

Date: September 28, 2022

To: Shanika Holen
Highland Water District
24602 Old Owen Rd
Monroe, WA 98272

Submitted via email: staff@highlandwaterdistrict.com

From: Karyn Johnson

RE: Six-Year Rate Outlook and General Facilities Charges Update

KLJ Financial Consulting (KLJ) and Katy Isaksen & Associates (KI&A) teamed to perform an update of water rates and general facilities charges (GFCs) for the Highland Water District (District).

The last rate study was completed by KI&A in 2015 along with the Water System Plan (WSP) prepared by PACE Engineers. That study included proposed rates for years 2016-2021. The District has extended the life of its WSP from 6 years to 10 years. The purpose of the current study is to update the capital funding plan, financial plan and proposed rates for the next six years, 2023-2028, and to update HWD GFCs that were last updated in 2009. This memorandum summarizes key assumptions and results of the study.

A. SUMMARY RESULTS

A1. SIX-YEAR RATE OUTLOOK

Key objectives of the financial plan are to set rates sufficient to sustain ongoing operations and maintenance (O&M), pay existing debt service obligations, fund identified capital needs and maintain adequate cash reserves. Major components of the analysis included:

- Evaluation of financial policies
- Development of the capital funding strategy
- Forecast of operating costs and revenue needs
- Strategy for rate adjustments

The primary funding source for O&M, existing debt service obligations, and future capital needs are the water service charges billed to customers on a monthly basis. The rates include two components, a flat basic charge and a water usage charge with increasing block rates. This rate structure provides a reasonably predictable source of revenue for the District and promotes conservation for the customers. The Friar Creek system is a separate water system operated by the District and the monthly base rates pay for the debt associated with their system with a portion for operations and future capital needs. All customers pay the same water usage rates set to recover the cost of purchased water from the City of Everett.

Exhibit 1 summarizes current monthly rates and presents the six-year proposed schedule of rates. Exhibit 2 presents a sample residential water bill comparison under current and proposed water rates.

Exhibit 1: Schedule of Current and Proposed Water Rates

	2022	2023	2024	Projected				2028
	Current	1-Jan-23	1-Jan-24	1-Jan-25	1-Jan-26	1-Jan-27	1-Jan-28	
Water Base Charges - \$/Month [1]								
HWD	\$67.50	\$68.75	\$70.00	\$71.25	\$72.50	\$73.75	\$75.00	
Friar Creek	\$87.00	\$88.61	\$90.22	\$91.83	\$93.44	\$95.06	\$96.67	
Friar Creek	\$25.00	\$25.46	\$25.93	\$26.39	\$26.85	\$27.31	\$27.78	
Water Usage Charges - \$/ccf [2]								
0 - 1000 cf	\$2.22	\$2.26	\$2.30	\$2.37	\$2.44	\$2.52	\$2.59	
1000-1500 cf	\$3.22	\$3.28	\$3.34	\$3.44	\$3.54	\$3.65	\$3.76	
1501-2200 cf	\$3.52	\$3.58	\$3.65	\$3.76	\$3.87	\$3.99	\$4.11	
2201-3000 cf	\$3.87	\$3.94	\$4.01	\$4.13	\$4.26	\$4.39	\$4.52	
over 3000 cf	\$4.22	\$4.30	\$4.38	\$4.51	\$4.64	\$4.78	\$4.93	

Notes

- [1] Base Charge increases applied uniformly to the current Base Charge rate structure.
 [2] Water Usage Charges incorporate projected EV water rate increases.

Water Base Charges for HWD customers are proposed to increase \$1.25 per month each year (2023-2028). The monthly base charge will increase from \$67.50 to \$75.00 over the study period. Total base charge revenues provide funding for:

- Projected District O&M expense (excluding purchased water costs)
- Cash-funding for the six-year capital program (2022-2028)
- Building and maintaining recommended operating and capital reserves, and
- Positioning the utility to fund the remaining 4 years of the 10-year capital program (2029-2032) within reasonable rates

Water Usage Charges are set to recover projected annual City of Everett purchased water costs. Purchased water costs are imposed as a direct pass-through to customers. Actual costs and resulting rate impacts may vary from projections.

