



City of Hollywood Department of Public Utilities
Water Supply Facilities Work Plan Update Amendment
Scope of Services
City Project #14-3068
May 15, 2014

Project Description

Brown and Caldwell, Inc. (BC) is pleased to submit this scope of work to the City of Hollywood ("City") Department of Public Utilities for completion of a 2014 Water Supply Facilities Work Plan Update Amendment (WFPUA) that will become adopted into the City's Comprehensive Plan Amendment as required by Subsection 163.3177(6)(c)3., F.S. The WFPUA will include public and regional water supply facilities that serve existing and new development within the City of Hollywood's service area. Please note that the term "water supply facilities" includes raw water supply infrastructure, treatment facilities, and transmission, distribution and associated storage infrastructure.

According to the SFWMD, "Local governments are required to update their Work Plans and Comprehensive Plans within 18 months after the District's Governing Board approves the Regional Water Supply Plan for that area. Work Plan Updates are comprehensive plan amendments, as required by Subsection 163.3177(6)(c)3., [Florida Statutes]"

Since the completion of the 2008 WFPUA, the South Florida Water Management District (SFWMD) has evaluated the previous WFPUAs, most of which were adopted between 2007 and 2010, and developed a revised set of guidelines that should be reflected in the current WFPUA. The current WFPUA should focus on updating the following:

- Planning timeframes
- Population estimates and projections
- Projections of future water demand
- Identification of viable water sources and development of projects
- Conservation efforts
- Coordination with applicable Regional Water Supply Plan



The following tasks will be performed for the development of the WFPUA. The last WFPUA for the City of Hollywood was mainly based on the Water System Master Plan which was completed in November 2007, the 10-Year Water Supply Facilities Work Plan completed by Broward County in December 2007, and the Reuse System Master Plan completed in July 2007. For this 2014 WFPUA, those documents are considered to be outdated. The most recent document that can assist with the development of this WFPUA would be the Lower East Coast (LEC) Water Supply Plan that developed by the SFWMD in coordination with the City and other entities that it regulates.

This proposed effort will maintain continuity with the prior adopted Work Plan by editing the existing document to highlight all changes made using underlined text for additions, strikethrough text for deletions and notations for substituted tables and figures.

Scope of Work

As stated previously, this 2014 WFPUA for the City of Hollywood will utilize information from the LEC Plan to the extent feasible and then create additional information for its successful completion. The planning period should start with the current year and be based on the most current available data. If possible, the planning periods in the WFPUA should be consistent with the applicable Regional Water Supply Plan. BC will complete the following ten (10) tasks that follow in order to prepare the 10-year WFPUA. In particular, it should be noted that the task items where any source documents, such as reference reports by others, are identified still entail the effort of repackaging and, in some cases, refining the information to the format or extent required by the regulation.

Task 1. Characterization of the City of Hollywood's Service Area

The activities in this task fully satisfy the update requirements for Section 1, Introduction, partially satisfy the requirements for Section 2, Water Supply System Characterization, and Section 3, Water Suppliers. BC will complete the following sub-tasks to characterize the City of Hollywood's service area:

1. Review Sections 1 and 2 of the existing Work Plan and identify specific updates required.
2. Request specific data/GIS mapping required from the City to update these sections. City shall furnish required information within 2 weeks from requested date.
3. Update Section 1, Introduction, to reflect current requirements
4. Update Section 2, Water Supply System Characteristics
 - Incorporate updated information into section
 - Update population projection table (note – developmental effort is under Task 2)

5. Update Section 3, Water Suppliers, inclusive of:
 - Update maps of the general location of existing water wells, treatment and storage facilities, distribution mains, and water service area based on information to be provided by the City.
 - Update maps of the treatment, storage, and distribution mains of the City of Hollywood water reuse system. This characterization will be entirely based on the most recent Reuse System Master Plan, and assumes that the system has not changed significantly since the previous assessment.
 - Quantify the design capacity of the existing withdrawal and treatment facilities based on design data provided by the City, the current demand on the facilities, and the consumptive use permit allocation. Comment on additional specific conditions likely to emerge during future permit renewal efforts in light of current regional water supply initiatives.
 - Summarize the scope of existing or anticipated emergency and service agreements and capacity allocations of other utilities serving the City of Hollywood's service area.
 - Identify conservation and reuse practices and regulations within the City of Hollywood's service area.

