

September 2016

CITY OF SWEET HOME

**WATER MANAGEMENT, CONSERVATION,
AND SYSTEM MASTER PLAN**

WMCP Amendment 2016

Prepared For:
City of Sweet Home
1140 12th Avenue
Sweet Home, OR 97386

Prepared By:
City of Sweet Home Staff

City of Sweet Home – Water Management, Conservation, and System Master Plan

WMCP Amendment 2016

On or about February 16, 2016, the City of Sweet Home submitted a DRAFT *Water Management, Conservation, and System Master Plan* to the OHA Drinking Water Services (OHA) as well as the Water Resources Department (WRD) for their corresponding State review. Although the document received written **Final Approval** as a “Master Plan” from the OHA as submitted, it was found by WRD to be lacking some information and/or analysis relating to requirements for a complete Water Management Conservation Plan (WMCP) as required by OAR 690-086.

Upon written notification by the WRD of the suspected deficiencies for a complete WMCP, the City corresponded with the WRD and proposed additional information for final review and approval in order to meet the provisions of an approved WMCP for the City of Sweet Home.

The information captured within this WMCP Amendment 2016 and is to become part of the complete “*Water Management, Conservation, and System Master Plan*” for the City of Sweet Home and is to be adopted as such.

The corrected deficiencies identified in the review worksheet provided by the State WRD (see attachments) are listed in each section by page number and section of the review worksheet e.g. DR Pg. 2 #5.

4.1 Source Water (WMCP 690-086-0) 140-1, 3, 5, 7 DR Pg. 3 #1; Pg. 5 #7

The source of water for the City of Sweet Home is Foster Reservoir, a flood control Dam placed on the South Santiam River, a tributary of the Santiam River, which is in turn a tributary of the Willamette River. The South Santiam River runs from east to west and serves as both the northern city limit and the northern Urban Growth Boundary (UGB) for the City of Sweet Home. It is situated in the Willamette Basin of Western Oregon and is recharged by precipitation from a 557-square mile area, which receives drainage for Quartzville Creek, the Middle Santiam River, and South Santiam River, which are high up in the Cascade Mountains. Wiley Creek also flows into the South Santiam River downstream of Foster Dam Reservoir.

The source water provided to the treatment plant property is received from Foster Reservoir through a supply pipe installed in Foster Dam (built by the USACE in early 1960) in which a 42” high capacity raw water intake screen was placed. Water supply then flows via gravity through approximately 5,200 linear feet of supply line to a pump house at the Water Treatment plant located at 1500 47th Avenue, approximately 1 mile to the west of Foster Dam.

The official point of diversion for the raw water supply is described as follows:

NW1/4 NE1/4, SECTION 27, T 13 S, R 1 E, W.M.; 1048 FEET SOUTH AND 697 FEET EAST FROM THE N1/4 CORNER OF SECTION 27.

Sweet Home does not currently have any interconnections with other cities or water districts for the supply of water. Although there remains an agreement for the City to potentially provide raw water to nearby undeveloped property currently owned by Santiam River Partners LLC, the provision is solely dependent on City discretion and is not guaranteed. The agreement provides Santiam River Partners LLC right of first refusal should another customer seeking raw water supply (i.e. manufacturing) request the raw water. Any/all raw water utilized herein shall also be dependent of any available water within existing water rights.

The City of Sweet Home holds senior water rights to other competing rights on the South Santiam River that has flow augmented from Foster Dam. Three of its permits are older than all but one 0.254 cubic feet per second certificate. Permits totaling 37.259 cfs, including Sweet Home's, exist on the river downstream of Sweet Home's point of diversion at Foster Dam. Therefore, the water rights available to the City of Sweet Home should be adequate for the study period.

Several fish species with habitat that include the Santiam River system are listed federally and locally as "protected", "threatened" or "endangered" and are otherwise protected by the intake screen previously mentioned. Please refer to the WR Inventory Table (Appendix E) for complete list of species.