Exhibit 2: Residential Sample Water Bill Comparison

HWD Customer Total Sample Bill	Current	2023	2024	2025	2026	2027	2028
BASE RATE PORTION OF BILL							
Base Charge - \$/Month	\$67.50	\$68.75	\$70.00	\$71.25	\$72.50	\$73.75	\$75.00
Monthly \$ Increase per Year		\$1.25	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25
% Increase per Year		1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
WATER USAGE PORTION OF BILL [1]							
Water Usage Charge - \$/ccf	\$18.32	\$18.65	\$19.00	\$19.57	\$20.16	\$20.76	\$21.38
Monthly \$ Increase per Year		\$0.34	\$0.35	\$0.57	\$0.59	\$0.60	\$0.62
% Increase per Year		1.83%	1.87%	3.00%	3.00%	3.00%	3.00%
TOTAL WATER BILL							
Base Charge - \$/Month	\$67.50	\$68.75	\$70.00	\$71.25	\$72.50	\$73.75	\$75.00
Water Usage Charge - \$/ccf	18.32	\$18.65	\$19.00	\$19.57	\$20.16	\$20.76	\$21.38
Total Water Bill	\$85.82	\$87.40	\$89.00	\$90.82	\$92.66	\$94.51	\$96.38
Monthly \$ Increase per Year		\$1.59	\$1.60	\$1.82	\$1.84	\$1.85	\$1.87
% Increase per Year		1.85%	1.83%	2.04%	2.02%	2.00%	1.98%

[1] Assumes customer using an average of 825 cubic feet of water per month.

A2. CONNECTION CHARGES

The District's connection charges include a general facilities charge (GFC), a local facilities charge, and a meter installation fee. All new and upgraded connections pay the GFC for the right to connect to the water system. The local facilities charges are paid only by those customers connecting into District facilities that have not otherwise paid directly through a developer extension, latecomers or local improvement district. Meter installation charges are based on the size of meter. Exhibit 3 summarizes existing connection-related charges.

Exhibit 3: Existing Connection Charges

Water Connection Charges	HWD		Friar Creek
	Same Side [1]	Opposite Side [2]	
Local Facilities Charges	\$ 2,400	\$ 3,200	\$ 11,298
General Facilities Charges	\$ 8,600	\$ 8,600	\$ 1,000
Meter Installation Charges			
3/4-inch	\$ 750	\$ 750	\$ 750
1-inch	\$ 1,000	\$ 1,000	\$ 1,000

[1] Same side of road as main.

[2] Across road from main

GFCs were updated for HWD customers from \$8,600 to \$9,813 (rounded down to \$9,800) to incorporate current infrastructure investments, planned capital expenditures and projected system capacity over the 10-year period, 2023-2032. The key objective is to recover a fair share of system costs from new customer connections or redevelopment that results in increases in capacity. Other connection charges were not updated as part of this study.

B. SIX-YEAR RATE OUTLOOK

The six-year rate outlook forms the basis for a multi-year financial plan and water rate adjustment strategy to recover the total costs of operating the water system under various planning assumptions and financial policy considerations. Linking utility rate levels to a financial plan helps to enable sound financial performance and establishes a clear relationship between the costs imposed on utility customers and the costs incurred to provide them service.

The six-year rate outlook is presented in three stages: Financial Policies, Capital Funding Strategy and Financial Plan.

B1. FINANCIAL POLICIES

To establish adequate rates, a utility must define its benchmarks for financial performance. The purpose of financial policies is to promote the financial integrity and stability of the utility and to provide for sustainability of essential utility services. Financial policies included in the financial plan are described below.

a) Operating Reserves

An operating reserve provides a liquidity cushion. It protects the financial viability of the utility from the risk of short-term variation in revenues and expenses – primarily caused by seasonal fluctuations in billings, unanticipated operating expenses or lower than expected revenue collections. Target funding levels are expressed in number of days of operating and maintenance (O&M) expense with the minimum requirement varying with the expected risk of unanticipated needs or revenue volatility. Industry practice ranges from 30 days to 120 days of O&M with the lower end more appropriate for utilities with very stable revenue streams and the higher end for utilities with significant seasonal variations. Consistent with District practice, this study incorporates a minimum operating reserve target of 60 days of annual O&M expense which equates to roughly \$150,000. Any operating cash surplus at year end is transferred to the construction fund to help pay for capital projects and/or to build reserves for future capital needs.

