherus polyphemus	Gopher Tortoise	S3	ST
Lampropeltis extenuata	Short-tailed Snake	S3	ST
Pituophis melanoleucus	Pine Snake	S3	ST
Plestiodon reynoldsi	Sand Skink	S3	FT
Vertebrates (Birds)			
Antigone canadensis pratensis	Florida Sandhill Crane	S2	ST
Aphelocoma coerulescens	Florida Scrub-Jay	S1S2	FT
Athene cunicularia floridana	Florida Burrowing Owl	S3	ST
Caracara cheriway	Crested Caracara	S2	FT
Dryobates borealis	Red-cockaded Woodpecker	S2	FE
Egretta caerulea	Little Blue Heron	S4	ST
Egretta tricolor	Tricolored Heron	S4	ST
Mycteria americana	Wood Stork	S2	FT
Platalea ajaja	Roseate Spoonbill	S2	ST

Source: FNAI rare species tracking https://www.fnai.org/species-communities/tracking-main

Date Retrieved: August 2023

Notes:

Plants

E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.

Florida Natural Area Inventory (FNAI) Listed Species, Orange County			
Scientific Name	**Common Name**	**State Rank**	**State Status**

T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.

Animals

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service

FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service

FT(S/A) = Federal Threatened due to similarity of appearance

ST = State population listed as Threatened by the FWC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

State Rank

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

S4 = Apparently secure in Florida (may be rare in parts of range).

AIR

The Air Quality Index (AQI) focuses on health effects that may be experienced within a few hours or days after breathing polluted air and relates all of the monitored pollutants to a single value. A description of AQI categories ranging from good to very unhealthy is shown in *Table CE - 2*. The Air Quality Index monitoring report for Orange County from 2018-2022 is listed in *Table CE - 3*. While there is no specific data available relating to air quality in the City of Apopka, the air quality in Orange County is generally good with at most a couple of days in 2018 in the unhealthy range.

Several air pollutants have been identified as causing health effects at concentrations above thresholds established at levels known to be safe. U.S. Environmental Protection Agency (EPA) measurements for carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), and particle pollution are shown in *Table CE - 3*. Particle pollution refers to a mixture of solid particles and liquid droplets found in the air made up of acids, organic chemicals, metals, soil or dust particles, and allergens. Small particles pose the greatest threat such as those found in smoke and haze that are less than 2.5 micrometers. Additionally, sulfur dioxide, nitrogen oxides, and volatile organic compounds interact with compounds in the air to form fine particles. Coarse particles ranging from 2.5 to 10 micrometers are generated by vehicles traveling on unpaved

roads, materials handling, crushing and grinding operations, and windblown dust. Fine and coarse particles are associated with asthma, heart and lung disease, reduced visibility, and negative impacts on vegetation and ecosystems.

In *Table CE - 3*, a daily index value was calculated for each of the air pollutants measured. The highest of the pollutant values is the AQI value, and the pollutant responsible for the highest index value is the "Main Pollutant." The row values give the number of days each pollutant measured was the main pollutant where a blank cell indicates a pollutant not measured in the county.

Table CE - 4 Air Quality Guide

Air Quality Guide for Ozone and Particle Pollution					
Air Quality Category	**Health Impacts**	**Air Quality Index**	**Ozone Concentration (ppm) [1]**	**Ozone Concentration (ppb) [2]**	**Particle Pollution Concentration (µg/m3) [3]**
Good	No health impacts are expected when air quality is in this range.	0 to 50	0.0 to 0.054	0 to 54	0.0 to 12.0
Moderate	**Ozone:** Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors. **Particle Pollution:** Unusually sensitive people should consider reducing prolonged or heavy exertion.	51 to 100	0.055 to 0.070	55 to 70	12.1 to 35.4
Unhealthy for Sensitive Groups	**Ozone:** Active children and adults, and people with respiratory disease should limit prolonged outdoor exertion. **Particle Pollution:** People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion.	101 to 150	0.071 to 0.085	71 to 85	35.5 to 55.4
Unhealthy	**Ozone:** Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion: everyone else, especially children, should limit outdoor exertion. **Particle Pollution:** People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion.	151 to 200	0.086 to 0.105	86 to 105	55.5 to 150.4
Very Unhealthy	**Ozone:** Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion: everyone else, especially children, should limit outdoor exertion. **Particle Pollution:** People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.	201 to 300	0.106 to 0.200	106 to 200	150.5 to 250.4

Source: FDEP AQI (https://floridadep.gov/air/air-monitoring/content/air-quality-index-aqi)

Date Retrieved: February 2022

Notes: 1 - 8 hour average in parts per million, 2 - 8 hour average in parts per billion, 3 - 24 hour daily average

Table CE - 5 Air Quality Index (AQI) Levels for Orange County (2018-2022)

Orange County Air Quality Index (AQI) Levels (2018-2022)					
AQI Level	Year and Number of Days				
	2018	2019	2020	2021	2022
Good	321	321	326	331	329
Moderate	42	39	40	34	36
Unhealthy for Sensitive Groups	1				
Unhealthy	1				
# Days with AQI	365	360	366	365	365
AQI Max	151	93	93	87	97
AQI Median	36	36	36	35	38
# Days Carbon Monoxide (CO)		1			
# Days Nitrogen Dioxide (NO2)					
# Days Ozone (O3)	274	290	256	287	331
# Days Fine Particle Pollution (PM2.5)	91	69	109	71	34
# Days Coarse Particle Pollution (PM10)			1	7	

Source: U.S. EPA AQI Report (https://www.epa.gov/outdoor-air-quality-data/air-quality-index-report)

Date Retrieved: August 2023

ANALYSIS OF NATURAL RESOURCES

This section analyzes the condition of natural resources in the City and how the management of these resources relates to sustainability and community growth.

SURFACE WATER

Specific data on surface water quality is not available for lakes within Apopka. However, it is known that pesticide use, stormwater runoff, and siltation due to soil erosion contribute to the degradation of the City's surface waters. Sources of surface water pollution are divided into two categories and are described in the following sections.

Point Source Discharges

Point sources generally have a human-made discharge point such as a pipe or channel and are discharged into water bodies at discrete points. A point source permitting program has been implemented for domestic and industrial wastewater facilities that discharge either to surface or ground water. The FDEP maintains a listing of these permitted point source pollution discharges to surface waters. This list allows maintenance of a complete inventory of all surface water pollution sources in and around the City of Apopka.

Non-point Source Discharges

Non-point pollution is generally associated with run-off water from the surface which carries sediment, organic material, nutrients and toxins into receiving waters. Non-point source pollution is difficult to monitor because of the diffuse and intermittent nature of discharges. The fact that most non-point pollution occurs during the first flush of rainfall following a storm event adds to the difficulty of non-point source monitoring.The non-point source discharges in the City of Apopka are from both urban and rural/agricultural land uses.

Soil erosion in the City is not considered a problem although wind and water erosion can occur throughout the area under severe storm occurrences. The most serious erosion problem occurs with unprotected soils on construction sites. Because land is often stripped of vegetation during development, the property becomes a target for theforces of wind and water. This can be alleviated through more sensitive land development measures including site assessment and planning, implementation of low impact development techniques, developer erosion control plans, retention of native vegetation, use of erosion control devices throughout construction, and establishment of permanent vegetation and erosion control measures after construction completion.

Surface Water Management Programs

Lake Apopka Basin

Lake Apopka's water quality restoration, managed by the SJRWMD, follows a two-pronged approach: "diet" and "exercise." The "diet" strategy involves curbing phosphorus inflow by purchasing farms along the north shore. The 1996 legislative directive led to a major improvement by reclaiming the marshy floodplain, which had been converted to farms in the 1940s. These farms contributed to phosphorus influx, triggering harmful algal blooms and disrupting the bass fishery.

Critical to reducing phosphorus from the North Shore was restoring wetlands to decrease water pumped to the lake. All discharges are now phosphorus-treated. The 2003 Lake Apopka Stormwater Rule expanded this "diet" to the entire watershed.

The "exercise" component involves extracting existing lake phosphorus. This includes removing rough fish like gizzard shad and using a continuous marsh flow-way to filter algae and nutrients. This combined strategy led to remarkable water quality

improvement. From the late 1980s to 2021, phosphorus levels dropped by 71%, and water clarity rose by 55%. This resurgence of clarity revived submerged aquatic vegetation absent for half a century, reestablishing vital bass habitat.

Florida's Non-Point Source Management Program

The FDEP, SJRWMD, Department of Agriculture and Consumer Services, Department of Health, and local governments implement Florida's Non-Point Source Management Program. Non-point source pollution arises from activities like agriculture, urban runoff, construction, and natural processes. The program is designed to mitigate the adverse environmental impacts caused by pollutants, such as sediment, nutrients, pesticides, and bacteria, that are carried by rainfall and runoff into rivers, lakes, and groundwater. The goal of the program is to mitigate non-point source pollution from new land use activities and to reduce pollution from existing activities.

WETLAND AND UPLAND HABITATS

One of the most important aspects of both wetland and upland communities is the wildlife they support. Of special concern arewildlife species designated as endangered or threatened by the FWC. When portions of ecological communities are altered, vegetative links between wildlife areas are often destroyed. The destruction of these links, or wildlife corridors, is detrimentalto wildlife as movement is often needed for feeding and breeding purposes, as well as a means for evacuation from danger. Because these vegetative communities often cross jurisdictional lines, development approvals in environmentally sensitive areas should be coordinated with all permitting agencies and surrounding jurisdictions.

Orange County has identified lands in the northwest section of the Apopka planning area that could be significant conservation lands and which merit protection (Orange County CARL Committee Study, July 1991). An evaluation matrix was used to prioritize land suitable for acquisition by Orange County. Each site was scored based on the ranking criteria for several parameters. In addition, each parameter was assigned a weighting factor indicating the relative importance of each parameter in the overall ranking system.

Wild beasts and birds are by right not the property of the people who are alive today, but the property of unknown generations, whose belongings we have no right to squander.
Theodore Roosevelt

The City has identified upland and wetland vegetative communities within its municipal boundaries and has a general idea of what species may be present in these communities; however, this information is somewhat generalized and is not site-specific to Apopka. Recognizing that all wetlands are environmentally-sensitive areas, the City and has assigned a conservation land use designation to all existing wetlands within the City limits.

The City maintains the quality and quantity of wetlands in its jurisdiction through the encouragement of techniques such as conservation easements and transfer of development rights. In addition, the City has included in its Land Development Code provisions for upland buffer zones for habitat protection and to provide foraging areas for wetland species. In order to protect endangered or threatened species and species of special concern, development proposals of 10 acres or more are required to submit a survey that identifies areas exhibiting the attributes which are indicative of sites that should be able to sustain identified species.

The criteria for ranking the habitats is based on the Orange County Endangered, Threatened and Species of Special Concern Habitat Evaluation Criteria, which applies a numerical system assigned to identify the degree of each characteristic present at a site (*Table CE - 6*). Where an endangered or threatened species or species of special concern is present and the site achieves a high enough rating of 169 or higher, the City requires preservation of the specific areas that are large enough to sustain a viable population of the identified species. If the site rates less than 169; and endangered, threatened or species of special concern are present,mitigation measures or relocation of the identified species is permitted. The City will work with the FWC to develop regulations that will identify all measures necessary to ensure the habitat will sustain a viable population for any listed species which may be found in the Apopka ecosystem.

Table CE - 6 Endangered, Threatened, and Species of Special Concern Habitat Evaluation Criteria

Endangered, Threatened, and Species of Special Concern Habitat Evaluation Criteria		
Unit Values	**Rank**	**Category**
Vegetative Communities		
15	1	Community not rare, sensitive, threatened, or endangered and not contain or likely contain threatened or endangered species.
30	2	Community not rare, sensitive, threatened, or endangered but contains or likely contains listed plant species.
45	3	Community rare, sensitive, threatened, or endangered and not contain or likely contain threatened or endangered species.
60	4	Community rare, sensitive, threatened, or endangered and contains or likely contains listed plant species.
Animal Species		
20	1	Habitat contains or is likely to contain no listed species.
40	2	Habitat contains or is likely to contain species of special concern.
60	3	Habitat contains or is likely to contain threatened and/or endangered species.
Manageability Feasibility/Potential		

Endangered, Threatened, and Species of Special Concern Habitat Evaluation Criteria		
Unit Values	**Rank**	**Category**
6	1	Site could be managed properly, but moderate management problems would exist.
12	2	Site would have minimal management constraints.
Ecological Viability		
16	1	Low potential for viability of featured attribute(s).
32	2	Moderate potential for viability of featured attribute(s).
48	3	High potential for viability of featured attribute(s).
Adjacency to Existing Publicly Owned Conservation Lands		
0	0	Site nonadjacent.
36	1	Site adjacent.
Historical/Archaeological Value		
0	0	Site contains no historic or archaeological sites.
30	1	Site contains historic or archaeological sites.
60	2	Site contains historic, archaeological sites; moderate to high significance.
Aquifer Recharge Potential		
30	1	Aquifer recharge potential; moderate (soils moderately well drained).
60	2	Aquifer recharge potential; high (soils excessively well drained).
Degree of Disturbance		
8	1	Site highly disturbed.
16	2	Site moderately disturbed.
24	3	Site relatively undisturbed.
Wildlife Corridor Potential		
0	0	Site not within or adjacent to a wildlife corridor.
30	1	Site within or adjacent to a wildlife corridor.
60	2	Site a vital component of an identified wildlife corridor.

Source: Orange County Endangered, Threatened and Species of Special Concern Habitat Evaluation Criteria
Date Retrieved: 2009

USE OF NATURAL RESOURCES

Commercial Use

Mining for peat is the only commercial use of natural resources within the City of Apopka. There are no other known commercial uses of surface water or vegetative communities within the City. The FDEP regulates the reclamation requirements for mining through Chapter 62C-39, F.A.C., and the City requires that these standards be met.

Approval for peat excavation is given if a complete environmental assessment indicates that the excavation will benefit the lake or wetland ecosystem. A reclamation plan is required prior to approval of excavation and must meet standards and guidelines for reclamation, evaluation, monitoring, maintenance, and performance detailed in the Land Development Code. The only peat mine in the City was permitted under the Orange County Conservation Ordinance after it was determined that the wetland was degenerating. The mining company restored the wetland.

Recreational Use

Currently, there are no managed recreational uses of lakes, vegetative communities, wildlife or freshwater fisheries within theCity of Apopka. Some of the lakes in the City are used for boating and fishing; however, there is no public boat ramp access to any ofthe lakes, which are all shallow. The City provides two waterfront parks – Dream Lake Park along the shore of 16-acre Dream Lake and the other at 15-acre Buchan Pond adjacent to the Apopka Recreation Complex. Both parks are used for passive recreation and shoreline fishing. According to the FWC, recreational fishing pressure within Apopka is minimal, with the greatest recreational effort occurring between January and March. Both of the waterbodies are listed as “not impaired” by the FDEP.

Conservation Use

The Future Land Use Map shows 332 acres of publicly-owned conservation areas in Apopka. Conservation land uses involve a range of activities and conditions aimed at safeguarding the environment and promoting sustainable land management practices. These designated areas serve various purposes, such as flood control, protection of the quality and quantity of groundwater or surface water, floodplain management, and the conservation of commercially or recreationally valuable fish and shellfish populations. Additionally, these areas are crucial for the protection of diverse vegetative communities and wildlife habitats, contributing to the overall health of ecosystems. By implementing and adhering to conservation land use strategies, the City can ensure the long-term health and integrity of the natural environment while also promoting the well-being of their residents and fostering a sense of environmental responsibility.

HAZARDOUS WASTE

Hazardous wastes are harmful substances that can be corrosive, toxic, flammable, or reactive, posing risks to public health and the environment. The City of Apopka doesn't have any known commercial hazardous waste generators. In Orange County, FDEP maintains records of hazardous materials, storage, and disposal methods for small industrial operations.

The City lacks hazardous waste disposal facilities. Orange County residents can drop off household hazardous waste at the county landfill or designated pick-up stations four times yearly. Recyclables are separated by a contractor after drop-off, and the remaining

hazardous waste is sent to an out-of-state disposal facility.

Regulation and compliance for hazardous waste in Apopka involve the FDEP Hazardous Waste Section and Orange County Environmental Protection Division. Orange County monitors small quantity and conditionally exempt generators, while FDEP focuses on large quantity generators.

AIR QUALITY

Orange County regulates air quality pursuant to the "Orange County Air Quality Rules" (Article III, Air Quality Control, Orange County Code). The article lists prohibited emissions and uses that require permits to be issued by the County's Environmental Protection Officer.

POTABLE WATER SOURCES AND DEMAND

When the well is dry, we'll know the worth of water. *Benjamin Franklin*

The evaluation of necessary systems to meet domestic and commercial consumptive demand is based upon the entire system's ability to meet peak hour flow. Presently, the ability of the City's system to meet the consumptive demand is controlled by the maximum permitted pumping capacity as limited by the City's Consumptive Use Permit (CUP) from the SJRWMD. The following is summary of the existing and future potable water demands. For further details, refer to the Potable Water Sub-Element within the Infrastructure Element.

Existing Demand Surpluses and Deficiencies

In 2022 the City's central water system withdrew 9.14 million gallons per day (mgd) on an average annual daily withdrawal basis.The system has a permitted allocation of 16.0 mgd average annual daily withdrawals. Therefore, there was surplus capacity available for additional connections in 2022. The City's central potable water system has adequate capacity to serve all of the existing residential and non-residential units that are currently connected as well as serve some additional new development.

Future Demand Capacity

Future water demand was forecast based on City population projections. In 2022, the central water system treated an average of 9.14 million gallons per day (mgd) of potable water. Based on 2022 water usage and the estimated central service area population of 64,168, potable waterusage was 142.4 gallons per capita per day (gpcd) for residential and non-residential uses. The maximum daily potable water demand for 2035 is projected to be 14.5 mgd. The City's Consumptive Use Permit (CUP) issued by the SJRWMD expires in 2031 and allocates an average of 16.0 mgd which is sufficient.

The Central Florida Water Initiative (CFWI) is a collaborative water supply planning effort among St. Johns River, South Florida, and Southwest Florida water management districts,

the FDEP, the Florida Department of Agriculture and Consumer Services (DACS) and water utilities, environmental groups, business organizations, agricultural communities and other stakeholders. The City will continue to coordinate updates of its Water Supply Facilities Work Plan with the CFWI to ensure that it is consistent with the most recently adopted CFWI Regional Water Supply Plan. Updates to the Work Plan will address water supply sources and related facilities necessary to meet the existing and projected demand within the City's utility service area.

Water Conservation

The City of Apopka employs a number of water conservation measures. The City's rate structures for both potable water and reclaimed water are increasing block rates designed to encourage wise use of water. Through the City's landscape ordinance, water conservation restrictions have been established for both potable and reclaimed water users. The ordinance includes the following provisions:

- No more than three-fourths inch of water may be applied per irrigation zone on each day that irrigation occurs, and in no event shall irrigation occur for more than one hour per irrigation zone on each day that irrigation occurs.
- Landscape irrigation is restricted to a maximum of two days per week. No irrigation is allowed between the hours of 10 a.m. and 4 p.m.
- Residential addresses ending with an odd number can only irrigate on Wednesdays and Saturdays.
- Residential addresses ending with an even number can only irrigate on Thursdays and Sundays.
- Nonresidential landscape irrigation may occur only on Tuesdays and Fridays.

A violation of the irrigation restrictions results in a $50 dollarfine after the first offense. Subsequent violations result in higher fines. After four offenses, the fine is $500 for each subsequent violation.

The City's Landscaping and Buffer Standards provides for the planting and maintenance of shrubs, trees, undercover, and other plants in appropriate locations, mitigating against erosion and sedimentation, reducing storm water runoff, and preserving and protecting the water table and surface waters. The ordinance includes water-wise irrigation practices and the application of Florida friendly landscape practices including the following:

- Encourages grass with a rating of medium or better (e.g., Bahia grass);
- Restricts the use of low drought tolerance turf grass (e.g., St. Augustine grass) to 50 percent of the green space area or one-half acre, whichever is smaller.
- Restricts high volume irrigation (>5 gpm/spray head) to 50 percent of the landscaped area or one-half acre whichever is smaller for single family residential properties.

- Restricts medium volume irrigation (0.5 to 5 gpm/spray head) to 25 percent of the landscaped area. The irrigation area can be increased to 75 percent if no high-volume irrigation is present.
- Allows 100 percent coverage for low volume (< 0.33 gpm/emitter) systems. The minimum coverage is 25 percent of the landscaped area.
- Encourages the use of soil amendments to improve water holding capacity of the soil;
- Encourages the use of mulches, where appropriate;
- Encourages the use of drought-tolerant plants;
- Encourages plants with similar water, soil, climate, sun, and light requirements shall be grouped together;
- Provides for preservation of existing plant communities and the re-establishment of native plant communities;
- Provides for the use of canopy trees to reduce transpiration rates of understory plant materials;
- Retention of stormwater runoff on site; and
- The use of pervious paving materials.
- Provides for financial incentives to encourage homeowners to upgrade their irrigation systems to conserve water.

The City provides water conservation education to the public through a Water Conservation Incentive Program. Through this program, City staff conducts irrigation retrofit education which includes site visits for irrigation system evaluation, door hangers when residents are operating their irrigation systems during unauthorized days and times as established by the landscape irrigation ordinance, issuance of rain sensors, outreach for seasonal water conservation practices (i.e., watering less during the winter months), landscape requirements (i.e., plant selection based on adaptability to existing site conditions), issuance of high water use notices with tips on conserving water and proper irrigation maintenance, and public outreach materials via social media, newsletters (print and digital), City website, and flyers.

Dual water system connections are required where available, offering use of reclaimed water. The owner of every lot or parcel of land within the City's utility service area developed for residential, public, commercial office, industrial, warehousing or multifamily use is required to connect to the reclaimed water distribution system, if available. Water for indoor uses and fire protection is provided by the potable water system. Water for outdoor uses is provided by the reclaimed water system, if available.

