

# Memorandum



**Date:** June 30, 2023

**To:** Honorable Chairman Oliver G. Gilbert, III  
and Members, Board of County Commissioners

Agenda Item No. 2(B)(4)  
July 18, 2023

**From:** Daniella Levine Cava  
Mayor

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

**Subject:** Report on the County's Wellfield Protection Areas - Directive No. 221568

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## Executive Summary

On September 1, 2022, the Board of County Commissioners (Board) adopted Resolution No. R-849-22, sponsored by Commissioner Sosa, in part directing the County Mayor or County Mayor's designee to review the County's wellfield protection areas, propose additional study or modeling, update or revise as necessary or appropriate, and prepare a written report to the Board within 45 days of the effective date of the resolution.

Resolution No. R-849-22 follows up on Ordinance No. 15-25, adopted on April 21, 2015. The memo accompanying the Ordinance directed the County Mayor or County Mayor's designee to conduct further scientific investigations of the [Northwest and West] wellfield protection areas and based on the findings of said scientific investigations provide recommendations to the Board regarding updating and modernizing the existing wellfield protection areas.

Since the adoption of Ordinance No. 15-25, the Department of Regulatory and Economic Resources (RER), Division of Environmental Resources Management (DERM) has initiated a series of actions to fulfil the directives of the Board. In 2015, DERM convened a Wellfield Technical Working Group (TWG) consisting of water resources planners and groundwater/surface water modelling experts, members of the academic/scientific community and stakeholder representatives, to provide recommendations to address some of the concerns expressed regarding the groundwater model developed by the United States Geological Survey (USGS: Estimation of Capture Zones and Drawdown at the Northwest and West Well Fields, Miami-Dade County, Florida, Using an Unconstrained Monte Carlo Analysis: Recent (2004) and Proposed Condition) that had informed staff's original recommendation to the Board regarding updating the West and Northwest Wellfield Protection Areas (WPAs). The working group issued a final report in September of 2017.

A report summarizing the recommendations from the working group and incorporating, as applicable, comments received from the public in response to the working group's recommendations, was provided to the Mayor on September 10, 2018. The primary recommendations were for the evaluation of a specific alternative approach to the approach utilized in the USGS groundwater model and for the inclusion of specific additional variables in the groundwater model.

Working with Miami-Dade Water and Sewer Department (WASD), in February 2018 DERM procured the services of a groundwater modelling expert, Groundwater Tek Inc (GTI), to evaluate the alternative groundwater modeling approach recommended by the technical work group vs the original USGS model and to provide a recommendation for the need to modify the USGS model incorporating the technical working group's recommended approach. As a second phase, as appropriate, GTI was tasked with the development of a technically sound method for modifying the USGS model, providing a scope of work and upon approval by DERM and WASD implementing the recommendation and utilizing the new model to redefine the travel times and drawn down zones of the Northwest and West WPAs.

## **Report**

### **A. Northwest Wellfield Protection Area and West Wellfield Protection Area**

In January 2019, GTI provided DERM and WASD (the county) with a report of the Review of Recommendations of The Technical Work Group for the Wellhead Protection Area Delineations of The West and Northwest Wellfields, Miami-Dade County, Florida. The report acknowledged the validity of some of the concerns raised by the TWG with respect to the USGS groundwater model but identified certain limitations with the alternative approaches recommended by the TWG. GTI proposed, and the county approved, an alternative more conservative approach to addressing the limitations of the USGS model and delineating Northwest and West WPAs.

GTI has been working with the county, under subcontract through WASD's Professional Services Agreement, to refine the groundwater model as appropriate and utilize the model along with other appropriate tools to redefine the boundaries of the Northwest and West Wellfield Protection Areas.

A draft report, indicating the West Wellfield and Northwest Wellfield wellhead protection area delineation based on revised groundwater modeling, released December 16, 2022, is under review with WASD and DERM. Once the internal peer review is completed the report will be made available for public comment prior to the technical workshop anticipated to be convened in June of 2023. Subsequently, the report will be finalized and an ordinance, reflecting the recommended amended maps of the Northwest and West WPAs will be submitted.

## **Conclusion**

DERM continues to evaluate the County's WPAs utilizing current groundwater models to provide recommends for modifications as appropriate based on best available science. DERM's recommendations, incorporating public input as appropriate, for amending the maps of the Northwest and West WPAs is expected to be available by the end of 2023.

In accordance with Ordinance No. 14-65, this report will be placed on the next available Board meeting agenda, without committee review. If you have any questions or require additional

information, please contact Rashid Z. Istambouli, P.E., Interim Assistant Director, Division of Environmental Resources Management in the Department of Regulatory and Economic Resources, at [Rashid.Istambouli@miamidade.gov](mailto:Rashid.Istambouli@miamidade.gov).

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