



FDEP Springs Funding FY2023 Applications

October 20, 2021

**My Home.
My Springs.**

Southwest Florida
Water Management District

#MySprings

FY2023 FDEP Springs Funding Application Materials Submitted to the Southwest Florida Water Management District									
Unit Number	Applicant	Project	Nitrogen Reduction (lbs/yr)	Land Acquisition (acres)	FDEP Request	WMD Request	Local Match	Other Funding	Total
APP01	Citrus County BOCC	Imperial Gardens Plant Interconnection	123		\$ 800,000				\$ 800,000
APP02	Alachua Conservation Trust	GHC Farms, Inc.		197	\$ 173,125			\$ 173,125	\$ 346,250
APP03	City of Inverness	41 N Sewer Extension Project	1,202		\$ 3,264,800		\$ 816,200		\$ 4,081,000
APP04	City of Inverness	South Highlands Septic to Sewer Project - Phase 1*	695		\$ 2,613,600		\$ 653,400		\$ 3,267,000
APP05	Marion County	Marion Oaks Bioswale Enhancements	159		\$ 295,391	\$ 147,695	\$ 147,695		\$ 590,781
APP06	Marion County	NW 44th Avenue Innovative Stormwater Retrofit	55		\$ 377,381	\$ 188,690	\$ 188,690		\$ 754,761
APP07	Florida Governmental Utility Authority	Rainbow River - Rio Vista Septic to Sewer Project*	3,310		\$ 2,160,521				\$ 2,160,521
APP08	Florida Governmental Utility Authority	Chatmire Septic to Sewer Florida Governmental Utility Authority*	2,114		\$ 1,500,000				\$ 1,500,000
		* Indicates multiyear funding request							
	Application Count:	8	7,658	TOTAL	\$ 11,184,817	\$ 336,386	\$ 1,805,986	\$ 173,125	\$ 13,500,313

APP01

Citrus County BOCC

Imperial Gardens Plant
Interconnection



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name: Citrus County BOCC

Is the Entity designated as an economically disadvantaged community? ☐ Yes ☒ No

Project Manager Name: Christina Malmberg

Project Manager Address: 3600 W. Sovereign Path

Project Manager Phone Number: 352-527-7616

Project Manager Email Address: christina.malmberg@citrusbocc.com

2. Project Information

Project Name: Imperial Gardens Plant Interconnection

Project Type: Waste Water Collection & Treatment (Complete Form A)

Is this a multiyear project? ☐ Yes ☒ No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: 10/01/2022

End Date: 12/30/2024

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: 10/01/2022 - 03/15/2023 *Construction:* 06/30/2023 - 12/30/2024

3. Project Benefit

Quantity of Water Made Available (mgd): .005

Land Acquisition within Basin Management Action Plan (acres): n/a

Nitrogen Reduced (lbs/year): 123

Sediment Reduced (lbs/year):

Please download the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

This project is the continuation of the County's effort to provide wastewater service to existing residential and commercial developments within the Basin Management Action Plan for Citrus County. This project will improve water quality by acquiring and demolishing existing private wastewater package plants and replacing them with lift stations to connect to the County's central wastewater collection system.

This project involves abandoning an existing underperforming 5,000 gallon per day privately owned wastewater treatment facility (Imperial Gardens Home Resort Wastewater Treatment Facility, FLA011872) located within the Kings Bay/CR BMAP/PFA area and re-directing its wastewater to Citrus County's Meadowcrest Wastewater Treatment Facility. The primary purpose of the project is to enhance reliability, redundancy, treatment efficiency, and water conservation.

The planned improvements include constructing a wastewater lift station at Imperial Gardens plant site and constructing approximately 1,000 ft of new 4 -inch diameter wastewater force mains from that lift station to an existing 4-inch force main stub-out located on US 19 that will direct flows to the existing Meadowcrest wastewater collection system. Once completed, the existing Imperial Gardens Mobile Home Resort Wastewater Treatment Facility and its associated effluent disposal system will be abandoned.

The plant interconnection project will reduce the nutrient loading to the groundwater by an estimated 123 lbs/yr of total Nitrogen.

The County is requesting funding for the connection of the mobile home resort into the County's wastewater collection system in the amount of \$27,698. This cost has been included in the total cost of the project.

4. Project Funding Information

Are you applying for CFI funding this fiscal year? ☐ Yes ☒ No

Have you received springs funding or CFI funding for this project in the past? ☐ Yes ☒ No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding		\$ 800,000.00		\$ 800,000.00
WMD CFI Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 800,000.00	\$ 0.00	\$ 800,000.00

If CFI funding was not applied for, please move to Section 5. In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

5. Project Location Information (please submit a map with this application)

County Citrus

Latitude (decimal degrees) -82.581139

Longitude (decimal degrees) 28.850830

What is the spring name that will receive the benefit? Crystal River

Is this spring deemed impaired? ☒ Yes ☐ No

What is the distance from the project to the spring receiving the benefit? ~2 miles

Is this project in a Basin Management Action Plan (BMAP)? ☒ Yes ☐ No

Is this project in the Priority Focus Area (PFA) of the BMAP? ☒ Yes ☐ No

Is this project listed in the BMAP project list? ☐ Yes ☒ No ☐ No, but will be in an update
BMAP project number:

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan
as benefiting an MFL? ☐ Yes ☒ No If yes, please describe below:

Strategy name:

Project number:

Project name as listed:

Please describe any other recovery, prevention, or regional water supply plans or strategies
this project is part of:

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

This proposed project will be added to Citrus County Water Resources Capital Improvement Plan once funded by FDEP.

Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

Meadowcrest Wastewater Treatment Facility

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

FLA011845

What level of treatment is offered at the wastewater treatment facility?

Public Access Reuse

At the wastewater treatment facility, where is the final treated wastewater sent?

Reclaimed

What is the current capacity of the wastewater treatment facility (mgd)?

2

What is the annual average of flow received by the wastewater treatment facility (mgd)?

0.716

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

5.

How much additional flow will be received by the treatment facility due to the project (mgd)?

0.005

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

The cost to connect the property owner to the County system is in the amount of \$27,698. This cost has been included in the total cost of the project. Connection fees cover connecting the proposed lift station to the County's wastewater collection system as well as a water connection fee that will provide water service to the lift station.

Is any land acquisition necessary? If so, please describe below.



Yes



No

What length of forcemain and pipe sizing is necessary? Please describe below.

The project includes the construction of 1,000 lf of 4-inch force main and will connect into the County's existing forcemain located along US 19.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

How many of the septic tanks in this project are commercial tanks?

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? ☐ Yes ☐ No

How many of the septic tanks service multi-family homes?

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

.005

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

12 (Not enough information )

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%):

Prior irrigation system efficiency (%):

Average metered water use for the past 5 years (mgd):

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd):

Percent Offset (%):

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

☐

Yes

☐

No

Percent Recharge (%):

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

What will be the landuse once purchased?

What is the recharge potential (mgd)?

Does a portion of the land to be acquired lie outside of the BMAP?

☐ Yes

☐ No

Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.



Package Plant Connection

Calculate Base Load		Calculate New Load		Cost Effectiveness Calculation for 30 Year Period		
Package plant annual average TN concentration in mg/l *	12	WWTP annual average TN concentration in mg/l	5		WWTP upgrade	
annual average flow in mgd (actual not permitted)	0.005	annual average flow in mgd	0.005	Project Cost	\$750,000	
Conversion	8.345	Conversion	8.345	cost/lb TN	\$10,422.46	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	Recharge Factor at new WWTP location (0.9, 0.5, 0.1, or 0)	0.9	Cost/lb TN / 30 years	\$347.42	
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.75	Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.75			
original load to springshed lbs/year	123	new load to springshed lbs/year	51			
		Reduction in Load to Springshed lb/yr	72			

The numbers used for the calculations are based on the permit numbers. There is not enough information to determine the actual TN and the actual flows.

APP02

Alachua Conservation Trust

GHC Farms Inc

FY2023

FDEP Springs Funding Application for Projects within the Southwest Florida Water Management District



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name: Alachua Conservation Trust

Is the Entity designated as an economically disadvantaged community? Yes

No

Project Manager Name: Erica Hernandez

Project Manager Address: 7204 SE County Road 234

Project Manager Phone Number: 3523731078

Project Manager Email Address: erica@alachuaconservationtrust.org

2. Project Information

Project Name: GHC Farms, Inc

Project Type: Land Acquisition (Complete Form C)



Is this a multiyear project? Yes No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: 09/18/2020

End Date: 03/31/2023

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: - Construction: -

3. Project Benefit

Quantity of Water Made Available (mgd):

Land Acquisition within Basin Management Action Plan (acres): 197 +/- acres

Nitrogen Reduced (lbs/year):

Sediment Reduced (lbs/year):

Please download the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

Project Description:

Less-than-fee simple acquisition (conservation easement) of approximately 197 acres +/- of intact sandhill natural community, hardwood forest and non-irrigated pasture within the Rainbow Springs Basin Management Action Plan. The property is currently under contract for a conservation easement with Alachua Conservation Trust (ACT) as the easement holder. This proposal is to request funds to match costs to purchase a conservation easement of one parcel owned by one entity and all required acquisition costs to complete transactions. Once acquired, the conservation easement will be monitored and enforced by Alachua Conservation Trust in perpetuity. The United States is granted the right of enforcement that it may exercise only if the terms of the conservation easement are not enforced by Alachua Conservation Trust. ACT is scheduled to close on the conservation easement in late 2022 or early 2023.

Property Use and Description:

The property is managed and will be maintained as a cow calf operation. The property is actively enrolled under the competitive National Resources Conservation Service (NRCS) Agricultural Conservation Easement Program (ACEP) Agricultural Land Easement (ALE) which provides 50% funding to purchase the value of the conservation easement. This proposal is to request match to purchase the conservation easement.

The conservation easement will protect this rural, natural land and endangered species habitat in perpetuity, prohibiting intensification, subdivision or development. The conservation easement will protect the integrity of a high recharge area in the Rainbow Springs BMAP. ACT is working with the Florida Fish and Wildlife landowner assistance program to create a management plan that will be a guiding document to aid the landowner with best management practices consistent with the conservation easement.

The landowner qualifies as a Limited Resource Farmer under the NRCS Limited Resource Farmer Online Self Determination Tool (see lrf.tool.sc.egov.usda.gov). Conservation easement funds will enable the landowner to better manage the property and maintain wildlife habitat. Additionally, the landowner is under contract with the NRCS Environmental Quality Incentives Program (EQIP) to receive costshare funding for brush management, prescribed fire, and to plant longleaf pine. EQIP assistance for habitat management further ensures the landowner has the tools to maintain the purpose of the conservation easement. This farm is registered with Florida Department of Agriculture and Consumer Services (FDACS) Best Management Practices (BMPs) as required by the BMAP.

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4. Project Funding Information

Are you applying for CFI funding this fiscal year? Yes ☒ No

Have you received springs funding or CFI funding for this project in the past? Yes ☒ No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding		\$ 173,125.00		\$ 173,125.00
WMD CFI Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding		\$ 173,450.00		\$ 173,450.00
Total	\$ 0.00	\$ 346,575.00	\$ 0.00	\$ 346,575.00

If CFI funding was not applied for, please move to Section 5. In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

5. Project Location Information (please submit a map with this application)

County Levy

Latitude (decimal degrees) 29.472321

Longitude (decimal degrees) -82.538002

What is the spring name that will receive the benefit? Rainbow Springs

Is this spring deemed impaired? ☒ Yes No

What is the distance from the project to the spring receiving the benefit? approx 27 miles

Is this project in a Basin Management Action Plan (BMAP)? ☒ Yes No

Is this project in the Priority Focus Area (PFA) of the BMAP? Yes ☒ No

Is this project listed in the BMAP project list? Yes ☒ No No, but will be in an update

 BMAP project number:

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan

as benefiting an MFL? Yes ☒ No If yes, please describe below:

 Strategy name:

 Project number:

 Project name as listed:

Please describe any other recovery, prevention, or regional water supply plans or strategies

this project is part of:

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

This project is primarily a prevention of degradation of water quality through protection of the Rainbow Springs recharge area. The 2015 Rainbow Springs BMAP stated that maintaining land at lower intensity uses through land purchases or easements for conservation is one strategy that can reduce water quality impacts in the basin. The property has several karst features, sometimes with standing water. The property is in an area identified as “Most Vulnerable, and More Vulnerable” in the 2008 Florida Aquifer Vulnerability Assessment (FAVA) Phase II for the Florida Department of Environmental Protection and Florida Geological Survey. According to the Florida Forever Conservation Needs Assessment (FFCNA) Aquifer Recharge data, approximately 90% of the property is considered to have high-medium (priority 2) aquifer recharge value with the remaining portion of the property being either high (priority 1-highest) or medium (priority 3). Completing the GHC Farms Acquisition Project will permanently protect this recharge value for the basin by preventing future land use intensification in a region that is rapidly subdividing and developing.

The project shares a boundary with the Bailey Tract of Goethe State Forest. A substantial portion of the project contains intact sandhill, and several endangered species have been verified including Eastern Indigo snake and Gopher tortoise. This property and adjacent lands are part of the Brooksville Ridge topographic highland. A substantial portion of the property is recognized as Priority 1 (highest) imperiled habitat in the Florida Fish and Wildlife Critical Lands and Waters Identification Project (CLIP) version 4.0 Biodiversity Resource Priorities model. Completing the GHC Farms Acquisition Project will permanently protect this valuable habitat and endangered species by preventing future land use intensification.



Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What level of treatment is offered at the wastewater treatment facility?

At the wastewater treatment facility, where is the final treated wastewater sent?

Make a Selection

What is the current capacity of the wastewater treatment facility (mgd)?

What is the annual average of flow received by the wastewater treatment facility (mgd)?

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

How much additional flow will be received by the treatment facility due to the project (mgd)?

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

Is any land acquisition necessary? If so, please describe below.

Yes

No

What length of forcemain and pipe sizing is necessary? Please describe below.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

How many of the septic tanks in this project are commercial tanks?

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? Yes No

How many of the septic tanks service multi-family homes?

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%):

Prior irrigation system efficiency (%):

Average metered water use for the past 5 years (mgd):

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd):

Percent Offset (%):

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

Yes

No

Percent Recharge (%):

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

Rangeland Grazing, Sandhill(135 ac), Hardwoods (20 ac), Pasture (41 ac)

What will be the landuse once purchased?

Maintain cow calf operation rangeland, rotational grazing and wildlife habitat

What is the recharge potential (mgd)? 3.01-10 inch/year (DEP NSILT)

Does a portion of the land to be acquired lie outside of the BMAP?

Yes

No

Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.

Please see attached document GHC Farm Application Supplement for detail and current description of the acquisition timeline, break downs of costs, partners, activities, and supporting documentation.

