


**Errata Sheet for Minor Corrections to
City of Santa Rosa 2015 Urban Water Management Plan (UWMP)**

This errata sheet logs minor content errors that were identified after final adoption of the City of Santa Rosa 2015 UWMP. DWR has determined that these corrections are minor and do not require the UWMP to be amended.

These data errors have been corrected in the Department of Water Resources (DWR) UWMP database at <https://wuedata.water.ca.gov/secure/>

This errata sheet has been filed with the UWMP in all locations where it is made publicly available, including the California State Library.

Name and agency of the person filing errata sheet:

Jennifer Burke, Deputy Director, Water & Engineering Resources 

Name

City of Santa Rosa

Agency

#	Description of Correction	Location	Rationale	Date Error Corrected
1	Added Unbilled Metered and Unbilled Unmetered line items to UWMP Table 4-3 (DWR Table 4-1)	Page 4-3 and Appendix D (DWR Tables)	Aligns Water Losses in Table 4-3 (DWR Table 4-1), Table 4-6 (DWR Table 4-4), and Appendix F (AWWA Water Audit)	March 2, 2017
2	Adjusted Water Losses value in Table 4-6 (DWR Table 4-4) to match value in Table 4-3 (DWR Table 4-1), as described above.	Page 4-5 and Appendix D (DWR Tables)	See rationale for #1, above.	March 2, 2017
3	Changed 1,090 to 851 in text above Table 4-6 (DWR Table 4-4) to match data in revised Table 4-6.	Page 4-5	See rationale for #1, above.	March 2, 2017
4	Changed Master Meter and Supply Error Adjustments to zero in AWWA Water Audit Software Reporting Worksheet	Appendix F (AWWA Water Audit)	Adjusted to match official water production and sales records	March 2, 2017

4.2.3 2015 WATER USES

As of December 2015, the City serves approximately 53,193 water customers. Of those customers, 89% serve residential land uses while approximately 5% serve commercial land uses. The City’s water customers are segregated into the following large customer classes: single-family residential, multi-family residential, commercial, industrial, institutional, and irrigation. The City does not provide any water for agricultural purposes. The numbers of accounts in each customer category currently served by the City are shown in Table 4-2.

Customer Class	Number of Customers in 2015	% of Total
Single-family Residential	44,268	83.3%
Multi-Family Residential	3,122	5.9%
Commercial	2,584	4.9%
Industrial	69	0.1%
Institutional	244	0.5%
Landscape Irrigation	1,608	3.0%
Other (Fireline)	1,110	2.1%
Other (Construction)	116	0.2%
Other (Yard Meter)	40	0.1%
Agricultural Irrigation	0	0%
Total	53,161	100%

Actual water demand for the year 2015 is reported in Table 4-3. As shown, all water deliveries were treated to a level of “drinking water.” The City did not supply wholesale water in 2015. The total water production for 2015 was 16,539 acre-feet (AF).

Table 4-3: Demands for Potable and Raw Water – Actual (DWR Table 4-1)

Use Type	2015 Actual		
	Additional Description (as needed)	Level of Treatment When Delivered	Volume
Single Family		Drinking Water	8,186
Multi-Family		Drinking Water	2,910
Commercial		Drinking Water	2,161
Industrial		Drinking Water	251
Institutional/ Governmental		Drinking Water	346
Landscape		Drinking Water	1,593
Other	Fire Line	Drinking Water	2
Other	Unbilled Metered	Drinking Water	32
Other	Unbilled Unmetered	Drinking Water	207
Losses		Drinking Water	851
Total			16,539

4.2.4 PROJECTED WATER USES THROUGH 2040

Projected water demands by sector in five-year increments through the year 2040 are reported in Table 4-4. Projected water use is summarized from the Water Demand Analysis¹ (Appendix E). The City will use the same sectors and definitions through the year 2040 as outlined in the DWR 2015 Guidebook and above.

As described in Appendix E, the water demand analysis began with a water demand projection through 2040 that used the historical water use, population and employment projections, and plumbing code information. Following the water demand projection, an analysis of the potential impact of up to 25 selected water conservation measures was applied.

¹ City of Santa Rosa 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, Final, Maddaus Water Management June 30, 2015.

4.3 DISTRIBUTION SYSTEM WATER LOSSES

This section describes the City’s distribution system water losses for the most recent 12-month period available. Distribution system water losses are losses from the water distribution system and the City’s storage facilities up to the point of customer consumption. Water losses are calculated using the AWWA Water Audit Method (Appendix F).

The most recent 12-month period began on January 1, 2015. As shown in Table 4-6, the City lost 851 AF in 2015. A detailed analysis of the 2015 water losses are included in Appendix F. Projected distribution system losses in five-year increments for the years 2020-2040, as documented in the Water Demand Analysis (Appendix E), are listed in Table 3-7 of that document.

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	851
<i>* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.</i>	

4.4 ESTIMATING FUTURE WATER SAVINGS

The City has included an estimation of future water savings in its 2015 UWMP. Both passive and active water savings were calculated in the Water Demand Analysis. This section includes a summary of estimated water savings from passive savings such as codes, standards, ordinances and transportation and land use plans. Though future job and population growth would be expected to increase water demand, passive savings are projected to decrease per capita water use for future customers compared to historical customers.

In accordance with the National Plumbing Code, the City requires that only fixtures meeting high efficiency standards be installed in new buildings (Appendix A of the Water Demand Analysis). Senate Bill 407 requires high efficiency standards to apply to all new and replacement residential construction as of 2017 and to new and replacement commercial construction as of 2019. Passive water savings from these and other codes are incorporated in the Water Demand Analysis.

In addition to the Plumbing Code, the City plans to implement a suite of cost-effective conservation programs, known as “Program B” in the Water Demand Analysis.

In 2015, the City’s water demand was reduced by an estimated 231 AF due to passive savings (not including a substantial reduction compared to 2013 water use due to implementation of short-term water shortage demand reduction measures). Current and projected water savings in five-year increments for the years 2015-2040 are summarized in the following table. As shown in Table 4-7, passive water savings and active conservation program savings (Program B) are expected to increase over the planning horizon of this UWMP.

APPENDIX D
Department of Water Resources Tables

Table 4-3: Demands for Potable and Raw Water - Actual (DWR Table 4-1)

Use Type	2015 Actual		
<i>May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description (as needed)	Level of Treatment When Delivered	Volume
Single Family		Drinking Water	8,186
Multi-Family		Drinking Water	2,910
Commercial		Drinking Water	2,161
Industrial		Drinking Water	251
Institutional/Governmental		Drinking Water	346
Landscape		Drinking Water	1,593
Other	Fire Line	Drinking Water	2
Other	Unbilled Metered	Drinking Water	32
Other	Unbilled Unmetered	Drinking Water	207
Losses		Drinking Water	851
TOTAL			16,539

Table 4-6: 12 Month Water Loss Audit Reporting (DWR Table 4-4)

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	851

** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*

APPENDIX F

American Water Works Association Water Loss Reporting Worksheet



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
American Water Works Association
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? Click to access definition
+ Click to add a comment

Water Audit Report for: **City of Santa Rosa**
Reporting Year: **2015** 1/2015 - 12/2015

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: **MILLION GALLONS (US) PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	+ ? 9	390.298	MG/Yr
Water imported:	+ ? 9	4,998.900	MG/Yr
Water exported:	+ ? 10	0.000	MG/Yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	MG/Yr
+ ? 8	0.00%	MG/Yr
+ ? 8	0.00%	MG/Yr
+ ?		MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 5,389.198 MG/Yr

AUTHORIZED CONSUMPTION

Billed metered:	+ ? 9	5,033.300	MG/Yr
Billed unmetered:	+ ? 10	0.000	MG/Yr
Unbilled metered:	+ ? 8	10.500	MG/Yr
Unbilled unmetered:	+ ?	67.365	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 5,111.165 MG/Yr

Click here: ?
for help using option buttons below

Pcnt:	Value:	MG/Yr
1.25%		MG/Yr

Use buttons to select percentage of water supplied OR value

Pcnt:	Value:	MG/Yr
0.25%		MG/Yr

	5.500	MG/Yr
0.25%	30.000	MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

278.033 MG/Yr

Apparent Losses

Unauthorized consumption: + ? **13.473** MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+ ? 8	5.500	MG/Yr
Systematic data handling errors:	+ ? 9	30.000	MG/Yr

Apparent Losses: 48.973 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? **229.060** MG/Yr

WATER LOSSES: 278.033 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 355.898 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ? 9	619.0	miles
Number of active AND inactive service connections:	+ ? 7	53,638	
Service connection density:	? 87		conn./mile main

Are customer meters typically located at the curbside or property line?

Average length of customer service line: + ? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: + ? 9 70.6 psi

COST DATA

Total annual cost of operating water system:	+ ? 9	\$38,708,199	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ? 10	\$4.86	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	+ ? 9	\$4.86	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 87 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Unauthorized consumption

3: Unbilled metered