Agenda Item 4

Engineering Meeting

Meeting Date: August 13, 2020

TO: Engineering Committee Members

STAFF CONTACT: Amber Baylor, Director of Environmental Compliance

SUBJECT: Use Audit Flow and Solids Methodology – Annual Update FY 19-20

Summary

The intent of this agenda item is to review the methodology for the determination of flow and solids allocations as used for the preparation of the annual use audit. The determination of usage relates as well to the preparation of the financial statements audit now underway. Each of these efforts requires that decisions be in place on or before August 15 of each year in order that the audits can be timely. This year, as in prior years, SOCWA staff has distributed background information and requested that member agencies comment on the proposed allocations. SOCWA proposed distributions are accumulated from Raw Data as explained in Attachment 1.

On July 11, 2020 Member Agencies were provided with daily flow and loading data organized by each project committee. Member agencies Moulton Niguel Water District and South Coast Water District had questions on the methodologies used with final comments received on July 29, 2019. SOCWA provided summary responses to member agency staff on August 4, 2020.

Several questions were raised by MNWD with a request that the flow methodology be changed for PC 12 and PC 17. The questions presented are:

- Should PC 12 base flow allocations on use of recycled water versus production?
- Should PC 17 use total centrate flow as the basis for cost allocation percentages?

Staff has determined that these questions are largely policy questions, however, there are practical factors that should be considered. These include:

- A policy change at year-end June 30, 2020 means that the methodology utilized to prepare the annual budget (which allocates a proposed flow against projected costs) will not be the same as the method applied at the end of the fiscal year.
- Important to the decision on use versus production of recycled water is the availability of supporting data and the responsibility for calculation of member agency flow data. When data is largely within the control of member agencies, SOCWA is not in the best position to acquire or assure the accuracy of data. A secondary factor is the staff time involved to acquire inputs of information and to do the accounting work to determine the fair values from what may be large data inputs.
- The SOCWA Recycled Water Permit, Order 97-52, sets requirements that align with the State Recycled Water Use Policy, which focus on the total volume of water produced at

each facility. There is not a direct correlation to the permit requirements for water used at the retail level. SOCWA's role and focus is compliance with the permit.

These factors will be reflected in the recommendations of staff below.

Additionally, as SOCWA staff explained to both the Finance Committee at its August 4, 2020 meeting and to the SOCWA Board at the August 6, 2020 meeting, due to the need to reach a final decision on the flow methodology questions raised by the August 15, 2020 deadline, this matter will be presented, discussed and decided at the August 13, 2020 Engineering Committee.

MNWD Request

1. PC12

MNWD requests allocation changes from Recycled Water (RW) Produced for FY 19-20 to Recycled Water (RW) Use. The current production data historically used by SOCWA to determine cost allocations is generated from data reported by the agencies (SOCWA staff quality review the data before reporting production by facility to the Regional Board). The current approach matches data reported to the fiscal-year end June 30, 2019. For the year end June 30, 2019, there is not a readily available source of fiscal year recycled water use data. Therefore, the source of production data for the fiscal year end June 30, 2019 would be based on calendar year reporting ending December 30, 2019 (1/2 of the fiscal year).

For purposes of comparison, SOCWA prepared Table 1, below, which contrasts FY production data to calendar year use data.

Table 1:

Summary Comparison			
Member Agency	**% RW Produced (FY 19-20)**	**% RW Use Calendar Year 2019**	**% RW Produced Calendar Year 2019**
CSJC	3.29	4.09	3.89
MNWD	42.64	37.81	46.20
SCWD	7.05	5.78	5.76
SMWD	42.89	47.88	40.44
TCWD	4.13	4.44	3.70
Total	**100**	**100**	**100**

Staff Recommendation:

SOCWA member agencies are the best-informed parties to utilize their internal recycled water sales records and recycled water interagency transfer data to determine the costs to be collected from or paid to their partner agencies for the use of recycled water. Transition of the SOCWA costs to a use basis of allocation does not alleviate the need

for individual member agencies to apportion and collect their own costs of recycled water system deliveries or to determine the rates to charge their neighboring agencies for the sharing of recycled water resources. The determination of metering, customer usage and area usage of recycled water is a retail function best performed at the individual member agency level. Further, SOCWA would need to acquire additional staff to take on this accounting function in a manner that could assure the accuracy of the reported use data. Accuracy would need to involve separate agreements that allowed for functions such as data auditing.

