FLORIDA DEPARTMENT OF Environmental Protection

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3900 Commonwealth Boulevard
Tallahassee, FL 32399

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Interim Secretary

June 30, 2021

The Honorable Ron DeSantis
Governor of Florida
Plaza Level 01, The Capitol
400 South Monroe Street
Tallahassee, Florida 32399

The Honorable Wilton Simpson
President, Florida Senate
Room 409, The Capitol
404 South Monroe Street
Tallahassee, Florida 32399-1100

The Honorable Christopher Sprowls
Speaker, Florida House of Representatives
Room 420, The Capitol
402 South Monroe Street
Tallahassee, Florida 32399-1300

Ms. Amy Baker
Office of Economic & Demographic Research
Suite 574
111 West Madison Street
Tallahassee, Florida 32399-6588

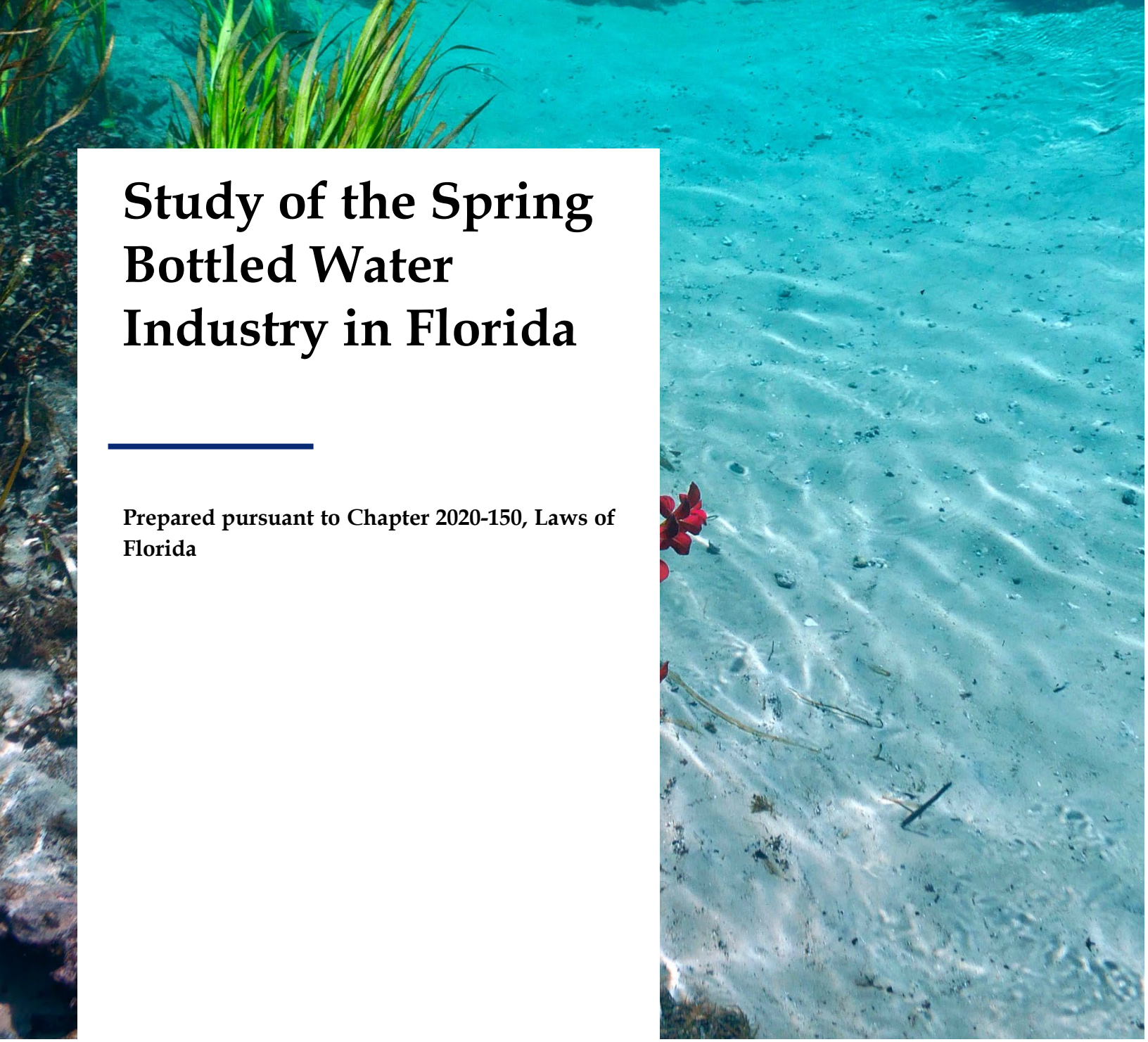
Dear Governor DeSantis, President Simpson, Speaker Sprowls and Ms. Baker:

The Florida Department of Environmental Protection (DEP) is committed to protecting Florida's water resources, which are vital to Florida's environment, economy and communities. In fulfillment of Senate Bill 712, also known as the Clean Waterways Act, DEP has prepared a report detailing the findings of a bottled water industry study for facilities producing its product with water derived from a spring. DEP is pleased to present the Study of the Spring Bottled Water Industry in Florida, with key findings on the withdrawals from springs for bottled water use, bottled water regulations, and the economic impacts of bottled water in Florida. This report was developed by DEP in coordination with the state's water management districts.

If you have questions regarding this report, please feel free to contact me or Adam Blalock, Deputy Secretary for Ecosystem Restoration, at (850) 245-2031.

Sincerely,

Shawn Hamilton
Interim Secretary



Study of the Spring Bottled Water Industry in Florida

Prepared pursuant to Chapter 2020-150, Laws of Florida

JUNE 2021

Department of Environmental Protection

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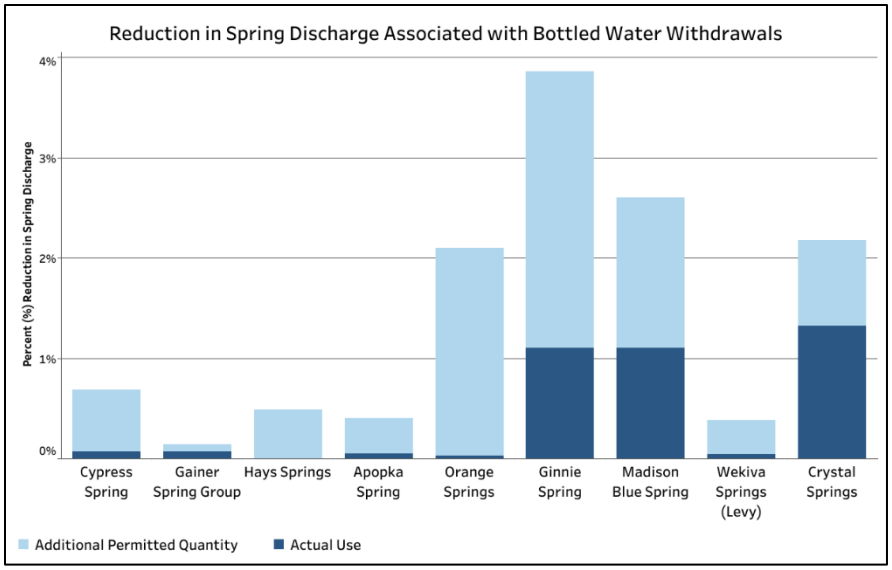
Executive Summary

Senate Bill 712, also known as the Clean Waterways Act, was passed by the 2020 Florida Legislature and was subsequently signed into law by Governor DeSantis. The bill, codified in Chapter 2020-150, Laws of Florida, Section 4, directs the Florida Department of Environmental Protection (Department) and Water Management Districts (WMDs or Districts) to complete a bottled water industry study (Study) for facilities producing its product with water derived from a spring. The study requires presentation of information relating to the spring and its legal status; withdrawals; bottled water labeling requirements; economic benefits to local communities relating to the bottling of spring water as well as the spring's recreational value; and additional information relating to spring water bottling.

As presented in this Study, nine permits were evaluated as withdrawing from springs for bottled water. The springs include two Outstanding Florida Springs; three springs with Minimum Flows; and one spring associated with the Lower Santa Fe and Ichetucknee River Recovery Strategy. Based on economic analyses, these springs bottled water facilities may generate approximately $108 million in economic benefits and 467 jobs in the communities in which they reside. Recreation associated with these springs additionally generate economic benefits in some of these communities, estimated at $26 million and providing 200 jobs.