b) Planned Rate-Funded Capital Contribution

To avoid excessive reliance on debt, it is prudent to have a policy that commits a certain amount of annual rate revenue to the replacement of system assets. By establishing a steady funding mechanism through a regular and predictable rate provision, an infrastructure replacement program can then be structured that takes into account the defined funding source, accumulation of funds when funding exceeds near term needs, and the use of debt when capital needs exceed available cash resources. Depreciation expense is commonly used as the benchmark for the minimum amount of annual rate contribution to the capital account. This metric simply serves as a starting point. Long-term average annual capital replacement spending should move toward two- to three-times depreciation expense to account for cost escalation. The District's current depreciation expense is about \$217,000, and expected to reach about \$260,000 by the end of the study period. While this study does not incorporate a specific annual rate-funded policy provision, the rate adjustment strategy discussed in Section B3 (Financial Plan), provides for a transfer from the operating fund to the construction fund of about \$390,000 per year for the main replacement program and other capital replacement needs.

c) Capital Reserves

In addition to protecting against variations in operating costs and revenues, it is prudent to maintain a capital reserve to meet unexpected emergency capital outlays. Common industry practice is to maintain a minimum balance in the capital account equal to 1 to 2% of system fixed assets. This study incorporates a minimum capital reserve of 2% of fixed assets, which equates to roughly \$300,000.

d) Debt Reserve

A restricted debt reserve is often a requirement associated with the issuance of revenue bonds and some other forms of debt. The reserve is typically set equal to annual or maximum annual debt service payments (principal and interest). The District has a debt reserve requirement for its outstanding USDA loans of roughly \$190,000.

e) Debt Service Coverage

Debt service coverage is required for revenue bonds and some other forms of debt. Under this requirement, the utility agrees to collect sufficient annual system revenues to meet all operating expenses, pay annual debt service, and collect an additional multiple of that debt service. Debt coverage ratios typically range from 1.10 to 1.50 times annual debt service payments. For example, a coverage requirement of 1.25 means the utility will collect an additional 25% of annual debt service payments. This cushion makes creditors more confident that debt service will be paid on time. The extra revenue generated from this policy can be used for capital expenditures and/or to build cash reserves. This study assumes debt service coverage of at least 1.25 times total annual debt service payments.

f) Debt to Net Plant Assets

This metric indicates the degree of leveraged capital assets. In other words, how much of the water system plant asset value is offset by debt obligations. Industry best practice suggests that less than 35 percent debt to net plant assets is considered very strong with an upper limit of 50 percent debt. The District's current debt ratio is 33 percent and is projected to improve to 23 percent over the study period as debt is paid down and new capital assets are placed into service.

B2. CAPITAL FUNDING STRATEGY

The capital funding analysis develops the strategy to fund the annual project costs identified in the capital improvement program (CIP) for the 2022 base year plus the six-year study period 2023-2028. The project costs were estimated in 2022 dollars and escalated to the scheduled year of construction at 3.0% per year. This is necessary to help make sure that rates will be sufficient to fund the capital at the time of actual construction. It also demonstrates the time value of money where delaying a project for some years will end up costing more in the long-run.

The annual water main replacement program is the largest category of costs due to the ongoing need to replace mains as they deteriorate due to age and wear and tear over time. An estimated average annual spending plan of \$300,000 (current dollars) was deemed necessary by the District and its consulting engineer to sustain system integrity and avoid critical impact on rates caused by system failures. This results in an average annual capital funding need of about \$350,000 (escalated dollars). The District is also continuing its annual water meter replacement program, and planning for additional projects as shown in Exhibit 4. The total funding need for the 6-year CIP is estimated at \$2.7 million. Based on discussion with District staff, the CIP projects will be funded with available capital cash reserves and contributions from rates and GFCs. No new debt is planned over the study period.