Accordingly, SOCWA staff recommends that fiscal year recycled water production data should continue to be in place as the best measure for allocation of PC 12 costs.

2. PC 17

   MNWD requests that for purposes of allocation of liquids costs flow should be determined by influent with the addition of centrate flow for the solids system partners. This approach would eliminate the use of the additional distribution percentage, which seems reasonable.

   The difference in the requested change is 0.010005909 MGD which equals a difference of 3.66 Million Gallons over the fiscal year.

   SOCWA staff recommends modification to allocate liquids utilizing the MNWD influent with the addition of the centrate flow.

3. PC 24 & 5

   The FY 2019-2020 Budget assigned all Outfall costs as fixed and thereby aligned the allocation of the costs with Outfall ownership percentages. There will not be a flow/use related component to the cost share due to the policy decision.

   SOCWA staff recommend distribution of PC 24 and 5 costs in alignment with the Board's policy decision as reflected in the FY 2019-2020 Budget (all costs identified as fixed and shared by ownership percentage).

Attachment 1

SOCWA Raw Data

The raw data is stored in the Water Information Management System (WIMS) database and where applicable is consistent with data that is reported to regulatory agencies. The raw data is reviewed on a daily and monthly basis for incongruencies or data quality issues. The WIMS database has an auditing feature that allows each data point to be tracked by user, date, and time entered or changed in the database. The WIMS database has a tiered user privilege system that ensures data integrity. Inclusion of variables and data type included here memorializes where the data is in the database for consistency and transparency when accounting for flows at the end of the FY.

Export to Excel

The data management tool that is utilized for extraction of data is the HACH Water Information Management System (WIMS). The variables are chosen from the list described in the following sections. The data is extracted by choosing the variable and the date range. For this use audit,

the date range for all variables is July 1, 2019 through June 30, 2020 (FY 19-20) except for the solids in PC2 where the date range is July 1, 2017 through June 30, 2020 (FY 17-18 through FY 19-20). Please refer to figure 1 for an example of the extraction procedure for PC 2 in FY 19-20.