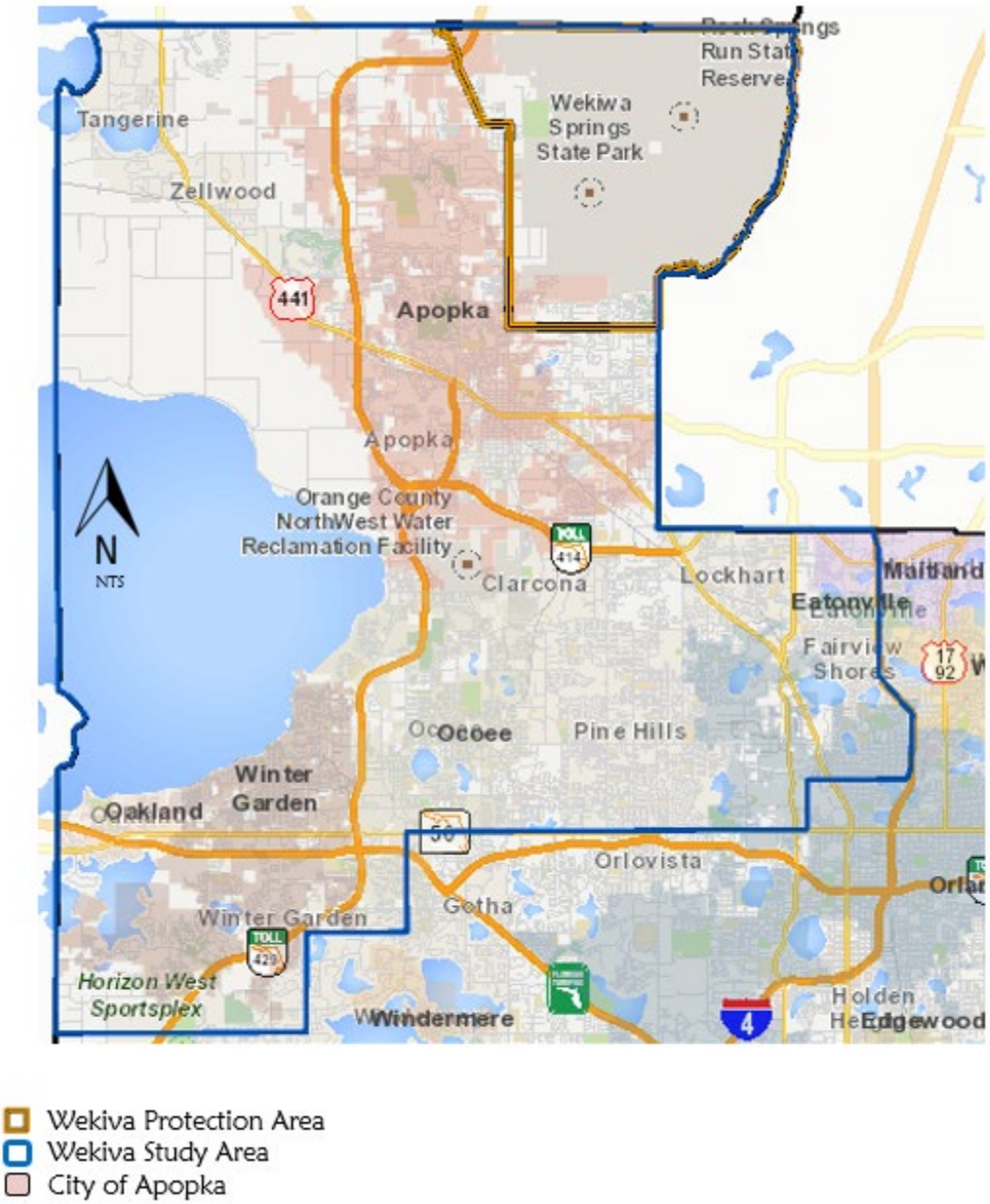
Green Building Standards are required through a point system for new development. Points are assigned for various water conservation and water quality practices including installation of green or vegetated roofs, stormwater capture systems (e.g., rain gardens, street-side swales), use of pervious pavement on at least 50 percent of parking lot and driveway areas, creation of soil management plan for stormwater infiltration, and rain

water capture and re-use devices (e.g., cisterns, rain filters, underground storage basins).

WEKIVA RIVER PROTECTION ACT

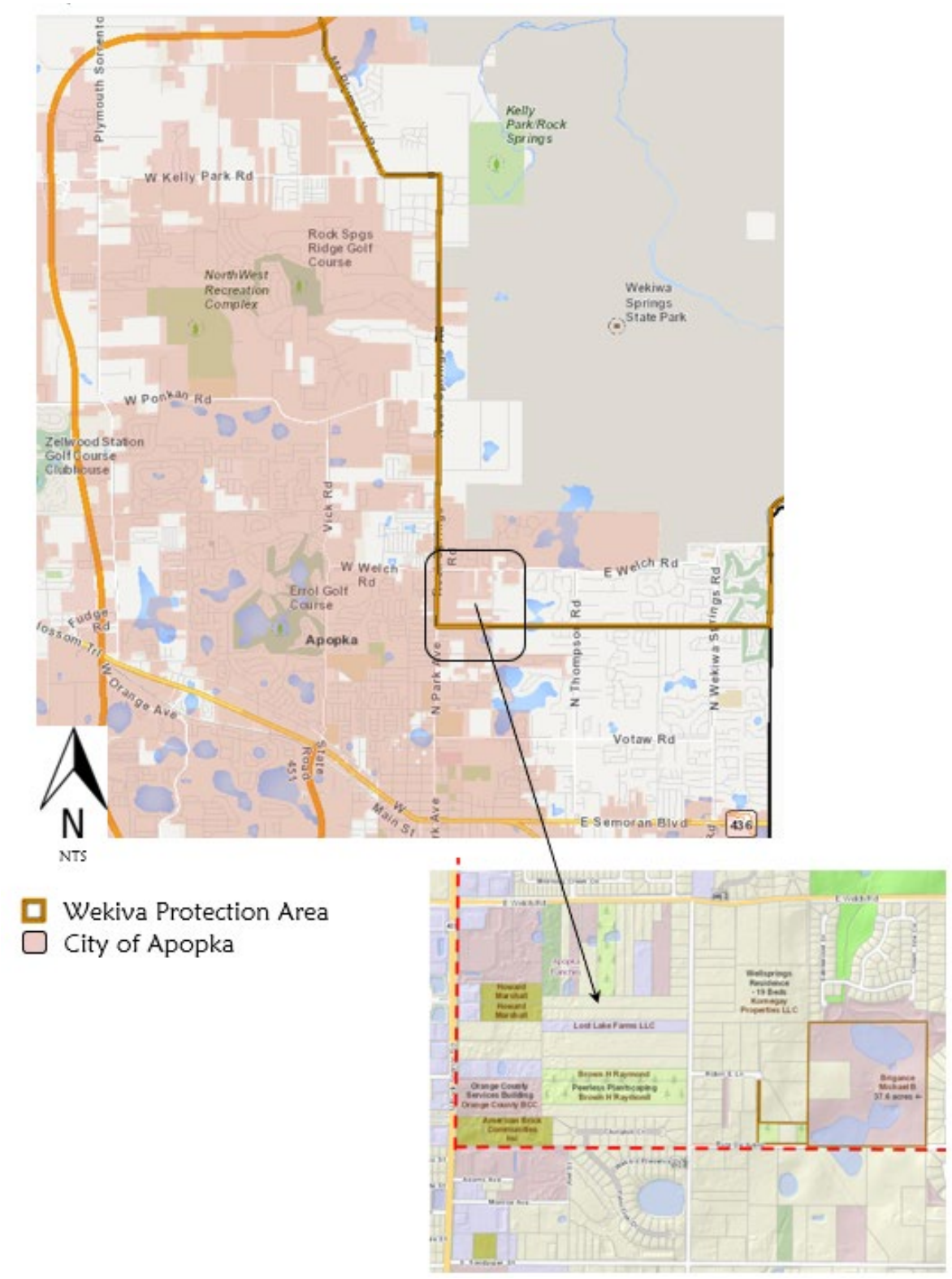
The state designated the Wekiva River as a Wild and Scenic River and enacted the Wekiva River Protection Act in 2004 to protect the river and its surrounding habitats. The City lies within the Wekiva Study Area and a small area of the northeastern portion of Apopka, east of County Road 435, lies within the Wekiva River Protection Area as designated by the Act. None of the waterways within the Wekiva River system lie within the City limits, as the Wekiva Springs State Park surrounds the river system in the Apopka area.

Figure CE - 1 Wekiva Study Area Map



Development in the protection area is limited to a low-density residential subdivision, Wekiva Glen, Wekiva Park, Parkview at Wekiva Park, Wekiva Preserve (a portion), and the Orange County Administration Building. Wekiva Park/Parkview was approved as a Planned Development (PD) and includes an existing retail neighborhood commercial center at the Northeast corner of Rock Springs Road and Welch Road. The remaining PD property is vacant.

Figure CE - 2 Wekiva Protection Area Map



Section 369.305(1)(a) of the Wekiva River Protection Act mandates that the local comprehensive plans of counties in the protection area shall be reviewed to ensure they contain goals, objectives, and policies that address the protection of the following:

1. Water quality and quantity and the hydrology of the Wekiva River System;
2. Wetlands associated within the Wekiva River Protection Area;
3. Aquatic and wetland dependent wildlife species associated with the Wekiva River System;
4. Habitat within the Wekiva River Protection Area of species designated pursuant to rules 39-27.003, 39-27.004, and 39- 27.005, Florida Administrative Code; and
5. Native vegetation within the Wekiva River Protection Area.

Section 369.305(1)(b) requires the local plans to also include:

1. Provisions to ensure the preservation of sufficient habitat for feeding, nesting, roosting, and resting so as to maintain viable populations of species designated pursuant to state statutes within the Wekiva River Protection Area.
2. Restrictions on the clearing of native vegetation within the100-year floodplain.
3. Prohibition of development that is not low density residential in nature unless that development has less impact on the natural system than low density residential.
4. Provisions for setback along the Wekiva River for areas that do not fall within the protection zones established pursuant to s. 373.415, F.S..
5. Restrictions on intensity of development adjacent to publicly owned lands to prevent adverse impacts to such lands.
6. Restrictions on filling and alteration of wetlands in the Wekiva River Protection Area.
7. Provisions encouraging clustering of residential development when it promotes the protection of environmentally sensitive areas, and ensuring that residential development in the aggregate shall be of rural density and character.

The Act also states that local land development codes "...shall also include restrictions on the location of septic tanks and drainfields in the 100-year floodplain and discharges of stormwater to the Wekiva River System."

In order to meet the requirements within the Wekiva River Protection Area the Comprehensive Plan Conservation Element addresses the above requirements. The LDC establishes regulations to protect the Wekiva River area, encompassing buffer zones, specific development practices, wildlife considerations, floodplain management, stormwater, conservation, historical assessments, landscaping, and reduced impact standards for certain projects through the following key points:

(a) Buffer Zone:

- A buffer zone of 550 feet is established from the edge of the Wekiva River or its

associated wetlands.
- Development activities cannot occur closer than 550 feet from the river's edge, except for certain cases like created wetlands or passive recreation.

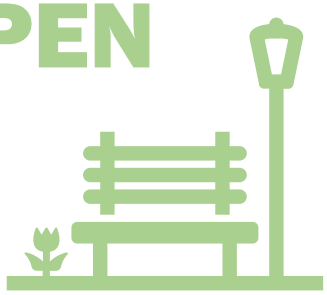
(b) General Regulations:
- Development within the protection area should prioritize clustering away from river waters or wetlands.
- Surveys of endangered, threatened, or special concern species are required for development applications when their habitat might be impacted.
- Within the one-hundred-year floodplain, native vegetation clearance is minimized and septic tank use is discouraged.
- Development with the potential to degrade groundwater quality is prohibited.
- Stormwater and conservation requirements of the code apply to developments in the protection area including, but not limited to, equal predevelopment and post-development stormwater rates.
- Archaeological and historical resource assessments may be necessary for development proposals.
- Landscaping includes native plant species to preserve wildlife habitat and blend with natural surroundings.

(c) Developments of Regional Impact:
- Development standards and guidelines specified by Florida Administrative Code (F.A.C.) ch. 28-24 are reduced by 50% for projects entirely or partially within the Wekiva River protection area, as required by state law (F.S. § 369.307).

RECREATION AND OPEN SPACE ELEMENT

Providing and preserving quality, innovative parks

RECREATION AND OPEN SPACE ELEMENT



GOAL 1

To provide and maintain sufficient parks, recreational facilities and open space areas to meet the needs of existing and projected populations of the City of Apopka.

OBJECTIVE 1.1

The City shall adopt and maintain level of service standards to ensure that a comprehensive system of parks, recreation, and open space areas are available and accessible for all residents.

Policy 1.1.1

The City hereby adopts the following level of service standard for park land: 10.0 acres per 1,000 population.

Policy 1.1.2

To ensure access to all City parks, recreation facilities, and open space areas for all residents, including disabled residents, the City will conduct an evaluation of all recreational facilities as needed to review their accessibility and connectivity with the public, specifically residential land uses.

Policy 1.1.3

The City shall coordinate with appropriate state and regional land acquisition and wildlife agencies to identify natural area greenways and wildlife corridors that will link existing public parks and preserves areas for the purposes of aquifer recharge, conservation and habitat preservation.

Policy 1.1.4

Neighborhood advisory committees and citizen groups will be engaged as needed to help inform decisions for acquisition of park land and the development of recreation facilities.

Policy 1.1.5

Strive to provide non-motorized access at all City-owned facilities that are on or near a lake shore within Apopka to ensure that public fresh water resources are accessible to all residents.

Policy 1.1.6
Regularly review park land and recreational facility needs to meet current as well as future resident recreational needs by including an analysis of population growth projections in the review process.

Policy 1.1.7
Modify land development regulations as needed to ensure that park impact fees for developers are based upon the latest level of service standard.

Policy 1.1.8
Residential developments around public lakes will still be required to provide public streets, sidewalks, and accessible parks and open spaces around those lakes.

Policy 1.1.9
The City will strive to explore possibilities to link existing recreational facilities to future parks through the development of pedestrian and bicycle facilities.

OBJECTIVE 1.2
Strive to plan and finance capital improvements for parks, recreation facilities, and open spaces to maintain the adopted level of service standard and to employ new, innovative park redevelopment strategies.

Policy 1.2.1
Develop a schedule of capital improvements for City parks via the City's annual budget in order to maintain existing recreational facilities. This will include the repair and replacement of park facilities when necessary.

Policy 1.2.2
Develop through the City's annual budget a schedule of capital improvements to construct new parks and recreational facilities as they are needed.

Policy 1.2.3
Identify and monitor all potential funding opportunities, both public and private, as well as partnerships that can facilitate park improvements or new developments.

Policy 1.2.4
Strive to maintain or develop new partnerships that can help facilitate new park improvements, developments, or open spaces.

Policy 1.2.5
Strive to assess and implement new planning and design strategies for City park and recreational spaces, such as those related to:

- Resilience: green infrastructure or low-impact development to enhance

stormwater management and reduce risks to flooding
- Social Equity: Park amenities that promote community engagement, support social gathering, and help combat inequitable exposure to heat
- Safety: Consider implementing best practices observed in principles such as Crime Prevention Through Environmental Design (CPTED) and Safe Routes to School (SRTS).

Policy 1.2.6
The City shall consider developing a Parks Master Plan by 2030 that will: - Address the connection between existing and proposed park as well as between existing parks and residential neighborhoods, workplaces, and centers of commerce - Address recreational needs of existing and proposed parks - Address safety concerns at parks and potential design solutions through CPTED.

OBJECTIVE 1.3
Identify and preserve current and potential park land, open space, and natural reservation areas.

Policy 1.3.1
As part of its regular process for designating conservation areas on the City's Future Land Use Map, the City will identify all potential parkland and open spaces that can be used for future recreational use.

Policy 1.3.2
Consider and maintain a list of potential park and open space opportunities in the City as they arise.

Policy 1.3.3
To ensure the equitable provision of green and open spaces, the City will strive to preserve and maintain, through effective landscaping practices, these spaces in all proposed development plans.

Policy 1.3.4
To ensure that current and future residents have the ability to enjoy and appreciate local natural resources, the City will assess and employ effective landscaping and sustainability practices to preserve and enhance the aesthetic, accessibility, and safety of City open spaces and green spaces.

Policy 1.3.5
The City shall continue to require that developers provide the proportionate share of open space necessary to accommodate resident needs and protect environmentally sensitive lands.

OBJECTIVE 1.4

Coordinate with external government agencies and private sector agencies as needed to provide and preserve an equitable supply of open space and recreation facilities.

Policy 1.4.1

The City will continue to work jointly with Orange County to coordinate the planning, management and optimal use of recreation and open space areas within the urban planning area.

Policy 1.4.2

The City will continue to coordinate the provision of recreational facilities by the private sector by including an inventory or accessible, private facilities in the analysis of needed facilities.

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RECREATION & OPEN SPACE ELEMENT

INTRODUCTION

The purpose of the Recreation and Open Space Element is to identify open space and recreation facilities available to residents of Apopka, establish level of service standards for the equitable provision of such facilities, and analyze current and projected park and recreational needs based on City demographics and level of service standards through 2050. This element seeks to use this analysis to inform, create, and implement policy and programmatic strategies that improve the accessibility and fair distribution of recreational and open space opportunities throughout the City, as well as bolster existing amenities while adding newer, more enhanced recreational and open space amenities.

Parks and designated green, open spaces in the City conserve natural resources and provide residents with opportunities to be physically active and engaged in their community. In general, parks are categorized as being either activity-based or resource-based. Activity-based parks provide user-oriented, recreation facilities designed for a specific purpose such as tennis, basketball, softball or soccer. On the other hand, resource-based parks utilize the natural environment to provide more passive activities such as picnicking, hiking, fishing, swimming, or boating. The City intends to continue providing a balanced supply of both types of parks that residents have come to rely upon. It also hopes to maximize the availability of open green spaces that can be conserved and potentially utilized as park space in the future.

In doing so, the City will maximize and dignify the role that parks play as a Social Determinant of Health, a key factor for quality-of-life levels and public health and wellness outcomes. One's ability to access and enjoy healthy, green park spaces affects their ability to lead a healthier lifestyle. Recreational facilities and open spaces provide opportunities to be outdoors and to escape the sometimes harsh and unnatural aspects of the built environment. The opportunity to be "one with nature" in a greener environment that promotes physical activity and social interaction can have numerous mental and physical health benefits. These include but are not limited to lower obesity levels, reduced negative health outcomes related to obesity such as heart disease, improved mental health conditions, and increased opportunities to age in place.

TYPES OF PARKS IN APOPKA

A description of the characteristics of each park type is included in this section. They include neighborhood parks and community parks. Only sites that are officially designated as public parks have been included. Vacant public lands and open space normally found in medians, buffers, retention areas and the like are not included.

Neighborhood parks serve the population of a neighborhood and are generally accessible by bicycling or walking. These parks are usually located along streets where people can access them without encountering heavy traffic. The typical service area is a radius of up to one-half mile. The maximum population served is 5,000 people. Where possible it is desirable for the neighborhood park to abut an elementary school because the service areas of a neighborhood include play equipment, multi-purpose courts, sports fields, picnic areas and free play area.

Community parks are usually located near major roadways and are meant to serve the needs of more than one neighborhood, usually within a radius of up to three miles. The typical service area is a radius of up to three miles. The maximum population served is 10,000 people. Typical facilities may include swimming pools, ball fields, tennis courts, play areas, picnic areas, multi-purpose courts, recreation buildings, passive recreation areas and parking spaces.

OPEN SPACE OVERVIEW

Urban open spaces are landscaped sites or natural open areas located within developed areas. Their principal function is to provide congested urban environments with aesthetically pleasing buffer zones. These areas may vary in size from one-tenth of an acre to several acres depending on their intended use. These areas may serve as linear, pocket or traffic circle parks, boulevard medians, plazas, malls, courthouse squares or promenades.

The Conservation land use designation corresponds with critical environmental areas where ordinary development practices would likely cause significant environmental damage. Lands surrounding or adjacent to conservation areas can also be sensitive and development of these lands should consider negative impacts and methods to mitigate or eliminate these impacts. Wetlands, marshes, flood hazard areas, steep slopes, critical plant and wildlife habitats and stream banks are types of conservation areas. Lands designated for conservation are intended to remain in their natural state and are ideal for passive recreation.

PARK SCORE

According to the 2022 release of ParkScores from the ParkServe Trust for Public Land database, 14% of Apopka residents live within a 10-minute (1/2 mile) walk to a park. Parks and recreation acreage determined in the Future Land Use Element's data and analysis shows 6% of the City acreage dedicated to parks. This number is greater than the 2% reported by ParkScore and includes private and public parks. Both of these values are

lower than the national median of 15% and presents an opportunity to create more parks and recreational facilities for residents to enjoy.

The ParkScore also indicates that seniors have less access to parks at 13% of their population located within a 10-minute walk of a park compared to children (14%) and adults (14%). Similarly, those earning higher incomes live farther from parks (11%), than those with a low-income (16%) and those in the middle-income bracket (16%). In terms of race, Native-American groups experience the best access to parks (22%) as well as Hispanics residents (18%), however, Asian residents experienced reduced access at 9% of their population living within a 10-minute walk of a park.

ADA Accessibility

Ensuring that all City recreational and open space amenities can be accessed by all residents and visitors, regardless of their socioeconomic background or physical ability, is a critical concern of the City. As it has in the past, the City will employ several strategies to ensure it continues to provide parks that are ADA accessible. This will include regularly accessing existing parks for improvements as they are needed, collecting resident feedback, and working with the staff and developers to ensure new park developments are considerate of ADA requirements.

EXISTING RECREATION AND OPEN SPACE CONDITIONS AND FACILITIES

The City of Apopka provides a range of recreation opportunities in its 14 public parks, where its residents have the opportunity to enjoy both active and passive forms of recreation. In addition, recreation and open space facilities are provided to City of Apopka residents by other jurisdictions and agencies, as will be analyzed and discussed.

RECREATION AND OPEN SPACE AMENITIES PROVIDED BY THE CITY

In 2023, the Apopka public park system included fourteen City parks. The table below shows an inventory of City-owned parks and recreational facilities. Altogether, the system of parks offers City residents a total of 14 recreational facilities with a variety of park amenities totaling 480 acres.

