14	**AGENDA ITEM** **ST. JOHNS COUNTY BOARD OF COUNTY COMMISSIONERS**
	Deadline for Submission - Wednesday 9 a.m. – Thirteen Days Prior to BCC Meeting

10/20/2026

BCC MEETING DATE

TO: **Joy Andrews, County Administrator** **DATE:** **May 15, 2026**

FROM: **Neal Shinkre, Director, Utilities** **PHONE:** **904 209-2721**

SUBJECT OR TITLE: **Amending the Land Development Code for Wellhead Protection -- Final Hearing**

AGENDA TYPE: **Business Item, Ordinance, Public Hearing, Report**

BACKGROUND INFORMATION:

Since the original St. Johns County Land Development Code in 1999 and Comprehensive Plan, significant technological and regulatory advancements have been made related to wellhead protection. Based on increased density in the County and its need for future well sites, SJCUD proposes to bring the County Comp Plan and Land Development code into compliance with State law and alignment with current best practices. This is the final reading and public hearing of the proposed Land Development Code Changes for Wellhead Protection.

1. IS FUNDING REQUIRED? No **2. IF YES, INDICATE IF BUDGETED.** No

IF FUNDING IS REQUIRED, MANDATORY OMB REVIEW IS REQUIRED:

INDICATE FUNDING SOURCE:

SUGGESTED MOTION/RECOMMENDATION/ACTION:

Motion to enact Ordinance 2026-___ regarding updates to the Wellhead Protection Areas of the St. Johns Land Development Code.
Motion to deny Ordinance 2026-___ regarding updates to the Wellhead Protection Areas of the St. Johns County Land Development Code.

For Administration Use Only:
Legal: Lex Taylor 10/7/2026 **OMB: CR 10/7/2026** **Admin: Brad Bradley 10/8/2026**

To:	Board of County Commissioners
From:	St. Johns County Utility Department
Date:	October 20, 2026
Subject:	**Land Development Code Amendments 2026-__ for Wellhead Protection**
Hearing Dates:	PZA – August 20, 2026 (First Hearing -- PZA) BCC – September 1, 2026 (Transmittal Hearing -- BCC) PZA – October 15, 2026 (tentative Second PZA) BCC – October 20, 2026 (tentative Final Hearing)
Commissioner District:	N/A

BACKGROUND

Since the original St. Johns County Land Development Code in 1999 and that version of the Comprehensive Plan, significant technological and regulatory advancements have been made related to wellhead protection. Based on increased density in the County and its need for future well sites, SJCUD proposes to amend the restrictions related to wellhead protection. Aligning the restriction with current State of Florida regulations and the St. Johns Water Management District brings us into compliance with state law and allows for correct placement of new County wells.

SJCUD must secure 20-30 additional well sites to meet its future water supply projections. Due to increased density, obtaining these sites has become challenging. Many sites are not feasible, too expensive, or sellers are unwilling to negotiate the purchase of a site. The County has committed to serving approved developments, and water supply planning and well construction must stay ahead of the completion of these developments.

The Florida Administrative Code (FAC) 62-761 mandates the wellhead protection radius to be 500 feet. This has always been the distance prescribed, and the majority of Florida municipalities and utilities have aligned with the state requirement. For example, Clay, Duval, Flagler, Putnam, and Alachua Counties all state 500 feet as the wellhead protection area. SJCUD is not proposing to reduce the overall 1,000 feet wellhead protection area (Floridan Aquifer Secondary Zone), but only make an exception for retail fuel stations provided that such facilities incorporate storage systems installed with secondary containment as required in Chapter 62-761, F.A.C.

The current version of the LDC allows for special use permits within the 500-foot wellhead protection area

which is in conflict with state law and the County has been required to use the State's 500-foot protection area instead of the County's 200-foot protection area because of preemption by State law. This has caused confusion with County staff and entities that are both trying to sell the County wellhead sites and those that own property within the wellhead protection zones. Aligning the County ordinances with the State requirements should eliminate the confusion of differences in St. Johns County regulations and State regulations.

A typical SJCUD well is 450 feet deep so does not impact anything that a surficial well would impact. Well construction includes a casing covering the shaft fully until the pumping zone. It is capped at the surficial aquifer and only draws from the Floridan aquifer. St. Johns County's geology is not karst like other parts of Florida that have natural springs. The confining layer in St. Johns County protects the aquifer from surficial impacts. The attached hydrogeological report and standard well construction detail contain more information.

In addition, the SJRWMD issues the consumptive use permits for SJCUD wells and therefore dictates much of the wellfield management. SJCUD must protect water quality for its wells, as well as surrounding wells. Pumping rates are lowered for this protection, which necessitates more wells. SJCUD's Wellfield Optimization Plan Report (June 2015) is available if more detail is needed on SJCUD's wellfield management.

SJCUD staff reached out to other water providers in St. Johns County to verify their support. There were no objections to this proposed change.

AMENDMENT SUMMARY

A red-line copy of the amendments is included as **Attachments** to this report. Changes consist of the following:

Section 3.02.01, 3.02.02, 3.02.03, 3.02.04, and 3.02.05 are modified to bring the Land Development Code into alignment with the State law. The changes will allow the Land Development Code to increase the primary zone of protection from 200 feet to 500 feet to mirror state law. The changes remove the ability to get a special use permit within the primary zone currently being enforced because of the State law preemption. Stormwater regulation is removed because St. Johns Water Management District monitors the position of all wellheads and regulates stormwater accordingly. Generally, the LDC changes allow for implementation of current best practices in lieu of absolute proclivity from uses in situations where many entities are permitting the uses and ensuring safety.

CORRESPONDENCE/PHONE CALLS

As of the writing of this staff report, Staff has not received related calls.

BOARD DIRECTION

Action today may include reviewing the proposed Land Development Code for any potential modifications or as it is currently written and final passage before the Board of County Commissioners.

ATTACHMENTS

1. Ordinance
2. Exhibit A (clean)
3. Hydrogeological Report & Well Standard Detail
4. Proof of Advertisement

ORDINANCE NO. 2026-_____

AN ORDINANCE BY THE BOARD OF COUNTY COMMISSIONERS, ST. JOHNS COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA, AMENDING ST. JOHNS COUNTY LAND DEVELOPMENT CODE (ORDINANCE 1999-51, AS AMENDED) REGARDING WELLHEAD PROTECTION, SPECIFICALLY AMENDING SECTION 3.02.01 PROVIDING PURPOSE; AMENDING SECTION 3.02.02 TO UPDATE THE DESIGNATION OF THE WELLHEAD RESOURCE PROTECTION AREA; AMENDING SECTION 3.02.03 REGULATING ACTIVITIES IN THE WELLHEAD RESOURCE PROTECTION AREAS; AMENDING SECTION 3.02.04 GENERAL EXEMPTIONS; AMENDING SECTION 3.02.05 SPECIAL USE; PROVIDING FINDINGS OF FACT; PROVIDING FOR CODIFICATION; PROVIDING FOR CORRECTION OF SCRIVENERS ERRORS; PROVIDING FOR APPLICABILITY; PROVIDING FOR SEVERABILITY; PROVIDING AN EFFECTIVE DATE.