Exhibit 4: Six-Year Capital Improvement Program

Capital Projects List - Escalated \$	2022	2023	2024	2025	2026	2027	2028	6-YR Total (2022-2028)
Annual Watermain Replacement Program	\$ -	\$ 309,000	\$ 318,270	\$ 327,818	\$ 337,653	\$ 347,782	\$ 358,216	\$ 1,998,739
Annual Meter Replacement Project	20,000	6,695	6,896	7,103	7,316	7,535	7,761	63,306
Telemetry & Security SCADA System	-	70,000	80,000	-	-	-	-	150,000
GIS/Mapping	-	-	2,652	-	2,814	-	2,985	8,451
Reservoir Coating	-	-	-	62,000	123,500	62,000	-	247,500
New Water System Plan	-	-	-	-	-	50,000	50,000	100,000
Rate Study	-	-	-	-	-	-	36,000	36,000
New Truck	-	-	-	46,581	-	-	-	46,581
Total	\$ 20,000	\$ 385,695	\$ 407,818	\$ 443,502	\$ 471,282	\$ 467,318	\$ 454,962	\$ 2,650,577

B3. FINANCIAL PLAN

The financial plan evaluates the sufficiency of current utility revenues in meeting the forecasted operating and capital-related expenses, and designs a rate adjustment strategy to close any revenue shortfall over the study period. Exhibit 5 summarizes the financial plan, followed by additional detail on projected operating expenses and revenues.

Exhibit 5: Financial Plan Summary

Cash Flow Sufficiency Assessment	Budget	Projected					
	2022	2023	2024	2025	2026	2027	2028
REVENUE							
Water Base Rate Revenue (at Current Rates)	\$ 1,051,068	\$ 1,056,179	\$ 1,061,316	\$ 1,066,478	\$ 1,071,666	\$ 1,076,880	\$ 1,082,120
Water Usage Revenue (including Everett Rate Increases)	289,230	295,940	302,906	313,490	324,444	335,781	347,514
Total Water Sales Revenue	\$ 1,340,298	\$ 1,352,119	\$ 1,364,222	\$ 1,379,968	\$ 1,396,110	\$ 1,412,661	\$ 1,429,635
Other Operating Revenue	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Interest Income	2,133	376	723	727	1,154	1,162	1,617
TOTAL REVENUE	\$ 1,357,431	\$ 1,367,495	\$ 1,379,945	\$ 1,395,695	\$ 1,412,264	\$ 1,428,823	\$ 1,446,252
EXPENDITURES							
Operating & Maintenance Expense							
Purchased Water Cost	\$ 270,534	\$ 276,674	\$ 283,053	\$ 292,822	\$ 302,929	\$ 313,386	\$ 324,205
All Other O&M Expense	643,916	602,448	601,443	643,219	639,196	670,544	688,860
Subtotal Operating & Maintenance	\$ 914,450	\$ 879,121	\$ 884,495	\$ 936,041	\$ 942,125	\$ 983,931	\$ 1,013,065
Other Expenditures							
Existing Debt Service, Principal and Interest	\$ 330,353	\$ 255,676	\$ 255,154	\$ 236,962	\$ 192,209	\$ 177,144	\$ 162,351
TOTAL EXPENDITURES	\$ 1,244,802	\$ 1,134,798	\$ 1,139,649	\$ 1,173,002	\$ 1,134,334	\$ 1,161,075	\$ 1,175,416
ANNUAL CASH FLOW SURPLUS/(DEFICIENCY)	\$ 112,629	\$ 232,697	\$ 240,296	\$ 222,693	\$ 277,930	\$ 267,748	\$ 270,837
RATE ADJUSTMENT STRATEGY							
Targeted Annual Adjustment to Customer Base Rates		1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
PROJECTED ANNUAL REVENUE FROM RATE, ADJUSTED							
Revenue from Water Base Rates, Unadjusted	\$ 1,051,068	\$ 1,056,179	\$ 1,061,316	\$ 1,066,478	\$ 1,071,666	\$ 1,076,880	\$ 1,082,120
Revenue from Prior Year Cumulative Rate Increase	n/a	-	19,654	39,499	59,537	79,769	100,196
Revenue from Current Year Rate Increase	-	19,559	19,654	19,750	19,846	19,942	20,039
Total Annual Revenue from Water Base Rates After Adjustments	\$ 1,051,068	\$ 1,075,738	\$ 1,100,624	\$ 1,125,727	\$ 1,151,049	\$ 1,176,591	\$ 1,202,356
ANNUAL CASH FLOW SURPLUS/(DEFICIENCY) AFTER ADJUSTMENTS	\$ 112,629	\$ 252,256	\$ 279,604	\$ 281,942	\$ 357,313	\$ 367,459	\$ 391,072
BEGINNING OPERATING FUND CASH BALANCE							
Use of Operating Surplus to Fund Capital	\$ 853,030	\$ 150,320	\$ 144,513	\$ 145,396	\$ 153,870	\$ 154,870	\$ 161,742
	(815,338)	(258,063)	(278,720)	(273,469)	(356,312)	(360,587)	(386,283)
ENDING OPERATING FUND CASH BALANCE	\$ 150,320	\$ 144,513	\$ 145,396	\$ 153,870	\$ 154,870	\$ 161,742	\$ 166,531
Minimum Target Combined Operating Reserve [2]:	\$ 150,320	\$ 144,513	\$ 145,396	\$ 153,870	\$ 154,870	\$ 161,742	\$ 166,531
	60 days						