4.5 Services and Customers Served (WMCP 690-086-0)140-6, 150-4 b DR Pg.5 #6

The City of Sweet Home has 2,956 active water services as of November 2015. These services are broken down according to the following classifications:

Table 4.3 – Services

Type of Service	Number Accounts	2010	2004
Residential	2,646	3017	2791
Multi-Family	75		
Hotel / Motel	3		
Commercial	181	122	139
Industrial	12	31	38
Medical	6		
Government	52		
Irrigation / Fire	19		
Other	0	90	78
Total	2,994	3260	3046

4.6 System Leakage (WMCP 690-086-0)140-9 DR Pg. 3 #3; Pg. 5 #i

The City has a fully metered system and is able to keep track of monthly water quantities pumped from the water treatment plant as well as the amount of water provided (billed and unbilled) which is the total of all system water meters. Recent yearly totals since 2007 are shown below in Table 4.5. The data within the table also takes into account water the City uses for system/fire hydrant flushing and recorded water used by the local Fire District. The City estimates that at least 600,000 gallons, on average, are used for these items each year although the exact amount is an inexact science due to estimations being made of actual use. On average, the City typically sees yearly water loss of 28% from 2007 – 2014. The overall lost water percentages is considered higher than the 15% or lower of typical acceptance.

There is some concern over lost water as some of the monthly percentages range from negative values to as much as 42%. The best explanation for this large range in percentages is poor record keeping of authorized water use and perhaps timing of meter readings. Another reasonable explanation is the potential for unauthorized water use of fire hydrants. Service meters are typically read and recorded during a seven day period beginning on, or near the 20th of each month while the production meters are read on a calendar month. Therefore, there will be slight discrepancy when comparing monthly production with monthly use, as any use by a customer after the meters are read will be recorded as use in the following months.

Water leakage can come from older small lines, those smaller than 4”, predominantly 2” in size, which deteriorate during long periods since construction. The 2” lines in particular have been found to have many slow “pin-hole” style leaks, some of which do not show up at ground level. The City has a quick response to finding and repairing the leaks that become evident on the surface, and a program to replace the older lines over time. The 2” Replacement Program and the Leak Maintenance Repair programs are described in greater detail in Section 6.3 below.

It is important that the City continues to strive to obtain accurate accounts of their water use in order to track the overall water system performance. Consistent high values raise the concern of system leaks, inaccurate metering, and/or unauthorized use.

The City of Sweet Home holds senior water rights to other competing rights on the South Santiam River that has flow augmented from Foster Dam. Three of its permits are older than all but one 0.254 cubic feet per second certificate. Permits totaling 37.259 cfs, including Sweet Home's, exist on the river downstream of Sweet Home's point of diversion at Foster Dam. Therefore, the water rights available to the City of Sweet Home should be adequate for the study period.

Several fish species with habitat that include the Santiam River system are listed federally and locally as "protected", "threatened" or "endangered" and are otherwise protected by the intake screen previously mentioned. Please refer to the WR Inventory Table (Appendix E) for complete list of species.

4.7 Water Rights Schedule (WMCP 690-086-0)170-2 DR Pg. 4 #a-h

A water right can be perfected once the user completes construction of the facilities necessary to divert and use the water for the authorized use. Once the user submits evidence showing the water has been used in compliance with the permit conditions, OWRD issues a water right certificate. The City of Sweet Home has water right certificates as described below in Table 4.6

Table 4.6 – Water Rights

Permit #	Certificate #	Certificate - Max Allowable Water Use Cubic Feet per Second (cfs)	Permit - Max Allowable Water Use Cubic Feet per Second (cfs)
S-13151	88300	0.60 cfs	0.60 cfs
S-20525	88301	7.00 cfs	7.00 cfs
S-49959	88302	3.51 cfs	5.50 cfs
	Total	11.11 cfs	13.10 cfs

Although the City holds the three water rights certificates, Certificate #88302 is a partial certificate in which the remaining 1.99 cfs remains unperfected at this time. The Final Order for the Extension of Time for Permit Number S-49959 issued by OWRD sets the deadline for applying water to full beneficial use at October 1, 2050.

