

Issue Paper 3: Review of the Hydrant Permit Program for the Tualatin Valley Water District

Introduction

Tualatin Valley Water District (TVWD or the “District”) retained HDR Engineering, Inc. (HDR) to provide an overview of TVWD’s current hydrant permit program, along with a review of the various approaches utilities use for charging hydrant meter water users and bulk water users. TVWD wants to meter and recover costs for temporary use of water through a hydrant more accurately. A comprehensive hydrant permit program balances protection of the community’s water supply and access to that water supply. Utilities will often limit the number of hydrants that are available for use and designate specific hydrant locations within their system for a variety of reasons, including hydraulic constraints of certain areas, limiting impacts to customers from potential sediment disturbances, safety concerns and overall, preventing water system damage or potential contamination events.

This issue paper provides the Rate Advisory Committee (RAC) with a review of current utility practices for hydrant permit programs and charges for construction or water hauler customers.

Defining Hydrant Charges

The primary purpose of hydrants is to provide public fire protection. However, hydrants also provide an easy access point for temporary connection for construction activity, temporary landscaping, or filling water trucks or tanks. Water haulers fill their trucks from specified points in the system such as hydrants or other locations designated by the utility. Customers using hydrants for construction purposes may physically connect to the system for short periods (i.e., seasonal project week) as needed. These customers are unique in that they lack a direct connection to the system and their usage characteristics vary. For example, depending on the need (total volume) for water, and the size (capacity) of the hauler, the timing and use of the system can vary significantly from one customer to another. This can also be further impacted by the need for water at various times of the year (e.g., construction season). As a result, these customers can place different impacts on the system, thus resulting in utilities taking different approaches in establishing rates for hydrant water customers.

One of the challenges in developing a hydrant meter program is that there is not a defined methodology from the American Water Works Association (AWWA) or other respected industry sources on hydrant water use. Hydrant fees typically fall under the category of miscellaneous charges. Frequently, miscellaneous charges or fees are set based on the cost associated with providing the service. For example, hydrant water rates should include the costs of managing the program, costs of supplies (e.g., meter/hydrant key), and other relevant costs.

TVWD Approach for Hydrant Permit Program

TVWD’s present hydrant permit program includes a permit fee based on length of permit plus \$4.06 per 100 cubic feet of usage. Currently, TVWD has 76 active hydrant permits as follows:

- 12 for 3 months
- 11 for 6 months
- 53 for 12 months



For construction sites, hydrant meters and backflow prevention assemblies¹ are provided in advance of the permanent meter when needed for site development. A deposit of \$2,000 is required for large meters (3-inch) and \$500 for small meters (1-inch). The customer’s metered water usage is billed at the District’s first block rate of \$4.06 per CCF². When the customer returns the hydrant meter, the deposit, less water usage charges, is returned to the permit holder.

For a truck hauler customer, District staff inspects the vehicle for the appropriate backflow protection (i.e., air gap) and proper equipment. The permit holder then receives a packet with a load card – used to track how many times a truck or tank is filled –and instructions for loading, along with approved hydrant locations. The permit holder is responsible for recording truck loads³ and submitting a quarterly record with which TVWD invoices the permit holder. Provided below in Table 1 is a summary of TVWD’s present hydrant meter and permit rates, and the current approach to charging these customers.

Table 1
TVWD Present Hydrant Permit Rates

Rate Component	Permit Fee (\$)	Hydrant Meter Deposit 3-inch (\$)	Water Unit Charge (\$/per 100 cubic feet)
Hydrant Meter			
Three Month Permit	\$65.00	\$2,000.00	\$4.06
Six Month Permit	\$90.00	\$2,000.00	\$4.06
Twelve Month Permit	\$140.00	\$2,000.00	\$4.06
Truck Hauler			
Three Month Permit	\$65.00		\$4.06
Six Month Permit	\$90.00		\$4.06
Twelve Month Permit	\$140.00		\$4.06

¹ Backflow prevention assemblies are designed to protect the water line from contamination.

² CCF = one hundred cubic feet or approximately 748 gallons of water

³ A meter is not issued to the water hauler customer since the meter is large and somewhat awkward to have to install before each refill. In addition, a hydrant meter is a measuring device prone to damage if frequently installed, removed and placed in the truck between refills.

