



**DATE:** March 7, 2017

**TO:** Lorie Tinfow, City Manager, City of Pacifica  
Lorenzo Hines Jr., Assistant City Manager, City of Pacifica

**FROM:** Douglas Dove, President  
Michael DeGroot, Financial Analyst  
Abigail Seaman, Financial Analyst

**SUBJECT:** Wastewater Rate and Structure Recommendations

**MEMORANDUM**

Introduction

Bartle Wells Associates has been retained by the City of Pacifica to evaluate the City’s current wastewater rates and make recommendations on rate increases and rate structure. BWA’s recommended rates are designed to fund upcoming expenses, be simple to understand, and secure fixed revenue.

Pacifica’s current rates are listed in Table 1.

**Table 1**  
**City of Pacifica**  
**2016/17 Wastewater Rates**

	<u>price per unit</u>	<u>minimum charge</u>
<b>Residential [1]</b>	\$13.04476	\$626.14
<b>Commercial [2]</b>	\$13.04476	\$626.14

**Commerical Strength Factors**

Car Washes	0.9
Cleaners	1.2
Laundromats	0.75
Restaurants with grease traps	1.2
Restaurants without grease traps	1.8
Gymnasiums	0.9
All other commercial use	1.0

1 - units calculated using either winter water use (December & January use x 6) or actual annual water use, whichever is lower

2 -units calculated using actual annual water use, multiplied by strength factor

The City currently collects approximately 60% fixed revenue from minimum charges, and 40% volumetric revenue from usage above the minimum charge. Approximately 90% of revenue comes from residential users, and 10% of revenue is collected from commercial users. Rate revenue from the current rates will not sufficiently cover growing operation, capital and debt service needs in the future.

The City’s current rate structure is based on water use during the period of highest rainfall annually. It may be difficult for the City to monitor rainfalls and explain the water use period to the public.

The City’s minimum charge is applied to the lowest user through the median user, who consumes 48 units per year. This is a secure way of constant revenue recovery but does not differentiate those who are conserving water below the median.

BWA has designed several rate structure alternatives which address these concerns. Each projected rate option assumes the same projected revenue increase. They are as follows:

Option 1: Keep the current rate structure with proposed increases

Option 2: Replace the minimum charge with a fixed rate based on meter size which recovers debt service in each year. Recover remaining costs with a volumetric charge.

Option 3: Replace the Residential rate with a fixed rate per Equivalent Dwelling Unit. Keep Commercial rate volumetric with no minimum charge.

Proposed Rate Increases

Given growing operations, capital and debt service needs, Bartle Wells recommends annual rate increases for the next five years according to tables 2, 3, and 4 below. The rates proposed are conservative and include debt service coverage at least 1.25 times net revenue, as well as a reserve fund equal to 90 days of operations and maintenance funding. Rates also include a total of \$52.5 million of Capital Project funding. The rates in Table 2 include a 10% contingency on the Equalization Basin Project, totaling \$20.5 million.

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**Table 2**  
**City of Pacifica**  
**Recommended Rate Increase - EQ Basin 10% contingency**

	Year 1	Year 2	Year 3	Year 4	Year 5
	2016/17	2017/18	2018/19	2019/20	2020/21
<b>% Rate Increase</b>	<b>6.5%</b>	<b>6.5%</b>	<b>6.5%</b>	<b>6.0%</b>	<b>6.0%</b>

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Since the time of the Equalization Basin’s original cost estimate in 2016, several of the City’s related capital projects have bid higher than their original estimates due to a changing climate for construction projects. This leads BWA to believe that the Equalization Basin cost may be inflated. In the event that the project cost increases, BWA has provided two alternate scenarios

in Tables 3 and 4 below, which include an additional 25% contingency and additional 40% contingency on the Equalization Basin Project.

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**Table 3**  
**City of Pacifica**  
**Recommended Rate Increase - EQ Basin 25% contingency**

	Year 1	Year 2	Year 3	Year 4	Year 5
	2016/17	2017/18	2018/19	2019/20	2020/21
<b>% Rate Increase</b>	<b>8.0%</b>	<b>7.0%</b>	<b>7.0%</b>	<b>7.0%</b>	<b>7.0%</b>

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**Table 4**  
**City of Pacifica**  
**Recommended Rate Increase - EQ Basin 40% contingency**

	Year 1	Year 2	Year 3	Year 4	Year 5
	2016/17	2017/18	2018/19	2019/20	2020/21
<b>% Rate Increase</b>	<b>8.0%</b>	<b>8.0%</b>	<b>8.0%</b>	<b>7.0%</b>	<b>7.0%</b>

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The Equalization Basin project cost would be \$25.6 million with the additional 25% contingency, and \$28.7 million with the additional 40% contingency, respectively.

