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Cost Comparative Analysis to Evaluate Wastewater Service Charge Savings Strategies

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Abstract

The wastewater construction projects are needed for meeting the environment regulatory and compliance, preserving the sewer system and treatment infrastructure and reducing the sewer spills. However, most business owners do not understand the fundamental of the sewer service charge program and the current sewer service charge adjustment guideline only provides very basic information for the program. These business owners end up with significant amount of money and time wasted since they often fall short of qualification for sewer service charge adjustment. More importantly, no sewer service charge evaluation or cost benefit analysis is conducted for new construction projects. Therefore, the objective of this paper is to evaluate wastewater charge saving strategies through two case studies that include hospital buildings and large residential complex buildings having more than 100 units. Detailed cost comparative analysis is presented to show if the saving strategies are achievable for each case. Lastly, this paper recommends the best property management approach for the review of sewer service charge so that the significant amount of long term sewer service charge saving can be achieved for larger commercial project.

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1. Introduction

With the upsurge in demand on the wastewater treatment, the sewer service charge (hereinafter SSC) rate is increasing 6.5% for the next ten years in the City of Los Angeles according to the 10 year SSC rate plan from the

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Bureau of Sanitation (City of Los Angeles, 2014). According to Los Angeles Municipal Code (LAMC), “Any allocation of the SSC rate between the financing of capital improvements and payment of the costs of operation and maintenance of the sewer system, or any other adjustment of the rate....” the SSC rate will go up with the aging sewer system and increasing costs of operation and maintenance. In regard to wastewater measurement, hundred cubic feet (HCF) is used for the volume measurement of the wastewater which is roughly equal to 748 gallons of water. Current SSC rate is \$3.73 per HCF and will boost to \$5.80 per HCF in year 2020. Majority of the commercial customer will be affected by this increase, and many of them already start to look for potential savings in sewer service charge.

SSC adjustment program provides lower SSC rate for those businesses who qualify for an SSC adjustment. Every year, a City of Los Angeles releases the SSC adjustment to citizens and business owners, but only a few attempts to apply for the adjustment. Adjustment is a determination that the volumetric amount of sewage which enters the sewer system from a premises according to Los Angeles Municipal Code (LAMC). For larger commercial companies, those SSC adjustments are often neglected to apply on their operations without paying enough attention. For some businesses, they applied for SSC adjustment, and able to achieve long term savings on the SSC. In the last seven years, the authors have encountered many commercial customers who seek for SSC adjustment which successfully reduced their SSC. The savings from the adjustment varies from case to case, but some customers were able to reduce 50% of their SSC through adjustment. Currently, the standard rate (city medium for commercial) is 93%, which means 93 HCF of wastewater will be discharged for every 100 HCF of water. According to current SSC adjustment information sheet (City of Los Angeles 2014), in order to qualify for an SSC adjustment, the customer has to discharge less than 80% of the standard discharge rate which is equal to 74%. Therefore, the benefit to qualify for an adjustment is at least 19% of the SSC year after year. For small businesses, the saving is limited since they produce less volume of wastewater compared to larger businesses. On the other hand, for businesses that use large amount water in their daily operation, the SSC saving can be enormous.

In fact, many of the SSC adjustment requests are not qualified for SSC adjustment. Some of those who were not qualified should revise the SSC adjustment based on recommendations. The recommendations may include increase of landscape area, installation of new cooling towers, or re-pipe the water lines, and etc. Their implementation based on recommendations may increase chances to be qualified for the SSC adjustment, but also high implementation cost can be hurdle for owners. The owner has to decide between the SSC savings and the cost of implementing the recommendation. Therefore, there is a significant need of in-depth evaluation on the current SSC adjustment for proper management practices.

2. Previous Studies

With the cost increase in wastewater treatment, the average monthly SSC charge also increased significantly from \$14.63 (1992) to \$21.48 (2004). This implies an average annual increase of 3.3 percent according to California Wastewater Charge Survey conducted by Black & Veatch Corporation in 2004 (Black & Veatch, 2004). The survey encompasses 524 cities and districts in California and majority of the survey participants increased rates by an average of 21 percent. The trend for SSC increase becomes noticeable after 2008 for most business owners since they all want to cut the cost during the economic downturn. Around similar timeframe, many wastewater construction projects were placed on hold (those projects are needed for meeting the environment regulatory and compliance, preserving the sewer system and treatment infrastructure, and reduce the sewer spills) due to funding issues, and the need of more SSC adjusters for the increasing SSC adjustment request, the funding issues were brought to the table again in 2011. From the Bureau of Sanitation Clean Water Program Status Report (Black & Veatch, 2007), it is clear to see the increasing trend of the SSC rate until 2011 in the city of Los Angeles. However, most business owners are not fully aware of the fundamentals of the SSC program because the current SSC adjustment information only exhibits limited information for the program. As a result, it became more challenging to be qualified for the program. Until now, no previous studies provide in-depth SSC analysis for those business owners. To support users better understand the SSC adjustment program, this study presents thorough analysis on SSC with adequate guidance through two major case studies.

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