

**1.0 Purpose and Need**

The purpose of this revenue policy is to ensure that there is sufficient revenue to support direct and indirect operating, capital, reserves and current and future debt service costs.

**2.0 Definitions**

**2.1 Domestic Quality Wastewater.** Defined in accordance with HRSD's Domestic Wastewater Survey that specifies the primary pollutants through sampling and the corresponding concentration limits for domestic wastewater.

**2.2 Facility Charges.** Charges to cover the cost of treatment and conveyance capacity consumed by new development or redevelopment. Facility charges are applied to any sewer or sewer system discharging into HRSD facilities and any increase to existing service.

**2.3 Hauled Wastewater.** Wastewater transported to a wastewater treatment plant and discharged that is subject to a fee.

**2.4 High Strength or Unusual Waste.** Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Phosphorus (TP), and Total Kjeldahl Nitrogen (TKN) discharged waste requiring a Surcharge Rate when concentrations exceed the published levels in the Rate Schedule or unusual wastes not covered by the Rate Schedule that may be considered separately and may be assigned a special rate.

**2.5 HRSD Charges.** Any and all charges or fees billed to customers for wastewater services provide by HRSD.

**2.6 HRSD Collection System.** All infrastructure conveying flow from homes, businesses and industries to the Interceptor System in localities where HRSD owns or operates a collection system.

**2.7 HRSD Enabling Act.** The Commonwealth of Virginia 1960 Acts of the Assembly, c. 66 as amended

**2.8 Interceptor System.** Large pipelines conveying flow from the Collection System to the Wastewater Treatment Plant.

**2.9 Rational Nexus Criteria.** This ensures that there is a reasonable connection between HRSD Charges and the actual cost of operating the wastewater system. These criteria ensure: (1) the charges are not arbitrary, (2) the charges are equitable, and (3) the charges are not discriminatory.

**2.10 Regional Sanitary Sewer System.** All portions of the individual locality and HRSD wastewater collection and transmission systems and appurtenances thereto.

**2.11 Surcharge Rate.** Rates for high strength wastes to recover costs in direct proportion to volume and pollutant concentrations. Since the majority of HRSD's costs are fixed, surcharge rates are based on a marginal cost approach for the variable costs associated with the incremental costs to treat High Strength Wastes.

**2.12 Wastewater Treatment Charges.** Charges to convey and treat Domestic Quality Wastewater that are based on billed water consumption, an effluent wastewater meter, or a flat rate.

### **3.0 Guiding Principles**

**3.1** General.

**3.1.1** To the extent feasible, HRSD is a cost recovery enterprise and supports a uniform rate structure for interception and treatment regardless of which wastewater treatment plant treats a customer's wastewater.

**3.1.2** Wastewater Treatment and Collection Charges shall not be waived. However, payment extensions may be established for the collection of HRSD Charges.

**3.1.3** All new connections shall pay an equitable share for the treatment and conveyance capacity consumed by their wastewater discharge to the Regional Sanitary Sewer System.

**3.1.4** All rates shall be reviewed and revised (if required) annually and approved by the Commission as part of the annual budget process. Changes shall be publically advertised in accordance with HRSD's Enabling Act as well as posted on the HRSD web site.

**3.1.5** Surcharge rates for high strength wastes are set to recover costs in direct proportion to volume and pollutant concentrations. Since the majority of HRSD's costs are fixed, surcharge rates are based on a marginal cost approach for the

variable costs associated with the incremental costs to treat high strength wastes.

**3.1.6** Facility Charges are an up-front charge proportional to the cost of treatment and conveyance capacity consumed by each new user. This charge ensures that an unfair burden is not placed on existing users that would otherwise pay higher rates to expand the system to accommodate new growth. HRSD uses the Rational Nexus Criteria to derive facility charges.

**3.1.7** HRSD will avoid dependence on temporary revenues such as grants to fund operating costs. One-time temporary revenues or grants should typically be used to fund capital projects.

**3.2** Basis of Charges.

**3.2.1** Wastewater Treatment Charges - HRSD shall establish rates based on the wastewater quality and one of the following factors:

- (1) Volume of water purchased by the customer (as recorded by a water meter)
- (2) Volume of effluent discharged to the sewer system (as recorded by an effluent meter)
- (3) A rate based on facility use and billing period.
- (4) A single family residential flat rate.
- (5) HRSD treatment plants are designed to treat domestic quality wastewater. Additional charges may be assessed for wastewater with qualities that differ from the current definition of Domestic Quality Wastewater.
- (6) Minimum charges apply to all accounts, except as specified herein.

**3.2.2** Facility Charges.

- (1) HRSD shall establish Facility Charges for new connections based upon the size of the water meter serving the new connection. If the Locality does not offer a specific meter size, a combination meter is proposed or other similar scenario, the Facility Charge may be based on a calculated meter size using the AWWA M22 Sizing Water Service Lines and Meters manual. Additional special exceptions may be outlined in the HRSD rate schedule.

- (2) The Facility Charge for each meter size is based on the unit volume rate, which is the total net replacement value of all HRSD's assets divided by HRSD's total hydraulic capacity, times the average water consumption for each meter size.
- (3) HRSD reserves the right to establish facility charges for new connections based upon wastewater that differs from domestic quality wastewater and that consumes loading capacity in excess of capacity consumed by the equivalent volume of Domestic Quality Wastewater.

