



Alachua County – Growth Management Staff Report

Application ZOX-03-20

Application Details

Staff Contact

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Staff Phone Number

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Planning Commission Hearing Date

November 18, 2020

Board of County Commissioners Hearing Date

December 8, 2020

Requested Action

A request for a special exception for a major utility (groundwater recharge wetland facility)

Property Owner

Mitchem-Rivers, LLC

Property Description

Address: 3602 SW 122nd St.

Parcel Numbers: 04433-000-000 and 04433-003-000

Section/Township/Range: 14/10/18

Land Use: Rural/Agriculture (1 dwelling unit/5 acres)

Zoning: A(Agriculture)

Acreage: 75 +/-

Previous Requests

None.

Zoning Violation History

None.

Applicant/Agent

CHW, Inc.

Project Timeline

- Submitted: August 25, 2020
- Staff Report Distributed: November 13, 2020
- Planning Commission Hearing: November 18, 2020

Staff Recommendation

Staff recommends that the Board of County Commissioners **approve ZOX-03-20**, with the conditions and bases as listed in the staff report.

Planning Commission Recommendation

The Planning Commission recommended (7-0) to **approve ZOX-03-20**, with the conditions and bases as listed in the staff report.

Background



Figure 1: Aerial image of site

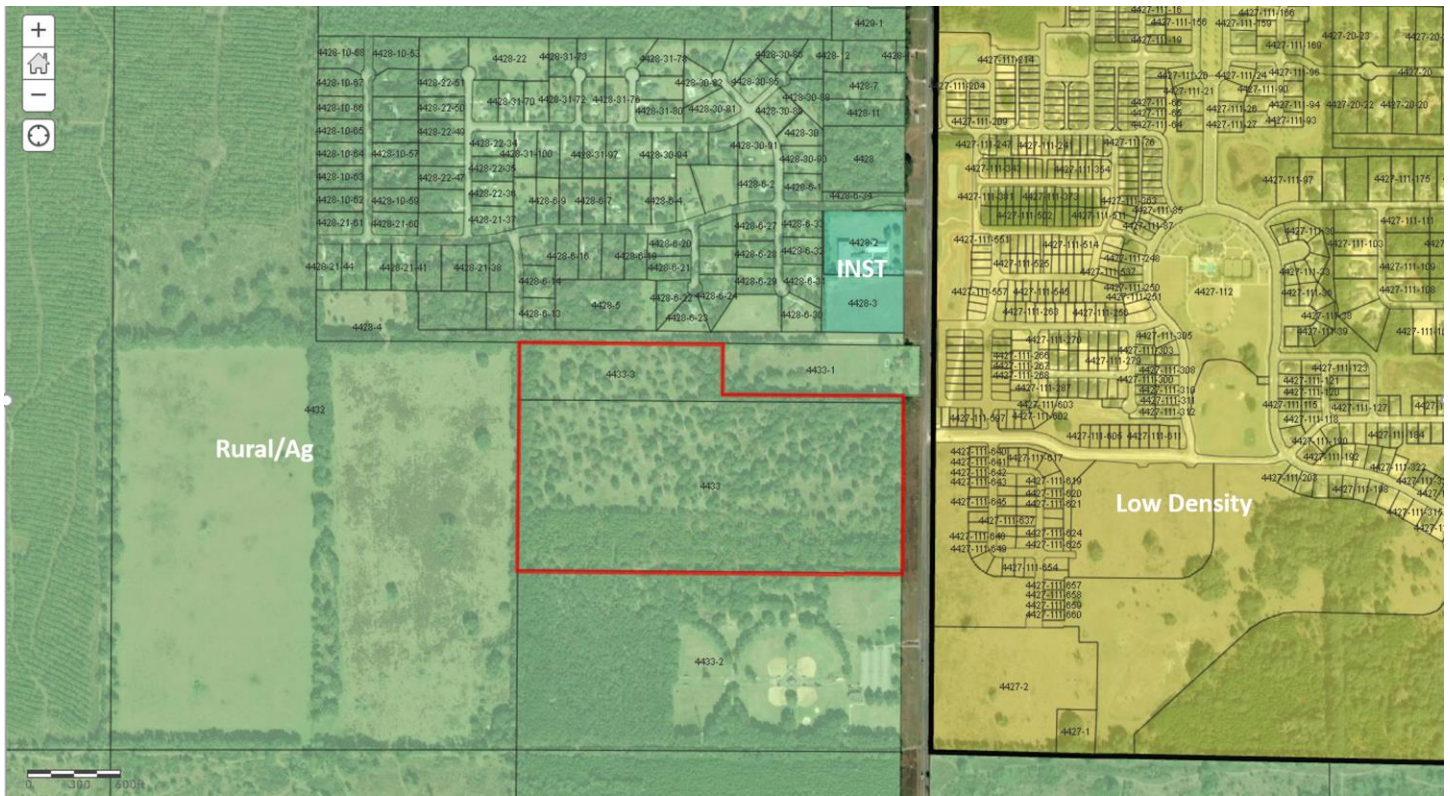


Figure 2: Future Land Use Map

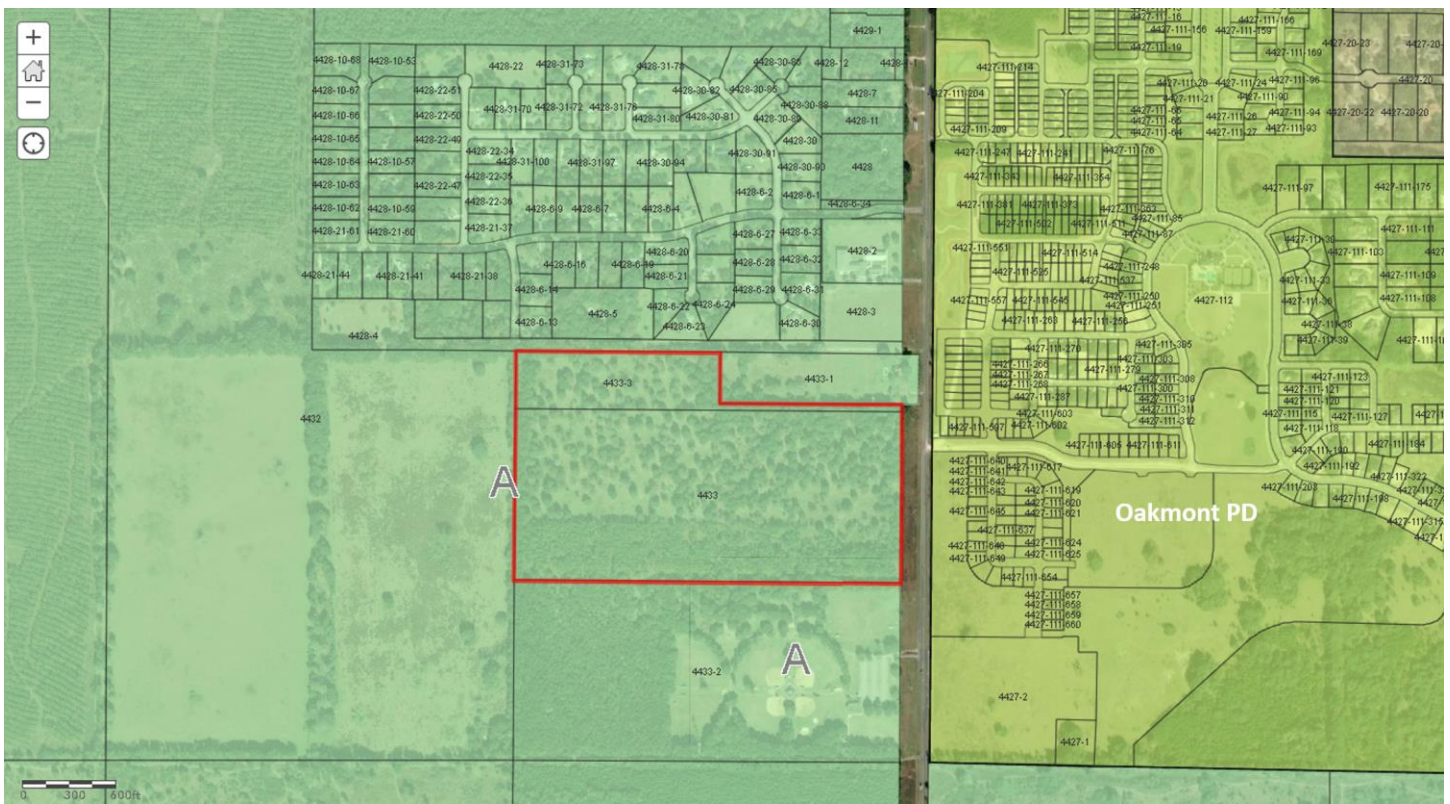


Figure 3: Zoning Map

This application is a request for a special exception for a major utility (groundwater recharge wetland park) on two parcels totaling approximately 75 acres. If approved, the site would allow a groundwater recharge wetland facility built in the form of a passive recreation park. At full build-out the park is expected to have a constructed wetland area of about 45 acres.

The intent of the proposed groundwater recharge facility is to infiltrate approximately 5 million gallons of reclaimed water/day (MGD), resulting in high quality, low nutrient water that recharges the Floridan aquifer. The reclaimed water will come from a Gainesville Regional Utilities (GRU) water reclamation facility.

According to GRU, *“A groundwater recharge wetland is man-made wetland constructed on sandy soils that allow water to gradually percolate through the soil and recharge the aquifer beneath it. Reclaimed water is used to continuously hydrate the wetland and maintain a relatively constant water level of 12 to 18 inches deep in order to facilitate growth of emergent aquatic vegetation. Natural wetland processes reduce nutrients in the water to low levels as it percolates into the ground.”*

County staff has met with the applicant to understand the project and options available for its design, with any potential adverse impacts being mitigated. Of particular concern is the possibility of sinkhole formation and water quality (affecting nearby residential wells). Staff requested additional information from the applicant on 9/25/20. The applicant responded with the required documentation on 10/30/20 and 11/2/20.

GRU has constructed a similar groundwater recharge wetland project on a smaller scale, near Kanapaha Middle School in 2008. The applicant has submitted a report with data summarized from the operation of this demonstration project from 2008-2010 (available in application background materials).

Site description

The site consists of two parcels totaling approximately 75 acres and is located along SW 122nd St. just outside of the Urban Cluster boundary. To the east is the Oakmont Planned Development; to the south is the Diamond Sports Park; to the west is a large (242 acre) parcel used for cattle grazing and to the north is the Parker Place subdivision.

The site has a future land use designation of Rural/Agriculture (1 dwelling unit/5 acres) and Agriculture zoning. Parcels to the north, south and west also have the Rural/Agriculture land use designation and Agriculture zoning. The Oakmont subdivision

has a future land use designation of Low Density Residential (1 to 4 dwelling units/acre) and Planned Development zoning.