The operating forecast relies on the District's adopted 2022 budget, and escalated each year based on assumed economic factors. Key economic assumptions were based on a historical review of actual performance and discussion with District staff:

- General cost inflation: 3.0% per year
- Construction cost inflation: 3.0% per year
- Purchased water costs: ranging from about 1.25% to 3.0% per year
- Customer growth: 0.50% per year (about 6 new connection/year)
- Funds earning rate: ranging from 0.25% to 1.0% per year

a) Operating Expenditures

Purchased Water Costs

The District purchases its water from the City of Everett. The District tracks and compares the amount of water purchased and then sold to customers. The District has an ongoing meter replacement program to make sure meters are reading accurately to generate necessary revenues. The District is also continuing its efforts to quickly identify leaks to minimize the amount of water purchased that cannot be sold. Purchased water cost increases are anticipated to range from about 1.25% to 3.0%, with an annual average increase of just under 2.5% over the study period.

The District's water usage rates were updated to recover these projected costs, and are expected to generate revenues from about \$289,200 to \$347,500 over the study period. Purchased water cost increases are directly passed on to District customers. As such, actual costs passed on to customers and resulting revenues may vary from the projections presented in this study.

District Operating and Maintenance Expense

In addition to purchased water costs discussed above, the District has ongoing annual expenditures for operations and maintenance, vehicle expense, administrative expense, outside services and payroll and benefits. These expenditures are projected to increase from about \$643,900 to \$688,900 over the study period.

Outstanding Debt Service

The District has been successful in obtaining loans from state and federal programs to help fund its capital program. These loans are from two primary programs designed to assist with rural water capital improvements including the Public Works Trust Fund and the US Department of Agriculture Rural Development Program. Several loans have been paid off over the past few years. As of December 31, 2021, the total outstanding principal balance was \$3.1 million. Annual debt service payments (principal and interest) are planned to reduce from \$330,353 to \$162,351 over the study period as additional debt issues are paid off.

Operating Fund Contributions to Construction Fund

As previously discussed under the Capital Funding Strategy, the District plans to fund its capital program with cash reserves and rates rather than issuing new debt. Transfers from the operating fund of about \$390,000 on average per year are planned for the construction fund to help pay for capital projects and to build cash reserves for future capital spending.

b) Operating Revenues

Operating revenues include rate revenue from water base charges and water usage charges and other revenues such as late payment penalties, other miscellaneous fees and interest earnings.

Water Usage Rate Revenue

Water usage charges are set to recover purchased water costs. The District’s water usage rates were updated to recover projected purchased water costs, and are expected to generate revenues from about \$289,200 to \$347,500 over the study period.