**3.2.3** HRSD Collection System Maintenance Charges - HRSD may establish separate collection system maintenance charges for each Locality within the HRSD Collection System. A weighted average cost of HRSD Locality collection rates will be used to develop the collection rate annually. Localities that do not charge a Locality collection rate will be excluded from this calculation. The weighted average will be based on the latest population estimates provided by the Welden Cooper Center for Public Service or other Commonwealth designated demographics agency.

**3.2.4** Hauled Wastewater - Charges are based on a common charge across all plants as derived from the HRSD rate model and are not subject to a minimum charge.

#### **4.0** Procedures

**4.1** Determining Costs.

**4.1.1** The budgeted annual costs shall be used to calculate rates that will be in effect for the budget fiscal year.

**4.1.2** Budgeted costs shall be loaded into a comprehensive rate model to allocate costs to applicable categories annually (see Appendix A). The model shall allocate costs to volume and each pollutant identified in the current HRSD Domestic Wastewater Survey.

**4.2** Determining Total Wastewater Volume.

The total volume of wastewater to be billed during a budget year shall be estimated based upon the water consumption trends within the HRSD service area.

**4.3 Calculating Rates.**

**4.3.1** The model shall calculate a wastewater treatment rate based on total budgeted cost divided by the estimated volume of wastewater to be billed in the fiscal year. The rate shall be expressed in dollars per hundred cubic feet or per 1,000 gallons.

**4.3.2** The model shall calculate the incremental cost to treat each additional pound of each pollutant in excess of the pounds of pollutants identified for Domestic Quality Wastewater in the current HRSD Domestic Wastewater Survey. The rates shall be expressed in dollars per 100 pounds or per milligrams per liter per hundred cubic feet of wastewater.

**4.3.3** The new connection charges shall be calculated by dividing the replacement cost for all HRSD facilities by HRSD's total hydraulic capacity to obtain the replacement cost per gallon. This replacement cost per gallon shall be multiplied by the estimated flow expected from new connections and expressed in dollars per meter size. The average daily flows for each size water meter shall be determined using actual historical data from HRSD's meter database.

**4.3.4** Flat Rate Accounts are for single family residential accounts with water meters 1" and smaller that do not have a water meter or that use a significant amount of water that is not discharged to the sanitary sewer. The Flat Rate is based on average residential water consumption for a 30-day period times the prevailing Wastewater Treatment Rate. The General Manager or Director of Finance may approve a flat rate account for water meters greater than 1" if the requestor provides sufficient evidence that there is a significant portion of water that is not discharged into the sanitary sewer system relative to average residential water consumption.

**4.3.5** The minimum charge for all accounts will be specified in the Rate Schedule.

**4.4 Implementation.**

**4.4.1** All rates shall be approved by the Commission as part of the annual budget process.

**4.4.2** Rates shall be advertised for four consecutive weeks in a newspaper of general circulation within the District

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*Revenue Policy*



Adopted: May 23, 2017

Revised: N/A

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**4.5** Financial Forecast.

HRSD will analyze water consumption, regional economic and population data periodically to identify any trends that may impact the long-range financial forecast. Based on this analysis, a conservative approach will be used to project revenues in the long-range financial forecast.

**4.6** Collections.

HRSD will monitor all collections to ensure they are equitably administered, timely and accurate. The cost of collections shall not exceed the marginal incremental revenue and it should not be a large percentage of the amount to be collected.

**5.0** Responsibility and Authority

**5.1** The General Manager shall ensure the Commission reviews all rates annually as part of the annual budget process.

**5.2** Rates may only be changed with an affirmative vote of a majority of the Commission at a legally noticed public meeting of the Commission.

**5.3** The General Manager shall ensure any rate revisions are advertised and published in accordance with the HRSD Enabling Act.

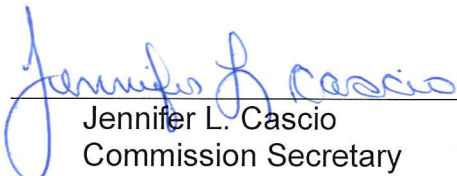
**5.4** The Director of Finance will present an updated Financial Forecast to the Commission and manage the update to the Rate Model on an annual basis.

Approved:

  
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Frederick N. Elofson  
Commission Chair

5/23/17  
\_\_\_\_\_  
Date

Attest:

  
\_\_\_\_\_  
Jennifer L. Cascio  
Commission Secretary

5/23/17  
\_\_\_\_\_  
Date

**COMMISSION ADOPTED POLICY**  
**Revenue Policy**  
**Appendix A – Rate Model Summary**



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Revised: N/A

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**1.0 Rate Model Summary**

HRSD's rate model uses a cost accounting process to allocate all operating costs to volume and each of four specific pollutants. The model designates each line item cost as fixed or variable. Fixed costs are those that are not influenced, in the short run, by volume or the quantity of pollutants in the wastewater being treated. These include for example, personnel costs, office, administrative, customer service, billing and collection expenses, and debt service. Conversely, variable costs are those that are affected by the volume and the amount of pollutants present; these include treatment plant expenditures for chemicals, electricity, fuel, and solids disposal. The rate model uses engineering criteria to allocate the variable costs to each of the four pollutants. Once the operating costs have been allocated, the model deducts miscellaneous revenues, includes a provision for bad debt, and derives rates for volume (\$/CCF) and high strength surcharges (\$/pound); the latter equates to HRSD's marginal or incremental cost attributable to treating each pollutant in excess of the amount present in typical domestic wastewater and is also presented as the equivalent \$ per mg/l per 100 CF to facilitate calculation by customers. Net fixed costs and the variable costs to treat the four pollutants present in typical domestic sewage are recovered via the volume rate and surcharges.

**2.0 Rate Model Schematic**