Based on 2019 spring bottled water withdrawals, the estimated reductions in spring discharge associated with those withdrawals ranged from 0.0% to 1.3% while permitted authorizations are estimated to result in a reduction in spring discharge between 0.14% to 4.5%. Three springs have been impacted by spring bottled water withdrawals with a reduction in spring discharge greater than 1%, while the next highest was at a reduction of 0.16% and most others far below that.



With the three exceptions identified above, bottled water withdrawals from most springs appear to result in little change in total discharge from the spring itself. Those three exceptions may illustrate how a relatively modest withdrawal quantity located in close proximity to a spring can impact that spring compared to other users who may be located further away from the spring vent.

Water Use from Springs for Bottled Water

The withdrawal of water for reasonable-beneficial use is authorized through the state's consumptive use permitting program established under Part II of Chapter 373, Florida Statutes, and implemented by the state's five water management districts. To receive a consumptive use permit, applicants must establish that their use is reasonable-beneficial; that it will not interfere with any presently existing legal use of water; and that it is consistent with the public interest.[1] An applicant must show that a withdrawal does not cause harm to the water resources of the area.[2]

Additionally, water management districts adopt minimum flows or minimum water levels (MFLs) where necessary and in accordance with state statute. MFLs are established as the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area.[3] In accordance with statute, the water management districts must submit an MFL Priority List and Schedule to the Department by November 15th each year, and this schedule identifies the minimum flows and levels planned for establishment in the next three years.[4] No permit may be issued in violation of an MFL.

Springs Associated with Bottled Water

There are more than 1,000 springs in the state, each with "immeasurable natural, recreational, economic, and inherent value."[5] Springs can be classified based on the average discharge of water, for which there are eight magnitude categories. For the purposes of this report, all springs referenced are either first magnitude (average discharge of 100 cubic feet per second (cfs) or higher), second magnitude (average discharge between 10 and 100 cfs), or third magnitude (average discharge between 1 and 10 cfs). The Florida Geological Survey (FGS) recognizes two types of springs in Florida: seeps (or seepage springs) and karst (or artesian) springs. Seepage springs occur in areas where groundwater moves laterally through permeable sediments and discharges at the surface through diffuse flow. When groundwater under artesian pressure discharges to the land surface through an opening in the limestone bedrock, called a vent, they

[1] Section 373.223(1), F.S.
[2] Section 373.219(1), F.S.
[3] Section 373.042, F.S.
[4] Section 373.042(3), F.S.; Rule 62-40.673(9), Florida Administrative Code
[5] Florida Geological Survey, Springs of Florida: Bulletin No. 66 (Revised), published October 12, 2004 and available at publicfiles.dep.state.fl.us/FGS/WEB/springs/bulletin_66.pdf.

are classified as karst springs.[6] This report focuses on karst springs from which bottled water facilities withdrawal groundwater.

Additionally, there are legal classifications for springs, such as the 2016 designation by the Florida Legislature of 30 Outstanding Florida Springs (OFS), which provides additional protections to ensure their conservation and restoration. "Outstanding Florida Spring" is defined as all historic first magnitude springs, including their associated spring runs, as well as De Leon, Peacock, Poe, Rock, Wekiwa and Gemini Springs and their associated spring runs. It does not include submarine springs or river rises.[7]

Identifying Applicable Permits

The Department evaluated eleven permits that authorize a use for bottled water and derive water from springs. Two of those permits have been excluded from further analysis in this report for not meeting the intent of the report and are detailed below.

Northwest Florida Water Management District permit 2E-077-5907-6 for Shuler Springs, LLC, is permitted to withdraw water from White Springs in Liberty County for bottled water. White Springs was historically a small linear stream reach that occupied an erosional valley. The seepage spring currently is located along the downstream embankment on the most downgradient impoundment in a series of manmade impoundments. Because it is classified as a seep and not a karst spring, the Department has excluded it from further analysis in this report.

Southwest Florida Water Management District permit 10646 for Safety Harbor Resort and Spa includes the withdrawal of water from Espiritu Springs, a 4th magnitude artesian spring with historical value.[8] Spring water is authorized for use for the resort's boiler feed and make up water, pools, laundry, and HVAC cooling. Additionally, it is authorized for bottling water with an annual volume of only 10,400 gallons. As the bottling is not associated with a wider commercial effort and the withdrawal of water associated with bottling is extremely small, this permit was excluded from further analysis.

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[6] Florida Geological Survey, Springs of Florida: Bulletin No. 66 (revised).
[7] Section 373.802(4), F.S.
[8] Espiritu Spring is a fourth magnitude spring group located in Pinellas County. It is historically known as "Espiritu Santo Springs," the name given by the Spanish Explorer Hernando de Soto in 1539, and it was designated a Historical Landmark by the U.S. Department of the Interior in 1964 and a Florida Heritage Landmark in 1997. There are five known spring vents associated with the spring group, and the site is currently run as the privately-owned Safety Harbor Resort and Spa.

Based on the foregoing, this report further evaluates nine permittees that have a consumptive use permit for bottled water derived from a spring.

Legal Status of Springs Associated with Bottled Water

Nine springs associated with bottled water include Cypress Spring, Gainer Spring Group, Hays Springs, Apopka Spring, Orange Springs, Ginnie Spring, Madison Blue Spring, Wekiva Springs (in Levy County), and Crystal Springs (in Pasco County) (Figure 1). Out of these nine springs, two are identified as an OFS (Gainer Spring Group and Madison Blue Spring).

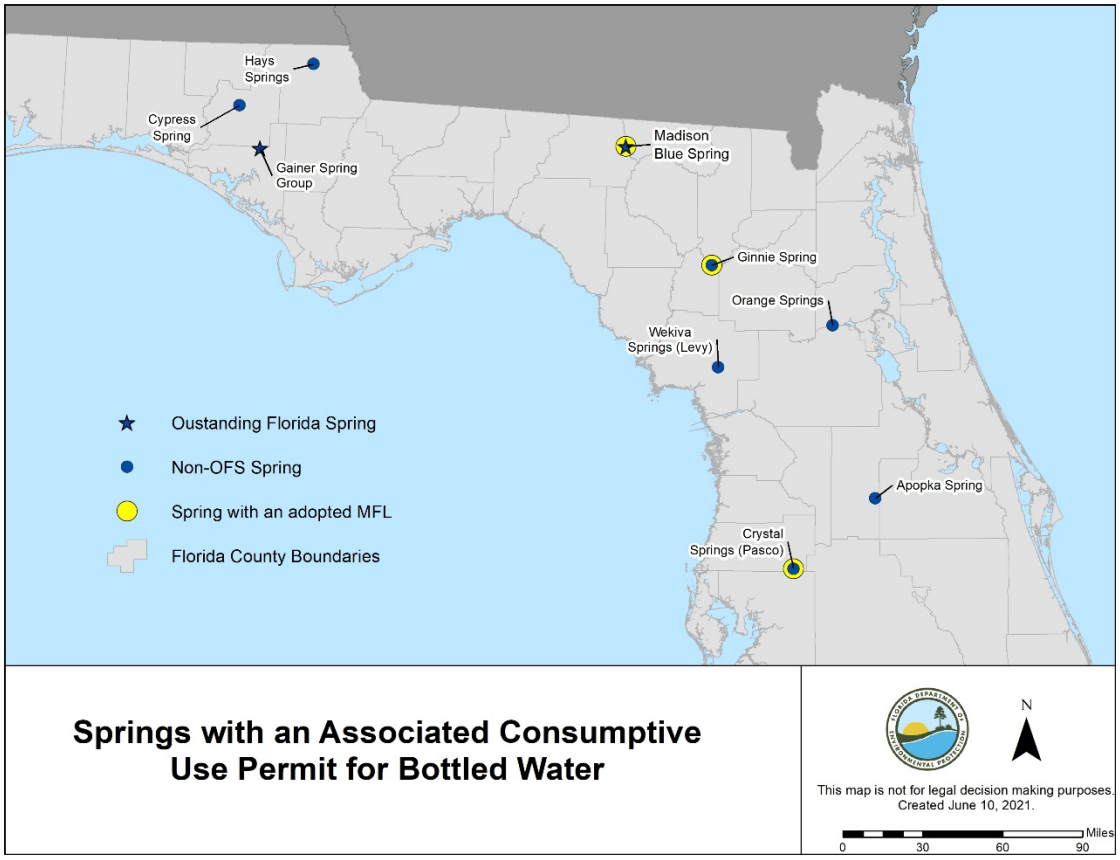

Figure 1. Map of springs associated with bottled water permits.