WHEREAS, local land development regulations require evaluation and revision to address public health, safety and welfare issues that may occur during the implementation of land development regulations; and

WHEREAS, St. Johns County desires to amend certain provisions of the Land Development Code (the "Code"), enacted pursuant to Part II of Chapter 163 and Chapter 190, Florida Statutes, to maintain consistency with Florida State Statutes and to provide for additional clarity and ease of use; and

WHEREAS, the Florida Department of Environmental Protection (FDEP) has adopted Wellhead Protection requirements pursuant to Chapter 62-521, Florida Administrative Code, which establish a Wellhead Protection Area defined as a five hundred (500) foot radial setback distance around a potable water well to provide protection from contamination of groundwater resources; and

WHEREAS, St. Johns County currently implements a Wellhead Protection Area of one thousand (1,000) feet surrounding public potable water supply wells, which consists of a primary and secondary protection zone intended to provide enhanced local protection of groundwater resources beyond the minimum protections established by Chapter 62-521, Florida Administrative Code; and

WHEREAS, St. Johns County desires to amend certain provisions of the Comprehensive Plan to maintain consistency with FDEP standards within the primary zone and to update prohibitions sand restriction within secondary zone based on current best practices and to provide greater flexibility in water supply planning; and

WHEREAS, St. Johns County desires to amend certain provisions of the Code to maintain consistency with FDEP standards within the primary zone and to update prohibitions sand restriction within secondary zone based on current best practices and to provide greater flexibility in water supply planning; and

WHEREAS, these proposed Code amendments are designed to be compliant with 2025 Senate Bill 180, and does not any more burdensome or restrictive procedures, the effect of these proposed amendments will be to reduce burdens and restrictions bringing County regulations into compliance with state law and allow for the use of modern best practices; and

WHEREAS, the proposed Code amendments are attached hereto as ***Exhibit "A"***; and

WHEREAS, St. Johns County has determined that reasonable amendments to land use regulations serve the public health, safety and welfare of the citizens of St. Johns County; and

WHEREAS, pursuant to Section 125.66(3)(a), Florida Statutes, the County prepared and posted a business impact estimate finding no direct detrimental economic impact on private, for-profit businesses in the County.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, as follows:

SECTION 1. LEGISLATIVE FINDINGS OF FACT. The above recitals and WHEREAS clauses are true and correct and are hereby adopted as legislative findings and incorporated herein by reference and made a part hereof.

SECTION 2. LAND DEVELOPMENT CODE REGULATIONS. Article II, of the St. Johns County Land Development Code, Ordinance No. 1999-51, as previously amended, is hereby amended as follows in the attached ***EXHIBIT "A"*,** incorporated herein and made a part of this Ordinance.

SECTION 3. APPLICABILITY. The remaining portions of the St. Johns County Land Development Code, Ordinance No. 99-51, as amended, which are not in conflict with the provisions of this Ordinance, shall remain in full force and effect.

SECTION 4. INCLUSION AND CODIFICATION INTO THE LAND DEVELOPMENT CODE. It is the intent of the St. Johns County Board of County Commissioners that the provisions of this Ordinance shall become and be made a part of the St. Johns County Land Development Code, Ordinance No. 1999-51, as previously amended, and that the parts, sections, and attachments of this Ordinance may be renumbered, reorganized, re-lettered, and appropriately incorporated into the Land Development Code in order to accomplish such intentions.

SECTION 5. **SCRIVENERS ERRORS**. It is the intent of the St. Johns County Board of County Commissioners that scriveners and typographic errors which do not change the tone or tenor of this Ordinance may be corrected during codification and may be authorized by the County Administrator or designee, without public hearing, by filing a corrected or recodified copy of the same with the Clerk of the Board.

SECTION 6. SEVERABILITY. It is the intent of the Board of County Commissioners of St. Johns County, and is hereby provided, that if any section, subsection, sentence, clause, phrase, or provision of this Ordinance is, for any reason, declared by a court of competent jurisdiction to be unconstitutional or invalid, such decision shall not affect the constitutionality or validity of the ordinance as a whole, or any part thereof, other than the part so declared.

SECTION 7. EFFECTIVE DATE. This Ordinance shall take effect upon a certified copy of this Ordinance being filed with the Florida Department of State.

PASSED AND ENACTED by the Board of County Commissioners of St. Johns County, Florida, this _____day of _____, 2026.

BOARD OF COUNTY COMMISSIONERS
OF ST. JOHNS COUNTY, FLORIDA

By: _____
Clay Murphy, Chair

ATTEST: Brandon J. Patty, Clerk of the Circuit Court & Comptroller

By: _____
Deputy Clerk

Date: _____

PART 3.02.00 — WELLHEAD PROTECTION

Sec. 3.02.01 Purpose

A. The purpose of this Part is to ensure the protection of the existing and future public potable water supplies in St. Johns County, Florida, through the establishment of Wellhead Resource Protection Areas (RPA) around public potable water supply wells, and the prohibition or regulation of specific activities and facilities in these areas.

B. The St. Johns County Board of County Commissioners hereby declares that in order to ensure an adequate and safe future supply of potable water that certain land Uses and associated activities, which are deemed by the County to be potential sources of degradation of the drinking water in St. Johns County, may be regulated or prohibited within defined areas. This Part sets forth regulations and prohibitions deemed necessary by the St. Johns County Board of County Commissioners to ensure protection of the present and future public potable water supply wells for the residents of unincorporated St. Johns County, Florida.

C. It is recognized that public water supply Development occurs within two (2) separate and distinct aquifer systems, those being the shallow, discontinuous, semi-confined Surficial Aquifer and the deeper, continuous, confined Floridan Aquifer. Further, it is recognized that the Surficial Aquifer requires a higher degree of protection than does the Floridan Aquifer.

D. New public water supply wells developed by a Public Water Supply Utility after the effective date of this Code shall prepare a Wellhead Protection Area Study with a professional geologist and submit the findings to St. Johns County in both hard copy and digital format.

Sec. 3.02.02 Wellhead Resource Protection Area Map

A. Designation of Wellhead Resource Protection Areas.

Wellhead Resource Protection Areas (RPA) are hereby established for the Surficial Aquifer and the Floridan Aquifer.

For the Surficial and Floridan Aquifer, a one thousand (1,000) foot Wellhead Resource Protection Area is established around public potable water supply wells

to protect existing and future potable water resources for the people of unincorporated St. Johns County. This Wellhead Resource Protection Area is further divided in two zones for the two Aquifer systems as follows:

1. Primary Zone.

   The Primary Zone of the Wellhead Resource Protection Area shall be defined as a radial setback from a distance of zero (0) to five hundred (500) feet around public potable water supply wells.

2. Secondary Zone.

   The Secondary Zone of the Wellhead Resource Protection Area shall be defined as a radial setback from a distance five hundred (500) to one thousand (1,000) feet around public potable water supply wells.

Notwithstanding the larger Wellhead Resource Protection Area set forth above the Primary Zone around each public potable water supply well constitutes a "Wellhead Protection Area" as defined in Chapter 62-521, F.A.C., and is subject to all prohibitions and restrictions in that rule in addition to the County standards herein.

B. Interpretation of Wellhead Resource Protection Area Designations

To determine the location of properties and facilities within the Wellhead Resource Protection Areas, the following general rules shall apply:

1. Map boundaries

   Provisions of this regulation shall apply if a contiguous parcel of land lies wholly or in part within a Wellhead Resource Protection Area, to the extent of the boundary delimitation.

2. Changes to map boundaries

   Wellhead Resource Protection Area designations may be changed by the Board of County Commissioners, on the basis of defined criteria, including but not limited to changes in the technical knowledge concerning the aquifers of St. Johns County, changes in pumping rates for public potable water supply wells in wellfields, wellfield reconfiguration, the addition of

new public potable water supply wells to a wellfield, or approval by the Board of County Commissioners of additional wellfields.

Sec. 3.02.03 Regulation Of Activities In The Wellhead Resource Protection Areas

A. Primary Zone - Surficial and Floridan Aquifer.

The Primary Zone of the Wellhead Protection Area is established as a zone of exclusion intended to prevent contamination of public potable water supplies. Except as expressly permitted herein no new Uses, Structures, or land-disturbing activities shall be allowed within the Primary Zone.

1. Permitted Uses within the Primary Zone.

Only the following Uses may be permitted within the Primary Zone, subject to compliance with all applicable County, State, and federal regulations:

a. Residential Uses lawfully permitted by the St. Johns Water Management District.

b. Uses functionally related and essential to the operation, maintenance, or protection of the water supply system.

c. Open space Uses, including passive recreation areas.

d. Parks, playgrounds, and similar low-impact recreational Uses.

