



ZOX-03-20

Gainesville Regional Utilities (GRU) Groundwater Recharge Wetland Park Special Exception

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Alachua County Growth Management

Applicant request

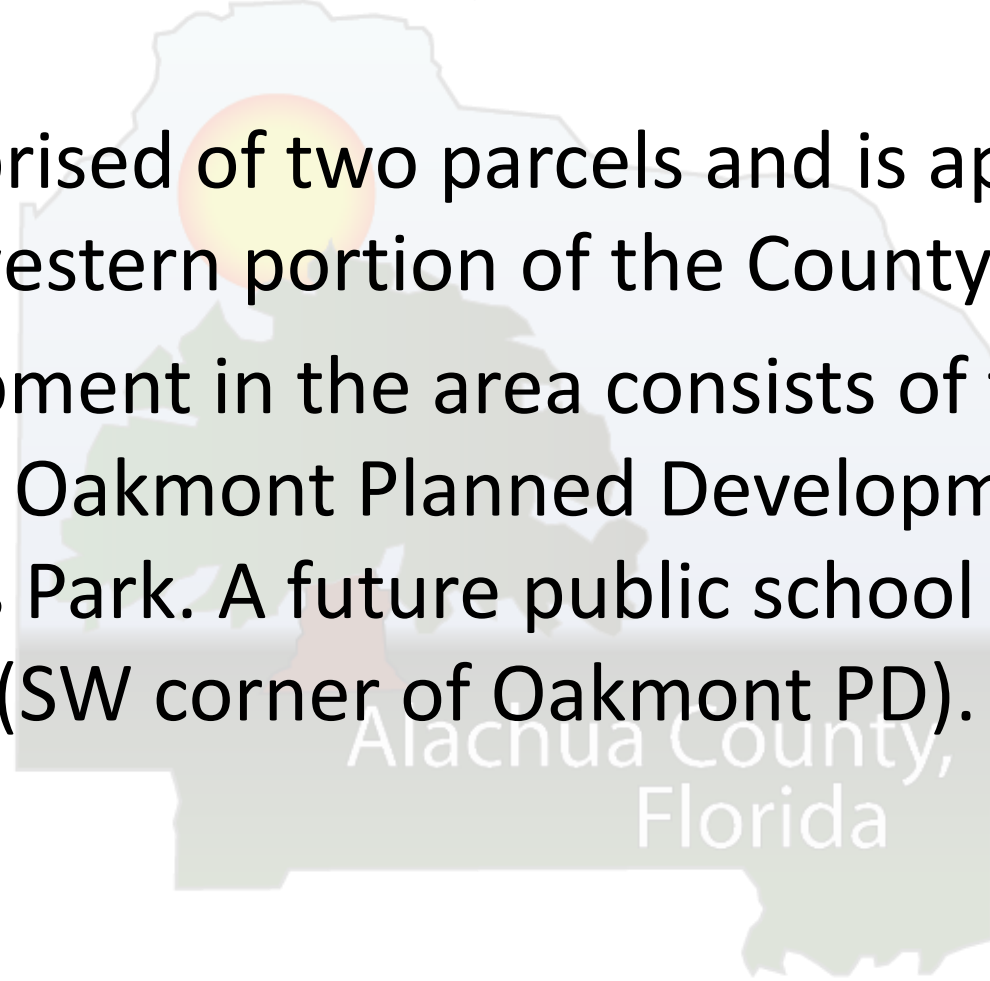
- The application is a request for a special exception to allow a major utility (groundwater recharge wetland park) in the Rural/Agriculture (1 dwelling unit/5 acres) land use category and the Agriculture zoning district.
- If approved, this man-made wetland would receive up to 5 million gallons of reclaimed water/day (MGD) from GRU's Kanapaha Water Reclamation Facility.
- The intent of the wetland is to infiltrate reclaimed water through aquatic vegetation and sandy soils to yield higher quality, lower nutrient water to recharge the Floridan aquifer.

Applicant request

- 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.”*

Background

- The site is comprised of two parcels and is approx. 75 acres, located in the western portion of the County on SW 122nd St.
- Existing development in the area consists of the Parker Place subdivision, the Oakmont Planned Development and the Diamond Sports Park. A future public school is also expected to be built nearby (SW corner of Oakmont PD).





Parker Place subdivision

Oakmont PD

SW 122nd St.