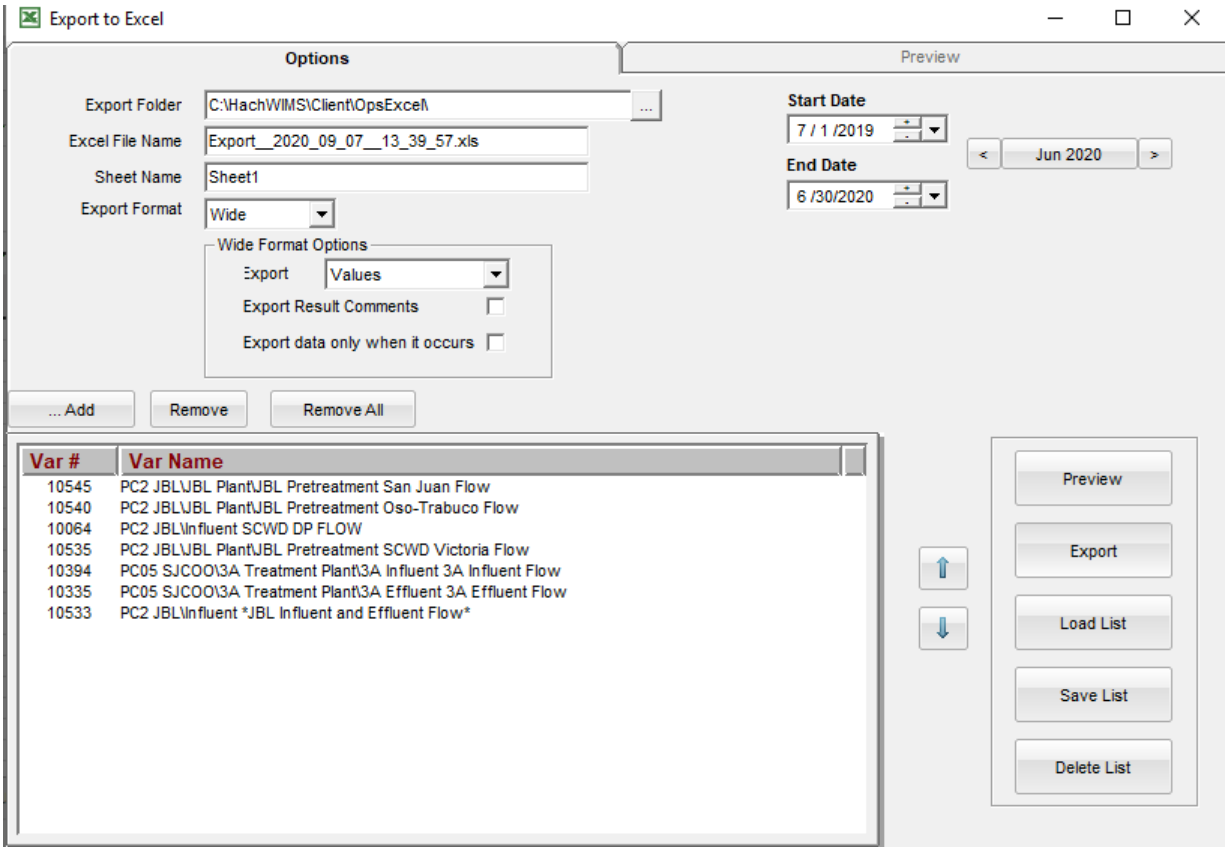

Figure 1: Data extraction from WIMS to Excel

PC2 Variables Used & Methodology Distribution

Variables used:

Variable Number	10545	10540	10064	10535	10394	10533	10541	10543	10546	10548	10159	10304
WIMS Variable Name	PC2 JBL\JBL Plant\JBL Pretreatment San Juan Flow	PC2 JBL\JBL Plant\JBL Pretreatment Oso-Trabuco Flow	PC2 JBL\Influent SCWD DP FLOW	PC2 JBL\JBL Plant\JBL Pretreatment SCWD Victoria Flow	PC05 SJCOO\3A Treatment Plant\3A Influent 3A Influent Flow	PC2 JBL\Influent *JBL Influent and Effluent Flow*	PC2 JBL\JBL Plant\JBL Pretreatment OSO-Trabuco TSS	PC2 JBL\JBL Plant\JBL Pretreatment Oso - Trabuco BOD	PC2 JBL\JBL Plant\JBL Pretreatment SAN JUAN TSS	PC2 JBL\JBL Plant\JBL Pretreatment San Juan BOD	PC2 JBL\Influent DANA POINT TSS	PC2 JBL\Influent JBL Plant 2 Influent BOD (DANA POINT)
Data Type	FY 19-20 Flow (MGD)	FY 19-20 Flow (MGD)	FY 19-20 Flow (MGD)	FY 19-20 Flow (MGD)	FY 19-20 Flow (MGD)	FY 19-20 Flow (MGD)	3Y FY Average Loading (mg/L)	3Y FY Average Loading (mg/L)	3Y FY Average Loading (mg/L)	3Y FY Average Loading (mg/L)	3Y FY Average Loading (mg/L)	3Y FY Average Loading (mg/L)

Allocation methodology:

Flow meters are calibrated on an annual basis in June and should be within 10% of the flow. JBL Effluent flow meter average flow was 6.24 MGD compared to the combined summary of 6.06 MGD which was within the meter specifications. Member agency average flows for the FY were used in the flow allocation and applied proportionally from the total combined flow from each tributary trunk line. The PC2 use audit uses FY flows and three-year FY average solid loadings

to reconcile the budgeted amounts. Solids loadings are calculated from adding the average FY BOD and TSS and dividing by 2 and then multiplying the result by the flow and the 8.34 pounds conversion factor. In March 2018, PC2 members MNWD & SMWD came to an agreement on how to allocate solids for budgeting and use audit purposes. The agreed method captures the influent loading at Plant 3A (data as reported by MNWD) as it was recognized that this allocation would isolate MNWD's solids contributions to JBL to a single variable. SMWD solids to JBL would then be the balance of solids contributed by the Oso Creek Water Reclamation Plant, 3A and any other discharges to the Oso Trabuco line to JBL.

