The United Nations estimates that nearly two-thirds of the world’s population could be living under water-stressed conditions by 2025 (United Nations Department of Economic and Social Affairs [UNDESA]). According to UNDESA, there is enough freshwater on earth for seven billion people, but the current worldwide population is approaching eight billion people (U.S. Census Bureau, 2022). The U.N. reports that, by 2050, more than five billion people are expected to face a shortage of water.

Access to water and sanitation are recognized as human rights by the U.N., which defines the “right to water entitles everyone to have access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use” and the “right to sanitation entitles everyone to have physical and affordable access to sanitation, in all spheres of life that is safe, hygienic, secure, and socially and culturally acceptable and that provides privacy and ensures dignity.”

In Florida, with rising seas changing the quality of groundwater near coastlines, continued migration of people calling Florida home, and increased source water withdrawals to meet Florida’s water demands, it’s all hands on deck to thoughtfully manage the state’s water resources.

Managing Florida’s Water Resources

The eastern United States inherited a system of water rights from English Common Law. Riparian rights are seen throughout the eastern U.S., except Florida, which uses a statutory system (Smolen, M.; Mittelstet, A.; Harjo, B. “Whose Water Is It Anyway? Comparing the Water Rights Frameworks of Arkansas, Oklahoma, Texas, New Mexico, Georgia, Alabama, and Florida.” E-1030. April 2017). Riparian rights are a doctrine of water law that gives water rights to every person whose property touches a natural watercourse.

In Florida, the Legislature enacted the Water Resources Act (WRA) of 1972 to establish the “management of water and related land resources” and “administrative water law that brought all waters of the state under regulatory control” in Florida Statutes 373.016(3)(a). Additionally, WRA established the development of the state’s five water management districts (WMDs) based on local hydrogeology.

Before the passage of the WRA, only two WMDs existed: the Southwest Florida WMD and the Central and Southern Florida Flood Control District (the predecessor to the South Florida WMD). The act established five WMDs and provided the regulatory agencies the responsibility of addressing issues such as water supply, drainage/flood protection, water quality, and protection of natural resources (Florida Statutes 373.026).

The boundaries of the WMDs were determined by the five major water basins in the state:
- Northwest Florida WMD
- St. Johns River WMD

The Silver Springs System (Silver Springs and the associated Silver River) has experienced a decline in flow of approximately 32 percent since the 1930s due to long-term rainfall deficit, flow suppression related to increases in submerged aquatic vegetation downstream in the Silver River, and, to a lesser degree, regional groundwater pumping (St. Johns River Water Management District, 2022).
By establishing five WMDs, the WRA provided a statewide comprehensive approach to solving water issues (Borisova, T; Olexa M.; Caracciolo J. “2021 Handbook of Florida Water Regulation: Florida Water Resources Policy”).

Rather than land proprietors’ ownership of water adjacent and under their properties (as was practiced under historical riparian rights doctrine), the WRA established that all water in Florida, underground or on the surface, is a public resource managed by the Florida Department of Environmental Protection (FDEP) and the WMDs.

While WMDs address regional issues, according to the WRA, statewide authority for water resource management is vested in FDEP, which has general supervisory authority over WMDs and delegates water resources programs to them wherever possible. The legislative intent is to provide for the continuity of the statewide water management policy, with regional implementation taking into account the variability of water resources in the state (UF/IFAS #FE1043. Borisova, T; Olexa M.; Caracciolo J. “2021 Handbook of Florida Water Regulation: Florida Water Resources Policy”).

The need to transport water between WMDs based on “environmental, technical, or economic reasons” is set forth in the policy of the WRA; however, the law also stipulates that such transport is allowed only when the receiving area has exhausted all local sources, including “desalination, conservation, reuse of nonpotable reclaimed water and stormwater, and aquifer storage and recovery.” The use of water from the nearest sources is encouraged, and conservation and proper utilization are the main themes throughout the WRA (Smolen, M.; Mittelstet, A.; Harjo, B. “Whose Water Is It Anyway? Comparing the Water Rights Frameworks of Arkansas, Oklahoma, Texas, New Mexico, Georgia, Alabama, and Florida.” E-1030. April 2017).

In addition, water resources management benefits from Florida’s overall water conservation goal are defined in the Florida Statutes (§ 373.227, F.S.) as “to prevent and reduce wasteful, uneconomical, impractical, or unreasonable use of water resources” (Borisova, T; Dukes, M.; Warner, L. Publication #FE1009. UF/IFAS, 2021).

Regional Water Supply Planning

In December 2021, FDEP published the “2020 Statewide Annual Report on Regional Water Supply Planning” in accordance with Florida Statutes, Section 373.709(6). The report reflects updated information reported in regional water supply plans (RWSPs) as published by the WMDs.

A RWSP is a planning document developed by a WMD that projects future demands for at least a 20-year planning period and is updated every year. A RWSP is required when existing sources of water are not adequate to supply water for existing and future uses, as well as to sustain water resources and natural systems for the planning period. A RWSP includes two primary components: water supply development and Continued on page 20
Florida's current freshwater supply is projected to be unable to meet all of the growing needs of Floridians in the future (FDEP, 2022). The shortfall in freshwater supply will be supplemented with alternative water supplies, such as reclaimed water, brackish groundwater, and seawater desalination, in addition to water storage opportunities, such as surface water reservoirs, aquifer storage and recovery (ASR), and aquifer recharge with stormwater and reclaimed water.

The Future of Water: Florida and Beyond

Per the FDEP "Regional Water Supply Planning 2020 Annual Report" (December, 2021), water demand for all users (power generation, domestic and small public supply, recreational/landscape, commercial/industrial/institutional, agricultural, and public water supply) is anticipated to be about 7.4 billion gallons per day in 2040. This is a projected 15 percent, or a 950 million gallons per day (mgd), increase from 2020.

Public supply in Florida is anticipated to increase by 573 mgd between 2020 and 2040, a 22 percent increase. Agriculture is the second largest water user and that demand is anticipated to increase by 83 mgd between 2020 and 2040, an increase of 3 percent.

During this same 2020 to 2040 time period, the population in Florida is expected to grow by 22 percent to 26.4 million people.

As examples of water needing to be developed in the next 20 years, the highest future demands have been identified by the North Florida Regional Water Supply Partnership (112 mgd needed) and the Central Florida Water Initiative (95 mgd needed).

Beyond Florida, the American Water Works Association (AWWA) Water 2050 initiative, which seeks to establish a long-term vision of the future of water, is scheduled to officially launch on June 13, 2022, at ACE22 in San Antonio.

The five critical drivers for the future of water include:
- Sustainability
- Technology
- Economics
- Governance
- Social/Demographics

The first steps of the program aim to gather “thought leaders” within and outside the water sector for interactive discussions, enlist and collaborate with strategic partners from all sectors, foster intergenerational responsibility, and capture the collective knowledge.

Collaboratively, we can guide the future of responsible water use by applying water policy and facilitating water supply planning grounded in science. We are the water visionaries who will help shape this water legacy.