Projected water use at the end of the 20 year study period for this plan will not put the unperfected water right to full beneficial use. Therefore, the City of Sweet Home will use the October 1, 2050 date as the target date for applying water to full beneficial use. This schedule will need to be reviewed and revised based upon updated projected water demands revised in the completed 10 year update of this plan.

A tabular list of water rights (Water Rights Inventory Table) for the City of Sweet Home has been attached to this report and will be added to Appendix E of the original document.

5.1 General (WMCP 690-086-0)170-3, 4 DR Pg. 11 #4

Determining present and future water demands is the first step in assessing the City's water facilities. It is critical that current demands are evaluated to determine if existing facilities are able to meet demands. If a system is unable to successfully meet the current needs of the

community, system upgrades become a high priority. A determination of the future demand is also a critical step because it establishes the capacity and size of water system components needed in the future. Water demand discussed in Section 5 is presented as the total combined water supplied from the intake structure in order to meet the needs of the City. The total produced water therefore includes all metered use, fire department use, system flushing and other lost water.

As was referenced in Section 4 of this document, The City of Sweet Home holds senior water rights to other competing rights on the South Santiam River that has flow augmented from Foster Dam. Three of its permits are older than all but one 0.254 cubic feet per second certificate. Permits totaling 37.259 cfs, including Sweet Home's, exist on the river downstream of Sweet Home's point of diversion at Foster Dam. Therefore, the water rights available to the City of Sweet Home should be adequate for the study period.

The source point for the municipal water supply comes from the Foster Dam, a flood control dam that regulates minimum river flows downstream, that has a minimum lake level requirement for river flow and fish habitat. The City will have access to entire allotment of water rights necessary for the study period unless the unlikely event of complete dam failure in which the lake water level would potentially fall below the intake structure.

6.8 Leak Detection DR Pg. 6 #1; Pg. 7 #e

A key component to an effective Water Management and Conservation Plan is minimizing the lost water noted in Section 4.5 of this plan. Lost water due to system leaks can be minimized by re-implementing and/or initiating a new leak detection program. Such a program needs to begin with a complete leak detection survey of the entire distribution system, which can be done utilizing existing staff and resources or through a contract services agreement. In order for a comprehensive study to be completed as quickly and accurately as possible, it is recommended the City contract this work with a licensed leak detection contractor such as American Leak Detection. It is anticipated a survey can be completed in about five (5) days at a total cost of approximately \$6,250, although actual cost will be dependent on the results of a local procurement process.

A leak detection survey records any leaks, irregularities or defects that may need to be addressed to maintain the integrity of the water system. A comprehensive report will then be submitted upon completion, which will identify leak locations, aid in prioritizing repairs and provide a record for future maintenance. The City will then review the completed leak detection survey and develop a repair schedule by prioritizing fixes based upon the severity of the water loss. The City intends to survey at least 25% of the entire distribution system annually beginning by no later than fiscal year 2017-18.

The survey is performed using the acoustic leak sounding survey tool. The survey tool is used to touch and listen to every accessible main valve, hydrant and service as necessary. Sensors are placed at intervals determined by availability of access and location of contact points. Normally contact points will be at intervals no greater than 350 feet. If good contact is not available, a highly sensitive ground mike device will be used making physical contact to the ground over the pipe at intervals no greater than 6 feet. If ground cover is not of a hard surface, probe rods will be used at intervals of 10 feet. If ambient noise on a certain section during day time hours interferes with survey effectiveness, the work may need to be performed at night. During the survey process, high leak signal areas will be prioritized and reinvestigated before the

pinpointing process is started. Pinpointing and verification of leak locations will be completed using a leak noise correlator. Two highly sensitive sensors are placed on either side of the suspected leak position. The sophisticated leak noise correlation process uses basic operator-supplied pipe data to pinpoint the leak location and display the results on screen.