Physical characteristics of the site such as soils, topography and aquifer recharge area are discussed on pages 14-17 of this report.

Consistency with Comprehensive Plan

Levels of Service

The Alachua County Comprehensive Plan Capital Improvement Element requires that the public facilities and services needed to support development be available concurrent with the impacts of development and that issuance of a Certificate of Level of Service Compliance (CLSC) be a condition of all final development orders. ‘Concurrent’ shall mean that all adopted levels of service (LOS) standards shall be maintained or achieved within a specified timeframe. Per **Policy 1.2.4 and Policy 1.2.5 of the Capital Improvements Element** of the Alachua County Comprehensive Plan, LOS standards have been adopted for various types of public facilities.

Traffic

According to the applicant, there are not immediate plans for the facility to be open to the general public but that would be the desire in the future. GRU/City of Gainesville operates a similar treatment wetland, “Sweetwater Wetlands Park”, which includes park like amenities and wildlife viewing platforms and boardwalks. Development on the subject property will mitigate its impacts through transportation impact fees. Any necessary operational improvements, such as turn lanes, will be analyzed during development plan review.

Water and Sewer

Policy 1.2.4 (d) of the Capital Improvements Element describes the minimum Level of Service standards for potable water and sewer. These are summarized in the following table:

	Peak Residential & Non Residential	Pressure	Storage Capacity
Potable Water	200 gallons/day/du	40 p.s.i.	½ peak day volume
Sanitary Sewer	106 gallons/day/du	N/A	N/A

The site is located outside of the Urban Cluster. The proposed special exception will not impact the water and sewer levels of service.

Drainage

Policy 1.2.4 of the Capital Improvements Element states that the minimum drainage LOS standard for non-residential development requires a floor elevation of one (1) foot above the 100-year/critical duration storm elevation or flood resistant construction. Development on this site would be required to meet this standard.

Emergency Services

Policy 1.2.5 (a) of the Capital Improvements Element states that the LOS standard for fire services in the rural area is as follows:

- Initial unit response within 12 minutes for 80% of all responses within 12 months.
- Development shall provide adequate water supply for fire suppression and protection, and fire service compliant fire connections.

All development would be required to meet these standards at the time of development plan approval.

Solid Waste

Policy 1.2.4 (b) of the Capital Improvements Element states that the minimum level of service standard for solid waste disposal used for determining the availability of disposal capacity to accommodate demand generated by existing and new development, at a minimum, shall be 0.8 tons per person per year. LOS standards for solid waste will not be exceeded by this request.

Schools

The proposed special exception does not authorize additional residential units and would not impact the level of service for public schools.

Recreation

The proposed special exception does not authorize additional residential units and would not impact the level of service for recreation.

Policy 7.1.2 of the Future Land Use Element

Policy 7.1.2 of the Future Land Use Element states that:

Proposed changes in the zoning map shall consider:

- a. consistency with the goals, objectives, policies and adopted maps of the Comprehensive Plan*

The proposed special exception, as conditioned, is consistent with the goals, objectives, policies and adopted maps of the Comprehensive Plan. The site has a future land use designation Rural/Agriculture and is in the Agriculture zoning district. Major utilities such as the proposed groundwater recharge wetland park are allowed in the Agriculture zoning district by means of a special exception.