Overall, TVWD's hydrant permit program is simple and relatively effective, with the added benefit of being cost effective for customers; however, the program requires varying levels of staff involvement, notably during peak times when program work increases staff time significantly. In March 2016, at a TVWD Board Work Session, District staff presented an overview of the issues and concerns for TVWD's hydrant meter permit program. The main concerns voiced at the meeting were the public perception of leaking, poorly maintained filling equipment and the method used by TVWD to track the number of loads by the permit holder, and to a lesser degree the inspection process itself which staff have noted could be improved substantially through more automated processes (e.g., online payments and application forms).

Review of Hydrant Permit Programs

In reviewing utility hydrant programs around the region, two primary approaches were found. These are the use of a hydrant permit, similar to TVWD's current approach, or in the case of water haulers, the use of a designated water filling station.

The hydrant permit approach is the most common. In order to get a hydrant permit, applicants must include a deposit for the meter, pay a rental fee for the meter, and pay for water use.⁴

The second approach is the use of a water filling station or bulk water station. Access to the station is granted by application and purchase/deposit of an access key card. Water charges are assessed by water unit (e.g., CCF) or by the truck load. Table 2 is a summary of hydrant permit programs at selected Oregon and other Pacific Northwest utilities.

⁴ TVWD's method differs slightly in that the District does not charge a rental fee for the meter.

Table 2
Hydrant Permit Programs at Selected Oregon
and Other Pacific Northwest Utilities

Name of Utility	Hydrant Use (Metered)	Truck/Tank Lot (Unmetered)	Water Fill Station
State of Oregon			
City of Albany	💧		
City of Beaverton	💧		
City of Bend	💧		
City of Corvallis			💧
Eugene Water and Electric Board			💧
Grant's Pass			💧
City of Hillsboro	💧		
City of Lake Oswego	💧		
City of Medford	💧		
Portland Water Bureau	💧	💧	
City of Redmond	💧		
City of Salem			💧
City of Tigard	💧		
City of Tualatin	💧	💧	
Tualatin Valley Water District	💧	💧	
Other Utilities			
City of Bellevue, WA	💧	💧	
City of Seattle, WA	💧		
City of Spokane, WA	💧		
City of Tacoma, WA	💧	💧	
City of Vancouver, WA	💧	💧	

As shown in Table 1, most hydrant programs are structured for a metered hydrant use.

Overview of Industry Approaches for Hydrant Permit Fees

Based on a review of other water utility rate schedules, HDR found that the method used to charge customers for hydrant water use can vary. However, HDR did not find any specific

analyses that outlined the cost basis for the hydrant rate, particularly if the rate was not tied to the existing rate schedule.

The fee structure for hydrant service can vary significantly given the wide range of facilities that can be used to provide the service, whether the service is metered or monitored, and the approach to managing the service. Based on HDR's review, there were several common approaches. The two simplest approaches were:

- Flat rate based on fill-ups/days/month
- Rates based on actual metered use

In the cases where it is a flat/fixed cost per fill up/day, the utilities generally would not meter the use. However, for those customers where there was a metered rate, the customer rented a hydrant meter that would track consumption for billing purposes. While no specific analysis was found for the rate development, in many cases the rate was similar to other consumption charges for the utility, and in some cases, appeared to be specifically developed for the water hauler service. For example, some utilities charge the same rate as all other commercial or irrigation customers. In addition to the hydrant fee and water unit fee, there are often other fees such as the following:

- Permit fee
- Set up fee
- Hydrant deposit
- Hydrant rental fee

Table 3 shows the hydrant permit rates at selected regional utilities.

Table 3
Hydrant Permit Rates at Selected Oregon
and Other Pacific Northwest Utilities

