RESOLUTION 2025-02

A RESOLUTION BY THE CITY COMMISSION OF THE CITY OF FLAGLER BEACH, FLORIDA, APPROVING A PROPOSAL FROM CONNECT CONSULTING, INC, IN AN AMOUNT NOT TO EXCEED $61,890 FOR THE EVALUATION OF WELL #11 IN RELATION TO THE INCREASED SALT INTRUSION; PROVIDING FOR CONFLICT AND AN EFFECTIVE DATE.

WHEREAS, the City operates and maintains a municipal water system (the "SYSTEM"), including several operating wells, to provide safe potable water to residents, businesses, and other agencies; and

WHEREAS, Well #11 was originally constructed in 2008 and rehabilitated and deepened in 2015; and,

WHEREAS, since the 2015 rehabilitation, the salinity of the drawn water has markedly increased; and,

WHEREAS, City staff, relying upon an existing City of Palm Coast contract, contacted representatives of Connect Consulting to solicit a proposal to evaluate Well #11; and,

WHEREAS, the subsequent Connect Consulting proposal (Exhibit A) was received and reviewed by City staff;

NOW THEREFORE BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF FLAGLER BEACH, AS FOLLOWS:

SECTION 1. The City of Flagler Beach City Commission approves the proposal submitted by Connect Consulting in an amount not to exceed $61,890 for the scope of work and services described in Exhibit A.

SECTION 2. The City Commission authorizes City Staff to issue a Notice to Proceed.

SECTION 3. All resolutions or parts of resolutions in conflict herewith be and the same are hereby repealed.

SECTION 4. This Resolution shall become effective immediately upon passage as provided by law.

PASSED AND ADOPTED THIS 23rd DAY OF JANUARY, 2025.

CITY OF FLAGLER BEACH, FLORIDA
CITY COMMISSION

ATTEST:

_____
Patti King, Mayor

_____
Penny Overstreet, City Clerk

Attachment:
Exhibit A

CCI Connect Consulting, Inc.
Water Resource Consultants

Central Florida Office
1210 Emmel Road
Lake Helen, FL 32744
Office: 386-473-7766
Email: drobertson@cciwater.com

September 30, 2024

Jim Ramer
Water Treatment Plant Superintendent
City of Flagler Beach
P.O. Box 70
Flagler Beach, Florida 32136

RE: Proposal – Public Water Supply Well FB 11 Evaluation
CCI Project No: 242.10

Dear Mr. Ramer:

Connect Consulting, Inc. (CCI) is pleased to provide this proposal to the City of Flagler Beach (City) to evaluate Public Water Supply (PWS) Well FB 11. This proposal has been developed based on information provided to CCI by City staff and a review of historical documents.

Background

The City provides water to its customers under Consumptive Use Permit (CUP) No. 59, issued by the St Johns River Water Management District (SJRWMD) on October 12, 2016 (expires on October 11, 2036). As described in the CUP, the City is authorized to use 333.0 million gallons per year (MGY) (0.912 million gallons per day (MGD) annual average) of groundwater from the Upper Floridan aquifer (UFA) for public supply type use (includes residential, commercial/industrial, water utility uses and unaccounted for losses) to serve a projected population of 6,517 in 2036.

The City operates a well field consisting of six (6) active and one (1) newly constructed UFA wells. **Table 1** lists the PWS wells owned and operated by the City.

Table 1 – City of Flagler Beach
Public Water Supply Well Construction Details

Well No.[1,2]	DID No.	Rate (GPM)	Diameter (in.)	Casing Depth (ft.)	Total Depth (ft.)	Status
FB 10	34525	500	12/8[3]	115/125	254	Active
FB 11	34526	500	12/8[3]	117/127	250	Active
FB 12R	459664	350	12	120	200	Active

Well No.[1,2]	DID No.	Rate (GPM)	Diameter (in.)	Casing Depth (ft.)	Total Depth (ft.)	Status
FB 13	39450	350	12	108	186	Active
FB 14	459665	350	12	108	157	Active
FB 15	459662	350	12	108	135	Active
FB 16	459663	350	12	103	150	Constructed

Notes:
1. Data from Consumptive Use Permit 59-5.
2. Wells FB 1-9 and 12 have been abandoned.
3. FB 10 and FB 11 have been modified to correct casing seal failures, by installing 8-inch sleeve/liners inside the original 12-inch casing shown as 12/8 creating a new casing depth shown as 115/125.