- b. the availability and capacity of public facilities required to serve the development. When considering a rezoning, this includes availability and capacity of existing public facilities and timing of future facilities based on capital plans. Specific determinations for any exceptions to the requirement to connect to a centralized potable water and sanitary sewer system will be made at the stage of development plan review, as detailed in Policy 2.1 of the Potable Water and Sanitary Sewer Element.*

The site is located outside of the Urban Cluster and the groundwater recharge wetland park will not be required to be served by centralized potable water and sanitary sewer systems. The proposed special exception does not authorize any new residential units and will not have an impact on public school or recreation levels of service. The special exception will not negatively impact the traffic level of service. Any development on the subject property will mitigate its impacts through the transportation impact fees.

- c. the relationship of the proposed development to existing development in the vicinity and considerations relating to environmental justice and redevelopment opportunities.*

Existing development in the vicinity of the site consists mostly of single family residences with Rural/Agriculture (Parker Place subdivision) or Low Density Residential (Oakmont PD) land use. Staff has proposed conditions of approval to monitor and mitigate any potential environmental impacts to surrounding properties. The proposed conditions will adequately address any potential environmental impacts to surrounding properties and therefore there are no environmental justice or redevelopment issues with the proposed Special Exception as conditioned. These wetland park facilities often attract wildlife and are often seen as a greenspace amenity to surrounding residential properties.

- d. those factors identified by law, including that as a general matter an applicant is not entitled to a particular density or intensity within the range of densities and intensities permitted by the Comprehensive Plan, given due consideration of legitimate public purposes relating to health, safety, and welfare.*

This special exception request does not have a particular density or intensity associated with it. The special exception would allow a major utility in the form of a groundwater recharge facility that would also serve as a passive public park.

Policy 3.4.1 of the Conservation and Open Space Element

Policy 3.4.1 of the Conservation and Open Space Element states that:

All applications for land use change, zoning change and development approval shall be required to submit an inventory of natural resource information.

(a) The inventory shall include site specific identification, mapping, and analysis of each natural resource or natural resource characteristic present on or adjacent to the site.

(b) The inventory shall be prepared by person(s) qualified in the appropriate fields of study, and conducted according to professionally accepted standards.

(c) The County shall provide a natural resources checklist to each applicant identifying natural resources that must be analyzed.

(d) The analysis shall consist of a resources management plan that includes the following:

(1) an assessment of the existing quality and characteristics of each natural resource,

(2) an evaluation of the impact of the proposed land use change, zoning change, or development on the resource, with consideration of the indicators in Policy 2.1.2,

(3) a discussion of the proposed measures to protect or mitigate the impacts on the resource, and

(4) a maintenance and monitoring plan.

(e) In the land use and zoning context, the County shall use this information to determine whether the requested change is consistent with protection of natural resources. In the development review context, the County shall use this information to determine appropriate site designs and strategies that maintain and protect the character and amenities of the natural environment on the site during construction and after development.

The applicant submitted an environmental resource assessment report and checklist of natural resources present on site as part of this special exception application. The report and checklist were prepared and signed by a qualified professional. County EPD staff visited the site and concurred with the environmental consultant findings, as described below.

The majority of the project area consists of old-field improved pasture with a Bahiagrass dominated groundcover and scattered trees such as slash pine, laurel oaks, black cherry, sweetgum, and some large southern red oaks. Along the southern property line, a slash pine plantation was established around 2004 and currently consists of small caliber pines intermixed with other historical sandhill groundcover species. Successional oaks and mixed hardwoods occur along the northern and western boundaries, including some large live oaks particularly along the western boundary.

The project area contains none of the following natural resources afforded special protection in the comprehensive plan and land development code: surface waters, wetlands, 100-year floodplains, strategic ecosystems, significant plant and wildlife habitat, listed species habitat (more on this in the listed species discussion below), conservation/preservation/recreation lands, wellfield protection areas, or mineral resource areas.

A number of state-regulated gopher tortoises have been observed within the project area, though not within high quality natural vegetative communities that would suggest designation of any portion of the project area as “listed species habitat.” There may be other species of state-regulated wildlife (e.g., gopher tortoise commensals, eastern indigo snakes, Florida pine snakes, Sherman’s fox squirrels, etc.) that have not yet been documented on the property. Potential impacts to all state-regulated wildlife species are subject to a permitting process administered by the Florida Fish and Wildlife Conservation Commission (FWC). Should the Special Exception be approved by the BoCC, staff will ensure appropriate coordination with the FWC during the development plan review process, as provided for in Condition 6.

Objective 6.1 Potable Water and Sanitary Sewer Element

Objective 6.1 of the Potable Water and Sanitary Sewer Element states that:

The County shall encourage wastewater effluent reuse, where appropriate. The best uses of reclaimed water are for industrial uses that offset potable demand and for recharging the aquifer following additional treatment, such as that provided by infiltrating wetlands. Reclaimed water may also be used for landscape irrigation purposes in place of potable water or well water in areas with high landscape irrigation demand. However, the County recognizes the need to minimize landscape irrigation demands regardless of the source of irrigation water.

This project meets this objective as it proposes to use reclaimed water to recharge the aquifer by constructing groundwater recharge wetlands. County staff finds this approach offers the best available aquifer recharge potential, in terms of quantity and quality of groundwater, compared to other reclaimed water application methods currently employed in this area, such as deep well injection and irrigation.

Policy 4.5.22 of the Conservation and Open Space Element

Policy 4.5.22 of the Conservation and Open Space Element states that:

The County shall establish a comprehensive springshed protection program to protect the resource from potential adverse effects from incompatible land uses and activities.

- (a) Springshed protection areas shall be identified for all springs in the County; springsheds within the County that extend from springs located outside the County shall also be identified.*

The proposed project is within the springshed of Rum Island and Gilchrist Blue springs according to the delineation of the Santa Fe River springsheds completed in 2008 on behalf of Alachua County.

- (b) The latest scientific modeling shall be reviewed and, as necessary, updated to assist in the identification of springshed, springs, Outstanding Florida Springs, and Floridan Aquifer High Recharge Areas.*

The proposed project lies within a county-designated “high aquifer recharge area.” Should the Special Exception be approved, all relevant protective provisions of the Comprehensive Plan, land development regulations, and environmental codes will be applied during the development plan review process.

- (c) For these springs and groundwater protection areas, land development regulations shall specify the size, location, and applicable requirements of protection zones, including specific requirements on activities associated with domestic waste treatment including septic tanks, package plants, and regional wastewater treatment facilities and their effluent disposal practices.*

The purpose of Article VIII Springs and High Aquifer Recharge Areas, ULDC, is to preserve, conserve, and protect springs, groundwater, and associated karst features in high aquifer recharge areas. The provisions are intended to “maintain and improve the quality and quantity of water recharging the Floridan aquifer and discharging from springs.” Section 406.59.1 (b) reads, “The use of rapid infiltration basins or percolation ponds for wastewater effluent disposal is prohibited. Use of

wetland treatment systems, such as infiltrating wetlands, that are designed to lower nutrient concentrations by denitrification and promote aquifer recharge are allowed.” The project proposes to use infiltrating wetlands to achieve lower nutrient concentrations and promote aquifer recharge.