GHC Farms Application Supplement

PARTNERS:

Alachua Conservation Trust (ACT), a certified non-profit land trust, will act as the conservation easement holder and enforcement. ACT has statutory authority to hold a conservation easement under §704.06, Florida Statutes – see **Attachment A**. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) is providing 50% of the value of the conservation easement paid to the landowner. The United States is granted the right of enforcement that it may exercise only if the terms of the conservation easement are not enforced by Alachua Conservation Trust.

REQUEST:

Alachua Conservation Trust is applying for 50% match for purchase of the conservation easement and acquisitions costs from FDEP Springs Funding through the Southwest Florida Water Management District. The request is for \$173,125 as match to the conservation easement value to be paid to the landowner plus acquisition costs to reimburse Alachua Conservation Trust for due diligence and closing fees. See **Tables A and B** for a breakdown of project costs.

TIMELINE:

- Spring 2020: Alachua Conservation Trust applied to the competitive NRCS Agricultural Conservation Easement Program (ACEP) on behalf of the landowner for funding to purchase a conservation easement to protect GHC Farms, Inc.
- 4/06/2020: Option Agreement **Attachment B** between landowner and ACT to protect property with conservation easement contingent on grant funding. Landowner Peggi Young has signatory authority for GHC Farms Inc. referenced in **Attachment C** affidavit.
- 9/18/2020: Contract between ACT and NRCS to facilitate a payment by NRCS to the landowner for 50% of the value of the conservation easement – see **Attachment D**.
- 2020 – 2021: Due diligence
 - Title Survey Complete: 8/30/2020 – see **Attachment E**
 - Boundary Survey Complete: 3/17/2021 – see **Attachment F**
 - Environmental Site Assessment ordered and planned for 2021
 - Appraisal late 2021 or early 2022
- Late Summer/Early Fall 2022: Expected closing on Conservation Easement

CONSERVATION EASEMENT:

- The conservation easement (**Attachment G** in draft) will protect this rural and natural land in perpetuity, prohibiting intensification, subdivision, or development. The conservation easement will protect the integrity of a high recharge area in the Rainbow Springs Basin Management Action Plan (BMAP).
- The conservation easement is planned to close Summer/early Fall 2022 but the contract with NRCS allows closing up to March of 2023.
- Landscape map of conservation easement area to protect GHC farms, Inc., in reference to Rainbow Springs BMAP and Goethe State Forest Bailey Tract – see **Attachment H**.

ADDITIONAL TOOLS FOR MANAGEMENT OF PROTECTED PROPERTY:

- As per NRCS requirements for conservation easement programs, Alachua Conservation Trust and the Fish and Wildlife Conservation Commission are writing a management plan that will be

a guide to ensure consistent practices with the conservation easement mandates so that the property is maintaining good habitat and agricultural practices – **see Attachment I** (in draft).

- Landowner is enrolled with Florida Department of Agriculture and Consumer Services Best Management Practices (BMPs) as per BMAP requirements.
- Landowner is enrolled in NRCS Environmental Quality Incentives Program (EQIP) to receive cost-share funding assistance for prescribed burning, brush management and longleaf pine planting to enhance wildlife habitat and recharge potential.

Table A.

Total Project Costs for Acquisition of Conservation Easement GHC Farms Levy County	Cost	Explanation of Cost
FDEP Springs/SWFWMD request	\$ 173,125.00	Half of the value of conservation easement and acquisition due diligence costs
Natural Resources Conservation Service	\$ 156,000.00	Half of the value of the conservation easement
Alachua Conservation Trust	\$ 17,450.00	Acquisition and due diligence costs
Total Project Costs	\$ 346,575.00	

Table B.

Breakdown of Project Costs	Cost	Funding Source
Estimated Cost of Less-than-Fee Acquisition (Conservation Easement) pre-appraisal	\$ 312,000.00	SRWMD (DEP SPRINGS FUNDING) Request, Natural Resources Conservation Service
Due Diligence Appraisal	\$ 6,000.00	SRWMD (DEP SPRINGS FUNDING) Request
Due Diligence Boundary Survey	\$ 6,125.00	SRWMD (DEP SPRINGS FUNDING) Request
Due Diligence Closing Costs	\$ 5,000.00	SRWMD (DEP SPRINGS FUNDING) Request
Due Diligence Environmental Site Assessment	\$ 2,150.00	Alachua Conservation Trust
Due Diligence Title Work	\$ 300.00	Alachua Conservation Trust
Endowment, title insurance and perpetual stewardship for CE (ACT)	\$ 15,000.00	Alachua Conservation Trust
Total project costs	\$ 346,575.00	

APP03

City of Inverness

41 N Sewer Extension Project



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name: City of Inverness

Is the Entity designated as an economically disadvantaged community? ☐ Yes ☒ No

Project Manager Name: Cory Dilmore

Project Manager Address: 212 West Main Street

Project Manager Phone Number: 352-726-2611

Project Manager Email Address: cdilmore@inverness-fl.gov

2. Project Information

Project Name: 41 N Sewer Extension Project

Project Type: Waste Water Collection & Treatment (Complete Form A)

Is this a multiyear project? ☐ Yes ☒ No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: January 2023

End Date: January 2025

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: Jan 2023 - Mar 2024 *Construction:* May 2024 - Jul 2025

3. Project Benefit

Quantity of Water Made Available (mgd): N/A

Land Acquisition within Basin Management Action Plan (acres): N/A

Nitrogen Reduced (lbs/year): 1202

Sediment Reduced (lbs/year): N/A

Please download the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

The 41 North Sewer Expansion Project is located in the northern portion of the City of Inverness. The project area is located within the BMAP area for the Chassahowitzka - Homosassa springs shed and this spring shed will directly benefit from the removal of the septic tanks within the project area. The project area is located approximately 14.5 miles from the spring heads. The project area is depicted on the project map included with the application. The project consists of a total of 116 parcels of which 67 contain septic tanks. There are a total of 33 commercial septic tanks and 34 residential septic tanks.

The removal of these septic tanks and connection of the residents to the City's sewer system would remove 1,202 lbs of TN/year from the Chassahowitzka - Homosassa spring shed. The total project also consists of approximately 1.5 miles of existing roadway and ROW, 7,500 LF of gravity sewer, 7,000 LF of FM, 3 local or regional lift stations, and 2 lots needed for the construction of the lift stations.

4. Project Funding Information

Are you applying for CFI funding this fiscal year? ☐ Yes ☒ No

Have you received springs funding or CFI funding for this project in the past? ☐ Yes ☒ No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding	\$ 0.00	\$ 3,264,800.00	\$ 0.00	\$ 3,264,800.00
WMD CFI Funding	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Local Funding	\$ 0.00	\$ 816,200.00	\$ 0.00	\$ 816,200.00
Other Funding	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Total	\$ 0.00	\$ 4,081,000.00	\$ 0.00	\$ 4,081,000.00

If CFI funding was not applied for, please move to Section 5. In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Local Funding	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Other Funding	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Total	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

5. Project Location Information (please submit a map with this application)

County Citrus

Latitude (decimal degrees) N 28.857782

Longitude (decimal degrees) W 82.348821

What is the spring name that will receive the benefit? Chassahowitzka-Homasassa Springs

Is this spring deemed impaired? ☒ Yes ☐ No

What is the distance from the project to the spring receiving the benefit? 14.5

Is this project in a Basin Management Action Plan (BMAP)? ☒ Yes ☐ No

Is this project in the Priority Focus Area (PFA) of the BMAP? ☐ Yes ☒ No

Is this project listed in the BMAP project list? ☐ Yes ☐ No ☒ No, but will be in an update

 BMAP project number: N/A

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan
as benefiting an MFL? ☐ Yes ☒ No If yes, please describe below:

 Strategy name: N/A

 Project number: N/A

 Project name as listed: N/A

Please describe any other recovery, prevention, or regional water supply plans or strategies
this project is part of:

None at this time.

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

This project was part of a capitol improvement plan.

Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

City of Inverness Wastewater Treatment Plant

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

FLA011847

What level of treatment is offered at the wastewater treatment facility?

Advanced Wastewater Treatment

At the wastewater treatment facility, where is the final treated wastewater sent?

Sprayfield

What is the current capacity of the wastewater treatment facility (mgd)?

1.5

What is the annual average of flow received by the wastewater treatment facility (mgd)?

0.5

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

3.5

How much additional flow will be received by the treatment facility due to the project (mgd)?

0.030

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

The City will charge the residents/property owners a onetime sewer capacity fee of \$2,720. Additionally, the residents will be charged a monthly sewer fee based on the amount of water used.

These fees will cover the cost of the additional capacity to the system and the cost of processing the wastewater.

Is any land acquisition necessary? If so, please describe below.



Yes



No

It will be necessary to acquire land for the lift station locations.

What length of forcemain and pipe sizing is necessary? Please describe below.

The project will consist of approximately 2,200 LF of force main piping that will range in size from 4 in to 6 in pipe.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

67

How many of the septic tanks in this project are commercial tanks?

33

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

The commercial land use ranges from commercial rural to commercial medium.

There is a total of 142,262 SF of commercial buildings.

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? ☒ Yes ☐ No

How many of the septic tanks service multi-family homes?

3

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

None

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

N/A

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

N/A

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%): N/A

Prior irrigation system efficiency (%): N/A

Average metered water use for the past 5 years (mgd): N/A

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd): N/A

Percent Offset (%): N/A

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

☐

Yes

☒

No

Percent Recharge (%): N/A

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

Single Family Residential or Commercial

What will be the landuse once purchased?

Municipal

What is the recharge potential (mgd)? None

Does a portion of the land to be acquired lie outside of the BMAP?

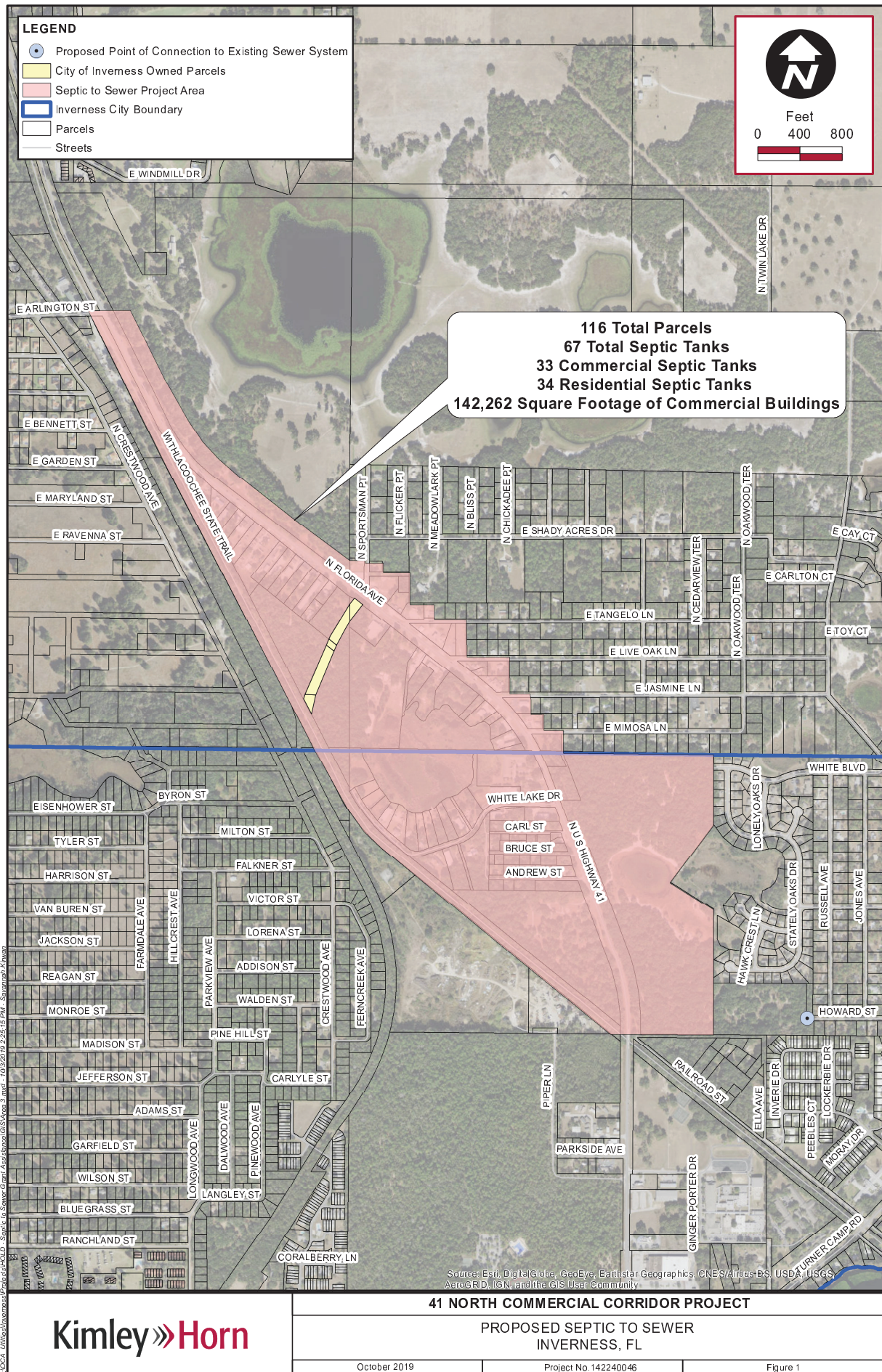
☐

Yes

☒

No

Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.



