Annual Assessment of Florida's Water Resources and Conservation Lands

2021 Edition

Executive Summary

The full report is available at:
http://edr.state.fl.us/Content/natural-resources/LandandWaterAnnualAssessment_2021Edition.pdf.

Executive Summary

The Office of Economic and Demographic Research (EDR) has completed the fifth annual assessment of Florida's water resources and conservation lands pursuant to section 403.928, Florida Statutes. The report presents topics in isolation that, at least in part, overlap. Land conservation, water supply, water quality, and water infrastructure are all interrelated, and investments in one of these areas will almost certainly benefit another.

Lands can be acquired for conservation by public or private entities and can be obtained in fee or less-than-fee simple ownership. Once acquired, the lands are typically managed to maintain their conservation purposes. As such, expenditures on conservation lands can be categorized into acquisition expenditures and management expenditures. In Fiscal Year 2019-20, the State of Florida expended $77.5 million on conservation land acquisition and $220.5 million on conservation land management.[1] Regarding the impact on ad valorem taxation, roughly 1.8 percent of the statewide county tax base and 1.6 percent of the statewide school tax base have been removed from the tax roll as a result of the total acquisitions to date. This translates into, on net, $294.8 million in county taxes and $224.6 million in school taxes that were shifted to other property owners or lost due to lands being held in conservation in 2020.[2]

Approximately 30 percent of all land in the State of Florida is currently designated for conservation purposes, with eight counties already over 50 percent.[3] If all lands identified in plans set forth by state agencies and water management districts are acquired, this share will jump to over 41 percent.[4] If federal, local, and private plans were accounted for, this share would be even greater. Summing the projected total acquisition costs for the additional conservation lands identified in the plans developed by the state and water management districts produces a preliminary cost estimate of just over $27 billion. The analysis suggests that roughly 86 percent of this cost would be the state's responsibility. At the current rate of annual state conservation land acquisition expenditures, it would take about 370 years to generate the state's share; in other words, it will take nearly four years for the state to generate its share for just one percent of the total additional conservation lands identified in plans. Any future conservation lands that are acquired will entail additional costs for management as well as the acquisition cost. Currently, a dedicated revenue source for managing the state's lands does not exist. Assuming the current level of expenditures per acre, the additional cost to the state to manage its potential land acquisitions is projected to be $104.9 million, annually.

With just under one-third of the land in the State of Florida already acquired for conservation purposes and approaching one-half after accounting for potential conservation land acquisition in the future, significant policy questions arise. For example, how much conservation land is needed and for what purpose? Where should it be located? Should the current pace of the state's conservation land acquisition efforts be accelerated? At what point does the volume of conservation land acreage alter the pattern of economic growth as expanding metropolitan areas

[1] *See* Table 2.2.8.
[2] *See* Table 2.1.3. Further, value reductions reported in the 2020 Edition were overstated as explained at the end of Section 2.1. See Table B.4 in Appendix B for corrected values for the previous edition.
[3] *See* Tables 2.1.1. The eight counties are: Broward, Collier, Miami-Dade, Monroe, Okaloosa, Franklin, Liberty, and Wakulla.
[4] *See* Table 2.3.3. This projection does not include any additions to current federal, local, or private conservation lands.

are forced upward instead of outward? Is this change acceptable to policy makers? Should there be a greater focus on selling non-essential conservation lands as surplus? Is primarily owning conservation land in fee simple the most efficient strategy for Florida? Would encouraging less-than-fee simple ownership help to alleviate economic and fiscal concerns associated with government ownership of conservation land? Are adequate funds available for managing current and future acquisitions? One of EDR's objectives for this ongoing report is to assist policy makers in developing the answers to these questions.

EDR is currently modeling water supply and demand with two approaches: one based on water management district projections (the principal model used in this edition) and the other using an independent water demand forecast (EDR's pilot model). The principal model projects water demand to increase by over 15 percent between 2020 and 2040, reaching 7,407.8 millions of gallons daily by 2040.[5] EDR's pilot model suggests a lower forecast, primarily because it takes greater account of the historic pace of conservation. The two largest drivers of water demand are and will continue to be population growth and agriculture. According to the districts' regional water supply plans and water supply assessments, the water needs of the state can be met through the 2040 planning horizon through a combination of traditional and alternative water sources; however, this assumes appropriate management, continuing conservation efforts, and necessary investments are made. These investments are related to alternative water supply projects identified in regional water supply plans. Because no district can meet its future demand solely with existing source capacity, these extra efforts (and the funding for them) are critical beginning now and continuing through 2040.