(d) Fertilizer shall be regulated to ensure that excess nitrogen and phosphorus are not leached into the Floridan Aquifer.

Alachua County regulates fertilizer application through Chapter 77, Article IV, Code of Ordinances. The fertilizer ordinance prohibits application of fertilizer with nitrogen from July through February. Phosphorus is only allowed if analytical tests verify the need. However, irrigation with reclaimed water, which can be an additional source of nutrients, is not regulated by Alachua County. The proposed project is an alternative to using reclaimed water for irrigation, which could result in lower nutrient application.

(e) The County shall provide municipalities with current modeling and protection standards for their use in protecting these resources.

The proposed project is located in unincorporated Alachua County.

(f) The following new uses or expansions of existing uses shall be prohibited in designated springsheds, springs buffers, and Floridan Aquifer High Recharge Areas:

(1) Rapid infiltration basins (RIBs) for wastewater effluent disposal.

(2) New or expanded surface water discharge of treated wastewater.

(3) Large scale land application of Class A or B biosolids.

(4) Land application of septage.

The project does not propose any of the above uses.

(g) The County shall develop effluent discharge standards for new and existing wastewater treatment plants in springshed protection areas for inclusion in the Land Development Code.

Currently, effluent discharge standards for wastewater treatment plants are developed, permitted and enforced by FDEP, and Alachua County’s Wastewater

Program monitors and reports results of inspections and effluent sampling to the facility owners and FDEP.

This project lies within the springshed of Rum Island and Gilchrist Blue springs, which are included in the Santa Fe River Basin Management Action Plan (BMAP). The Santa Fe BMAP allows wastewater treatment plants to discharge effluent as reclaimed water at a concentration of 3 mg/L of total nitrogen.

The Florida Department of Environmental Protection (FDEP) set nitrate water quality restoration targets of 0.35 milligrams per liter (mg/L) for the Santa Fe River and associated springs in the 2018 Santa Fe River Basin Management Action Plan.

The average nitrate/nitrite levels from the monitoring wells for the Kanapaha Middle School infiltrating wetland pilot project ranged from 0.61 to 1.86. Page 74 of their supplemental submittal (Request for Additional Information, or RAI, responses) shows a slide illustrating nitrate levels being reduced to less than 0.5mg/L as it infiltrates to the groundwater beneath treatment wetlands. If the proposed treatment wetland received 5 MGD and the water is treated to a level of 0.5 mg/L, this results in a loading 208 pounds of nitrate per day. This loading could have a negative impact in this springshed, but the County recognizes that this effluent is currently being applied to landscapes in the same springshed without the further water quality treatment that the infiltrating wetlands will provide.

While the concept of groundwater recharge wetland is supported by this comprehensive plan policy and associated land development code provisions, including Chapter 406, Article VIII, it is important that the project is designed and managed to fully meet the intent of protecting the quality of groundwater resources. Conditions have been applied to this approval to ensure adequate protection of the aquifer and to meet the intent of the Chapter 406, Article VIII, Springs and High Aquifer Recharge Areas.

(h) Reclaimed water standards in Policy 4.6.16 item (d) shall apply.

These standards shall apply (see below).

Policy 4.6.16 of the Conservation and Open Space Element

Policy 4.6.16 (d) states that:

“Wastewater and stormwater discharges to surface waters and wetlands shall be allowed only if the following criteria are satisfied:

(d) The project owner or developer corrects any failures in design or operation of the system that cause degradation of water quality, biological health, or the function of the natural ecosystem.”

The project does not propose discharges to surface waters and wetlands. However, the provisions of (d) as they may apply to groundwater will be a requirement of development plan approval, as indicated in the proposed conditions.

Policy 4.4.7 of the Conservation and Open Space Element

Policy 4.4.7 of the Conservation and Open Space Element states that:

The County shall establish management strategies for sinkholes and sinkhole-prone areas that protect water quality, hydrologic integrity, and ecological value. Management strategies may include, among other techniques, filling and development restrictions, buffers, runoff diversion, muck and debris removal, berm and weir construction, and filtration.

The project site is located in western Alachua County just south of SW 24th Avenue on the west side of SW 122nd Street (Parker Road). The subject site is located within the western Coastal Lowlands geological area of the County. The topography of this area consists of a nearly flat plain underlain by the limestone of the Crystal River Formation. The surface consists of a relatively flat layer of sand and soil. Karst features are numerous in the Lowlands and this area is recognized as a karst sensitive area of the county. The Sensitive Karst Area is defined as the areas designated as “high vulnerability” or “vulnerable” zones of the Floridan Aquifer and with soil types classified as “excessively drained”, “somewhat excessively drained”, or “well drained” as defined by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Florida.

The western plains region is dotted with sinks and limestone mines. While the Ocala Limestone is essentially near the surface in this region, many of the old sinks have become filled with sand, clayey sand, and sandy clay. These soil materials come from marine submergence, soil creep and slumping, and stream transport

from the Northern Highlands. The residual sediments occur most frequently as sinkhole fillings and tend to mask the great irregularities of the limestone surface.

Management strategies to prevent and reduce the risk of sinkhole formation will be reviewed at the development plan submittal stage. A Sinkhole Monitoring and Mitigation Plan will also be required at that time (Condition 7).