Table ROSE - 1 City-Owned Parks and Recreational Facilities

City-Owned Parks and Recreational Facilities		
Park/Facility Name	**Acreage**	**Recreational Facilities**
Alonzo Williams Park	4.44	Outdoor Basketball Courts, Playground, Softball Field, Multipurpose Field, Multipurpose Field, Picnic Tables and Grills
Billie Dean Community Center	0.0*	Multipurpose room/rental space, media room
Apopka Amphitheater	45.0	Walking Trail, Amphitheater, Concession Stands
Apopka Athletic Complex	10.0	Playground, Soccer Field, Softball Fields
Apopka Community Center	1.5	Multipurpose room/rental space, Commercial Kitchen,
Camp Wewa	70.0	Ropes Course and Climbing Wall, Basketball Courts, Target Areas, Junior Olympic-Sized Pool, Dining Hall, Commercial Kitchen, Large Pavilion with Fire Pit, Lake, Arts and Crafts Building, Rental Cabins, Outdoor Event Space
Doctor's Dog Park	1.0	Pet Shower, Pet Memorial Bridge, Pet water fountains, Open Space
Dream Lake Park	0.6	Picnic areas
Edwards Field	8.0	Multipurpose Field
Fran Carlton Center	1.0	Multipurpose room/rental space
Kit Land Nelson Park	5.0	Apopka Splash Pad, Gazebo, Playground, Indoor Racquetball Court, Picnic Areas
Lake Avenue Park	1.0	Playground, Picnic Areas
Northwest Recreation Complex	227.2	7 Baseball Fields, 5 Softball Fields, 3 Basketball Courts, 16 Multi-Purpose Fields, Outdoor Gym, 2 Playgrounds, 4 Tennis Courts, 4 Sand Volleyball Courts, Walking Trail, 4 pavilions
Apopka Birding Park	69.5	Natural area for bird spotting with parking lot and planned future outdoor nature center
Undeveloped Park and Recreation Open Space near Northwest Recreation Complex	35.49	Future park expansion opportunities
Totals	**479.73**	**Total Recreational Facilities:14**

* Acreage included in Alonzo Williams Park

Source: Apopka Parks and Recreation Department

Date Retrieved: August 2023

RECREATION AND OPEN SPACE AMENITIES PROVIDED BY EXTERNAL AGENCIES

National and State Recreation and Open Space Amenities

The closest national park accessible to the City of Apopka residents is the Canaveral National Seashore located approximately 55 miles from the City. This regional park is situated on a barrier island along Florida's east coast. The City of Apopka is unique in that it has three state parks within or near the city limits: Lower Wekiva River Preserve State Park (18,000 acres), Rock Springs Run State Reserve (14,000 acres) and Wekiva Springs State Park (7,000 acres). Canoeists and kayakers can paddle along the Wekiva River and Rock Springs Run. Thirteen miles of trails in Wekiva Springs State Park provide opportunities for hiking, bicycling, and horseback riding. All three state parks offer options for camping from full facility campgrounds to primitive camping areas.

Further, the St. Johns River Water Management District provides the Lake Apopka Restoration Area, a 777,912 acre preserve on the northwestern shores of Lake Apopka. Public recreation access is limited to the Clay Island portion of the property. Hiking, bicycling, horseback riding and wildlife viewing are allowed there. Group tours for environmental education are available on the restoration project area by appointment. Boating and canoeing opportunities are available on Lake Apopka; however, there are no launches located on the property.

County and School District Recreation and Opens Space Amenities

Recreational facilities owned by Orange County and the Orange County School Board that City residents are allowed to use are listed in the table below. Orange County operates and maintains 93 parks, facilities and trails. Five of Orange County's parks are within the Apopka City limits (Roosevelt Nichols Park, Tom Staley Historical Park, Magnolia Park, Wheatley Park and the West Orange Trail). Kelly Park/Rock Springs is just north of the city limits. This section and related table do not include any recreation or open space amenities that are provided by private agencies or property-owners.

Table ROSE - 2 County and School District Recreation and Open Space Amenities

County and School District Recreation and Open Space Amenities		
Agency	**Classification**	**Recreational Amenities**
Orange County School District		
Apopka Elementary School	Neighborhood Special Purpose	Softball Field, 2, Soccer/Football Field, 2, Basketball Courts, Playground
Apopka High School and Ninth Grade Center	Neighborhood Special Purpose	Softball Field, 2, Soccer/Football Fields, Baseball Field, 3 Basketball Courts, Gymnasium, Track
Wekiva High School	Neighborhood Special Purpose	Softball Field, Football Field, 2 Multi-purpose Fields, Baseball Field, 3 Outdoor Basketball Courts, Indoor Basketball Court, 3 Tennis Courts, Stadium, Gymnasium
Apopka Memorial Middle School	Neighborhood Special Purpose	Soccer/Football Field, 2, Basketball Courts, Gymnasium
Dream Lake Elementary School	Neighborhood Special Purpose	Softball Field, Soccer/Football Field, Baseball Field, 2 Playgrounds
Lakeview Elementary School	Neighborhood Special Purpose	Soccer/Football Field, 2 Shuffleboard Courts, 4 Basketball Courts, Playground
Piedmont Lakes Middle School	Neighborhood Special Purpose	Softball Field, 2 Basketball Courts, Playground
Wolf Lake Elementary School	Neighborhood Special Purpose	Softball/Baseball Field, 2 Basketball Courts, 2 Playgrounds
Wolf Lake Middle School	Neighborhood Special Purpose	Softball/Baseball Field, Soccer/Football Field, 3 Basketball Courts, 3 Tennis Courts, Track
Kelly Park School	Neighborhood Special Purpose	Soccer field, Indoor & outdoor basketball courts/ Playground/Track
Orange County		
Kelly Park/Rock Springs	Community	Natural Resources: Springs, Natural Vegetation, Sink Holes, Trails Other Facilities: Camping, Swimming, Tubing, Volley Ball, Playground, Restrooms, Full Service Concessions
Roosevelt Nichols Park	Neighborhood	Recreation Facilities: Multi- Use Field, Covered Basketball Court, 2 Playgrounds Other Facilities: 2 Large Picnic Pavilions, 2 Covered Picnic Tables, Port-o-lets

Tom Staley Historical	Special Purpose	Historical Property
West Orange Trail	Community	Recreation Facilities: Linear Park/Trail, Playground Other Facilities: Trail Head (Apopka Station), Picnic Tables
Lake Apopka Wildlife Drive	Special Purpose Urban Open Space	Lake Apopka North Shore access, 11-mile Wildlife Drive
Magnolia Park	Community	Volleyball Courts, Basketball Court, 4 Tetherball Poles, 3 Playgrounds Other Facilities: 18 Camp Sites with Electricity and Water, 2 Group Camping Sites, 4 Picnic Pavilions with Grills, Numerous Picnic Tables with Grills, 4 Public Restrooms and 1 Shower/Restroom Facility for Campground. Natural Facilities: Lakeshore
Wheatly Park	Neighborhood	Recreation Facilities: Volleyball Court, Tennis Court, Basketball Court, Multipurpose Field, 2 Playgrounds, 1-mile Exercise Trail Other Facilities: Amphitheater, 5 Covered Picnic Tables, 1 Large Rental Pavilion, Restrooms
Total Recreational Facilities		**17**

Source: Apopka Parks and Recreation Department
Date Retrieved:2023

INVENTORY OF ALL RECREATIONAL FACILITIES IN APOPKA

The table below lists the recreational facilities located within Apopka's municipal boundaries that are provided by the City, Orange County, Orange County School District and private establishments.

Table ROSE - 3 Recreational Facilities in Apopka

Recreational Facilities in Apopka	
Facility	**Quantity**
Baseball/Softball Fields	33
Basketball Courts	33
Soccer/Football/Rugby	32
Playgrounds	35
Volleyball	10
Tennis Courts	27
Swimming Pools	5
Gymnasium	9
Racquetball Courts	6
Trails	2
Skate Park / Pump Track	1
Splash Pads	1
Total Facilities	**194**

Source: Apopka Parks and Recreation Department

Date Retrieved: 2023

FUTURE RECREATION AND OPEN SPACE NEEDS

LEVEL OF SERVICE STANDARDS

Level of service (LOS) standards for recreation and open space needs are estimates that are used to determine the recreation and open space facilities needed in the City to continue accommodating the recreational needs of residents. The criterion defines the acreage and service area requirements for recreational amenities. The City of Apopka has established LOS standards for park acreage.

In order to accommodate the recreation and open space needs of its residents, the City of Apopka adopted an LOS standard for overall parkland of ten acres for every 1,000 residents. This level of service is aligned with the National Recreation and Park Association recommendation for providing 10 acres of parkland per 1,000 resident population. The inventory of City owned parks and recreation facilities located within the municipal limits of Apopka totals 479.73 acres. Based on the estimated population of

Apopka in 2022 (57,930), the City currently owns and maintains approximately 8.3 acres of recreation and open space lands per 1,000 residents. This value met the previously adopted LOS standard of eight acres per 1000 residents; however, it falls short of the revised standard. The LOS calculation is based on amenities within City limits. County and state parks adjacent to the City such as Magnolia Park, Apopka Wildlife Drive, and Wekiva Springs State Park provide residents with additional park and open space amenities.

Providing for Future Recreation and Open Space Needs

Based on the City's park and open space acreage LOS standard of 10 acres per 1,000 residents, the City is currently deficient by 99.6 acres. The table below identifies the recreation and open space acreage needs through 2040 based on the City's population projections. As the table indicates, the City will need to develop an additional 349.7 acres by 2040 to meet the adopted LOS standard. The City may want to consider ParkScore's prioritized areas (indicated in ParkServe's Trust for Public Land database and map) for new parks when creating future park facilities.

Table ROSE - 4 Projected Park and Open Space Acreage Needs

Projected Park and Open Space Acreage Needs					
Year	**2022**	**2025**	**2030**	**2035**	**2040**
Population	57,930	63,296	70,990	77,380	82,939
Park and Open Space Acreage for All Parks within City Limits	479.7	479.7	479.7	479.7	479.7
Projected Acreage Needs Based on LOS Standard (10 acres per 1,000 residents)	579.3	633.0	709.9	773.8	829.4
Surplus / Deficiency (Acreage)	**-99.6**	**-153.2**	**-230.2**	**-294.1**	**-349.7**

Sources: Projections: Shimberg Center for Housing Studies Data Clearinghouse (2023), 2022 estimate: BEBR (2023)
Date Retrieved: July 2023

CAPITAL IMPROVEMENTS ELEMENT

Ensuring adequate public facilities and services to meet future development demands

CAPITAL IMPROVEMENTS ELEMENT

GOAL 1

Ensure adequate public facilities and services are provided within the City jurisdiction, in keeping with the goals, objectives and policies contained within the plan, in a timely and efficient manner and appropriate locations as necessary to correct existing deficiencies in level of service for potable water, sanitary sewer, solid waste, multimodal facilities, public safety, and parks and recreation and to meet future development demands.

OBJECTIVE 1.1

The City shall schedule and provide capital improvements to alleviate existing deficiencies, accommodate desired future growth, and update outdated or failing facilities to ensure that adopted level of service standards for public facilities will be achieved and maintained for a minimum 5-year period.

Policy 1.1.1

Capital projects included in the Five-Year Schedule of Capital Improvements (Capital Improvements Program- CIP) shall be consistent with goals, objectives and policies in each element of the comprehensive plan and with other plans applicable to City facilities that are necessary to maintain adopted LOS standards, including increasing the capacity or efficiency of existing facilities and/or replacing failing facilities.

Policy 1.1.2

The City shall prepare an annual Capital Improvements Program (CIP), comprised of physical improvements with a minimum cost of $50,000 and minimum useful life of five years, to guide the timing and location of capital expenditures.

Policy 1.1.3

In order to maintain adopted LOS standards, the City of Apopka shall coordinate land use decisions and available or projected fiscal resources through the annual adoption of a Five-Year Schedule of Capital Improvements. The capital improvement program shall be adopted and incorporated into the annual City budget and utilized to monitor the implementation of the Capital Improvements Element (CIE). The Capital Improvement Program (CIP) will be prepared and reviewed annually by a committee consisting of at

least one staff representative from the following departments: Public Services, Community Development, Police, Fire and Finance. The CIP shall be reviewed and adopted by the City Council by ordinance. The CIP shall be transmitted annually to the Florida Department of Economic Opportunity through ordinance.

Policy 1.1.4

The City shall evaluate all new capital facility proposals based on the following criteria in the order shown below and using the internal scoring processes depending upon funding availability and mechanisms:

1. an immediate hazard to public health or safety,
2. correction of deficiencies not previously identified,
3. consistency with the adopted Comprehensive Plan,
4. financial feasibility and local budget impact,
5. support of community redevelopment area,
6. support of new development within the corporate City limits or the utility service area as depicted on Potable Water and Sewer Service Area Maps of the Infrastructure Element,
7. consistency with plans of state agencies and surrounding jurisdictions, and
8. advances the goal of City to reduce municipal carbon footprint/Greenhouse Gas Emissions.

Policy 1.1.5

The City shall plan and schedule the correction of any existing deficiencies within one year of identification of the problem through CIP updates.

Policy 1.1.6

Revenue sources identified in the CIE shall provide for capital improvement expenditures and efforts shall be made to secure grants to offset these expenses.

Policy 1.1.7

The City shall plan and maintain all its assets at a level adequate to protect the city's capital investment, to minimize future maintenance and replacement costs, and to reduce future climate vulnerabilities.

Policy 1.1.8

The City shall meet or exceed the following public safety level of service standards:

Police LOS: Achieve 2.3 law enforcement officers per thousand residents. The City will stay consistent with the State average for police departments.

Fire LOS: Achieve 1.8 fire fighters per thousand residents with a benchmark of 2 fire fighters per thousand residents. The City will stay consistent with National Fire Protection Association (NFPA) level of service standards with an annual

review of factors including response time, population, number of fire stations, apparatus, and infrastructure.

OBJECTIVE 1.2

The City will at least annually establish financial indicators in order to ensure the ability to fund the City's share of needed improvements is within acceptable limits.

Policy 1.2.1

In no case shall the City incur debt for those capital facilities which exceed the capacity to issue bonds or other financial mechanisms as determined in part by the indicators described below, which shall be monitored

1. The ratio of total debt service to total revenue shall not exceed 1:5.23.

2. The ratio of total capital indebtedness to property tax shall not exceed 1:250.

Policy 1.2.2

The City's adopted Five-Year Schedule of Capital Improvements (CIP) is included as *Appendix CIE* of this element, which will be updated on an annual basis.

Policy 1.2.3

The City adopts, by reference, the Metroplan Orlando 2022-2026 Transportation Improvement Program (TIP) adopted annually by MetroPlan Orlando that identifies funding for county and state roads and multi-modal transportation projects to address present or expected deficiencies.

Policy 1.2.4

The City adopts by reference the Five-Year Facilities Work Plan FY 2021-2022 and the Ten-Year Facilities Work Plan FY 2021-2022 as formally adopted by Orange County Public Schools.

OBJECTIVE 1.3

The City shall maintain the development permit concurrency management system which ensures that minimum levels of service standards are maintained.

Policy 1.3.1

Adhere to the adopted level of service standards established in the following elements and sub-elements:

- Mobility Element - Ensure consistency with Policies XXX.
- Potable Water Sub-Element - Ensure consistency with Policies 2.2.1 and 2.2.2.
- Sanitary Sewer Sub-Element - Ensure consistency with Policy 3.2.1.
- Stormwater Sub-Element - Ensure consistency with Policies 4.1.2,4.1.3, and 4.1.4.

- Solid Waste Sub-Element - Ensure consistency with Policy 6.1.2.
- Recreation and Open Space Element - Ensure consistency with Policy 1.1.1

Policy 1.3.2

The City of Apopka will continue to implement the concurrency management system which includes a determination of compliance with the level of service standards prior to the initiation of the permitting process.

1. For potable water supplies and facilities, sewer, solid waste, and drainage, at a minimum, the following standards will satisfy the concurrency requirements:
   a) The necessary facilities and services are in place at the time a development permit is issued; or
   b) A development permit is issued subject to the condition that the necessary facilities and services will be in place when the impacts of the development occur; or
   c) The necessary facilities are under construction at the time a permit is issued; or
   d) The necessary facilities and services are guaranteed in an enforceable development agreement that may include, but is not limited to, development agreements pursuant to Section 163.3220, F.S., or an agreement or development order issued pursuant to Chapter 380, F.S.. The agreement must guarantee that the necessary facilities and services will be in place when the impacts of the development occur.

2. With respect to potable water, the Concurrency Management System will also require consultation with all applicable water suppliers, including internal coordination within the City, prior to approval of a building permit, to determine if adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy or functional equivalent.

3. For parks and recreation, the concurrency requirement shall be met by complying with the above standards, or by ensuring that the following standards will be met:
   a) At the time the development permit is issued, the necessary facilities and services are the subject of a binding executed contract which provides for the commencement of the actual construction of the required facilities or the provision of services within one year of the issuance of the development permit; or
   b) The necessary facilities and services are guaranteed in an enforceable development agreement which requires the commencement of the actual construction of the facilities or the provision of services within one year of the issuance of the applicable development permit. An enforceable development agreement may include, but is not limited to, development agreements pursuant to Section 163.3220, Florida Statutes, or an agreement or

development order issued pursuant to Chapter 380, Florida Statutes.

Policy 1.3.3
Concurrency determination shall be made prior to issuance of a final development order which shall be defined as the last order or approval in the City's development permit process as defined or as otherwise required by State Statutes, the interlocal agreement or policies of the City's comprehensive plan. The City shall deny any development proposals in which concurrency does not exist to support the development; and agreements cannot be made to mitigate these impacts.

Policy 1.3.4
Projects which have received a final development order must initiate construction within twelve months and be at least substantially completed within thirty-six months unless there is an executed developer's agreement which provides otherwise in order to maintain assigned concurrency determination. Failure to do so will result in the loss of assigned concurrency determination and development order. The concurrency determination process will be required to be re-initiated and a new development order will be required.

Policy 1.3.5
Require a proposed development to avoid and/or mitigate those identified impacts which negatively affect an adjacent local government's adopted level of service standards.

OBJECTIVE 1.4
The City shall require all development to bear a fair, equitable and proportionate share of facility improvements required to maintain the adopted minimum level of service standards.

Policy 1.4.1
All new development and redevelopment will be assessed a pro rata share of the costs necessary to ensure the public facility improvements generated are available at the time the development impacts occur, including consistency with the City's Transportation Proportionate Fair Share Ordinance.

Policy 1.4.2
The City will accept dedications, or construction in lieu of, as an alternative to the payment of all, or a portion of any, required fees provided there is an executed developer's agreement.

Policy 1.4.3
The City shall evaluate impact fees, the need for additional fees, and the use of mandatory dedications or fees every five years, at a minimum, to ensure the rates are consistent with the required construction costs for public facility needs generated by new development.

Such new fees may require review by an ad-hoc citizens' advisory committee and at least one public hearing by the local planning agency before the additional fees are adopted by the city.

Policy 1.4.4

The City shall continue to use the stormwater utility as authorized by the City Council using the non-ad valorem fee collection method, as provided in Section 403.0893, F.S., as the source to fund stormwater capital improvement projects.

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CAPITAL IMPROVEMENTS ELEMENT

INTRODUCTION

This element provides the framework the City of Apopka shall use to prioritize capital improvements, allocate financial resources, determine the timing and location of capital improvements and monitor compliance with the comprehensive plan. The goals, objectives, and policies incorporate the use of sound fiscal principles to efficiently provide and maintain public services and facilities.

Specifically, the purpose of the Capital Improvements Element (CIE) is:

- to evaluate the timing, location and funding of capital projects to achieve and maintain adopted level of service standards for public facilities that are necessary to implement the comprehensive plan;
- to estimate the cost of improvements and funding sources;
- to analyze the fiscal capability of the City to fundand construct improvements;
- to adopt policies to guide and schedule the funding and implementation of capital improvements consistent with the City's Concurrency Management System (CMS); and
- to ensure that an adequate CMS is implemented by the City.

The CIE focuses on the capital improvements identified in the comprehensive plan required to meet existing deficiencies and maintain level of service (LOS) standards adopted in the plan. The CIE includes the City's Capital Improvement Plan (CIP) which is a schedule of all future capital improvements required to maintain current facilities and to expand facilities as necessary to provide services to new development in accordance with adopted LOS standards. The CIP is a direct input into the annual budgeting process, providing a list of capital improvements, including cost estimates and anticipated means of funding, and provides a detailed funding schedule for a five-year period. The role of monitoring and evaluation of the CIE and the CIP is important to the effectiveness of the City's planning and infrastructure programming due to the fluctuations in the revenues and expenditures of the City resulting from market and economic conditions. The revenues and expenditures of the City will be used to predict fiscal trends in order to maintain the City's adopted level of service standards for public facilities. Therefore, the

CIP projects and schedule are reviewed and amended annually to ensure consistency with the comprehensive plan and that the fiscal resources are available to provide the public facilities needed to support the established level of service standards. The update to the schedule may be accomplished by ordinance and will not be considered an amendment to the comprehensive plan.

The Comprehensive plan identifies various capital improvements necessary to meet the recommended level of service standards to ensure the health and safety of City residents and visitors.

MULTIMODAL TRANSPORTATION

Orange County and the Florida Department of Transportation (FDOT) are responsible for maintaining and improving county and state roads, respectively. By way of the CIE policies, the City adopts, by reference, the five-year Transportation Improvement Program (TIP) adopted annually by MetroPlan Orlando that identifies funding for county and state roads and multi modal transportation projects to address present or expected deficiencies. The City shall continue to participate in the MetroPlan Orlando planning process and in the development of the TIP and the five-year Transit Development Plan (TDP).

Section 380.0651(3)(a) designates Apopka as a “Dense Urban Land Area” (DULA) and, therefore, is exempt from state-mandated transportation concurrency. The City’s municipal limits are designated as a Transportation Concurrency Exception Area (TCEA) and the City is required to adopt development strategies that support and fund multimodal transportation. The DULA designation allows the City to address any multimodal system concerns using a variety of comprehensive, multi-modal programs and facilities rather than focusing on currency of individual roadway segments.

SOLID WASTE

The City provides solid waste collection services to residential and commercial customers. The City provides curbside pick- up service for residential solid waste collection as well as recyclable waste for single family units. The City does not collect hazardous household waste and does not collect recycling from multifamily developments unless contracted to do so. Orange County collects the hazardous waste or the citizens may dispose of the residential hazardous waste at the landfill or community pickup sites on advertised days throughout the year. All items collected by the City of Apopka are delivered to the Orange County Landfill.

Based on projections presented in the Solid Waste Element, OrangeCounty currently has adequate landfill capacity to meet the City'sneeds through the planning timeframe.

STORMWATER MANAGEMENT

The City's Drainage Master Plan provides for projects and analysis of stormwater management processes and infrastructure. In order to address future development impacts upon the City's drainage system, the City will incorporate sustainable stormwater management principles into its Drainage Master Plan and Land Development Code (LDC) to include requirements or guidelines for Sustainable stormwater management principles require or encouragethe use of natural features and/or environmentally-friendly concepts to reduce flooding rather than structural alternatives.

Sustainable stormwater management includes the use of swales and grassy channels, bioretention, infiltration, retention/detention ponds, and porous pavements and other pervious materials.