It should be noted that because the Seminole land is not part of the City's service area, the Seminole land will not be addressed in the City's 10-Year WFPUA. The City shall furnish updated data and GIS shapefiles containing information to be updated.

Task 2. Update of Population Projections

Local governments are directed to use population estimates and projections based on the latest published Office of Economic and Demographic Research population estimates and projections or be generated based upon a professionally acceptable methodology (Chapter 163.3177(1)(f)3., F.S.). Previously, the City relied on TAZ-level projections from its 2007 master plan to establish overall service area and sub-area populations and demands. For this update, this will be removed and replaced with aggregate population projections with the service area as a whole that are consistent with the approach used in the most recent update of the LEC Water Supply Plan.

BC will incorporate population projections prepared by SFWMD in the 2013 LEC plan in to the water supply facilities work plan. Projections and estimates in the LEC Plan are based on University of Florida's Bureau of Economic and Business Research (BEBR) medium population projections for a particular year and were coordinated with utilities during the Plan development. The projections used for water facilities planning may differ from those used in other portions of the City's Comprehensive Plan because the water service area extends outside of the City's boundaries. Since the ultimate purpose of population projections in the WFPUA is to facilitate demand forecasting, seasonal population fluctuations will be accounted for by analyzing finished water production data under Task 3: Demand Forecasts.



The population projections updated under this Task shall be used to update the forecasts presented in Section 2 for the proposed Work Plan. Under this task, the updated population projections and estimates should address the:

- City's geographic extent
- Areas served by the City's water facilities, as well as self-supplied areas
- Areas that the City provides water to outside of its jurisdiction, such as the Broward County 3A and 3B/C systems
- Areas within the City where another local government or utility provides water

Finally, maps will be developed based on GIS data to be provided by the City that shall represent current and future areas served. The maps will include:

- Areas served by the City
- Areas served by other water suppliers
- Areas of self-supply

Task 3. Development of Water Demand Forecasts

The activities in this task are required to fully satisfy the update requirements of Section 4, Water Demand Characterization, and partially satisfy Section 5, Water Demand Forecast and Water Supply Adequacy. The previous water supply plan included a detailed characterization of customer location, size and class based on work done as part of the master planning effort. For this update, it is assumed that customer makeup has not significantly changed. Updates of demand forecasts will be based on aggregate demands over the service area, which includes an implicit assumption that customer makeup will not change significantly over the planning horizon (10 years).

BC will update the most recent water demand forecasts readily available within the City of Hollywood's service area. These will be based on the updated planning timeframes, population projections, and be coordinated with the Regional Water Supply Plan. These water demand projections will include adopted or anticipated large-scale developments that are not already reflected in projections done for the LEC, as provided by the City's planners (e.g. Developments of Regional Impact or Sector Plans).

BC will evaluate water production data from the City's 2006-present MORs to identify seasonal trends in water demand, confirm maximum-day and maximum-month peaking factors, and establish an appropriate per-capita demand range for planning purposes. A time frame from 2006 to present (calendar year 2013) was established to reflect the changes in demand patterns that began occurring around 2006-2007 and take into account the most recent conservation measures and county-wide outdoor watering restrictions that have been in effect. Seasonality will be taken into account via the development of the maximum month peaking factor. The water



demand projections developed in this section will be used as the basis for developing water supply source adequacy projections in Task 4. The peak hour to average day peaking factor and fire flow storage requirements (1.0 MGD) established in the previous report will be used in the planned update.

The City will provide information on its current non-revenue water management program and estimated non-revenue water percentages, and BC will incorporate this information into the plan update. Review and analysis of the accuracy or adequacy of the City's non-revenue water program is not contemplated under this scope of services.

The City will coordinate with the City of Fort Lauderdale to obtain up-to-date demand projections for Port Everglades and confirmation that Fort Lauderdale's water supply plan demonstrates that adequate capacity and level of service will be provided to this facility through the planning horizon. Both the City of Hollywood and BC will rely on the City of Fort Lauderdale to provide accurate information; independent verification of the port's water needs by either the City of Hollywood or BC will not be a part of this effort.