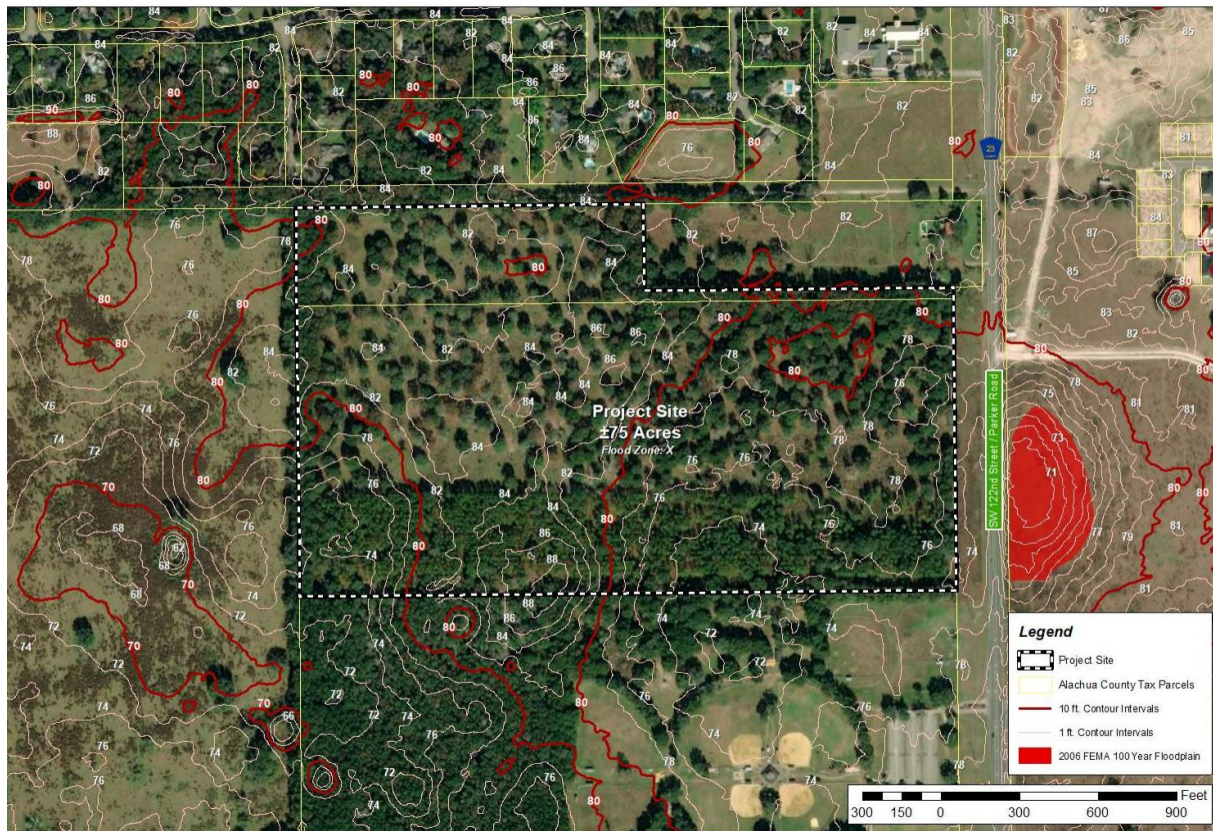


Figure 4: Topographic Map

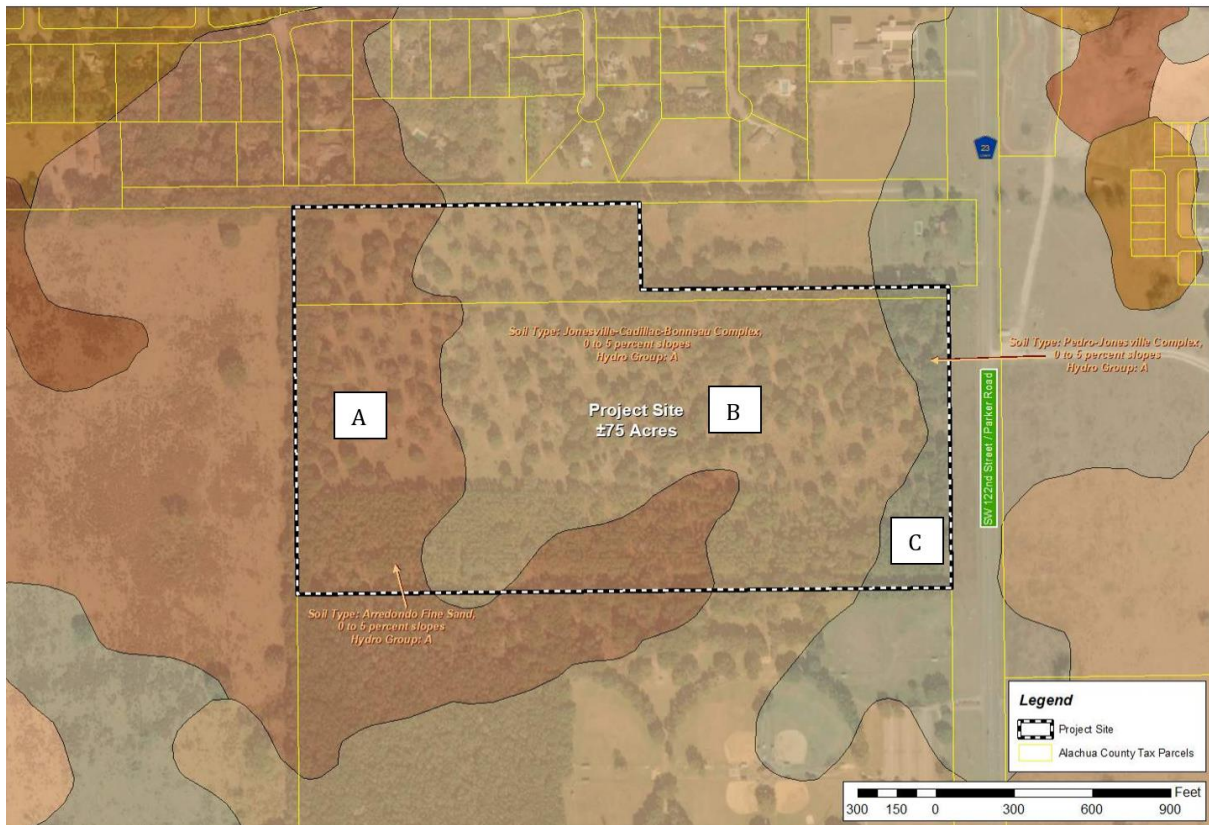


Figure 5: Soils Map, indicating the three soil types found on site: A) Arredondo fine sand, 0 to 5 percent slopes; B) Jonesville-Cadillac-Bonneau Complex, 0 to 5 percent slopes; and C) Pedro-Jonesville Complex, 0 to 5 percent slopes