Table 4 provides the most conservative rates, ensuring this necessary project can be funded even if costs escalate. These rates should be adopted by Council as maximum rates that can be reduced in any year that construction cost is less than the 40% contingency cost.

Proposed Commercial Strength Factors

Table 5 below includes Bartle Wells Associates’ proposed commercial strength factors, which covers all existing commercial classes in Pacifica and is consistent with the most up to date flow and loading data for restaurants with grease traps. Any class that has been eliminated would fall under the “All Other Commercial Use” category.

**Table 5**  
**City of Pacifica**  
**Recommended Commercial Strength Factors**

<b>Customer Class</b>	<b>Current</b>	<b>Proposed</b>
Car Washes	0.9	0.9
Cleaners	1.2	1.2
Laundromats	0.75	0.75
Restaurants with grease traps	1.2	1.6
Restaurants without grease traps	1.8	1.8
Gymnasiums	0.9	0.9
All other commercial use	1.0	1.0

Proposed Rate Structures

As summarized in the Introduction, Bartle Wells has calculated several options to meet the revenue requirements of the City. All Rate Structures assume the revenue requirements outlined in Table 2.

By keeping the current rate structure as outlined in Table 6, the City will avoid any compounded increase on the rates from a structure change and a rate increase in the same year. However, the City also keeps the issues associated with the current rate structure, including the complicated volumetric charge and impact on low users. Please refer to Appendix 2 for projected residential bills.

**Table 6**  
**City of Pacifica**  
**Proposed Rates Option 1: Current Rates**

	2016/17 <u>price per unit</u>	<i>projected increases (from Table 2)</i>				
		<b>6.5%</b> 2017/18	<b>6.5%</b> 2018/19	<b>6.5%</b> 2019/20	<b>6.0%</b> 2020/21	<b>6.0%</b> 2021/22
<b>Residential</b>	\$13.04	\$13.89	\$14.80	\$15.76	\$16.70	\$17.71
<b>Commercial</b>	\$13.04	\$13.89	\$14.80	\$15.76	\$16.70	\$17.71
<b>Min Charge</b>	\$626.14	\$666.84	\$710.18	\$756.35	\$801.73	\$849.83

\*All minimum charges under the current rate structure will be rounded to the nearest even penny upon adoption.

In Table 7, BWA has calculated a fixed charge based on the required debt service in the next five years, which would replace the current minimum charge. The volumetric charge recovers the remaining projected costs. The proportion of revenue recovery in this scenario would be approximately 37% fixed and 63% variable in 2017/18.

**Table 7**  
**City of Pacifica**  
**Rate Structure Option 2: Rate Based on Meter Size**

	2016/17 (Minimum Charge)	2017/18 Projected	2018/19 Projected	2019/20 Projected	2020/21 Projected	2021/22 Projected
<b>Fixed Rate (Annual)</b>						
1" or less	\$626.14	\$336.98	\$370.78	\$368.92	\$375.80	\$381.21
1.5"	\$626.14	\$673.97	\$741.56	\$737.85	\$751.60	\$762.42
2"	\$626.14	\$1,078.35	\$1,186.50	\$1,180.56	\$1,202.56	\$1,219.87
3"	\$626.14	\$2,021.91	\$2,224.69	\$2,213.55	\$2,254.80	\$2,287.25
4"	\$626.14	\$3,369.84	\$3,707.82	\$3,689.25	\$3,758.00	\$3,812.08
<b>Volumetric Rate (\$/hcf billed)</b>	\$13.04	\$10.49	\$10.97	\$12.12	\$13.11	\$14.19

This rate structure reduces charges for minimum and low users since it reduces the fixed charge, but raises costs for average users and above. Customers face the minimum fixed charge and a volumetric charge based on their usage, rather than one charge that covers up to 48 units of water per year. Please refer to Appendix 2 for projected residential bills.

The charge is based on meter size, which is not currently part of the City's annual data collection from North Coast County Water District.