POTABLE WATER

The City owns, operates and maintains five water plants and a water distribution system. Currently, no LOS standard deficiencies have been identified within the potable water treatment and distribution system; however, a new water plant is proposed in the southwestern portion of the City.

RECREATION AND OPEN SPACE

In order to accommodate the recreation and open space needs of its residents, the City of Apopka adopted a level of service (LOS) standard for overall parkland of ten acres for every 1,000 residents. This LOS is aligned with the National Recreation and Park Association recommendation for providing 10 acres of parkland per 1,000 resident population.

The inventory of City owned parks and recreation facilities located within the municipal limits of Apopka totals 479.7 acres. Based on the estimated population of Apopka in 2040 (82,939), the City will need to develop an additional 349.7 acres by 2040 to meet the revised LOS standard of 10 acres of recreation and open space lands per 1,000 residents. The LOS calculation is based on amenities within City limits. County and state parks adjacent to the City such as Magnolia Park, Apopka Wildlife Drive, and Wekiva Springs State Park provide residents with additional park and open space amenities. The City may want to consider ParkScore's prioritized areas (indicated in ParkServe's Trust for Public Land database and map) for new parks when creating future park facilities.

EXISTING REVENUE SOURCES AND FUNDING MECHANISMS

The City of Apopka utilizes a variety of revenue resources and funding mechanisms to fund capital improvements.

MUNICIPAL REVENUES

Ad Valorem Property Taxes – are based on the assessed value of real property and tangible personal property located within the City, less any authorized exemptions. The assessed value is determined by the Orange County Property Appraiser and the tax rate, or millage, is set by the City Council each fiscal year. The City has traditionally used property taxes as one of the major funding sources for operating the general fund as there are generally no restrictions regarding what property taxes can be spent on such as personnel costs, operating expenses and capital expenditures.

Millage Rate

1 mill is equal to $1 in property tax levied per $1,000 of a property's assessed value.

Local Option Gas Tax - are based on the City's share of the local six-cent option gas tax levied in Orange County. In accordance with Section 336.025, Florida Statutes (F.S.) all expenditures from this tax must be transportation-related.

Municipal Utility Taxes - are assessed on the purchase of electricity, water, natural gas and propane within the City. Consistent with Section 166.231, F.S. which authorizes cities to levy these taxes, the City's current rate is ten percent, the authorized taxation limit.

Telecommunication Taxes - are levied on telephone and cable users and right-of-way permit fees.

Franchise Fee - are levied on a utility or company in return for the privilege of doing business within the City's jurisdiction and/or for utilizing municipal rights-of-way. The rates are specified in the individual franchise agreements. The City currently collects

franchise fees on electric, cable television, gas, water and sewer.

Licenses and Permits, Fines and Forfeits – are primarily consisted of: City occupational licenses; building and inspection permits; and court fines.

Charges For Services and User Fees - are charges for services provided by the City that are designed to fully or partially recover the costs incurred to provide the service. The primary sources of this revenue are the water, sewer and sanitation utility service charges received by the City's enterprise funds. General fund includes charges for services such as ambulance, recreation and zoning fees.

Interest Income - is revenue earned on funds invested by the City.These investments come from two sources; cash temporarily invested until the time it is to be spent and cash reserves maintained by the City inaccordance with prudent fiscal policy.

Miscellaneous Revenue - consists of such items as rental of City property, sale of surplus City property and contributions and donations from private sources. This is considered a very minor revenue source and an unstable revenue stream for future projections.

INTERGOVERNMENTAL REVENUES

This category is often referred to as "revenue sharing." These revenues are collected by one government and shared with other governmental units.

State Sources

Apopka, similar to other cities in Florida, depends on annual disbursements from the state government to supplement its operating and capital budget revenues. Some of the specific programs are:

Local government half-cent sales tax - a percentage of the State collected sales tax is distributed to the local entities according to population.

State Revenue Sharing - the municipal portion of this is funded by sales tax and the municipal gas tax.

Other State Shared Sources - includes mobile home licenses, alcoholic beverage licenses and motor fuel tax rebate.

Federal and State Grants and Loans

Federal grant funds are generally allocated to state agencies to administer or are disbursed directly to local agencies, or other eligible organizations, dependent upon the funding program. As these funds require competitive applications, the grant monies are a non-recurring source of funds, and as such, cannot be accurately projected for budgeting purposes.

In addition to grants, several federal agencies offer direct loan programs; however, their applicability to capital improvement projects is extremely limited. State loans, on the other hand, are usually available to finance capital projects such as land acquisition for low-income housing. The DEO administers loans and grants for these purposes to eligible local governments.

OTHER SPECIAL LOCAL SOURCES

Depending upon priorities assigned by the City Council and the availability of other revenue sources, it may be necessary to seek additional funding mechanisms. The following sources of revenue represent options available to the City to finance required capital improvements.

Capital Facilities Fees or Impact Fees - are charges to developers at the time of development for construction of necessary infrastructure to meet the needs resulting from the development. These fees are charged in advance of the new development and are not designed to pay for on-going operating costs. These funds must be equitably allocated to the specific group(s) which will directly benefit from the capital improvement, and the assessment levied must fairly reflect the true costs of these improvements. Sometimes developers are also required to construct infrastructure and donate it to the City in lieu of or in addition to paying impact fees. The City currently levies water, sewer and reuse impact fees. While impact fees can be an important revenue source for financing capital improvements, this is not a steady, reliable revenue source as it depends on the amount of development that takes place within the City.

Special Assessments – are usually capital in nature and enhance the utility, accessibility or aesthetic value of the affected properties and generally provide improvements or additions to a government's general fixed assets or infrastructure. Examples include sidewalks, parking facilities and curbs and gutters. Like impact fees, special assessments are levied against residents, agencies or districts which directly benefit from the new service or facility. For example, street paving for an existing neighborhood can be financed through a special assessment of that neighborhood's homeowners, rather than through the city's general fund.

LONG-TERM DEBT

The high cost of many capital improvements sometimes requires local governments to resort to borrowing, either through short-term or long-term financing. Short-term financing, perhaps through local banks, is one option available to raise required revenue for periods of one to five years. It is more customary, however, to issue long-term bonds which normally have a maturity rate from five (5) to forty years. The following are examples of long-term financing mechanisms:

General Obligation (GO) Bonds - are also known as full faith and credit bonds because repayment is backed by the general credit of the issuing local government.

General obligation bond issues are required to be approved by voter referendum and usually carry lower interest rates than other bonds, as they are, in effect, secured by the taxing powers of the government. Revenues collected from real estate ad valorem taxes and other sources of general revenue are used to service the debt. Capital improvements financed through GO bonds should benefit the City as a whole rather than particular areas or groups. As GO bonds are generally not supported directly by the projects they finance, there is often not a direct correlation between the amount of borrowing and the value or useful life of the project.

Revenue Bonds - are financed by those directly benefitting from the capital improvements. They may be defined as obligations in which debt service requirements are payable exclusively from the earnings of a public enterprise. Proceeds of these bonds are used to finance publicly-owned facilities such as water and wastewater facilities and charges collected from the users of these facilities are used to retire the bond obligations. Revenue bonds do not count against some legal debit limits and they may be approved by the City Council without voter referendum. Revenue bond interest rates tend to be higher than for general obligation bonds.

Loan Pools - is a technique in which a group of local governments form a joint financing agency. The agency then borrows money through some type of financing instrument and the proceeds go into the pool from which individual governments can make long-term loans for capital improvements.

Lease/Purchase Financing - is when the vendor or a third party purchases or constructs the asset secured by a mortgage and then leases it to the local government obtains ownership of the capital item at the end of the lease. Furthermore, the lessor may sell Certificates of Participation in the lease (similar to tax-exempt bonds) to investors. Lease/purchase arrangements do not require voter approval and generally are not subject to legal debt restrictions; however, the interest rates are usually slightly higher than bonds and the project must have a high degree of essentiality to the City to be approved. The only lease/purchase agreements the City currently has are for the purchase of various types of equipment.

Other - The City carries from time to time notes payable to local banks and individuals for the purchase of real estate. The total amount of these loans is a very small portion of the City's indebtedness.

CURRENT PRACTICES FOR FUNDING CAPITAL IMPROVEMENTS

Revenues have generally been used to meet mandatory or essential operating expenses in the past. The City utilizes its CIP to identify needed improvements and projects and guide fund allocation to ensure the adequate provision of public facilities and infrastructure. To provide a means to determine the relative priority of each capital project necessary to address existing deficiencies and provide facility expansion to meet projected growth, the City will decide whether the project:

- eliminates a public hazard;
- corrects deficiencies not previously identified;
- implements the policies of the comprehensive plan;
- is financially feasible;
- supports the Community Redevelopment Area;
- represents a logical extension of facilities within the urban service area or supports new development in the City limits
- is coordinated with major projects of other agencies; and/or
- advances reduction of municipal carbon footprint/Greenhouse Gas Emissions.

TIMING AND LOCATION OF CAPITAL IMPROVEMENTS

Capital projects planned through fiscal year 2027 will occur in various locations throughout the City. The timing of new infrastructure takes into account the criteria for prioritizing capital projects and project phasing so that overlapping construction activities are undertaken in the proper sequence. The numerous elements of this plan require an annual assessment of the City's infrastructure at budget time. The City is required to adopt an ordinance and transmit the revised Five-Year Schedule of Capital Improvements to the DEO on an annual basis.

IMPACTS OF PUBLIC SCHOOLS AND HEALTH FACILITIES ON INFRASTRUCTURE PLANNING

Impacts placed on infrastructure serving school sites and public health care facilities will be addressed on a case-by-case basis and are not anticipated to have any significant effects on current or proposed levels of service for short- and long-range planning periods.

As additional student stations are added to existing public schools, or new schools are built, demand for and consumption of public services can be expected to increase proportionally. The City considers future school demands when analyzing its transportation, water and sewer infrastructure needs. In addition, school demands on the City's water and sewer infrastructure are included in the level of service calculations for those services.

CITY'S ABILITY TO FINANCE CAPITAL IMPROVEMENTS

Projection of Debt Service Obligations

The City currently utilizes debt service financing to pay for capital projects including potable water, sanitary sewer and stormwater facilities. The City utilizes general fund revenues, water fund revenues, wastewater impact fees, stormwater fund revenues, infrastructure surtax fund revenues and impact fee revenues to fund their respective debt service payments.

The following debt service indicators are monitored by the Finance Department and reviewed annually:

- Ratio of total debt service to total revenue should not exceed 1:5.23
- Ratio of total capital indebtedness to property tax should not exceed 1:250.

Projection of Revenue and Expenses

The revenues and expenses extracted from funds that provide for each of the City's capital facilities are provided in *Table CIE - 1* .

Table CIE - 1 Projection of Revenue by Capital Improvement Fund

Projection of Revenue by Capital Improvement Fund			
Special Fund	**FY 2021/2022**	**FY 2022/2023**	**FY 2023/2024**
102 Transportation Impact Fees	7,190,000	3,650,000	1,050,000
401 Water/Sewer/Reclaim Operations	296,000	300,000	200,000
403 Water/Sewer/Reclaim Impact Fees	4,710,000	5,330,000	5,320,000
402 Sanitation	403,000	1,290,000	745,000
Totals	**12,599,000**	**10,570,000**	**7,315,000**

Data Source: Apopka Finance Department, FY22 Budget Book

Date Retrieved: April 2022

INTERGOVERNMENTAL COORDINATION ELEMENT

Supporting intergovernmental collaboration and long-lasting partnerships

INTERGOVERNMENTAL COORDINATION ELEMENT

GOAL 1

The City of Apopka will continue to coordinate and execute agreements as needed with neighboring local governments to foster growth, effective delivery of services to both residential and commercial spaces, and enhance land use and land use compatibility between the City and adjacent local governments.

OBJECTIVE 1.1

Facilitate increased intergovernmental coordination in order to achieve the goals, objectives and policies of the Comprehensive Plan, further the appropriate goals and policies of the State Comprehensive Plan, and maintain consistency with the East Central Florida Regional Planning Council (ECFRPC) Strategic Regional Policy Plan (SRPP).

Policy 1.1.1

Amendments to the Apopka Comprehensive Plan will include an evaluation of effects it may have on the appropriate policies of the State Comprehensive Plan and the SRPP.

Policy 1.1.2

The City shall annually review the JPA and the Land Development Code (LDC) to ensure applicability of current and future needs in relation to the requirements of the Joint Planning Agreement.

Policy 1.1.3

The City will coordinate with Orange County to provide for provisions establishing adjacent land use compatibility, boundaries of future annexations, and a dispute resolution mechanism.

Policy 1.1.4

The City of Apopka will strive to assess and implement new mechanisms as needed to improve how it develops, manages, and amends its interlocal agreements to improve coordination with respective governments.

Policy 1.1.5
Should it become necessary, the City will utilize all possible enforcement mechanisms, including but not limited to, formal and informal dispute resolution mechanisms, litigation, or the administrative assistance of appropriate state agencies to achieve the agreements described in this plan.

Policy 1.1.6
The City of Apopka shall continually review the implementation of its LDC and public facilities systems to ensure that the appropriate policies of the State Comprehensive Plan and the SRPP are implemented.

Policy 1.1.7
Coordinate with Orange County, Seminole County, and Lake County, through interlocal agreements, if necessary, to improve the notification process regarding new development proposals located within one mile of the common boundary that may impact the other jurisdiction's provision of public facilities.

Policy 1.1.8
Continue to coordinate with Orange County to define procedures for annexation and to ensure that upon approval of an annexation ordinance, the City's comprehensive plan and LDC apply to the annexed property.

Policy 1.1.9
The City shall pursue an Interlocal Service Boundary Agreement (ISBA) to allow for annexations within the JPA in an effort to reduce existing and future enclaves within the JPA.

OBJECTIVE 1.2
The City shall continue to coordinate with Orange County Public Schools (OCPS) to ensure the provision of infrastructure needed to accommodate new schools and that sufficient school capacity and associated concurrency agreements are available for new development proposals.

Policy 1.2.1
The City will review and coordinate with OCPS on development plans for the expansion of existing schools or the development of new school facilities within the City to assess, identify, and address any potential infrastructural or community-based issues.

Policy 1.2.2
For plans that involve the development or expansion of school facilities, the City will coordinate with OCPS to review the plan for potential impacts on LOS standards to ensure that the plan is consistent with the City's interlocal agreement with OCPS.

Policy 1.2.3
The City and OCPS will continue working together to publicize its projects and activities to inform residents of the different services available to them, such as joint use recreational facilities.

Policy 1.2.4
The City will coordinate with OCPS regarding the location of schools near or adjacent to public facilities, such as parks, libraries, public transportation, community centers, etc.

Policy 1.2.5
To assist in the development of student enrollment projections, the City will continue to provide data on projected population growth, development trends, and demand for new school facilities in the City to OCPS.

Policy 1.2.6
Encourage the inclusion of a OCPS representative as an ex-officio member on the Local Planning Agency to comment on proposals that may potentially impact local schools. Similarly, encourage the designation of a representative of the City to serve on the OCPS Technical Planning Committee.

Policy 1.2.7
The City and OCPS will work to assess and identify potential opportunities to jointly plan, fund, and provide parks and recreation facilities to residents, such as joint-use parks at City schools.

OBJECTIVE 1.3
The City of Apopka shall continue to coordinate with state water resource agencies to provide enhanced protection of water resources in the area.

Policy 1.3.1
The City will ensure that SJRWMD is provided an opportunity to comment on proposed developments that may have substantial implications for local water resources_in the land development review process.

Policy 1.3.2
The City will participate in the development of water supply development-related initiatives facilitated by SJRWMD that may have implications for the City.

Policy 1.3.3
To protect its potable water service, the City will coordinate with adjacent local governments as needed to continue enforcing its wellhead protection zone, consisting of a 200' radius from the wellhead, in which potentially high-risk land uses are prohibited.

Policy 1.3.4
The City will strive to protect public potable water wellfields from incompatible land uses and all other potential threats to water quality.

Policy 1.3.5
The City, in cooperation with Orange County, will continue to implement and annually reevaluate its Joint Planning Area (JPA) Agreement, which includes an intent to protect the Wekiva River and ensure its effectiveness for both jurisdictions.

Policy 1.3.6
The City shall regularly review its LDC to ensure compliance with the appropriate provisions of the Wekiva River Protection Act applicable to the City.

Policy 1.3.7
The City will look for support and assistance from external agencies, such as the Department of Health and the Wekiva River Basin Commission, as needed to facilitate the implementation of the Wekiva Parkway and Protection Act of 2004 (as amended).

Policy 1.3.8
The City shall support and coordinate with the ECFRPC, the SJRWMD, and other agencies and neighboring local governments as needed to address potential impacts of proposed redevelopment or any new development near Lake Apopka, included but not limited to new parks, roads, or trails.

Policy 1.3.9
The City shall ensure its reuse water policies, aquifer recharge, and stormwater management projects are consistent with existing plans established by the SJRWMD and any other significant policy frameworks that the City deems appropriate.

Policy 1.3.10
The City will coordinate appropriate activities with the FDEP, SJRWMD, and Orange County as needed to effectively manage the preservation and protection of surface and ground water quality, quantity, and aquifer recharge areas.

Policy 1.3.11
The City, in cooperation with the County, FDEP, and SJRWMD, will evaluate and promote, if viable, the establishment of a regional wastewater program that will decrease the prevalence of septic systems, minimize groundwater and surface water contamination, maximize the reuse of reclaimed water, and reduce future ground water demand through beneficial reuse.

OBJECTIVE 1.4

The City shall continue to participate in and implement agreements with Orange County and other adjacent local governments as needed to facilitate the delivery of infrastructure services to residents, including roadways, water reuse, potable water services, solid waste disposal, and sewer services.

Policy 1.4.1

The City shall continue to participate in the Interlocal Solid Waste Agreement with Orange County.

Policy 1.4.2

The City shall utilize the Joint Planning Agreement as a guide for the review of projects and to assist in coordination between Apopka and Orange County which include the following items:

a. Joint Planning Area;
b. Utilities – potable water, sewer, and stormwater;
c. Kelly Park Interchange Land Use Plan;
d. Planning and development within the Joint Planning Area;
e. Public Services; and
f. Transportation facilities.

Policy 1.4.3

The City of Apopka shall continue to implement its Utility Service Area Agreement with Orange County for water and sewer service provision. The City will function as the primary provider for potable water service, reclaimed water and wastewater services within the City and within areas of unincorporated Orange County that lie within the City's utility service areas. The County will continue to serve potable water service, reclaimed water and wastewater services within the Adjacent Territorial Area even after they are annexed into the City of Apopka, as defined in the City of Apopka/ Orange County Amended and Restated Water, Wastewater and Reclaimed Water Territorial Agreement.

Policy 1.4.4

Continue to pursue new joint planning opportunities with adjacent local governments as needed to coordinate the provision of utilities to avoid duplication of facilities and services.

Policy 1.4.5

The City will continue to collaborate with other local governments, primarily through participation with MetroPlan Orlando and the Central Florida Regional Transportation Authority, to secure additional sources of funding and coordinate facilities' improvements for local transportation needs.

Policy 1.4.6
The City shall coordinate with Orange County, MetroPlan Orlando and the Florida Department of Transportation (FDOT) to monitor operating conditions of major roadways in and around the City and implement projects and strategies that enhance roadway conditions and improve regional connectivity where feasible.

Policy 1.4.7
The City of Apopka shall maintain and establish coordination agreements to coordinate with adjacent jurisdictions to address issues regarding infrastructure and transportation impacts of new development that affects more than one jurisdiction.

Policy 1.4.8
The City shall coordinate with the SJRWMD, FDEP, Federal Emergency Management Agency (FEMA) and other appropriate state and federal agencies that have jurisdictional authority in the City to ensure that water quality, stormwater drainage and flood control measures are addressed with impacts of development.

Policy 1.4.9
The City shall prioritize in the Capital Improvements Element any significant recommendations from the adopted Master Stormwater Management Plan prepared in collaboration with multiple jurisdictions and the SJRWMD.

Policy 1.4.10
The City will strive to coordinate with adjacent jurisdictions and external agencies to secure funding and facilitate plans, programs, and projects that enhance City infrastructure to increase its sustainability so that future generations may benefit from it.

OBJECTIVE 1.5
The City shall continue to work with external organizations, local governments, and non-profit agencies to address local housing needs and related community issues.

Policy 1.5.1
The City of Apopka will coordinate with local governments and external agencies like Orange County and the ECFRPC in the development and distribution of housing information for local/regional housing programs to residents.

Policy 1.5.2
The City will strive to collaborate with state agencies, local governments, and external agencies in the community whenever possible to develop and implement housing initiatives that address housing affordability, accessibility, and quality.

Policy 1.5.3
The City will continue to utilize its Community Redevelopment Agency to secure and apply funds within the CRA District to improve local housing and community conditions through programs such as the Residential Renovation Assistance Program and the Residential Fee Assistance Program.

OBJECTIVE 1.6
Upon adoption of the Comprehensive Plan, the policies, objectives, capital improvement proposals, and the level of service standards therein shall not be revised without completion of the plan amendment process required by Chapter 163, Florida Statutes.

Policy 1.6.1
The City will provide adjacent local governments and the affected regional and state agencies with an opportunity to provide comment regarding proposed plan amendments consistent with Florida Statutes.

Policy 1.6.2
The evaluation format for a plan amendment shall be reviewed as needed by the City to ensure that it includes an analysis of the proposed amendment's impacts on the Apopka Comprehensive Plan, potential impacts on adjacent local governments, the combined effect of all proposed amendments, and findings of fact for each proposed plan amendment.

Policy 1.6.3
The Community Development Department will prepare an evaluation of plan amendment applications received and will provide copies of this evaluation to the applicants and any other agencies that may be impacted by the amendment.

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INTERGOVERNMENTAL COORDINATION ELEMENT

INTRODUCTION

Intergovernmental coordination between the City and other local governments and agencies is key for managing growth within and around the City and for enforcing the Comprehensive Plan. The Intergovernmental Coordination Element (ICE) of this Plan outlines all of the City's partnerships, effective coordination and interlocal agreements, and coordination strategies that can be used by the City as it strives to maintain and grow its network through relationships with partners that offer the highest good for the City. This entails striving to improve coordination and cooperation among the various levels of government (Federal, State, Regional) as well as with the private sector. For the City of Apopka, the sphere of concern mostly involves the continued cooperation and coordination with Orange County. The City is within a few miles of the City of Ocoee and the communities of Zellwood (west), Paradise Heights (south), and Clarcona (south). It is also adjacent to a small portion of Seminole county (east), and Lake County (north).

