

## 95724 APPENDIX A - TECHNICAL SPECIFICATIONS FIRE HYDRANT MAINTENANCE

### **BACKGROUND**

The service territory of the JEA water system contains facilities in Duval, St. Johns, Nassau, and Clay Counties. Periodic preventive maintenance is required to ensure the over 24,000 JEA owned fire hydrants work properly when needed. ~~Hydrant flow tests are also a means to help calibrate the JEA water flow model and to help identify issues in the water distribution system.~~

JEA W/WW Operations and Maintenance has developed a preventive maintenance schedule for hydrants for hydrant servicing and hydrant flow tests based on service routes and set goals for route cycle times. To help meet cycle times established by management, JEA is soliciting contractor assistance.

### **SCOPE**

The intent of this contract is for the **CONTRACTOR** to conduct servicing of JEA owned fire hydrants within assigned hydrant service routes in the JEA service territory ~~and conduct hydrant flow tests for JEA owned hydrants as identified by JEA. Not all hydrants serviced will require a hydrant flow tests and this shall be taken into consideration when completing the bid form for submittal.~~ All assigned work will be grouped together geographically to reduce travel time between hydrants.

#### **1. Hydrant Servicing**

The **CONTRACTOR** shall provide all tools and devices associated with the fire hydrant servicing. The fire hydrant services shall include the following: grease and operate caps, low flow operational flush, check the static pressure at the hydrant, placement of hydrant locator reflector (if necessary), minor vegetation trimming around hydrants, and painting of hydrants. A hydrant service report shall be furnished and shall include the following information: manufacturer of fire hydrant, model of fire hydrant, production year of fire hydrant, fire hydrant condition, fire hydrant location including latitude and longitude coordinates, and any problems discovered.

If a hydrant is in a condition where repairs are outside of the definition of routine maintenance, the hydrant condition should be recorded in the inspection report and reported to the contract administrator for further action. The **CONTRACTOR** shall take caution to schedule the hydrant repair with JEA forces.

JEA established hydrant service routes to improve planning, minimize drive time between hydrants, and for ease of tracking completed hydrant services. A collection of these routes will be provided to the **CONTRACTOR**.

#### **2. ~~Hydrant Flow Testing~~**

~~Fire flow tests are conducted to determine pressure and flow producing capabilities at any location within the distribution system. The primary function of fire flow tests is to determine how much water is available for fighting fires, but the tests also serve as a means of determining the general condition of the distribution system. JEA also uses the data collected from hydrant flow tests to calibrate the water flow model used to determine estimated flow to hydrants.~~

#### **Field Procedures for Flow Tests**

- ~~1. Make provisions for minimizing interruptions to traffic and for adequate drainage of water.~~
- ~~2. Locate the residual hydrant and do the following:~~
  - ~~a. Flush the residual hydrant to eliminate sediment that may damage the gauge.~~
  - ~~b. Install the outlet nozzle cap equipped with the pressure gauge on a hydrant nozzle.~~
  - ~~c. Open the main valve slowly until the air is vented. Close the vent and open the main valve fully.~~
  - ~~d. Read the gauge. This is the static pressure reading.~~
- ~~3. Locate the flow hydrant(s) and do the following:~~
  - ~~a. Measure and record the ID of the outlet nozzle from which the flow is measured. The ID measurement is taken to the nearest 1/16 in. (0.159 cm).~~

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- ~~b. Determine the discharge. At the hydrants used for flow during the test, the discharges from the open butts are determined from measurements of the diameter of the outlets flowed, the velocity pressures of the streams as indicated by the Pitot gauge readings, and the coefficient of the discharge outlet being flowed. If flow tubes or stream strengtheners are used, a coefficient of 0.95 is suggested unless the coefficient of the tube is known.~~
- 4. Conduct the flow test as follows:
  - ~~a. Station one observer at the residual hydrant and one observer at each flow hydrant.~~
  - ~~b. Open each flow hydrant slowly until it is fully open. Open one hydrant at a time to avoid a pressure surge.~~
  - ~~c. When the pressure at the residual hydrant is stabilized, the observer signals the persons stationed at the flow hydrants to take the readings. The readings for residual pressure of the residual hydrant and the Pitot tube readings of each flow hydrant must be taken simultaneously. The air should be exhausted from the flowing hydrant before the reading is taken. For an accurate reading, hold the Pitot tube in the center of the nozzle, with the axis of the Pitot tube opening parallel to the direction of flow. The Pitot tube should be held away from the end of the nozzle at a distance of about half the nozzle diameter.~~
  - ~~d. Record the residual reading of the residual hydrant and the Pitot gauge reading at each flow hydrant. Then close the flow hydrants one at a time.~~

~~For reasonably accurate test results, the pressure drop between the static and the residual pressures should be at least 10 psi (70 kPa). If the distribution system is strong (as it should be near a supply main) and the pressure drop is less than 10 psi (70 kPa), an additional flow hydrant should be added to the test. It is best for observers to calculate the flow in the field so that if the results appear in error, the test can be repeated immediately.~~

### **MATERIALS PROVIDED BY JEA**

JEA will provide the following items to the CONTRACTOR: 1 gallon of paint for every 7.5 fire hydrants painted and the hydrant locator reflectors.

### **ACCESS TO CONTRACTOR'S OPERATING RECORDS**

The Contractor shall provide immediate access to its operating records as required by JEA and applicable regulatory agencies.

### **FACILITY LOCATIONS**

Services rendered by the Contractor may involve all JEA owned facilities within our service area (primarily in Duval County, but includes St. Johns and Nassau Counties)

### **WORK AND QUANTITIES**

Payment for mileage and travel time is not allowed. Unit prices entered on the Bid Workbook should encompass the cost of all work performed to complete each job assigned. Quantities for this contract are not guaranteed and are subject to the availability of funds.

### **MINIMUM QUALIFICATIONS**

All applicants must be an approved vendor on the JEA Responsible Bidder List – Category GC4 – Fire Protection Equipment Installation, Maintenance and Repair.

To become an approved vendor in this category, go to JEA.com and search “Application for Responsible Bidder List” and follow the instructions given.