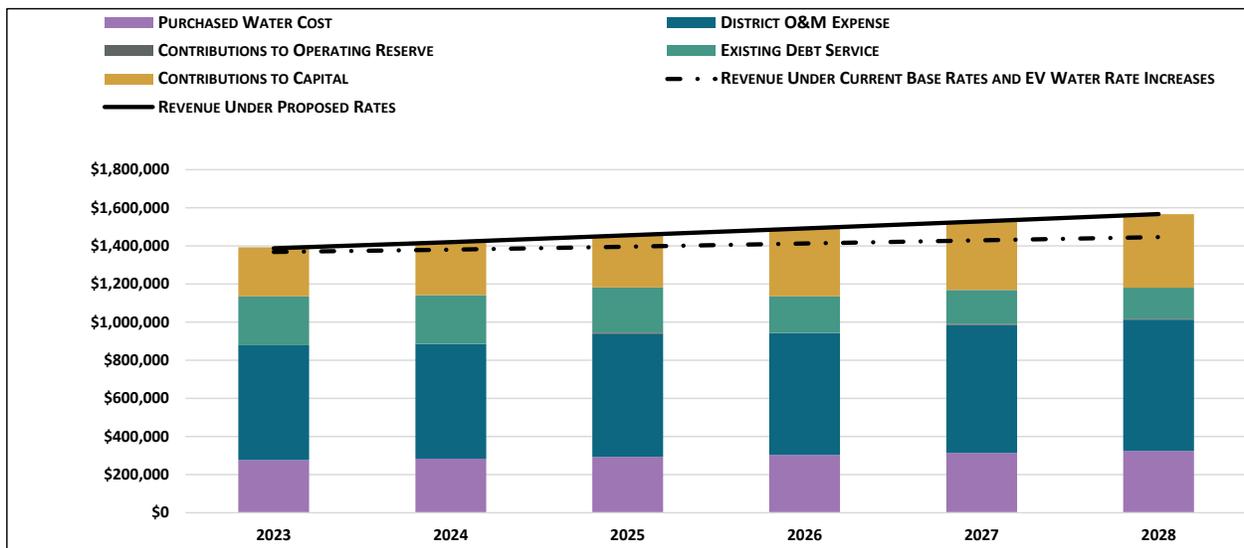
Base Rate Revenue and Other Revenue

Base rates and other revenues fund District O&M (excluding purchased water), existing debt service and contributions to the operating reserve and construction fund.

Base rate revenue (prior to proposed rate adjustments) uses the adopted 2022 budget and incorporates additional revenues from projected customer growth. Existing base rate revenue is forecasted to increase nominally from \$1.0 million to \$1.1 million over the study period. To close the revenue gap illustrated in the exhibit below, base rates are projected to increase on average at about 1.77 percent per year over the study period. For HWD customers this results in an increase of \$1.25 per month per year over the study period.

Exhibit 6 summarizes total operating expenditures, revenues under existing rates and revenues under proposed rates.

Exhibit 6: Six-Year Rate Outlook



C. GENERAL FACILITIES CHARGES

The Revised Code of Washington (RCW) 57.08.005(11) authorizes the District to impose a connection charge based on an “equitable share” of the cost of the system. That paragraph also describes conditions that must be met in calculating the charge.

GFCs serve two main purposes: to provide equity between existing and future customers, and to provide a source of capital funding. The charge is imposed on both new development and redevelopment that increases demand for system capacity. In essence, the GFC functions as a “buy-in” charge. To avoid dilution of investment of existing customers, new customers are required to buy in to the system commensurate with the cost of assets needed to service them.

Given that the RCW does not explicitly define an “equitable share,” the District has some flexibility in defining an equitable share of water system costs. That said, it is important to follow a rational approach to consistently determine cost-based GFCs. The calculated charges represent the maximum allowable charge. The District may choose to charge less but cannot charge more than the calculated charge. The updated GFC increases from the current charge of \$8,600 to \$9,813. We suggest rounding down to \$9,800.

Exhibit 6 summarizes the proposed GFC calculation, followed by additional methodology detail.