Additionally, three of the nine springs have an adopted minimum flow (or MFL), including Crystal Springs, Madison Blue Spring, and Ginnie Spring. Water management districts monitor the water resources within their district and adopt new MFLs or periodically reevaluate existing MFLs as needed in accordance with their approved MFL Priority List and Schedule. The MFL Priority Lists, which are required to be submitted and approved by the Department annually, identify waterbodies for which an MFL adoption or re-evaluation is planned. Re-evaluations are

an adaptive management strategy to incorporate new data and methods to ensure the best available science is used. If necessary, re-evaluations may result in the adoption of a revised MFL.

The Crystal Springs MFL was adopted in 2008 by the Southwest Florida Water Management District and, both at the time of adoption and as of March 2021, was identified as meeting its MFL. Therefore, no associated recovery or prevention strategy is required.[9]

Madison Blue Spring's MFL was adopted by the Suwannee River Water Management District in 2005. At the time of adoption and as of March 2021, this OFS spring's status was identified as meeting the MFL. However, the district's 2018 Regional Water Supply Assessment noted that results from the North Florida Southeast Georgia Groundwater Flow Model indicate that Madison Blue Spring "warrants a more detailed evaluation of [its] status, based on simulated changes in flow under 2009 conditions" and that "estimated changes in flow modeled along the Withlacoochee River (including Madison Blue Spring and Pot Spring)… warrant further scrutiny."[10] The district recommended, and has commenced, further regional water supply planning in this area. Additionally, the district has included Madison Blue Spring on its Priority List for re-evaluation (along with a new MFL for the Withlacoochee River into which Madison Blue flows).

Ginnie Springs discharges to the Lower Santa Fe River. These base flows are "essential to the protection of the Lower Santa Fe River Basin."[11] Devil's Ear, also referred to in the rule as "Ginnie Group," is included in the MFLs for the Lower Santa Fe and Ichetucknee Rivers and Priority Springs, which were adopted in 2015. The recovery strategy provides that potential impacts to the MFL water bodies be assessed based on potential changes to flow at the Lower Santa Fe River Ft. White Gage and the Ichetucknee River US Highway 27 Gage. These gages were identified as being in recovery, meaning the flows were not meeting the MFL. The recovery strategy includes regulatory and nonregulatory provisions. The MFL for the Lower Santa Fe and Ichetucknee River and Priority Springs is currently under re-evaluation.

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[9] See sections 373.042 and 373.0421, F.S

[10] Suwannee River Water Management District, 2015-2035 Water Supply Assessment, pp. 4, 76, published July 10, 2018, and available at https://www.mysuwanneeriver.com/DocumentCenter/View/15162/2015-2035-Water-Supply-Assessment-PDF.

[11] Suwannee River Water Management District, Lower Santa Fe and Ichetucknee River MFL Technical Report, published November 22, 2013, and available at https://www.mysuwanneeriver.com/DocumentCenter/View/9023/Lower-Santa-Fe--Ichetucknee-Rivers-MFL-Report-2013-11-22.

Table 1. Springs with an Associated Consumptive Use Permit for Bottled Water

Water Management District	Spring Name	Spring Magnitude	OFS Status	Adopted MFL	MFL Adoption Year	MFL Status[1]
NWFWMD	Cypress Spring	2	No	No	N/A	N/A
NWFWMD	Gainer Spring Group	1	OFS	No	N/A[2]	TBD
NWFWMD	Hays Springs	2	No	No	N/A	N/A
SJRWMD	Apopka Spring	2	No	No	N/A	N/A
SJRWMD	Orange Springs	3	No	No	N/A	N/A
SRWMD	Ginnie Spring	2	No	Yes	2015	Recovery
SRWMD	Madison Blue Spring	1	OFS	Yes	2005	Meeting
SRWMD	Wekiva Springs (Levy)	2	No	No	N/A	N/A
SWFWMD	Crystal Springs (Pasco)	2	No	Yes	2008	Meeting

[1] The MFL status as of March 2021 is reflective of the most recent reporting and can be found in the Department's 2020 Statewide Annual Report, available at https://floridadep.gov/STAR. For Ginnie Spring, the MFL Status is for the Lower Santa Fe and Ichetucknee River at the Fort White and Hwy 27 gages.

[2] Outstanding Florida Springs in NWFWMD are required to have an MFL no later than July 1, 2026.

Descriptions of Springs

The individual characteristics of springs can provide varied opportunities for recreation. A description of each of the springs associated with the nine bottled water permits is provided to give context to the setting of these withdrawals. A more detailed description and photographs are provided in the FGS Bulletin 66.[12]

Cypress Spring

Cypress Spring is a second magnitude spring in Washington County. The average spring discharge is 90 cfs, the diameter of the spring pool is approximately 150 feet, and the maximum depth is 29 feet.[13] The spring has a 1,400-foot spring run that flows into Holmes Creek. The spring is used for swimming, canoeing, kayaking, tubing, and snorkeling as well as cave diving.

Gainer Spring Group

Gainer Spring Group is first magnitude spring group located in Bay County. A spring group is a collection of individual spring vents that share a hydrogeological connection and typically discharge to a common spring run. Their flow is evaluated as a group, though the individual

[12] Florida Geological Survey, Springs of Florida: Bulletin No. 66 (Revised), published October 12, 2004 and available at publicfiles.dep.state.fl.us/FGS/WEB/springs/bulletin_66.pdf.

[13] Northwest Florida Water Management District, Holmes Creek Inventory Washington County, FL: Water Resources Special Report 2008-01, published December 2008 and available at https://www.nwfwater.com/content/download/1340/11594/WRSR-2008-01.pdf.

vents may be measured as necessary. Gainer Spring Group is comprised of at least five known spring vents that discharge to Econfina Creek, of which Emerald and McCormick springs are the largest. The average discharge of the group is 161 cfs. Swimming and canoeing are common recreational activities that occur at all vents of Gainer Spring Group as well as kayaking, tubing and snorkeling. Additionally, Gainer Spring Group is an OFS and is on the Northwest Florida Water Management District's Priority List and Schedule for adoption by the statutory deadline of July 1, 2026.[14]

Hays Springs

Hays Spring is a second magnitude spring in Jackson County. The average spring discharge is 31 cfs, and the spring pool is 14.9 feet deep directly over the vent. Hays Spring Run exits the pool on the southwest side and flows into the Chipola River. The spring is surrounded by private lands and there are no public recreational activities at the spring.

Apopka Spring

Apopka Spring is a second magnitude spring located in Lake County. The spring is in an open cove on the northwest side of Gourd Neck, which is on the southwest side of Lake Apopka. The vent is 45 feet below the surface a bowl-shaped spring depression, and an underwater cave system is present. Apopka Spring is accessible by boat only. Recreational opportunities can include fishing, scuba diving and snorkeling, although the clarity of lake can at times impact the ability to scuba or snorkel in the spring.

Orange Springs

Orange Springs is third magnitude spring located in northern Marion County. The spring is in a slightly ovoid depression entirely ringed with a rock retaining wall that was constructed in the early 1900s. The pool depth over the vent is 12 feet. The 500-foot spring run exits the pool over a man-made limestone waterfall on the northeast side to join Orange Creek. The spring was an attraction during the 19th and early 20th centuries, but it is now closed to the public.

Ginnie Spring

Ginnie Spring is a second magnitude spring located within a privately-operated park and resort in Gilchrist County offering recreational opportunities such as swimming, diving, boating, and camping for a fee. The spring pool is 90 feet across and 12 feet deep at the center and the 500-foot long spring run flows into the Lower Santa Fe River. There is a mapped cave system associated with the spring; however, the entrance is gated to keep divers from entering it. Ginnie

[14] See section 373.042(2)(a), F.S.

Spring is proximate to several other springs including Devil's Ear, Devil's Eye and July Spring. Extensive cave systems have been mapped by divers in this area that reflect the nature of the karst aquifer in which they are developed. These large, interconnected cave passages rapidly transmit enormous quantities of groundwater and discharge to the Santa Fe River.