Utility Name	Permit Fee (\$)	Set Up Fee (\$)	Hydrant Meter Deposit 3-inch (\$)	Hydrant Meter Rental (\$/Day)	Hydrant Meter Fee (\$/Month)	Water Unit Fee (\$/Usage)
State of Oregon						
City of Albany [1]		\$25.00	\$75.00		\$95.56	\$3.35/100 CF
City of Beaverton [2]		\$25.00	\$675.00			\$2.97/100 CF
City of Bend [3]	\$102.28				\$44.25	\$1.86/100 CF
City of Hillsboro			\$675.00	\$4.00		\$2.00/1,000 Gals
City of Lake Oswego [4]	\$550.00		\$475.00	\$10.00		\$3.16/100 CF
City of Medford		\$40.00		\$10.00		
Portland Water Bureau						
Hydrant Meter Permit [5]	\$360.00		\$627.00	\$3.60		\$4.22/100 CF
Annual Permit [6]	\$2,825.00					
City of Redmond	\$85.00			\$40.00	\$57.23	\$0.91/100 CF
City of Tigard [7]		\$50.00	\$650.00		\$50.00	\$7.75/Month
City of Tualatin [8]	\$50.00		\$700.00	\$5.00	\$50.00	\$2.29/100 CF
Tualatin Valley Water District						
Three Month Permit	\$65.00		\$2,000.00			\$4.06/100 CF
Six Month Permit	\$90.00		\$2,000.00			\$4.06/100 CF
Twelve Month Permit	\$140.00		\$2,000.00			\$4.06/100 CF
Other Utilities						
City of Bellevue, WA [9]						
Fire Hydrant	\$100.00		\$800.00		\$50.00	\$6.60/100 CF
Tank Lot (1 fill up per day)						\$6.60/100 CF
City of Seattle, WA [10]	\$214.00	\$304.00			\$45.00 or \$57.00	\$5.06/100 CF
City of Spokane, WA [11]	\$50.00		\$600.00			
City of Tacoma, WA [12]						
Fixed (Single) Site	\$100.00		\$1,000.00		\$263.04	\$1.945/100 CF
Multiple Site	\$100.00				\$263.04	\$1.945/100 CF
Short Term (per truck, per day)					\$50.00	
City of Vancouver, WA [13]						
Short Term < 15 Days	\$100.00					\$1.47/100 CF
Long Term > 15 Days	\$100.00				\$100.00	\$1.47/100 CF
Truck Based					\$100.00	\$1.47/100 CF

- [1] Albany fees for 2-inch meter.
- [2] Beaverton set up fee of \$25 charged for each use up to one month or \$100 per year.
- [3] Bend hydrant fee \$25 per month; \$100 per year. Backflow assembly required and included in fee price.
- [4] Lake Oswego rental fee \$10 per day with a maximum of \$50 per month.
- [5] Portland Water Bureau temporary hydrant 3-day minimum with one three-month extension. 700 cubic feet included in permit. Additional water charged at \$4.22/100 cf.
- [6] Portland Water Bureau – 2 vehicle tags (includes 60,000 cubic feet water); each additional tag under 1,000 gallons is \$400, over 1,000 gallons is \$835.
- [7] Tigard water unit rate is based on irrigation rate.
- [8] City of Tualatin permit fee is per truck for six months. Hydrant fee per month is per truck valid for six months.
- [9] Bellevue water unit based one truck fill up per day.
- [10] Seattle hydrant fee is one time not by month. If hydrant meter cannot be used, \$45/month from Sept 16 to May 15, \$57/month from May 16 to Sept 15.
- [11] Spokane permit is daily charge of \$50, \$200 monthly, \$450 yearly.
- [12] Tacoma is for 2-inch meter. Water unit usage plus monthly readiness to serve charge of \$263.04. Hydrant fee is per truck.
- [13] Vancouver truck based also pay for meter and installation.

Hydrant permit programs have additional administrative and policy restrictions that would need to be enforced. Typically, the utility will have various fees and penalties in place to encourage certain positive behaviors or to discourage negative behaviors. Included in these miscellaneous fees may be a penalty for unauthorized water use, failure to not report water use or tank inspection, and deposit/rental for a backflow prevention device. Again, the various fees would depend on the ability of the utility to provide the service, either through a hydrant or other specified point. Table 4 shows additional miscellaneous charges at various regional utilities.

Table 4
Other Fees and Charges at Selected Oregon
and Other Pacific Northwest Utilities

Utility Name	Wrench Deposit /Rental	Backflow Deposit/Rental	Other Fees and Penalties
State of Oregon			
City of Albany	\$25.00 deposit		\$25.00 Relocation; \$50 + \$3.35 per 100 CF of unauthorized use
City of Beaverton	\$25.00 deposit		\$102.28 Relocation
City of Hillsboro		\$250.00 deposit; \$2.00 day rental	
Portland Water Bureau	\$269.00 deposit; \$3.60 day rental		
City of Salem		\$404.00 deposit; \$3.00 day rental	
Tualatin Valley Water District			\$70 Other location tank inspection; \$950 Uninspected tank; \$500.00 Unauthorized use per occurrence; \$15/Day Failure to report usage; damage to meter deducted from deposit; deposit forfeited if meter held more than 3 months.
Other Utilities			
City of Bellevue, WA	\$25.00 deposit		Unauthorized use \$500 per day per violation up to \$5,000 per day for repeat violations
City of Spokane, WA	\$75.00 deposit		\$375.00 Unauthorized use
City of Tacoma, WA			\$1,000.00 Unauthorized use
City of Vancouver, WA			\$50.00 Relocation; \$200 failure to report usage

The second approach of the use of a water filling station or bulk water station is limited in practice in the Pacific Northwest. The water from a filling station is charged by water unit or by the truck load. Table 5 is a summary of regional utilities with water filling stations and their rates.