PC2 Allocation Table:

PC2 - JB Latham Plant

Liquids Summary (mgd)

Member Agency	2019-2020 Budgeted Flow (mgd)	2019-2020 Budgeted Percent	2019-2020 Total Avg. Flow (mgd)	2019-2020 Total Billing Flow (mgd)	Total Percent To Date
CSJC	2.17	36.57%	2.128	2.128	32.01%
MNWD	1.40	23.64%	Constant	1.400	21.06%
SCWD	1.64	27.67%	1.616	1.691	25.44%
SMWD	0.72	12.12%	2.829	1.429	21.49%
	5.92	100.00%	6.574	6.648	100.00%

Please refer to the MNWD & SMWD Agreement from 2018 for flow/solids splitting in the Oso-Trabuco line.

Solids Summary Loading (mgd)

Member Agency	2019-2020 Budgeted Flow	2019-2020 Budgeted Percent	Total Avg. Loadings FY 18/19	Total Avg. Loadings FY 2019-2020 Billing Loading	Total Percent To Date
CSJC	5815.437	23.90%	5,914	5706	29.63%
MNWD	5123.934	21.06%	Constant	3890	20.20%
SCWD	4399.253	18.08%	5,311	5181	26.91%
SMWD	8991.562	36.96%	8,368	4478	23.26%
	24330.186	100.00%	19,593	19255	100.00%

PC5 Variables Used & Methodology Distribution

Allocation Methodology:

Based on Board policy direction, the use audit is based on the allocation of fixed costs to be distributed by ownership percentages. Please refer to budget assumption 11a in the SOCWA FY19/20 Budget Book.

Fixed percentages are described in the table below.

Member Agency	Ownership Share (%)
CSC	16.60%
CSJC	11.10%
MNWD	15.50%
SCWD	44.30%
SMWD	12.50%

PC5 Ownership Share

PC12 Variables Used & Methodology Distribution

Variables Used:

Variable Number	40970	40971	70807	40962	40966	40968	40969	40964	40963	40965	40961
WIMS Variable Name	Recycle\CSJC CSC Mission Street Well Acre Feet	Recycle\CSJC Rosenbaum Well	Recycle\CSJC intertie	Recycle\ETWD-WRP ETWD Recycled Water AF/Day	Recycle\RTP - AWT #2 RTP #2 Recyled Water - AF/day	Recycle\3AWRP 3A Recycled Water - AF/Day	Recycle\CTP - WRP CTP Recycled Water - AF/day	Recycle\SMWD - OSO WRP OCWRP Recycled Water - AF/Day	Recycle\SMWD-Chiquita WRP CWRP Recycled Water - AF/day	Recycle\SMWD - Nichols WRP NWRP Recycled Water - AF/day	Recycle\TCWD-RRWRP TCWD Recycled Water Acre-Ft
Data Type	AF/day	AF/day	AF/day	AF/day	AF/day	AF/day	AF/day	AF/day	AF/day	AF/day	AF/day

Allocation Methodology:

The PC12 method of production is detailed by member agency in the following narrative. San Juan Capistrano it is the acre-foot sum of the Rosembaum well, the Mission Street Well, and the total reclaimed water from the SMWD/CSJC intertie. For the Moulton Niguel Water District (MNWD) it is the amount of reclaimed water produced from the Regional Treatment Plant (RTP) and the 3A Treatment Plant (split with SMWD). South Coast Water District (SCWD) is the total reclaimed water produced from the Coastal Treatment Plant (CTP). The Santa Margarita Water District (SMWD) is the combined sum of reclaimed water produced from the 3A Treatment Plant (split with MNWD), the Oso Creek Water Reclamation Plant (OCWRP), the Chiquita Water Reclamation Plant (CWRP), and the Nichols Water Reclamation Plant (NWRP). The Trabuco Canyon Water District (TCWD) is reclaimed water produced from the Robinson Ranch Water Reclamation Plant (RRWRP).