The deliverable for this task will be an updated Section 4, and the part of Section 5 related to water demand and storage capacity, of the WFPUA and a figure showing the projected demand over the planning period (to be utilized in Section 5 of the WFPUA).

Task 4. Adequacy of Water Supply Sources

This task is required to partially satisfy the requirements for Section 5, Water Demand Forecast and Water Supply Adequacy. The proposed activities will be combined with the work product from Task 3 to produce Section 5 of the WFPUA.

The plan is required to address the following:

1. If no new water sources are deemed to be necessary, then an explanation of this determination must be included
2. Any plans for new water suppliers
3. Demonstration that each water supplier serving the City has sufficient capacity
4. Plans for self-supplied areas to be supplied by the City (providing regional water service) to these areas during the planning period
5. Identification of new water sources, including plans to develop new water sources
6. Alternative water supply options
7. Identification of new commitments for water conservation and reclaimed water programs
8. Status of Water Use Permit (WUP) to evaluate if future demands can be met

9. Information on potential impacts to existing minimum flows and levels (MFLs), water reservations, or restricted allocation areas over the planning period
10. Updated facility/service area maps for each water supplier

BC recognizes that the City has an array of water supply sources and treatment technologies at its disposal, including Biscayne aquifer wells (conventional or membrane treatment), Floridan aquifer wells (membrane treatment), and public access reuse (advanced treatment of effluent from the SRWWTP). Available water supply sources and treatment technologies will be reviewed and summarized and used to inform the mix of supplies that is required to provide a reliable supply of water. Details of the permits, including numbers, maximum-day and maximum-month allocations, and expiration dates will be added to the report to comply with regulatory requirements.

This section will also include updated information on the status of existing water suppliers and their permit details, supply arrangements/contracts, capacities, etc. Specifically, this task will address coordination with raw water (Broward County) and finished water (Fort Lauderdale) suppliers. To do this, the City shall furnish updated expiration dates and contractual supply requirements (water quantity) of water supply-related intergovernmental contracts, which include the following:

- Raw water supply contract with Broward County
- Finished water supply contract with Broward County
- Finished water supply contract with Dania Beach
- Finished water supply contract with Hallandale Beach
- Emergency interconnect operating agreements, if any
- Any memorandum of understandings (MOUs), bulk service agreements, contracts, etc.
- Any other water supply-related contract that the City deems relevant to this effort

Available water supplies will be plotted against projected demand to demonstrate how the available and planned mix of supplies is able to meet the City's water supply needs. These projections will take into account the need to maintain adequate capacity during times when supplies of water from the Biscayne aquifer may be limited, as well as the need to provide a cost-effective supply of water to service the City's residents. Also, based on contract information furnished by the City, BC shall identify action needed to renew any of the relevant contracts, or if any are set to expire within the planning horizon. This information will be integrated into a revised Section 5 of the Water Supply Facilities Work Plan.



Task 5. Assessment of Existing Conservation and Reuse Efforts

BC will review existing conservation and reuse efforts to determine if there is a need to update or revise them based in changes in statutory requirements or the manner in which they have been implemented. This will address the following

- Assessment of existing water conservation use
- Identification of options to conserve water; this can include educational programs, rate structures, Florida-friendly landscape ordinances, etc.
- Description of successful implementation of mandatory year-round landscape irrigation conservation measures
- Utilization of reclaimed/reuse water
- Any other successful City enforcements of water shortage and other irrigation restrictions
- Any new conservation and reuse efforts to be implemented
- Coordination with Regional Water Supply Plan

For the conservation aspect of this task, BC will rely primarily on descriptions developed in past efforts, such as the previous WFPUA, as well as updated information to be provided by the City. For the reuse aspect of this task, BC will use projections in the City's Reuse Master Plan, which takes into account the increased level of reuse required by the Ocean Outfall Rule. Integration of conservation and reuse into meeting the City's overall demand will be accounted for in Task 4; the purpose of this task is to generally describe conservation and reuse efforts as required by the guidelines for preparing the WFPUA. This information will be integrated into Sections 4 and 5 of the water supply facilities work plan, as applicable.

