An example of a constructed wetlands system used to recharge both reclaimed water and stormwater is the Ocala Wetland Recharge Park. This 60-acre project recharges approximately three MGD to the Floridan aquifer. The use of wetlands for high-rate recharge could be problematic, depending on the substrate (soil) on which it is constructed. Wetlands perform better with some degree of organic content in the soil, and the soil and the vegetation root systems can impede the downward flow of water. Maintaining design recharge rates could require ongoing maintenance to ensure recharge flow pathways remain open and effective.

RIBs: The next method of aquifer recharge, RIBs, has been used in Florida since the late 1970s. Most RIBs are used for effluent disposal and recharge and are most effective in upland areas with thick surficial deposits and deep water tables, such as in Florida's sand ridges and adjoining uplands (e.g., Lake Wales Ridge, Mt. Dora Ridge, etc.). For deeper recharge to be effective, the regional confining unit (Hawthorn Group sediments) are usually thin or missing altogether. RIBs permitted as high-rate-land application systems typically adhere to Reuse of Reclaimed Water regulations (Chapter 62-610, FAC Part IV).

There are many RIB systems used for reclaimed water disposal throughout Florida. RIBs are initially permitted to process as much as three inches per day (1.9 gallons per day per square foot [gpd/ft^2] of RIB bottom area). When the RIBs have been operated for a sufficient period of time to collect data, they can be re-rated and re-permitted for up to nine inches per day (5.6 gpd/ft^2).

In addition to groundwater recharge (Chapter 62-610, FAC Part V), RIBs can also be used for indirect potable reuse projects when in proximity to potable supply wells (Chapter 62-565, FAC). RIBs located in areas with Basin Management Action Plans (BMAPs) for established Total Maximum Daily Loads (TMDLs) for nutrients may also require high level of treatment for the source water. Denitrification is also a primary concern for RIBs located in proximity to springs with excessive nitrate levels. Further evaluation of treatment processes to achieve allowable nitrate levels may result in treatment needs greater than biological denitrification processes alone can achieve.

Recharge Wells: The third method of aquifer recharge is direct recharge to the target aquifer using a Class V injection well. Class V wells, as defined in Chapter 62-528, FAC Underground Injection Control, are those which inject water into the Underground Source of Drinking Water (USDW). The USDW is defined as groundwater that contains a TDS of less than 10,000 milligrams per liter (mg/L). Rule 62-610.563, FAC (Waste Treatment and Disinfection) defines two distinct levels of treatment, depending on TDS concentrations of the receiving aquifer. Full treatment must be provided if the TDS of the groundwater in the receiving aquifer is less than 3,000 mg/L and principal treatment is allowed for groundwaters with a TDS between 3,000 and 10,000 mg/L. It is anticipated that recharge wells located within the preliminary target recharge area would have to meet the full treatment requirements, including reducing the amount of organic carbon present. Treatment for direct recharge is more expensive than for wetlands or RIBs. There are several planned aquifer recharge wells and indirect potable recharge wells planned for Florida. There is one permitted and operational aquifer recharge project in west central Florida—the South Hillsborough Aquifer Recharge Project, which is a salinity barrier system permitted under Rule 62 610.662, FAC and under Chapter 62-528, FAC, and uses reclaimed water from the Falkenburg and Valrico WRF as the injectate. The recharge wells are permitted as Class V, Group 2 wells, which are classified by FDEP for aquifer recharge purposes. Direct injection into an aquifer (for aquifer recharge purposes) is the most