

# POLK COUNTY DEVELOPMENT REVIEW COMMITTEE STAFF REPORT

<b>DRC Date:</b>	December 29, 2022	<b>Level of Review:</b>	4
<b>PC Date:</b>	February 1, 2023	<b>Type:</b>	LDC Text Amendment
<b>BoCC Date:</b>	March 7, 2023	<b>Case Numbers:</b>	LDCT-2023-1
	March 21, 2023	<b>Case Name:</b>	School DWTS Pilot Program
<b>Applicant:</b>	Polk County	<b>Case Planner:</b>	Erik Peterson, AICP

<b>Request:</b>	An LDC text amendment to Chapter 3, Section 303, Criteria for Conditional Uses, Elementary School, Middle, and High School, to allow schools in the Suburban Development Area (SDA) and Rural Development Area (RDA) to connect to a Distributed Wastewater Treatment System when sewer connection is not available; amending Chapter 10, Definitions to add definitions for Distributed Wastewater Treatment Systems, SCADA System, and Sequencing Batch Reactors; providing for severability; and providing for an effective date.
<b>Location:</b>	n/a
<b>Property Owner:</b>	n/a
<b>Parcel Size (Number):</b>	n/a
<b>Development Area:</b>	n/a
<b>Nearest Municipality:</b>	n/a
<b>DRC Recommendation:</b>	Approval
<b>Planning Commission Vote:</b>	Approval 7:0

## Among the changes to Chapter 3, Section 303, Criteria for Conditional Uses are:

- The requirement that all elementary schools connect to centralized water and sewer in Condition #1 is amended to give new elementary schools in the SDA and RDA the option of connecting a Distributed Wastewater Treatment System (DWTS) if central sanitary sewer is not available.
- The requirement that all middle and high schools connect to centralized water and sewer in Condition #1 is amended to provide new middle and high schools in the SDA and RDA the option of connecting to a DWTS if central sanitary sewer is not available.

## Among the changes to Chapter 10 Definitions is the addition of definitions for:

- Distributed Wastewater Treatment System (DWTS)
- SCADA System - Supervisory Control and Data Acquisition
- Sequencing Batch Reactors (SBR)

## **Summary:**

Elementary schools are permitted in the Rural Cluster Center (RCC) and Residential Suburban (RS) Future Land Use Map districts through DRC approval and in the Agricultural/ Residential Rural (A/RR) district with Planning Commission approval. Middle and High schools may be approved by the Planning Commission in RS district. One key component of these approvals is that the new schools be connected to central sanitary sewer (wastewater). However, it is unlikely that central sewer is available in the Rural Development Area (RDA) where A/RR and RCC districts are located or the Suburban Development Area (SDA) where extension of sewer is prohibited. The Florida Department of Education (FDOE) also requires a public wastewater connection for new schools as well and prohibits the utilization of septic tanks. This makes it difficult to site new schools in the rural and suburban areas of the County.

Wastewater treatment technology has significantly increased over recent years. There are several hybrid forms of wastewater treatment systems that a public utility can operate remotely without the physical connection to a large wastewater treatment plant. These systems treat the waste to the same level as a large, centralized sanitary sewage treatment plant but on a micro scale such that the effluent can be used as irrigation or released into surface waters without any environmental harm. They can be efficiently run by a central facility without added labor costs through a supervisory control and data acquisition (SCADA) system.

There are three fundamental infrastructure issues that must be addressed with any form of land development: access, water, and a way to dispose of waste. This new type of system could one day revolutionize the way wastewater treatment is handled in many areas of the County by providing an efficient and environmentally beneficial option for meeting development needs. This could enable more intense development where it has been unfeasible to locate in the past. But this new technology has not been available for very long and Polk County Utilities staff is still analyzing the costs and benefits of providing this service option. If used on a broad scale to allow more intense development in different parts of the County, it could cause other infrastructure and service weaknesses. Therefore, due to the uncertainty regarding this new technology, staff is first attempting only a pilot project for now. This will enable more time to thoroughly vet all the potential ramifications of the widespread use of this new technology.

Staff is requesting an amendment to add this option for only schools as a pilot project before opening it up to other development options. This amendment will narrowly limit the use of the new technology so that it can be fully analyzed for both its effects, efficiency, and potential for changing the development dynamic. The definitions are being added to provide for this amendment and can possibly serve for future amendments if this becomes a viable alternative to wastewater treatment solutions.

## **Data and Analysis Summary**

The data review and analysis conducted by staff includes a survey of other similar sized counties that also run their own wastewater treatment systems and comparison to their current Comprehensive Plan and LDC policies. Staff has also reviewed the mechanics of this new system technology to craft language that is specific to it to eliminate possible unintended applications of the text changes. Staff is conscious of the County's history with small wastewater treatment plants and how they lead to the eventual regionalization of the County's wastewater treatment services. While that proved to be an effective tool for sound growth management, in the end, it came at significant fiscal commitments as well.