The deliverable for this task will be a section of the WFPUA describing conservation and reuse efforts.

Task 6. Documentation of Capital Improvements/Water Supply Projects

This task is required to update the 5 to 10 year CIP presented in Section 6, Water Supply Capital Improvements. In anticipation that no new water supply projects will be required (based on the result of a 2012 update of existing capacity needs from the City), the assumed effort assumes this section will be limited to a statement that the City's water supply capacity over the planning horizon is adequate and that no additional capital projects are required. Consequently, this task does not provide for the review and adequacy assessment of an existing CIP.

Should it be determined that a capacity shortfall is projected requiring the development and evaluation of new water supply projects, additional effort beyond the scope of this authorization will be required.

Task 7. Identification of Comprehensive Plan Goals, Objectives, and Policies

This Task will update the elements of Section 7 of the WFPUA. The City shall furnish current goals, objectives, and policies (GOPs) for review by BC to determine if further updates, including updates needed for the purposes of intergovernmental coordination, are recommended. BC shall incorporate updates into Section 7. The GOPs to be furnished by the City and reviewed by BC shall include the following:

- Implementation of the WFPUA
- Concurrency for water supply availability
- Water conservation programs
- Alternative water supply projects
- Reclaimed water programs
- Level of service standards
- Population projections
- Water supply/source needs and demands
- Intergovernmental coordination with the SFWMD, water suppliers, and other local governments. Any joint planning areas and joint infrastructure service areas related to water supply should be identified.

The deliverable for this task will be a set of updated GOPs presented in Section 7, Goals, Objectives and Policies. For this task, it is assumed that only minor modifications to GOPs will be required. Consequently BC does not anticipate developing GOPs where required elements are missing. If assistance with the development of GOPs is required, the required effort would be need to be authorized under a separate task order.

Task 8. Report Preparation/Production

This task includes the preparation of draft and final reports (hard copy and electronic). A total of three paper copies of the draft WFPUA will be submitted. The City will review and provide comments within fourteen days. The final WFPUA document will be prepared following the receipt of comments from the City. The effort associated with collating, reproducing, and distributing the draft and final documents is included herein. A total of five paper copies and one electronic copy (on CD) of the final Work Plan will be submitted.

Task 9. PowerPoint Presentation Development

This task includes the development of a PowerPoint presentation that will be delivered to the City Commission. This task assumes one review meeting of the presentation with City staff, making any necessary revisions, and attending two separate presentation meetings with the City Commission. The deliverable for this task will be a PowerPoint presentation on a CD.



Project Schedule

BC will complete the proposed services within 210 calendar days from the receipt of notice to proceed. Subsequent assessment report revisions will be prepared within 15 calendar days of the receipt of consolidated written comments from the City.

Compensation

BC will perform the proposed services for a not to exceed fee of \$64,059. Please see Exhibit A for the cost breakdown.

Assumptions

- The 10-year WFPUA for the City of Hollywood will be based on any recent City documents deemed informative for this effort.
- The City will provide all requested documentation within two weeks of the notice to proceed.
- BC will rely on population forecasts in the SFWMD LEC Plan published in 2013 and will account for seasonal fluctuations in population via analysis of seasonal water demands.
- The City will provide GIS shapefiles showing the City's political boundaries, service area boundaries, water supply wells, and water mains.
- The City of Hollywood will furnish written comments on each deliverable within 14 calendar days of each submittal.
- The City will confirm the financial feasibility of the 5-year CIP when applicable.
- Aquifer recharge requirements under the ocean outfall rule are outside of the planning horizon of this report and will not be integrated herein, since it is not anticipated that existing sources will be able to provide adequate supply.
- The City shall furnish copies of all applicable permits.