To simplify billing, BWA also calculated a base rate per Equivalent Dwelling Unit (EDU) for each single-family and multi-family household, as shown in Table 8. This eliminates the usage-based charge for residential users, but results in increased rates for both residential and commercial to accommodate the revenue currently collected from residential excess users and maximum users. The proportion of revenue recovery in this scenario would be approximately 88% fixed and 12% variable in 2017/18.

**Table 8**  
**City of Pacifica**  
**Rate Structure Option 3: Rate Based on Equivalent Dwelling Unit**

	2016/17 (Minimum Charge)	2017/18 Projected	2018/19 Projected	2019/20 Projected	2020/21 Projected	2021/22 Projected
<b>Residential (\$/EDU)</b>	\$626.14	\$893.44	\$951.51	\$1,013.36	\$1,074.16	\$1,138.61
<b>Commercial (\$/hcf)</b>	\$13.04	\$14.89	\$15.86	\$16.89	\$17.90	\$18.98

The residential charge is based on Equivalent Dwelling Unit (EDU), which is not currently part of the City's annual data collection from North Coast Water Agency. BWA received EDU information for multi-family units from the Pacifica Fire Department.

## Recommendations

Bartle Wells Associates has prepared rates for the City of Pacifica which maintain healthy reserves, adequate debt service coverage, and funding for capital using a 10% contingency for the \$20.5 million Equalization Basin Project, as shown in Table 2. However, the current climate for construction projects leads BWA to believe that these costs may be higher than previously estimated, as shown in Tables 3 and 4.

BWA recommends that the City adopt the proposed wastewater rate increases according to Table 4, which are conservatively based on a 40% contingency for the Equalization Basin Project. The rates adopted by Council are the maximum possible rates that can be adopted in the next five years without another Proposition 218 process. If any of the City's projected costs are less than this contingency estimate, the City can implement a lower rate.

Given the need for rate increases to fund upcoming capital and debt service, Bartle Wells proposes that the City increase the rates within the current rate structure. Combining a rate increase with a rate structure change will compound the initial increase on user bills. BWA recommends that the City implement Rate Option 2 based on customer meter size once rate increases are no longer needed above standard inflation adjustments.

To simplify the City's volumetric charges, the City may wish to use a different metric for calculating residential sewer flow, such as total use discounted by a flow factor of 0.9. The City could also use either total use or six times the average bill between November and February, so that the rainfall period does not change every year. The effects of these two scenarios on the current rate structure are shown in Table 9 below.

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**Table 9**  
**City of Pacifica**  
**Residential Volumetric Billing Comparison**

<b>Method for Calculating Residential Sewer Usage</b>	<b>Approximate Increase/Decrease in 2016/17 Revenue</b>	
Total Use x 0.9	-\$6,092	-0.05%
Average Bill November - February x 6 or Total Annual Use, whichever is less	\$152,929	1.22%

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Please find in the Appendix below a summary comparison of the proposed rate structures, and a comparison of residential bills under the proposed increases and rate structures.

Appendix A: Comparison of Rate Structure Scenarios

Rate Structure Option 1 – Current Rates		Rate Structure Option 2 – Rates Based on Meter Size		Rate Structure Option 3 – Rates Based on Dwelling Unit	
Pros	Cons	Pros	Cons	Pros	Cons
Keeps average residential charge relatively low	Does not reward reduction in consumption below average user	Reduces rates for low users, rewards below-average consumption	Rate increase and structure change will have a larger impact on average user	Eliminates complicated residential volumetric charge	Rate increase and structure change will have a larger impact on average user
Smallest increase in the first year	Volumetric Charge based on rainfall changes every year  Most difficult to explain to users	Less of an increase from structure change in the first year  Easier to explain to users	Volumetric Charge based on rainfall changes every year	High fixed charge generates reliable revenues  Easiest to explain to users	Does not encourage reduction in consumption  Highest initial increase from structure change

Appendix B1: Comparison of Projected Single Family Bills: From Table 2

**RATE STRUCTURE OPTION 1, CURRENT RATES**

	2016-17		2017-18	2018-19	2019-20	2020-21	2021-22
	hcf billed	Total Charge					
Minimum	0	\$626.14	\$666.84	\$710.18	\$756.35	\$801.73	\$849.83
25th Percentile	30	\$626.14	\$666.84	\$710.18	\$756.35	\$801.73	\$849.83
50th Percentile	48	\$626.15	\$666.85	\$710.19	\$756.36	\$801.74	\$849.84
75th Percentile	72	\$939.22	\$1,000.27	\$1,065.29	\$1,134.53	\$1,202.61	\$1,274.76
<i>% change for minimum user</i>			6.5%	6.5%	6.5%	6.0%	6.0%
<i>% change for median user</i>			6.5%	6.5%	6.5%	6.0%	6.0%
<i>% change for 75th percentile user</i>			6.5%	6.5%	6.5%	6.0%	6.0%