This amendment is applicable to only elementary, middle, and high schools in the Suburban and Rural Development Areas (SDA & RDA) of the unincorporated County. This change will not apply to properties in the Green Swamp Area of Critical State Concern because K-12 schools are not permitted in the Green Swamp. It is not required undergo review by the Florida Department of Economic Opportunity (DEO) Community Planning Department Areas of Critical State Concern Program prior to it becoming effective.

### **Findings of Fact**

1. *The request is a Land Development Code text of Chapter 3, Section 303, Criteria for Conditional Uses, Elementary School, Middle, and High School, to allow schools in the Suburban Development Area (SDA) and Rural Development Area (RDA) to connect to a Distributed Wastewater Treatment System when sewer connection is not available. This also requires amendments to Chapter 10, Definitions to add definitions for Distributed Wastewater Treatment Systems, Scada System, and Sequencing Batch Reactors.*
2. *POLICY 2.108-A5 of the Comprehensive Plan states that “Elementary, middle and high schools and other community facilities and essential services will be allowed as conditional use, in accordance with the guidelines of the County’s Land Development Code” in the Rural Development Area (RDA).*
3. *POLICY 2.125-E1, Community Facilities' Permitted Uses of the Comprehensive Plan states identify schools as Type D Community facilities.*
4. *POLICY 2.125-E2, Community Facilities' Development Controls of the Comprehensive Plan states that a “Type D facilities shall be permitted in all areas of Polk County in accordance with the policies of this Plan and the Land Development Code adopted by the County in accordance with Section 163.3201(1), FS.”*
5. *POLICY 2.106-A5.f of the Comprehensive Plan states that Suburban Development Areas shall “have access to elementary schools.”*
6. *POLICY 2.120-A4 of the Comprehensive Plan lists “Community Facilities, in accordance with policies of this Plan and the provisions of the Land Development Code” among the limited uses permitted in the Residential Suburban (RS) districts.*
7. *POLICY 2.121-A2.f of the Comprehensive Plan lists “Community Facilities and essential services will be allowed as conditional uses, in accordance with policies of this Plan and the guidelines of the County's Land Development Code.” among the limited uses permitted in the Agricultural/Residential Rural (A/RR) districts.*
8. *POLICY 3.102-A3 of the Comprehensive Plan states “discharge effluent from new sanitary sewer treatment facilities shall, at a minimum, meet water quality standards established in Chapter 17-6 (FAC) and the Water Quality Act of 1987, as amended, such that effluent may be reused for non-drinking purposes.”*
9. *In Section 205, Table 2.1 of the Land Development Code, Elementary schools are permitted administratively by the Development Review Committee though a Level 2 Review in the Rural Cluster Centers, both RCC and RCC-R, districts.*
10. *In Section 205, Table 2.1 of the Land Development Code, Elementary Schools are permitted in Agricultural/Residential Rural (A/RR) districts with Planning Commission approval though a Level 3 Review.*

11. *In Section 205, Table 2.1 of the Land Development Code, Middle and High Schools are permitted in Residential Suburban (RS) with Planning Commission approval though a Level 3 Review.*
12. *In Section 205, Table 2.1 of the Land Development Code, Elementary and Middle Schools are permitted by right in Institutional (INST-1) districts.*
13. *The use table in Chapter 5, Table 5.2 of the Land Development Code does list either elementary, middle, or high school land uses in the Polk City Special Protection Area or the Rural Special Protection Areas.*
14. *There are no SDA or RDA districts in the Ridge Special Protection Areas in the Comprehensive Plan Future Land Use Map Series.*
15. *Planning staff has reviewed the land development regulations for counties in the central Florida region that bear commonalities with Polk and provide wastewater treatment services directly. Staff found that the counties that allowed for schools in rural and suburban areas also allowed for other forms of sanitary sewer treatment.*

### **Development Review Committee Recommendation:**

The Land Development Division, based on the information provided with the proposed text amendment application, finds that the proposed text change request is **CONSISTENT** with the Polk County Land Development Code and the Polk County Comprehensive Plan. Staff recommends **APPROVAL** of LDCT-2023-1.