Table 5
Water Filling Stations at Selected Oregon
and Other Pacific Northwest Utilities

Name of Utility	Set up Fee	Key Deposit	Water Unit Charge
State of Oregon			
City of Corvallis		\$150.00	\$20 per access
Eugene Water and Electric Board		\$15.00	\$4.00 per 1,000 gallons
Grant's Pass			\$6.50 per 1,000 gallons
City of Salem			\$0.75 per 1,000 gallons

Based on the review of regional hydrant permit programs, Table 6 provides a summary of the advantages and disadvantages of the various approaches. Keep in mind that this summary is based on the limited review of Oregon and other Pacific Northwest utilities. It is not an evaluation of the overall cost to the system.

Table 6
Review of Hydrant Permit Program Approaches

<i>Establishes specific rules and regulations of the utility for hydrant permit meter use and filling stations</i>		
Metered Hydrant Use	Un-Metered Hydrant Use	Water Filling Station
<p>Advantages –</p> <ul style="list-style-type: none"> • Specific sites can be designated and identified. • Access points are spread across the service area. • Reduced need to monitor and track customer use. • Consumption is metered. • No self reporting since metered. <p>Disadvantages –</p> <ul style="list-style-type: none"> • Initial cost of meters for customer use. • Maintenance of equipment and damage to hydrant meters. • Higher customer cost for deposits, rental fees, etc. • Administration of additional fees and program. 	<p>Advantages –</p> <ul style="list-style-type: none"> • Specific sites can be designated and identified. • Access points are spread across the service area. • Lower cost of metering equipment. • Lower maintenance costs of metering equipment. • Simple, low cost approach and program. <p>Disadvantages –</p> <ul style="list-style-type: none"> • Consumption is un-metered. • Reliance on customer self reporting to bill for usage. • Increased staff inspection and accounting effort to monitor customers. 	<p>Advantages –</p> <ul style="list-style-type: none"> • All consumption is metered and tracked by customer. • Limits water access to specific locations. • Minimizes the need for hydrant meters and equipment. • Eliminates wear and tear on fire hydrants. • Easier to monitor location(s). <p>Disadvantages –</p> <ul style="list-style-type: none"> • Capital costs of establishing and maintaining station(s). • Additional operating costs for maintaining the station(s). • Required monitoring of trucks and access for permitted vehicles only. • Availability of sites and impact to locations.

Based on the initial review and comparison of TVWD's hydrant permit program to other utilities, TVWD's approach is similar to other utilities but may not include all the fees other utilities use to reflect the costs of the program. However, additional hydrant permit program options may be more expensive and not as flexible for TVWD's customers.

Addressing TVWD's Board Concerns

As noted, TVWD currently has approximately 76 active customers in the hydrant permit program. These customers used approximately 3,714 CCF in 2014 which resulted in approximately \$13,000 in revenue. Compared to TVWD's total rate revenue of \$35 million and annual metered sales of 9.8 million, these customers represented only 0.04% of revenues and 0.04% of the total metered sales in 2014.

The current issues related to the hydrant meter program are centered around the perception of leaking, poorly maintained filling equipment and the method used by the District to track the number of loads by the permit holder, and as previously noted, the inspection and process itself which District staff have noted could be improved through more automated processes. There are limited options available to TVWD to address the perception issues above but the latter items could be refined in order to reduce program expenses related to staff time.

In the case of hydrant meters for construction, TVWD's approach is typical of other utilities and the fee assessed against the metered usage appears reasonable. In the case of water haulers, there are alternative approaches available, such as the building of a water-filling station. Our experience suggests that the cost of constructing and maintaining a water filling station likely far exceeds the benefit to be derived. Requiring the use of a hydrant meter for a water hauler is certainly feasible but likely awkward and costly given the increase need to meet District permit demands. TVWD's use of designated hydrants and regular truck inspections appears to be a reasonable balance between the District's desire to protect its customers from water theft and most importantly, maintain public health, while meeting the water haulers' desire to be able to efficiently fill their trucks.

Summary

This paper provides an overview of the issue of hydrant programs and the associated rates and fees. It is intended to provide an understanding of the different approaches and programs currently being used across the Pacific Northwest. From this information the Rate Advisory Committee can begin to consider the issue of hydrant meter programs and whether TVWD should consider making any adjustments to its current program.