2. Additional Limitations Applicable to the Surficial Aquifer Primary Zone.

Within the Primary Zone for the Surficial Aquifer the following additional restrictions apply:

a. No parking areas, Structures, or impervious surfaces shall be permitted, except impervious surfaces that are clearly accessory to existing residential Uses lawfully established prior to adoption of the Comprehensive Plan.

b. Playing courts, open-air shelters, and similar low-impact recreation facilities may be permitted, provided they do not result in direct discharge to the Surficial Aquifer and are designed to minimize pollutant loading.

3. Single Family Residential Exemption. One (1) single family dwelling unit may be permitted within the Primary Zone on a Parcel or Lot that lies wholly or partially within this zone of exclusion, provided that the Parcel or Lot was created on or before the adoption of the St. Johns County Comprehensive Plan and all applicable health, wastewater, and stormwater requirements are satisfied.

4. Prohibited Uses and Activities.
Notwithstanding any other provision of this Code, the following Uses and activities are expressly prohibited within the Primary Zone of a Wellhead Resource Protection Area.

a. New sanitary landfills, including new phosphogypsum stacks, solid waste disposal sites, or solid waste transfer facilities, including any solid waste activities regulated under Rule 17-701.020, F.A.C.

b. New Industrial Land Use designations, industrial Uses, or industrial wastewater discharges.

c. New Interim wastewater treatment plants, that do not meet Advanced Wastewater Treatment standards and all regulatory requirements applicable to Community Wastewater Treatment Plants.

d. New concentrated animal feeding operations, as defined in Rule 17-670.200, F.A.C.

e. New dairy farm storage and treatment facilities, including high intensity use areas and land application areas, as defined in Rule 17-670.200, F.A.C.

f. Discharge or infiltration of stormwater into depressions or features with direct or demonstrated hydrologic connection to the Surficial Aquifer.

g. New land applications of sludge or septage.

h. New underground storage tanks or underground storage facilities. Except, replacement of an existing underground storage tank system regulated under Chapter 62-761, F.A.C., within the same excavation, or the addition of new underground storage tanks regulated under Chapter 62-761, F.A.C., at a facility with other such existing underground storage tanks is exempt from this provision, provided that the replacement or new underground

storage tank system is installed with secondary containment as required in Chapter 62-761, F.A.C.

i. New Class I and Class III injection wells, and new Class V injection wells except for those specifically exempted by Rule 62-521.400, F.A.C.

j. New hazardous-waste treatment, storage, or disposal facilities.

k. New aboveground storage tanks and aboveground storage tank facilities. Except replacement or upgrading of an existing aboveground storage tank or addition of new aboveground storage tanks which are regulated under Chapter 62-762, F.A.C., at a facility with other such aboveground storage tanks is exempt from this provision, provided that the replacement or new aboveground storage tank system meets the applicable provisions of Chapter 62-762, F.A.C.

B. Secondary Zone - Surficial Aquifer.

The following Uses and activities are expressly prohibited within the Secondary Zone of a Wellhead Resource Protection Areas for the Surficial Aquifer not withstanding any other provision of this Code:

1. New sanitary landfills, including new phosphogypsum stacks, solid waste disposal sites, or solid waste transfer facilities, including any solid waste activities regulated under Rule 17-701.020, F.A.C.

2. New concentrated animal feeding operations, as defined in Rule 17-670.200, F.A.C.

3. New dairy farm storage and treatment facilities, including high intensity use areas and land application areas as defined in Rule 17-670.200, F.A.C.

4. Any new land applications of sludge or septage.

5. Installation of new underground storage tanks or underground storage facilities.

6. Surface drainage modifications or alteration that would reduce natural recharge to the Surficial Aquifer or redirect stormwater in a manner that diminishes aquifer recharge capacity.

C. Secondary Zone - Floridan Aquifer.

The following Uses and activities are restricted within the Secondary Zone of the Wellhead Resource Protection Areas for the Floridan Aquifer and may be allowed, subject to review and approval of a Special Use Permit and where applicable a Development Permit pursuant to Part 9.01.00.

1. Sludges

Existing sludge spreading activities in an RPA must have a current valid permit or regulatory authorization and remain in full compliance with all applicable state and local environmental permitting requirements and this Part.

2. Septages

Existing septage spreading activities in an RPA must have a current valid permit or regulatory authorization and remain in full compliance with all applicable state and local environmental permitting requirements and this Part.

3. Hazardous Wastes

Any new facility that uses, handles, stores, or generates hazardous wastes in an RPA exceeding thirty (30) gallons of liquid hazardous waste, or six (6) pounds of solid hazardous waste, shall require approval and must have a current valid permit or regulatory authorization and be in full compliance with all local, state and federal requirements and this Part.

4. New sanitary landfills, including new phosphogypsum stacks, solid waste disposal sites, or solid waste transfer facilities, including any solid waste activities regulated under Rule 17-701.020, F.A.C.

5. New concentrated animal feeding operations, as defined in Rule 17-670.200, F.A.C.

6. New dairy farm storage and treatment facilities, high intensity use areas and land application areas, as defined in Rule 17-670.200, F.A.C.

7. Installation of new underground storage tanks or underground storage facilities. Except underground storage tanks or facilities regulated under Chapter 62-761, F.A.C., are exempt from this provision, provided that the new underground storage tank system or facility is installed with secondary containment as required in Chapter 62-761, F.A.C.

Sec. 3.02.04 General Exemptions

The following legally existing activities and facilities are deemed by the County to be generally exempt from the requirements of this Part.

A. General Exemption for Continuous Transit.

The transportation of any hazardous waste through an RPA shall be exempt from the provisions of this Part provided that the transporting motor vehicle is in continuous transit. The transport of any hazardous waste through existing permanent pipelines shall also be exempt provided that the currently authorized Use or Uses are not changed.

B. General Exemption for Vehicular Fuel and Lubricant Use.

The use of any petroleum product solely as a fuel in a vehicle's fuel tank or as a lubricant in a vehicle shall exempt the vehicle from the provisions of this Part.

C. General Exemption for the Use of Nitrates Contained in Fertilizers.

The use of fertilizers containing nitrates shall be generally exempt from this Part.

D. General Exemption for Janitorial Uses.

The use of hazardous waste for the maintenance and cleaning of residential, commercial and office Buildings is generally exempt from the provisions of this Part.

E. General Exemption for Construction Activities.

The activities of constructing, repairing or maintaining any facility or improvement on land within an RPA shall be generally exempt from the provisions of this Part provided that all contractors, subcontractors, laborers, material men and their employees or agents, when using, handling, storing, producing, transporting or disposing of hazardous wastes use applicable Best Management Practices.

F. General Exemption for Laboratory or Instrument Use.

Professional laboratories shall not be required to obtain a Special Use Permit for the handling, storage, use, generation, transport or disposal of hazardous wastes, if and only if, these substances are stored, generated, transported, handled, used or disposed of in the normal course of business of the laboratory.

G. General Exemption for Retail Sales Activity.

Retail sales establishments which store and handle, for resale, hazardous materials in the substance's original and unopened containers shall not be required to obtain a Special Use Permit, when using, handling, storing, producing, transporting or disposing of such materials, use applicable Best Management Practices, and are generally exempt from the provisions of this Part.

This exemption does not apply within five hundred (500) feet of a potable water well and does not waive any secondary containment or other requirements imposed by state or federal law, including Rule 62-521.400, F.A.C., Chapter 62-730, F.A.C., and 40 C.F.R. Part 264, Subpart I.

H. General Exemption for Application of Pesticides, Herbicides, Fungicides, and Rodenticides.

The application of those hazardous wastes used as pesticides, herbicides, fungicides, and rodenticides in recreation, agriculture, pest control, and aquatic weed control activities shall be exempt from the provisions of this Part provided that:

1. Application of the substance is in strict conformity with the use requirements as set forth in the EPA registry for that substance and as indicated on the containers in which the substances are sold.

2. The application is in strict conformity with the requirements as set forth in Chapters 482 and 487 F.S., and the Florida Administrative Code.

3. The application of any of the pesticides, herbicides, fungicides, and rodenticides shall be highlighted in the records of the certified operator supervising its use. The certified operator shall provide specific notification in writing to the applicators under his or her supervision that they are working at a site located in a potable water Wellhead Resource Protection Area for which particular care is required. Records shall be kept of the date and the amount of those substances applied at each location and said records shall be available for inspection by the County.