As mentioned before, intergovernmental coordination is essential for managing growth in the City and planning for future populations (implementing the Comprehensive Plan). In addition to this it is key for the efficient and effective delivery of services to City residents. Services or are organized and dispensed through various mechanisms, including interlocal agreements, contract agreements, mutual aid, informal agreements, letter agreements, and Memorandums of Understanding. This element provides a framework for governmental interaction between the City and its local, regional, state, and federal partners. This framework is pillared by the objectives of this element as well as the City's major planning areas: land use, transportation, schools, housing, public services and utilities, and recreation.

COORDINATION AGREEMENT INVENTORY

The City of Apopka has numerous agreements of one kind or another currently in place with many of the surrounding governments and special districts. Table ICE – 1 identifies the current agreements between the City and its respective partners, the nature of the agreement, the City department primarily responsible for maintaining the relationship, and the current standing of the agreement. In general, the agreements shown in the table below represent cooperative efforts for solving intergovernmental problems and are a means of achieving greater efficiency for both parties involved. For example, the City has joint use agreements and reciprocal agreements with the Orange County School Board (OCSB) for recreation facilities.

Table ICE - 1 Inventory of Intergovernmental Coordination Agreements

Inventory of Intergovernmental Coordination Agreements				
Coordinating Entity	**Subject**	**Coordinating Mechanism**	**Lead City Department**	**Status**
Adjacent Cities				
Altamonte Springs	Fire protection and rescue services	Interlocal Agreement	Fire Dept.	Satisfactory
Ocoee	Fire protection and rescue services	Interlocal Agreement	Fire Dept.	Satisfactory
Ocoee	Transportation planning coordination	Informal Coordination	Community Development	Satisfactory
Orlando	Fire protection and rescue services	Interlocal Agreement	Fire Dept.	Satisfactory
Eatonville	Police Dispatching Services	Interlocal Agreement	Fire/Police Dept.	Satisfactory
Maitland	Police Dispatching Services	Interlocal Agreement	Fire/Police Dept.	Satisfactory
County				
Orange	Accept and enforce County Animal Control Ordinance to regulate animal care in County	Orange Co. Ord. No. 95-32 & City Ord. No. 893	Police Dept. / Code Enforcement	Satisfactory
Orange	Establishment of Urban Service Area	Interlocal Agreement	Public Services	Satisfactory

INTERGOVERNMENTAL COORDINATION ELEMENT				
Orange	Emergency water supply interconnect agreement	Interlocal Agreement	Public Services	Satisfactory
Orange	Interconnect to Apopka's water system to provide temp. fire flow backup to Plymouth Service water system	Letter Agreement	Public Services and Fire Dept.	Satisfactory
Orange	Traffic signal installation, operation and maintenance for the intersection of Rock Springs Road and Welch Road	Interlocal Agreement	Public Services	Satisfactory
Orange	Distribution of "9-1-1" Emergency Phone Service Fee	Interlocal Agreement	Fire and Police Dept.	Satisfactory
Orange	Combined operational assistance and voluntary cooperation mutual aid agreement	Mutual Aid Agreement	Police Dept.	Satisfactory
Orange	Solid Waste Management	Interlocal Agreement	Public Services	Satisfactory
Orange	Joint Planning Area	Interlocal Agreement	Community Development	Satisfactory
Orange	Public Schools Facilities Planning and Implementation of Concurrency	Interlocal Agreement	Community Development	Satisfactory
Orange	Regulation of Solid Waste Management Facilities	Interlocal Agreement	Community Development	Satisfactory
Orange	Intergovernmental Radio Communication Program	Interlocal Agreement	Fire Dept.	Satisfactory
Lake	Fire protection and rescue services	Interlocal Agreement	Fire Dept.	Satisfactory
Lake	Transportation planning coordination	Informal Coordination	Community Development	Satisfactory
Seminole	Fire protection and rescue services	Interlocal Agreement	Fire Dept.	Satisfactory
Seminole	Combined operational assistance and voluntary cooperation mutual aid agreement	Mutual Aid Agreement	Police Dept.	Satisfactory
State				

INTERGOVERNMENTAL COORDINATION ELEMENT				
FDEO	Small Cities Community Development Block Grant program: Commercial Revitalization, Housing, Neighborhood Revitalization, and Economic Development	Contracts as applicable	Community Development	Satisfactory
FDEO	Comprehensive Planning, Florida Building Codes, National Flood Insurance Program	Review and Regulation	Community Development	Satisfactory
St. John's River Water Management District	Wekiva River Protection Act	State Regulation Comp. Plan	Community Development	Satisfactory
St. John's River Water Management District	Water Use Permit, Well Construction Permit, Regional Water Supply Planning, Water Conservation, Reclaimed Water Projects	Permitting, Review, and Regulation	Community Development	Satisfactory
St. John's River Water Management District	Central Florida Aquifer Recharge Enhancement Water Resource Development Project	Informal Coordination	Public Services	Satisfactory
St. John's River Water Management District	Use of water from the north shore restoration area at Lake Apopka	Memorandum of Agreement	Public Services	Satisfactory
State Bureau of Historic Resources	Coordination and review for historic preservation activities	Apopka Historical Properties Survey, National Register of Historic Properties, State Master Site File	Community Development	Satisfactory
FDEO	Support State Emergency Management Plan for the provision of Emergency Assistance	Statewide Mutual Aid Agreement	Fire Dept.	Satisfactory
FDOT	Level of Service Agreements with FDOT and Orange County	Level of Service Agreements	Community Development	Satisfactory

INTERGOVERNMENTAL COORDINATION ELEMENT				
FDOT	Maintenance Agreement for all paved, landscaped and/or turfed areas within FDOT rights-of-way for US 441 and SR 436	Highway Maintenance Memorandum of Agreement	Public Services	Satisfactory
FDOT	Waiver of fees for application processing, review, inspection of access permits	Permitting	Public Services	Satisfactory
FDOT	Traffic signal installation, operation and maintenance for the intersection of Midland Ave/Edgewoood Dr., Park Ave., and Central Ave.	Interlocal Agreement	Public Services	Satisfactory
FDOT and FL Central Railroad	Maintenance of RR grade crossing traffic control devices	Railroad Reimbursement Agreement	Public Services	Satisfactory
FL Central Railroad Company	License Agreement	Agreement	Public Services	Satisfactory
State of Florida	State Emergency Management	Statewide Mutual Aid Agreement	Fire Dept.	Satisfactory
State of Florida	Plan and Program for State Emergency Assistance	Agreement	Fire Dept.	Satisfactory
Florida Department of Corrections	Inmate Labor Work Program	Agreement	Police Dept.	Satisfactory
State				
Department of Environmental Protection	Development regulations in the Wekiva River Protection Area	Informal Coordination	Community Development	Satisfactory
FEMA	Joint Hazard Mitigation Grant Program	Agreement	Fire Dept.	Satisfactory
FEMA	Flood Insurance Rate Map (FIRM) updates	Review, Regulations	Community Development	Satisfactory
Utilities				
Embarq	Telephone Service	Franchise Agreement	Admin.	Satisfactory
Progress Energy	Electricity	Franchise Agreement	Admin.	Satisfactory
Bright House	Cable Service	Franchise Agreement	Admin.	Satisfactory

Lake Apopka Gas District	Natural Gas	Franchise Agreement	Admin.	Satisfactory
City of Apopka	Amended and Restated Potable Water, Wastewater and Reclaimed Water (reuse)	City is provider	Public Services	Satisfactory
City of Apopka	Solid Waste Collection and Recycling	City is provider	Public Services	Satisfactory
Orlando Utilities Commission	Renew Reclaimed Water Agreement - PROJECT ARROW	Agreement	Public Services	Satisfactory
Zellwood Station Co-Op, Inc.	Joint Planning Area - Wholesale Reclaimed Potable Water and Wastewater	Agreements	Public Services	Satisfactory
Other				
OOCEA - Orlando Orange County Expressway Authority	Transportation planning	Formal coordination	Community Development	Satisfactory
Metroplan Orlando	Transportation Planning and Funding Agreement	Technical Advisory Committee and Agreement	Community Development	Satisfactory
Orange County School Board	Provide 5 school resource officers	Agreement	Police Dept.	Satisfactory
Orange County School Board	Mutual agreement for use of 9th Grade Center parking lot and city's athletic complex adjacent to 9th Grade Center	School Facility Use Agreement	Recreation Dept.	Satisfactory
Orange County School Board	School Impact Fee Distribution	Interlocal Agreement	Admin.	Under negotiation
Lynx	Transit Station License	Agreement	Public Services	Satisfactory
Keene Road Landfill, Inc. Buttrey Dev.	Landfill Management	Agreement	Community Development	Satisfactory

Source: City of Apopka Community Development Department
Date Retrieved: September 2023

INTERGOVERNMENTAL PRIORITIES, CHALLENGES, AND OPPORTUNITIES

Table ICE – 1 summarizes the current inventory of agreements between the City, other adjacent cities and counties, regional, state, federal, utility companies and other agencies in the area. Even though the City has several kinds of agreements in effect, there are several issues or areas of improvement which would benefit from improved levels of cooperation and coordination. Some areas of improvement result from the need to establish new relationships, or the need to strengthen existing ones. The issues are identified and addressed below Table ICE – 1.

SCHOOL BOARD COORDINATION

In order to adhere to the Growth Management Reform Act of 2005, the City adopted the required Public School Facilities Element language, and executed an amended Interlocal Agreement for Public School Facility Planning and Implementation of Concurrency with Orange County, OCSB and other municipalities in the County in 2009. This has enabled the City of Apopka and the OCSB to coordinate the development of school sites, the expansion of existing schools, and the provision of adequate infrastructure and public facilities in association with residential development.

In addition, the City holds four interlocal agreements with the OCSB to implement various programs and services for residents. For instance, a school board representative serves on the Planning Advisory Board to ensure that school site development is coordinated with the City's Future Land Use Element. The City also notifies the school board of new development proposals within the City at the earliest stage possible in the review process, assists the OCSB in helping to publicize its projects and services that it provides to the community, and helps the OCSB project future enrollment numbers, and will continue this coordination. Further, the City and the school board coordinate to ensure the provision of school resource officers where they are needed, the exaction of school impact fees, and the provision of recreational opportunities and expanded facilities to City residents.

LAND USE AND JOINT PLANNING AREA

Apopka and Orange County currently notify the other jurisdiction when development proposals are occurring that might affect the adjacent jurisdiction. However, land use compatibility and coordination between the City and Orange County presents some

potential areas of improvement. The City has worked for some years and will continue to work to coordinate land uses with the County to address and mitigate land use issues they experience with compatibility. Similarly, the City's boundaries are adjacent to the Seminole County line. There is no existing process to notify Seminole County of development proposals within the City, and Seminole County does not currently notify Apopka of development proposals adjacent to the City limits. There is a need to improve the notification process between the City and Seminole County regarding new and forthcoming development proposals.

The City will also consider coordinating with Lake County for the same reason, so both entities do not impose on the other with their growth and land use decisions. Further, the City will work with Orange County and its neighbors to engage in and support the goals outlined in the East Central Florida Regional Planning Council's (ECFRPC) regional planning initiatives. This includes the Strategic Regional Policy Plan adopted in 2011, as well as the "How Did We Grow" regional report completed in 2020 which was a follow-up to the "How Shall We Grow" regional report.

Chapter 163, F.S. requires the comprehensive plan to "provide for procedures to identify and implement joint planning areas, especially for the purposes of annexation, municipal incorporation, and joint infrastructure service areas." The entered into a Joint Planning Area Agreement (JPA) on October 26, 2004 with Orange County to adhere to state law. The agreement addresses the conflict resolution process, notification, annexations, joint land use planning, site development standards, and other similar joint planning issues. This includes the protection of the Wekiva River with considerations for open space, buffers, and density requirements for development in the Northern Study Area. Since its creation, the JPA has worked well to define the potential growth boundary for the City and assist in annexations. The JPA has also provided for cooperation between the City and County to address the elimination of enclaves. The JPA set land use strategies, which ultimately reflected the mandates of the 2005 Wekiva Parkway and Protection Act in terms of open space requirements.

HOUSING

The City is fortunate to have a wide range of partners they may collaborate with to encourage the development of new housing as well as attainable housing. In 2022 Orange County developed its own housing trust fund and related plan, called the Affordable Housing Trust Fund Plan, in order to spur the development of more attainable housing units in response to increased housing costs in the County. A few years before in 2019 the County developed its Housing For All Task Force and its related plan, called the Orange County Housing for All 10-Year Action Plan. This initiative built upon a previous housing initiative that the County participated in in 2016 in collaboration with Osceola County, Seminole County, and the City of Orlando.

The Regional Affordable Housing Initiative, as it was known, sought to bring community leaders together to identify housing challenges as well as policy and programming solutions for the region. The County drew from its participation in this initiative to develop its trust fund, task force, and several housing plans and policies. Similarly, Seminole County developed its own housing plan, called the Attainable Housing Strategic Plan. Other partners in the region that have been active in the housing sphere include the BRIGHT Community Land Trust, the Hannibal Square Community Land Trust, LIFT Orlando, the Shimberg Center for Housing Studies, the Florida Housing Coalition, and the Florida Redevelopment Association.

There is no coordinated, multi-jurisdictional approach to the provision of affordable housing in the City. The City utilizes its Community Redevelopment Agency (CRA) that has designated a Community Redevelopment Area in its downtown. The CRA focuses its efforts in this area to address and mitigate blight while supporting the mix of businesses, residences, and historic sites therein. Through the CRA the City provides a Residential Fee Assistance Program that provides the payment of the impact fees for infill projects that develop single-family homes, and a Residential Renovation Assistance Program that supports the exterior renovation of existing single-family homes. In addition to this, the City works with DEO to implement state funds from the Small Cities Community Development Block Grant program. This program, through its focus on housing and neighborhood revitalization, can help to improve housing and community conditions in the City.

One possible mechanism for improving the provision of affordable housing is the establishment of a City/County housing finance authority. The authority's primary responsibility would be to improve affordable housing conditions in the Apopka area. Another would be to enable the development of more affordable housing units via the Live Local Act. The Act, which passed in March 2023, requires that all local governments provide an inventory of its surplus lands that would be ideal for the development of affordable housing on its website, and also utilize best practices in managing surplus lands by October 1, 2023. In addition to this, the City must also list on its website the expedited permit processes, and any other incentives it offers for development proposals that include the creation of new affordable housing. As the City provides this as the law mandates, it may also consider other ways it can use the Live Local Act to spur the development of new affordable housing units within its limits.

MOBILITY AND TRANSPORTATION IMPROVEMENT FUNDING

Due to high population growth in the City, the County, and in neighboring local governments, there is a need for the City to coordinate with local governments adjacent to it to ensure its network of transportation infrastructure is suitable to meet levels of service (LOS) and is free of daily stressors, like congestion and traffic incidences. For instance, transportation facilities and corridors, like Mt. Plymouth Road, in Lake County affect the traffic conditions within Apopka. The City should consider an interlocal agreement with Lake County/Lake Sumter Metropolitan Planning Organization to improve the transportation coordination process between the two jurisdictions. Additionally, the City should consider cooperating with other local governments in the region and the state to find additional sources of revenue for road projects. Currently, the City does coordinate with Lake County via a informal agreement with Lake County as well as the City of Ocoee to conduct "transportation planning coordination" with the City. Creating a more formal agreement may suit the City's need to ensure the County's major roadways are coordinated with the City's transportation network.

Similarly, the City has an active LOS agreement with the Florida Department of Transportation and with Orange County to ensure that they are in sync with one another as development occurs and provided with the road maintenance and/or expansion needed. Of course, FDOT is responsible for maintaining roads or highways owned by the state through a MOU. This includes landscaping, traffic signal operation, and maintenance. The City also has a license agreement with the Florida Central Railroad Company, a transportation planning agreement with the Orlando Orange County Expressway Authority, and a transportation planning and funding agreement with Metroplan Orlando, the Metropolitan Planning Organization for Orange, Osceola, and Seminole counties.

RECREATION

The City has access to and enjoys various recreational services outside of its limits with no financial or operational contribution from Orange County. The City has included several policies in this element to continue supporting its agreement with the OCSB regarding use and operation of its recreational facilities, such as existing facilities at County parks and schools. Also, one of the best examples of regional bike path interconnectivity in East Central Florida is the West Orange Trail, which runs from the southern portion of the City to Winter Garden and then west to Lake County. The West Orange Trail then connects with Lake County's bike path system which continues on through Minneola. A significant bike trail connection is planned to connect the West Orange Trail with the Seminole County Trail system. The City should strive to maintain

effective relationships with its regional partners to ensure the vitality of the trail and its effective use by City residents.

UTILITIES

The City provides utility services to its residents by means of several coordination agreements. The City operates the Orange County Northwest Utility Service Area since the City purchased it via the First Amendment to the City of Apopka/Orange County Amended and Restated Water, Wastewater, and Reclaimed Water Territorial Agreement, approved by the Orange County Board of Commissioners and Apopka City Council in March 2006. The City also provides water and wastewater services through its Zellwood Station, using the Apopka/Zellwood Station Co-op Inc. Wholesale Potable Water and Wastewater Agreement that was executed in 2006. Under the terms of the agreement, the City generally provides water and wastewater service to areas inside the utility service area (City Territorial Area) and Orange County generally provides service to those areas located outside the service area (Adjacent Territorial Area).

There are certain exceptions, however. The County may also serve utility customers within the Adjacent Territorial Area even after they are annex into the City of Apopka. Currently there is a small area that is served by the County within the City limits. Water demands for this area are not calculated within the City of Apopka calculations because they are calculated within Orange County calculations. With the County the City also has an interlocal agreement to enable an Emergency Water Supply interconnect agreement between the two entities. Between the two entities is also a solid waste management interlocal agreement to effectively manage and provide solid waste utility services to its residents. Further, the City has an agreement with the City of Orlando in Orange County to implement Project Arrow. This is established through a renew reclaimed water agreement between the city and the Orlando's Utilities Commission.

The Wekiva Parkway and Protection Act, enacted in 2005, required a master stormwater management plan and a wastewater facility plan for joint planning areas and utility service areas where central wastewater systems are not readily available. A portion of the City of Apopka is located within the Wekiva Protection Area, which has been designated an Area of Critical State Concern. Because of this, the City analyzes individual development projects for impacts to the area and requires that development meet the SJRWMD's regulations to ensure that there are no negative impacts to the water quality of the protection area. The City also coordinates with the Department of Environmental Protection to ensure the vitality of the Wekiva Protection Area.

In addition to this, the City also coordinates with the SJRWMD to issue water use permits and well construction permits, use water from the north shore restoration area at Lake Apopka, conduct regional water supply planning and water conservation, and implement reclaimed water projects. Further, the City has an informal agreement with the SJRWMD

to conduct Central Florida Aquifer Recharge Enhancement Water Resource Development Project. The SJRWMD has and in the future will be a major partner of the City as it continues to preserve the quality of its water resources.

Embarq, Progress Energy, and Bright House Agreements confirmed by Susan?

PUBLIC SERVICES

The City has several coordination agreements with adjacent local governments wot provide public services in an effective and timely manner to its residents. To provide Fire Services, the City coordinates with the Cities of Altamonte Springs, Ocoee, Orlando, Seminole County, and Lake County via interlocal agreements. For Police Services in the City, there are interlocal agreements with the Cities of Eatonville and Maitland. The City also maintains a mutual aid agreement between its City Police Department and Orange County, Seminole County, and Lake County. With Orange County, the City also holds a coordination agreement for the County to provide Animal Control services to City residents. Lastly, the City coordinates with the State of Florida and with FEMA for emergency management, and relies on a statewide mutual aid agreement with the State to support as well as receive support for emergency management when needed.

RESILIENCE & SUSTAINABILITY ELEMENT

Working towards an equitably resilient and sustainable community

RESILIENCE & SUSTAINABILITY ELEMENT

GOAL 1

Create a vibrant, sustainable, and resilient community through innovative, inclusive, and sensible planning and implementation. To promote health and safety, environmental stewardship, social cohesion, strategic infrastructure, equity, prosperity, and overall community well-being.

OBJECTIVE 1.1

The City shall work to integrate sustainable principles of development and redevelopment to promote and prioritize community resilience.

Policy 1.1.1

The City shall continue to promote measures and, when feasible, prioritize strategies (e.g., green building standards, land development code requirements, Arbor Day Foundation program, Tree City, and others) that enhance tree canopy and open spaces for the reduction of heat island effect, development of equitable and healthier communities, biodiversity support, stormwater management, water quality improvement, energy and water use reduction, roadway improvements, and other resilient efforts. The implementation of these nature-based solutions should be sensibly and strategically evaluated for suitability and best benefits of services.

Policy 1.1.2

The City is encouraged to conduct research on funding opportunities, programs, and partnerships (e.g., Orange County Housing Rehabilitation Program, Florida single-family housing repair loan and grants and those businesses located within the Community Redevelopment Area) and to use findings to assist low-income property owners in enhancing their home structure resilience.

Policy 1.1.3

The City shall continue to advocate for the priority of historical resources (e.g., Camp Wewa, Highland Manor) by encouraging preventive property maintenance and rehabilitation rather than demolition for redevelopment.

Policy 1.1.4

The City shall continue to support the implementation of low-impact development and best management practices (e.g., impervious surface reduction, vegetation for run-off filtration and retention, and others alike) within the Wekiva Study Area to conserve and protect its healthy water quality, natural habitat, and economic value.

Policy 1.1.5

The City shall encourage smart growth development to reduce environmental impacts and increase community connectivity, mobility, economic diversification, and sustainability.

OBJECTIVE 1.2

The City shall strive to reduce its community carbon footprint by increasing efforts toward smart growth development, alternative modes of transportation (e.g., transit, walking, biking, and other), and by promoting energy-efficient measures in municipal, public, and commercial buildings, where feasible.

Policy 1.2.1

To support County goals and regional efforts in significantly reducing regionwide greenhouse gas (GHG) emissions by the year 2030, the City is encouraged to periodically develop its municipal operations GHG inventory and evaluation of internal procedures as it was conducted during its participation in the Audubon Florida and Regional Resilience Collaborative (R2C) Cohort. Following inventory results, the City is also encouraged to explore ""next steps"" for addressing internal inefficiencies by identifying and prioritizing high-impact actionable strategies that will help reduce GHG emissions and the social, environmental, and economic impacts of a changing climate.

Policy 1.2.2

The City is encouraged to analyze the potential of incorporating solar energy and other energy conservation/carbon reduction measures at city-owned facilities to assist in the reduction of municipal operations-related greenhouse gas emissions.

