

Memorandum



Date: April 13, 2022

To: Honorable Chairman Jose “Pepe” Diaz
and Members, Board of County Commissioners

From: Daniella Levine Cava
Mayor

A handwritten signature in blue ink that reads "Daniella Levine Cava".

Agenda Item No. 2(B)(5)
June 1, 2022

Subject: Map of Areas Within Miami-Dade County Where There is a Need for Wastewater Pump Stations – Directive 212141

On October 5, 2021, the Board of County Commissioners adopted Resolution R-955-21, sponsored by Commissioner Raquel A. Regalado, requesting information on areas within the Miami-Dade County Water and Sewer Department (WASD) sewer service area where there is a need for wastewater pump stations to support the connection of properties to municipal sanitary sewer infrastructure for those which are currently served by septic tank systems. In response to this directive, WASD has produced this report and associated map attached as Exhibit A.

In Miami-Dade County (MDC), approximately 120,000 properties are served by septic tank systems and not connected to a sanitary sewer system. These septic tank systems treat and dispose of wastewater through underground drain fields, which are vulnerable to malfunction due to improper maintenance, aging, and fluctuations in groundwater levels. Improperly functioning septic tank systems may pose a financial, environmental, and health risk to the public. For these reasons, the Miami-Dade Board of County Commissioners has taken an interest in converting septic tank systems to sanitary sewer infrastructure in the County and developing the necessary tools to help County decision-makers and administrators visualize the problem.

It is understood that areas in MDC served by septic tank systems do not currently have the necessary infrastructure, including wastewater pump stations, to support the conversion to sanitary sewer systems. Pump stations collect wastewater from homes and businesses and discharge such wastewater into force main pipes, then transfer the wastewater flow to treatment plants. Pump stations exist approximately every quarter section, which is a half-mile by half-mile square, to provide the necessary collection of sewage from a particular quadrant, referred to as a pump station basin. This general spacing can be smaller or larger depending on specific characteristics, including the size and allowable use of parcels, which influence the amount of wastewater flow from a given area. Physical characteristics such as elevation changes that impact these gravity-based systems and barriers, such as large roadways or canals, can also influence the size and spacing of pump station basins. Geographical conditions, including jurisdictional boundaries, are also a factor. Finally, capacity conditions of nearby stations can also influence the need and sizing of pump stations for sanitary wastewater expansion projects. These specific characteristics are analyzed as part of the design process once a sewer expansion project has been initiated, and the use of the quarter section is a good approach for planning purposes.

The map of areas needing pump stations (Exhibit A) was developed using a report that applied this planning approach to unserved residential pockets and another report identifying key commercial corridors for sewer expansion. The first report, “Identification, Cost Estimates, and Funding Options for Residential Pockets Without Water and/or Sewer Services,” was completed in December 2016 to identify existing “doughnut” neighborhoods, which do not have County nor municipal water and/or wastewater service but are within a certain proximity of wastewater infrastructure. The second report, “Sewer Service to Commercial Corridor Properties in Miami-Dade County,” was completed in 2014. Together, these sources provide a reasonable estimate of the needed pump station infrastructure for unserved and developed areas within the WASD sewer service area. The yellow circles on the map indicate areas where pump stations are needed based on the analysis performed for residential pockets of unserved areas. They are laid out at a distance slightly smaller than a half-mile in diameter to allow for a conservative planning estimate. In addition, the study that identified commercial corridors lacking sewer service included the potential placement of pump stations. On the map, these corridors are identified in green (funded) and orange (unfunded). As mentioned, the exact locations of pump stations are established during the design phase of expansion projects and depend on physical and geographical conditions that are analyzed as part of the design process, as well as the availability of parcels at the property acquisition phase of a project.

Stakeholders Coordination Efforts

Staff from WASD and the Information Technology Department (ITD) prepared the information contained in this report. They continue to work together with municipal, state and community partners on developing tools and processes to support the objectives of the County’s Connect 2 Protect program.

The recently passed Board Resolution R-1121-21, directing the prioritization of any requests made by WASD for the use of property for planned or anticipated infrastructure needs, and prohibiting disposition of any property that is anticipated for future use by WASD for infrastructure, is an effective tool for identifying and securing properties for pump stations during the planning and design phase of sewer expansion projects.

Should you require additional information, please contact Roy Coley, Director, Miami-Dade Water and Sewer Department, at 786-552-8200 or Roy.Coley@miamidade.gov.

c: Geri Bonzon-Keenan, County Attorney

Honorable Chairman Jose “Pepe” Diaz
and Members, Board of County Commissioners
Page 4

Gerald Sanchez, First Assistant County Attorney
Jess McCarty, Executive Assistant County Attorney
Office of the Mayor Senior Staff
Roy Coley, Director, Water and Sewer Department
Yinka Majekodunmi, Commission Auditor
Jennifer Moon, Chief, Office of Policy and Budgetary Affairs
Basia Pruna, Director, Clerk of the Board
Eugene Love, Agenda Coordinator

EXHIBIT A
MAP OF AREAS IN NEED OF POTENTIAL PUMP STATION WITHIN WASD SEWER
SERVICE AREA