PC 12 Recycled Water		
Master Recycled Water Permit		
FY 19-20		
Member Agency	**Region 9 Recycled Produced FY 19-20 acft**	**% RW FY 19-20**
CSJC	553	4.09
MNWD	5110	37.81
SCWD	782	5.78
SMWD	6471	47.88
TCWD	600	4.44
Total	**13516**	**100**

PC12 Production Methodology table

PC15 Variables Used & Methodology Distribution

Variables Used:

Variable Number	20002	20003	20001
WIMS Variable Name	PC15 CTP\Influent CLB INF FLOW	PC15 CTP\Effluent EBSD EFF FLOW	PC15 CTP\Effluent SCWD Billing Flow
Data Type	MGD	MGD	MGD

Allocation Methodology:

Due to the lack of solids handling capacity at the Coastal Treatment Plant (CTP), allocation methodology is based on flows to the treatment plant. In addition, there is no current flow meters installed to account for any flow sent to CTP from MNWD so no flow is being accounted for in this PC flow allocation methodology. The City of Laguna Beach (CLB) is the average annual flow into CTP (metered). The Emerald Bay Services District (EBSD) is the average annual flow into CTP (calculated from monthly meter read from the lift station divided by the days in the month). The South Coast Water District (SCWD) is the average annual flow into CTP (metered). The meter calibration is performed annually in June

PC15 Allocation Table:

PC 15 FY 19-20 Actual Flows Coastal Treatment Plant		
Member Agency	Plant Flows MGD	Plant Flow Percent
CLB	1.652	60.89
EBSD	0.059	2.18
SCWD	1.002	36.93
MNWD	0.000	0.0
Total	2.713	100.00

PC17 Variables Used & Methodology Distribution

Variables Used:

Variable Number	1	1613	9	445	15192	15191	15193	15194	15144	2022
WIMS Variable Name	PC17 RTP\Influent Influent	PC17 RTP\Solids CTP EXPORT SLUDGE	PC17 RTP\Centrifuge Centrate Flow	PC17 RTP\Biosolids 503 Averge Sludge Cake %	PC2 JBL\Operations Agenda Report\RTP Operation Agenda CTP Monthly Total CLB Lbs	PC2 JBL\Operations Agenda Report\RTP Operation Agenda CTP Monthly Total EBSD Lbs	PC2 JBL\Operations Agenda Report\RTP Operation Agenda CTP Monthly Total SCWD Lbs	PC2 JBL\Operations Agenda Report\RTP Operation Agenda CTP Monthly Total MNWD Lbs	PC2 JBL\Operations Agenda Report\RTP Operation Agenda RTP MNWD Monthly Total Solids	PC17 RTP\Biosolids Management Site ETWD Total Monthly Solids
Data Type	MGD	gal	gal	%	LBS	LBS	LBS	LBS	LBS	LBS

Allocation Methodology:

PC17 has liquid and solids contribution. The liquid flow allocation is based on influent flow to the plant. The influent flow is solely contributed by the MNWD. Due to liquid flow from CTP, the centrate flow is distributed to each agency then summed to create a total liquid flow to the RTP. The flows are then distributed on a proportional basis[1]. The solids contribution is based on the total daily average pounds contributed by each agency distributed proportionally). The meter calibration is performed annually in June.

PC17 Allocation Tables:

PC 17 Liquids
Regional Treatment Plant
FY 19-20

Member Agency	Plant Flow (MGD)	Centrate Flow (MGD)	Total Flow (MGD)	Liquid Flow (%)
CLB	0	0.01225	0.007457974	0.0954
EBSD	0	0.0004	8.73485E-06	0.0001
SCWD	0	0.0076	0.002808267	0.0359
ETWD	0	0.01551	0.01551438	0.1985
MNWD	7.7285233	0.06037	7.788893661	99.6700
Total	**7.7285233**	**0.09614**	**7.814683018**	**100.0000**

PC 17 Solids
Regional Treatment Plant
FY 19-20

Member Agency	FY 2018-2019 #/Day	FY 2018-2019 %
CLB	4605	12.76
ETWD	5821	16.13
EBSD	150	0.42
MNWD	22649	62.75
SCWD	2869	7.95
Total	**36095**	**100.00**

[1] Attached Staff Report details MNWD request to eliminate the additional proportional distribution and utilize the total Centrate (MNWD plus Centrate) as the distribution of 100% flows.

PC24 Variables Used & Methodology Distribution

Allocation Methodology:

Based on Board policy direction, the use audit is based on the allocation of fixed costs to be distributed by ownership percentages. Please refer to budget assumption 11a in the SOCWA FY19/20 Budget book.

Member Agency	Ownership Share (%)
CLB	11%
EBSD	0.78%
ETWD	16.30%
IRWD	15.76%
MNWD	43.85%
SCWD	12.31%

PC24 Ownership Share