I. General Exemption for Office Uses

Office Uses, except for the storage, handling or use of hazardous wastes as provided for in this Part, shall be generally exempt from the provisions of this Part.

J. General Exemption for Residential Uses

Residential Uses shall be generally exempt from this Part. However, notwithstanding the minimum lot size requirements of Section 6.01.01 and Section 6.01.05 of this Code, a minimum lot size of one (1) acre is required for the use of a septic system within an RPA, except for existing lots of record as of the adoption of this Code.

Sec. 3.02.05 Special Use

The Applicant for a Special Use Permit shall, in addition to the standards of Part 9.03.00, demonstrate by the preponderance of competent substantial evidence of:

1. Unique circumstances exist which are peculiar to the particular non-residential activity or facility, and which are different than any other prohibited or allowed non-residential activity or facility.

2. Best Possible Technology

Best possible technology exists which will isolate the activity or facility from the existing or future potable water supply resources. Compliance with requirements of state rule shall create a rebuttable presumption that the best possible technology is used.

3. Hydrogeologic data and analysis

Site-specific hydrogeologic data and analysis establish that the activity or facility will not elevate water quality parameters above the limits set forth in Rule 17-3, F.A.C., at the point of discharge.

D. Limitations

No Special Use may authorize any activity prohibited by Chapter 62-521, F.A.C. within five hundred (500) feet of a potable water well (the Wellhead Protection Area), regardless of its designation in this Part.

General Geology and Hydrogeology of St. Johns County

Proposed Ordinance Amendments for
Wellhead Protection
Supporting Information

Prepared by St. Johns County
Utility Department

August 25, 2025

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I. General Geology and Hydrogeology of St. Johns County

A review of the hydrogeology in St. Johns County, Florida (study area) was conducted using existing hydrogeologic data, published reports, drilling and geophysical logging data, and well construction and testing records obtained from wells located throughout the county. Data from these sources were compiled to illustrate cross sections of the generalized hydro stratigraphy underlying the study area.

Figure 1 presents a general summary and description of the hydrogeologic framework in the study area. Figure 2 provides a location map for the cross sections (A–A' and B–B') shown in Figures 3 and 4, respectively.

A. Hydrogeologic Framework

The geological setting of the study area consists of a thick sequence of carbonate rock and unconsolidated to semi-consolidated clay, silt, and sand deposits that overlie a basement of complex metamorphic strata. The principal aquifer systems underlying the study area are contained within sediments ranging in age from the Late Cretaceous to the Holocene. From shallowest to deepest, these aquifer systems include the Surficial Aquifer (SA), the Floridan Aquifer System (FAS), and the Cretaceous Aquifer System (CAS).

The geologic units that comprise the SA, FAS, and CAS, from youngest to oldest, include undifferentiated deposits of Pliocene and Late Miocene age, the Hawthorn Group of Miocene age, the Ocala Limestone of Late Eocene age, the Avon Park Formation of Middle Eocene age, the Oldsmar Formation of Early Eocene age, the Cedar Keys Formation of Paleocene age, and the Lawson Limestone and Navarro Group of Upper Gulfian age (Figure 1).

Rocks comprising these geologic formations generally dip to the north-northeast and are shallower in the southern portion of the county. Variations in the thickness and distribution of these stratigraphic units are depicted in Figures 3 and 4. Groundwater quality in the area is variable and generally degrades toward the south, becoming more mineralized with depth.

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SYSTEM	SERIES	GEOLOGIC FORMATION	LITHOLOGIC CLASSIFICATION	AQUIFER SYSTEM		HYDROLOGIC UNIT
Quaternary	Holocene/Pleistocene Pliocene Miocene	Undifferentiated Deposits	Sand, silt, and shell deposits	Surficial Aquifer		Surficial Aquifer
Tertiary	Holocene/Pleistocene Pliocene Miocene	Hawthorn Group	Clay, silt, sand, and carbonate deposits	FLORIDAN AQUIFER SYSTEM	UCU	Upper Confining Unit
Tertiary	Eocene	Ocala Limestone	Fossiliferous limestone porous	FLORIDAN AQUIFER SYSTEM	UFA	Upper Floridan Aquifer
Tertiary	Eocene	Avon Park	Fossiliferous and dolomitic limestone variable	FLORIDAN AQUIFER SYSTEM	MSCU	Middle Semi Confining Unit
Tertiary	Eocene	Avon Park	Fossiliferous and dolomitic limestone variable	FLORIDAN AQUIFER SYSTEM	Lower Floridan Aquifer	Upper Avon Park Permeable Zone
Tertiary	Eocene	Avon Park	Fossiliferous and dolomitic limestone variable	FLORIDAN AQUIFER SYSTEM	Lower Floridan Aquifer	Confining to Semi Confining Unit
Tertiary	Eocene	Avon Park	Fossiliferous and dolomitic limestone variable	FLORIDAN AQUIFER SYSTEM	Lower Floridan Aquifer	Semi-Confining Unit (MAPCU)
Tertiary	Eocene	Avon Park	Fossiliferous and dolomitic limestone variable	FLORIDAN AQUIFER SYSTEM	Lower Floridan Aquifer	Lower Avon Park Permeable Zone
Tertiary	Eocene	Oldsmar Formation	Micritic and dolomitic limestone	FLORIDAN AQUIFER SYSTEM	Lower Floridan Aquifer	GMU Confining Unit
Tertiary	Eocene	Oldsmar Formation	Micritic and dolomitic limestone	FLORIDAN AQUIFER SYSTEM	Lower Floridan Aquifer	Fernandina Permeable Zone
Tertiary	Paleocene	Cedar Keys Formation	Interbedded dolomite and anhydrites	FLORIDAN AQUIFER SYSTEM	LCU	Lower Confining Unit
Cretaceous	Upper Gulfian	Lawson Limestone	Dolomitic limestone, fossiliferous, porous	Cretaceous Aquifer System		Lawson Limestone
Cretaceous	Upper Gulfian	Rocks of Navarro Age	Chalk, Clay, and Sand	Cretaceous Aquifer System		Navarro Group

Figure 1: Generalized Hydro stratigraphy of St. Johns County, Florida

B. Surficial Aquifer

The geologic units comprising the Surficial Aquifer (SA) in the study area consist predominantly of discontinuous, interbedded lenses of unconsolidated, fine- to medium-grained quartz sand, shell, and clay deposits of the Pleistocene, Holocene, and Late Miocene series. The base of the SA is expected to occur at an elevation of approximately –25 to –100 feet mean sea level (msl) and generally lies between 25 and 120 feet below land surface (bls) in the study area.

The SA is underlain by approximately 50 to 310 feet of Miocene-age phosphatic sands, dolomitic silts, and clay deposits (Hawthorn Group) that comprise the upper confining unit (UCU) of the Floridan Aquifer System (FAS). As shown in Figure 3, the thickness of the UCU increases in the northern part of the county, where it generally ranges from 180 to 310 feet. In the southern part of the county, it decreases to roughly 50–150 feet. The silt and clay deposits of the UCU form an effective confining layer that restricts the exchange of water between the underlying FAS and the SA.

C. Floridan Aquifer System

The FAS is the principal underground source of drinking water in the region due to its water quality and production potential. Except for the UCU, the hydrogeologic units comprising the FAS, in descending order, include the Upper Floridan Aquifer (UFA), the middle semiconfining unit (MSCU), the Lower Floridan Aquifer (LFA), and the lower confining unit (LCU).

The LFA is subdivided into three distinct aquifer zones:

- Upper Avon Park permeable zone (UAPPZ)
- Lower Avon Park permeable zone (LAPPZ)
- Fernandina permeable zone (FPZ)

These zones are separated by two intervening confining units: the middle Avon Park Composite Unit (MAPCU) and the Glauconite Marker Unit (GMU). The geologic units comprising the FAS, from youngest to oldest, include the Ocala Limestone, the Avon Park Formation, and the Oldsmar Formation. The Cedar Keys Formation forms the lower boundary of the FAS.

