State University System

Education and General
2020-2021 Legislative Budget Request
Form I

University(s):	**Florida Gulf Coast University**
Issue Title:	**University of Distinction**
Date Issue Approved by University Board of Trustees:	
Recurring Funds Requested:	**$3,000,000**
Non-Recurring Funds Requested:	
Total Funds Requested:	**$3,000,000**
Please check the issue type below:	
Shared Services/System-Wide Issue for Fiscal Year 2020-2021	☒
Unique Issue for Fiscal Year 2020-2021	☐

I. Description – *1. Describe the service or program to be provided and how this issue aligns with the goals and objectives of the strategic priorities and the 2019 University Accountability Plan established by your institution (include whether this is a new or expanded service/program). If expanded, what has been accomplished with the current service/program?* 2. *Describe any projected impact on academic programs, student enrollments, and student services.*

This revised Legislative Budget Request for 2020–2021 to support The Water School at Florida Gulf Coast University reflects the difference between the scope and budget ($8,000,000) originally proposed and the revised scope based on the actual budget ($3,000,000) approved. The scope has been downsized as have the number of metrics used to evaluate the program's effectiveness. To help augment this difference, FGCU will use the annual proceeds (currently $40,000) from an endowment with the FGCU Foundation to provide operating funds for a new eminent scholar position. FGCU will withhold 6% ($180,000) of the total ($3,000,000) in reserve. This will impact the scope of work by eliminating one faculty position and one staff position.

The Water School was established to address water issues in Southwest Florida by bringing together faculty from across the university; forging partnerships with local communities; working with local organizations involved in environmental education and outreach; collaborating with research institutions across the state; and building research capacity to tackle these issues. Part of this

charge is to educate and train the next generation of leaders responsible for addressing the region's environmental issues, especially those related to water. Core academic programs include undergraduate degrees in Environmental Geology (BS), Environmental Studies (BA), and Marine Science (BS), and graduate degrees in Environmental Science (MS) and Environmental Studies (MA). In addition to the core faculty supporting these STEM programs, affiliate Water School faculty have been appointed from across the university, representing four colleges and thirteen other departments.

This effort supports key FGCU strengths as detailed in its 2019 Accountability Plan:

- Meeting the unique needs of Southwest Florida in terms of an educated and skilled workforce
- Preservation of the environment
- Providing for the health and social welfare of the region
- Catalyzing economic development
- Conducting applied research that directly impacts Southwest Florida issues (e.g., red tide)
- Fulfilling student aspirations

It also aligns with one of the Top 3 Key Initiatives and Investments detailed in the 2019 Accountability Plan—applied research to address issues critical to Southwest Florida.

> *Stimulating increased research and scholarship relevant to the unique character, challenges and opportunities in Southwest Florida. A primary initiative will focus on issues related to water quality, allocation, availability, and management with concomitant 'downstream' effects on public health and economic development in our region.*

Furthermore, there is a robust and growing workforce need for graduates of these programs in Florida. At the state level, projected job openings for related fields number over 8,700 for 2019–2026 (Table 1), and in Southwest Florida projected job openings total 370 for the same period (Table 2).

Funding provided will enable FGCU to increase STEM degree production in important natural science and environmental disciplines, provide enhanced research opportunities for undergraduate and graduate students, stimulate research productivity of faculty and associated grant funding, and develop and deliver water-related outreach programs that meet community needs.

<u>Impact on Academic Programs, Enrollment, and Student Services</u>
Hiring faculty will support the new Environmental Geology program. Beginning its second year, this program requires additional faculty to meet the full range of student needs and interests that will accompany expected program growth. New faculty will also benefit other academic programs in The Water School by

broadening available course selection and providing additional faculty mentors to supervise undergraduate research. New faculty will loosen one major constraint to enrollment growth in the M.S. Environmental Science program. Because students are not admitted to this program without a designated thesis advisor, current faculty size limits program enrollment. Instructors will also be hired to increase general education course capacity, which could result in additional recruitment to STEM programs. Scholarships will support students in STEM programs, and funding is requested for Library resources to support new courses developed and student research interests.

Table 1. Relevant employment data for Florida, 2019–2027 (FDEO 2020).

State of Florida							
		Employment					
SOC Code	SOC Title	2019	2027	Growth	Percent Growth	Total Job Openings	2018 Median Hourly Wage ($)
19-4091	Environmental Science and Protection Technicians, Including Health	1,604	1,765	161	10.0	1,705	19.37
19-2043	Hydrologists	270	304	34	12.6	242	40.65
19-2041	Environmental Scientists and Specialists, Including Health	5,946	6,493	547	9.2	5,039	23.80
17-2081	Environmental Engineers	2,843	3,064	221	7.8	1,738	34.61

Table 2. Relevant employment data for Southwest Florida, 2019–2027 (FDEO 2020).