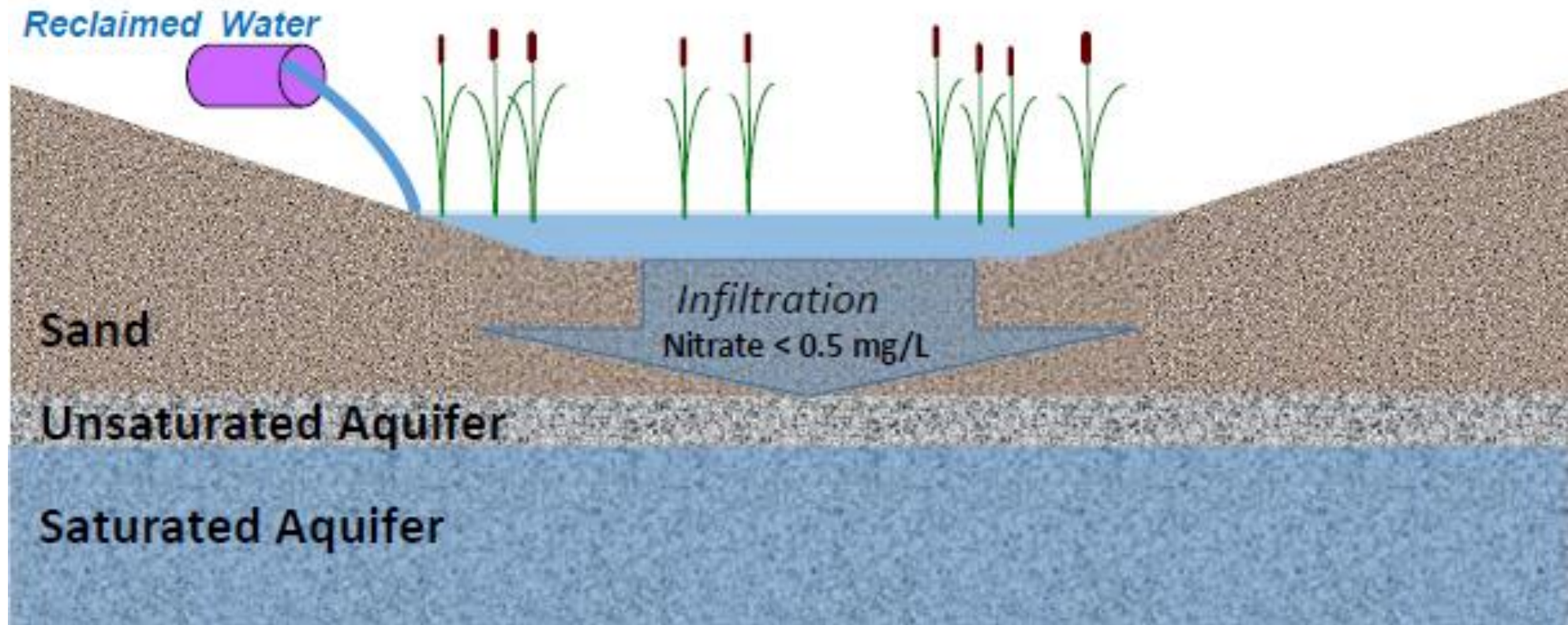
SITE

Diamond Sports Park

Aerial Image

Background

Groundwater Recharge Wetlands



Background



- The wetland park would be built to further treat reclaimed water (treated effluent) with the initial phase designed to load up to 3 MGD; final phase would be designed up to 5 MGD.
- Wetland cells will be planted with native wetland plants to assist in reducing nutrients in the water.
- This project proposes park like amenities for the public such as boardwalks and educational activities.

Background

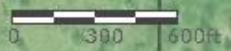


Existing Groundwater
Recharge Wetland @
Kanapaha Middle
School (Built in 2008)