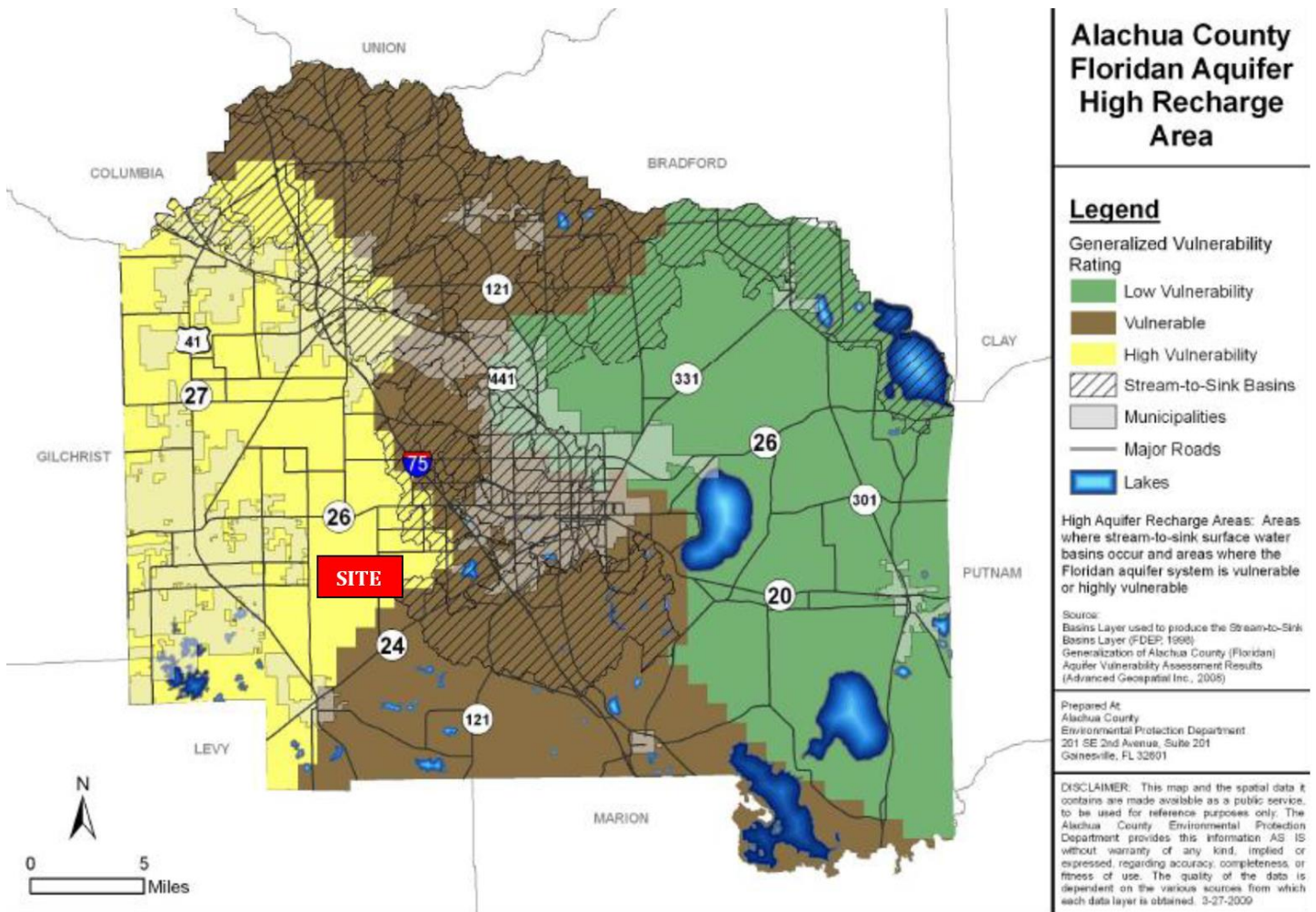


Figure 6: Alachua County Floridan Aquifer High Recharge Area

Unified Land Development Code (ULDC) Consistency

Sec. 402.113. – Special exception criteria for approval.

The board of county commissioners shall, as part of a decision to approve an application for special exception, make a finding that an application complies with both the general criteria and the review factors listed below.

(a) *The proposed use is consistent with the comprehensive plan and ULDC;*

The proposed use is consistent with the comprehensive plan and ULDC. Major utilities are allowed in the Agriculture zoning district by means of a special exception.

(b)The proposed use is compatible with the existing land use pattern and future uses designated by the comprehensive plan;

The existing land use pattern surrounding the site consists of residential subdivisions to the north and east, a public sports park to the south and cattle grazing lands to the west. The conditions proposed by staff include setbacks from residential wells, wetland cell design standards and require groundwater and sinkhole monitoring plans that serve to ensure that the proposed use of a groundwater recharge wetland park (major utility) is compatible with the existing land use pattern and future uses designated by the comprehensive plan.

(c)The proposed use shall not adversely affect the health, safety, and welfare of the public; and

As conditioned, the proposed use of a groundwater recharge wetland park will not adversely affect the health, safety or welfare of the public. Proposed conditions include setbacks from potable water wells to protect water quality and limitations on the size of wetland cells to mitigate the potential for sinkhole formation. Proposed condition 5 requires the applicant to provide a groundwater quality monitoring plan and sinkhole mitigation and monitoring plan as part of the development plan approval process.

(d)Satisfactory provisions and arrangements have been made concerning the following matters, where applicable:

(1)Ingress and egress to the property and proposed structures thereon with particular reference to automotive, bicycle, and pedestrian safety and convenience, traffic flow and control and access in case of fire or catastrophe;

The proposed major utility/passive public park would have ingress and egress from SW 122nd St. The design of traffic flow, control and access will be determined during development plan review.

(2)Off-street parking and loading areas where required, with particular attention to item (1) above;

Adequate space exists for off-street parking and loading areas, were the special exception to be approved. The exact location and number of parking spaces would be determined as part of the development plan review process.

(3)The noise, glare or odor effects of the special exception on surrounding properties;

Staff has not found any likely effects of noise, glare or odor to surrounding properties that would result from approval of this special exception. The reclaimed water entering the facility would be of drinking water quality.

(4)Refuse and service areas, with particular reference to location, screening and items (1) and (2);

Adequate space exists on site for refuse and services areas associated with this use. The exact location would be determined as part of the development plan review process.

(5)Utilities, with reference to location and availability;

The site is located just outside of the Urban Cluster boundary line (which runs along SW 122nd St. in this location). While utilities are available to serve this site, any extension of potable water or sanitary sewer lines outside of the Urban Cluster must receive Board of County Commissioners approval, consistent with Sec. 402.139 of the Unified Land Development Code.

(6)Screening and buffering with reference to type, dimensions and character;

Staff has proposed a condition for a 50 ft. naturally vegetated buffer along the northern boundary of the site.

(7)Signs, if any, and proposed exterior lighting with reference to glare, traffic safety and compatibility with surrounding properties;

Any proposed signs and exterior lighting will be reviewed with reference to glare, traffic safety and compatibility with surrounding properties as part of the preliminary and final development plan review process, should this special exception be approved.

(8)Required yards and other greenspace;

The proposed facility would be required to meet the setback requirements of the Agriculture zoning district. Additionally, staff has proposed a 50 ft. naturally

vegetated buffer/setback along the northern boundary of the site where residences are located.

(9)General compatibility with surrounding properties; and

“Compatibility” is defined in the Community Planning Act (F.S. 163.3164) as “a condition in which land uses or conditions can coexist in relative proximity to each other in a stable fashion over time such that no use or condition is unduly negatively impacted directly or indirectly by another use or condition”.

Staff has proposed conditions on this special exception to ensure compatibility with surrounding properties. Condition 1 provides a 50 ft. naturally vegetated buffer/setback from residential properties to the north which is greater than the standard side setback of 20 ft. for the Agriculture zoning district. Condition 2 requires that wetland recharge cells be located at least 300 ft. from any public or private well (unless the applicant can demonstrate reasonable assurance that groundwater will be protected) to protect water quality and limits the size of those cells to 5 acres, with a maximum depth of 18 inches for 75% of the total wetland unlined recharge area. This size restriction is to mitigate the potential for sinkhole development. As a further measure to ensure compatibility, Condition 5 requires that the applicant provide a groundwater quality monitoring plan and sinkhole mitigation and monitoring plan as part of the development plan approval process.

(10)Any special requirements set forth in this ULDC for the particular use involved.

The ULDC does not specify any special requirements for major utilities.