Exhibit 6: GFC Calculation

Existing Cost Basis		Notes
Plant-in-Service		
Total Water Capital Assets	\$ 12,354,821	Original cost of plant-in-service as of 2021
Less: Intangible Assets	(89,763)	Excludes organizational costs and system plans
Less: Assets Donated /Contributed by Outside Agencies	(459,560)	Excludes costs not incurred by the utility
Less: HWD Facilities Funded by Local Facilities Charges	(2,232,650)	Excludes costs recovered from LFCs
Less: Localized Assets (Meters & Services)	(192,379)	Excludes costs directly paid by customers
Less: Friar Creek Assets	(768,651)	Excludes costs in Friar Creek GFC / LFC cost basis
less: HWD Net Debt Principal Outstanding		
Existing HWD Unrestricted Cash Balances	\$ 1,410,930	Unrestricted cash balances, excl. Friar Creek, as of 2021
less: HWD Debt Principal Outstanding	(2,919,470)	Debt principal outstanding, excl. Friar Creek as of 2021
equals: Net Debt	(1,508,540)	Debt principal outstanding, net of unrestricted cash reserves
Plus: Construction Work In Progress	553,150	Paid CWIP as of 2021
plus: Interest on Assets Included in GFC Cost Basis	5,013,275	Interest on assets up to a maximum 10-year period
Total Existing Cost Basis	\$ 12,669,703	
Future Cost Basis		
Capital Improvement Program (Current Day \$)		
Total Future Projects	\$ 3,860,739	CIP (Years 2022 - 2032)
Less: Future Projects Ineligible for Recovery through GFCs	(2,704,870)	Excludes Intangibles, repair & replacement, meters
Less: Contributed Future Upgrade & Expansion Assets	-	Excludes costs not incurred by the utility
Total Future Cost Basis	\$ 1,155,869	
Customer Base		
No. of Equivalent Residential Units (ERUs) [1]		
Existing HWD ERUs	1,225	No. of ERUs as of 2021
Future ERUs (Incremental)	184	Projected Incremental ERUs (1.28% growth per WSCP)
Total Customer Base	1,409	No. of ERUs (2032)
Resulting Charge		
Existing Cost Basis	\$ 12,669,703	
Future Cost Basis	1,155,869	
Total Cost Basis	\$ 13,825,571	
Total Customer Base	1,409	
Maximum Allowable GFC per ERU	\$ 9,813	
Existing GFC	\$ 8,600	Effective November 2009
Dollar Change	\$ 1,213	
% Change	14%	

The basic approach to the GFC calculation is illustrated below:

$$GFC = \text{Eligible Capital Costs divided by Applicable Customer Base}$$

This study updated GFCs using a common approach referred to as the “average integrated approach”. Under this method, eligible existing system costs and future capital costs that improve or expand the system are included in the cost basis. As a result, all relevant capital costs (excluding R&R) are divided by the entire projected customer base (existing plus projected growth). The main policy emphasis under this method is on intergenerational equity. There is no cost advantage for either existing or new customers. The resulting GFC is stable over time and not highly sensitive to population forecasting assumptions.

Legal interpretations of Washington State connection charge statutes have provided the following guidelines:

- Charges should reflect the actual original cost of the existing utility system net of donated facilities and other sources of outside funding (e.g., grants and direct assessments).
- The existing cost basis can include interest on the net original costs at the rate of interest applicable at the time of construction (up to a 10-year period but not to exceed 100% of construction costs).
- The existing cost basis should reflect a net-debt adjustment. The amount of outstanding debt represents assets that existing customers have acquired but not yet fully paid. Instead, those assets will be paid for in future years as debt service payments are made. New customers will pay rates in the future including a share of debt service payments. Those new customers should not also be charged for outstanding debt in the GFC. However, there is an appropriate offset to the debt deduction - the cash that has been accumulated by existing customers. Cash represents an asset that current customers have funded even though that cash has not yet been used to acquire new assets and/or retire outstanding debt. The net-debt deduction is calculated as outstanding debt principal minus cash balances but not less than zero.
- Future capital costs should be expressed in current day dollars and include capital projects identified in an adopted system plan, but not more than a 10-year planning period.

C1. EXISTING SYSTEM COSTS

Existing system costs represent the original cost of investment in assets that are currently in service on the premise that these assets will serve or otherwise benefit new customers. As of December 31, 2021, the original cost of total water system assets is \$12,354,821. The following required and or allowable adjustments were made to the cost basis:

- Deduction for intangible assets including organizational costs, system plans and other studies: \$89,763
- Deduction for donated facilities and other sources of outside funding such as grants and direct assets: \$459,560
- Deduction for facilities funded on by HWD local facilities charges: \$2,232,650
- Deduction for other localized facilities including meters and services: \$192,379
- Deduction for Friar Creek assets: \$768,651
- Deduction for net outstanding debt: \$1,508,540 (HWD outstanding debt principal of \$2,919,470 net of unrestricted cash balances of \$1,410,930)
- Addition of construction-work-in-progress: \$553,150

- Addition of interest provision: \$5,013,275

The resulting net existing cost basis for inclusion in the GFC is \$12,669,703.