Southwest Florida (Workforce Development Area 24) Charlotte, Collier, Glades, Hendry, and Lee Counties							
		Employment					
SOC Code	SOC Title	2019	2027	Growth	Percent Growth	Total Job Openings	2018 Median Hourly Wage ($)
19-2041	Environmental Scientists and Specialists, Including Health	361	399	38	10.5	313	21.04
17-2081	Environmental Engineers	86	96	10	11.6	57	30.30

Focus on Research

Significant resources go toward further enhancing research capacity and productivity as well as stimulating external grant funding. Undergraduate Research helps students hone their critical thinking and communication skills and trains them to develop the specific skill sets they need to be successful in STEM careers or graduate school. Graduate-level research often focuses on specific research needs in the region and prepares students to enter the workforce at a more advanced level with concomitantly higher salaries. External funding provided through faculty research helps drive undergraduate and graduate research. Southwest Florida has become known for water-related issues that threaten its economy, human health, natural resources, and quality of life. Funding will enable The Water School to focus

research on harmful algal blooms, coastal vulnerability and sea level rise, climate change and hurricanes, water quality and its management, and environmental restoration. One of the faculty positions requested will be a joint appointment with the College of Health and Human Services to conduct research on environmental health issues, and another position will be used to hire an eminent scholar in the field of Marine Conservation Biology.

Outreach and Partnerships

FGCU will develop The Water School Leadership Academy outreach program. During this yearlong program, a cohort of community leaders will complete seven days of immersive education, training, and networking on water-related issues at strategic sites throughout the region. FGCU faculty and regional experts will provide instruction, interpretation, and mentorship. Graduates will gain increased capacity and leadership to improve the long-term environmental and socio-economic sustainability of Southwest Florida. Outreach funding will also be used to help support the work of the Southwest Florida Regional Resiliency Compact. A work in progress, this effort brings together representatives from three counties and ten municipalities in Southwest Florida to develop a regional plan for communities to adapt to climate change and increase coastal resilience.

Budget Description

The spending plan (LBR Form II) advances the objectives of The Water School by providing necessary faculty, staff, student support, operating funds, and equipment. Faculty positions comprise 13 full-time equivalent (FTE) lines spanning multiple academic disciplines. In addition to the joint appointment with the College of Health and Human Services and the eminent scholar position in Marine Conservation Biology, faculty will be hired to support the new Environmental Geology degree program and the Environmental Studies program and to create interdisciplinary connections across academic units. Instructor positions will help accommodate general education enrollment and support release time for faculty active in research to seek external grants and mentor student research. Staff positions (5 FTE) will support operational needs and will include an Administrative Specialist and an Outreach Coordinator to support outreach programs, a full-time dive safety officer to coordinate research dive operations, and research laboratory and field technicians to assist faculty research and supervise undergraduate and graduate students. Temporary employment funds will be used to support undergraduate assistants working in support of Water School programs.

Operating expenses will support research activities and student research projects, and will be used to purchase software, non-capital equipment, and consumables required for the day to day operation of on- and off-campus facilities and labs. A recurring equipment budget will support start-up funds for new faculty, enhance existing research capacity to target new research questions, and allow for maintenance and replacement of existing equipment, instrumentation, vehicles,

and vessels as necessary. Scholarship funding will allow us to recruit and retain high-quality undergraduate and graduate students to the STEM programs offered through The Water School. Library resources will include specialized databases required by new faculty hires and will also support new courses developed and student and faculty research interests. Database costs are recurring, with annual increases expected.

II. Return on Investment - *Describe the outcome(s) anticipated, dashboard indicator(s) to be improved, or return on investment. Be specific. For example, if this issue focuses on improving retention rates, indicate the current retention rate and the expected increase in the retention rate. Similarly, if the issue focuses on expanding access to academic programs or student services, indicate the current and expected outcomes.*

Return on Investment is defined by student success in their academic, career and life-long learning pursuits and by our contributions to the health, economic prosperity, and environmental protection of Southwest Florida. Applied research success will result in advances in water management that contribute to significant regional economic growth and sustainable development which ***over time may be measured in the billions of dollars***. The following metrics will be used to track the development of The Water School and evaluate success.

1. STEM degree production at undergraduate and graduate levels
2. Contributions to applied water science/policy
3. Percentage of ranked faculty actively engaged in research (i.e., publications or external grants awarded in AY)
4. Externally sponsored research grants and contracts
5. Graduate students funded through research assistantships
6. Number of undergraduate research opportunities supported

We expect in the first year of funding to see growth in research expenditures.

- ✓ One-year Goal: 2020-2021: $1 million alone in externally funded research expenditures in support of water research (see Appendix)

As FGCU continues to implement its strategic plan and invest in regional employer and research partnerships to serve our students and communities, it will produce outcomes with strong economic impacts for our students and region, collaborate to find solutions that address critical water issues facing our state, and remain a sound steward and solid investment of taxpayer dollars.