COST ESTIMATE FOR GRANT APPLICATION CITY OF INVERNESS 41 N SEWER EXTENSION					
ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	67	EA	\$ 8,000	536,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	7,500	LF	\$ 120	900,000.00
3	FORCE MAIN (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	7,000	LF	\$ 100	700,000.00
4	LIFT STATION	3	LS	\$ 400,000	1,200,000.00
5	PROPERTY ACQUISITION	2	LOT	\$ 35,000	70,000.00
6	ROADWAY	1.50	MI	\$ 450,000	675,000.00
TOTAL					\$ 4,081,000.00
<i>The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.</i>					

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Recharge Factor

0.1 mgd or greater WWTP locations

NSLIT Recharge Factor GIS Viewer Link (2016)

Reclaimed water lines and facilities within SWFWMD

https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d_

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

41 North Sewer Expansion Project

Calculate Base Load for Residential Septic Tanks	
Number of Septic Tanks	34
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	363

Calculate Base Load for Commercial Septic Tanks	
Number of Commercial Septic Tanks	33
Building Square Footage	142,262
Sewage Generated from Commercial Applications (gpd/100 SF) - FAC 64E-008	15
GPD Flow from Commercial Septic Tanks	21,339
GPD per ERU	250
Equivalent ERUs	85
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	910

Calculate New Load		AWT	
Number of Residential Septic Tanks and Equivalent ERUs from Commercial Septic Tanks Input from Septic Systems to be Connected % TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l) Attenuation Factor for Wastewater Application (RIB .75; Reuse .25; Sprayfield .40) Recharge Factor (0.9, 0.5, 0.1, or 0) Load to Groundwater After Treatment Reduction in Load to Springshed lb/yr	Traditional	119	119
		23.7	23.7
	0.18	0.07	0.07
	0.4		
	0.9		
	183	1090	71
			1202

Cost Effectiveness Calculation for 30 Year Period		
Project Cost cost/lb TN Cost/lb TN / 30 years	Traditional	AWT
	\$4,081,000	
	\$3,745.27	\$3,396.14
	\$124.84	\$113.20

PM to enter data

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Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

41 North Sewer Expansion Project

Calculate Base Load for Residential Septic Tanks	
Number of Septic Tanks	34
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	363

Calculate Base Load for Commercial Septic Tanks	
Number of Commercial Septic Tanks	33
Building Square Footage	142,262
Sewage Generated from Commercial Applications (gpd/100 SF) -FAC 64E6.008	15
GPD Flow from Commercial Septic Tanks	21,339
GPD per ERU	250
Equivalent ERUs	85
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	910

Calculate New Load		
	Traditional	AWT
Number of Residential Septic Tanks and Equivalent ERUs from Commercial Septic Tanks	119	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	183	71
Reduction in Load to Springshed lb/yr	1090	1202

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$4,081,000	
cost/lb TN	\$3,745.27	\$3,396.14
Cost/lb TN / 30 years	\$124.84	\$113.20

APP04

City of Inverness

South Highlands Septic to
Sewer Project - Phase 1

FY2023

FDEP Springs Funding Application for Projects within the Southwest Florida Water Management District



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name: City of Inverness

Is the Entity designated as an economically disadvantaged community? ☒ Yes ☐ No

Project Manager Name: Cory Dilmore

Project Manager Address: 212 West Main Street

Project Manager Phone Number: 352-726-2611

Project Manager Email Address: cdilmore@inverness-fl.com

2. Project Information

Project Name: South Highlands Septic to Sewer Project - Phase 1

Project Type: Waste Water Collection & Treatment (Complete Form A)

Is this a multiyear project? ☒ Yes ☐ No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: January 2023

End Date: January 2025

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: Jan 2023 - Mar 2024 *Construction:* May 2024 - Jul 2025

3. Project Benefit

Quantity of Water Made Available (mgd): N/A

Land Acquisition within Basin Management Action Plan (acres): N/A

Nitrogen Reduced (lbs/year): 695 (Phase 1) 5,427 (Total Project)

Sediment Reduced (lbs/year): N/A

Please download the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

The South Highlands Septic Sewer Project is located in the southeast portion of the City of Inverness. This project is a multi-year project that is broken into 5 phases. This application is for Phase 1 of the total project. The total project area is located within the BMAP area for the Chassahowitzka-Homosassa springs shed and this spring shed will benefit directly from the removal of septic tanks within the project area. The project area is located 16 miles from the spring head. The total project area for Phase 1 is depicted on the project map included with the application.

The total project area consists of 751 parcels of which 540 contain septic tanks. This is a residential area comprised of single family lots. The removal of these septic tanks and connection of the residents to the City's sewer system would remove 5,427 lbs of TN/year once the total project is complete. The total project also consists of approximately 9 miles of existing roadway and ROW, 46,500 LF of gravity sewer, 22,400 LF of FM, 14 local or regional lift stations, and 5 lots needed for the construction of the lift stations.

The Phase 1 project area consists of 114 parcels of which 69 contain septic tanks. The removal of these septic tanks and connection of the residents to the City's sewer system will remove 695 lbs of TN per year from the Chassahowitzka - Homosassa spring shed. Phase 1 consists of 1.4 miles of roadway and ROW, 7,250 LF of gravity sewer, 3,800 LF of force main, 2 lift stations, and 1 lot for lift station construction.

4. Project Funding Information

Are you applying for CFI funding this fiscal year? ☐ Yes ☒ No

Have you received springs funding or CFI funding for this project in the past? ☐ Yes ☒ No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding	\$ 0.00	\$ 2,613,600.00	\$ 14,898,000.00	\$ 17,511,600.00
WMD CFI Funding	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Local Funding	\$ 0.00	\$ 653,400.00	\$ 3,724,500.00	\$ 4,377,900.00
Other Funding	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Total	\$ 0.00	\$ 3,267,000.00	\$ 18,622,500.00	\$ 21,889,500.00

If CFI funding was not applied for, please move to Section 5. In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

5. Project Location Information (please submit a map with this application)

County Citrus

Latitude (decimal degrees) N 28.827937

Longitude (decimal degrees) W 82.328362

What is the spring name that will receive the benefit? Chassahowitzka-Homosassa Springs

Is this spring deemed impaired? ☒ Yes ☐ No

What is the distance from the project to the spring receiving the benefit? 16 miles

Is this project in a Basin Management Action Plan (BMAP)? ☒ Yes ☐ No

Is this project in the Priority Focus Area (PFA) of the BMAP? ☐ Yes ☒ No

Is this project listed in the BMAP project list? ☐ Yes ☐ No ☒ No, but will be in an update

 BMAP project number: N/A

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan
as benefiting an MFL? ☐ Yes ☒ No If yes, please describe below:

 Strategy name: N/A

 Project number: N/A

 Project name as listed: N/A

Please describe any other recovery, prevention, or regional water supply plans or strategies
this project is part of:

None at this time

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

The project is part of a economically disadvantaged community as designated by the Department of Economic Opportunity.

Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

City of Inverness Wastewater Treatment Plant

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

FLA011847

What level of treatment is offered at the wastewater treatment facility?

Advanced Wastewater Treatment

At the wastewater treatment facility, where is the final treated wastewater sent?

Sprayfield

What is the current capacity of the wastewater treatment facility (mgd)?

1.5

What is the annual average of flow received by the wastewater treatment facility (mgd)?

.5

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

3.5

How much additional flow will be received by the treatment facility due to the project (mgd)?

0.0285 for Phase 1

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

The City will charge the residents/property owners a onetime sewer capacity fee of \$2,720. Additionally, the residents will be charged a monthly sewer fee based on the amount of water used.

These fees will cover the cost of the additional capacity to the system and the cost of processing the wastewater.

Is any land acquisition necessary? If so, please describe below.



Yes



No

It will be necessary to acquire land for the lift station locations.

What length of forcemain and pipe sizing is necessary? Please describe below.

Phase 1 will consist of approximately 3,800 LF of forcemain piping that will range in size from 6 in to 8 in pipe.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

69 existing septic tanks for Phase 1 of the project. 539 for the whole project.

How many of the septic tanks in this project are commercial tanks?

None

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

N/A

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? ☒ Yes ☐ No

How many of the septic tanks service multi-family homes?

N/A

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

None

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

N/A

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

N/A

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%): N/A

Prior irrigation system efficiency (%): N/A

Average metered water use for the past 5 years (mgd): N/A

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd): N/A

Percent Offset (%): N/A

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

☐

Yes

☒

No

Percent Recharge (%): N/A

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

Single Family Residential

What will be the landuse once purchased?

Municipal

What is the recharge potential (mgd)? None

Does a portion of the land to be acquired lie outside of the BMAP?

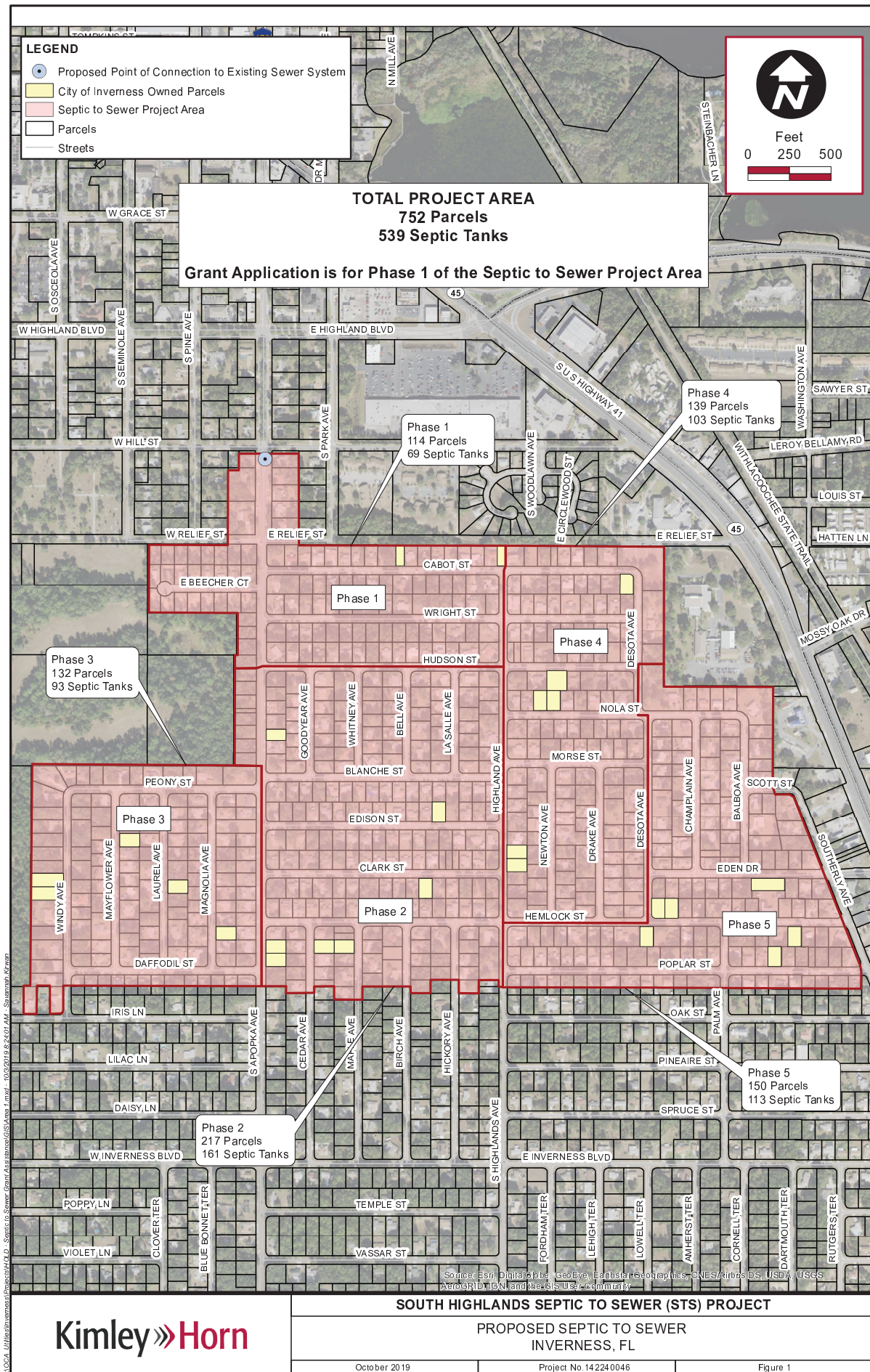
☐

Yes

☒

No

Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.



COST ESTIMATE FOR GRANT APPLICATION CITY OF INVERNESS SOUTH HIGHLANDS SEPTIC TO SEWER - PHASE 1					
ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	RESIDENT SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	69	EA	\$ 8,000	552,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	7,250	LF	\$ 120	870,000.00
3	FORCE MAIN (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	3,800	LF	\$ 100	380,000.00
4	LIFT STATION	2	LS	\$ 400,000	800,000.00
5	PROPERTY ACQUISITION	1	LOT	\$ 35,000	35,000.00
6	ROADWAY	1.40	MI	\$ 450,000	630,000.00
TOTAL					\$ 3,267,000.00
<i>The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.</i>					

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Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

SOUTH HIGHLANDS SEPTIC TO SEWER PROJECT - TOTAL PROJECT - NUTRIENT CALCULATIONS

Calculate Base Load	
Number of Septic Tanks	539
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	5748

Number of Parcels

751

Calculate New Load		
	Traditional	AWT
Number of Septic Tanks	539	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	828	322
Reduction in Load to Springshed lb/yr	4921	5427

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$21,889,500	
cost/lb TN	\$4,448.49	\$4,033.80
Cost/lb TN / 30 years	\$148.28	\$134.46

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Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

SOUTH HIGHLANDS SEPTIC TO SEWER PROJECT - PHASE 1 - NUTRIENT CALCULATIONS

Calculate Base Load	
Number of Septic Tanks	69
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	736

Number of Parcels114

Calculate New Load		
	Traditional	AWT
Number of Septic Tanks	69	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	106	41
Reduction in Load to Springshed lb/yr	630	695

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$3,267,000	
cost/lb TN	\$5,186.39	\$4,702.92
Cost/lb TN / 30 years	\$172.88	\$156.76

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Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

SOUTH HIGHLANDS SEPTIC TO SEWER PROJECT - PHASE 2 - NUTRIENT CALCULATIONS

Calculate Base Load	
Number of Septic Tanks	161
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	1717

Number of Parcels

217

Calculate New Load		
	Traditional	AWT
Number of Septic Tanks	161	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	247	96
Reduction in Load to Springshed lb/yr	1470	1621

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$6,385,500	
cost/lb TN	\$4,344.45	\$3,939.46
Cost/lb TN / 30 years	\$144.81	\$131.32

PM to enter data

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Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

SOUTH HIGHLANDS SEPTIC TO SEWER PROJECT - PHASE 3 - NUTRIENT CALCULATIONS

Calculate Base Load	
Number of Septic Tanks	93
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	992

Number of Parcels132

Calculate New Load		
	Traditional	AWT
Number of Septic Tanks	93	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	143	56
Reduction in Load to Springshed lb/yr	849	936

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$3,340,000	
cost/lb TN	\$3,933.95	\$3,567.23
Cost/lb TN / 30 years	\$131.13	\$118.91

PM to enter data

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Do not change contents of cell

Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

SOUTH HIGHLANDS SEPTIC TO SEWER PROJECT - PHASE 4 - NUTRIENT CALCULATIONS

Calculate Base Load	
Number of Septic Tanks	103
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	1098

Number of Parcels

139

Calculate New Load		
	Traditional	AWT
Number of Septic Tanks	103	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	158	62
Reduction in Load to Springshed lb/yr	940	1037

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$5,161,000	
cost/lb TN	\$5,488.61	\$4,976.96
Cost/lb TN / 30 years	\$182.95	\$165.90

PM to enter data
= Output
Do not change contents of cell

Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

SOUTH HIGHLANDS SEPTIC TO SEWER PROJECT - PHASE 5 - NUTRIENT CALCULATIONS

Calculate Base Load	
Number of Septic Tanks	113
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	1205

