AMES LAKE WATER ASSOCIATION

WATER GENERAL FACILITY CHARGE
(JULY 2009)

INTRODUCTION

This report documents the calculation of the general facility charge, or GFC for the Association's water utility. A GFC is also commonly referred to as a connection charge or system development charge.

A GFC is a one-time charge paid by a new customer connecting to a utility system. A GFC can include a pro-rata share of the cost of existing facilities (existing facility component) and a pro-rata share of planned facilities (future facility component). The existing facility component offsets the historical contributions from existing customers used to acquire existing assets of benefit to a new customer. The future facility component is a customer's proportional share of the cost of capital improvements required to serve future growth and is intended to minimize the impact to existing customers of constructing growth related facilities.

This analysis utilizes information prepared by the Association and the Association's engineering consultants Gray & Osborne, Inc (G&O). G&O provided the following data necessary to determine the GFCs recommended in this analysis based on water comprehensive planning reports currently being finalized and additional engineering analysis:

- Original costs for all existing facilities (see attached 2009 Water System Inventory) (G&O)
- Planned capital costs (2008 water System Plan)
- Planned number of ERUs in 10 years (2008 Water System Plan)
- Outstanding debt (Association records)
- Current customer counts and meter sizes (Association billing records)

OVERVIEW

The water GFC calculated in this study is stated in terms of dollars per equivalent residential unit, or ERU. The term, ERU, is used to convert non-residential (i.e. commercial) customers into an equivalent number of residential units based on the defined water use of a single-family residence. Thus the GFC stated in terms of dollars per ERU determined in this analysis is an appropriate fee for any new single-family residential connection.

The Revised Code of Washington (RCW) addresses some aspects of how a GFC should be determined for municipal governments. However, GFCs are determined primarily based on practices that have been upheld by State courts and also by industry standards

(e.g. American Water Works Association). RCW 35.92.025, which authorizes cities and towns to charge for connecting to a water or wastewater system, requires that the charge be an equitable share of the cost of the existing system and may include up to ten years of interest charges at a rate commensurate with the rate of interest applicable at the time of construction. RCW 57.08.005, which address connection charges for special purpose districts, also specifically allows districts to charge a pro rata share of the cost of future facilities planned in the next ten years and documented in an approved comprehensive plan. An opinion provided by Foster, Pepper, and Shefelman, PLLC concluded that cities might also include costs of future facilities intended to serve growth.

Under RCW 57.08.005, special purpose districts are not allowed to include costs associated with facilities that are funded from grants/donations. In 1999, the Washington State Supreme Court ruled in the case Landmark Development, Inc. versus the City of Roy that cities and towns may include costs associated with facilities funded wholly or in part by grants/donations when calculating a connection charge.

Solely for Ames Lake convenience, the water GFC proposed in this study has been modeled using a methodology consistent with RCW and case law requirements for a city in the State of Washington. Notwithstanding the use of City guidelines, Ames Lake is a non-profit cooperative and it is not subject to the same statutes as cities and districts. By adopting the proposed GFC Ames Lake does not intend to subject itself to statutes and rules for a city, rather they have been used as approximate guidelines and our opinion that their use results in a fair and reasonable GFC.

GENERAL FACILITY CHARGE DETERMINATION

The existing and planned facility components of the water system GFC are analyzed in this section.

EXISTING FACILITY COMPONENT OF THE WATER GFC

The pro-rata share of the original cost of existing facilities, or existing facility component, is determined by dividing the cost of existing utility assets that will benefit future customers by the number of existing customers, or ERUs. The cost of each existing water infrastructure asset that will benefit future customers is based on an engineering analysis performed by Gray & Osborne, Inc (see attached 2009 Water System Inventory). As documented in the Inventory Analysis, the original cost for most system assets is based on an engineering estimate of the cost to replace the asset deflated to the time of each asset's installation in order to estimate the original cost.

The attached Technical Memorandum (T.M.) from G&O describes the processes used to identify existing facilities that provide a general benefit to the system and therefore will benefit future customers and to determine original installation costs.

Table 1 summarizes the original costs for all existing Association water assets as listed in the attached 2009Water System Inventory.