SITE

Location Map



Rural/Ag

SITE

INST

Low Density

Bold black line indicates
Urban Cluster boundary

Future Land Use Map



Oakmont PD

Zoning Map

Sinkholes

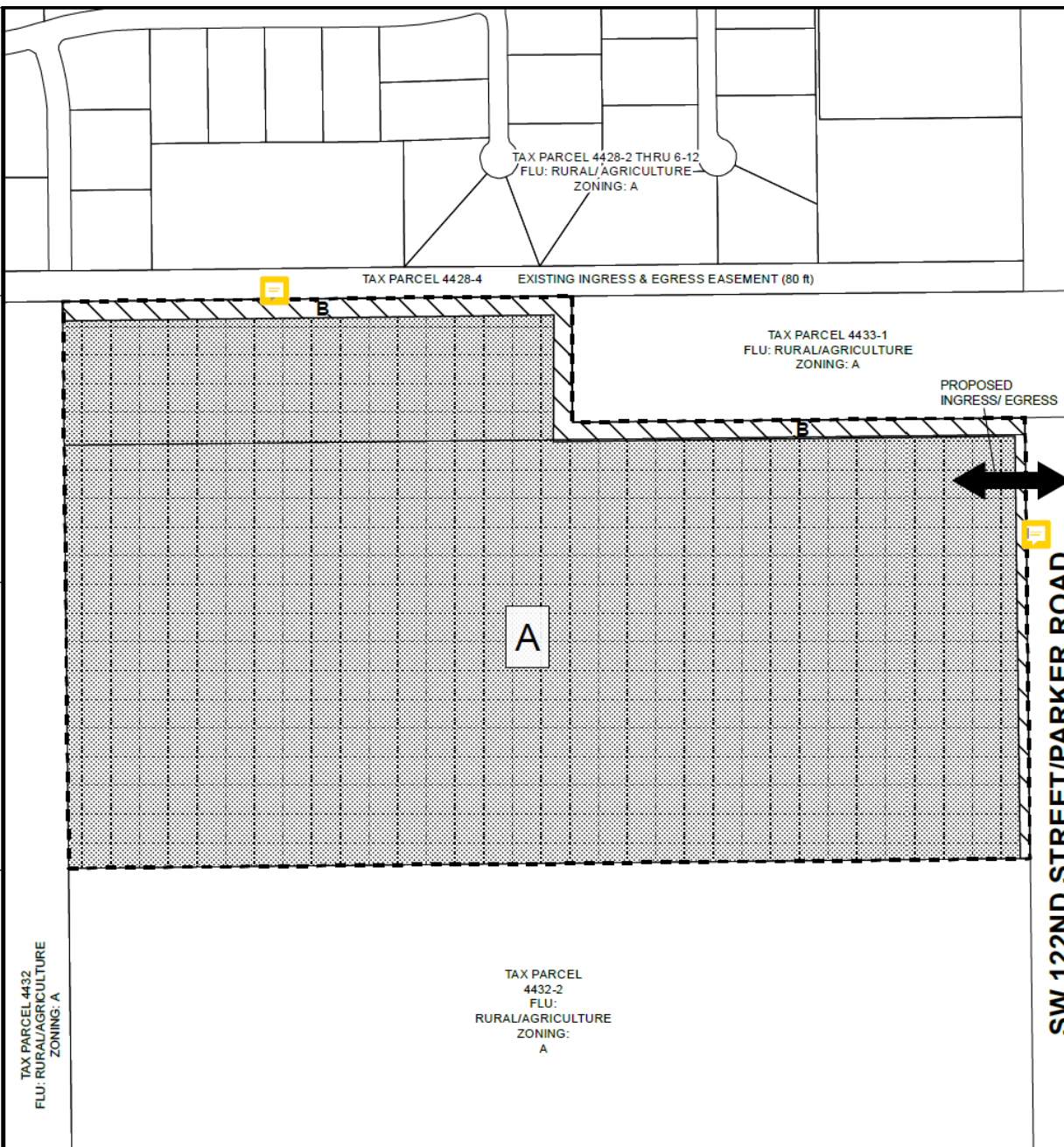


- Staff has proposed a condition (Condition #2) that limits individual wetland recharge cells to 5 acres in size and limits water depth in wetland unlined recharge areas. This is to mitigate the occurrence of sinkholes.
- Staff has proposed a condition (Condition #5) that requires a sinkhole monitoring and mitigation plan at the development plan review stage.

Water Quality



- Staff has proposed the following conditions related to water quality:
- Condition #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.
- Condition #4 requires a groundwater monitoring plan.