Sec. 406.92. - Projects Within Karst Topography and High Aquifer Recharge Areas

An application for any new development or expansion of existing development located within a high aquifer recharge area or karst area shall submit an analysis of site conditions in sufficient detail to define hydrologic and geologic conditions which may guide land development or construction activities on the proposed site. The application shall also depict karst features on the project site and off-site within 150 feet of the project boundary. The following submittal requirements shall apply:

- (a) *Where karst features are present, the following minimal information shall be included with the application:*
- (1) Regional potentiometric surface map of the Florida aquifer using available data or maps;*
 - (2) Geologic bulletins and papers specific to the project area;*
 - (3) Geotechnical and hydrogeologic reports or studies, such as test borings, ground penetrating radar, electrical resistivity, and other tests as applicable.*
 - (4) Assessment of sinkhole, cave, lineament, escarpment, solution pipe, and other known and potential karst features; and*
 - (5) Engineering analysis and recommendations, including:*
 - a. Evaluation of planned site area; and*
 - b. Options and recommendations including but not limited to:*
 - 1. Minimization of impervious surfaces;*
 - 2. Potential for innovative stormwater collection and protection measures including pre-treatment and shallow drainage retention areas;*
 - 3. Alternatives to stormwater retention basins when soil cover is inadequate to protect the Floridan aquifer; and*
 - 4. Recommendations for protection strategies or alternative compliance in accordance with Section 406.91.*
- (b) *Projects shall comply with applicable standards in Chapter 406, Article VIII, Springs and High Aquifer Recharge Areas.*
- (c) *No untreated stormwater shall be directed into a karst feature. Stormwater management facilities should be located as far as possible from significant geologic features on or adjacent to the project area, and outside the drainage area of those features so that stormwater flows towards it are minimized. All other applicable requirements in Chapter 407, Article IX shall be met.*

Compliance with these provisions is typically addressed at the development plan review stage through review of detailed and comprehensive geotechnical investigations. However, due to the nature of the request, the applicant assembled a

team of local geologists and geotechnical engineers to conduct a preliminary evaluation of site conditions, and submitted a geotechnical report titled “Summary Report of a Sinkhole Susceptibility Study” for parcel 04433-000-000 with the initial application materials. The summary report presented an extensive preliminary investigation of the 63.83 acre parcel, which included Ground Penetrating Radar (GPR) survey at regular intervals, Electrical Resistivity Imaging (ERI) transects along areas of anomalies identified by GPR, as well as a number of Standard Penetration Test (SPT) borings.

Upon review of the initial application materials, staff requested additional information and geotechnical investigations to also include preliminary geotechnical data for parcel 04433-003-000, the 12.66 acre parcel to the north. The subsequent studies submitted for review, titled “Sinkhole Susceptibility Study and Near Surface Geotechnical Exploration” and “Limited Subsurface Site Evaluation,” included auger borings and piezometer results for the 63+ acre parcel as well as GPR and SPT borings for the 12+ acre site, respectively.

Preliminary findings show that, overall, the site does not have an abundance of sinkhole susceptibility that would make it unsuitable for a groundwater recharge wetland. As part of the site design and development plan approval process, additional geotechnical exploration will be conducted to guide selection of the most appropriate location for the proposed wetland cell areas by further characterizing subsurface conditions and potential for sinkhole development. Areas found to be susceptible to sinkhole development will be avoided. Conditions have been proposed to prevent and reduce potential impacts of sinkhole formation, including:

- Condition 3; specifying limitations on siting of groundwater recharge wetland cells, size and depth;
- Condition 7; requiring additional geotechnical investigations in the areas of the proposed wetland cells, as well as a sinkhole monitoring and mitigation plan outlining sinkhole response and remediation methods.

Planning Commission Recommendation

The Planning Commission recommended (7-0) that the Board of County Commissioners approve ZOX-03-20, with the conditions and bases as listed in the staff report

Staff Recommendation

Staff recommends that the Board of County Commissioners **approve ZOX-03-20**, with the conditions and bases as listed in the staff report.

Conditions

1. A minimum 50 feet naturally vegetated setback shall be provided along the northern site boundaries.
2. Groundwater recharge wetland cells wetted bottom shall be located a minimum of 300 feet away from any public or private potable water supply well, unless the applicant can demonstrate reasonable assurance that groundwater will be protected. Individual wetland recharge cells shall not exceed 5 acres in size, and zones with a water depth greater than 18 inches shall be limited to 25% of total wetland unlined recharge area.
3. The initial phase shall be designed to a loading rate of 3 million gallons/day (MGD). Prior to increasing this loading (up to 5.0 MGD), the applicant must demonstrate that adequate water quality treatment is being achieved and that there are no offsite impacts. The goal would be to reduce nitrogen levels below the influent concentration and as close as possible to the 0.35 mg/L nitrate levels in the state water quality standard for the Santa Fe River and associated springs.
4. Groundwater Monitoring Plan Requirements:
 - a. The applicant shall comply with all requirements of the Florida Department of Environmental Protection (FDEP), including any conditions issued as part of the FDEP permit regarding the facility's groundwater monitoring plan (such as monitor well requirements, sampling frequency, monitoring reports, etc.). All required correspondence, groundwater monitoring data and reports related to the site shall be submitted to the Alachua County Environmental Protection Department. Alachua County will be a stakeholder in the development of the FDEP Groundwater Monitoring Plan, and reserves the right to require additional monitoring beyond the FDEP permit requirements to be determined during the development review process. The monitoring plan should include, at a minimum, chloride, sulfate, total dissolved solids, and nutrients (total nitrogen, ammonia, as N, nitrate + nitrite, phosphorus); it may also include sampling and reporting results of emerging contaminants.

- b. The applicant shall conduct a current inventory of all public and private potable water supply and irrigation wells within a 500-foot radius of property boundaries and an initial sampling of potable supply wells prior to development plan submittal to establish a baseline. Field tests shall include specific conductance, pH, temperature, turbidity, and dissolved oxygen. Laboratory tests shall include, at a minimum, arsenic, bacteria (total and fecal), total nitrogen, ammonia as N, nitrate + nitrite, phosphorus.
 - c. Any violation of the approved groundwater monitoring plan shall be considered a violation of the conditions of this Special Exception
- 5. At the development review stage, the applicant shall submit the following, subject to county approval:
 - a. An inventory of all private potable supply and irrigation wells within 500 feet of the subject property boundaries and initial sampling results for the potable supply wells.
 - b. A groundwater quality monitoring plan.
 - c. A sinkhole monitoring and mitigation plan.
 - d. An invasive, non-native vegetation management plan.
 - e. A development plan demonstrating compliance with the conditions of this Special Exception.
- 6. Prior to any site work, the applicant shall demonstrate compliance with all applicable requirements of the Florida Fish and Wildlife Conservation Commission regarding gopher tortoises and other state-regulated wildlife species.
- 7. Results of additional geotechnical investigation to further evaluate the subsurface conditions and sinkhole potential in the areas of the proposed wetland cells shall be submitted to the County at the time of development plan review. A sinkhole monitoring and mitigation plan shall be submitted to the County for approval, and shall include an abandonment plan for any cells that experience a significant subsidence event and cannot or will not be repaired and returned to service.