**RATE STRUCTURE OPTION 2, RATE BASED ON METER SIZE**

	2016-17		2017-18	2018-19	2019-20	2020-21	2021-22
	hcf billed	Total Charge					
Minimum	0	\$626.14	\$336.98	\$370.79	\$368.92	\$375.80	\$381.21
25th Percentile	30	\$626.14	\$651.65	\$699.80	\$732.65	\$769.18	\$806.99
50th Percentile	48	\$626.15	\$840.45	\$897.21	\$950.89	\$1,005.21	\$1,062.46
75th Percentile	72	\$939.22	\$1,092.19	\$1,160.42	\$1,241.87	\$1,319.92	\$1,403.08
<i>% change for minimum user</i>			-46.2%	10.0%	-0.5%	1.9%	1.4%
<i>% change for median user</i>			34.2%	6.8%	6.0%	5.7%	5.7%
<i>% change for 75th percentile user</i>			16.3%	6.2%	7.0%	6.3%	6.3%

**RATE STRUCTURE OPTION 3, RATE BASED ON DWELLING UNIT**

	2016-17		2017-18	2018-19	2019-20	2020-21	2021-22
	hcf billed	Total Charge					
Minimum	0	\$626.14	\$893.44	\$951.51	\$1,013.36	\$1,074.16	\$1,138.61
25th Percentile	30	\$626.14	\$893.44	\$951.51	\$1,013.36	\$1,074.16	\$1,138.61
50th Percentile	48	\$626.15	\$893.44	\$951.51	\$1,013.36	\$1,074.16	\$1,138.61
75th Percentile	72	\$939.22	\$893.44	\$951.51	\$1,013.36	\$1,074.16	\$1,138.61
<i>% change for minimum user</i>			42.7%	6.5%	6.5%	6.0%	6.0%
<i>% change for median user</i>			42.7%	6.5%	6.5%	6.0%	6.0%
<i>% change for 75th percentile user</i>			-4.9%	6.5%	6.5%	6.0%	6.0%

\*All minimum charges under the current rate structure will be rounded to the nearest even penny upon adoption.



**Appendix B2: Comparison of Projected Single Family Bills: From Table 3 (25% contingency on EQ Basin Project)**

**RATE STRUCTURE OPTION 1, CURRENT RATES**

	2016-17		2016/17				
	hcf billed	Total Charge	2017-18	2018-19	2019-20	2020-21	2021-22
Minimum	0	\$626.14	\$676.23	\$723.57	\$774.22	\$828.41	\$886.40
25th Percentile	30	\$626.14	\$676.23	\$723.57	\$774.22	\$828.41	\$886.40
50th Percentile	48	\$626.15	\$676.24	\$723.58	\$774.23	\$828.42	\$886.41
75th Percentile	72	\$939.22	\$1,014.36	\$1,085.37	\$1,161.34	\$1,242.64	\$1,329.62
<i>% change for minimum user</i>			8.0%	7.0%	7.0%	7.0%	7.0%
<i>% change for median user</i>			8.0%	7.0%	7.0%	7.0%	7.0%
<i>% change for 75th percentile user</i>			8.0%	7.0%	7.0%	7.0%	7.0%

**RATE STRUCTURE OPTION 2, RATE BASED ON METER SIZE**

	2016-17		2016/17				
	hcf billed	Total Charge	2017-18	2018-19	2019-20	2020-21	2021-22
Minimum	0	\$626.14	\$348.22	\$381.96	\$380.05	\$389.05	\$396.22
25th Percentile	30	\$626.14	\$663.96	\$715.00	\$751.10	\$795.11	\$840.99
50th Percentile	48	\$626.15	\$853.40	\$914.82	\$973.73	\$1,038.74	\$1,107.86
75th Percentile	72	\$939.22	\$1,105.99	\$1,181.24	\$1,270.57	\$1,363.58	\$1,463.68
<i>% change for minimum user</i>			-44.4%	9.7%	-0.5%	2.4%	1.8%
<i>% change for median user</i>			36.3%	7.2%	6.4%	6.7%	6.7%
<i>% change for 75th percentile user</i>			17.8%	6.8%	7.6%	7.3%	7.3%