Policy 1.2.3

The City will work to promote for installations of electric vehicle charging stations in city-own properties to be “universally” accessible/compatible in terms of technology and for stations locations to be distributed or accessible by all neighborhoods for equitable opportunity use.

Policy 1.2.4

Through financial and implementation guiding resources, the City will work to advocate for property owners’ incentives toward necessary improvements for installing electric

vehicle (EV) charging stations. In addition, the City shall explore the possibility of changing or adjusting codes and parking requirements so that EV charging stations can be easily installed.

Policy 1.2.5

The City shall explore the opportunity to evaluate and update building energy codes for new and re-developments to include energy conservation measures such as passive solar design, weatherization, and reflective and green roofs, among other approaches, and promote the use of renewable clean energy alternatives (e.g., solar energy). The City is also encouraged to educate multifamily property owners and tenants about low-cost energy efficiency opportunities.

Policy 1.2.6

The City shall continue to plan for a safe, connected, equitable, walkable, and bikeable community, and partner with organizations that encourage sustainable mobility options (e.g., FDOT yearly partnership for mobility week) and planning to promote physical activity for community health and a lower community's carbon footprint. In addition, the City is also encouraged to consider implementing one or more technological safety improvements such as automated license plate readers and integrated camera systems in high traffic or high crime areas.

Policy 1.2.7

The City shall work to promote and encourage the development community to obtain green certifications under the U.S. Green Building Council, Florida Green Building Coalition, Florida Yards and Neighborhoods Program, Energy Star, Florida Water Star^{SM}, and other programs.

OBJECTIVE 1.3

The City shall work to strengthen economic resilience and diversification by developing partnerships, policies, and programs that support, retain, and/or expand small, disadvantaged, and independent businesses and promote social mobility, equity, and inclusiveness.

Policy 1.3.1

The City is encouraged to continue partnerships with regional agencies, programs, industries, businesses, government entities, and Chamber of Commerce (e.g., Apopka Chamber, Apopka Youth Work, Wekiva High Culinary program, etc.) to promote local prosperity and economic diversity, inclusively and equitably, by providing mentorship, vocational guidance, training, and other relevant tools to residents from all education and skill levels, specifically to under-served individuals, neighborhoods, and economic centers within the City, to promote a resilient workforce.

Policy 1.3.2
The City is encouraged to develop necessary partnerships to provide assistance programs to help improve the infrastructure and operational resilience of businesses.

OBJECTIVE 1.4
The City shall work with state and local agencies and organizations to increase sustainable and resilient opportunities within City operations and throughout the community.

Policy 1.4.1
The City is encouraged to evaluate all current and future plans, processes, projects, and codes to ensure a cohesive approach to resilient community development.

Policy 1.4.2
The City shall work to promote awareness on environmental, socio-economic, and public health impacts related to the built environment and the changing climate by providing science-based information and education, and implementing City resilience efforts to increase community and stakeholder engagement, collaboration, and sensible planning.

Policy 1.4.3
The City shall encourage adaptive approaches, such as emerging technologies and climate change science data, and input from impacted community members to future infrastructure planning for more innovative, resilient, and inclusive development.

Policy 1.4.4
The City shall promote and exhibit diversity, equity, and inclusion within the City government operations to include staff, boards, and commission, and to incorporate community engagement.

Policy 1.4.5
The City is encouraged to work on increasing partnerships for regional efforts (e.g., Regional Resilience Collaborative) and continue its local collaboration with Orange County to support and enhance region-wide social, economic, and environmental resilient actions to help strengthen and improve communities' quality of life and well-being for a prosperous and healthy City and its surroundings.

Policy 1.4.6
The City shall encourage the use community gardens, open green spaces, and public facilities for community multigenerational purposes, fostering activities that promote physical and mental health and increase residents' connection within their community as well as natural environments.

Policy 1.4.7
The City shall recognize and promote energy efficiency as a tool to increase housing affordability and as an equitable approach to increase resilience.

Policy 1.4.8
The City shall evaluate the potential investment of public facilities' weatherization to prepare for extreme weather and natural events in anticipation of climate change impacts. The City should also consider these climate impacts and resilience when planning investments in assets that will last more than five years.

OBJECTIVE 1.5
The City shall integrate resilient infrastructure principles to provide maximum efficiency and return to service when considering current and future shocks and stressors and changing climate.

Policy 1.5.1
The City shall continue to support heat reductions techniques through the City's Land Development Code and by promoting green building standards and the use of innovative site design and building materials that help lower heat absorption, energy usage, and the heat island effect.

Policy 1.5.2
It is recommended for the City to create a plan to expand and upgrade municipal lighting to improve energy efficiency, reduce energy costs, and improve operational resilience, especially, during local emergency and disaster events.

Policy 1.5.3
The City shall explore equitable, environmentally and economically sustainable, and resilient energy generation options (e.g., solar generators, on-site renewable energy, micro-grid, etc.) to include these infrastructures and improve energy needs during and after disaster events.

Policy 1.5.4
The City shall collaborate with partners across the region and state to assess and integrate diverse solutions for more equitable and resilient technological communications infrastructure.

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RESILIENCE & SUSTAINABILITY ELEMENT

INTRODUCTION

The Resilience and Sustainability Element (RSE) is an optional component of the Comprehensive Plan created to address potential environmental (places- built and natural infrastructure), social (people), and economic (prosperity) vulnerabilities of the community. The element includes perspectives to increase community resilience through the identification and mitigation of short-term shocks and long-term stressors. The data and analysis detailed in this section highlight various vulnerabilities within the City of Apopka and provide the indicators for which the Resilience Element goals, objectives, and policies were derived. Objectives and policies within the Resilience Element's topic areas protect and enhance the City's core values. Guidance in the Resilience Element can help direct efforts toward reducing the community's carbon footprint, land use decision-making, future resilient economic development, equity, and overall community well-being. The element's main goal and objectives focus areas are the following:

> Goal: create a vibrant, sustainable, and resilient community through innovative, inclusive, and sensible planning and implementation. To promote health and safety, environmental stewardship, social cohesion, strategic infrastructure, equity, prosperity, and overall community well-being.
>
> Objectives: work to integrate sustainable principles of development and redevelopment to promote and prioritize community resilience; reduce the community's carbon footprint; strengthen economic resilience and diversification; increase sustainable and resilient opportunities within City operations and throughout the community; and integrate resilient infrastructure principles to provide maximum efficiency and return to service when considering current and future shocks and stressors and changing climate.

This Resilience Element was developed by utilizing a comprehensive scope of all aspects of the community via the People, Places, and Prosperity framework, and the interconnection between these pillars, conducting a City's vulnerability assessment, considering regional efforts identified by the East Central Florida Regional Resilience

Collaborative, and by aligning some of the policies presented in this element with what has already been done or is planned by Orange County and Apopka's neighboring City of Orlando. This segment will complement other elements in the Comprehensive Plan; thus, an overlap of topics is expected; however, a resilience and sustainability lens is applied to address those topics within this element.

DEFINING RESILIENCE

Resilience is the ability to bounce forward; absorb, recover and get better in the face of short-term shocks and long-term stressors.

Resilience is defined by the East Central Florida Regional Planning Council and the Regional Resilience Collaborative as the ability to bounce forward; absorb, recover and get better in the face of short-term shocks like hurricanes or infrastructure failures and long–term stressors like affordable housing, aging infrastructure, shifting economic trends and climate change. All communities experience short-term shocks and long-term stressors. However, stressors are particularly burdensome to communities since these can affect everyday life and immediate well-being. For the past two years, stressors have been heightened by the COVID-19 pandemic impacting communities' quality of life across the East Central Florida region.

The East Central Florida Regional Planning Council (ECFRPC) approach to resiliency planning is characterized by three pillars: People, Places, and Prosperity (Figure RSE- 1). These pillars are integrated into the main objectives of the City of Apopka's Resilience Element. The People pillar addresses the general needs of the population with a focus on health and equity, centered on fostering social cohesion, inclusiveness, and community welfare. The Places pillar focuses on the community's natural and built environments, infrastructure, place-based assets, and local institutions. Finally, the Prosperity pillar harnesses economic resilience through major industry assets and innovation systems to promote paths toward social mobility, equity, and inclusive economic development. Woven through these pillars are efforts to reduce the community's greenhouse gas emissions contributions, reduce risks and vulnerabilities, and support overall local sustainability goals. These three pillars present a holistic approach to promoting a more resilient and vigorous community today and for generations to come.

Figure RSE- 1 ECFRPC Resilience Framework

Sustainability

Sustainability is another important aspect of community resilience. While building resilience, sustainable measures must also be incorporated to ensure that resources are available to communities today and for those resources to meet the future community's needs. Thus, components for environmental stewardship and the support of responsible resources management are included in this element's policies.

VULNERABILITY ASSESSMENT

The vulnerability assessment addresses the people, places, and prosperity dimensions of community resilience as they are integral in the ability of a community to continuously adapt, recover, and thrive. The areas assessed for this report are populations at risk and neighborhoods at risk; these analyses were obtained from city-specific U.S. Census Bureau data and the Headwaters Economics reports. It is recommended that the City continue working with experts to monitor the latest science and data reflective of resilience impacts.

PEOPLE

A vulnerability assessment through the People pillar can help the City better understand required services and needs, a community's sense of belonging, and the community's most prevalent health conditions, at a glance. In this vulnerability assessment of the People pillar, Apopka's vulnerable community segments (i.e., vulnerable age groups, race/ethnic, language barrier, and people living with a disability) are evaluated, along with other community People aspects. This section provides an overview of those segments of the population most susceptible to health problems and environmental impacts, which can present with conditions that a changing climate might further aggravate. For example, individuals with respiratory sensitivities, chronic diseases, vulnerability to extreme heat, and physical and mental stress. By evaluating the community's race/ethnic composition, an insight into community connectivity (e.g., ability to communicate and engage during disaster events), social cohesion, culture, success potential, accessibility to services, physical and mental well-being risk levels, and isolation prevalence can be obtained. These community aspects often correlate with health outcomes that can cause health disparities (e.g., access to resources), exposure to environmental pollution, and greater vulnerability to hazards.

Social Determinants of Health

The people-centered topics of environmental justice and social determinants of health provide insight into potential community social vulnerabilities. The U.S. Environmental Protection Agency (EPA) defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Furthermore, the EPA states justice will be achieved when everyone within a community enjoys: "the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work."

Figure RSE- 2 Social Determinants of Health (Source: U.S. Dept. of Health and Human Services)

The U.S. Department of Health and Human Services defines social determinants of health (Figure RSE- 2) as "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks". These indicators are grouped into five domains: education access and quality, healthcare access and quality, economic stability, social and community context, and neighborhood and the built environment.

Heat and Health Indicators

Extreme heat can negatively impact a community's population and natural environment. Increased heat extremes are influenced by several climate and weather-related factors, including rising global temperatures (mainly driven by anthropogenic greenhouse gas emissions), heat waves (short periods of abnormally hot and humid weather), and urban heat islands (areas of hotter temperatures created by local conditions)[1]. Climate and health experts with the National Integrated Heat Health Information System (NIHHIS) have identified factors that positively or negatively influence how climate can affect human health (Figure RSE- 3). Health outcomes are defined by social and behavioral factors that influence vulnerability for individuals (right box), natural and built environment factors (left box), and climate change. Certain groups are at increased risk

[1]Urban Land Institute. (2019). *Scorched - Extreme heat and real estate*. Retrieved from https://2os2f877tnl1dvtmc3wy0aq1-wpengine.netdna-ssl.com/wp-content/uploads/ULI-Documents/Scorched_Final-PDF.pdf

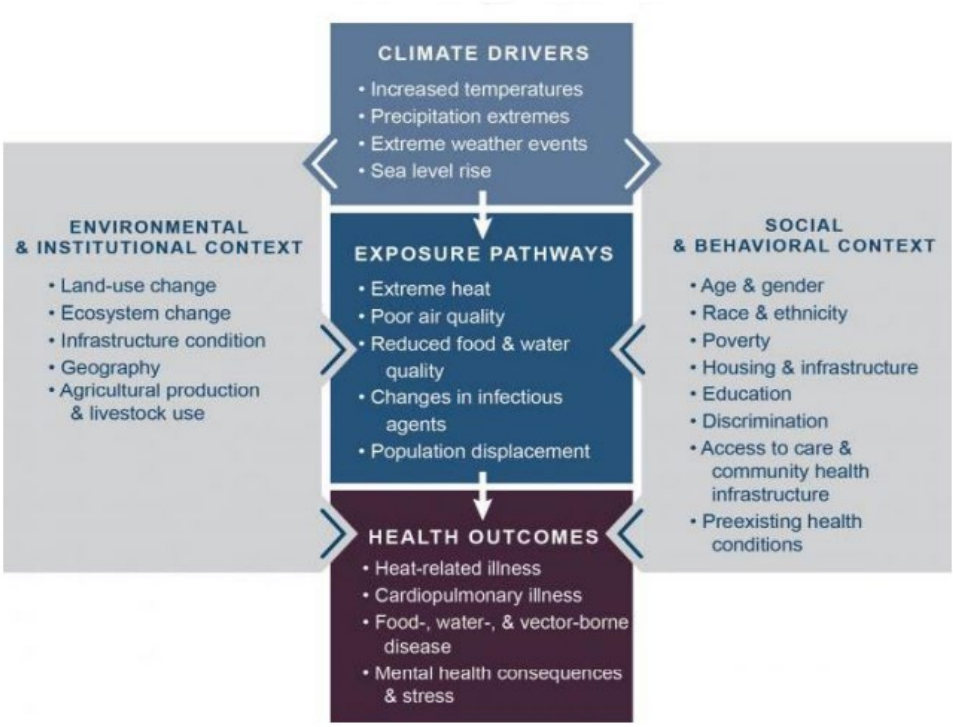

Figure RSE- 3 Climate Impacts to Human Health
(Source: NIHHIS)

of heat-related illness and death, including children, older adults, pregnant women, outdoor workers, emergency responders, and athletes. Identifying populations at increased risk offers a way to reduce exposure and vulnerability through adaptive actions. Actions can be as simple and immediate as raising public awareness or involve more planning, such as increasing tree canopy and reducing impervious surfaces.

Tree Canopy

Tree canopy is essential to help combat heat island impacts, improve air quality, and mitigate flooding. In addition, effective tree canopies contribute to a greater quality of life. For example, it provides the community with a more comfortable walking environment, increasing potential walkability and reducing heat-induced health issues. According to a preliminary evaluation of the City's tree canopy area, utilizing the U.S. Climate Resilience Neighborhoods at Risk Tool, based on socioeconomic and climate exposure factors, it is estimated that five City-intersecting census tracts that correlate with higher than the City's median numbers based on people of color and Hispanics (> 56.7%), people who do not speak English well (> 4%), and people without health insurance (> 11.9%) data, also lack a combined tree canopy area of approximately greater than 75% (Figure RSE- 4).

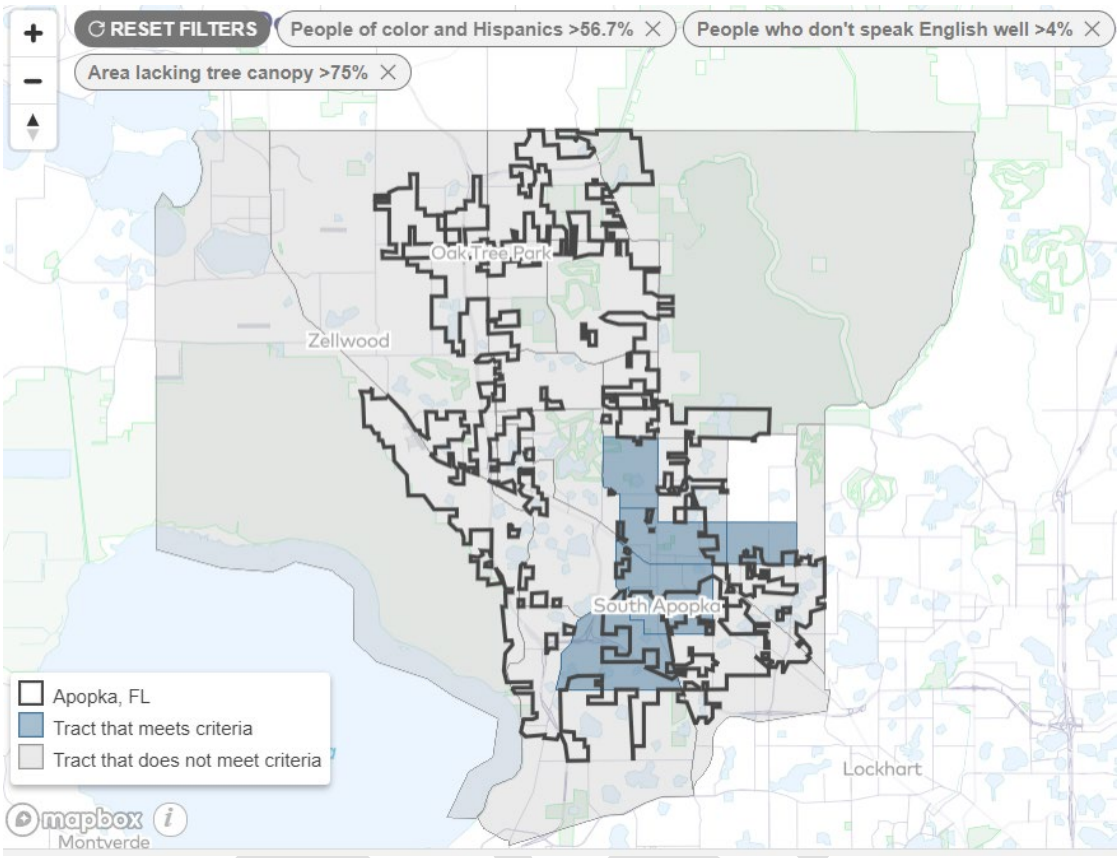

Figure RSE- 4 Areas Lacking Tree Canopy by > 75%
(Source: U.S. Climate Resilience Neighborhoods at Risk Tool, 2023)

Impervious Surface

Impervious surfaces inhibit surface water percolation resulting in water pollution and flooding. Rainwater collects pollutants that can flow into nearby waterways as it flows over impervious surfaces such as rooftops, parking lots, and roads. Moreover, these types of surfaces contribute to heat island effects by storing heat during the day and slowly releasing heat at night[2]. Estimates of the City's impervious surface coverage reported by the U.S. Climate Resilience Neighborhoods at Risk Tool can help prioritize areas for impervious surface enhancements, especially in those areas that also correlate with higher than the median socioeconomic factors. The City should consider factors such as input from the community, low-impact development, and lack of tree canopy coverage. The addition of new impervious surfaces should be limited by preserving open space and concentrating new construction in developed areas.

[2] U.S. Environmental Protection Agency (EPA). (2015). *EnviroAtlas national data fact sheet | Percent impervious area*. Retrieved on May 7, 2021 from https://enviroatlas.epa.gov/enviroatlas/datafactsheets/pdf/ESN/PercentImperviousArea.pdf

By utilizing the U.S. Climate Resilience Neighborhoods at Risk Tool, similarly for the tree canopy evaluation, the City's impervious surface areas were estimated. Findings indicate that three of the five most vulnerable census tracts also have an impervious surface area greater than 25% (Figure RSE- 5). These most vulnerable neighborhoods are detailed in Table RSE - 1.

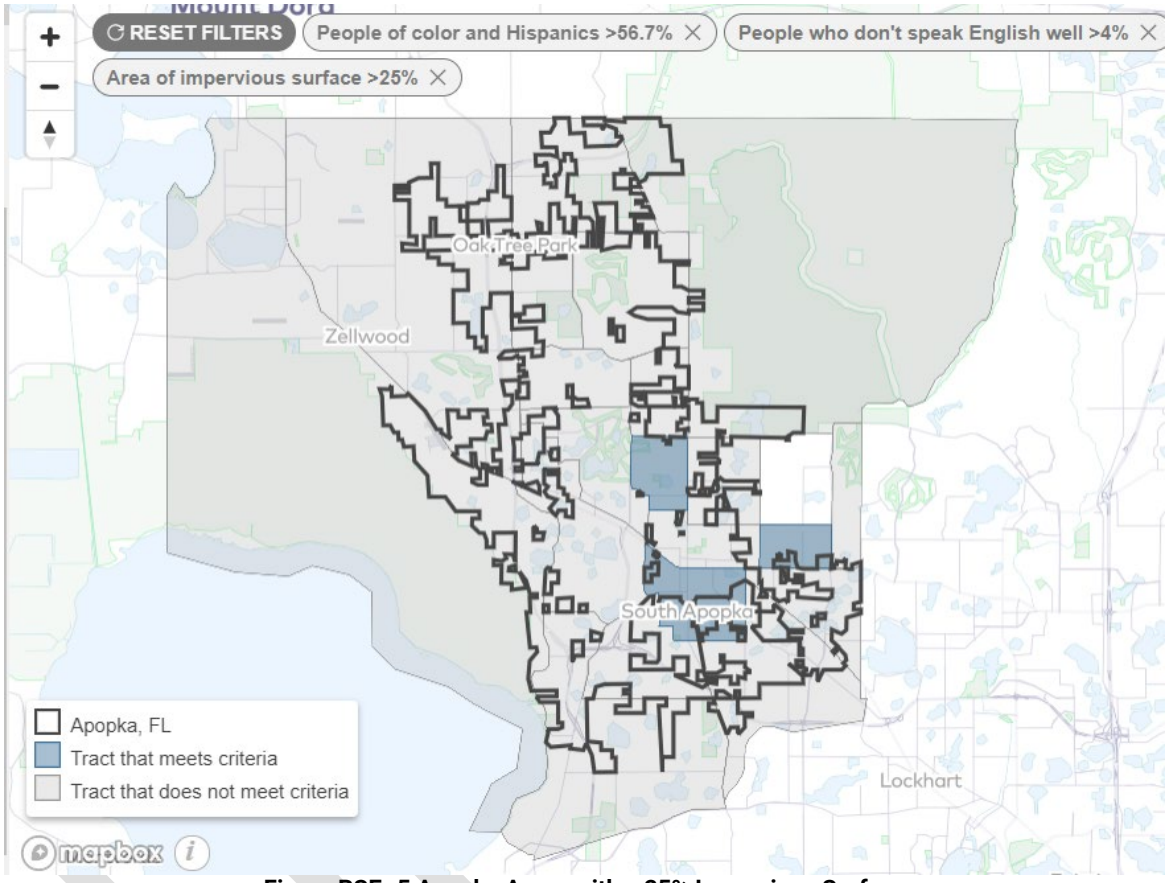

Figure RSE- 5 Apopka Areas with > 25% Impervious Surface
(Source: U.S. Climate Resilience Neighborhoods at Risk Tool, 2023)

Heat Projections

Lack of tree canopy and impervious surfaces significantly contribute to elevated day and evening temperatures, which can result in severe heat-related health effects, significant economic impacts, and a reduction of overall community well-being. Based on the U.S. Climate Resilience Neighborhoods at Risk Tool's climate projections options, it is estimated that by 2030, with a higher global greenhouse gas emissions (RCP 8.5) scenario, Apopka would experience a 32% increase in extremely hot days (9 more days reaching higher than 95°F temperatures, from 29 to 38 days). And with a lower emissions (RPC 4.5) scenario, the city is expected to increase by 25% the number of extremely hot days (7 more days reaching higher than 95°F temperatures, from 29 to 36 days). Extreme heat events are the number one cause of weather-related injuries and death in the United

States[3]. Furthermore, prolonged heat exposure can cause strenuous activity on the heart as the cardiovascular system tries to thermoregulate internal body temperatures, which can trigger various heat stress conditions. These health effects can be most significant in young children, the elderly, and other vulnerable segments of the population, making them the most at risk from extreme heat. In addition, extreme heat can affect mental health and behavior, significantly impacting individuals with mental illness and posing higher risks for poor physical and mental well-being. Moreover, as one of the various economic impacts of extreme heat and the severe conditions these present, a significant economic burden on many households struggling to meet the affordability of air conditioning and cooling demands (an aspect that, in turn, increases greenhouse gas emissions).