Number of Parcels149

Calculate New Load		
	Traditional	AWT
Number of Septic Tanks	113	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	174	67
Reduction in Load to Springshed lb/yr	1032	1138

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$3,736,000	
cost/lb TN	\$3,621.54	\$3,283.94
Cost/lb TN / 30 years	\$120.72	\$109.46

	I. TOTAL PROJECT COST					II. Year 1 - Project Funding Breakout											II. Year 2 - Project Funding Breakout					
C o u n t	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Match	TOTAL Project Cost	DEP/State Funding Amount	Local Match - Cash	Local Match - In- kind Efforts	Local Match - Companion Projects	Local Match - Other	WMD Match - Cash	WMD Match - In- kind Efforts	WMD Match - Companio n Projects	WMD Match - Other	Third Party Funding	TOTAL Year 1 Funding	DEP/State Funding Amount	Local Match - Cash	Local Match - In- kind Efforts	Local Match - Companio n Projects	Local Match - Other	WMD Match - Cash
1	\$17,511,600	\$4,377,900	\$ -	\$ -	\$21,889,500	\$2,613,600	\$261,000	\$392,400								\$3,267,000	\$5,108,400	\$510,840	\$766,260			
2	\$ -	\$ -	\$ -	\$ -	\$ -																	
3	\$ -	\$ -	\$ -	\$ -	\$ -																	
4	\$ -	\$ -	\$ -	\$ -	\$ -																	
5	\$ -	\$ -	\$ -	\$ -	\$ -																	

						III. Year 3 - Project Funding Breakout					III. Year 4 - Project Funding Breakout					III. Year 5 - Project Funding Breakout				
C o u n t	WMD Match - In- kind Efforts	WMD Match - Companio n Projects	WMD Match - Other	Third Party Funding	TOTAL Year 2 Funding	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Funding	TOTAL Year 3 Funding	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Funding	TOTAL Year 4 Funding	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Funding	TOTAL Year 5 Funding
1					\$6,385,500	\$ 2,672,000	\$668,000			\$3,340,000	\$ 4,128,800	\$1,032,200			\$5,161,000	\$ 2,988,800	\$747,200			\$3,736,000
2																				
3																				
4																				
5																				

APP05

Marion County

Marion Oaks Bioswale
Enhancements

FY2023

FDEP Springs Funding Application for Projects within the Southwest Florida Water Management District



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name: Marion County

Is the Entity designated as an economically disadvantaged community? ☐ Yes ☒ No

Project Manager Name: Christine Vrabic

Project Manager Address: 412 SE 25th Ave, Ocala, FL 34471

Project Manager Phone Number: (352) 671-8686 ext. 8365

Project Manager Email Address: Christine.Vrabic@marionfl.org

2. Project Information

Project Name: Marion Oaks Bioswale Enhancements

Project Type: Stormwater

Is this a multiyear project? ☐ Yes ☒ No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: 03/27/2023

End Date: 09/29/2023

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: 01/01/2022 - 10/28/2022 *Construction:* 03/27/2023 - 09/29/2023

3. Project Benefit

Quantity of Water Made Available (mgd): N/A

Land Acquisition within Basin Management Action Plan (acres): N/A

Nitrogen Reduced (lbs/year): 159

Sediment Reduced (lbs/year): N/A

Please download the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

The Marion Oaks Bioswale Enhancement project is located in southwestern Marion County within the Rainbow Springs Basin Management Action Plan (BMAP) area as well as the contributing area to Wilson Head, Citrus Blue, and Gum Springs which has a finalized Total Maximum Daily Load (TMDL) as of October 2019. The project was identified from the Gum Swamp & Big Jones Creek watershed management plan, completed in 2012. This project is comprised of three project areas with a combined 192-acre contributing area, comprised of mostly medium-density residential land uses. Stormwater in these three areas is primarily conveyed by swales which drain to DRAs. Dry retention ponds and swale systems provide minimal removal of nitrogen and phosphorus from stormwater runoff as it is being infiltrated. Infiltrated stormwater is a source of nitrogen, in the form of nitrate, to Rainbow Springs as well as Wilson Head Springs, Citrus Blue Springs, and Gum Springs. A TMDL for nitrate concentration has also been adopted for Rainbow Springs and a BMAP has been developed. This project will be included in the BMAP. Marion County lies within SWFWMD's Northern Region. One of the State's priorities is the Springs, and in this case, Rainbow Springs and Gum Springs springshed. One of the State's objectives for Rainbow Springs is to improve water quality. The County is working towards this objective by reducing the amount of total nitrogen entering the groundwater within 16.7 miles of Rainbow Springs and 4.7 miles of Gum Springs. This project upholds the State's Water Quality initiative by implementing a project to improve water quality within the Rainbow Springs BMAP Area and the Wilson Head, Citrus Blue, and Gum Springs TMDL Contributing Area. This project will improve the ability of the existing swales to remove nitrogen from the stormwater entering the conveyance system. Based on the Gum Swamp & Big Jones Creek WMP – BMP Analysis, Jones Edmunds recommends enhancing the swale system, rather than the DRAs, due to the fact that most of the stormwater percolation within these drainage basins occurs within the swale system, never reaching the receiving DRAs. This project will enhance the current swale system by retrofitting specific portions of the swale system within the drainage basins to promote denitrification of stormwater that percolates in the swale. The retrofit will include regrading the swales and installing a 12-inch layer of Bold and Gold below the swale bottom. This distributed stormwater treatment approach has the advantage of being able to reduce nutrient loads through percolation in the swales for all storm events, including those that would not result in runoff reaching the receiving DRAs. The bioswale retrofit is accomplished by removing approximately one and a half feet of soil from the swale bottoms and replacing it with the Bold and Gold soil amendment developed by the University of Central Florida Stormwater Academy. Bold and Gold is composed of natural and recycled materials including clay, tire crumb, and sand. It is manufactured to contain no organics and removes dissolved nutrients from the stormwater that infiltrates the media. The County plans to begin the design phase in FY 2022.

4. Project Funding Information

Are you applying for CFI funding this fiscal year? ☒ Yes ☐ No

Have you received springs funding or CFI funding for this project in the past? ☐ Yes ☒ No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding		\$ 295,390.50		\$ 295,390.50
WMD CFI Funding		\$ 147,695.25		\$ 147,695.25
Local Funding		\$ 147,695.25		\$ 147,695.25
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 590,781.00	\$ 0.00	\$ 590,781.00

If CFI funding was not applied for, please move to Section 5. In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

5. Project Location Information (please submit a map with this application)

County Marion

Latitude (decimal degrees) 29.008114

Longitude (decimal degrees) -82.180209

What is the spring name that will receive the benefit? Gum Spring & Rainbow Spring

Is this spring deemed impaired? ☒ Yes ☐ No

What is the distance from the project to the spring receiving the benefit? 4.7 miles; 16.7 miles

Is this project in a Basin Management Action Plan (BMAP)? ☒ Yes ☐ No

Is this project in the Priority Focus Area (PFA) of the BMAP? ☐ Yes ☒ No

Is this project listed in the BMAP project list? ☐ Yes ☐ No ☒ No, but will be in an update

BMAP project number:

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan

as benefiting an MFL? ☐ Yes ☒ No If yes, please describe below:

Strategy name:

Project number:

Project name as listed:

Please describe any other recovery, prevention, or regional water supply plans or strategies

this project is part of:

This project was identified in the Gum Swamp & Big Jones Creek Watershed Management Plan (WMP) as a Best Management Practice (BMP) project to decrease nutrient loading to the springs. The Southwest Florida Water Management District has approved funding for an update to the WMP and the County's initiative is to continuously update the WMPs for all 32 watersheds across the County.

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

This project will reduce the nutrient loading to the Rainbow Springs BMAP Area and the Wilson Head, Citrus Blue, & Gum Springs TMDL Contributing Area. These two springsheds have an established total maximum daily load (TMDL) and Rainbow Springs has an adopted basin management action plan (BMAP) as of December 2015. Pollutant load modeling from the Gum Swamp and Big Jones Creek Watershed Management Plan estimated that a total of approximately 208 pounds of TN per year is transported in stormwater runoff to Project Area 1, 83 pounds of TN per year to Project Area 2, and 83 pounds of TN per year to Project Area 3, for a total of 374 pounds of TN per year entering these swale systems. As the runoff infiltrates, any nitrogen that is not already in nitrate form is expected to convert to nitrate. Existing treatment efficiency of TN by the swales is minimal. Based on the Gum Swamp and Big Jones Creek BMP Analysis methodology, the proposed enhancements would be able to treat approximately 3.2 acre-feet of runoff which equates to approximately 0.2-inch of runoff across the areas draining to the enhanced swales. Based on the retention volume, curve number, and DCIA, the proposed sorption-media enhanced swales would treat approximately 71% of the average annual runoff (FDOT's Draft Stormwater Quality Applicant's Handbook – March 2010). Assuming the Bold and Gold at a 12-inch depth has a TN removal efficiency of 60% and TP removal efficiency of 90% (BMP Trains), the reduction in TN and TP loads provided by this BMP is estimated to be 42.6% and 63.9%, respectively. This project will provide a TN reduction of 159 pounds per year and a TP reduction of 38 pounds per year.

WMP updates are required per Marion County's Comprehensive Plan.

Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What level of treatment is offered at the wastewater treatment facility?

At the wastewater treatment facility, where is the final treated wastewater sent?

Make a Selection

What is the current capacity of the wastewater treatment facility (mgd)?

What is the annual average of flow received by the wastewater treatment facility (mgd)?

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

How much additional flow will be received by the treatment facility due to the project (mgd)?

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

Is any land acquisition necessary? If so, please describe below.

☐

Yes

☐

No

What length of forcemain and pipe sizing is necessary? Please describe below.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

How many of the septic tanks in this project are commercial tanks?

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? ☐ Yes ☐ No

How many of the septic tanks service multi-family homes?

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%):

Prior irrigation system efficiency (%):

Average metered water use for the past 5 years (mgd):

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd):

Percent Offset (%):

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

☐

Yes

☐

No

Percent Recharge (%):

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

What will be the landuse once purchased?

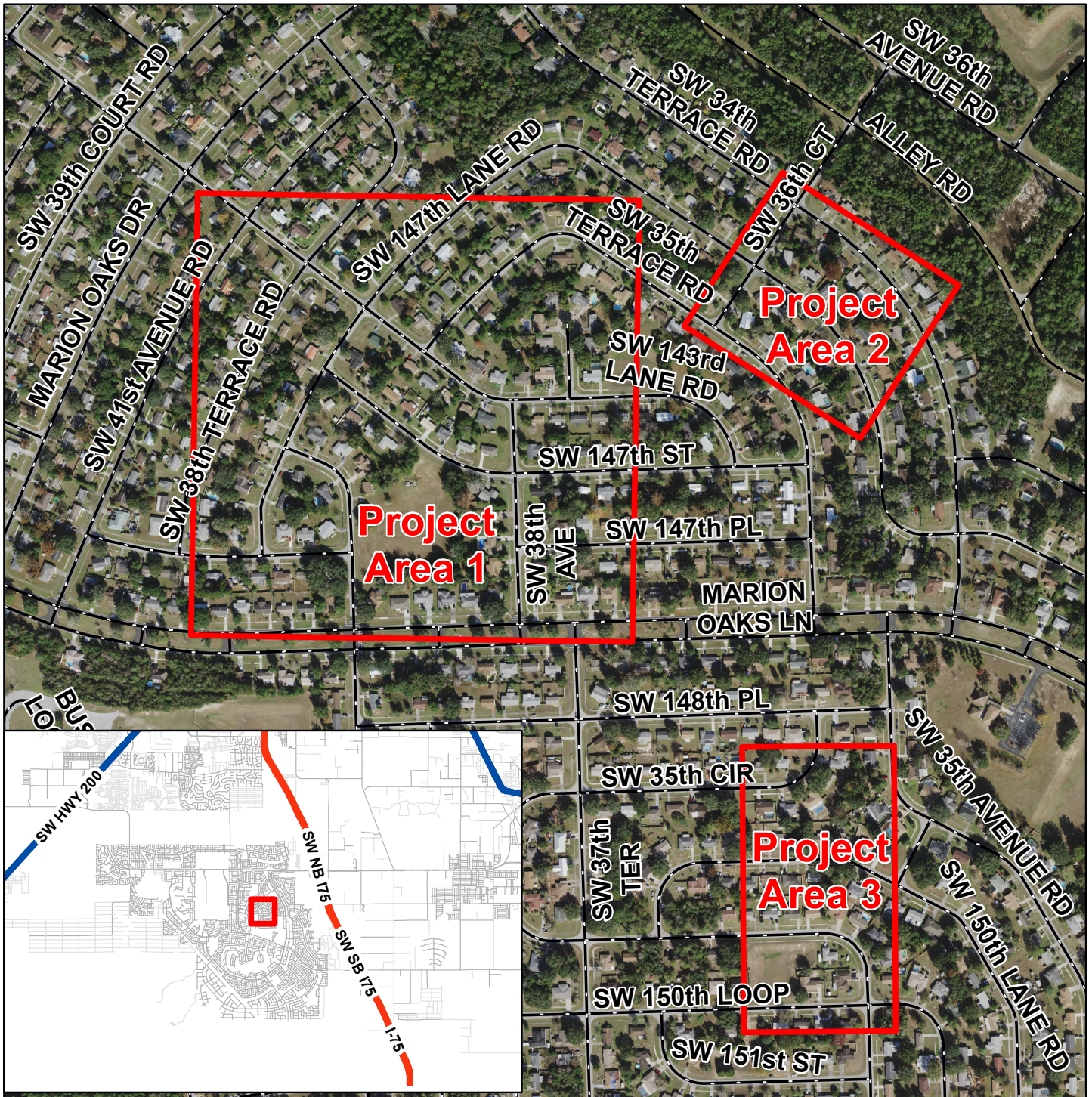
What is the recharge potential (mgd)?

Does a portion of the land to be acquired lie outside of the BMAP?

☐ Yes

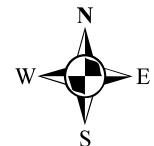
☐ No

Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.



