



Hazen and Sawyer, PC.
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**CITY OF HALLANDALE BEACH
2009 AGREEMENT**

**HAZEN AND SAWYER, PC
WORK AUTHORIZATION No. 22**

RAW WATER MODELING 2012

*In accordance with Article 12 of the AGREEMENT between City of Hallandale Beach, Florida (**CITY**) and Hazen and Sawyer, P.C. (**CONSULTANT**) for TRANSPORTATION PLANNING AND ENGINEERING, TRAFFIC STUDIES, UTILITIES, ROADWAYS, GEOTECHNICAL CONSULTING AND TESTING SERVICES, the following scope of services is provided as requested by the **CITY**. Compensation shall be on a maximum amount not-to-exceed basis for salary costs and reimbursables as set forth in the original agreement.*

Task No. 1 – Raw Water Modeling

CONSULTANT shall evaluate wellfield withdrawals and associated recharge conditions for the proposed Biscayne Aquifer well locations (relocated to the Hillcrest area) on the regional system. **CONSULTANT** shall use the existing groundwater model currently used for the existing permitting process (for the West Park well locations). The following services will be provided through the subconsultant, Federico Lamb and Associates (**FLA**):

1. Prepare numerical modeling of proposed well locations at Hillcrest. Modeling shall evaluate drawdowns and water budgetary impacts to the Regional System **FLA** will use the current multi-layered model previously developed for the **CITY** as part of the ongoing permitting process. Modeling shall be conducted using the modified South Florida Water Management District (SFWMD) Broward County MODFLOW groundwater model under 1-in-10 drought conditions.
2. Assist in the preparation of responses to requests for information to the SFWMD. Up to two responses are assumed for this effort.
3. Attend meetings with SFWMD and the **CITY**, as requested. Up to four meetings have been assumed for this effort.

CONSULTANT shall coordinate the efforts of **FLA** with the **CITY** and with SFWMD, up to the limits of this work authorization, including meetings, review and correspondence.

Task No. 2 – Additional Optional Services

CONSULTANT shall provide additional services, if requested by the **CITY**, up to a limit of \$5,000. Services may include, but are not limited to, additional meetings, correspondence, modeling, or other tasks related to water supply.

SCHEDULE OF COMPLETION

These services shall be rendered by **CONSULTANT** for up to a one year period, initiating from receipt of notice-to-proceed from **CITY**.

COMPENSATION

Compensation shall be made to **CONSULTANT** on an hourly basis, not-to-exceed \$22,500.

AUTHORIZATION - HAZEN AND SAWYER, P.C.



Accepted: Patrick A. Davis, P.E.
Vice President

3.16.12

Date: