City of Chula Vista

Staff Report

File#: 14-0152**, Item#: 19.**

CONSIDERATION OF ACCEPTING THE 2014 WASTEWATER MASTER PLAN UPDATE AND MODIFYING THE SEWER CAPACITY CHARGE AND WASTEWATER UNIT GENERATION RATES

A. RESOLUTION NO. 2014-135 OF THE CITY COUNCIL OF THE CITY OF CHULA VISTA ACCEPTING THE 2014 WASTEWATER MASTER PLAN UPDATE

B. ORDINANCE OF THE CITY OF CHULA VISTA AMENDING: CHULA VISTA MUNICIPAL CODE SECTION 13.14.090 (SEWER CAPACITY CHARGE); THE CITY'S MASTER FEE SCHEDULE (CHAPTER 12 - SEWER FEES); AND THE CITY'S SUBDIVISION MANUAL (SECTION 3-300 - SEWER DESIGN CRITERIA), TO MODIFY THE SEWER CAPACITY CHARGE AND THE WASTEWATER UNIT GENERATION RATES (FIRST READING)

RECOMMENDED ACTION
Council conduct the public hearing, adopt the resolution and place the ordinance on first reading.

SUMMARY
The current Wastewater Master Plan was prepared in 2005 (2005 Study). Since that time, the City has had changes in planned development and flow projections. This 2014 Wastewater Master Plan Update (2014 Study) accounts for said impacts on the wastewater system.

The 2014 Study covers the wastewater collection, conveyance and treatment capacity requirements under existing and ultimate City build-out conditions, conducted on behalf of the City by Infrastructure Engineering Corporation, Inc.

The 2005 Study recommended that the Sewer Capacity Charge be set at $3,478 per Equivalent Dwelling Unit (EDU). The 2014 Study recommends modifying the charge to $3,450 per EDU. It also recommends modifying the single family wastewater unit generation rate from the existing 265 gallons per day (GPD) to 230 GPD. With this action, the City Council will consider:

(i) Accepting the 2014 Study;
(ii) Modifying the Sewer Capacity Charge and Wastewater Unit Generation Rates, as recommended in the 2014 Study;
(iii) Amending Chula Vista Municipal Code section 13.14.090, the City's Master Fee Schedule and the Subdivision Manual, to reflect the modifications and provide for annual increases in the Sewer Capacity Charge.

The public hearing has been duly noticed.

ENVIRONMENTAL REVIEW
The Development Services Director has reviewed the proposed activity for compliance with the California Environmental Quality Act (CEQA) and has determined that the proposed actions are not a "Project" as defined under Section 15378 of the State CEQA Guidelines because the activity consists of a governmental fiscal/administrative activity which does not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment. Therefore, pursuant to Section 15060(c)(3) of the State CEQA Guidelines the activity is not subject to CEQA. Thus, no environmental review is required. Although environmental review is not required at this time, once the scope of potential individual city projects to be funded have been defined, environmental review will be required for each project and the appropriate environmental determination will be made.

BOARD/COMMISSION RECOMMENDATION
Not Applicable.

DISCUSSION
The City of Chula Vista (City) provides sanitary sewer service for all areas within the City limits and owns, operates, and maintains, more than 500 miles of sewer main lines, 11 pump stations and approximately 12,000 manholes. The City is divided into eight sewer basins that outflow into regional sewage facilities located to the west of Chula Vista and south of the San Diego Bay and to the north of the Sweetwater River. Wastewater flows are ultimately conveyed to transmission and treatment facilities operated by the City of San Diego's Metropolitan Wastewater Department (METRO).

In 2005, the City updated its Wastewater Master Plan to analyze the City's wastewater collection system and determine the infrastructure's ability to support the City's demand for the next 16 years. Since that time, the City has had various changes in planned development and reduced flows due to water conservation efforts; all of which have an impact on wastewater. For this reason, past infrastructure planning assumptions needed to be reexamined.

The City of San Diego's Point Loma Wastewater Treatment Plant (PLWWTP) was issued a waiver in 2010 from the Environmental Protection Agency (EPA) which allowed the plant to operate at an advanced primary treatment level. The waiver expires in 2015. The PLWWTP may be required to operate at a secondary treatment level if the waiver is not renewed. The expectation is that even if it is renewed, expensive infrastructure will be required as part of the renewal approval process. This would increase the costs associated with purchasing additional capacity from METRO.

Alternatively, the City could elect to accommodate future development by constructing its own treatment plant to treat projected flows of new customers at buildout.

The City retained Infrastructure Engineering Corporation to prepare the "2014 Wastewater Master Plan Update" (2014 Study) (Attachment 1) completed in May 2014. The 2014 Study recommends: (1) sewage generation rates to estimate the additional treatment capacity that must be secured by the City to meet buildout needs and expansion collection system sewer demands, (2) a capital improvement plan (CIP) identifying existing sewer deficiencies and recommending facility improvements to accommodate growth and ultimate City buildout conditions, and (3) Sewer Capacity Charges that continue to provide adequate funding for the acquisition of additional treatment capacity needs of the City and the facility improvements needed to accommodate growth at buildout.

Wastewater Unit Generation Rates

The wastewater unit generation rate represents the average wastewater generated per capita, dwelling unit, acre, or 1,000 per square-feet depending on land use. Wastewater unit generation rates are used to estimate wastewater flow projections and determine infrastructure improvements required to serve existing and future development needs. This forms the basis of the Sewer Capacity Charge.

The 2014 Study estimated residential, commercial, institutional, and industrial wastewater unit generation rates utilizing return-to-sewer-ratios based on water billing records and wastewater flow monitoring data. Population data for schools was used to estimate school wastewater unit generation rates.

Utilizing the existing water billing records from 2009 through 2011 and the wastewater meter data, the proposed wastewater unit generation rates shown in Table 1 were developed.

Table 1: Wastewater Unit Generation Rates

Land use	Recommended Wastewater Duty Factors based Water Demands			
	GPD/Capita	Gal/DU	GPD/Acre	GPD/1000 sq-ft
Single Family	63	230	-	
Multi-Family	55	182	-	
Commercial	-	-	1,401	80
Industrial	-	-	712	80
Government/Office/Public Institution	-	-	1,313	80
Elementary School	12	-	1181	
Junior/Middle/High School	13	-	1080	
Olympic Training Center	-	-	582	
Open Space/Recreation	-	-	410	

The 2005 Wastewater Master Plan recommended a single family wastewater unit generation rate of 265 gallons per day (GPD). The 2014 Study recommends 230 GPD. The wastewater unit generation rate decrease is a reflection of the ongoing water conservation trends citywide.

Wastewater Flow Projections

Once the wastewater unit generation rates were established for 2012 conditions, flow projections for 2017, 2022, 2027, 2032, 2037, 2042 and 2050 conditions were calculated. Yearly and planning flow projections were calculated based on the City's 2005 General Plan including General Plan Amendments in 2013, 2013 Otay Ranch General Development Plan projections and the San Diego Association of Governments (SANDAG) population projections.

Table 2 identifies the City's total projected flows through 2050. Growth/flow projections used a linear growth projection between 2012 and 2050.

Table 2: Recommended Wastewater Flow Projections

Year	Total Projected Flow (MGD)	SANDAG Population*
2012	15.73	249,382
2017	18.16	255,382
2022	20.04	271,913
2027	22.00	282,785
2032	23.97	293,610
2037	25.93	306,922
2042	27.91	318,270
2050	29.89	330,049

* SANDAG Populations were not used as part of the flow calculations but have been provided for informational purposes only.

Table 3 shows the projected wastewater flows and timeframe of additional treatment capacity that will be required for the City.

Table 3: Additional Treatment Capacity

Year Proposed	Wastewater Flow Projections (MGD)	Additional Treatment Capacity Required [(1)] (MGD)
Existing	15.73	-
2017	18.16	-
2022	20.04	-
2027	22.00	1.14
2032	23.97	3.10
2037	25.93	5.07
2042	27.91	7.04
2050	29.89	9.03
Total		

1) Above the City's current 20.864 MGD treatment capacity rights.

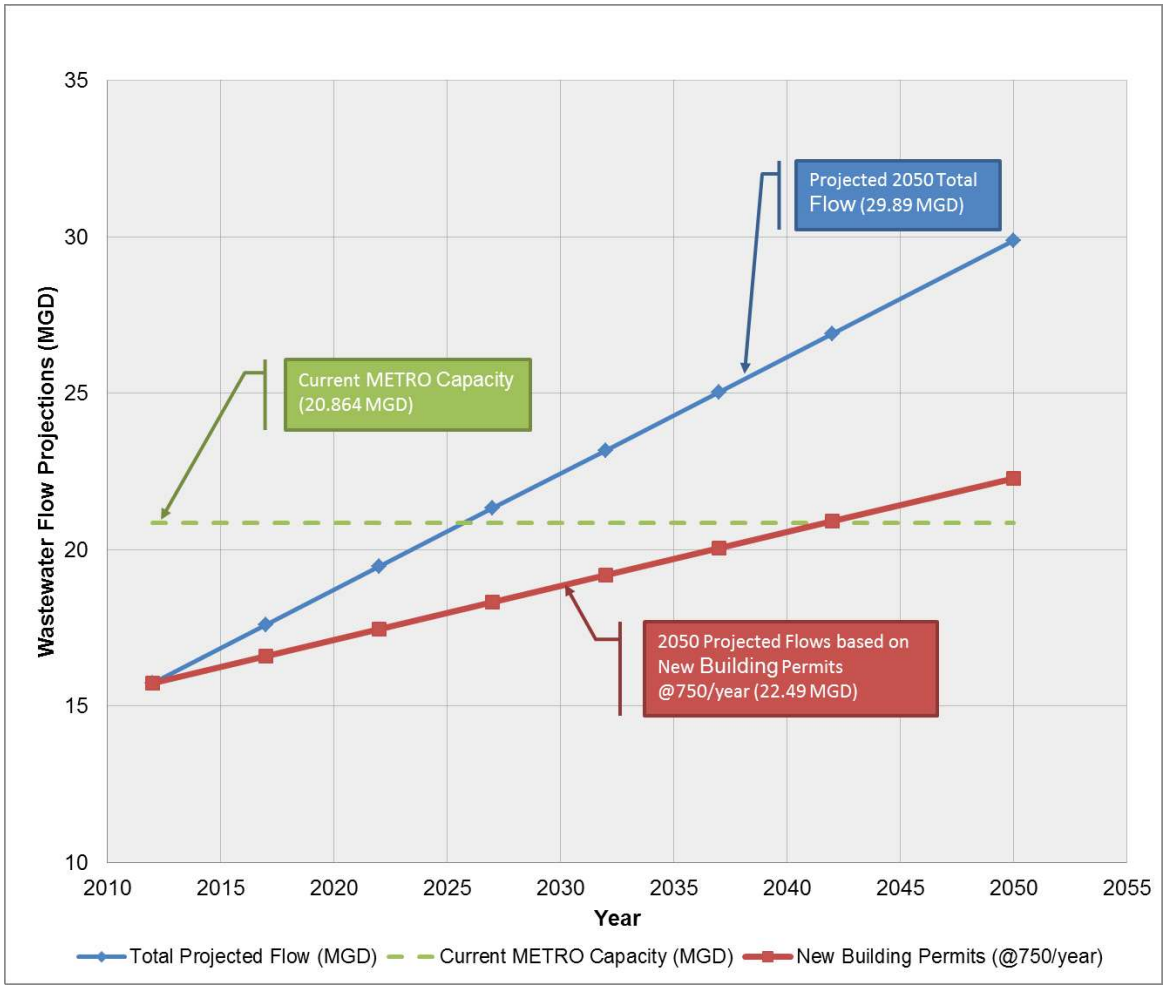
The ultimate wastewater flow in 2050 has been projected to reach 29.89 million gallons per day (MGD). This flow is approximately 9.03 MGD more than the 20.864 MGD capacity rights currently owned by Chula Vista in the METRO system. It is estimated that the total wastewater flows generated by the City will reach 20.864 MGD by year 2024.

The 2014 Study included the estimated flows from a portion of the Bayfront development in the calculation of City's flow projections, treatment capacity needs and Sewer Capacity Charge. No existing conveyance system upsize was included in the CIP as a result of projected Bayfront flows. Partial Bayfront flows were used only to define ultimate treatment capacity needs.

The 2014 Study includes the area in the County known as Village 13. However, the estimated flows from this development were not used as part of the City's hydraulic model, flow projections, CIP analysis, treatment capacity needs, nor Sewer Capacity Charge calculation. It is assumed that once the County development has been defined and authorized, the County will update the necessary documents.

Figure 4 shows a graphical representation of the ultimate flows in 2050. The graph compares the City's development planning projection and the projection of new permits issued in the City by 2050 using the average for the last three years. The new-building permit projection represents a much slower growth resulting in approximately 22.49 MGD in 2050.

Figure 4: Projected Wastewater Flows



The 2014 Study utilized the more conservative approach of estimating projected flows through 2050 based on SANDAG projections rather than assuming growth at the current rate of 750 building permits per year.

The 2014 Study includes quantifying wastewater flow rates for existing conditions and projected conditions through year 2050. The flow projections have a direct impact to the pipeline expansion capacity of the existing collection system and the determination of the additional METRO capacity requirements.

Capital Improvement Program (CIP)

There are two main elements of the CIP: 1) pipeline capacity analysis and 2) cost estimation. The pipeline capacity analysis phase consists of evaluating the wastewater collections system at different time intervals and under various operational scenarios. The cost estimation phase incorporates estimating construction costs for the proposed facilities in terms of dollar value in the year 2013.

CIP Pipeline Improvement Costs

An evaluation of the available capacity of the City's existing wastewater collection system was

completed to identify sewer reaches that may be undersized to accommodate existing and/or future wastewater flows. Based on the findings of the evaluation, phased facility improvements were identified to reduce the potential for sanitary sewer overflows as well as to allow for projected growth within the City's service area.

Utilizing a hydraulic model, the ability of City's wastewater infrastructure was evaluated in the Existing (2012), 2017, 2022, 2027, 2032, 2037, 2042 and 2050 time-increments. Approximately 12 miles gravity mains, accounting for nearly 2.4 percent of the total gravity mains, are unable to satisfy the City's design criteria and accommodate peak flows by 2050. The cost estimates for the pipe unit costs were based on an ENR-CCI (20 City Average) of 9552 for September 2013.

The 2014 Study utilized the results of the hydraulic analysis to develop a phased and prioritized CIP. Recommendations included gravity main replacements and lift station capacity improvements. Table 5 provides a summary of pipeline, manhole and any flow meter vault improvements broken down by year.

Table 5: Summary of Existing and Proposed Capital Improvement Costs

Year Proposed	Pipeline Improvements	Manhole/Flow Meter Vault Replacements
Existing	$5,000,100	$265,000
2017	$3,210,600	$265,000
2022	$1,462,100	$60,000
2027	$242,000	$65,000
2032	$328,400	$105,000
2037	$1,828,600	$180,000
2042	$2,078,300	$125,000
2050	$1,612,400	$465,000
Total	$15,762,500(1)	

(1) Total costs include manhole/flow meter vault replacements.

Sewer Capacity Charge

The Sewer Capacity Charge is paid by the owner or person applying for a permit to develop or modify the use of any residential, commercial, industrial or other property. The purpose of the Sewer Capacity Charge is to pay for the capital costs of existing facilities upgrades needed to serve new customers connecting to the wastewater system. The Sewer Capacity Charge is also intended to fund either the construction of treatment facilities or the purchase of additional treatment capacity rights in the METRO sewer system. A proper Sewer Capacity Charge will secure adequate funding for the wastewater collection system upgrades and treatment facilities needed to accommodate the City's growth.

In March of 1985, the City established a capacity fee of $300 per EDU that would be applicable to all new connections to the City's sewer collection system. Since then, said fee has been amended several times. Table 6 shows those increases:

Table 6: Sewer Capacity Charge Adjustments

Year	Resolution/ Ordinance	Justification	Rate ($)
1987	Reso. No. 13004 and Ordinance No. 2002	Anticipated costs of upgrading the Point Loma Treatment Plant to a secondary treatment facility	$600
1989	Reso. Nos. 15352 & 15352A	Cost of bringing the Point Loma Treatment Plant into compliance were far greater than anticipated and Federal funds were not available	$2,000
1990	Reso. No. 15894	Meet City's obligation to the Metro System for the upgrade of the treatment plant	$2,220
2003	Ordinance No. 2900	Interim adjustment based on the ENR -Index to account for inflation and in anticipation of the increase in the cost of acquisition of additional treatment capacity rights in the Metro System. This adjustment was done pending the completion of the Wastewater Master Plan Update	$3,000
2005	Ordinance No. 3007	Budget for Capital Improvement Projects, allocate resources for the acquisition of sewage capacity and determine the short term and long-term sewer capacity needs of the City.	$3,478

Staff will pursue all possible options to acquire the additional treatment capacity rights required. The goal is to minimize risks to future development, ensure sufficient fund balance and to reduce acquisition costs while lessening the impact to the Sewer Capacity Charge.

Sewer Capacity Charge Evaluation

The 2014 Study outlines two options for calculating the Sewer Capacity Charge:

- Option 1 is the Buy-in to existing facilities and includes the depreciated value of existing City pipelines and the value of the City's existing capacity rights at METRO.

- Option 2 estimates the Incremental Capacity Cost of Expanding Existing City pipelines and building a City-owned treatment plant.

The estimated investment and Sewer Capacity Charge projection for Option 1 is shown in Table 7

Table 7: Option 1- Buy In to Existing Facilities

Sewer Capacity Charge Components	Cost per GPD	Cost per EDU (230 GPD)
City Pipeline Buy-in	$1.32	$303.60
Available Metro Capacity	$16.47	$3,788.10
Total	$17.79	$4,091.70

The Buy-in to Existing Facilities (Option 1) results in a Sewer Capacity Charge of $4,091.70 based on the estimated value of the City's existing collection system assets and value of the City's existing capacity rights in the METRO system.

The estimated investment and Sewer Capacity Charge projection for Option 2 is shown in Table 8

Table 8: Option 2- Incremental Capacity Expansion

Sewer Capacity Charge Components	Cost per GPD	Cost per EDU (230 GPD)
City Pipeline Expansion	$0.76	$174.80
City-owned Treatment Plant	$14.24	$3,275.20
Total	$15.00	$3,450.00

The Incremental Capacity Expansion (Option 2) results in a Sewer Capacity Charge of $3,450.00 based on the projected cost of upgrading the City's existing pipelines required to accommodate the flow projections herein described through the CIPs. It also assumes, for cost projection purposes only, a City-owned treatment plant that would accommodate the City's growth at buildout.

Table 9 shows the current Sewer Capacity Charge, the current Sewer Capacity Charge adjusted to current dollars, and the estimated Sewer Capacity Charge, assuming the City decided to purchase additional treatment capacity from METRO after the PLWWTP is upgraded to secondary.

Table 9: Comparison of Sewer Capacity Charge

	Description	Cost of Capacity ($/GPD)	Capacity Fee (230 GPD)
Current Sewer Capacity Charge	2005 Study	$15.12	$3,478.00
Current Sewer Capacity Charge Escalated to 2013	2005 Study's cost escalated to July 2013 using the ENR CCI for Los Angeles	$18.85	$4,336.12
PLWWTP Secondary Expansion	Collection system expansion and PLWWTP Secondary Expansion	$26.99	$6,207.70

The City's existing Sewer Capacity Charge was last updated as part of the 2005 Wastewater Master Plan and was based on a buy-in cost to existing facilities. If that fee had been increased each year by the change in the ENR Construction Cost Index, it would be $4,336 per EDU reflecting a 24.7% change in the index over the past eight years. Purchasing additional capacity rights at the PLWWTP after Secondary Expansion is projected to result in the highest capacity fee at $6,207.70 per EDU.

Sewer Capacity Charge Recommendation

Staff recommends Option 2- Incremental Capacity Expansion and that the Sewer Capacity Charge be reduced from $3,478 to $3,450 per EDU as described above.

Both the Buy-in (Option 1) to Existing Facilities and the Incremental Capacity Expansion (Option 2) method are fair to customers and reflect the estimated capital costs of providing capacity in the wastewater system. Staff recommends the Option 2 method to calculate the Sewer Capacity Charge as it is the lowest cost option that conservatively recovers expansion related costs from new development.

As previously stated, options 1 and 2 are based on estimated values of City's existing collection

system and projected costs of constructing a City-owned treatment plant respectively. Staff will continue to evaluate both options when updated information becomes available. If actual construction costs are higher than estimated, or if METRO/other agencies are willing to sell treatment capacity rights at a price lower than constructing a treatment plant, staff will update this analysis.

Master Fee Schedule and Subdivision Manual Amendment

The City's existing Sewer Capacity Charge is set forth in the City's Master Fee Schedule. As the Sewer Capacity Charge is amended, the Master Fee Schedule Chapter 12 would need to be amended accordingly. The proposed modifications to the Master Fee Schedule as it relates to the modification of the Sewer Capacity Charge are shown in Attachment 2.

The 2014 Study recommends a wastewater unit generation rate of 230 GPD as described above. This rate is a component of the Sewer Capacity Charge set forth in the City's Master Fee Schedule and Subdivision Manual. As the wastewater unit generation rate is amended, the Master Fee Schedule and Subdivision Manual would need to be amended accordingly. The proposed modifications to the Master Fee Schedule as it relates to the modification of the wastewater unit generation rate are shown in Attachments 2 and 3. The proposed modifications to the Subdivision Manual are shown in Attachment 4.

Adjusting Sewer Capacity Charge

Since it is likely that the timing of payments received from the Sewer Capacity Charges will not exactly match the timing of expenditures to provide for facilities, the fee needs to be adjusted to reflect the time value of money. The intent is that the charge be equal to the required investment as if the construction were to occur at the time of contribution.

Capacity fees should be adjusted regularly to prevent them from falling behind the costs of constructing new facilities. Several methods can be used to adjust the capacity fees, including:

1 ENR Construction Cost Index: ENR (Engineering News-Record) magazine publishes construction cost indices monthly for Los Angeles. This index can be used to estimate the change in the construction cost of facilities. If the ENR Index has increased by three percent since the last capacity fee adjustment, the capacity fee should be increased by three percent.
2 U.S., California, or regional consumer price index.
3 Interest rate and borrowing costs: The interest and borrowing costs for debt issued to finance sewer capital projects can be added to the capacity fee annually.

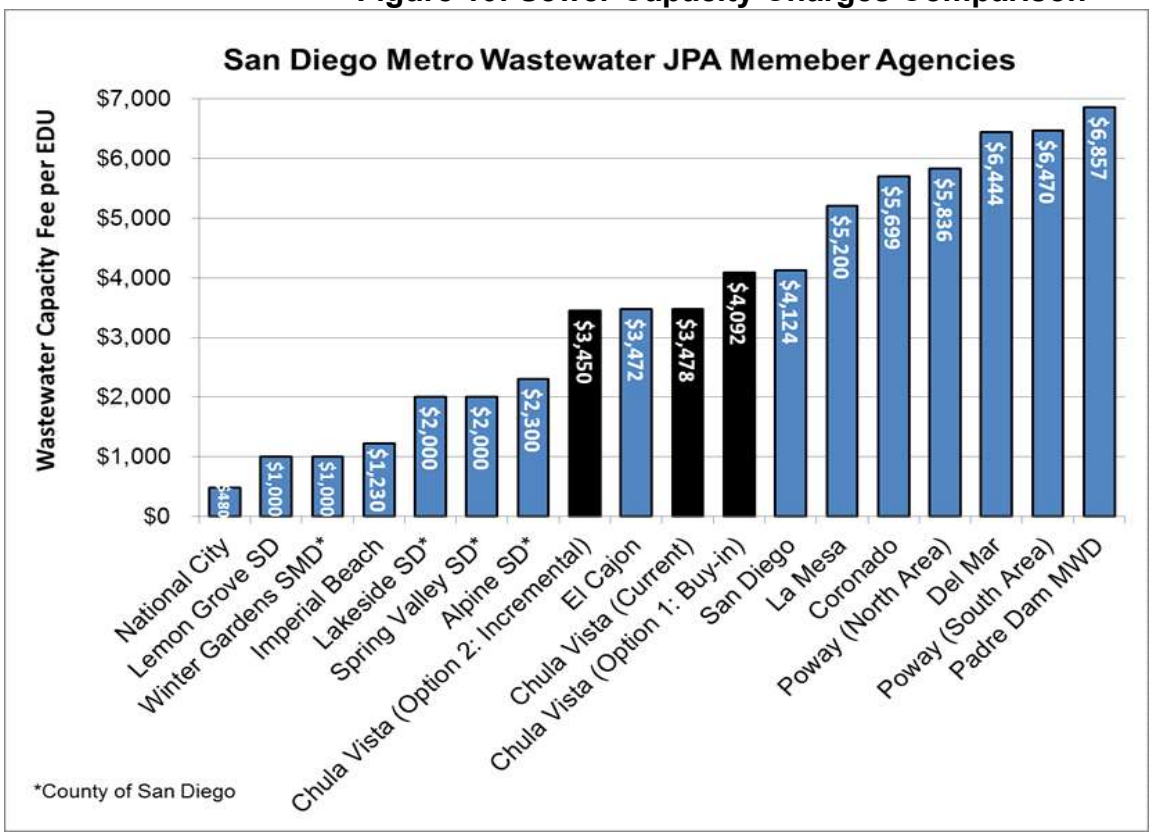
Staff recommends adjusting the Sewer Capacity Charge annually based on the year-over-year (from July to July) change in the ENR Construction Cost Index for Los Angeles, to be effective each October 1st. This index is currently being used in the City's Development Impact Fees (DIFs) yearly adjustments and it is considered industry standard practice. Staff believes this is the most appropriate index because it directly reflects construction costs in the regional economy. This change is reflected in the ordinance amendment presented for the City Council's consideration with this item. The redline/strikeout version reflecting the recommended changes to the ordinance is included as Attachment 5.

Sewer Capacity Charges will also need to be reviewed in detail when updated information is available regarding the PLWWTP waiver from the EPA, and a revised master plan or capital improvement program is obtained.

Comparison of City of Chula Vista's Sewer Capacity Charge with Other Local Agencies

Most agencies in the area between Poway and the International Border collect some form of connection fee, which is used to defray some portion of the cost of existing sewer facilities. Those fees are sometimes part of a larger fee covering specific work involved in making a physical connection to the sewer. Consequently, it is difficult to do a proper comparison of the proposed fee increase with those of other agencies. Figure 10 is a compilation of the fees charged by other local agencies.

Figure 10: Sewer Capacity Charges Comparison



Community Outreach

From the initial stages of this project, City staff and consultant staff have stressed the importance of conducting thorough community outreach to foster transparency and make sure community

members' questions and concerns would be heard and responded to as comprehensively as possible. Outreach for the 2014 Study was combined with outreach for the sewer rate review and billing delivery methodology. Staff conducted four general community meetings, attended a regular meeting of the Development Oversight Committee and a regular meeting of the Chamber of Commerce Board of Directors.

DECISION-MAKER CONFLICT
Staff has reviewed the decision contemplated by this action and has determined that it is not site specific and consequently, the 500-foot rule found in California Code of Regulations section 18704.2 (a)(1), is not applicable to this decision. Staff is not independently aware, and has not been informed by any Council member, of any other fact that may constitute a basis for a decision maker conflict of interest in this matter.

LINK TO STRATEGIC GOALS
The City's Strategic Plan has five major goals: Operational Excellence, Economic Vitality, Healthy Community, Strong and Secure Neighborhoods and a Connected Community. The 2014 Study supports the Economic Vitality goal in the City's Strategic Plan. It provides funding for planning sewer infrastructure and treatment capacity for new development, which is a key City function in supporting new growth.

CURRENT YEAR FISCAL IMPACT
The 2014 Study was funded by Trunk Sewer Capital Reserve funds available in CIP SW223. There is no impact to the General Fund as a result of this action.

Staff's recommendation is to lower the Sewer Capacity Charge from $3,478 to $3,450. However, this change is not expected to have a negative fiscal impact on the Sewer Fund. The proposed Sewer Capacity Charge is based on the projected cost of upgrading the City's existing pipelines required to accommodate the flow projections described in this report and secure the necessary treatment capacity.

ONGOING FISCAL IMPACT
Wastewater Capital Improvement Projects resulting from the 2014 Study will be budgeted as part of the City's annual Capital Improvement Program and funded from the Trunk Sewer Capital Reserve funds.

Adopting an updated Sewer Capacity Fee, including authority for annual index based adjustments, supports the collection of funding for wastewater collection system upgrades and treatment facilities needed to accommodate future development.

ATTACHMENTS

Attachment 1-	2014 Wastewater Master Plan Update
Attachment 2-	Striked version of Master Fee Schedule Section 12-100
Attachment 3-	Striked version of Master Fee Schedule Section 12-300
Attachment 4-	Striked version of Subdivision Manual
Attachment 5-	Striked version of Chula Vista Municipal Code section 13.14.090

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