Date Created: 9/29/2021

Legend	
	Project Location
	Unpaved Road
	Paved Road



0 120 240 480 720 960 Feet



Marion Oaks Bioswale Enhancements

Project Location Map

Marion County
Office of the County Engineer
Stormwater Program
412 SE 25th Avenue
Ocala, FL 34471

Marion Oaks Bioswale Enhancements

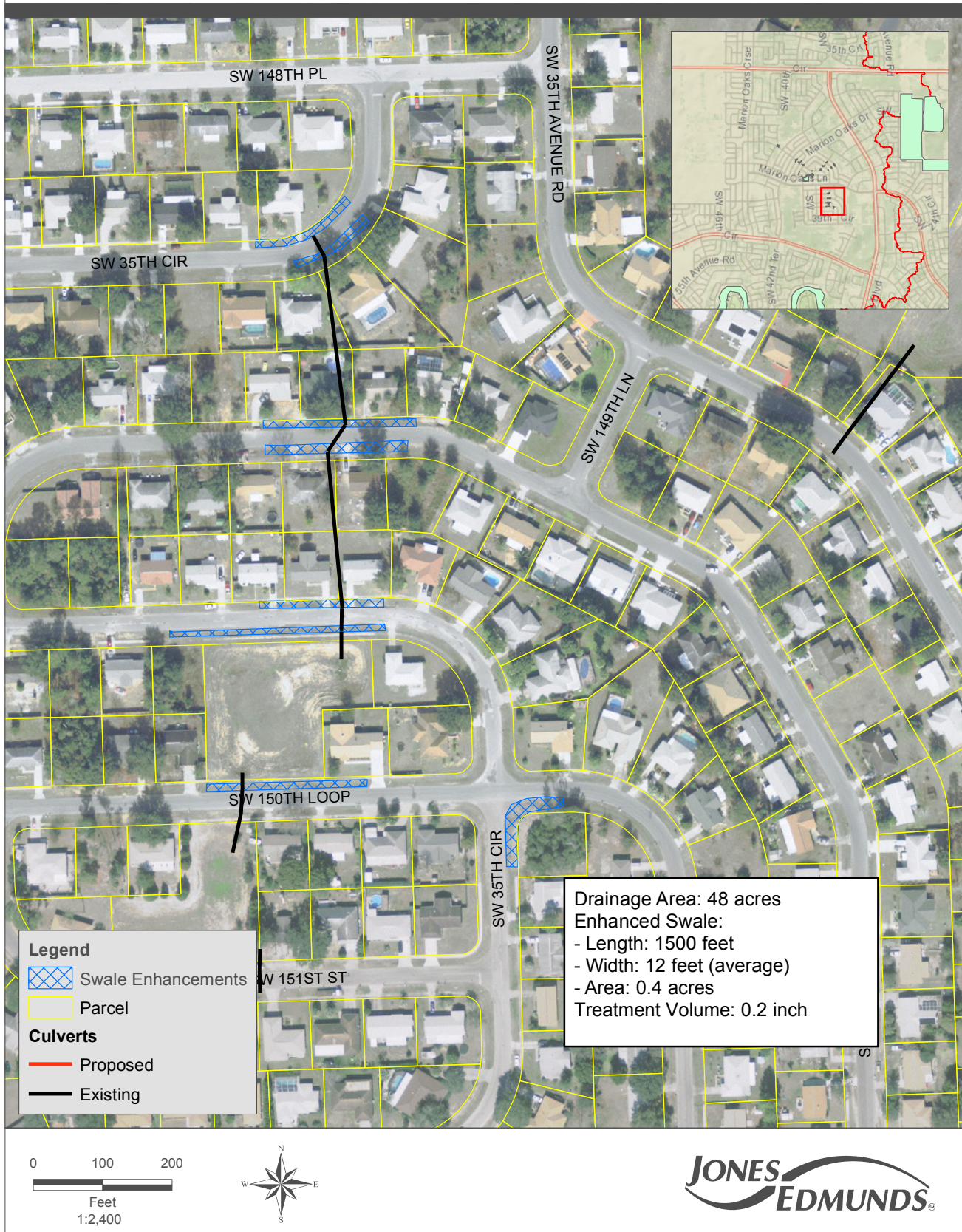
Project Area 1



Marion Oaks Bioswale Enhancements Project Area 2



Marion Oaks Bioswale Enhancements Project Area 3



BASIN	CONTRIBUTING AREA (acres)	TN LOAD (lb/yr) ¹	TP LOAD (lb/yr) ¹	TN REMOVED (lb/yr)		TP REMOVED (lb/yr)		TOTAL TN TREATMENT (lb/yr)	TOTAL TP TREATMENT (lb/yr)
				Standard Swale ²	Enhance Swale w/ Bold & Gold ^{3, 4}	Standard Swale ²	Enhance Swale w/ Bold & Gold ^{3, 4}		
EXISTING PROJECT AREA 1	96	208	33	10		2		19	3
EXISTING PROJECT AREA 2	48	83	13	4		1			
EXISTING PROJECT AREA 3	48	83	13	4		1			
PROPOSED PROJECT AREA 1 (B&G)	96	208	33		89		21	159	38
PROPOSED PROJECT AREA 2 (B&G)	48	83	13		35		8		
PROPOSED PROJECT AREA 3 (B&G)	48	83	13		35		8		

¹ TN and TP Loads provided by Marion County's Gum Swamp & Big Jones Creek Watershed Management Plan - Best Management Practice Alternatives Analysis (2012)

² Average removal efficiency of 5% for standard swale alone (no BMP enhancements)

³ Enhance Swale Treatment Efficiency using CTS12 per BMP Trains (includes BMP enhancements) - TN = 60%; TP = 90%

⁴ Based on the retention volume, CN, and DCIA, the proposed sorption-media enhanced swales can treat approximately 71% of the average annual runoff.

Existing Removal Efficiency (TN) = 19 lb/yr = 5.0%
Existing Removal Efficiency (TP) = 3 lb/yr = 5.0%

Proposed Removal Efficiency (TN) = 159 lb/yr = 42.6%
Proposed Removal Efficiency (TP) = 38 lb/yr = 63.9%

Net Increase in Removal Efficiency (TN) = 141 lb/yr = 37.6%
Net Increase in Removal Efficiency (TP) = 35 lb/yr = 58.9%

APP06

Marion County

NW 44th Avenue Innovative
Stormwater Retrofit



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name: Marion County

Is the Entity designated as an economically disadvantaged community? ☐ Yes ☒ No

Project Manager Name: Christine Vrabic

Project Manager Address: 412 SE 25th Ave, Ocala, FL 34471

Project Manager Phone Number: (352) 671-8686 ext. 8365

Project Manager Email Address: Christine.Vrabic@marionfl.org

2. Project Information

Project Name: NW 44th Avenue Innovative Stormwater Retrofit

Project Type: Stormwater

Is this a multiyear project? ☐ Yes ☒ No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: 02/27/2023

End Date: 06/02/2023

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: 01/01/2022 - 09/30/2022 *Construction:* 02/27/2023 - 06/02/2023

3. Project Benefit

Quantity of Water Made Available (mgd): N/A

Land Acquisition within Basin Management Action Plan (acres): N/A

Nitrogen Reduced (lbs/year): 55

Sediment Reduced (lbs/year): N/A

Please download the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

The NW 44th Avenue Innovative Stormwater Retrofit project is located in northwestern Marion County within the Rainbow Springs Basin Management Action Plan (BMAP) area. The project was identified from the West Ocala watershed management plan, completed in 2014. A 62.84-acre contributing area, comprised of farmland (37.84 acres), roadway and industrial land uses (25 acres), drains to an existing dry retention pond with a 2.5-acre pond bottom. Dry retention ponds provide minimal removal of nitrogen and phosphorus from stormwater runoff as it is being infiltrated. Infiltrated stormwater is a source of nitrogen, in the form of nitrate, to Rainbow Springs. A Total Maximum Daily Load (TMDL) for nitrate concentration has been adopted for Rainbow Springs and a BMAP has been developed. This project will be included in the BMAP. Marion County lies within SWFWMD's Northern Region. One of SWFWMD's priorities for the Northern Region is the Springs, and in this case, Rainbow Springs. One of the District's objectives for Rainbow Springs is to improve water quality. The County is working towards this objective by reducing the amount of total nitrogen entering the groundwater within this 62.84-acre contributing area. This project upholds the District's Water Quality Strategic Initiative by implementing a project to improve water quality within the Rainbow Springs BMAP Area. This project will improve the ability of the existing retention pond to remove nitrogen from the stormwater entering the pond. This is accomplished by removing approximately two feet of soil from a portion of the pond bottom and replacing it with the Bold and Gold soil amendment developed by the University of Central Florida Stormwater Academy. Bold and Gold is composed of natural and recycled materials including clay, tire crumb, and sand. It is manufactured to contain no organics and removes dissolved nutrients from the stormwater that infiltrates the media. The proposed project is a continuation of a phased implementation of Bold and Gold retrofits to County owned retention ponds in the BMAP areas. The application of Bold and Gold proposed for this project is the same as in the first full scale pilot application at the SW 85th Street and SW 40th Avenue Stormwater Retrofit. Monitoring of the pilot project has shown that the Bold and Gold has resulted in a treatment efficiency of 70% of total nitrogen from the stormwater infiltrated. The County plans to begin the design phase in FY 2022. To optimize the cost-benefit of the project, the County will install Bold and Gold within a portion of the pond bottom to treat the stormwater runoff from the roadway and industrial area which has the highest nitrogen loads within the catchment area. This treatment cell will be designed to hold an optimum capacity of approximately 0.32 inches of runoff depth over the entire catchment area (62.84 acres). The optimum Bold and Gold cell area will be approximately 0.85 acres.

4. Project Funding Information

Are you applying for CFI funding this fiscal year? ☒ Yes ☐ No

Have you received springs funding or CFI funding for this project in the past? ☐ Yes ☒ No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding		\$ 377,380.50		\$ 377,380.50
WMD CFI Funding		\$ 188,690.25		\$ 188,690.25
Local Funding		\$ 188,690.25		\$ 188,690.25
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 754,761.00	\$ 0.00	\$ 754,761.00

If CFI funding was not applied for, please move to Section 5. In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

5. Project Location Information (please submit a map with this application)

County Marion

Latitude (decimal degrees) 29.223915

Longitude (decimal degrees) -82.194776

What is the spring name that will receive the benefit? Rainbow Springs & Silver Springs

Is this spring deemed impaired? ☒ Yes ☐ No

What is the distance from the project to the spring receiving the benefit? 16.88 & 8.6 miles

Is this project in a Basin Management Action Plan (BMAP)? ☒ Yes ☐ No

Is this project in the Priority Focus Area (PFA) of the BMAP? ☐ Yes ☒ No

Is this project listed in the BMAP project list? ☐ Yes ☐ No ☒ No, but will be in an update

BMAP project number:

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan as benefiting an MFL? ☐ Yes ☒ No If yes, please describe below:

Strategy name:

Project number:

Project name as listed:

Please describe any other recovery, prevention, or regional water supply plans or strategies this project is part of:

This project was identified in the West Ocala Watershed Management Plan (WMP) as a Best Management Practice (BMP) project to decrease nutrient loading to the springs. The Southwest Florida Water Management District has approved funding for an update to the WMP and the County's initiative is to continuously update the WMPs for all 32 watersheds across the County.

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

This project will reduce the nutrient loading to the Rainbow Springs BMAP Area. The springshed has an established total maximum daily load (TMDL) and adopted basin management action plan (BMAP) as of December 2015. Pollutant load modeling from the West Ocala Watershed Management Plan estimated that a total of approximately 118 pounds of TN per year is transported in stormwater runoff to the retention pond. As the runoff infiltrates, any nitrogen that is not already in nitrate form is expected to convert to nitrate. Existing treatment efficiency of TN by the retention ponds is minimal, about 5%. The County has optimized the cost-benefit for Bold and Gold projects. Based on the Optimization Spreadsheet for the given watershed parameters, the optimum treatment cell will have an area of about 0.85 acres to catch the first 0.32 inches of rain over the 62.84-acre watershed. This would result in the enhanced cell capturing approximately 57% of the stormwater runoff from the entire basin. Based on the volume captured and treatment efficiencies for Bold and Gold (BMP Trains), the TN removal efficiency of the enhanced cell will be approximately 43%, resulting in an overall TN removal efficiency for the watershed of approximately 46%. This results in approximately 55 pounds of TN to be removed per year as a result of this project; an increase in removal efficiency of 41%. WMP updates are required per Marion County's Comprehensive Plan.

Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What level of treatment is offered at the wastewater treatment facility?

At the wastewater treatment facility, where is the final treated wastewater sent?

Make a Selection

What is the current capacity of the wastewater treatment facility (mgd)?

What is the annual average of flow received by the wastewater treatment facility (mgd)?

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

How much additional flow will be received by the treatment facility due to the project (mgd)?

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

Is any land acquisition necessary? If so, please describe below.

☐

Yes

☐

No

What length of forcemain and pipe sizing is necessary? Please describe below.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

How many of the septic tanks in this project are commercial tanks?

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? ☐ Yes ☐ No

How many of the septic tanks service multi-family homes?

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%):

Prior irrigation system efficiency (%):

Average metered water use for the past 5 years (mgd):

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd):

Percent Offset (%):

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

☐

Yes

☐

No

Percent Recharge (%):

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

What will be the landuse once purchased?

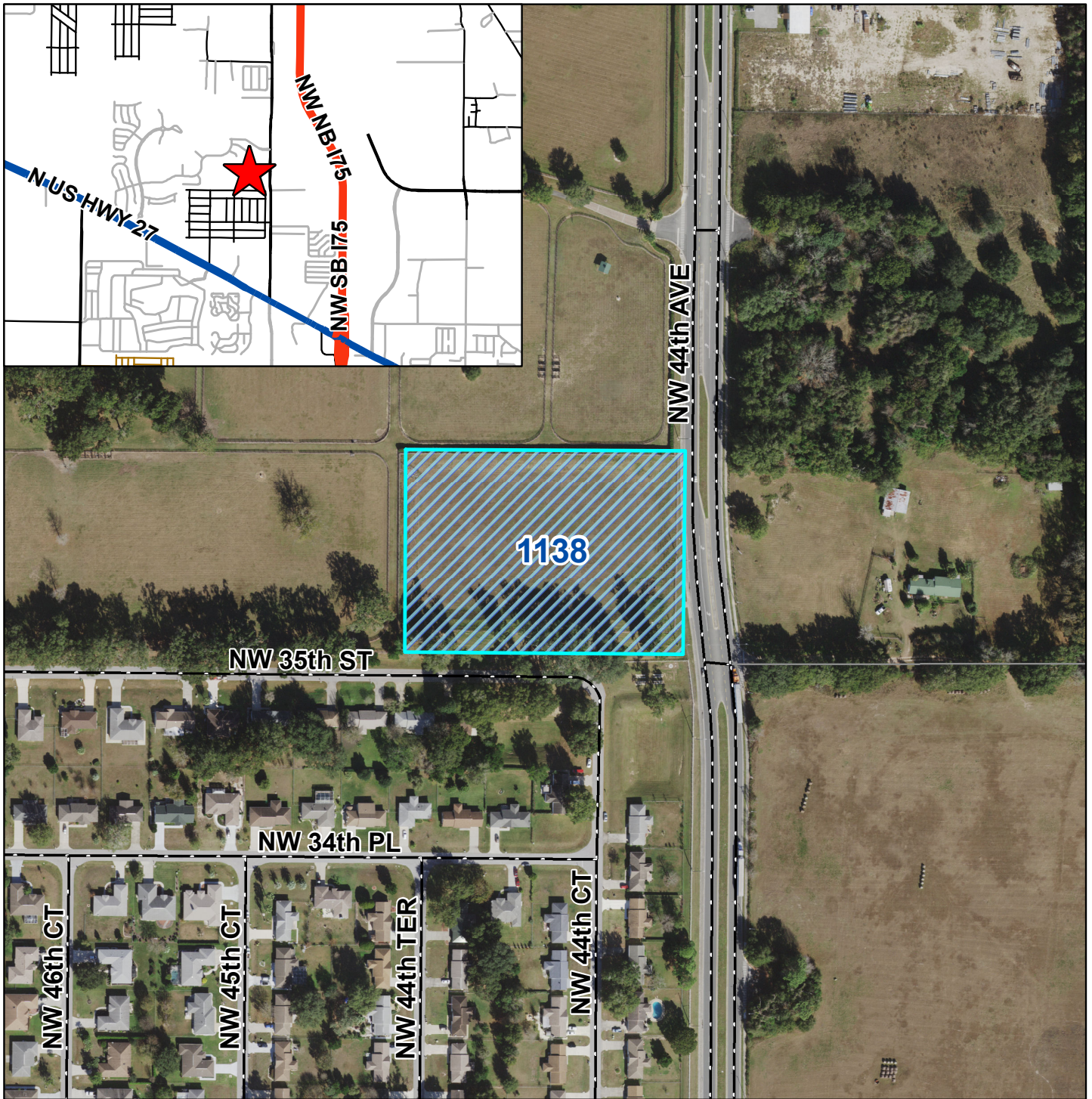
What is the recharge potential (mgd)?