### **Planning Commission Recommendation:**

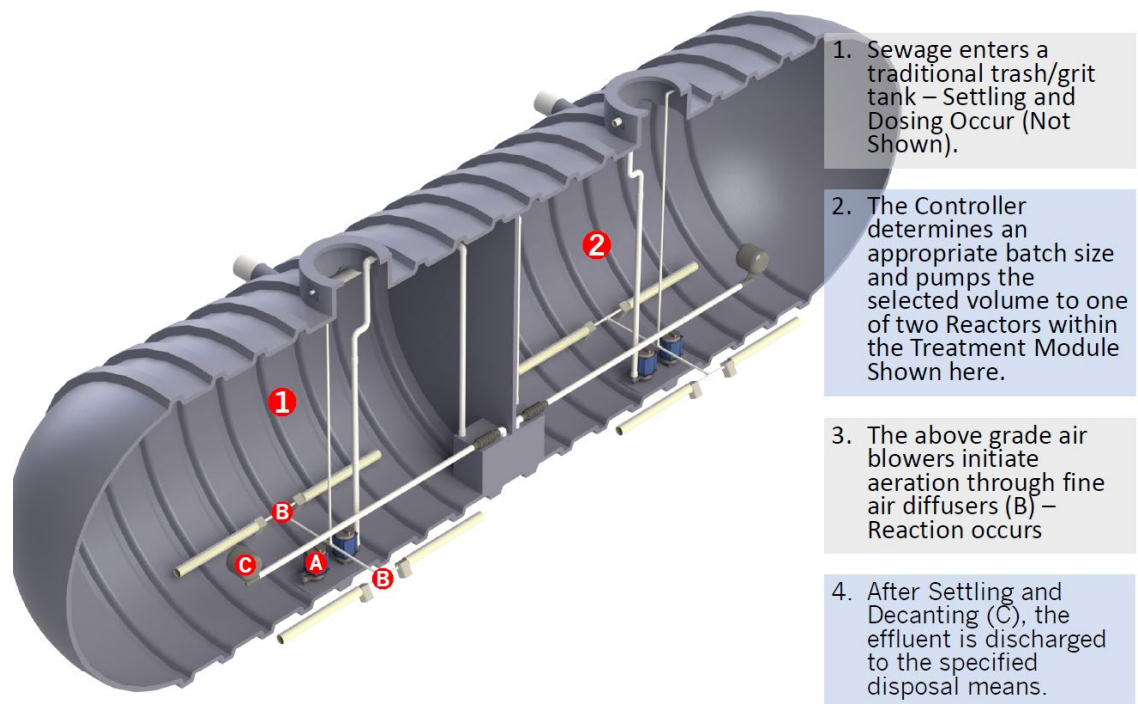
*On February 1, 2023, at an advertised public hearing, the Planning Commission voted 7-0 to recommend approval of this application.*

### **Analysis:**

The volume of wastewater produced in a typical day is too high in elementary, middle and high school for a simple onsite septic disposal system (septic tank) and package wastewater plants are costly to operate and maintain. However, there are areas of the County where there are established rural communities that are in need of schools (either public or private) but lack access to a centralized sanitary sewer system. County Land Development and Utilities staff collaborated to identify a solution to providing sanitary sewer to elementary schools and middle schools in the suburban and rural areas of the County.

A new technology has emerged in the field of wastewater treatment called a Distributed Wastewater Treatment System (DWTS). These systems are more than just an advanced onsite septic system that involves aerobic respiration in the breakdown of septage. It involves a type of activated sludge process for the treatment of the wastewater effluent. These systems include reactors that treat wastewater output from anaerobic digesters or mechanical biological treatment facilities in batches. Oxygen is bubbled through the mixture of wastewater and activated sludge to reduce the organic matter (measured as biochemical oxygen demand (BOD) and chemical oxygen demand (COD)). This process can be monitored in real time from a remote location to ensure the optimal levels of treatment. The treated effluent may be suitable for discharge to surface waters or possibly for use on land.

**Figure 1 Distributed Wastewater Treatment System**



Remote control of the plant allows it to be part of a bigger network that can be publicly owned and remotely controlled through a Supervisory Control and Data Acquisition (SCADA) system the same as other facilities within Polk County Utilities network. This system has the capabilities of revolutionizing delivery sanitary sewer services throughout the County. Its applications could be ideal for pollution reduction in areas near waterbodies where residences have concentrated over time but are on septic tank systems, some of them antiquated and inferior. It could also allow for more clustered development or multifamily residences in rural settings where affordable housing is needed.

Staff suggests that there be ample opportunity to study the effectiveness and efficiency of this new system. Caution is also needed with regard to comprehensive planning and effective growth management to ensure other necessary services are also in place. While this may enable more intense development to be environmentally safe, there are other elements of urban infrastructure needed to support the communities such as fire protection, law enforcement, roads, drainage outfall management, and recreation facilities. This could stretch other public safety services too thin and exacerbate school busing shortages also. Some rural areas do not have the roadway network in places to keep up with the development intensity that this could bring. For these reasons, staff is using this amendment as a quasi-pilot program to provide time to analyze all the aspects this technology brings to the delivery of urban services.