D. Upper Floridan Aquifer

The UFA occurs below the Hawthorn Group and is contained within the carbonates of the Ocala Limestone. In the southern part of the county, it also includes the carbonate rocks of the upper Avon Park Formation. This sequence consists primarily of poorly to moderately indurated, fossiliferous limestone with relatively high effective porosity and permeability, grading into moderately indurated limestone and sparse dolomitic limestone.

In general, the UFA dips to the north-northeast and is inferred to occur at depths ranging from approximately –90 feet msl in the southwestern county to more than –350 feet msl in the extreme north. Based on lithologic and geophysical logging data from water-supply wells throughout the county, its thickness is estimated at 200–300 feet. Hydraulic data from the St. Johns River Water Management District (SJRWMD) Northeast Florida (NEF) regional model indicate transmissivity values generally range from 20,000 to 500,000 feet squared per day (ft^2/d). Constant-rate pumping tests in the Tillman Ridge Wellfield suggest transmissivity of the UFA in the CR 207 wastewater basin is on the order of 28,000–55,000 ft^2/d.

Water-quality conditions in the UFA were evaluated using existing groundwater sampling data from thirty UFA wells in the study area. These data, obtained from the SJRWMD water-quality database, were compiled into a TDS concentration contour map (Figure 5). Water in the UFA is fresh in the

northern county and brackish in the south. TDS concentrations range from about 200 mg/L in the northwest to approximately 5,000 mg/L in the southeast. The high-TDS water in the southern county is attributed to vertically induced migration of saline water from deeper FAS zones, driven by UFA discharge through submarine springs east of Crescent Beach (Spechler and Hampson, 1984).

E. Middle Semiconfining Unit (MSCU)

The MSCU underlies the UFA and is estimated to range from 100 to 400 feet in thickness across the study area. This unit separates the UFA from the underlying LFA and generally consists of low-permeability limestone and dolomite deposits within the Avon Park Formation. The degree of vertical fluid movement through the MSCU varies across the county, depending on its vertical hydraulic conductivity. Based on the SJRWMD NEF groundwater model, leakance through the MSCU is low in the northern part of the county (10^{-6} to 10^{-5} per day) and increases by several orders of magnitude in the southern half, which may have contributed to upward migration of deep saline water into shallower aquifer zones in this area (Figure 3).

F. Lower Floridan Aquifer (LFA)

The LFA underlies the MSCU and comprises three discrete water-producing zones separated by intra-aquifer confining units. These zones occur within the carbonates of the Avon Park Formation:

- Upper Avon Park permeable zone (UAPPZ)
- Lower Avon Park permeable zone (LAPPZ)
- Fernandina permeable zone (FPZ)

The UAPPZ occurs at depths of approximately –700 to –900 feet msl in the study area and generally ranges from 50 to 200 feet in thickness, depending on location. It supplies water to Duval County and parts of northeast St. Johns County, where its groundwater is fresh with relatively low TDS concentrations. As in the UFA, water quality in the UAPPZ degrades southward—TDS exceeds 10,000 mg/L in the middle to southern half of the county (Figure 3).

The middle Avon Park Composite Unit (MAPCU) separates the UAPPZ from the deeper LAPPZ, providing roughly 100 to 200 feet of confinement between them. The top of the LAPPZ lies between –1,050 and –1,200 feet msl and is several hundred feet thick. Water quality in the LAPPZ is poorly understood due to limited well data, but is expected to be brackish to saline throughout the study area, especially in the southern half of the county.

The Glauconite Marker Unit (GMU) underlies the LAPPZ and is composed of interbedded dolomite

and anhydrite deposits in the upper Oldsmar Formation. Its low-permeability rocks form an effective confining layer between the LAPPZ and the FPZ. In the study area, the GMU occurs at depths of –1,300 to –1,600 feet msl and ranges from 300 to 500 feet in thickness. Drilling, sampling, and geophysical-logging data from an FPZ test monitoring well (SJ0025) in northeast St. Johns County indicate that the GMU is an excellent confining unit: flow logs and head differences, as well as a sharp chloride increase—from 38 mg/L in the LAPPZ to 16,210 mg/L in the FPZ—demonstrate its effectiveness.

G. Fernandina Permeable Zone

The FPZ underlies the GMU and is the lowermost permeable zone of the LFA. It is composed of highly permeable, fractured limestone and dolomite that make up the lower portion of the Oldsmar Formation. The FPZ is estimated to occur at depths ranging from –1,650 to –1,950 feet mean sea level (msl) and is 150 to 300 feet thick in the study area. It contains saline, highly mineralized groundwater. Based on recent water-quality samples from the FPZ monitoring well in northeast St. Johns County, TDS concentrations in this zone are on the order of 30,000 mg/L and are expected to exceed 10,000 mg/L elsewhere in the county.

H. Lower Confining Unit

The LCU lies below the FPZ and consists of lower Eocene to Paleocene, gypsiferous carbonates of the Cedar Keys Formation. It is estimated to occur from –1,950 to –2,200 feet msl and range from 250 to 500 feet in thickness. Primary porosity in these rocks is filled with anhydrite or gypsum, making them nearly impermeable and thus an effective confining unit. This unit forms the base of the Floridan Aquifer System (FAS) in the area and separates it from the underlying Cretaceous Aquifer System.

I. Lawson Limestone

In the study area, the Lawson Limestone is the uppermost permeable zone of the CAS, separated from the FPZ by the Cedar Keys Formation. This sequence of carbonate rock consists primarily of light-colored, fossiliferous, dolomitic limestone with relatively high effective porosity and permeability.

The Lawson Limestone is estimated to occur at depths between –2,200 and –2,600 feet msl and to range from 200 to 300 feet in thickness. Based on fluid-resistivity logs obtained from previous oil- and gas-exploratory wells, the TDS concentration in the Lawson Limestone is inferred to be on the order of 50,000 mg/L or more.

J. Navarro Confining Unit

The Navarro Confining Unit underlies the Lawson Limestone and consists of low-permeability sand, clay, and chalk deposits. Drilling records from exploratory oil- and gas-wells in the study area indicate that this unit is composed predominantly of white chalk grading into well-indurated shale.