TABLE 1
Original Costs for Existing Water Assets that Benefit Future Customers

Water System Assets	Original Costs (All Pipe Incl.)	Original Costs (Pipe <= 8 inch Incl.)
Wells	$ 611,200	$ 611,200
Reservoirs	$ 1,185,000	$ 1,185,000
Booster Stations	$ 37,100	$ 37,100
PRV Stations	$ 32,800	$ 32,800
Hydrants	$ 424,100	$ 424,100
Water Mains	$ 7,528,100	$ 5,853,400
Total	**$ 9,818,300**	**$ 8,143,600**
(1)	This data is based on the inventory valuation of original asset costs prepared by Gray & Osborne, Inc.	

All assets included in Table 1 are assumed to benefit future customers due to the general benefit to all residential and commercial customer of being provided fire flow. Additionally, the assets listed in Table 1 are integral to the system in terms of the system's reliability, redundancy, and the importance of water movement in order to maintain water quality. Note also that the assets included in Table 1 do not include any land, buildings, or rolling stock (equipment) in order to be conservative.

The original costs of existing assets that are included in a GFC must be adjusted to account for outstanding debt principal and for ten years of accumulated interest costs. Some of the assets listed in Table 1 have outstanding debt principal. Since the Association pays for annual debt costs using revenues from monthly rates, all customers (both existing and new) will pay their pro-rata of the remaining unpaid for capital costs associated with outstanding debt through monthly rates. Therefore all outstanding debt principal is removed from the total assets included in the existing facility components of the GFC. Table 2 provides a list of all outstanding debt principal of the Association as of the start of 2009.

TABLE 2
Outstanding Debt Principal

Current Loans	Outstanding Principal Balance
RDA Loan #1	$ 3,048
RDA Loan #2	$ 5,430
RDA Loan #3	$ 65,054
RDA Loan #4	$ 136,225
RDA Loan #5	$ 350,844
RDA Loan #6	$ 331,065
Total	**$ 892,000**

A City may include up to ten years of accumulated interest costs in the calculation of a GFC. An interest rate applicable to the time of major system construction is to be used in calculating the ten years of interest charges. It is reasonable for Ames Lake to adopt the same methodology. According to the data provided in the 2009 Water System Inventory, most assets have been installed since 1980. Based on a review of historical Treasury Bills returns from 1980 through 2005, the average annual bond return was 6.19 percent. However, since actual installation years are somewhat ambiguous and in order to be even more conservative, this analysis uses an average annual interest rate of 5.05 percent that reflects the average T-Bill return from 1950 through 2005.

Table 3 lists total original costs for existing assets from Table 1 and the corresponding amount of interest based on up to ten years and a 5.05 percent annual interest rate. Note that assets installed after 1999 have not been in place for ten years and therefore the accumulated interest is based on less than ten years as indicated in Table 3.