Using water demand projections from the principal model shows that the total costs, excluding operations and maintenance, associated with ensuring that future water supplies are available to meet the increasing water demands are between $0.57 and $1.13 billion over the 2020 through 2040 planning horizon.[6] Using EDR's pilot model suggests that the average total cost would be similar, but would fall within a tighter range. These estimates are based on an analysis of projects identified by water management districts through the water supply planning process and may change significantly in the future as the methodologies, both of EDR and the water management districts, are refined. The future demand not met with existing supply assumes average weather conditions and that the demand which has been met in the past will continue to be met in the future. In this edition, EDR has begun to explore the risks inherent in some of these assumptions.

The cost estimates described above only capture the cost of developing alternative water supplies. In addition, the estimated cost to complete projects benefitting the natural systems must be taken into account. These are projects needed to meet the minimum flows and minimum water levels for natural systems that are currently in recovery and prevention status, as well as additional projects expected to primarily benefit the natural systems. This cost is estimated to be $665.1 million.[7]

Overall, the state's share of the expenditures necessary to ensure sufficient water is available to meet the growing water demand, as well as the needs of the natural systems, varies based on

[5] This assumes average annual rainfall and does not account for potential new water conservation activities. For more details, see Section 4.3.
[6] *See* Table 4.6.5.
[7] *See* Section 4.9, which provides an explanation of the reduced cost estimate since the previous edition.

location and project type, but is expected to be about 10.4 percent. Based on the costs identified to date, this amounts to a state investment of $157.3 million by 2040; however, additional research is planned that is likely to increase this estimate.

Preliminary estimates of the expenditures necessary to comply with key federal and state laws and regulations governing water quality protection and restoration suggest required state expenditures of approximately $270.5 million for the development of total maximum daily loads,[8] $3.2 billion for the implementation of basin management action plans,[9] and $8.4 billion for completion of the Comprehensive Everglades Restoration Plan.[10] Future editions will expand the water quality analysis to include expenditure forecasts for other activities required by or implemented pursuant to federal or state law, including alternative plans for impaired waters, water quality monitoring, and Everglades restoration initiatives outside of the Comprehensive Everglades Restoration Plan. Alone, the expected state expenditures for Total Maximum Daily Load development, Basin Management Action Plan implementation, and Comprehensive Everglades Restoration Plan implementation will exceed currently dedicated revenues and result in funding shortfalls.[11] The degree to which the assumed timeframes and cost shares underlying these expenditure forecasts are legally required is still being assessed.

In the 2019-20 fiscal year, the State of Florida expended approximately $172.8 million on water supply[12] projects and an additional $933.9 million on water quality and other water resource-related programs.[13] In recent years, expenditures for water resources have increased significantly, leading to questions about financial sustainability. Based on historical trends, EDR's forecasts indicate that the recent levels of increases in expenditures cannot be sustained into the future using only the implied revenue shares historically allocated to water quality. In this regard, a gap exists in every future year, growing to $840.69 million by the end of the ten-year forecast period. [14] This gap does not include any specific adjustments for new or expanding initiatives. Potential options to close the projected gap include the use of statutorily uncommitted Documentary Stamp Taxes, additional General Revenue funds, or bonding. As a result, substantial policy questions arise. What is the total amount of funding that should be committed to these initiatives? What are the appropriate levels of funding and shares among public and private stakeholders? To what extent should land acquisition programs be required to identify quantifiable water resource benefits? One of EDR's objectives for this ongoing report is to assist policy makers in developing the answers to these questions.

There is, however, yet another cost to be considered. Expenditures necessary to replace, maintain, and expand Florida's aging water infrastructure over the next decades will reach tens of billions of dollars. The U.S. Environmental Protection Agency's most recent drinking water, wastewater, and stormwater 20-year capital-needs estimates for Florida total nearly $45 billion after adjusting for inflation. While only $20.9 billion of that total is attributable to wastewater and stormwater infrastructure, EDR's initial attempts to estimate that subset of needs total $40.3 billion, nearly

[8] *See* Table 5.1.4.
[9] *See* Table 5.1.6.
[10] *See* the conclusion of Section 7.2.
[11] *See* Table 8.2.4.
[12] *See* Table 3.1.1.
[13] *See* Table 3.3.7.
[14] *See* Table 8.1.2.

doubling the cost identified by the U.S. Environmental Protection Agency. EDR is preparing to survey drinking water and wastewater utilities to produce an independent cost estimate that includes all expenditures, not just the capital investment portion. A key policy question arises: once they have been identified, what is the state's role in addressing these infrastructure costs?

Subsequent editions of this report will continue to satisfy the requirements of section 403.928, Florida Statutes, and address those subjects that require further research. First, EDR is continuing to refine its integrated water supply and demand model and preparing to submit its pilot model for publication and peer-review before full deployment. Second, EDR will work with the Department of Environmental Protection and the water management districts to incorporate additional expenditures that are necessary to comply with laws governing water quality. Finally, EDR's estimates of necessary water infrastructure expenditures will continue to be developed. This includes incorporating the results of the forthcoming EDR surveys and assessing the higher stormwater expenditure needs in coastal areas.