Does a portion of the land to be acquired lie outside of the BMAP?

☐ Yes

☐ No

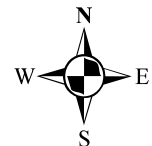
Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.



Date Created: 9/29/2021

Legend

- Project Location
- Storm Basin
- Unpaved Road
- Paved Road



0 60 120 240 360 480 Feet

	<p>NW 44th Ave Innovative Stormwater Retrofit</p>	<p>Marion County Office of the County Engineer Stormwater Program 412 SE 25th Avenue Ocala, FL 34471</p>
<p>Project Location Map</p>		

PRELIMINARY ASSESSMENT OF RETENTION POND EFFICIENCIES IN RETROFIT PROJECTS

NUTRIENT REMOVAL FROM INFILTRATED RUNOFF

Pond ID: 1138

Basin Data

Contributing Basin Area¹: 62.8 acres

Existing Pond Data Input (for calc purposes)

Existing Pond Bottom Area (GIS-approx) 2.50 acres
Design Pond Depth (ft) = 5.0 (typical)
Design Pond Sideslope H (H:V) = 4.0 (typical)

Note: DRA is conceptualized as a rectangular pond for analysis. L/W ratio uses average dimensions across pond, measured from TOB to TOB

Rectilinear Pond Aspect Ratio: Length/ Width	
L	W
480.0	295.0

Treatment Cell ~ Depth to Overflow = 24.0 inches

Note: Once cell inflow crests over design stage, discharge is uncontrolled into remaining DRA

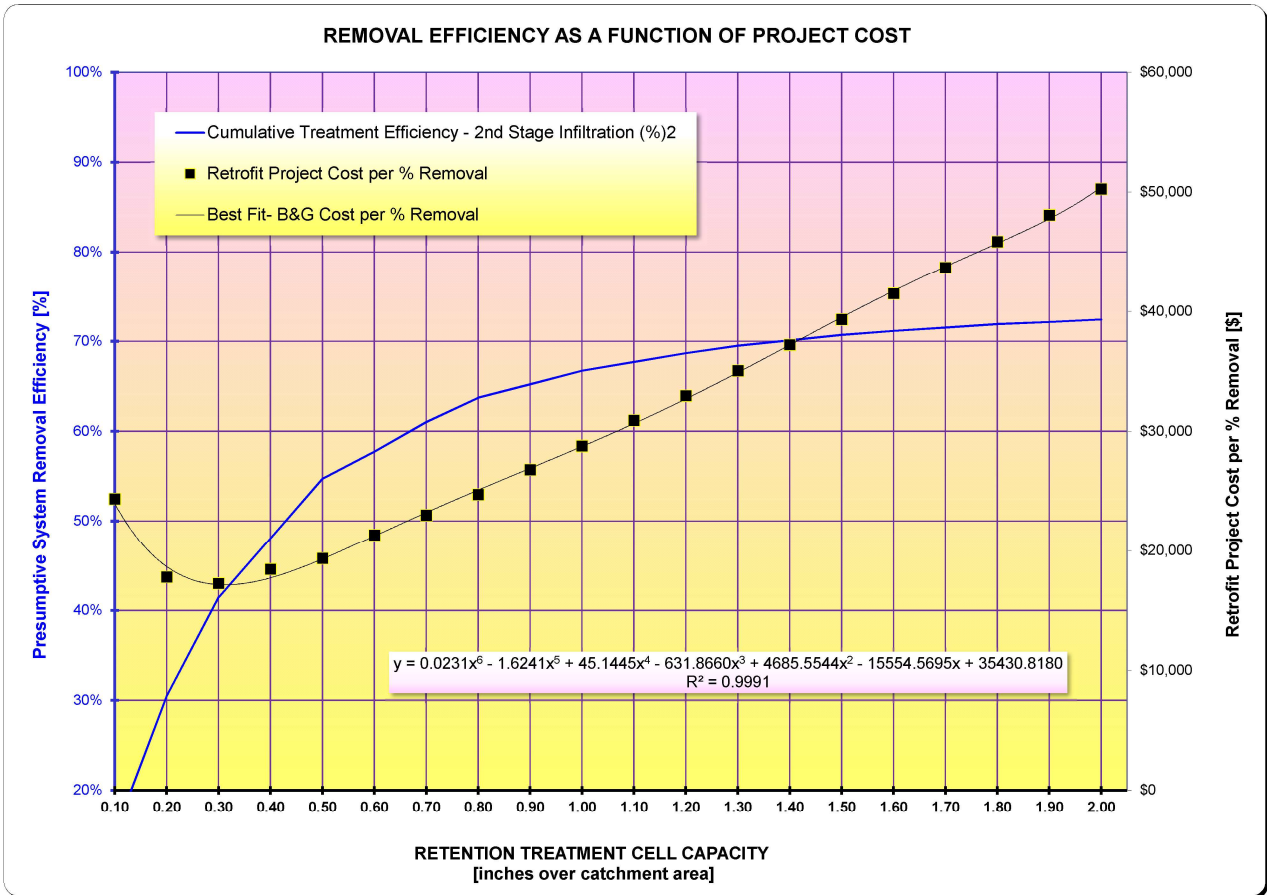
Basin Land Use/ Hydrology Data

Pre-development NonDCIA (CN) : 61
Pre-development DCIA (%) : 38
Post-development NonDCIA (CN) : 61 L/U does not change
Post-development DCIA (%) : 38 L/U does not change

BMP Data Input (GW ~ Soil Amendment)

B&G Media Cost (\$/TN) = \$113.85
Estimated B&G Weight (TN/CY) = 1.258 ECS typical average
Top Soil Layer Depth = 2 inches
Coarse Sand Layer Depth = 4 inches
Bold & Gold Media Treatment Depth = 24 inches

B&G ~ GW Treatment Efficiency:	Phosphorus ==>	95.0%
	Nitrogen ==>	75.0%



Treatment Cell Capacity ~ Runoff Depth (inches over catchment)	Treatment Cell Efficiency - 1 st Stage Captured Runoff (%) ² [BMP Trains]	Cumulative Treatment Efficiency - 2 nd Stage Infiltration (%) ²	Runoff Volume over Catchment (ac-ft)	* Required Treatment Cell Bottom Area (acres)	Verify Pond Bottom Area Balance (ac)	PROJECT COST BREAKDOWN			1	2
						Overall Pond ~ Non-B&G Cost Items	Treatment Cell ~ B&G Related Cost Items	Aggregated Project Costs	Retrofit Project Cost per % Removal	Incremental Cost per % Removal
0.10	20.3%	15.2%	0.52	0.26	2.24	\$180,479	\$156,540	\$370,721	\$24,349	\$24,349
0.20	40.7%	30.5%	1.05	0.52	1.98	\$180,479	\$313,080	\$542,915	\$17,786	\$11,255
0.30	55.3%	41.5%	1.57	0.79	1.72	\$180,479	\$469,621	\$715,109	\$17,242	\$15,725
0.40	64.1%	48.1%	2.09	1.05	1.45	\$180,479	\$626,161	\$887,303	\$18,448	\$26,001
0.50	73.0%	54.8%	2.62	1.31	1.19	\$180,479	\$782,701	\$1,059,498	\$19,352	\$25,884
0.60	77.0%	57.8%	3.14	1.57	0.93	\$180,479	\$939,241	\$1,231,692	\$21,328	\$57,398
0.70	81.4%	61.1%	3.66	1.83	0.67	\$180,479	\$1,095,781	\$1,403,886	\$22,996	\$52,180
0.80	85.0%	63.8%	4.19	2.09	0.41	\$180,479	\$1,252,321	\$1,576,080	\$24,723	\$63,776
0.90	87.0%	65.3%	4.71	2.36	0.15	\$180,479	\$1,408,862	\$1,748,274	\$26,793	\$114,796
1.00	89.0%	66.8%	5.23	2.62	-0.12	\$180,479	\$1,565,402	\$1,920,469	\$28,771	\$114,796
1.10	90.3%	67.7%	5.76	2.88	-0.38	\$180,479	\$1,721,942	\$2,092,663	\$30,899	\$176,609
1.20	91.6%	68.7%	6.28	3.14	-0.64	\$180,479	\$1,878,482	\$2,264,857	\$32,964	\$175,261
1.30	92.7%	69.5%	6.80	3.40	-0.90	\$180,479	\$2,035,022	\$2,437,051	\$35,053	\$210,635
1.40	93.5%	70.1%	7.33	3.66	-1.16	\$180,479	\$2,191,562	\$2,609,245	\$37,208	\$286,990
1.50	94.3%	70.7%	7.85	3.93	-1.43	\$180,479	\$2,348,103	\$2,781,440	\$39,328	\$286,990
1.60	94.9%	71.2%	8.37	4.19	-1.69	\$180,479	\$2,504,643	\$2,953,634	\$41,498	\$382,654
1.70	95.4%	71.6%	8.90	4.45	-1.95	\$180,479	\$2,661,183	\$3,125,828	\$43,687	\$459,185
1.80	95.9%	71.9%	9.42	4.71	-2.21	\$180,479	\$2,817,723	\$3,298,022	\$45,854	\$459,185
1.90	96.2%	72.2%	9.94	4.97	-2.47	\$180,479	\$2,974,263	\$3,470,216	\$48,082	\$695,734
2.00	96.6%	72.5%	10.47	5.23	-2.73	\$180,479	\$3,130,804	\$3,642,411	\$50,275	\$620,520

	B&G Cost per % Removal		
	Best Fit Curve Plot for Analysis		
X-Axis	F(x) Best Fit B&G Cost per % Removal	Dy/Dx Plot (slope)	(Dy/Dx)^2 Plot
1	23,973	-7906	6090
2	18,681	-3076	3707
3	17,156	-250	2052
4	17,731	1220	973
5	19,315	1841	331
6	21,256	1989	8
7	23,224	1929	-100
8	25,103	1832	-80
9	26,907	1789	-2
10	28,710	1830	81
11	30,590	1939	130
12	32,596	2073	128
13	34,725	2175	68
14	36,919	2195	-34
15	39,077	2102	-150
16	41,088	1905	-234
17	42,873	1666	-222
18	44,450	1519	-35
19	46,014	1686	423
20	48,033	2492	1265

*INVALID condition If treatment cell exceeds available pond bottom area ==> XX

Optimized B&G Infiltration Treatment Efficiency and Retrofit Project Cost

Watershed Loading rate (WMP) = 117.7 lbs/ yr TN

Proposed DRA Balance - Nutrient Removal from Infiltrated Runoff

Balance of Existing DRA Bottom Area = 1.65 acres ==> 66.2% of existing DRA
Estimated Infiltration Removal Efficiency (TN) of Retention System = 5.0%

Estimated Nitrogen (TN)Removal by DRA Balance = 3.90 lbs/ Yr

Treatment Cell - Nutrient Removal from Infiltrated Runoff

Initial estimate of Treatment Removal Efficiency = 42.6% (per proxy table)

Final Optimized Removal Efficiency (TN) of Treatment Cell = 43.0%

Optimized Treatment Cell area = 0.85 acres (pond bottom area)
Treatment Cell Capacity = 0.32 inches (over site) ==> 1.69 ac-ft

Estimated Nitrogen (TN) Removal by Cell = 50.61 lbs/ Yr

Total Nitrogen Removal Rate (cell + pond balance) = 54.51 lbs/ Yr

Estimated Project Retrofit Costs

Preliminary Project Cost Estimate = \$754,761

Estimated B&G Cost (Material only) = \$390,621

Lifetime Project Cost / Yr = \$15,095 <== 50 year lifespan basis

Estimated Cost/ lb of Nitrogen Removed = \$277

Generate Proxy Best Fit Curve - using a dimensionless Excel-generated polynomial expression. Verify fit with R-Square value, add coefficients to table below. Optimum value is estimated at curve bottom (ie; condition dy/dx = 0)

y = 0.0231x⁶ - 1.6241x⁵ + 45.1445x⁴ - 631.8660x³ + 4685.5544x² - 15554.5695x + 35430.8180

Tabulated Polynomial Coefficients ==> input into highlighted cells below

	Exp	F(x)	Exp	Dy/Dx	Exp	(Dy/Dx) ^2
x ⁶	6	0.0231	5	0.1386	4	0.693
x ⁵	5	-1.6241	4	-8.1205	3	-32.482
x ⁴	4	45.1445	3	180.578	2	541.734
x ³	3	-631.8660	2	-1895.6	1	-3791.2
x ²	2	4685.5544	1	9371.109		9371.109
x	1	-15554.5695		-15554.6		
Constant		35430.8180				

Solve for Dy/Dx = 0.0 Interpolated result ==> 3.17

Initial estimate of removal efficiency (result by proxy) ==> 42.6%

¹ Basin area is to treatment cell but may be from WMP data for initial calcs

² Use BMP Trains. Efficiency is Nitrogen Retained in Media divided by the load.

³ B&G Costs include material and transport.