TABLE 3
Accumulated Interest Costs on Existing Water Assets

System Assets	Installation Year	Replacement Cost	Original Cost	No. of Years of Accumulated Interest	Total Acc. Interest
Wells					
Well No. 1 (Vista 1)	1978	$ 115,000	$ 40,700	10	$ 20,554
Well No. 1-A (Vista 1-A)	1978	$ 115,000	$ 40,700	10	$ 20,554
Well No. 13 (Vista 2)	2004	$ 115,000	$ 106,900	5	$ 26,992
Well No. 2 (Ridgehaven)	Emergency				
Well No. 6 (View Park)	Emergency				
Well No. 8 (American Hills)	1992	$ 250,000	$ 151,400	10	$ 76,457
Well No. 12 (Marshall)	1992	$ 250,000	$ 151,400	10	$ 76,457
Well No. 7 (Carnation)	1987	$ 46,000	$ 24,900	10	$ 12,575
Well No. 11 (Daniel's Ranch)	1993	$ 149,500	$ 95,200	10	$ 48,076
Subtotal		**$ 1,040,500**	**$ 611,200**		**$ 281,664**
Reservoirs					
Tolt Hill Reservoirs (4)	1985	$ 706,500	$ 374,100	10	$ 188,921
Tolt Hill Reservoirs (4)	2005	$ 235,500	$ 225,800	4	$ 45,612
Carnation Reservoirs (2)	1995	$ 343,500	$ 233,100	10	$ 117,716
Carnation Reservoirs (2)	2005	$ 343,500	$ 329,300	4	$ 66,519
Ridgehaven Reservoir (1)	1969	$ 146,000	$ 22,600	10	$ 11,413
Subtotal		**$ 1,775,000**	**$ 1,185,000**		**$ 430,179**
Booster Stations					
BPS No. 1-NE 52nd Street	1987	$ 24,700	$ 13,300	10	$ 6,717
BPS No. 2-288th Avenue NE	1975	$ 26,900	$ 7,200	10	$ 3,636
BPS No. 3-NE Ames Lake Road	1975	$ 30,900	$ 8,200	10	$ 4,141
Tolt Hill BPS-290th Avenue NE	1980	$ 19,600	$ 8,400	10	$ 4,242
Subtotal		**$ 102,100**	**$ 37,100**		**$ 18,736**
PRVs					
PRV No. 1	1987	Included with BPS No. 1		10	$ -
PRV No. 2	1975	Included with BPS No. 2		10	$ -
PRV No. 3	1975	Included with BPS No. 3		10	$ -
PRV No. 4	1980	$ 22,000	$ 9,400	10	$ 4,747
PRV No. 5	1980	$ 22,000	$ 9,400	10	$ 4,747
PRV No. 6	1993	$ 22,000	$ 14,000	10	$ 7,070
Subtotal		**$ 66,000**	**$ 32,800**		**$ 16,564**
Hydrants					
Total Number of Hydrants (195)	1990	$ 741,000	$ 424,100	10	$ 214,171
Pipe Diameters					
2 Inch	1975				
4-Inch	1975				
6-Inch	1975	$ 6,273,900	$ 1,674,700	10	$ 845,724
8-Inch	1990	$ 10,224,600	$ 5,851,800	10	$ 2,955,159
10-Inch	1985	$ 3,100	$ 1,600	10	$ 808
Subtotal		**$ 16,501,600**	**$ 7,528,100**		**$ 3,801,691**
Total			**$ 9,818,300**		**$ 4,763,000**

The current and projected number of ERUs in the year 2018 are required in order to calculate the existing and future facility components of the GFC. Table 4 lists the number of ERUs as of 2008 through the year 2018 that corresponds to a ten-year horizon beginning with the start of this study and corresponding to the 2008 Water System (the source of data for Table 4).

TABLE 4
Current and Projected Number of Water ERUs

		Current No of ERUs	ERU Growth through 2018	Total No. of ERUs in 2018
Projected ERUs		1,085	204	1,289
(1)	These ERU projections are from the 2008 Water System Plan showing 1,085 ERUs in 2018 and 1,289 in the year 2018.			

Table 5 shows the calculation of the existing facility component of the GFC based on the total cost of existing assets that will benefit future customers from Table 1, outstanding debt from Table 2, accumulated interest costs from Table 3 and the current number of ERUs from Table 4. As shown in Table 5 total existing assets costs have been adjusted for the Association's current total outstanding debt principal balance of $892,000. The existing facility component of the GFC is then calculated by dividing the total existing costs included in the GFC by the total number of current ERUs in the system of 1,085.

TABLE 5
Existing Facility Components of the Water GFC

Existing Facility Component of GFC	Amount
Total Existing Assets	$ 9,818,300
Less Otstanding Debt Principal	$ (892,000)
Subtotal	**$ 8,926,300**
10-years of Accumulated Interest (@5.05%)	$ 4,763,000
Total Existing Costs Incldued in GFC	**$ 13,689,300**
Total Existing Costs Incldued in GFC	$13,689,300
Total No. of Existing ERUs	1,085
Existing Facility Component of GFC ($ per ERU)	**$ 12,617**

FUTURE FACILITY COMPONENT OF THE GFC

A GFC typically includes a pro–rata share of the cost of facilities planned within the next ten years and therefore it is reasonable for Ames Lake to use this same methodology. The future facility component is calculated by dividing the total cost of planned capital improvement costs by the number of benefiting customers (or ERUs). In this analysis all projects that are included in the GFC are presumed to benefit both existing as well as new customers. The projected number of ERUs in ten years (2018) is as listed in Table 4, 1,289.