Although City Staff may not have the time, training, and/or adequate resources to complete a comprehensive system survey, the City should continue to invest in their leak detection equipment and training as it will become useful in verifying and/or completing additional investigation of suspected leaks identified in the comprehensive survey.

7.8 Conservation Summary DR Pg. 6 General Comment; Pg. 8 #b; Pg. 9 #c & e

This plan is intended to be the updated water management and conservation plan for the City of Sweet Home as required per Final Order. The City intends to use this plan as a continuing guide to implement conservation techniques discussed in this section and will institute the public education program, leak detection program, and source meter testing upon the acceptance of this plan. The City will continue to record production and use monthly and audit for lost water annually, submit water production to Oregon Water Resources Department, and use the existing rate structure that encourages water savings.

As previously mentioned in Section 7.6 of this document, please refer to Appendix H for educational information and a Five-Year Conservation Benchmarks table the City intends to follow for conservation of municipal water.

The City has been, and will continue to, contact users by telephone on a monthly basis when meter readings indicate potential high usage and/or possible leaks. Customer notification will also take place when other indications become apparent by the City.

Sweet Home must have a program for supplier financed retrofitting or replacement of existing inefficient water using fixtures, including distribution of residential conservation kits and rebates for customer investments in water conservation. Please refer to:

<http://energytrust.org/residential/incentives/Appliances/ and/or>
http://www.oregon.gov/energy/RESIDENTIAL/pages/residential_blue_energy_tax_credits.aspx for potential resources.

Within 90 days of WMCP plan approval the City will create paper handouts regarding the above referenced resources to all customers requesting utility service. Additionally, the City will distribute this same information to all existing customers at least quarterly as a billing “insert” with the utility billing as well as identifying the web links on the City website.

Lastly, the effluent from the wastewater treatment facility is not currently eligible for beneficial reuse as it is not approved for anything other than discharge directly into the South Santiam River. Additionally, given the physical location and other constraints of the effluent point of the plant, it would be difficult and expensive to divert the flow.

10.1 General (WMCP 690-086-0)125-5 DR Pg. 2 #5

The goals of this plan were to determine the amount of water required to meet the City of Sweet Home’s current and future needs, determine if upgrades are required to provide reliable water supply to all areas of the city, and to document the City’s current and proposed water management and conservation techniques required to satisfy conservation and management requirements.

The City of Sweet Home, Oregon is the local government that is affected by this plan and, notice of this plan will be provided to Linn County for their review and comment.

[Appendix H DR Pg. 7 #c](#)

See updated Benchmark Table attached as part of this amendment.

Attachments



Oregon

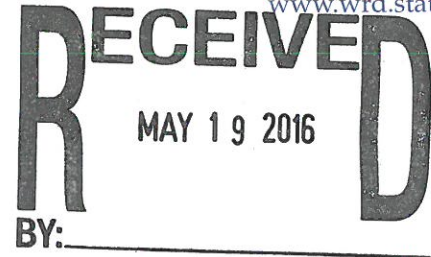
Kate Brown, Governor

May 17, 2016

City of Sweet Home
Attn: Michael J. Adams
1140 12th Ave.
Sweet Home, OR 97386

Water Resources Department

North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301
Phone (503) 986-0900
Fax (503) 986-0904
www.wrd.state.or.us



SUBJECT: Water Management and Conservation Plan

Dear Mr. Adams:

Thank you for preparing the City of Sweet Home's (City) Water Management and Conservation Plan (WMCP) for submittal on February 17, 2016. The Department appreciates the City's commitment to water conservation and management.

Our Department has completed a review of the City's WMCP, and pursuant to OAR 690-086-0905, the Department published notice of the availability of the plan for review on March 1, 2016. No public comments were received during the 30-day public comment period.

Overall, the City's plan was very good and includes most of the elements required by OAR 690-086. Our main concern about the plan revolves around the need for more information and/or analysis related to a system wide leak repair program and the need for stronger conservation measures in the plan.