People (Social) Risk Factors

People (social) risk factors examine the differences in vulnerability indicators by age, race and ethnicity, language proficiency, and lack of health insurance.

Race and Ethnicity

Race and ethnicity are strong predictors of vulnerability to natural hazards, health disparities, and exposure to environmental pollution[4]. Minorities can be particularly vulnerable to disasters and extreme heat due to language skills, housing quality, isolation within the community, and cultural barriers[5]. Ethnicity data, as collected by the U.S. Census, is divided into two categories: Hispanic and Non-Hispanic (Hispanics may be of any race). Rates of preventable hospitalizations are highest among Black and Hispanic populations, often due to a lack of primary care[6] (Centers for Disease Control and Prevention, 2011). The three largest race/ethnicity categories in Apopka are White (Non-Hispanic), Hispanic or Latinx, and Black (Non-Hispanic) (Figure RSE- 6). Based on U.S. Census 2021 ACS 5-year data, Apopka's Hispanic and Black combined percentage (53%) is similar to Orange County's (52%) and greater than that of Florida (41%). To promote social resilience, the City can work to encourage community members' engagement in decision-making processes. Moreover, the City can operationalize measures that promote and exhibit diversity, equity, and inclusion within City government operations (i.e., staff, boards, and commission) to ensure those serving the community are reflective

[3] U.S. Centers for Disease Control and Prevention (CDC). 2020. Indicator: Heat-related mortality. National Center for Health Statistics. Annual national totals provided by National Center for Environmental Health staff in July 2020. https://ephtracking.cdc.gov

[4] County of Los Angeles Public Health. (2013). *Health atlas for the City of Los Angeles*. Retrieved from https://wattscommunitystudio.files.wordpress.com/2013/06/healthatlas.pdf

[5]Cooley, H., Moore, E., Heberger, M. and Allen, L. (2012). *Social vulnerability to climate change in California*. Retrieved from https://pacinst.org/wp-content/uploads/2012/07/social-vulnerability-climate-change-ca.pdf

[6]Centers for Disease Control and Prevention. (2011). CDC Health Disparities and Inequalities Report — United States. *Morbidity and Mortality Weekly* Report 60 Suppl. Retrieved from http://www.cdc.gov/mmwr/pdf/other/su6001.pdf

of the community. Additionally, the City should increase inclusive and equitable economic diversity through strong economic linkages and opportunities within and between the City's under-served neighborhoods and economic centers.

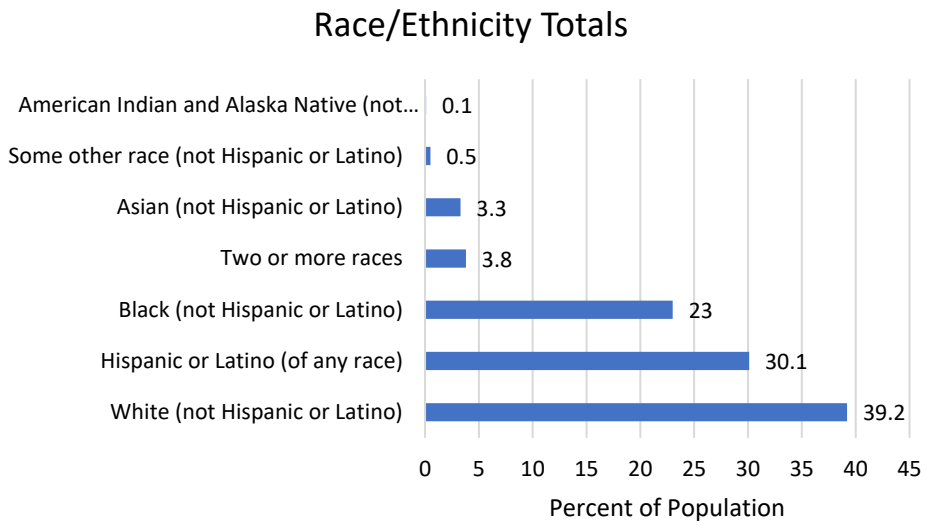

Figure RSE- 6 Apopka's Race & Ethnicity Breakdown (Source: 2021 ACS 5-year)

Language Proficiency

Residents with limited English language skills are at risk for inadequate access to health care, social services, and emergency services. Language barriers can hinder a person's ability to take action during natural disaster events[5]. Limited English skills can also make it harder to obtain medical or social services and interact with caregivers[4]. U.S. Census data 2021 ACS 5-year estimates indicate that 18% of Apopka's population is foreign-born with 29% speaking languages other than English at home. Spanish is spoken by 23% of Apopka's residents. Approximately 10% of the community have limited English skills (based on the ability to speak English "less than very well"); this is less than that of Orange County (15%) and Florida (12%). Thus, to ensure equitable inclusion and access to opportunities and services for all community members, the City can work across departments and relevant partner agencies and institutions to provide adequate access to healthcare, mental wellness, and preventive messaging and assistance before, during, and after acute shock events by tailoring information based on residents' language needs. This approach should also consider different platforms and outlets of communication, as technological barriers may impede resource access, as can be the case for residents with or without language barriers.

Age

Age (see Figure RSE- 7 for Apopka's population age distribution) is a predictor of vulnerability to acute and chronic stressors, especially for young children and older adults. For instance, children have faster breathing rates than adults, placing them at

greater risk for respiratory distress related to ground-level ozone, airborne particulates, wildfire smoke, and allergens. Climate change can aggravate this respiratory response as, for example, it creates an extended pollen season, which increases allergens. Moreover, children are also more vulnerable to infectious diseases due to their developing immune systems[7]. The City's under five-year-old population (6.4%) is slightly greater than that of Orange County (5.9%) and Florida (5.2%).

Apopka's population 65 years old and over is approximately 15% (U.S. Census 2021 ACS 5-year); this segment of the population is at increased health risk of climate change and environmental hazards. The elderly are more vulnerable to natural disasters due to possible pre-existing medical conditions or compromised mobility. They are particularly at risk of heat-related illness or death as their bodies do not adjust well to sudden temperature changes, and they may have abnormal heat responses due to chronic illness or medication (CDC).

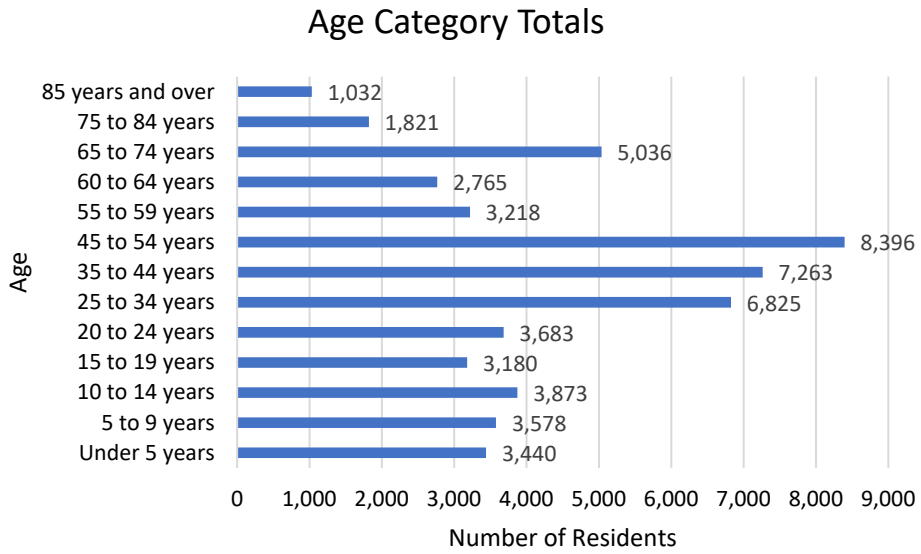

Figure RSE- 7 Apopka Age Category Totals
(Source: 2021 ACS 5-year)

Due to increased vulnerability, the youth and elder age groups should be sensibly addressed in resilience planning. The City can work across departments and with relevant partner agencies, institutions, and the private sector to implement one or more heat-related illness mitigation strategies such as: promoting heat-health through messaging, identifying residents at higher risk (consider partnering with homecare agencies), establishing community cooling centers during high heat months and acute shock events (e.g., municipal buildings, library, faith-based, non-profit organization), offering home energy efficiency assistance program, air-conditioning upgrade assistance, and/or utility

[7] Balbus, J. M., & Malina, C. (2009). Identifying vulnerable subpopulations for climate change health effects in the United States. *Journal of occupational and environmental medicine*, *51*(1), 33–37. https://doi.org/10.1097/JOM.0b013e318193e12e

benefits during high heat months. In addition, reducing greenhouse gas emissions and air pollutants can help reduce poor air quality and respiratory impacts. Moreover, increased tree canopy, nature-based solutions, and alternative transportation can improve air quality conditions and provide overall quality of life[8]. To learn more about Apopka's air quality, refer to Table CE - 5 Air Quality Index Levels for Orange County in the Conservation Element. In addition, the City can also plan outdoor spaces and community areas to be inclusive of all age groups and incorporate activities that invigorate individuals and promote connectedness and social cohesion between all ages.

Health Insurance

Residents who lack health insurance are at higher health risks because they often avoid or delay diagnoses, treatment, and/or medication. In addition, residents lacking healthcare coverage are also more likely to suffer health consequences from air pollution and extreme heat[6]. Apopka's vulnerable population without health insurance is an estimated 11.9% (U.S. Census 2021 ACS 5-year). Based on this indicator's risk aspects, City's plans to coordinate medical services for those residents in need should consider this area a priority.

Population Living with a Disability

Based on 2021 U.S. Census ACS 5-year data, 10.3% of Apopka's population (noninstitutionalized civilians) lives with a disability. Thus, when planning, it is essential for the City to account for this community segment inclusively. Therefore, evaluating service gaps (i.e., mobility, open spaces, access to goods, and more) and opportunities to improve these residents' quality of life is crucial. In addition, it is important to note that 42% of Apopkan's living with a disability are 65 years and over, prompting the need for sensible planning to help physically, mentally, and economically invigorate this segment of the population.

Access to Healthy Foods

Accessibility and affordability of healthy foods are essential health contributing factors and strong indicators of inequity. By understanding a community's lack of access to healthy foods and the financial ability to obtain these, a city can adequately plan to allocate resources and promote relevant services in the area. Based on U.S. Census 2021 ACS 5-year data, an estimated 12.4% of households receive food stamps/supplemental nutrition assistance program (SNAP).

It is important for the City to continue efforts such as the implementation of farmer's markets, community gardens (support of Billie Dean Community Garden and others), and meaningful partnerships and collaboration with local programs (such as the Big Potato Foundation) to promote local production of accessible and affordable local healthy

[8]National Institute of Health (NIH). (n.d.). *Asthma, Respiratory Allergies, and Airway Diseases – Health and Climate*. Retrieved on May 14, 2021 from https://www.niehs.nih.gov/research/programs/geh/climatechange/health_impacts/asthma/index.cfm

foods, encourage green areas and biodiversity growth, increase charitable and cultural programs, and to also foster local entrepreneurship, especially in areas that required additional attention based on needs, and lack of services and resources. In addition, the City can find greater collaboration by partnering with regional efforts to share resources and best practices and advancement of City community goals.

PLACES

A community's place-based vulnerability assessment can help evaluate the level of accessibility to services and needs (especially as an avenue to promote prosperity), walkability, infrastructure quality, and areas of opportunity to reduce community-wide greenhouse gas emissions. For this assessment, mobility data such as occupied housing units with no car, walkability, and proximity to transit are explored, as well as the age ranges of housing units for potential building efficiency and indoor quality improvements.

Livability Indicators

Walkability

The National Walkability Index is a measure used to indicate the ease of pedestrian travel in an area and is based on the characteristics of the built environment. The index ranks census block groups according to their relative walkability based on the following attributes within the block: mix of employment types, occupied housing, street intersection density, and predicted commute mode split[9]. A greater mix of employment types, occupied housing, and street intersection density contributes to more walk trips.

The walkability index score for Apopka is 9.1, on a scale ranging from 1-20, with lower values meaning less walkable (see Figure RSE- 8 for more on Apopka's index mapping). The map is based on EPA's most recent data set (2019) with darker shading indicating greater walkability. Walkability expert, Jeff Speck, recommends four attributes in creating a walkable community – safe, useful, comfortable, and interesting[10]. These attributes should be addressed and improved to encourage more pedestrian activity. The City can opt to prioritize pedestrian improvements in areas with lower walkability indices.

[9] U.S. Environmental Protection Agency (EPA). (n.d.). *National walkability index*. Retrieved on April 20, 2021 from https://www.epa.gov/smartgrowth/smart-location-mapping#walkability

[10] Speck, J. (2012). *Walkable city: How downtown can save America, one step at a time.* New York: Farrar, Straus and Giroux.

Additionally, the City can review area traffic incident reports to factor safety into walkability upgrades.

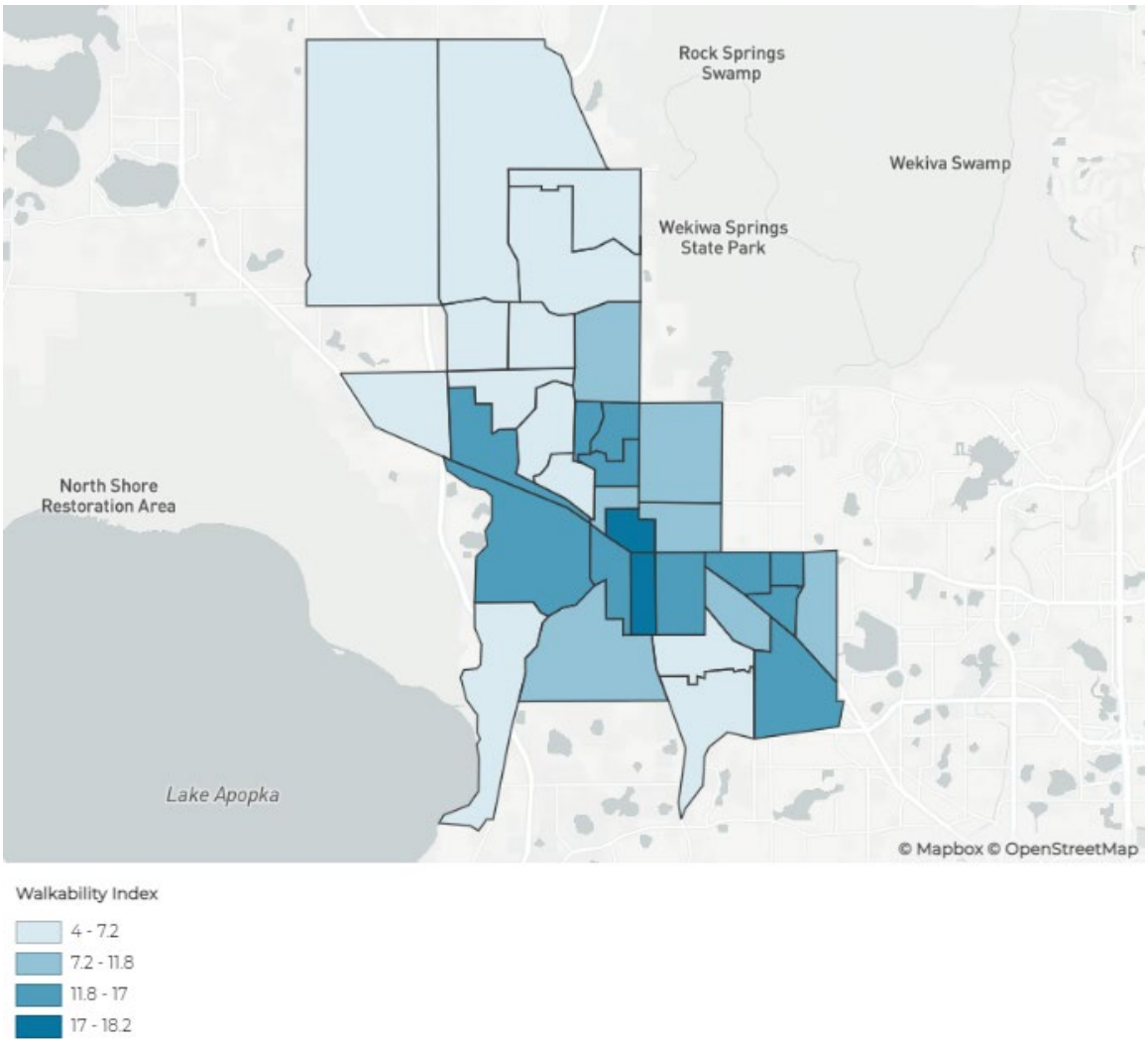

Figure RSE- 8 Apopka's Walkability Index
(Source: mySidewalk, EPA 2019)

Another important component of walkability and Places improvement measures is proximity to transit (walkable access to a transit stop). Based on EPA 2019 latest estimates, Apopka's walkability proximity to transit ranks 6 on a scale from 1-20, with higher values representing closer proximity to transit and walk trips (Figure RSE- 9). According to U.S. Census 2021 ACS 5-year data, approximately 2.6% of occupied housing units have no vehicles available (Figure RSE- 10 for occupied housing units with no vehicle available mapping), where a commonality between low proximity to transit and a high number of occupied housing units with no vehicles available align.

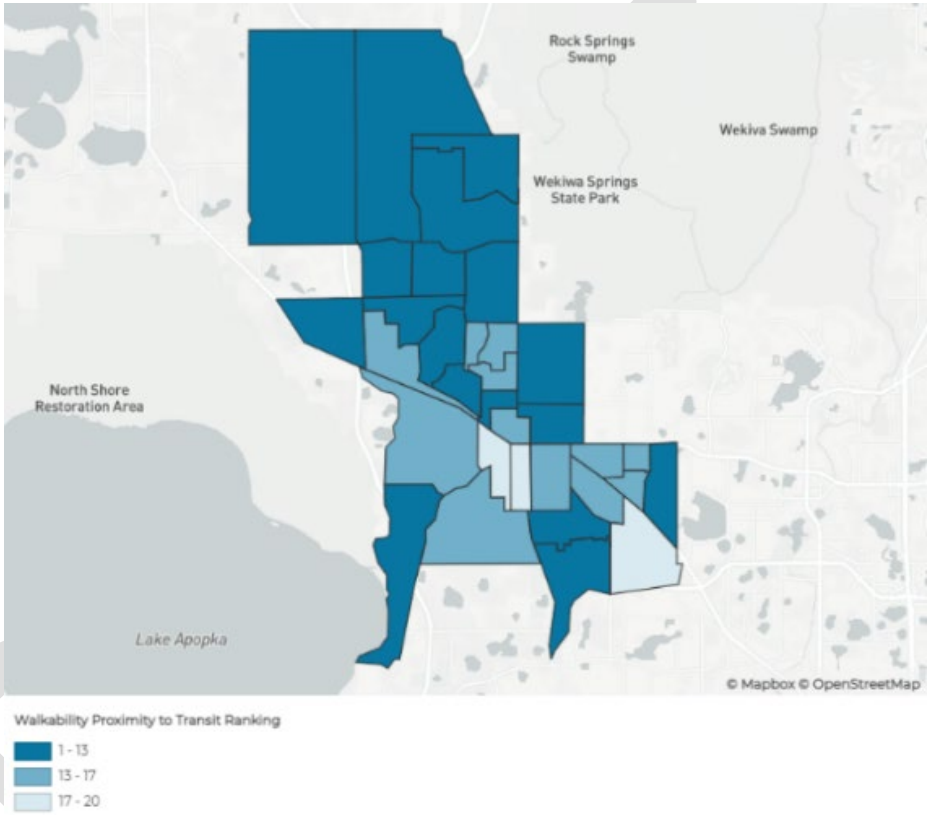

Figure RSE- 9 Apopka's Walkability Proximity to Transit (Source: mySidewalk, EPA 2019)

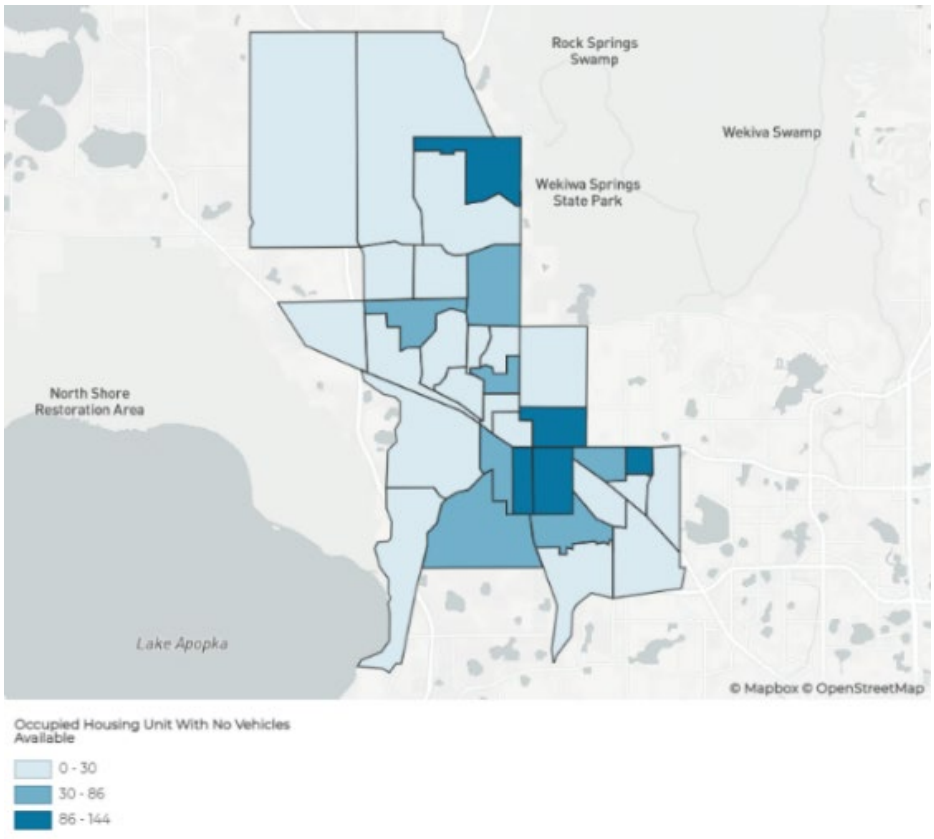

Figure RSE- 10 Apopka's Occupied Housing Units with No Vehicle (Source: mySidewalk, 2021 ACS 5-year)

Building Age of Housing Units

Understanding the building age of housing units can be useful in identifying older homes. Older buildings are likely less energy-efficient and pose a greater risk to the community members living in these types of infrastructure. Figure RSE- 11 and Figure RSE- 12 show, based on U.S. Census 2021 ACS 5-year data, Apopka's buildings age median and building age of housing units. This information can be helpful in identifying homes and neighborhoods where resilience could be improved with air conditioning upgrades and insulation, energy-efficient renovation such as windows and lighting, increased tree canopy, and reduced impervious surfaces.