## History

The County was forced into the sanitary sewer business due to past development failures that left small wastewater treatment systems in receivership. The County is the receiver of infrastructure assets as a last resort. When residential development is dependent upon a private wastewater system and the private entity fails to adequately manage the system because of bankruptcy or foreclosure, the County must step in to run the facility. During the recession of the 1980s, this occurred in many locations. Sometimes the County was able to find a city, other times it fell upon the County to run the system and often at a fiscal deficit. During the 1990s, the County found that through

regionalization, the cost of running these facilities could be reduced. And, by adding more customers it could become even more financially solvent. Today, the County runs seven (7) utility service areas providing wastewater to the unincorporated areas. While this is a success story, the County is apprehensive to incurring more private wastewater treatment facilities. Regionalization of wastewater systems requires a significant investment in the front end before the benefits can be realized.

This amendment will enable only schools to utilize this new type of sanitary sewer system. It will also be managed by the Polk County Utilities Division from the initial beginning. This small-scale launch of the new technology will enable PCU to intimately study the strengths and weaknesses of this new type of system operation. It will enable Land Development staff time to analyze and address the potential applications of this technology in other areas of development approvals.

### Limits of the Proposed Ordinance

This amendment applies to elementary, middle, and high schools within the unincorporated areas of the County locating in the Rural and Suburban Development Areas (RDA & SDA). While there are RDAs and SDAs in the Green Swamp, K-12 schools are not permitted within any Future Land Use Map district in the Green Swamp Area of Critical State Concern. Therefore, this request will not be reviewed by the Florida Department of Economic Opportunity Community Planning Department Areas of Critical State Concern Program prior to becoming effective.

### Comparisons to other Jurisdictions:

Polk County staff surveyed only counties that provided wastewater services were provided by the County government. Counties were mixed on whether or not to allow schools in rural and suburban areas. The counties that allowed for schools in rural and suburban areas also allowed for other forms of sanitary sewer treatment.

**Table 1**

<b>Jurisdiction</b> <i>(code citation)</i>	<b>Is central wastewater service provided in rural or suburban infrastructure service areas?</b>	<b>Are Elementary or Middle Schools permitted in Rural or suburban Areas of the County</b>	<b>Are other forms of sanitary sewer services referenced in the County's Code or Plan?</b>
<b>Alachua County</b> <i>Policy 6.2.2 Sec. 404.34, 407.114</i>	<b>Yes</b> , but only in "Urban Clusters".	No. Only in Urban districts.	<b>Yes</b> . Package WW treatment plants but only in "Urban Clusters".
<b>Brevard County</b> <i>Sec. 110-95 Policy 2.5, 3.17</i>	<b>Yes</b> , the County is a regional provider but there are "limited capacity areas"	No. Required to locate where sewer is available.	<b>Yes</b> . But package plants are discouraged and limited to strict criteria.
<b>Hillsborough County</b> <i>Sec. 102-94 to 99</i>	<b>Yes</b> .	<b>Yes</b> , subject to review procedures of Interlocal Agreement with School Board, Private requires public hearing.	<b>Yes</b> . "Transitional wastewater treatment plants (TWWTP)".
<b>Manatee County</b> <i>Policy 2.13.2.1 Policy 9.1.2.1.</i>	No. There is a service boundary.	No.	No. Only septic tanks.
<b>Orange County</b> <i>Sec. 37-147, 38-1751</i>	<b>Yes</b> .	<b>Yes</b> . Through PD only.	<b>Yes</b> . Through BoCC approval and utilities agreement
<b>Volusia County</b> <i>Sec. 90-71, 72-1102</i>	<b>Yes</b> .	<b>Yes</b> .	<b>Yes</b> . If designed to later pump into the County system.

## **Consistency with the Comprehensive Plan**

The plan enables community facilities such as public schools (elementary, middle, and high) into rural and suburban areas (RDA and SDA). The only rural areas where schools are prohibited in RDA and SDA areas is in the Green Swamp Area of Critical State Concern. In the RDA, POLICY 2.108-A5 of the Comprehensive Plan states that “*Elementary, middle and high schools and other community facilities and essential services will be allowed as conditional use, in accordance with the guidelines of the County’s Land Development Code.*” POLICY 2.106-A5.f of the Comprehensive Plan states that Suburban Development Areas shall “*have access to elementary schools.*” If these are the intentions of the Comprehensive Plan and schools produce large quantities of wastewater effluent, then there needs to be a means to accommodate this in the rural and suburban areas where central sanitary sewer is not available.

## **Consistency with the Florida Statutes**

The Florida Statutes identifies the Florida Department of Environmental Protection (FDEP) as the state’s regulatory arm for wastewater systems under Chapter 373, 381 and 403. This DWTS technology has been thoroughly and successfully tested this technology under the supervision of the FDEP in two separate pilot tests, each lasting over two years. The FDEP has issued permits to operate a Distributed Wastewater Treatment Systems and have found they meet or exceed the water quality limits prescribed in the permits.

**Comments from Other Agencies:** None

**Draft Ordinance:** under separate attachment