**RATE STRUCTURE OPTION 3, RATE BASED ON DWELLING UNIT**

	2016-17		2016/17				
	hcf billed	Total Charge	2017-18	2018-19	2019-20	2020-21	2021-22
Minimum	0	\$626.14	\$905.96	\$969.37	\$1,037.23	\$1,109.84	\$1,187.53
25th Percentile	30	\$626.14	\$905.96	\$969.37	\$1,037.23	\$1,109.84	\$1,187.53
50th Percentile	48	\$626.15	\$905.96	\$969.37	\$1,037.23	\$1,109.84	\$1,187.53
75th Percentile	72	\$939.22	\$905.96	\$969.37	\$1,037.23	\$1,109.84	\$1,187.53
<i>% change for minimum user</i>			44.7%	7.0%	7.0%	7.0%	7.0%
<i>% change for median user</i>			44.7%	7.0%	7.0%	7.0%	7.0%
<i>% change for 75th percentile user</i>			-3.5%	7.0%	7.0%	7.0%	7.0%

\*All minimum charges under the current rate structure will be rounded to the nearest even penny upon adoption.

**Appendix B3: Comparison of Projected Single Family Bills: From Table 4 (40% contingency on EQ Basin Project)**

**RATE STRUCTURE OPTION 1, CURRENT RATES**

	2016-17		2016/17				
	hcf billed	Total Charge	2017-18	2018-19	2019-20	2020-21	2021-22
Minimum	0	\$626.14	\$676.23	\$730.33	\$788.76	\$843.97	\$903.05
25th Percentile	30	\$626.14	\$676.23	\$730.33	\$788.76	\$843.97	\$903.05
50th Percentile	48	\$626.15	\$676.24	\$730.34	\$788.77	\$843.98	\$903.06
75th Percentile	72	\$939.22	\$1,014.36	\$1,095.51	\$1,183.15	\$1,265.97	\$1,354.59
<i>% change for minimum user</i>			8.0%	8.0%	8.0%	7.0%	7.0%
<i>% change for median user</i>			8.0%	8.0%	8.0%	7.0%	7.0%
<i>% change for 75th percentile user</i>			8.0%	8.0%	8.0%	7.0%	7.0%

**RATE STRUCTURE OPTION 2, RATE BASED ON METER SIZE**

	2016-17		2016/17				
	hcf billed	Total Charge	2017-18	2018-19	2019-20	2020-21	2021-22
Minimum	0	\$626.14	\$354.96	\$388.67	\$386.73	\$397.00	\$405.22
25th Percentile	30	\$626.14	\$667.22	\$723.19	\$764.96	\$810.33	\$857.52
50th Percentile	48	\$626.15	\$854.58	\$923.90	\$991.90	\$1,058.33	\$1,128.91
75th Percentile	72	\$939.22	\$1,104.39	\$1,191.51	\$1,294.48	\$1,388.99	\$1,490.75
<i>% change for minimum user</i>			-43.3%	9.5%	-0.5%	2.7%	2.1%
<i>% change for median user</i>			36.5%	8.1%	7.4%	6.7%	6.7%
<i>% change for 75th percentile user</i>			17.6%	7.9%	8.6%	7.3%	7.3%

**RATE STRUCTURE OPTION 3, RATE BASED ON DWELLING UNIT**

	2016-17		2016/17				
	hcf billed	Total Charge	2017-18	2018-19	2019-20	2020-21	2021-22
Minimum	0	\$626.14	\$906.03	\$978.51	\$1,056.79	\$1,130.76	\$1,209.92
25th Percentile	30	\$626.14	\$906.03	\$978.51	\$1,056.79	\$1,130.76	\$1,209.92
50th Percentile	48	\$626.15	\$906.03	\$978.51	\$1,056.79	\$1,130.76	\$1,209.92
75th Percentile	72	\$939.22	\$906.03	\$978.51	\$1,056.79	\$1,130.76	\$1,209.92
<i>% change for minimum user</i>			44.7%	8.0%	8.0%	7.0%	7.0%
<i>% change for median user</i>			44.7%	8.0%	8.0%	7.0%	7.0%
<i>% change for 75th percentile user</i>			-3.5%	8.0%	8.0%	7.0%	7.0%

\*All minimum charges under the current rate structure will be rounded to the nearest even penny upon adoption.