⁴ Acreage should be approximately 2 feet from the expected pond bottom. For preliminary values, use LiDAR 2' above existing pond bottom or at main toe of slope of existing pond. GIS review may

APP07

Florida Governmental Utility Authority

Rainbow River - Rio Vista Septic to Sewer Project



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name: Florida Governmental Utility Authority

Is the Entity designated as an economically disadvantaged community? ☒ Yes ☐ No

Project Manager Name: Robert W. Dickson, PE

Project Manager Address: 280 Wekiva Springs Rd., Ste 2070, Longwood, FL 32779-6026

Project Manager Phone Number: (407) 629-6900

Project Manager Email Address: rdickson@govmserv.com

2. Project Information

Project Name: Rainbow River - Rio Vista Septic to Sewer Project

Project Type: Waste Water Collection & Treatment (Complete Form A)



Is this a multiyear project? ☒ Yes ☐ No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: 10/01/2022

End Date: 10/01/2027

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: 10/01/2022 - 10/01/2023 *Construction:* 11/30/2023 - 10/01/2027

3. Project Benefit

Quantity of Water Made Available (mgd): N/A

Land Acquisition within Basin Management Action Plan (acres): N/A

Nitrogen Reduced (lbs/year): 3310

Sediment Reduced (lbs/year): N/A

Please download the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

The FGUA recognizes the vital ecological and environmental importance that Rainbow Springs and the Rainbow River have to the state of Florida. The bodies of water are listed as Outstanding Florida Waters and classified as high priorities in the Surface Water Improvement and Management (SWIM) Plan. These water bodies have also been deemed impaired in the updated 2018 Total Maximum Daily Load Report by the FDEP with an OSTDS Remediation Plan Required as part of the Basin Management Action Plan (BMAP) process.

The Rainbow River-Rio Vista Septic to Sewer project is identified in the Wastewater Feasibility Study prepared by Marion County to address the OSTDS plan requirements and is listed as Project R103 in the BMAP activity report and includes connection of 333 septic tanks from single family residential lots in the Rio Vista neighborhood in Rainbow Springs BMAP PFA. The project is located approximately 0.3 miles south of the Spring. The project includes the following:

- * 154 Grinder Stations
- * 25,000 linear feet of gravity sewer collection lines (8" PVC)
- * 5,000 linear feet of force main (10" PVC)
- * 20,000 linear feet of low pressure force main (2", 4" and 6" PVC)
- * Roadway restoration
- * Upgrade of existing lift station
- * "Stub-outs" for empty lots
- * Abandonment of existing septic tanks and connection to the central sewer system

4. Project Funding Information

Are you applying for CFI funding this fiscal year? ☐ Yes ☒ No

Have you received springs funding or CFI funding for this project in the past? ☐ Yes ☒ No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding		\$ 2,160,521.00	\$ 8,447,900.00	\$ 10,608,421.00
WMD CFI Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 2,160,521.00	\$ 8,447,900.00	\$ 10,608,421.00

If CFI funding was not applied for, please move to Section 5. In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding				\$ 0.00
Local Funding				\$ 0.00
Other Funding				\$ 0.00
Total	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00

5. Project Location Information (please submit a map with this application)

County Marion County

Latitude (decimal degrees) 29.073

Longitude (decimal degrees) -82.439

What is the spring name that will receive the benefit? Rainbow Springs

Is this spring deemed impaired? ☒ Yes ☐ No

What is the distance from the project to the spring receiving the benefit? 0.3

Is this project in a Basin Management Action Plan (BMAP)? ☒ Yes ☐ No

Is this project in the Priority Focus Area (PFA) of the BMAP? ☒ Yes ☐ No

Is this project listed in the BMAP project list? ☒ Yes ☐ No ☐ No, but will be in an update

BMAP project number:

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan

as benefiting an MFL? ☒ Yes ☐ No If yes, please describe below:

Strategy name:

Project number:

Project name as listed:

Please describe any other recovery, prevention, or regional water supply plans or strategies

this project is part of:

As published in the "Silver Springs and Upper Silver River and Rainbow Spring Group and Rainbow River Basin Management Action Plan, June 2018"

Rainbow River and Rio Vista Septic-to-Sewer Project: FGUA recognizes vital ecological and economic importance that Rainbow Springs and Rainbow River has in community. These waterbodies are listed as OFWs and are classified as high priorities in SWIM Plan. BMAP is currently being updated. These waterbodies are impaired under Chapter 62-303(d), F.A.C., by Total Nitrogen as identified in adopted Total Maximum Daily Load. FGUA has identified Rainbow River and Rio Vista Septic to Sewer Project to help improve water quality of these impaired waterbodies.

Primary project objective is to design and construct sanitary sewer system that will 

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

The FGUA, along with our contracted system operator, US Water Services Corporation (USW), is committed to operating and maintaining the Dunnellon Wastewater Treatment Plant and the service area collection systems. During the execution of the project, FGUA will provide oversight to the selected engineering and construction companies.

Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

FGUA Dunnellon Wastewater Treatment Plant

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

FLA126594

What level of treatment is offered at the wastewater treatment facility?

Advanced Secondary

At the wastewater treatment facility, where is the final treated wastewater sent?

Sprayfield



What is the current capacity of the wastewater treatment facility (mgd)?

0.49

What is the annual average of flow received by the wastewater treatment facility (mgd)?

0.163

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

4.08

How much additional flow will be received by the treatment facility due to the project (mgd)?

0.083

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

The Grant will include grinder stations and gravity sewer laterals from the individual residences including abandonment of existing septic tanks. There will be no connection impact fees planned for current residences.

Is any land acquisition necessary? If so, please describe below.



Yes



No

What length of forcemain and pipe sizing is necessary? Please describe below.

Project will include a combined 20,000 linear foot (LF) of 2-inch, 4-inch and 6-inch low pressure force main (FM), and 5,000 LF of 10-inch FM as well as 25,000 LF of 8-inch gravity sewer.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

333

How many of the septic tanks in this project are commercial tanks?

0

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

N/A

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? ☒ Yes ☐ No

How many of the septic tanks service multi-family homes?

0

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

FGUA Wastewater System Mandatory Connection Policies - Rule 62-6.0011, FAC

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%):

Prior irrigation system efficiency (%):

Average metered water use for the past 5 years (mgd):

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd):

Percent Offset (%):

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

☐

Yes

☐

No

Percent Recharge (%):

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

What will be the landuse once purchased?

What is the recharge potential (mgd)?

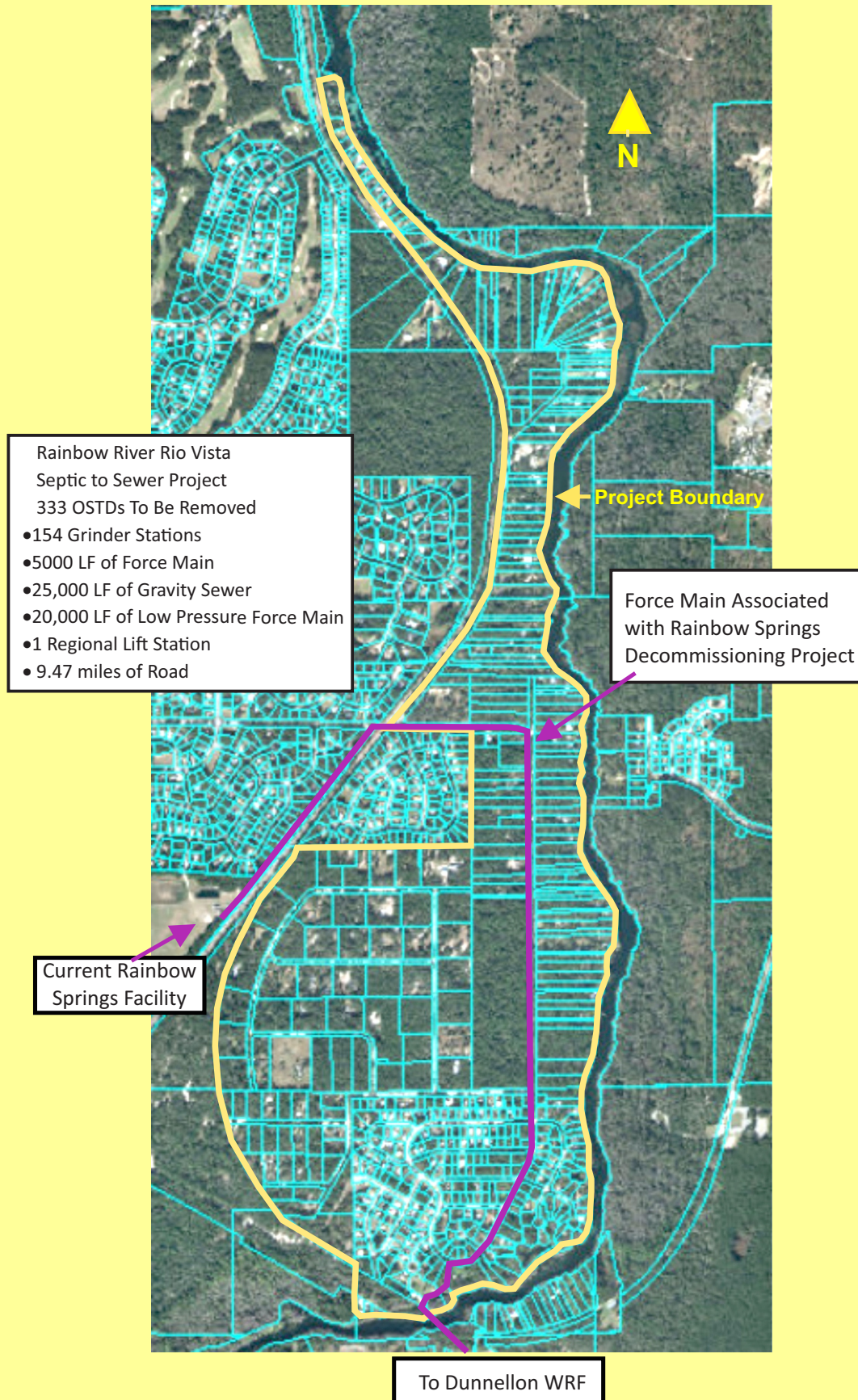
Does a portion of the land to be acquired lie outside of the BMAP?

☐ Yes

☐ No

Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.

Rainbow River Rio Vista Septic To Sewer Project



FDEP method

PM to enter data
= Output
Do not change contents of cell

Recharge Factor

NSILT Recharge Factor GIS Viewer Link (2016)

<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations

Reclaimed water lines and facilites within SWFWMD

http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

Septic to Sewer Projects

Calculate Base Load	
Number of Septic Tanks	329
Typical septic TN input to environment (lb/yr)	23.7
Typical Septic Attenuation	0.5
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Septic System Load to Groundwater	3509

Calculate New Load		
	Traditional	AWT
Number of Septic Tanks	333	
Input from Septic Systems to be Connected	23.7	
% TN Remaining After Treatment (18% remaining going from 45 mg/l to 8 mg/l OR 7% remaining going from 45mg/l to 3mg/l)	0.18	0.07
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	
Load to Groundwater After Treatment	511	199
Reduction in Load to Springshed lb/yr	2997	3310

Cost Effectiveness Calculation for 30 Year Period		
	Traditional	AWT
Project Cost	\$10,802,600	
cost/lb TN	\$3,604.02	\$3,263.72
Cost/lb TN / 30 years	\$120.13	\$108.79

WWTP Upgrade Projects

Calculate Base Load	
WWTP annual average TN concentration in mg/l	3.9
annual average flow in mgd (actual not permitted)	0.0658
Conversion	8.345
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4
original load to springshed lbs/year	281

Calculate New Load	
WWTP annual average TN concentration in mg/l	0
annual average flow in mgd	
conversion	8.345
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4
new load to springshed lbs/year	0
Reduction in Load to Springshed lb/yr	281

Cost Effectiveness Calculation for 30 Year Period	
	WWTP upgrade
Project Cost	
cost/lb TN	\$0.00
Cost/lb TN / 30 years	\$0.00

FDEP method

	PM to enter data
	= Output
	Do not change contents of cell

Reharge FactorNSILT Recharge Factor GIS Viewer Link (2016)<https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locationsReclaimed water lines and facilites within SWFWMDhttp://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

Septic to Sewer Projects

Calculate Base Load		Calculate New Load			Cost Effectiveness Calculation for 30 Year Period		
Number of Septic Tanks		Traditional		AWT	Traditional		AWT
Typical septic TN input to environment (lb/yr)	210	210			\$3,700,000		
Typical Septic Attenuation	23.7	23.7			\$1,929.96		\$1,750.05
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.5	0.18		0.07	\$64.33		\$58.33
Septic System Load to Groundwater	0.9	0.4					
	2240	0.9					
		323		125			
		1917		2114			
		Reduction in Load to Springshed lb/yr					

WWTP Upgrade Projects

Calculate Base Load		Calculate New Load		Cost Effectiveness Calculation for 30 Year Period	
WWTP annual average TN concentration in mg/l	3.9	WWTP annual average TN concentration in mg/l	0	WWTP upgrade	
annual average flow in mgd (actual not permitted)	0.042	annual average flow in mgd	0.042		
Conversion	8.345	conversion	8.345		
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9		
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4		
original load to springshed lbs/year	180	new load to springshed lbs/year	0		
		Reduction in Load to Springshed lb/yr	180		

WWTP application method change

Calculate Base Load		Calculate New Load		Cost Effectiveness Calculation for 30 Year Period	
WWTP annual average TN concentration in mg/l	0	WWTP annual average TN concentration in mg/l	0	WWTP upgrade	
annual average flow in mgd	0	annual average flow in mgd	0		
Conversion	8.345	conversion	8.345		
Recharge Factor (0.9, 0.5, 0.1, or 0)	0	Recharge Factor (0.9, 0.5, 0.1, or 0)	0		
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0	Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0		
original load to springshed lbs/year	0	new load to springshed lbs/year	0		
		Reduction in Load to Springshed lb/yr	0		

Advanced nitrogen reducing septic systems

Calculate Base Load		Calculate New Load			Cost Effectiveness Calculation for 30 Year Period		
Number of Septic Tanks		advanced system 65% TN reduction		advanced system 93% TN reduction	advanced system 65% TN reduction		advanced system 93% TN reduction
Typical septic TN input to environment (lb/yr)	0	0			\$0		
Typical Septic Attenuation Soil + drainfield	23.7	23.7			#DIV/0!		#DIV/0!
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.5	0.8			#DIV/0!		#DIV/0!
Septic System Load to Groundwater lbs/year	0	0					
		0.35		0.07			
		0		0			
		0		0			
		Reduction in Load to Springshed lb/yr		0			0

Package Plant Connection

Calculate Base Load		Calculate New Load		Cost Effectiveness Calculation for 30 Year Period	
Package plant annual average TN concentration in mg/l *	0	WWTP annual average TN concentration in mg/l	0	WWTP upgrade	
annual average flow in mgd (actual not permitted)	0	annual average flow in mgd	0		
Conversion	8.345	Conversion	8.345		
Recharge Factor (0.9, 0.5, 0.1, or 0)	0	Recharge Factor at new WWTP location (0.9, 0.5, 0.1, or 0)	0		
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0	Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0		
original load to springshed lbs/year	0	new load to springshed lbs/year	0		
		Reduction in Load to Springshed lb/yr	0		

* based on basic level disinfection treatment average of 15.35 mg/l TN per 2009 FDEP reuse study data. If legitimate water quality data exist for the specific package plant use that data instead.