GAINESVILLE REGIONAL UTILITIES GROUNDWATER RECHARGE WETLAND PARK SPECIAL EXCEPTION PLAN

GENERAL NOTES

1. PERMITTED USES INCLUDE, BEYOND THOSE IN THE AGRICULTURE ZONING DISTRICT, OPERATION AND MAINTENANCE OF A WETLAND RECHARGE PARK IN ACCORDANCE WITH STATE OF FLORIDA DEPARTMENT OF HEALTH AND ENVIRONMENTAL PROTECTION DEPARTMENT REQUIREMENTS. PASSIVE RECREATION ACTIVITIES, EDUCATIONAL TOURS, AND LIMITED EVENTS ARE ALLOWED IN CONJUNCTION WITH THE AFOREMENTIONED PERMITTED USES DURING DAYLIGHT HOURS (DAWN TO DUSK) UNLESS FOR SPECIFIC SEASONAL EVENTS (IE. SUMMER SOLSTICE, FULL-MOON GUIDED TOURS, OR SIMILAR MIGRATORY FAUNA EVENT). THE OPERATIONS, MAINTENANCE, AND REPAIRS OF ADDITIONAL BUILDINGS/STRUCTURE AND ASSOCIATED VEHICULAR PARKING AREAS SHALL BE LOCATED AS CLOSE TO SW 122ND STREET AS PRACTICABLE. ONLY IN CONJUNCTION WITH SPECIAL EVENTS, WITHIN LAND USE AREA 'A', FOOD AND BEVERAGE VENDING IS PERMITTED AS A LIMITED AND TEMPORARY USE, ONLY IN CONJUNCTION WITH SPECIAL EVENTS, WITHIN LAND USE AREA 'A'.
2. SITE INGRESS/ EGRESS LOCATION WILL BE VIA SW 122ND STREET, DETERMINED DURING PRELIMINARY DEVELOPMENT PLAN (POP) REVIEW AND APPROVAL, AND GATED FOR THE SITE'S AND PUBLIC'S SECURITY. THE EXACT LOCATION WILL BE DETERMINED DURING POP REVIEW AND APPROVAL BASED ON ADJACENT USES AND ACCESS MANAGEMENT CRITERIA FOR SPACING AND OPERATIONAL SAFETY.
3. PEDESTRIAN PATHS, PATHWAY AND SECURITY LIGHTING, AND STORMWATER MANAGEMENT FACILITIES SHALL BE PERMITTED ANYWHERE WITHIN THE SITE.
4. A 30'-WIDE BUFFER SHALL BE REQUIRED WHERE THE PROJECT SITE IS ADJACENT TO PUBLIC RIGHTS-OF-WAY, AS SHOWN ON THIS PROPOSED SITE PLAN AS LAND USE AREA 'B'.

ALACHUA COUNTY ENVIRONMENTAL PROTECTION DEPARTMENT CONDITIONS

1. A MINIMUM 50 FEET NATURALLY VEGETATED BUFFER/SETBACK SHALL BE PROVIDED ALONG THE NORTHERN PROPERTY 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 SHALL BE LOCATED 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 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.

DEVELOPMENT STANDARDS

MAX BUILDING COVERAGE: 10% GROSS LAND AREA	
MINIMUM SETBACK REQUIREMENTS:	
FRONT (FT)	40
INTERIOR SIDE (FT)	20
STREET SIDE (FT)	40
REAR (FT)	40

LAND USE DATA

HATCH PATTERN	LAND USE AREA	AREA	
		AC	%
[Pattern A]	PROJECT SITE	75.0	100%
[Pattern B]	DEVELOPABLE AREA	72.6	96.8%
[Pattern C]	BUFFER	2.4	3.2%

1:300' SCALE
VERTICAL SCALE
HORIZONTAL SCALE
1" = 300'
0'
100'

CH2M HILL
1800 TOWN CENTER DRIVE
SUITE 100
GAINESVILLE, FL 32601
TEL: 352.335.1100
WWW.CH2MHILL.COM

1
NORTH

Staff's bases for approval



- 1. Major utilities are allowed in the Agriculture zoning district by means of a special exception.
- 2. ULDC Sec. 402.113 provides criteria for special exception approval. Staff has found that the proposed groundwater recharge wetland park meets the criteria for approval, as conditioned.
- 3. Alachua Co. Environmental Protection Dept. staff have visited the site and concur with the findings of the applicant's environmental consultant that show that the request is consistent with the protection of natural resources (pursuant to Policy 3.4.1 COSE).

Staff's bases for approval (cont'd)

4. The proposed special exception uses infiltrating wetlands to achieve lower nutrient concentrations and promote aquifer recharge, consistent with Ch. 406, Article VIII and Sec. 406.59.1(b) of the ULDC (Springs and High Aquifer Recharge Areas)
5. Management strategies for sinkholes will be established by means of the requirement (i.e. Condition #7) for a Sinkhole Monitoring and Mitigation Plan, consistent with Policy 4.4.7 COSE
6. Conditions (i.e. Conditions # 3 and 7) have been proposed to prevent and reduce potential impacts of sinkhole formation.

Staff's 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's 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's proposed conditions

- 1. A minimum 50 feet naturally vegetated setback shall be provided along the northern property 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.

Staff's proposed conditions (cont'd)

- 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.

Staff's proposed conditions (cont'd)

- 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.

Staff's proposed conditions (cont'd)

- 4. Groundwater Monitoring Plan Requirements:
 - 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

Staff's proposed conditions (cont'd)

- 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.

Staff's proposed conditions (cont'd)

- 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.