**Table 1. Summary of Engineering Fees - City of Hollywood - Water Supply
Facilities Work Plan Update Amendment**

Description	Amount
Labor Costs	\$ 63,559
Other Direct Costs	\$ 500
Total Fee	\$ 64,059

COST ESTIMATE
CITY OF HOLLYWOOD
WATER SUPPLY FACILITIES WORK PLAN UPDATE AMENDMENT

	Billing Labor Rate	Chief Engineer \$237.01 Grace/Perez	Managing Engineer \$218.99 Earle	Senior Engineer \$156.19 Charles	Senior Drafter \$98.87 Hellyer	Administrative Coordinator \$98.87 Gardner	Labor Hours	Labor Cost
TASKS								
TASK NO. 1 - CHARACTERIZATION OF HOLLYWOOD SERVICE AREA								
1	CHARACTERIZATION OF HOLLYWOOD SERVICE AREA	2	6	32	12	2	54	8,170
	Hour Subtotal	2	6	32	12	2	54	
	Labor Cost Subtotal	\$474	\$1,314	\$4,998	\$1,186	\$198		8,170
TASK NO. 2 - DEVELOPMENT OF POPULATION PROJECTIONS								
2	DEVELOPMENT OF POPULATION PROJECTIONS	2	8	32	12	2	56	8,608
	Hour Subtotal	2	8	32	12	2	56	
	Labor Cost Subtotal	\$474	\$1,752	\$4,998	\$1,186	\$198		8,608
TASK NO. 3 - DEVELOPMENT OF WATER DEMAND FORECASTS								
3	DEVELOPMENT OF WATER DEMAND FORECASTS	4	8	32	4	2	50	8,291
	Hour Subtotal	4	8	32	4	2	50	
	Labor Cost Subtotal	\$948	\$1,752	\$4,998	\$395	\$198		8,291
TASK NO. 4 -ADEQUACY OF WATER SUPPLY SOURCES								
4	ADEQUACY OF WATER SUPPLY SOURCES	4	8	48	0	4	64	10,593
	Hour Subtotal	4	8	48	0	4	64	
	Labor Cost Subtotal	\$948	\$1,752	\$7,497	\$0	\$395		10,593
TASK NO. 5 - ASSESSMENT OF CONSERVATION AND REUSE EFFORTS								
5	ASSESSMENT OF CONSERVATION AND REUSE EFFORTS	1	2	12	4	2	21	3,142
	Hour Subtotal	1	2	12	4	2	21	
	Labor Cost Subtotal	\$237	\$438	\$1,874	\$395	\$198		3,142
TASK NO. 6 - DOCUMENTATION OF CIP/WATER SUPPLY PROJECTS								
6	DOCUMENTATION OF CIP/WATER SUPPLY PROJECTS	1	1	16	4	2	24	3,548
	Hour Subtotal	1	1	16	4	2	24	
	Labor Cost Subtotal	\$237	\$219	\$2,499	\$395	\$198		3,548
TASK NO. 7 - IDENTIFICATION OF COMPREHENSIVE PLAN GOALS, POLICIES, AND OBJECTIVES								
7	IDENTIFICATION OF COMP PLAN GOPs	1	4	12	0	0	17	2,987
	Hour Subtotal	1	4	12	0	0	17	
	Labor Cost Subtotal	\$237	\$876	\$1,874	\$0	\$0		2,987
TASK NO. 8 - REPORT PREPARATION/PRODUCTION								
8	REPORT PREPARATION/PRODUCTION	8	12	20	8	24	72	10,812
	Hour Subtotal	8	12	20	8	24	72	
	Labor Cost Subtotal	\$1,896	\$2,628	\$3,124	\$791	\$2,373		10,812
TASK NO. 9 - COMISSION PRESENTATIONS								
9	COMISSION PRESENTATIONS	8	10	20	0	2	40	7,408
	Hour Subtotal	8	10	20	0	2	40	
	Labor Cost Subtotal	\$1,896	\$2,190	\$3,124	\$0	\$198		7,408
	Total Labor Hours	31	59	224	44	40	398	
	Total Labor Cost	\$7,347	\$12,920	\$34,987	\$4,350	\$3,955		\$63,559

OTHER DIRECT COSTS SUMMARY

	UNIT	NO. OF UNITS	UNIT COST	TOTAL COST
1.0 COPYING AND PRINTING REPRODUCTION (DRAFT AND FINAL REPORT)	UNIT	1	\$ 500.00	\$500
2.0 MAILING - FED EXPRESS	UNIT	0	\$ -	\$0
SUBTOTAL OTHER DIRECT COSTS				\$500
TOTAL ODCS				\$500