Calculate base load

Number of septic tanks	typical septic TN input to environment (lb/yr)	Septic attenuation	Recharge factor (0.9, 0.5, 0.1, or 0)	Septic system load to ground water
250	23.7	0.5	0.5	1481.25

Calculate new load

number of tanks	input from septic systems to be connected	% TN remaining after treatment (18% remaining going from 45 mg/l to 8 mg/l)	attenuation factor for wastewater application (RIB .75)	recharge factor	load to groundwater after treatment
250	23.7	0.18	0	0	0

Reduction in load to springshed lb/yr

1481.25

Cost effectiveness calc for 30 year period

Project cost	cost/ TN reduction	Cost/lb TN / 30 years
\$2,950,000	\$1,991.56	\$66.39

= Input

= output

	I. TOTAL PROJECT COST					II. Year 1 - Project Funding Breakout											II. Year 2 - Pr				
C o u n t	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Match	TOTAL Project Cost	DEP/State Funding Amount	Local Match - Cash	Local Match - In- kind Efforts	Local Match - Companion Projects	Local Match - Other	WMD Match - Cash	WMD Match - In- kind Efforts	WMD Match - Companio n Projects	WMD Match - Other	Third Party Funding	TOTAL Year 1 Funding	DEP/State Funding Amount	Local Match - Cash	Local Match - In- kind Efforts	Local Match - Companio n Projects	Local Match - Other
1	\$ 10,802,608	\$ -	\$ -	\$ -	\$10,802,608	\$ 2,160,522										\$ 2,160,522	\$2,160,522				
2	\$ -	\$ -	\$ -	\$ -	\$ -																
3	\$ -	\$ -	\$ -	\$ -	\$ -																
4	\$ -	\$ -	\$ -	\$ -	\$ -																
5	\$ -	\$ -	\$ -	\$ -	\$ -																

Project Funding Breakout							III. Year 3 - Project Funding Breakout					III. Year 4 - Project Funding Breakout					III. Year 5 - Project Funding Breakout				
C o u n t	WMD Match - Cash	WMD Match - In- kind Efforts	WMD Match - Companio n Projects	WMD Match - Other	Third Party Funding	TOTAL Year 2 Funding	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Funding	TOTAL Year 3 Funding	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Funding	TOTAL Year 4 Funding	DEP/State Funding Amount	Local Match Amount	WMD Match Amount	Third Party Funding	TOTAL Year 5 Funding
1						\$ 2,160,522	\$ 2,160,522				\$ 2,160,522	\$2,160,522					\$ 2,160,522				\$ 2,160,522
2																					
3																					
4																					
5																					

APP08

Florida Governmental Utility
Authority

Chatmire Septic to Sewer
Florida Governmental Utility
Authority



This application should be completed and emailed with the appropriate calculations and map to Lisa.Laupert@swfwmd.state.fl.us by 5:00PM on October 1, 2021.

1. Applicant Information

Entity Name:

Is the Entity designated as an economically disadvantaged community? Yes No

Project Manager Name:

Project Manager Address:

Project Manager Phone Number:

Project Manager Email Address:

2. Project Information

Project Name:

Project Type:

Is this a multiyear project? Yes No

Note: For multiyear funding request, please download the [multiyear funding request spreadsheet](#), complete the form, and send in with this application.

What is the anticipated start and end date for the work that will be conducted under this funding request (in MM/DD/YYYY)?

Start Date: End Date:

If applicable, please list the design and construction start and end dates (MM/DD/YYYY).

Design: - Construction: -

3. Project Benefit

Quantity of Water Made Available (mgd):

Land Acquisition within Basin Management Action Plan (acres):

Nitrogen Reduced (lbs/year):

Sediment Reduced (lbs/year):

Please download the the [FDEP Springs Funding guidance](#) document. Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Please provide a full description of the project. For multiyear funded projects, please provide a description of the complete project, beginning to end, and a description explaining what phase will be covered by this funding request application.

4. Project Funding Information

Are you applying for CFI funding this fiscal year? Yes No

Have you received springs funding or CFI funding for this project in the past? Yes No

Enter the funding amount that has been received and/or is being requested:

	Previous	FY2023	Future	Total
FDEP Springs Funding				
WMD CFI Funding				
Local Funding				
Other Funding				
Total				

~~QÔÖQ~ } ää * Á æ Á [öä] | ä ä Ä | Ë | ^ æ ^ Á [ç ^ Ä Å ^ & ç } Ä Ë~~ In the event this project is not awarded CFI funding, please use the table below to reflect how the costs will be handled without CFI funding.

	Previous	FY2023	Future	Total
FDEP Springs Funding				
Local Funding				
Other Funding				
Total				

5. Project Location Information (please submit a map with this application)

County

Latitude (decimal degrees)

Longitude (decimal degrees)

What is the spring name that will receive the benefit?

Is this spring deemed impaired? Yes No

What is the distance from the project to the spring receiving the benefit?

Is this project in a Basin Management Action Plan (BMAP)? Yes No

Is this project in the Priority Focus Area (PFA) of the BMAP? Yes No

Is this project listed in the BMAP project list? Yes No No, but will be in an update

BMAP project number:

Is this project listed in a recovery strategy, prevention strategy, or regional water supply plan

as benefiting an MFL? Yes No If yes, please describe below:

Strategy name:

Project number:

Project name as listed:

Please describe any other recovery, prevention, or regional water supply plans or strategies

this project is part of:

Please download the the [FDEP Springs Funding guidance document](#). Benefit calculations should be provided demonstrating how the benefit calculation was derived. A Map should be included showing the area of the project and depict notable features.

Provide any additional information below that is pertinent to the review of this application. Include information on any existing ordinances, capital improvement plans, or master plans.

Don't forget to submit

- Benefit Calculations
- Map
- Form A (Wastewater Collection and Treatment Projects)
- Form B (Water Quantity Projects & Reuse)
- Form C (Land Acquisition Projects)

Please contact Frank Gargano with any questions prior to submittal. Frank.Gargano@swfwmd.state.fl.us

Form A: Wastewater Collection & Treatment Projects Only

What is the name of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What is the facility ID of the wastewater treatment facility where the project intends to send flows once connected to sewer:

What level of treatment is offered at the wastewater treatment facility?

At the wastewater treatment facility, where is the final treated wastewater sent?

What is the current capacity of the wastewater treatment facility (mgd)?

What is the annual average of flow received by the wastewater treatment facility (mgd)?

What is the annual average of total nitrogen leaving the treatment facility (mg/L)?

How much additional flow will be received by the treatment facility due to the project (mgd)?

Please describe any proposed costs for the resident/property owner for connection to sewer. Will connection and/or impact fees be charged? If so, how much are the fees? What will the fees cover?

Is any land acquisition necessary? If so, please describe below.

Yes

No

What length of forcemain and pipe sizing is necessary? Please describe below.

Form A: Wastewater Collection & Treatment Projects Only

Septic to Sewer Conversion Projects Complete this Section:

How many septic tanks will be connected to sewer through this project? Please provide the database source for this calculation or provide as an attachment.

How many of the septic tanks in this project are commercial tanks?

If commercial tanks are included in this project, provide type of commercial use and heated/ac square footage of the associated buildings below.

Is there a local ordinance in place that requires proper abandonment of septic system and connection to an available sewerage system, as defined by in Section 381.0065(21), Florida Statutes (F.S.)? Yes No

How many of the septic tanks service multi-family homes?

If there are more requirements to the local ordinance, such as limiting future installation of septic systems, please describe and reference the ordinance below.

Package Plant Conversion Projects Complete this Section:

What is the annual average flow (actual, not permitted) from the package plant (mgd)?

What is the annual average concentration (actual, not permitted) of total nitrogen (mg/L)?

Form B: Water Quantity Projects

For Agricultural Projects associated with irrigation system efficiency improvements:

Proposed irrigation system efficiency (%):

Prior irrigation system efficiency (%):

Average metered water use for the past 5 years (mgd):

For Reclaimed Water Projects:

Note: Refer to Appendix D of the [Springs Funding Guidance](#) for how to calculate the following:

Projected Reuse Flow (mgd):

Percent Offset (%):

Was Percent Offset determined by Table 1 of the Springs Funding Guidance?

Yes

No

Percent Recharge (%):

Form C: Land Acquisition Projects Only

What is the current landuse? If mixed, please depict acreage for each land use.

What will be the landuse once purchased?

What is the recharge potential (mgd)?

Does a portion of the land to be acquired lie outside of the BMAP?

Yes

No

Please note, the portion of land outside of a BMAP for a land acquisition project should not be included in reporting acreage preserved.



					DESIGNED	KFRASER	 <p>730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821 8657 BAYPINE ROAD, BLDG. 5, SUITE 300 JACKSONVILLE, FLORIDA 32256 / (904) 744-5401</p>	FLORIDA GOVERNMENTAL UTILITY AUTHORITY CHATMIRE SEPTIC TO SEWER PROJECT (DUP12)	PROPOSED LAYOUT	PROJECT NO:	DATE:
				DRAWN	DSHELDON	06791-008-01				APRIL 2021	
				CHECKED	WLYNCH	INDEX NO:				DWG NO:	
LTR.	DATE	REVISIONS	BY	APPRD.						FIG 1	



					DESIGNED	<u>WLYNCH</u>
					DRAWN	<u>SMENARD</u>
					CHECKED	<u>WLYNCH</u>
LTR.	DATE	REVISIONS	BY	APPRD.		

JonesEdmunds

730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
8657 BAYPINE ROAD, BLDG. 5, SUITE 300 JACKSONVILLE, FLORIDA 32256 / (904) 744-5401

**FLORIDA GOVERNMENTAL UTILITY AUTHORITY
CHATMIRE SEPTIC TO SEWER PROJECT
(DUP12)**

PROPOSED PHASE 2 FM ROUTING

PROJECT NO: 06791-008-01	DATE: APRIL 2021
INDEX NO:	DWG NO: FIG 2

FDEP method

	PM to enter data
	= Output
	Do not change contents of cell

Recharge Factor **NSILT Recharge Factor GIS Viewer Link (2016)** <https://www.arcgis.com/home/webmap/viewer.html?webmap=50f845b3ace54f48b56c6db877cf626d>

0.1 mgd or greater WWTP locations **Reclaimed water lines and facilites within SWFWMD** http://www21.swfwmd.state.fl.us/maps/pages/viewer_rw.html

Septic to Sewer Projects

Calculate Base Load	Calculate New Load		Cost Effectiveness Calculation for 30 Year Period	
Number of Septic Tanks	210	Traditional	AWT	
Typical septic TN input to environment (lb/yr)	23.7	210		Project Cost
Typical Septic Attenuation	0.5	23.7		cost/lb TN
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	0.18	0.07	Cost/lb TN / 30 years
Septic System Load to Groundwater	2240	0.4		
		0.9		
		323	125	
		Reduction in Load to Springshed lb/yr		
		1917	2114	

WWTP Upgrade Projects

Calculate Base Load	Calculate New Load	Cost Effectiveness Calculation for 30 Year Period	
WWTP annual average TN concentration in mg/l	0	WWTP upgrade	
annual average flow in mgd (actual not permitted)	0	Project Cost	
Conversion	8.345	cost/lb TN	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0.9	Cost/lb TN / 30 years	
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0.4	#DIV/0!	
original load to springshed lbs/year	0	#DIV/0!	
		Reduction in Load to Springshed lb/yr	
		0	

WWTP application method change

Calculate Base Load	Calculate New Load	Cost Effectiveness Calculation for 30 Year Period	
WWTP annual average TN concentration in mg/l	0	WWTP upgrade	
annual average flow in mgd	0	Project Cost	
Conversion	8.345	\$0	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0	cost/lb TN	
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0	#DIV/0!	
original load to springshed lbs/year	0	Cost/lb TN / 30 years	
		#DIV/0!	
		Reduction in Load to Springshed lb/yr	
		0	

Advanced nitrogen reducing septic systems

Calculate Base Load	Calculate New Load		Cost Effectiveness Calculation for 30 Year Period	
Number of Septic Tanks	0	advanced system 65% TN reduction	advanced system 93% TN reduction	
Typical septic TN input to environment (lb/yr)	23.7	0		Project Cost
Typical Septic Attenuation Soil + drainfield	0.5	23.7		cost/lb TN
Recharge Factor (0.9, 0.5, 0.1, or 0)	0	0.8		Cost/lb TN / 30 years
Septic System Load to Groundwater lbs/year	0	0	0	
		0.35	0.07	
		0	0	
		Reduction in Load to Springshed lb/yr		
		0	0	

Package Plant Connection

Calculate Base Load	Calculate New Load	Cost Effectiveness Calculation for 30 Year Period	
Package plant annual average TN concentration in mg/l *	0	WWTP upgrade	
annual average flow in mgd (actual not permitted)	0	Project Cost	
Conversion	8.345	\$0	
Recharge Factor (0.9, 0.5, 0.1, or 0)	0	cost/lb TN	
Attenuation Factor for Wastewater Application (RIB .75, Reuse .25, Sprayfield .40)	0	Cost/lb TN / 30 years	
original load to springshed lbs/year	0	#DIV/0!	
		Reduction in Load to Springshed lb/yr	
		0	

* based on basic level disinfection treatment average of 15.35 mg/l TN per 2009 FDEP reuse study data. If legitimate water quality data exist for the specific package plant use that data instead.

Calculate base load				
Number of septic tanks	typical septic TN input to environment (lb/yr)	Septic attenuation	Recharge factor (0.9, 0.5, 0.1, or 0)	Septic system load to ground water
250	23.7	0.5	0.5	1481.25

Calculate new load				
number of tanks	input from septic systems to be connected	% TN remaining after treatment (18% remaining going from 45 mg/l to 8 mg/l)	attenuation factor for wastewater application (RIB .75)	load to groundwater after treatment
250	23.7	0.18	0	0

Reduction in load to springshed lb/yr

1481.25

Cost effectiveness calc for 30 year period		
Project cost	cost/ TN reduction	Cost/lb TN / 30 years
\$2,950,000	\$1,991.56	\$66.39

= Input

= output