Madison Blue Spring
Madison Blue Spring is a first magnitude Outstanding Florida Spring located within Madison Blue Spring State Park in Madison County. The spring pool is 24 feet deep and it is surrounded by vertical limestone walls. The spring run is 100 feet long and flows into the Withlachoochee River. There are extensive cave systems beneath the surface. Recreational activities at the state park include birding, fishing, paddling, picnicking, scuba diving, swimming, and tubing.

Wekiva Springs (Levy)
Wekiva Springs is a second magnitude spring group in Levy County comprised of many vents within three spring pools. (It should not be confused with Wekiwa Springs in Orange County.) The main vent is in the southernmost pool and has pool depth of 30 feet. A man-made stone wall containing a water wheel partially separates the pool from the 70-foot spring run, which flows into the Wekiva River. The springs are located on private property and not open for recreation.

Crystal Springs (Pasco)
Crystal Springs is a second magnitude spring group in Pasco County. The springs are located in a shallow pool that is formed by a dam on the southeast side of the Hillsborough River. Water discharges through a culvert in the dam directly to the Hillsborough River. The springs are owned by Crystal Springs Preserve and are operated as a part of an educational facility where students partake in environmental educational programs.

Withdrawals from Springs for Bottled Water

At the time of this report, there were 25 individual consumptive use permits (CUPs) issued to permittees for the bottling of water in Florida. As previously indicated, nine of these permits are associated with the withdrawal of water derived from a spring applicable to this Study.

Permitted and Actual Withdrawals

The permitted quantities and the actual use for each spring withdrawal are presented in Table 2. Permitted and actual withdrawal figures can be substantially different as consumptive use authorizations are typically for 20 years and are intended to account for projected growth in

demand over the permit duration. For the purpose of this report, the actual use was determined as the average water use for 2019 with the exception of Ice River Springs USA, Inc., which uses the average for 2017 because this was the last full year of data collected prior to disruptions to withdrawals resulting from impacts due to Hurricane Michael in 2018.

Table 2. Permitted and Actual Water Use

Water Management District	Permit #	Current Permittee	Associated Spring Name	Permit Duration	Permitted Quantity (mgd)	Average Water Use (mgd)	Acts as Bottler[1]
NWFWMD	2B-133-6638-5	BlueTriton Brands, Inc. (formerly Nestlé Waters North America)[2]	Cypress Spring	6/15/2021 – 12/1/2028	0.395	0.042	Yes
NWFWMD	2E-005-3323-8	Johnny & Jimmy Patronis	Gainer Spring Group	7/16/2014 – 10/1/2033	0.150	0.072	No
NWFWMD	2E-063-7223-2	Ice River Springs USA, Inc.	Hays Springs	9/22/2014 – 4/1/2032	0.100	0.010	No
SJRWMD	51056	Spring of Life Spring Water, Inc.	Apopka Spring	1/5/2012 – 9/11/2022	0.274	0.047	No
SJRWMD	3138	L.T.D. Unlimited, LLC.	Orange Springs	7/19/2016 – 6/14/2031	0.197	0.003	Yes
SRWMD	2-041-218202-3	Seven Springs Water Company	Ginnie Spring	2/24/2021 - 2/24/2026	0.984	0.276	No
SRWMD	2-079-218544-9	BlueTriton Brands, Inc. (formerly Nestlé Waters North America)[2]	Madison Blue Spring	11/11/2014 – 5/6/2028	1.613	0.701	Yes
SRWMD	2-075-221114-3	DS Services of America, Inc.	Wekiva Springs (Levy)	12/11/2018 – 12/11/2038	0.127	0.014	No
SWFWMD	9132	Crystal Springs Preserve, Inc.	Crystal Springs	2/24/2009 – 2/24/2029	0.756	0.586	No

[1] Permittees may bottle the water in facilities they own or operate or may sell to another company who bottles the water. This column identifies those permits that both withdraw the water and bottle the water at a facility they own or operate.

[2] The permits associated with BlueTriton Brands, Inc., were formerly associated with Nestlé Waters North America. For the purposes of this report, information associated with data related to the former named permittee has been used, but the names may be used interchangeably in this report.

Impacts to Spring Discharge

Groundwater withdrawals, individually and cumulatively, can contribute to reduced spring discharge. However, not all reductions in spring discharge constitute harm or significant harm. To understand impacts to spring discharge, the water management districts use a number of methods to assess the impacts to groundwater and surface waters, including springs. This may include data collection and evaluation, and/or modeling of surface and/or groundwater systems. Hydrologic monitoring is also often a condition of permit issuance that occurs for the duration of the permit.

Analytical or numerical groundwater flow models may be used to simulate aquifer drawdowns associated with requested groundwater withdrawals. Table 3 presents the calculated percent reductions in average spring discharges for the permitted quantity and actual water use for each of the springs associated with a bottled water permit where such information is available. [15]

Table 3. Modeled Percent Reduction in Average Spring Discharge from Permitted and Actual Water Use for Spring Bottled Water and All Users

Water Management District	Spring Name	Avg. Spring Discharge (cfs)	Bottled Water % Reduction in Average Spring Discharge		Cumulative % Reduction in Average Spring Flow	
			Permitted Use	Actual Use	All Users (Projected to 2035 or 2040)[1]	All Users (Estimated Actual Use)
NWFWMD	Cypress Spring	90	0.68%[2]	0.07%[2]	Unquantified[3]	Unquantified[3]
NWFWMD	Gainer Spring Group	161	0.14%[2]	0.07%[2]	Unquantified[3]	Unquantified[3]
NWFWMD	Hays Springs	31	0.49%[2]	0.00%[2]	Unquantified[3]	Unquantified[3]
SJRWMD	Apopka Spring	31	0.35%	0.16%	24.11%	15.18%
SJRWMD	Orange Springs	3	2.10%	0.03%	5.40%	1.90%
SRWMD	Ginnie Spring	39	3.86%	1.10%	6.60%	3.30%
SRWMD	Madison Blue Spring	96	2.60%	1.10%	19.70%	12.30%
SRWMD	Wekiva Springs (Levy)	51	0.38%	0.04%	1.20%	0.21%
SWFWMD	Crystal Springs	54	2.18%	1.33%	11.98%	9.80%

[1] The model files used to estimate the cumulative percent reduction in spring flow includes the end of permit allocations for permitted users as well as projected allocations for agricultural use based on average use, domestic self-supply and subthreshold agricultural/landscape irrigation (i.e., withdrawals below the threshold for which an

[15] For the purpose of this report, the recorded average spring discharges were analyzed to determine the relative discharge reductions that would be expected given the permitted quantity and the actual water use.

individual permit is required). For SRWMD, the cumulative impacts also include estimates for Georgia uses represented by 2035 projected demand.

[2] This value within the NWFWMD is estimated only using a 1:1 withdrawal to impact ratio. The location of the wells associated with these permits include wells located some distance from the vent. Therefore, some of the values presented may be higher than the actual spring discharge reductions associated with the withdrawal.

[3] At this time the NWFWMD does not have calibrated numerical groundwater flow models in the vicinity of bottled water facilities and is unable to quantify the impacts to the individual springs from bottled water facilities and other users with a modeled percent reduction.

Of the spring bottled water withdrawals, many have an actual withdrawal of less than 100,000 gallons per day and result in estimated actual reductions in spring discharge of less than 0.2%. Three permittees, however, have withdrawals over that threshold and result in flow reductions greater than 1%. These include BlueTriton Brands, Inc. (formerly Nestlé Waters North America) at Madison Blue Spring, Seven Springs Water Company at Ginnie Spring, and Crystal Springs Preserve, Inc. at Crystal Springs.[16] Figure 2 shows the impact of all users and bottled water users as a percent reduction in average spring discharge due to the projected and actual use where that information is available.

Factors that can affect the size of the impact include total volume of withdrawal and proximity to the spring, among other hydrogeological factors. Direct water withdrawals from springs and spring conduits for water bottling or other permitted uses result in a reduction in spring discharge equivalent to the volume being withdrawn. Spring discharge is also sensitive to regional water uses, but the magnitude of flow change resulting from these withdrawals varies by proximity and other hydrogeologic factors. For example, a 1 million gallon per day (mgd) withdrawal directly from a spring vent may result in an approximate 1 mgd reduction in discharge from that spring; conversely, a permittee that withdraws 1 mgd from the aquifer several miles away will result in a smaller reduction of flow at the spring. This is how smaller total withdrawals can have a larger proportionate impact on spring discharge when the withdrawal is situated so close, or within, the spring.