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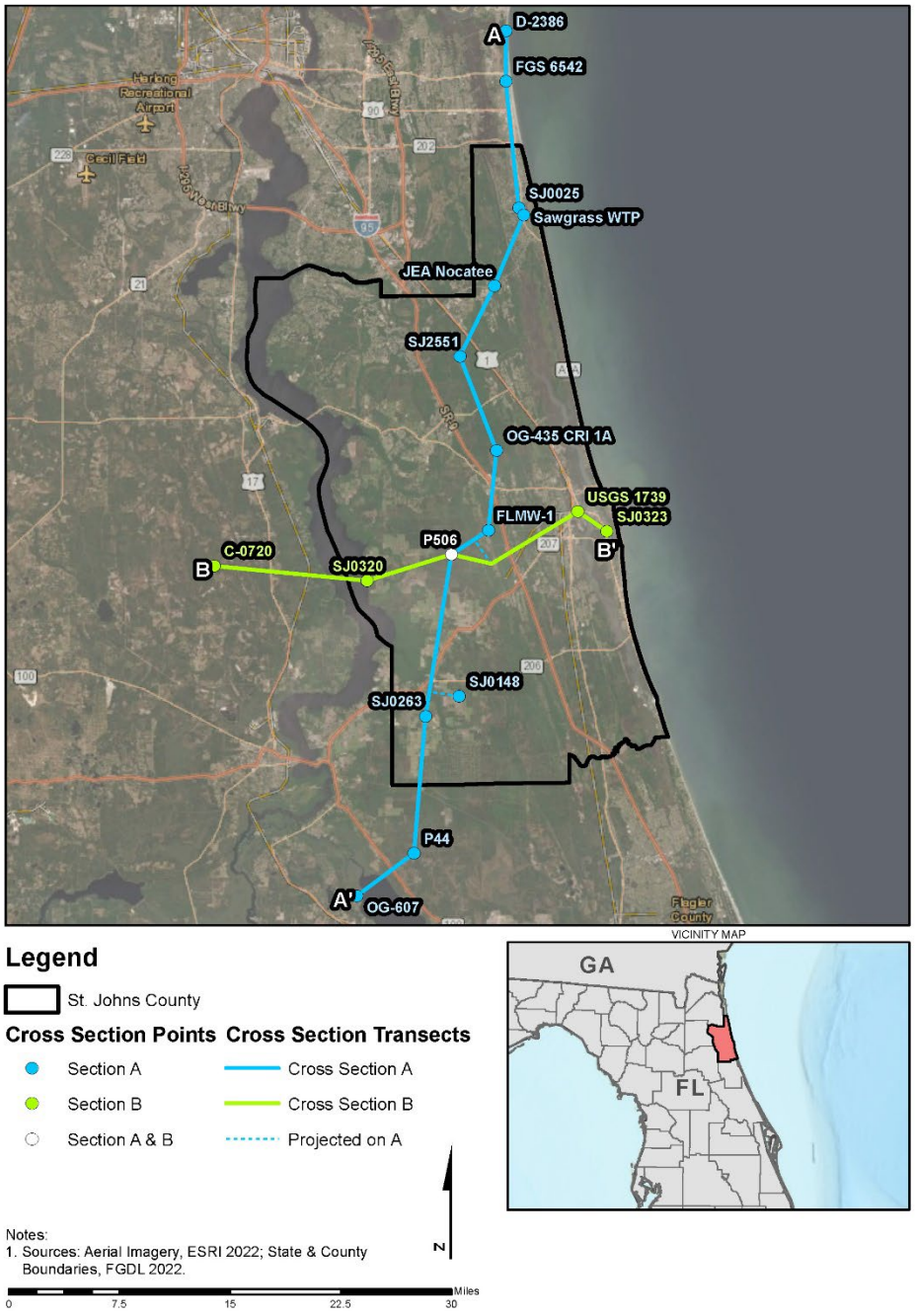


Figure 2: Cross Section Location Map

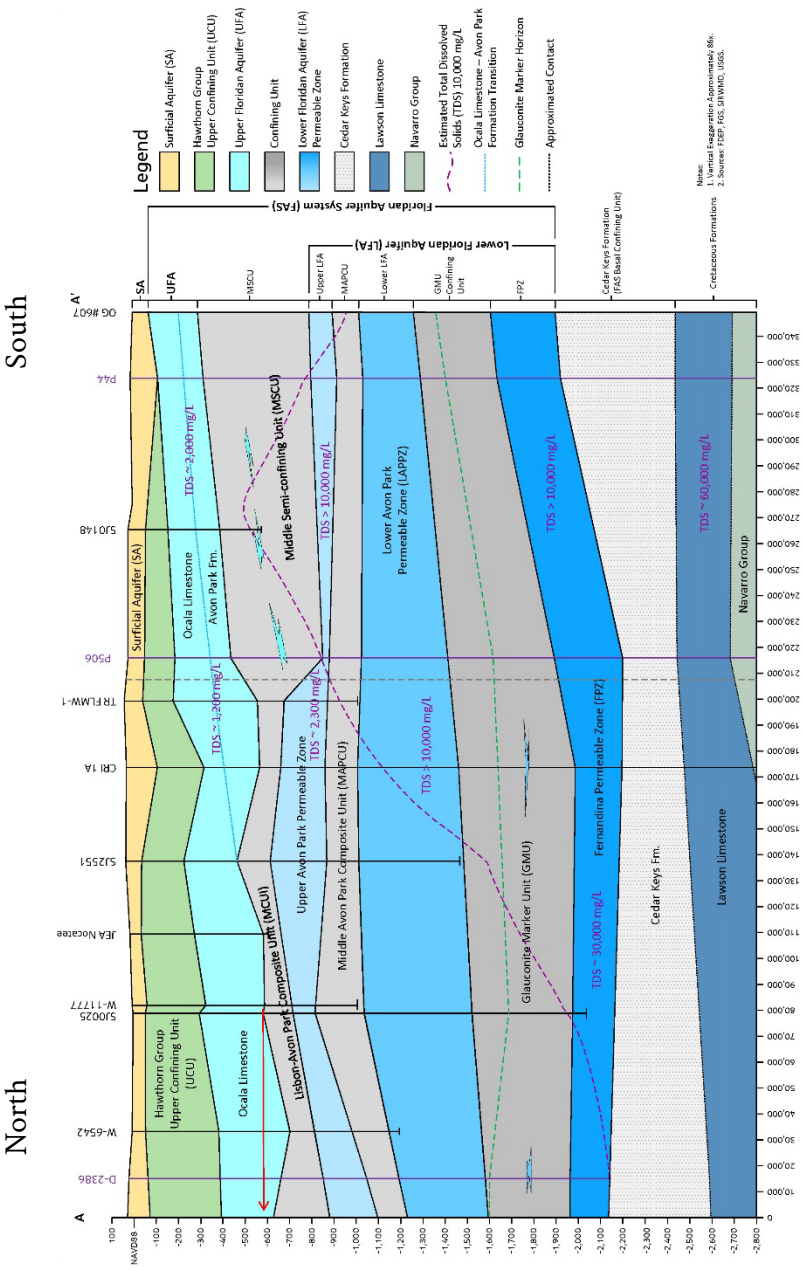


Figure 3 Cross Section A (North – South)