C2. FUTURE CAPITAL COSTS

Future system costs refer to planned capital improvement projects identified in system plans for execution within the GFC planning horizon, but not more than 10 years. The planning period for this study is 2023-2032. Capital projects typically fall into three categories depending on the reason for the capital expenditure:

- **Repair & Replacement (R&R) projects** – Replace existing infrastructure due to wear and tear over time. These projects do not increase system capacity and are not updates to functionality or regulatory compliance. R&R costs are most often excluded from GFCs since they are assumed to be repairing or replacing assets that are already accounted for within the existing system cost basis.
- **Upgrade Projects** – Broadly benefit both existing and future customers without increasing system capacity. Examples include construction of an operations facility, improving system securing, projects driven by new regulations, and a portion of pipe upsizing projects.
- **Expansion Projects** – Primarily increase capacity to serve additional customers.

A single capital project may have components in more than one of these groups. In that case, an estimate is made of the percentage of the total project cost applicable to each group. For example, a 6-inch pipe being replaced by an 8-inch pipe may be considered 67% R&R and 33% upgrade or expansion.

The CIP, shown in Exhibit 7, identifies \$3,860,739 (current day dollars) in capital projects. An estimated \$2,704,870 of those costs are for repair and replacement projects which are excluded from the calculation. The remaining \$1,155,869 forms the future cost basis.

Exhibit 7: 10-Year Capital Program (Current \$)

Description	% Upgrade/ Expansion	% R&R/ Ineligible	Total Current Day Costs		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total Current Costs
			\$ Upgrade/ Expansion	\$ R&R/ Ineligible												
Annual Watermain Replacement Program	33%	67%	\$ 1,000,000	\$ 2,000,000		\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 3,000,000
Annual Meter Replacement Project	0%	100%	\$ -	\$ 85,000	\$ 20,000	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 85,000
Telemetry & Security SCADA System	100%	0%	\$ 143,369	\$ -		\$ 67,961	\$ 75,408									\$ 143,369
GIS/Mapping	100%	0%	\$ 12,500	\$ -			\$ 2,500		\$ 2,500		\$ 2,500		\$ 2,500		\$ 2,500	\$ 12,500
Reservoir Coating	0%	100%	\$ -	\$ 435,300				\$ 56,739	\$ 109,728	\$ 53,482			\$ 71,047	\$ 144,305		\$ 435,300
New Water System Plan	0%	100%	\$ -	\$ 85,005						\$ 43,130	\$ 41,874					\$ 85,005
Rate Study	0%	100%	\$ -	\$ 56,937							\$ 30,149				\$ 26,787	\$ 56,937
New Truck	0%	100%	\$ -	\$ 42,628				\$ 42,628								\$ 42,628
Total Capital Projects, Current Cost Estimate	30%	70%	\$ 1,155,869	\$ 2,704,870	\$ 20,000	\$ 374,461	\$ 384,408	\$ 405,867	\$ 418,728	\$ 403,112	\$ 381,024	\$ 306,500	\$ 380,047	\$ 450,805	\$ 335,787	\$ 3,860,739

C3. CUSTOMER BASE

The key objective in defining the customer base is to determine the number of customer equivalents the system can serve once the capital plan has been executed. Per the WSP, the number of customer connections is equal to the number of customer equivalents. The District currently serves 1,225 customer accounts, excluding Friar Creek customers. After the CIP is executed, system capacity is estimated to serve a total of 1,409 customers (average annual growth rate of about 1.28 percent).

C4. CALCULATED MAXIMUM GFC

The calculated maximum GFC of \$9,813 is derived by dividing the total cost basis of \$13,825,571 (existing + future) by the total customer base (existing + new). This represents the maximum charge that the District can impose under the proposed methodology.