To illustrate, Ginnie Spring is one of several springs that discharge to the Lower Santa Fe River. Regional groundwater flow model simulations for the Lower Santa Fe River at the Fort White gage indicate that, overall, public supply represents approximately 34% of flow change (associated with 253 mgd in withdrawals) and agriculture represents approximately 29% of flow

[16] Seven Springs Water Company sells exclusively to BlueTriton Brands, Inc. (formerly Nestlé Waters North America) at an adjacent bottling facility. Crystal Springs Preserve, Inc. sells to Zephyrhills Water Company and its parent corporation, Nestlé Waters North America.

change (associated with 218 mgd in withdrawals).[17] By comparison, the bottled water withdrawal at Ginnie represents 1.1% reduction in spring discharge while all uses together represent 3.3% reduction in spring flow (i.e., 33% of the discharge change is from the bottled water withdrawal, which is associated with an average 0.28 mgd 2019 withdrawal). It is the proximity to the spring and/or spring conduit that results in this proportionately high withdrawal ratio for some springs bottled water facilities.

[17] The remaining Lower Santa Fe River flow change is a result of commercial, industrial, institutional, landscape, recreational, domestic self-supply, out-of-state, and other water uses in North Florida and Southeast Georgia.

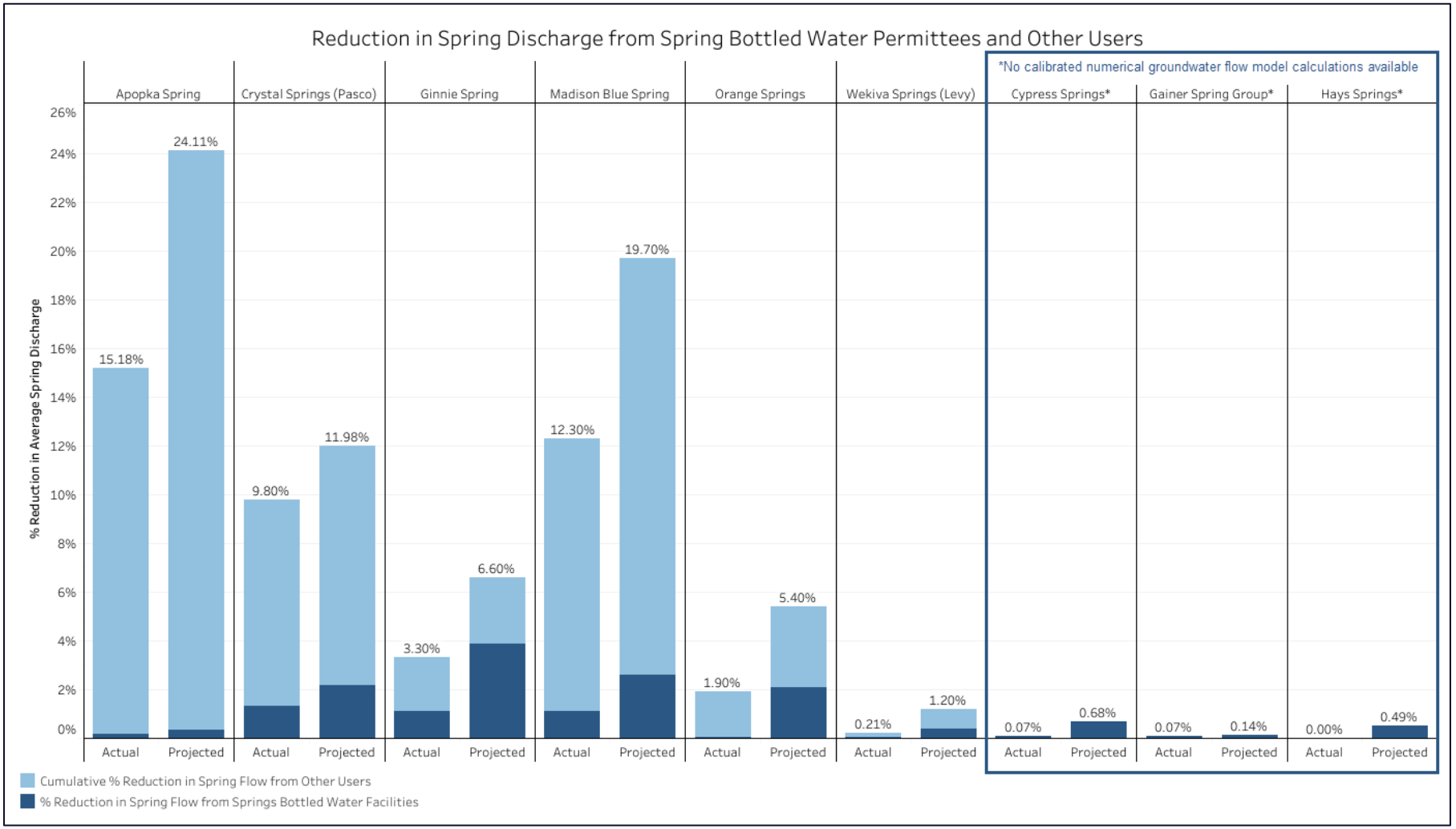
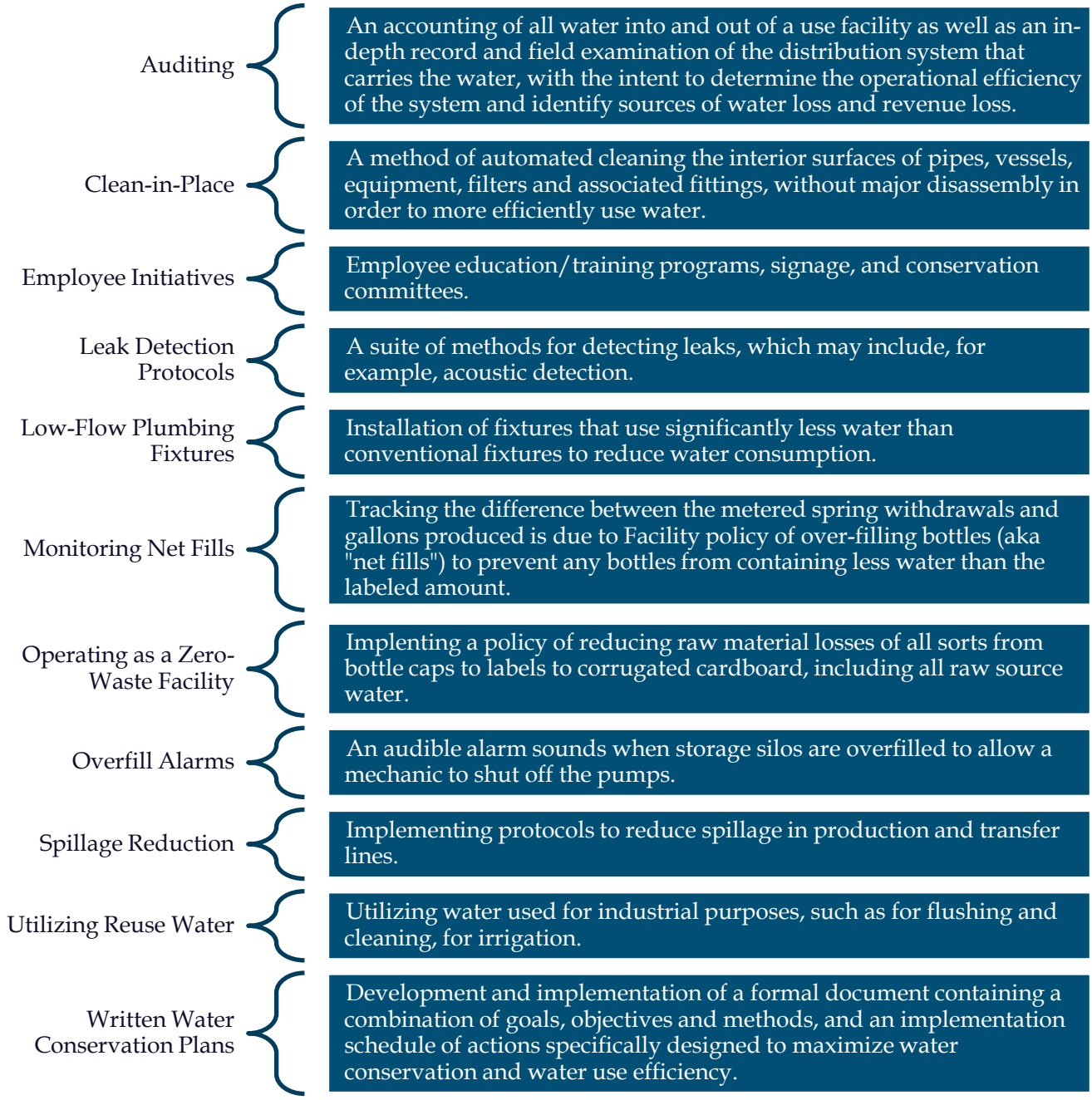


Figure 2. Reduction in spring discharge from Spring Bottled Water Permittees and Other Users

Conservation and Efficiency Measures

Efficient use of water is a key tenet of consumptive use permitting and is part of the reasonable-beneficial analysis. Commercial and industrial users have specific water conservation and efficiency requirements that are incorporated into enforceable conditions of individual permits. In many cases, water conservation measures associated with facility design are integrated into the water demand calculations. Additional water conservation and efficiency measures, such as those that may be associated with operations, can be incorporated into permit conditions and vary based on facility-specific evaluation of a facility's operation and include:



Bottled Water Regulations in Florida

While the water management districts regulate the withdrawal of water for bottling, the bottled water itself is considered a packaged food product and is regulated by the Food and Drug Administration (FDA) and Florida Department of Agriculture and Consumer Services (FDACS).[18] The FDA regulations for bottled water include standards of identity, manufacturing practices, quality criteria, and labeling requirements designed to address a broad scope of food manufacturing and safety issues.[19]

Bottled water manufacturers may label bottled water as "bottled water," "drinking water," or may use an alternative name, as appropriate, depending on the source, as is the case with "spring water." [20] Bottled water can be labeled spring water when the water "is derived from an underground formation from which water flows naturally to the surface of the earth."[21] Spring water may be collected in two ways: at the spring or through a bore hole tapping the underground formation feeding the spring. There must be a natural force causing groundwater to flow to the surface through a natural orifice to be labelled spring water. In addition, spring water collected with the use of an external force shall be from the same underground stratum as the spring, as shown by a measurable hydraulic connection using a hydrogeologically-valid method between the borehole and the natural spring; shall be of the same composition and quality as the water that flows naturally to the surface of the earth; and shall allow the water to continue to flow naturally to the surface of the earth through the spring's natural orifice.[22]

This definition may provide some incentive to site a withdrawal facility near a spring, as proximity may make demonstration of the above requirements easier and provide bottled water companies a higher degree of certainty that the label will be permissible. As previously explained, proximity to the spring can result in a proportionately high withdrawal ratio for some springs bottled water facilities.

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[18] The FDA requirements are set forth in 21 C.F.R. § 165.110. The Federal Food, Drug, and Cosmetic Act (FDCA), which provided the FDA authority to promulgate these regulations, preempts states from establishing any requirement for a food subject to an FDCA standard of identity that is "not identical to such standard of identity …" 21 U.S.C. § 343-1(a)(1). These requirements are incorporated into Chapter 500 of the Florida Statutes, which states '"Bottled water" means a beverage, as described in 21 C.F.R. part 165 (2006), that is processed in compliance with 21 C.F.R. part 129 (2006)." Section 500.03(1)(d), F.S.

[19] The FDA bottled water quality standards, by law, are as stringent as the U.S. Environmental Protection Agency's primary and secondary drinking water standards. Florida law incorporates these regulations by reference.

[20] 21 C.F.R. § 165.110(2)(i)

[21] *Id.* at § 165.110(2)(vi)

[22] *Id.*

Economic Analyses

Economic analyses were performed to identify key elements of this report. Data utilized includes publicly available data and reports. The Department did seek additional business-specific information, but informed businesses that disclosed information would be subject to Florida's public records requirements and that, therefore, the Department did not seek confidential information. As a result, confidential business information was not provided. Nevertheless, robust economic analyses were able to be performed. This section summarizes the findings of those analyses, with a more complete report attached as Appendix 1.

Economic Analyses of Spring Bottled Water Facilities

As previously detailed, there are nine permits associated with the withdrawal of water from a spring. Six of these nine permits are suppliers of water who do not act as the bottler. That is, the permittee, frequently the landowner, receives authorization to withdrawal water from the spring and thereinafter sells the water to a bottling facility. The bottling facility may be located in an adjacent facility or the water may be tankered, or trucked, to another community. For the purposes of this report, site specific financial information was not readily available; however, data made available by some bottlers, including a report provided by Nestlé Waters titled *Economic & Fiscal Impacts of Nestlé Waters in Florida*, have allowed the Department to estimate economic contributions of bottled water facilities to their local communities, including tax revenue, job creation and wages.

The economic study estimates that the total gross value of all activity within the impacted counties where permittees conduct operations associated with the bottled spring water industry in Florida is approximately $108.2 million. Other associated impacts of this industry are through the total employment of an estimated 467 people with an average salary of approximately $45,007, putting total earnings for the industry at $21 million. Additionally, other public benefits are displayed through state and local tax rates, with the total government revenues for the industry amounting to approximately $4.5 million.

Table 4 identifies the estimated economic impact from the identified bottled water facilities and includes direct, indirect, and induced impacts. These were generally derived by utilizing the aforementioned Nestlé report and other available data, such as estimated water use. This provides an overall estimate of the economic value of these facilities, though the Department recognizes that actual figures may vary.

Table 4. Total estimated economic impact from bottled water facilities including direct, indirect and induced impacts

Spring	County	Gross Output (millions)	Wages and salaries (millions)	Employment (Jobs)	Government revenues (millions)
Gainer Spring Group	Bay	$5.592	$1.583	28	$0.184
Ginnie Spring	Gilchrist	$16.345	$2.356	64	$0.695
Hays Springs	Jackson	$0.000	$0.000	0	$0.000
Apopka Spring	Lake	$3.351	$0.475	13	$0.139
Wekiva Springs	Levy	$0.807	$0.053	2	$0.034
Madison Blue Spring	Madison	$44.409	$9.643	208	$1.917
Orange Springs	Marion	$0.211	$0.053	1	$0.009
Crystal Springs	Pasco	$34.987	$6.728	145	$1.425
Cypress Spring	Washington	$2.449	$0.127	6	$0.096

The study additionally estimates that approximately 63.6 million gallons of Florida's spring water are sold annually. Of these, roughly 89% of bottled spring water sales are attributed to three permittees: BlueTriton (formerly Nestlé Waters North America) (withdrawal located near Madison Blue Spring), Crystal Springs Preserve (withdrawal located near Crystal Springs), and Seven Springs (withdrawal located near Ginnie Spring). The six other facilities included in this analysis account for the remaining 11% of spring bottled water sales. Several sources have cited between 60-70% of bottled water sold throughout the United States is sold within the same state. Under the assumption that those patterns have not changed over time and that Florida's bottled water market follows a similar pattern where 60-70% of bottled water is packaged and sold in-state, then an estimated 19 to 25.4 million gallons of bottled spring water is sold out of state.

The Department generally does not have sufficient information to provide a complete cost-benefit analysis of withdrawing, producing, marketing, selling and consuming spring water as compared to other sources of bottled water. Treatment at bottling facilities may differ for spring water as compared to other water sources, but such operational cost differences are not known. It is also not known how much is paid for water sold by a permittee to a bottler when the bottler is not the owner of the withdrawal facility. However, market research does indicate that spring water is expected to grow at higher rates than non-spring water. Specifically, market research estimates total market growth in the total bottled water industry, from 2020 to 2026, at 35.1%. Over this same time period, bottled spring waters market growth is estimated at 43.6%. This additional 8.5% growth for spring water would be associated with an estimated total gross output of $9.2 million; government revenues of $381,000; 40 jobs; and $1.8 million in wages and salaries in Florida.

Economic Analyses of Springs (Recreation)

In addition to evaluating the economic impact of the bottled water facilities, the Department evaluated in parity the economic impact of the springs and their recreational values. It should be noted that springs are found by the legislature to have inherent value, supporting communities, their families, and their way of life in ways distinct from their economic impacts. Additionally, springs available for recreation are estimated to have significant economic impacts in their communities.