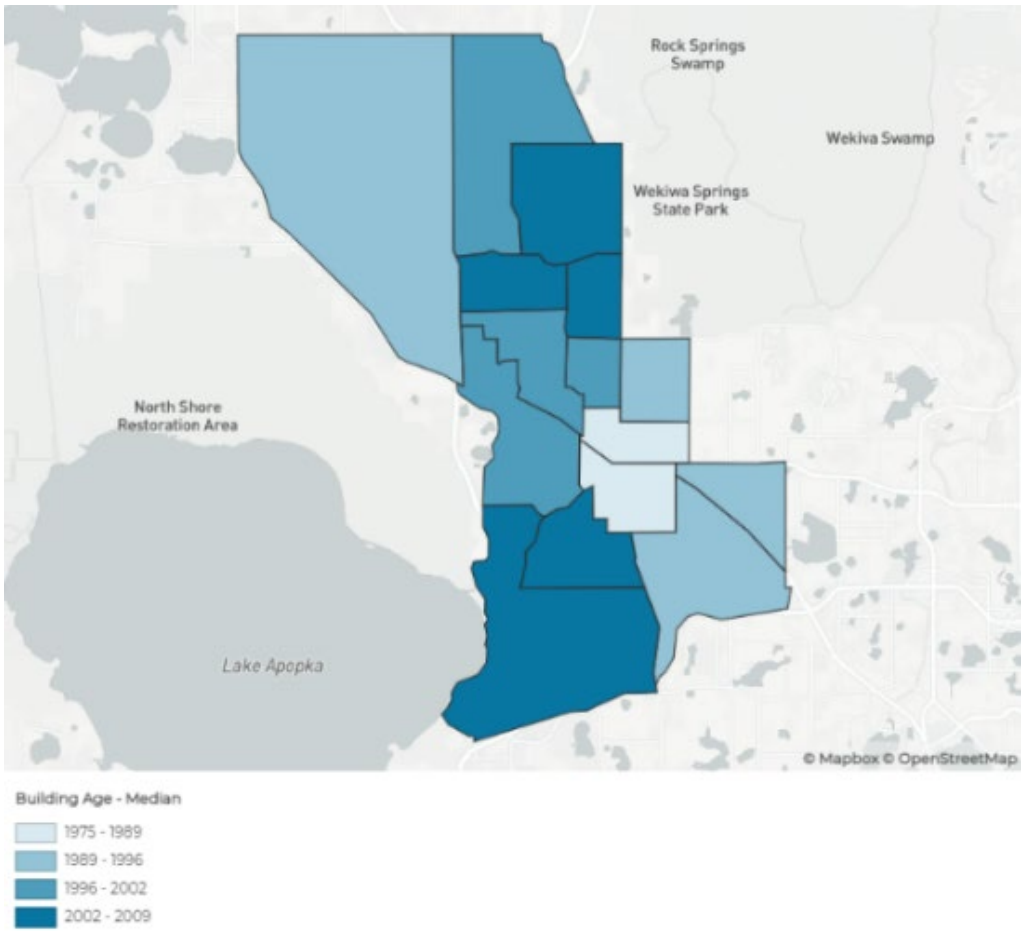

Figure RSE- 11 Apopka's Building Age Median
(Source: mySidewalk, 2021 ACS 5-year)

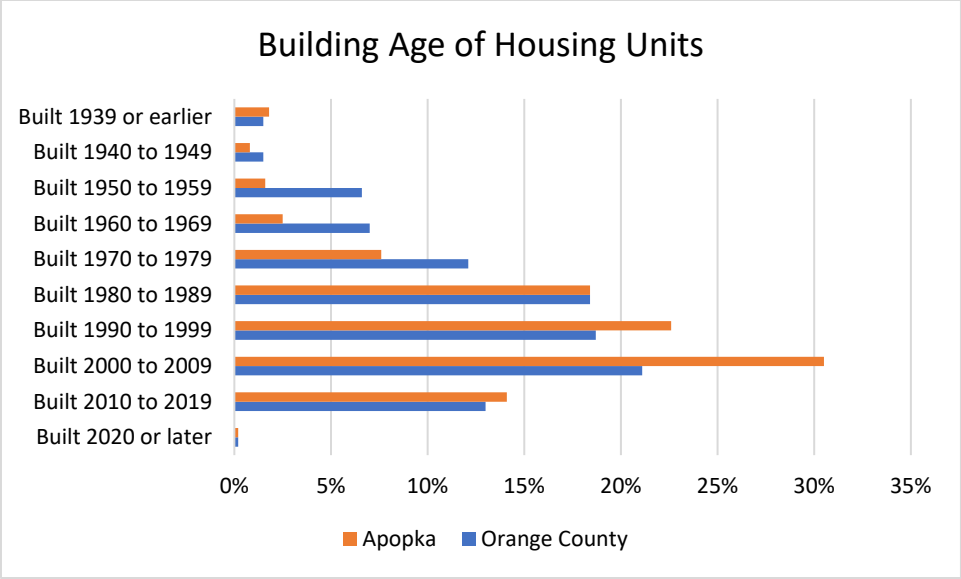

Figure RSE- 12 Building Age of Housing Units, Apopka and Orange County (Source: 2021 ACS 5-year)

Aside from directly improving people's quality of life, inclusive and sensible Places planning should also ideally be designed to reduce the community's greenhouse gas (GHG) emissions and increase and promote sustainable and resilient practices. To date, the City of Apopka has made notable progress in supporting several sustainable initiatives. For instance, in 2020, as part of an eighteen regional local governments group, the City partnered with the Regional Resilience Collaborative and Audubon Florida to participate in a Climate Cohort that mirrored regional efforts in measuring greenhouse gas emissions contributions. These estimates were conducted through a local government operations greenhouse gas emissions inventory that, upon completion, would help the City assess the largest emitting areas by providing valuable operational insight for the adequate development of high-impact actions for emissions reduction goals. Furthermore, the City has recently been selected to participate in the Florida League of Cities Race to Zero Cohort for June 2022, which will further assist with collecting necessary data for reduction assessment.

To continue emissions reduction efforts, the City has also invested in lower carbon-emitting (e.g., compressed natural gas) fleet and a municipal operating electric vehicle. In addition, the City has incorporated in its land development code a Green Building Standards section that encourages the development of various water management and energy efficiency practices (i.e., low impact development, resilient electric supply, retention of natural environments, and more), and promotes the use of low to zero-carbon transportation such as bicycling and electric vehicle use. The City has also engaged in multiple programs (e.g., Property Assessed Clean Energy Program, Solar and Energy Loan Fund, Community Development Block Grant, Water Conservation Program, EPA Brownfields Collaborative Grant, and more) that help community members with home

efficiency and resilient opportunities, such as water conservation through education and home energy improvements and rehabilitation for increasing housing affordability. Other engagement programs include promoting sustainable mobility options, such as the City's yearly partnership with the Florida Department of Transportation to host Mobility Week, and the conservation and preservation of natural areas such as the West Orange Trail project, Keep Apopka Beautiful Program, and Tree City USA. In terms of waste management, the City has also partnered with Orange County, the City of Orlando, and other entities to launch "Central Florida Recycles."

Due to the ever-evolving work of sustainability and resiliency efforts, it is recommended for the City to continue its work toward GHG emissions reduction, sustainable and inclusive community practices, local and regional partnerships, and programs engagement. These efforts should be managed and assessed by incorporating science-based strategies, city monitoring data, and the evaluation and consideration of regional actions.

PROSPERITY

Apopka's Prosperity vulnerability assessment provides an insight into those community members living in poverty and struggling to meet every day needs. People living under these conditions are often at higher risk of having compromised health (physical and mental) and a lower ability to recover from shocks and stressors; due to that, low income generally correlates with inadequate housing, social exclusion, lower ability to evacuate during emergencies, work areas with greater risks exposure, and lack of resources, among other income-driven community aspects. Therefore, understanding what portion of the population is experiencing these stressors can aid in more inclusively and effectively plan to help ease financial hardship by improving the allocation or facilitation of adequate resources and promoting the use of services, especially in those areas that need it most.

Economic Risk Factors

Poverty

Poverty and low-income factors increase the risk of compromised health and decrease the ability to recover from extreme weather, climate change, and environmental stresses. Generally, low-income residents are often challenged with accessing healthy food, affordable healthcare, property insurance, and quality housing. This can, in turn, also contribute to heightened emotional stress[11]. In addition, individuals and families with low incomes are more likely to have substandard housing with leaks, mold, or inadequate air

[11]Wilkinson, Richard G., and Marmot, Michael Gideon. (2003). *Social determinants of health: The solid facts*. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0005/98438/e81384.pdf

conditioning putting them at higher risk of infection and heat-related illness.

According to U.S. Census 2021 ACS 5-year data, 10.6% of Apopka residents live below the poverty level, of which 8.2% are families. Based on this data, 6% are families with children and 3% are families with single mothers. The U.S. Census defines family poverty as "if a family's total income is less than the family's threshold, then that family and every individual in it are considered in poverty." The City can address challenges faced by low-income residents by providing access to healthy foods, healthcare and mental wellness, assistance for resilient housing upgrades, and career pathways to promote social mobility.

Housing Affordability

The percentage of income spent on housing can dramatically affect the well-being and stability of an individual— homeownership and renting carry differing risks and concerns. Homeowners often spend more on their overall housing costs; however, renters typically spend a larger proportion of their income on housing.

Renters can often be subject to increased health risk exposures, with rental units located in high-density areas in multistory apartment buildings contributing to heat-related illness. In addition, renters can be exposed to dampness, mold, toxic substances, and allergens in units that are not well-maintained[12]. Gross rent as a percentage of income includes the estimated average monthly cost of utilities in addition to monthly rent. According to the U.S. Department of Housing and Urban Development (HUD), renters with gross rent percentages of 30% and greater are considered to be cost-burdened, while those with gross rent percentages of 50% and greater are considered severely cost-burdened. It is estimated that about 34.2% of Apopka's occupied housing units require 30% or more of income, and approximately 12.5% of the households are severely cost-burdened. The City can address this root cause of inequity through strategies to diversify housing, assist cost-burdened residents in improving housing resilience (e.g., energy efficiency, air-conditioning upgrade), by prioritizing vulnerable neighborhoods to reduce heat island effects (e.g., tree canopy, reflective roofing, green mitigation in parking lots), and by collaborating regionally to improve career pathways for cost-burdened residents.

Educational Attainment and Labor Participation

There is a strong correlation between lower educational attainment, poverty, and poor health. People with lower educational attainment are less likely to carry health insurance, often putting them at risk of lower preventive, primary, and specialty care rates. This risk is greater for racial and ethnic minorities. Moreover, people with lower educational

[12]Rohe, William M. and Lindblad, Mark. (2013). "Reexamining the Social Benefits of Homeownership after the Housing Crisis" (presentation, Homeownership Built to Last: Lessons from the Housing Crisis on Sustaining Homeownership for Low Income and Minority Families–A National Symposium, Cambridge, MA, April 2013)

attainment are more likely to live in inadequate housing conditions[13]. Based on data collected from the U.S Census 2021 ACS 5-year estimate, about 88.7% of Apopka residents are high school educated, which is slightly lower than Orange County and Florida (89.5% and 89.0%, respectively). Refer to Figure RSE- 13 for more information on Apopka's educational attainment. In terms of labor force participation, Apopka's rate is 67.5% (U.S. Census ACS 5-year 2021), which is similar to Orange County's and higher than that of Florida. To further improve labor force participation and poverty levels, the City can work to increase partnerships and continue collaboration with local organizations that promote prosperity at all community levels.

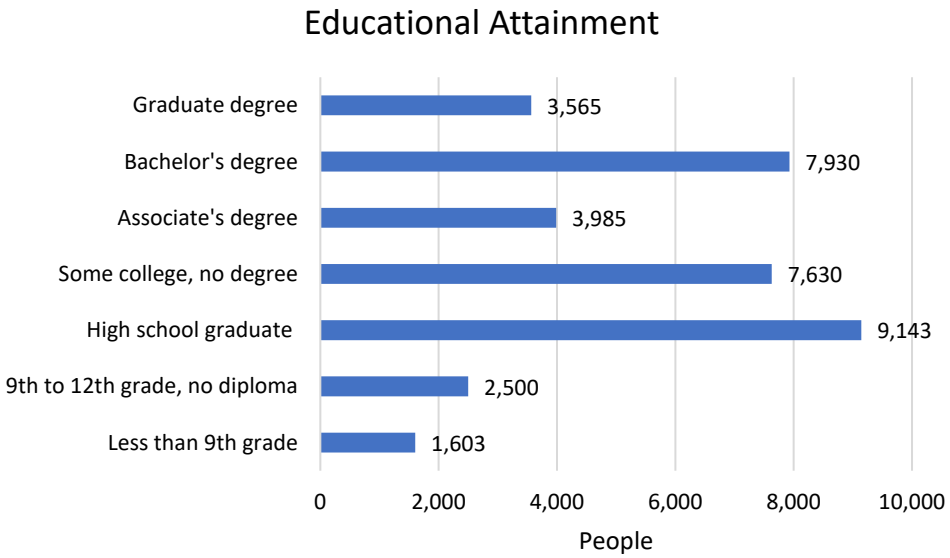

Figure RSE- 13 Apopka's Educational Attainment
(Source: 2021 ACS 5-year)

Partnerships and collaboration are integral components of resilience work. For prosperity, collaboration presents opportunities to strengthen local actions by sharing resources (i.e., funding and knowledge) and amplifying efforts and community vision. The City of Apopka has made notable progress in developing valuable partnerships to move forward initiatives that can help build community prosperity and overall resilience. Some of the partnerships and programs the City has engaged to date include the Apopka Chamber and Apopka Youth Works partnership, high school career programs (e.g., Wekiva High Culinary Program), community business resilience initiatives (e.g., Apopka Chamber's "Let's Restart Apopka," and Mayor's "Gold Seal Program"), Apopka Faith

[13] Centers for Disease Control and Prevention. (2011). CDC Health Disparities and Inequalities Report — United States. *Morbidity and Mortality Weekly* Report 60 Suppl. Retrieved from http://www.cdc.gov/mmwr/pdf/other/su6001.pdf

Community Group job resources and opportunities, homes and businesses resilience improvement grant funding assistance, and Community Development Block Grant (CDBG) to help with economic improvement and development projects. The City should continue to engage in prosperity-driven initiatives and partnerships, and it can look into further expanding these efforts by collaborating with neighboring cities, the county, and regional actions to collectively increase economic prosperity within the City and across the region.

NEIGHBORHOODS AT GREATER RISK ANALYSIS

The U.S. Climate Resilience Toolkit's Neighborhoods at Risk tool identified five neighborhoods with a greater risk of climate-related impacts than the surrounding City. The five Census tracts – 177.03, 178.07, 176, 175.05, and 177.01 – exceed Apopka's median vulnerability factors (Figure RSE- 14). Note that Census tracts with any portion within the municipality are analyzed though only a portion of a tract may fall within the City boundaries.

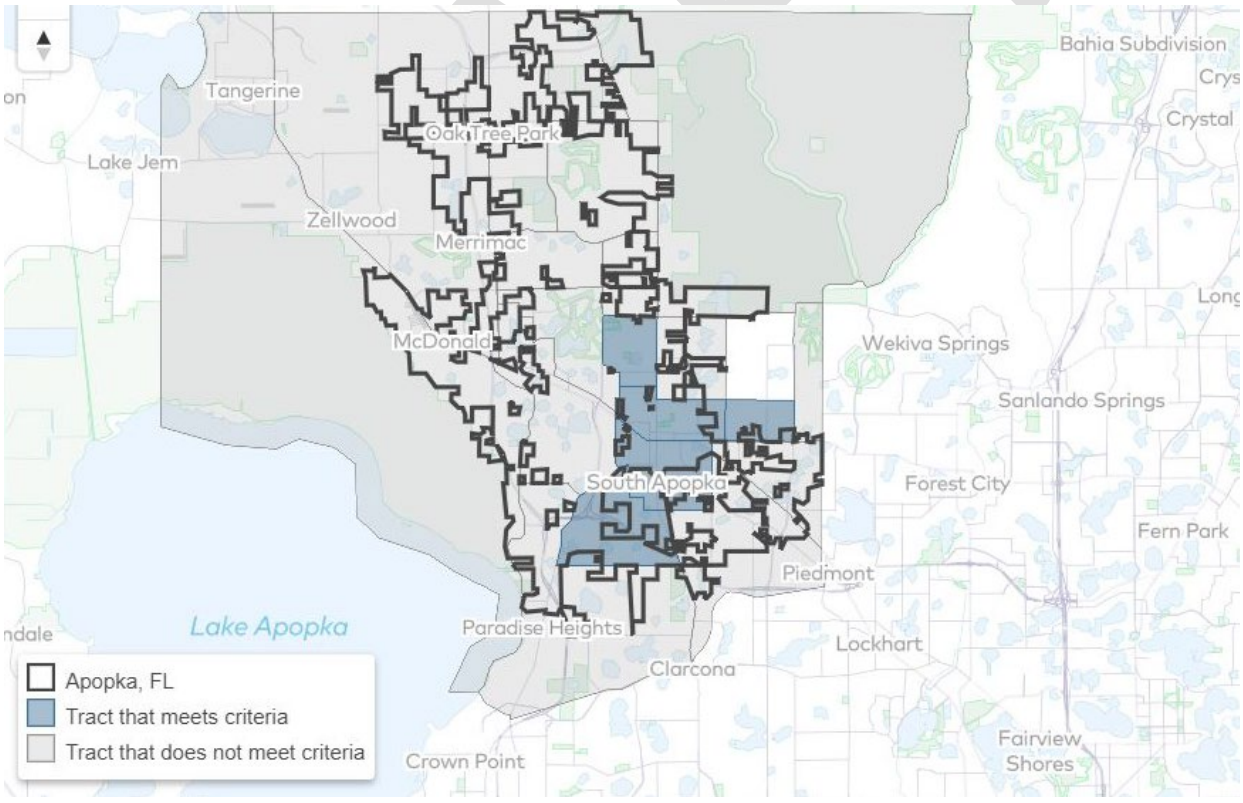

Figure RSE- 14 Census Tracts at Greater Risk
(Source: US. Climate Resilience Toolkit Neighborhoods at Risk and 2021 ACS 5-year)

The following vulnerability indicators were identified as greater than the surrounding City median values and used as criteria to determine the neighborhoods at greater risk. The values represent combined results for the five most vulnerable Census tracts:

- People of color and Hispanics: 76.7% (greater than median of 56.7%),
- People who don't speak English well: 10% (greater than median of 4%),
- People without health insurance: 21.1% (greater than median of 11.9%),
- Number of rental units: 33.7% (greater than median of 21.4%), and
- Families in poverty: 17.9% (greater than median of 6.3%).

The Neighborhoods at Risk tool used 2021 ACS 5-year estimates and remote sensing data to collect risk data. The nine attributes used by the tool indicate those populations that are potentially more vulnerable to climate-related risk. Not all residents who meet the criteria are more vulnerable; however, research shows that they are more likely to experience hardship during stages of climate-related disasters, including mitigation, preparedness, response, and recovery.

The five at-risk neighborhoods (Table RSE - 1) represent 27,069 people, with tract 177.01 home to the most people (7, 021) of the five tracts. Tract 176 has the greatest percentage of rental units (44.2%), people lacking health insurance (27%), and families in poverty (24.8%). Tract 177.03 has the most residents who don't speak English well (15.1%). Social vulnerabilities of poverty, rental status, language proficiency, race, and health insurance place these neighborhoods at greater risk of climate-related impacts.

Table RSE - 1 Apopka's Most Vulnerable Neighborhoods

U.S. Climate Resilience Neighborhoods at Risk						
Vulnerability Indicator	**Combined 5-tracts**	**Tract 176**	**Tract 177.01**	**Tract 177.03**	**Tract 175.05**	**Tract 178.07**
Population	27,069	5,454	7,021	4,580	5,574	4,440
People of Color and Hispanics	76.7%	88.9%	69.3%	63.1%	90.2%	70.6%
People who don't speak English well	10.0%	11.1%	10.2%	15.1%	4.0%	9.9%
People without health insurance	21.1%	27.0%	19.6%	24.3%	13.9%	22.2%
Families in poverty	17.9%	24.8%	11.3%	20.8%	23.0%	12.4%
Housing units that are rentals	33.7%	44.2%	26.3%	40.5%	26.3%	32.3%
Properties with flood risk	4.1%	6.4%	0.4%	4.8%	4.6%	70.0%
Areas lacking tree canopy	80.5%	78.2%	84.2%	75.9%	81.9%	84.6%
Area of impervious surface	28.2%	28.1%	36.4%	24.4%	24.9%	33.9%
Area in 500-yr floodplain	5.2%	1.7%	3.0%	7.6%	9.6%	0.0%

Source: U.S. Climate Resilience Neighborhoods at Risk, ACS 2021 5-year
Date Retrieved: October 2023