Well FB 11 was originally constructed as a 12-inch diameter PVC well. An evaluation of Well FB 11 in 2014 documented that the casing seal was significantly compromised if not completely absent. The lack of a casing seal allowed shallow unconsolidated formation material (sand, shell, and clay) to pass under the casing and affected operations at the Water Treatment Plant (WTP). In 2015, Well FB 11 was modified by installing an 8-inch liner casing overlapping the 12-inch casing to remedy the lack of a casing seal and drilling the well deeper to intersect the next producing zone of the UFA.

As we understand from discussions with City staff, the chloride concentration is increasing in Well FB 11. An analysis of water quality data, provided by the City, shows that chloride concentration increased from ~370 milligrams per liter (mg/L), after the installation of an 8-inch diameter PVC liner casing, to 930 mg/L in August 2024.

In September 2024, CCI was contacted by City staff to assess the cause of the increasing salinity observed in FB 11. The City requested CCI to prepare a proposal to conduct a hydrogeologic evaluation on Well FB 11. The following scope of work was developed based on data review and conversations with City staff regarding project goals.

Scope of Work

Hydrogeologic Services:

1. Project management
2. Well evaluation program design
3. Oversight during evaluation
4. Data collection during evaluation
5. Prepare a final report summarizing the evaluation.

Well Field Services:

1. Mobilize equipment to the site to perform the scope of work.
2. Coordinate with City to disconnect and lock out power supply to well pump and motor.
3. Remove the submersible pump and motor from the well. Inspect the submersible pump, motor, and drop pipe in the field. Store submersible pump, motor, and drop pipe on site, off the ground, and covered until ready for reinstallation. A pump repair/replacement budget of $7,500 is included and will be determined after inspection.
4. Furnish and install a test pump capable of 400-500 GPM with a standalone generator to power it. Include a calibrated flow meter, multiple access ports for water sample/sand rate collection, and up to 200 ft. of appropriately sized hose/piping to convey the discharge water away from the well site.
5. Conduct static and dynamic (pumped) geophysical logs/borehole video survey at a flow rate of ~400-500 GPM. Borehole logging shall include:
    A. Self-Potential (Electric) log (static)
    B. Long (64-inch) and short (16-inch) normal resistance log (static)
    C. Natural Gamma Ray log (static)
    D. Caliper log (static)
    E. Fluid Resistivity/Conductivity log (static and pumped)
    F. Fluid velocity (flow meter) log (static and pumped)
    G. Temperature log (static and pumped)
    H. Color Borehole Video Survey (static and pumped)
6. Conduct a short-term step-drawdown or constant rate pumping test during geophysical logging and borehole video survey.
7. Collect and analyze field water quality during pumping test.
8. Remove test pump and all tools from the well.
9. Disinfect the well once all tools have been removed and secure the wellhead until the permanent pump is ready to be re-installed.
10. Reinstall the permanent pump.
11. Flow test the pump.
12. Chlorinate the well.
13. Clean up and restore the site
14. Demobilize all equipment and secure the site.

Schedule and Cost

We will complete the scope of work described above on a lump sum/fixed fee basis as summarized in **Table 2**:

Table 2 – Cost Summary

Task	Cost
Well Evaluation	$54,390.00
Pump Allowance	$7,500.00
Total Fee	$61,890.00
Days to Complete (Days)	90

We appreciate the opportunity to assist the City with this project.

Please review this proposal and contact me with any questions.

Sincerely:

Connect Consulting, Inc.
David S. Robertson
David S. Robertson, P.G
Principal Hydrogeologist

Cc: Ehab Hashem
Thomas Freeman
Samuel Adams
Gary Eichler