The total gross output within all impacted counties where spring-related recreational facilities operate is approximately $26 million. This contributes an estimated $1.8 million in government revenues. These recreational activities are responsible for the employment of approximately 200 individuals with total earnings of $5.5 million. On average, employees of these recreational facilities earn approximately $27,274 a year.

For many of these springs, recreational activities are documented and support the local economy, including direct, indirect and induced economic impacts. Table 5 identifies those impacts by spring. A variety of data sources were reviewed, including state park data; however, specific visitation records for many of these springs is not known. For example, there is no fee or admission requirement to visit Gainer Spring Group. In such cases, visitation numbers are estimated using a data model. For three springs, however, there is no public recreation at the spring and visitation is set to zero. Crystal Springs is also estimated at zero visitors as the visitation associated with that spring is educational in nature rather than recreational. Due to the method of calculating economic impact, it was not anticipated that there would be significant community spending associated with educational visitation, though the Department acknowledges that there is likely economic benefit directly and indirectly associated with this educational operation.

Economic figures are based on estimated spending by recreational visitors using federal estimates for visitation at National Parks. While these values may vary from the expenditures by visitors at these springs, it represented a reasonable value to estimate visitor expenditures in a community, which can range from rental equipment to gasoline to food purchase.

Table 5. Total economic impact from recreational activities including direct, indirect and induced impacts

Spring	County	Gross Output (millions)	Wages and salaries (millions)	Employment (Jobs)	Government revenues (millions)
Gainer Spring Group	Bay	$6.681	$2.007	72	$0.473
Ginnie Spring	Gilchrist	$12.422	$2.223	83	$0.880
Hays Springs	Jackson	-	-	-	-
Apopka Spring	Lake	$0.360	$0.093	3	$0.025
Wekiva Springs	Levy	-	-	-	-
Madison Blue Spring	Madison	$1.898	$0.472	17	$0.134
Orange Springs	Marion	-	-	-	-
Crystal Springs*	Pasco	-	-	-	-
Cypress Spring	Washington	$4.593	$0.663	25	$0.325

*Crystal Springs economic impact was unable to be estimated at this time.

As illustrated above, springs can result in direct and indirect economic benefits for their communities, as well as provide non-economic value to a community. Reduced flows can result in harm or even significant harm and the MFL process is designed to identify where significant harm will occur. The impact on recreation associated with reduced flow is evaluated when the water management districts develop and adopt MFLs. For the three MFLs applicable to this Study, none identified a recreational value as the most constraining value of the system when identifying the point at which further withdrawals would result in significant harm. Because those were not the most constraining, it is not possible with the current data available to assess precisely what economic impact reduced spring flow has or will have on recreation. However, it is clear that recreational springs can provide economic benefits to a community.

Economic Analyses for Alternative Water Supply Development

In all areas of the state, Regional Water Supply Assessments or Regional Water Supply Plans evaluate whether there is sufficient water available to meet reasonable-beneficial demands over the next 20 years while protecting the water resources of the area. These plans include water resource and water supply development projects, including alternative water supplies,[23]

[23] Alternative water supplies are nontraditional sources of water and specifically include "salt water; brackish surface and groundwater; surface water captured predominately during wet-weather flows; sources made available through the addition of new storage capacity for surface or groundwater; water that has been reclaimed after one or more public supply, municipal, industrial, commercial, or agricultural uses; the downstream

to ensure water supply needs are met and water resources are protected. Regional Water Supply Plans must include projects identified as part of an MFL Recovery or Prevention Strategy.

Requirements for the development of an alternative water supply will vary throughout the planning region and are frequently dependent on the use of water and whether a lower quality water source is suitable for that use. For example, reclaimed water may be suitable for residential irrigation, but not suitable for certain crops.

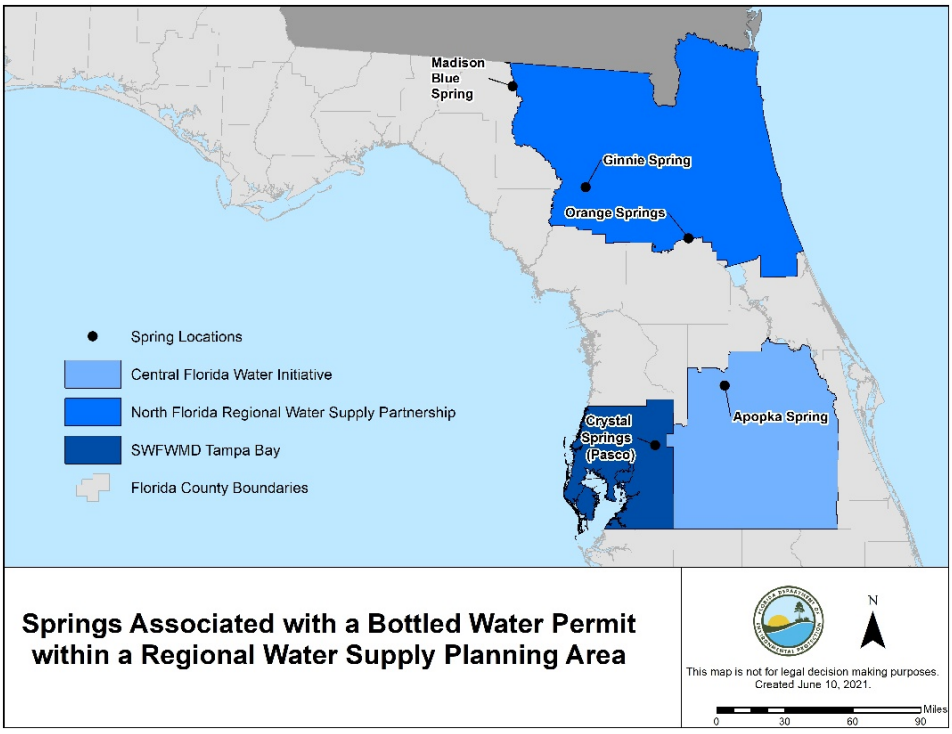

Figure 3. Map of springs associated with a bottled water permit within a Regional Water Supply Planning area

For the nine springs associated with a bottled water facility, five fall within an area with a regional water supply plan. Alternative water supply projects have been and will continue to be necessary in all of those regional water supply planning areas identified in Figure 3. In total, more than $1.1 billion has been spent in these planning regions for the development of alternative water supplies in the past 10 years. The majority of these projects are completed by public supply utilities. Alongside the local sponsor, the state and the water management

augmentation of water bodies with reclaimed water; stormwater; and any other water supply source that is designated as nontraditional for a water supply planning region in the applicable regional water supply plan." Section 373.019(1), F.S.

districts often provide grant funds in support of these efforts as illustrated in Table 4. Figures 4-6, below, show cumulative water made available and expenditures in these planning regions.

Table 4. Water Resource and Water Supply Development Projects Over the Past 10 Years

Spring	Planning Region Name	RWSP Planning Years	Water Needed[1] (mgd)	State and Water Management District Funding	Local Sponsor Funding	Total Funding	Water Made Available (mgd)
Crystal Springs	Tampa Bay	2020-2040	0[2]	$297,857,839	$297,190,562	$595,048,401	41
Apopka Spring	CFWI	2020-2041	95	$387,218,499	$389,974,580	$777,193,079	141
Madison Blue Spring	NFRWSP	2015-2035	112	$147,424,146	$96,777,692	$244,201,838	85
Ginnie Spring							
Orange Springs							

[1] Water needed is the amount of water needed to meet the 20-year projection with traditional sources and must either be conserved or developed, but which is not available as of the date of the approval of the RWSP or through the end of the planning period.

[2] The 2020 update to the SWFWMD Regional Water Supply Plan for the Tampa Bay Region concluded that sufficient sources of water are available within the planning region to meet projected demands through 2040. This conclusion is contingent on the ability to develop the alternative water sources identified in the plan.