III. Facilities (*If this issue requires an expansion or construction of a facility, please complete the following table.):*

Not Applicable

2020-2021 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II

University: **Florida Gulf Coast University**
Issue Title: **The Water School**

	RECURRING	NON-RECURRING	TOTAL
Positions			
Faculty	13.00	0.00	13.00
Other (A&P/USPS)	5.00	0.00	5.00
Total	18.00	0.00	18.00
Salary Rate (for all positions noted above)			
Faculty	$1,238,421	$0	$1,238,421
Other (A&P/USPS)	$210,083	$0	$210,083
Total	$1,448,504	$0	$1,448,504
Salaries and Benefits	$1,959,971	$0	$1,959,971
Other Personal Services	$10,000	$0	$10,000
Expenses	$250,029	$0	$250,029
Operating Capital Outlay	$400,000	$0	$400,000
Electronic Data Processing	$0	$0	$0
Library Resources	$50,000	$0	$50,000
Scholarships	$150,000	$0	$150,000
	$0	$0	$0
Reserve (6%)	$180,000	$0	$180,000
Total All Categories	$3,000,000	$0	$3,000,000

Florida Gulf Coast University
2020-2021 Legislative Budget Request
Appendix: Metrics

The Legislative Budget Request for 2020–2021 to support The Water School at Florida Gulf Coast University has been revised to reflect the difference between the scope and budget ($8,000,000) originally proposed and the revised scope (see Form I) based on the actual budget ($3,000,000) approved (see Form II). As a result of this decreased scope, the number of metrics used to evaluate program effectiveness has been reduced accordingly. This appendix describes the change in metrics and provides benchmark data to gauge program success.

Changes in Metrics

In the original Legislative Budget Request, the following metrics were identified for use in evaluating the program:

- Contributions to practical water management solutions benefiting the region and beyond
- Community engagement/outreach measure by number of media contacts and community presentations
- Number of internships developed that focus on water-related issues;
- Placement of students in highly regarded doctoral programs.

Because of challenges encountered regarding the use of these metrics, they were modified or not included in the revised program scope. The contributions to practical water management solutions metric has been reframed as contributions to applied water science and policy, recognizing the importance of sea level rise and other impacts that may not directly be related to water management. This metric will be measured as the percentage of total grants awarded to The Water School that focus on applied water science and policy issues. The community engagement metric is difficult to gauge at this time due to a data outlier resulting from unusually high media attention (e.g., Hurricane Irma, harmful algal blooms, water quality) and the addition of a Director of Media and Public Relations. We believe this metric has the potential to be useful for measuring community engagement and will revisit it in the future. Because the availability of internships outside the university varies from semester to semester and students are responsible for obtaining their own internship positions, the metric for internship placements that focus on water-related issued is difficult to influence directly. Furthermore, students opt for paid internships whenever possible, regardless of topic. Although water-related internship placements trended slightly upward for the period 2014–2015 to 2018–2019, the data varied considerably from year to year making target setting for the future difficult. The metric related to the placement of students in highly regarded doctoral programs also proves problematic due to the small number of students who go on to doctoral program after graduating. FGCU placed 10 of its

graduates in doctoral programs during the period 2014–2015 to 2018–2019, but the placement data is highly variable. The addition of new faculty who can support and advise graduate students will likely increase the number of FGCU students going on to doctoral programs, but any goal setting for this metric remains problematic at this time.

Revised Metrics

The following represents the revised list of metrics selected for use in evaluating the effectiveness of the The Water School Legislative Budget Request:

1. STEM degree production at undergraduate and graduate levels
2. Contributions to applied water science/policy
3. Percentage of ranked faculty actively engaged in research (i.e., publications or external grants awarded in AY)
4. Externally sponsored research grants and contracts
5. Graduate students funded through research assistantships*
6. Number of undergraduate research opportunities supported

Table 1. Metrics for use in evaluating program effectiveness of The Water School. Trends estimated using regressions of 2014-2015 through 2018-2019 data ($p \leq 0.10$) with the exception of Metrics 2 and 5, which rely on data from 2015–2016 through 2019–2020. Percentage improvement represents difference between projections with LBR funding and those without.

Metric	Historic Benchmark 2014-2015	Current 2018-2019	Trend w/o Investment 2021-2022	Trend with Investment 2021-2022 (% Improvement)
1. STEM degrees – Water School	64	114	146*	162 (+13%)*
2. Contributions to applied water science/policy (%)	63	71	73	76 (6%)
3. % Research active faculty	64	77	80†	83 (4%)
4. External support	$1,272,684	$853,504	$425,334	$1,200,000 (+182%)
5. Graduate assistantships	19	27	27†	30
6. Undergraduate research	46	67	86	100 (+16%)

* Projections do not consider potential negative impacts from COVID-19 or other unforeseen external drivers (e.g., hurricanes) on enrollment, retention, and graduation).
†Trend not significant.

Metric 4 is expected to be able to demonstrate a one-year return on investment through the generation of additional external funding (i.e., target of $1,000,000; see also Form I), and Metrics 1 and 4 each represent a return on investment to the State of Florida. Metrics 1–6 will be tracked and used to demonstrate program improvement over time.