Table 6 lists capital improvement projects planned to occur within the next ten years as identified in the draft 2008 Water System Plan.. Note that two projects, main replacements and water meter replacements have not been included in the GFC. The main replacement project has not been included because all existing piping has been included in the existing facility component and therefore including main replacement costs would double charge new customers for some existing piping that has or will be replaced. The water meter replacement project has also been excluded since new customers pay for the installation of their new meters and will not benefit from another customer's meter replacement.

TABLE 6

Planned Facilities Included in the Future Facility Component of the GFC

Future Facility Component	Year Planned	Current Cost	Cost in Year Planned (1)	Included in GFC (Y/N)	Total Cost Incl. In GFC
WS-1 Vista 1A - DOH Source Approval	2009	$ 10,900	$ 10,900	Y	$ 10,900
WS-2 Marshall Well - DOH Approval & Arsenic Treatment	2009	$ 8,000	$ 8,000	Y	$ 8,000
WS-3 Well Chlorination Facilities	2010	$ 37,500	$ 38,625	Y	$ 38,625
BS-1 Existing BPS Upgrade at 288th Ave. NE	2009/2010	$ 197,700	$ 200,644	Y	$ 200,644
BS-2 New Tolt Hill Booster Station	2013/2014	$ 544,600	$ 622,078	Y	$ 622,078
PZ-1 PRV Stations for New 610 Zone	2014	$ 108,200	$ 125,433	Y	$ 125,433
PZ-2 PRV Stations for Modified 592 Zone	2014	$ 162,300	$ 188,150	Y	$ 188,150
D-1 Main Replacements	2013-2043	$ 519,600	$ 639,042	N	$ -
M-1 Telemtry System Upgrade	2009	$ 38,400	$ 38,400	Y	$ 38,400
M-2 Intertie with Sammamish Plateau on Uniion Hill Rd.	2009	$ 32,500	$ 32,500	Y	$ 32,500
M-3 Water Meter Replacements	2011-2021	$ 346,400	$ 413,620	N	$ -
Total		**$ 2,006,100**	**$ 2,317,393**		**$ 1,264,700**

The future facility component of the GFC can now be calculated based on the total cost of planned capital improvements included in the GFC from Table 7 divided by the total number of ERUs in 10 years (2018) of 1,289 from Table 4.

TABLE 7
Future Facility Component of the GFC

Future Facility Component of the GFC	Amount
Total Cost of Planned Improvements Included in GFC	$ 1,264,700
Total No. of ERUs Benefitting from Improvements	**1,289**
Future Facility Component of GFC ($/ERU)	**$ 981**

GENERAL FACILITY CHARGE

The total proposed GFC can now be expressed in terms of the existing facility component plus the future facility component.

TABLE 8
Maximum Proposed General Facility Charge

GFC Components	GFC ($ per ERU)
Existing Facility Component	$ 12,617
Future Facility Component	$ 981
Total GFC	**$ 13,598**

GFC IMPLEMENTATION

The maximum proposed GFC is appropriate for all new single-family residences. Non-residential growth is expected to be minimal over the next ten years as documented in the 2008 Water System plan. If the Association adds new commercial customers then appropriate GFCs for a commercial customer can be established based on an engineering review. Alternatively there are established methods for computing commercial GFCs based on the use of AWWA meter equivalent flow factors or by estimating the number of ERUs in water use expected from a new commercial customer and multiplying this by the proposed GFC that is stated in dollars per ERU.

TABLE 9
General Facility Charges

New Connections	GFC
Single-family Residence	$ 13,598
Non-residential	TBD (1)

(1) Appropriate GFCs for new commercial or other non-residential customer will be determined by engineering review.

Note that the GFCs determined in this analysis only represent a new customer's pro rata share of buying into the physical water system. Proposed GFCs do not include the cost of the physical connection and or meter drop in costs, new membership fee, or administration/account set up fees.