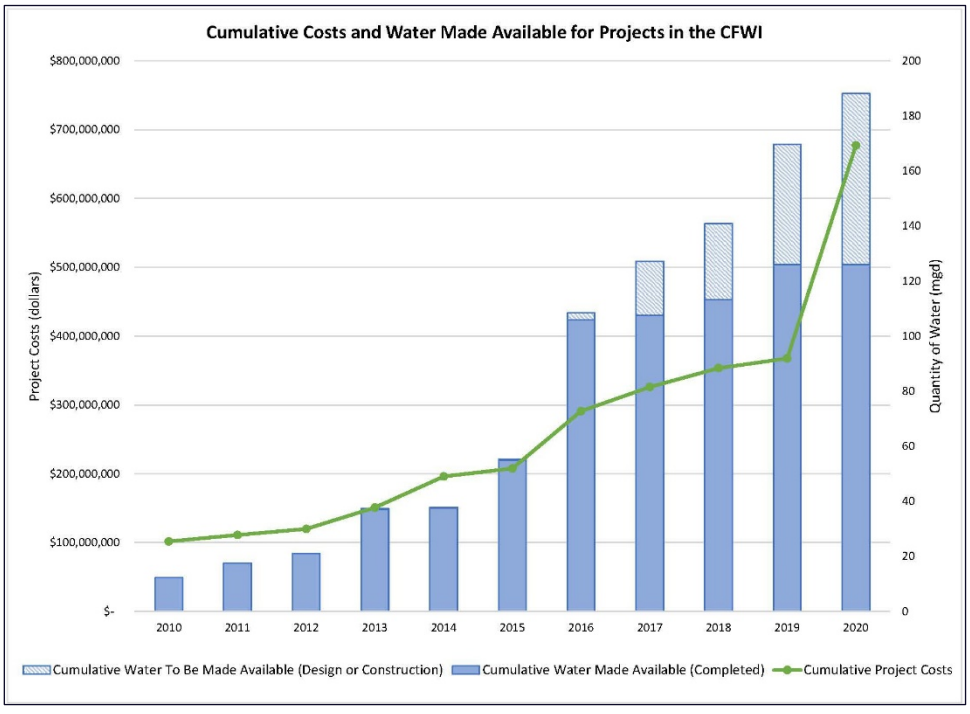

Figure 4. Costs and water made available for water resource and water supply development projects in the CFWI

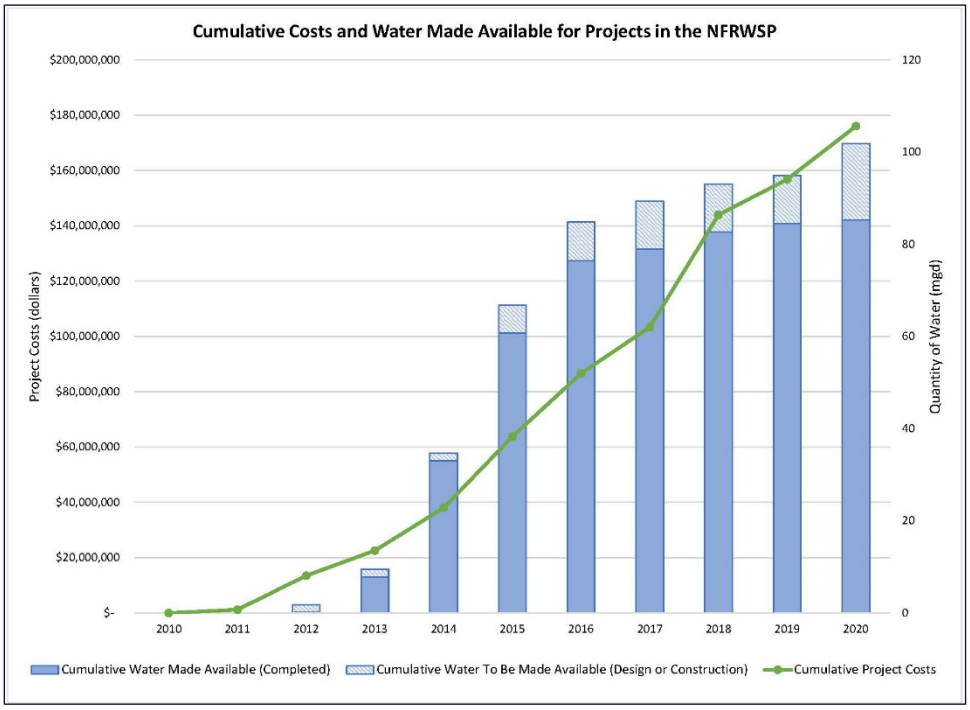

Figure 5. Costs and water made available for water resource and water supply development projects in the NFRWSP

Figure 6. Costs and water made available for water resource and water supply development projects in the SWFWMD Tampa Bay Planning Region

A number of the projects associated with the North Florida Regional Water Supply Planning Area identified above are part of the Lower Santa Fe and Ichetucknee River Recovery Strategy. To support the strategy, $28 million in water resource and water supply development projects has been spent between 2014, when the strategy was adopted, and 2020, which includes $14.8 million from the state, $5.3 from the water management districts, and $7.9 from the local

sponsor. These costs are primarily for public supply and agricultural user groups. An additional $57.5 million is planned to be spent on projects that were in the design phase at the time of this Study, including $48.5 million for the Black Creek Water Resource Development Project, which is expected to move into the construction phase in 2021.

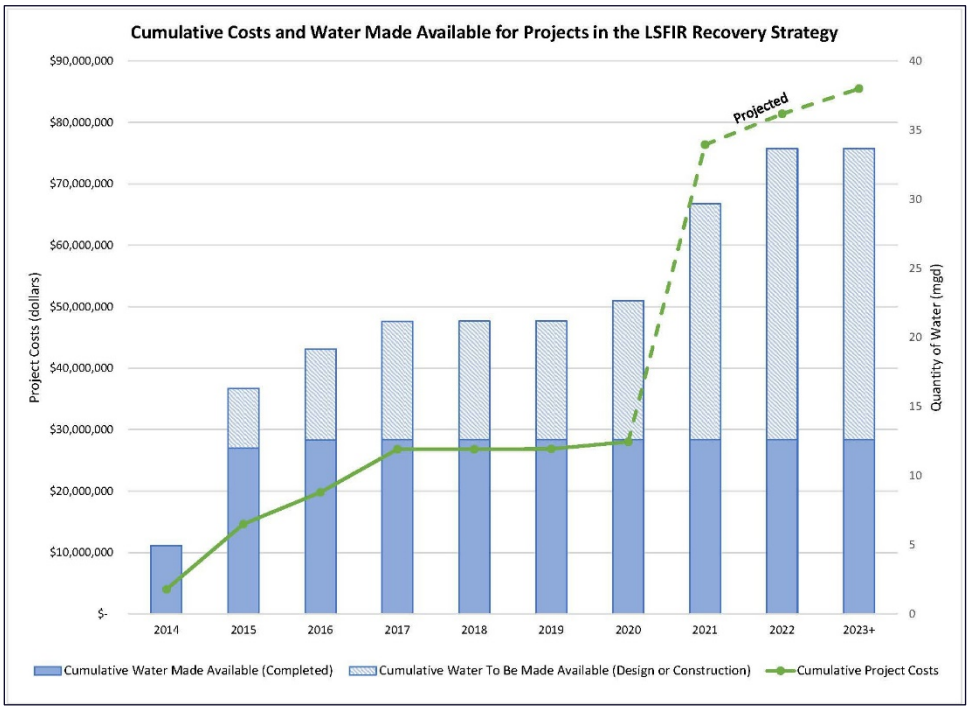

Figure 7. Costs and water made available for water resource and water supply development projects in the Lower Santa Fe Ichetucknee River (LSFIR) Recovery Strategy

In addition, the Lower Santa Fe and Ichetucknee River Recovery Strategy had a number of regulatory requirements designed to protect the rivers and springs as part of a phased effort. The rule required that the impact of new withdrawals or increases in permitted water use be eliminated or offset. The rule additionally limited permit durations to five years. The Statement of Estimated Regulatory Costs (SERC) associated with that rulemaking effort assessed costs for the five-year period of 2014-2018. The SERC found that the financial cost of that rule was borne predominately by agricultural users in the Suwannee River Water Management District area and was estimated at approximately $3 million over that 5-year time period. Some of those uses may have received District cost-share funding to offset those costs.

The $1.1 billion investment in these regions has helped ensure adequate supplies are available for users over a 20-year planning horizon. The North Florida Regional Water Supply Planning Region in particular, identifies the most water needing to be developed. While individual alternative water supply development projects cannot be attributed to a single spring, these areas have demonstrated that there are regional water constraints for which the development of alternative water supplies are needed.