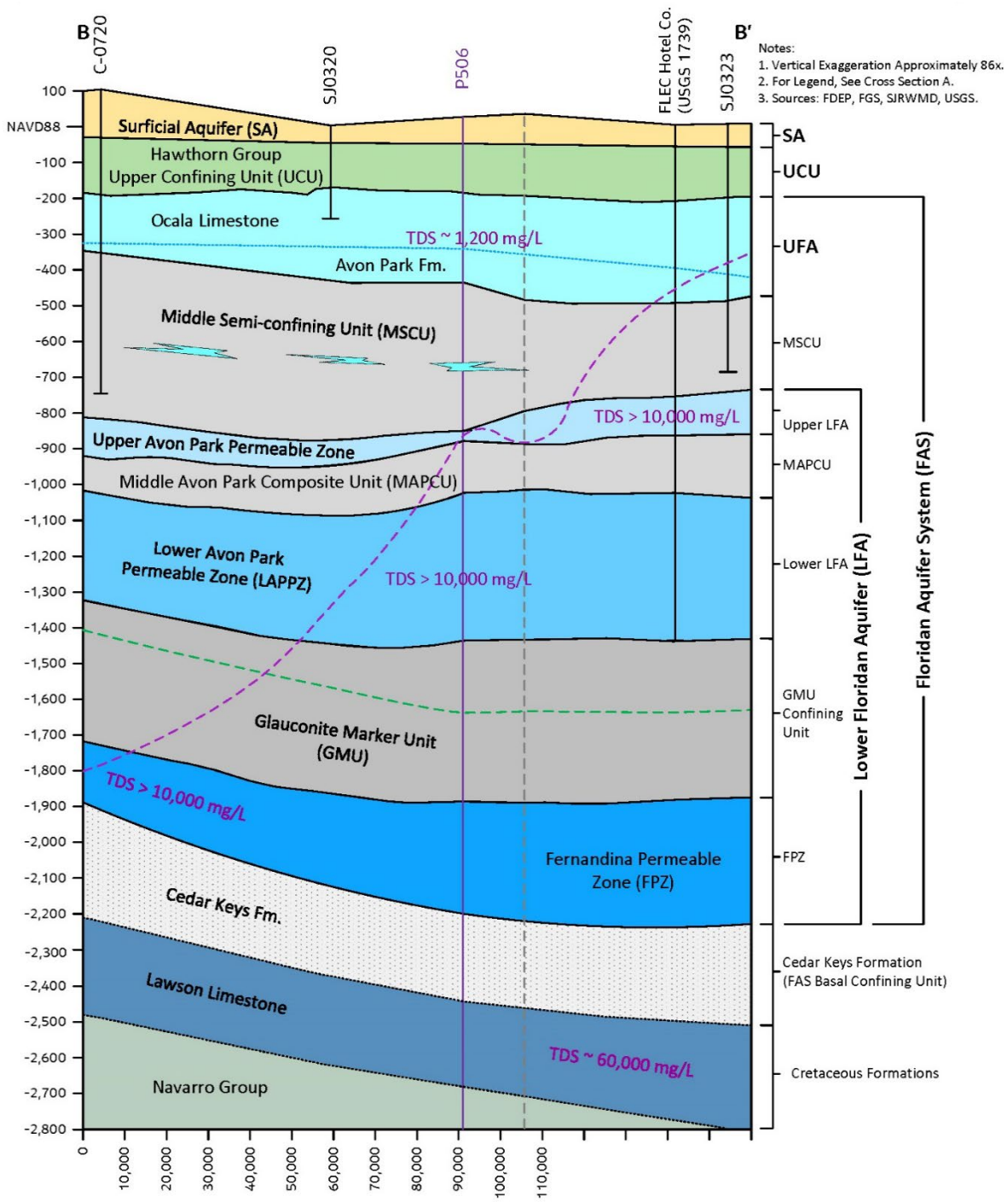


Figure 4: Cross Section B (West – East)

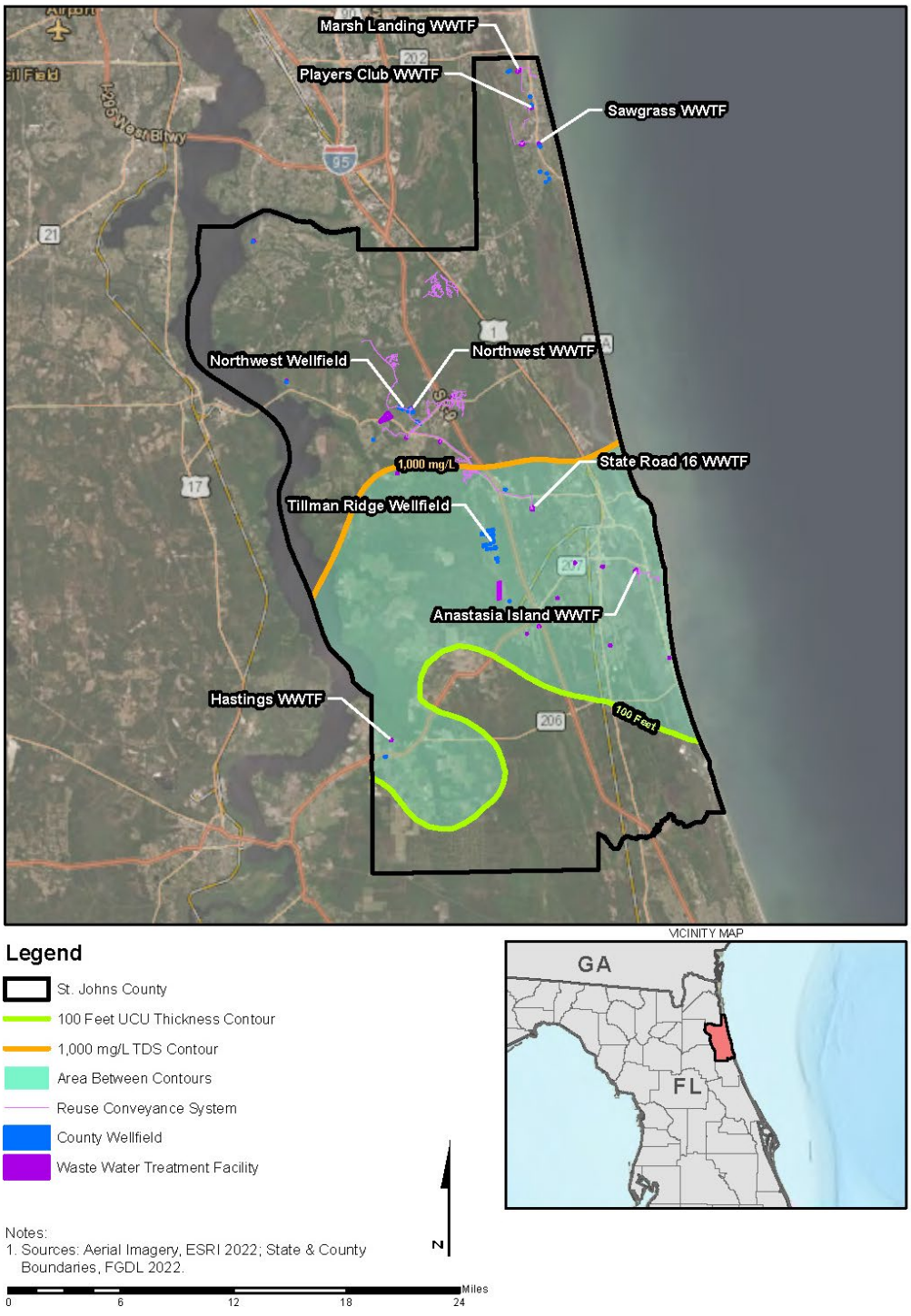


Figure 5: TDS Concentration Contour Map

II. Typical St. Johns County Public Supply Well

The construction of a typical public water-supply well in St. Johns County involves installing and grouting a production casing into the top of the Ocala Limestone, the geologic formation that contains the Upper Floridan Aquifer (UFA). The production casing seals off the discontinuous, interbedded lenses of unconsolidated sand, silt, and clay that form the Upper Confining Unit (UCU) and provides a conduit for safe, efficient groundwater extraction from the Floridan Aquifer System (FAS). Additionally, the casing and grout seal create a protective barrier against potential surface or near-surface contaminants.

A typical well also includes a concentric outer (surface) casing of larger diameter, installed and grouted prior to the production casing. The surface casing is normally set within the upper 80 feet of the borehole and seated into the top of the UCU, sealing off the Surficial Aquifer (SA) from deeper formations during drilling. Its primary purposes are to stabilize the borehole for production-casing installation and to provide an additional layer of protection against contaminants.

Once casing is in place, an open borehole is drilled below the production casing and typically completed within the carbonate rocks of the UFA. The silt and clay of the UCU form an effective confining layer that restricts water exchange between the UFA and the SA, offering natural protection of the groundwater source.

In summary, public-supply wells in St. Johns County are completed into the FAS and constructed with at least two steel casings—surface and production—grouted with cement from casing shoe to land surface. A 5- to 7-inch-thick cement grout seal protects the well from potential surface or near-surface contamination in the shallower SA.

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A. Typical Detail for Public Supply Well