Bases

1. The proposed major utility (groundwater recharge wetland park) is located on two parcels with Agriculture (A) zoning. The zoning use table (**Chapter 404, Article II of the Unified Land Development Code**) indicates that the proposed use is allowed in this district by means of a special exception.
2. **Sec. 402.113 of the Unified Land Development Code** provides the criteria for special exception approval. Staff has found that the proposed special exception, as conditioned, meets the criteria for approval.

The special exception is consistent with the Comprehensive Plan and ULDC. The conditions proposed by staff include setbacks from residential wells, wetland cell design standards and require groundwater and sinkhole monitoring plans that serve to ensure that the proposed use of a groundwater recharge wetland park (major utility) is compatible with the existing land use pattern and future uses designated by the comprehensive plan.

Adequate space exists for off-street parking, refuse and loading areas.

Staff has not found any likely effects of noise, glare or odor to surrounding properties that would result from approval of this special exception.

The site is located just outside of the Urban Cluster boundary line (which runs along SW 122nd St. in this location). While utilities are available to serve this site, any extension of potable water or sanitary sewer lines outside of the Urban Cluster must receive Board of County Commissioners approval, consistent with Sec. 402.139 of the Unified Land Development Code.

Any proposed signs and exterior lighting will be reviewed with reference to glare, traffic safety and compatibility with surrounding properties as part of the preliminary and final development plan review process, should this special exception be approved.

The proposed facility would be required to meet the setback requirements of the Agriculture zoning district. Additionally, staff has proposed a 50 ft. vegetated buffer/setback along the northern boundary of the site where residences are located.

Staff has proposed conditions on this special exception to ensure compatibility with surrounding properties. Condition 1 provides a 50 ft. vegetated buffer/setback from residential properties to the north which is greater than the standard side setback of 20 ft. for the Agriculture zoning district. Condition 2 requires that wetland cells be located at least 300 ft. from any public or private well to protect water quality and limits the size of the cells to 5 acres, with a maximum depth of 18 inches for 75% or more of the cell area. This size restriction is to mitigate the potential for sinkhole development. As a further measure to ensure compatibility, Condition 5 requires that the applicant provide a groundwater quality monitoring plan and sinkhole mitigation and monitoring plan as part of the development plan approval process.

The ULDC does not specify any special requirements for major utilities.

3. The applicant submitted an environmental resource assessment report and checklist of natural resources present on site as part of this special exception application. The report and checklist were prepared and signed by a qualified professional. Alachua County Environmental Protection Department staff visited the site and concurred with the environmental consultant findings, as referenced in the staff report.
4. The purpose of **Chapter 406, Article VIII of the ULDC (Springs and High Aquifer Recharge Areas)**, is to preserve, conserve, and protect springs, groundwater, and associated karst features in high aquifer recharge areas. The provisions are intended to *“maintain and improve the quality and quantity of water recharging the Floridan aquifer and discharging from springs.”* Section 406.59.1 (b) reads, *“The use of rapid infiltration basins or percolation ponds for wastewater effluent disposal is prohibited. Use of wetland treatment systems, such as infiltrating wetlands, that are designed to lower nutrient concentrations by denitrification and promote aquifer recharge are allowed.”* The project proposes to use infiltrating wetlands to achieve lower nutrient concentrations and promote aquifer recharge.
5. **Policy 4.4.7 of the Conservation and Open Space Element states that:**
The County shall establish management strategies for sinkholes and sinkhole-prone areas that protect water quality, hydrologic integrity, and ecological value. Management strategies may include, among other techniques, filling and development

restrictions, buffers, runoff diversion, muck and debris removal, berm and weir construction, and filtration.

The project site is located in western Alachua County just south of SW 24th Avenue on the west side of SW 122nd Street (Parker Road). The subject site is located within the western Coastal Lowlands geological area of the County. The topography of this area consists of a nearly flat plain underlain by the limestone of the Crystal River Formation. The surface consists of a relatively flat layer of sand and soil. Karst features are numerous in the Lowlands and this area is recognized as a karst sensitive area of the county. The Sensitive Karst Area is defined as the areas designated as “high vulnerability” or “vulnerable” zones of the Floridan Aquifer and with soil types classified as “excessively drained,” “somewhat excessively drained,” or “well drained” as defined by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Florida.

The western plains region is dotted with sinks and limestone mines. While the Ocala Limestone is essentially near the surface in this region, many of the old sinks have become filled with sand, clayey sand, and sandy clay. These soil materials come from marine submergence, soil creep and slumping, and stream transport from the Northern Highlands. The residual sediments occur most frequently as sinkhole fillings and tend to mask the great irregularities of the limestone surface.

Management strategies to prevent and reduce the risk of sinkhole formation will be reviewed at the development plan submittal stage. A Sinkhole Monitoring and Mitigation Plan will also be required at that time (Condition 7).

6. The applicant assembled a team of local geologists and geotechnical engineers to conduct a preliminary evaluation of site conditions, and submitted a geotechnical report titled “Summary Report of a Sinkhole Susceptibility Study” for parcel 04433-000-000 with the initial application materials. The summary report presented an extensive preliminary investigation of the 63.83 acre parcel, which included Ground Penetrating Radar (GPR) survey at regular intervals, Electrical Resistivity Imaging (ERI) transects along areas of anomalies identified by GPR, as well as a number of Standard Penetration Test (SPT) borings.

Upon review of the initial application materials, staff requested additional information and geotechnical investigations to also include preliminary geotechnical data for parcel 04433-003-000, the 12.66 acre parcel to the north. The subsequent studies submitted for review, titled “Sinkhole Susceptibility Study and Near Surface Geotechnical Exploration” and “Limited Subsurface Site Evaluation,” included auger borings and piezometer results for the 63+ acre parcel as well as GPR and SPT borings for the 12+ acre site, respectively.

Preliminary findings indicate that, overall, the site does not have an abundance of sinkhole susceptibility that would make it unsuitable for a groundwater recharge wetland. As part of the site design and development plan approval process, additional geotechnical exploration will be conducted to guide selection of the most appropriate location for the proposed wetland cell areas by further characterizing subsurface conditions and potential for sinkhole development.. Areas found to be susceptible to sinkhole development will be avoided. Conditions have been proposed to prevent and reduce potential impacts of sinkhole formation, including:

- Condition 3; specifying limitations on siting of groundwater recharge wetland cells, size and depth;
- Condition 7; requiring additional geotechnical investigations in the areas of the proposed wetland cells, as well as a sinkhole monitoring and mitigation plan outlining sinkhole response and remediation methods.

Staff and Agency Comments

Department of Environmental Protection

Staff provided the applicant a request for additional information on 9/25/2020. The applicant provided the requested information on 10/30/2020 and 11/2/2020. Staff’s request and the applicant’s responses can be found in the backup materials for this application.

Department of Public Works

No comment.

Transportation

No comment.