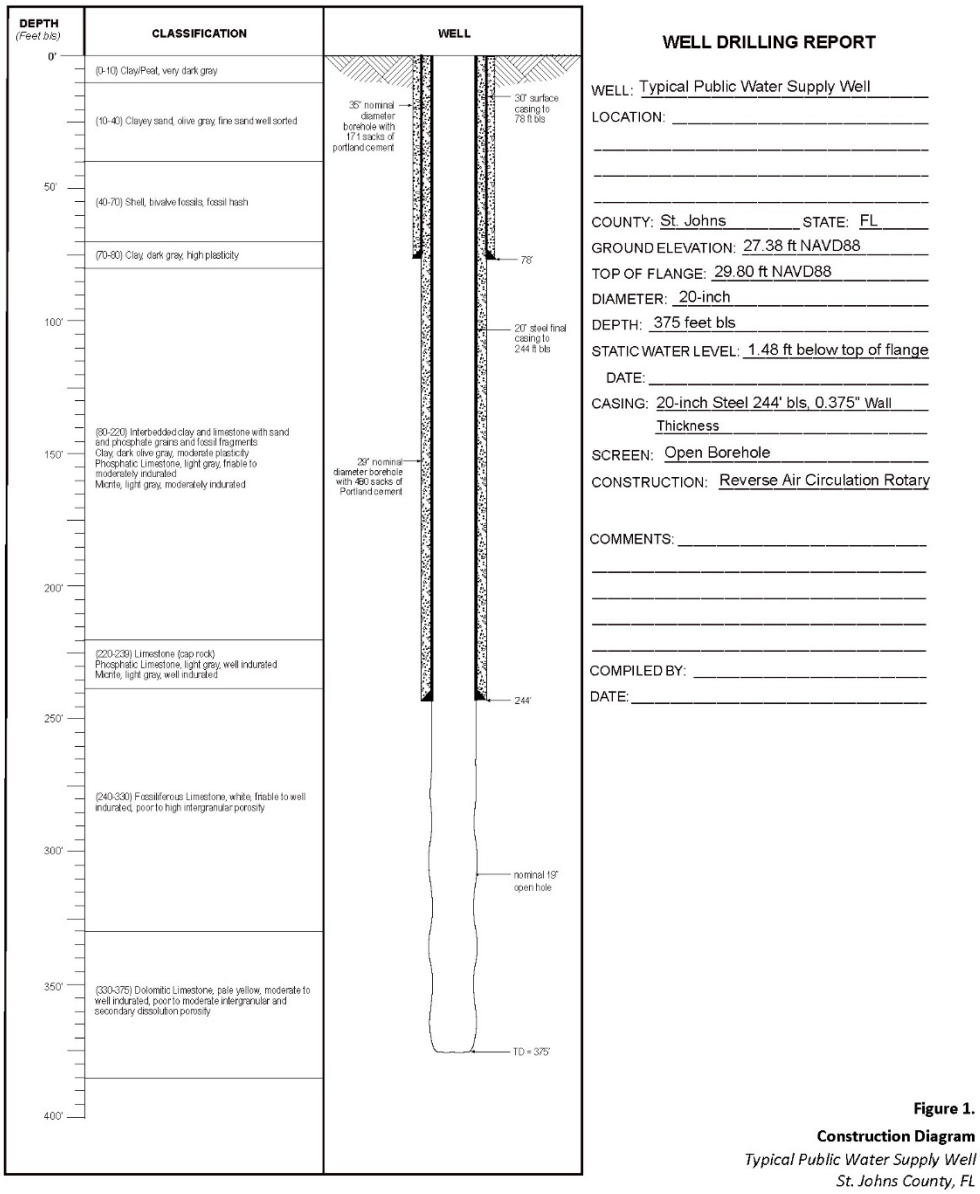


Figure 6: Typical Public Supply Well Detail

III. FDEP Wellhead Protection Area Supporting Information

Under Chapter 62-521, Florida Administrative Code (F.A.C.), the Florida Department of Environmental Protection (FDEP) designates a wellhead protection area (WPA) as a 500-foot radial setback around a potable-water well. Within this area, the most stringent measures apply to safeguard the groundwater source. Section 62-521.400, F.A.C., prohibits installing new aboveground or underground hazardous-waste tanks regulated under Chapter 62-730, F.A.C.

Reducing the radial setback for a new underground storage tank from 1,000 feet to 500 feet within the WPA secondary zone for the Floridan Aquifer would meet the minimum FDEP requirements in Chapter 62-521, F.A.C., and align with surrounding counties' practices.

- In Duval County, the WPA consists of a 750-foot radial setback. However, within a 500-foot radius of an existing potable water well, the prohibitions and uses established by Section 62-521.400, F.A.C., are adopted by reference.
- In Putnam County, a well-field protection zone consists of a 500-foot fixed radius around all community water-system wellheads, as defined by the FDEP.
- Clay County, Florida follows the FDEP guidelines for wellhead protection that establishes a 500-foot radius Wellhead Protection Area (WPA) around wells serving community and non-transient non-community public water systems.
- Flagler County's wellhead protection requirements are codified in Section 6.03.00 (Wellfield Protection) of the Flagler County Code of Ordinances. Owners or developers must furnish copies of all applicable EPA, DEP, DOH, or SJRWMD permits, permit applications, amendments, and monitoring reports to the county. This WPA defines a "zone of exclusion" as all land within a 200-foot radius of an existing or designated protected wellhead.

A. Duval County – Link to code

https://library.municode.com/fl/jacksonville/codes/code_of_ordinances/286353?nodeId=TITXENAF_CH366GRSUWAREMA_PT4WEPR_S366.404ESMAWEPRAR

B. Putnam County – Link to code

https://library.municode.com/fl/putnam_county/codes/code_of_ordinances?nodeId=COOR_CH45LADECO_ARTVIREPRST_DIV6POWAWEFIPR

C. Clay County – Link to code

https://library.municode.com/fl/clay_county/codes/code_of_ordinances?nodeId=CO_CH19WAWAWAMA_ARTIIPE_DIV1GE

D. Flagler County – Link to code

https://library.municode.com/fl/flagler_county/codes/code_of_ordinances?nodeId=FLCOCOOR_APXCLADECO_ARTVIREPRST_6.03.00WEPR_6.03.01PUIN

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SAG St Augustine Record 10/02/2026

Affiant further says that the website or newspaper complies with all legal requirements for publication in chapter 50, Florida Statutes.
Subscribed and sworn to before me, by the legal clerk, who is personally known to me, on 10/02/2026

Legal Clerk

Notary, State of WI, County of Brown

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My commission expires

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State of Wisconsin

NOTICE OF PUBLIC HEARINGS OF THE ST. JOHNS BOARD OF COUNTY COMMISSIONERS AND THE PLANNING AND ZONING AGENCY ESTABLISHMENT OF ORDINANCE/ REGULATIONS

NOTICE IS HEREBY GIVEN that public hearings will be held to consider the enactment of the following proposed ordinance at regular meetings, as follows:

Planning and Zoning Agency
Thursday, October 15, 2026, at 1:30PM

St. Johns County Board of County Commissioners
Tuesday, October 20, 2026, at 9:00AM

The public hearings will be held in the St. Johns County Auditorium, located at 500 San Sebastian View, St. Augustine, Florida.

AN ORDINANCE OF ST. JOHNS COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA, AMENDING ST. JOHNS COUNTY'S LAND DEVELOPMENT CODE REGARDING WELLHEAD PROTECTION, SPECIFICALLY SECTION 3.02.01 PROVIDING PURPOSE; AMENDING SECTION 3.02.02 TO UPDATE THE DESIGNATION OF THE WELLHEAD RESOURCE PROTECTION AREA; AMENDING SECTION 3.02.03 REGULATING ACTIVITIES IN THE WELLHEAD RESOURCE PROTECTION AREAS; AMENDING SECTION 3.02.04 GENERAL EXEMPTIONS; AMENDING SECTION 3.02.05 SPECIAL USE; PROVIDING FINDINGS OF FACT; PROVIDING A SAVINGS CLAUSE; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

All interested parties may appear at the public hearings to be heard regarding any or all of the proposed amendment. Board of County Commissioner items not heard by 6 pm shall automatically be continued until 9 am the following day, unless otherwise directed by the Board.

The proposed ordinance is on file and is available for review in the Planning and Zoning Division of the Growth Management Department, at the Permit Center, 4040 Lewis Speedway, St. Augustine, Florida and may be examined by interested parties prior to said public hearings.

Interested parties may appear at the public hearings to be heard regarding the proposed amendment.

If a person decides to appeal any decision made with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and for such purpose, he or she 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.

NOTICE TO PERSONS NEEDING SPECIAL ACCOMMODATIONS AND TO ALL HEARING-IMPAIRED PERSONS: In accordance with the Americans with Disabilities Act, persons needing special accommodations or an interpreter to participate in this proceeding should contact the County's ADA Coordinator at (904) 209-0650 or at the St. Johns County Facilities Management, 2416 Dobbs Road, St. Augustine, FL 32086. Hearing impaired persons, call Florida Relay Service (1-800-955-8770), no later than 5 days prior to the meeting.

PLANNING AND ZONING AGENCY
ST. JOHNS COUNTY, FLORIDA
RICHARD HILSENBECK, CHAIR
LDCA 2025-07 Wellhead Protection

BOARD OF COUNTY COMMISSIONERS
ST. JOHNS COUNTY, FLORIDA
CLAY MURPHY, CHAIR