Additionally, review of The City's water rights inventory revealed that the authorized date for completion of development under The City's Water Right Transfer Application T-8414, expired on October 1, 2012. In order for The City to prove up on any development under T-8414 accomplished after the expired completion date, The City must first submit a Permit Extension of Time Application and receive Department approval of the extension request.

If The City intends to apply for a Permit Extension of Time under OAR 690-315, you should be aware that the date for submittal of a WMCP set forth in the conditions of an order approving an Extension of Time may result in a different submittal deadline than the one resulting from this review.

At this time, there are two alternatives available to The City in response to this review. The City may choose to:

1. Identify information in the draft plan that we may have missed that would alter the results of the review and provide a basis for concluding that the plan is fully consistent with OAR Chapter 690, Division 86 [2002]; *or*
2. Modify the draft plan to address the deficiencies identified in the attached comments and worksheet.



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Please notify us by **Thursday, June 16, 2016**, of the alternative you wish to pursue or if you would like additional time to evaluate these alternatives. If you select to modify your plan under Alternative 2, please indicate the date by which you can submit the additional information. If you do not notify us by **Thursday, June 16, 2016**, of the alternative you wish to pursue, we will issue a proposed final order on your water management and conservation plan as we understand it now.

Please do not hesitate to contact me by telephone at 503-986-0919 or by e-mail at Kerri.H.Cope@wrd.state.or.us if you have any questions or if I can be of any assistance.

Sincerely,



Kerri H. Cope
Water Management and Conservation Analyst
Water Right Services Division

Enclosure

cc: WMCP File
Michael Mattick, District #02 Watermaster

Oregon Water Resources Department (OWRD)
Municipal Water Management and Conservation Plan (WMCP) Review Worksheet
(OAR Chapter 690, Division 086)

Name of Supplier: City of Sweet Home (Date WMCP Received by OWRD: <u>2/17/16</u>)	
OWRD Reviewer:	K. Cope
Date of OWRD Review:	5/13/16
Reason for submittal of the WMCP:	WMCP FO required updated plan by 2/21/16
If a previous WMCP has been submitted, was it approved contingent upon the completion of certain Work Plan activities? If so, list those Work Plan items here:	No work plan requirement
Are there any "Development Limitation" conditions established by a Final Order approving a previous WMCP or Permit Extension of Time?	1.99 CFS not yet greenlit for Permit S-49959, updated plan due 2/21/16

<u>Rule Reference</u>	<u>OWRD Review Comment</u>
ORS 536.050(1)(u) – Fees for Water Management and Conservation Plans	
<p>\$900 – for examination of a Plan submitted by a municipal water supplier serving a population of 1,000 or fewer; or</p> <p>\$1800 – for examination of a Plan submitted by a municipal water supplier serving a population of more than 1,000.</p> <p><i>Current fee schedule effective July 1, 2013 (ORS 536.050).</i></p>	<p>\$1800 paid 2/17/16</p> <p>9170 approximate residents for year 2015 – see page 12-13</p>

OAR 690-086-0125 – Additional Requirements

<p>(5) A list of the affected local governments to whom the draft plan was made available pursuant to 690-086-0120(8) and a copy of any comments on the plan provided by the local governments;</p>	<p>Meets the requirement, however per OAR 690-086-0020(1), notice to affected local governments is a <u>requirement</u> of the plan. Please modify the statement on page 49 accordingly.</p> <p>(1) "Affected local governments" means any local government as defined in OAR 690-005-0015, within whose jurisdiction the diversion, conveyance, or use of water is established or proposed within the context of the water management and conservation plan.</p> <p>City Response – At the time of the report creation it was understood the City of Sweet Home to be the “affected local government” for the purposes of this OAR and as such we provided notice of the plan to Linn County as a courtesy. Although we have not received any response from Linn County, we will change the statement on page 49 accordingly.</p>
<p>(6) A proposed date for submittal of an updated plan within no more than 10 years based on the proposed schedule for implementation of conservation measures, any relevant schedules for other community planning activities, and the rate of growth or other changes expected by the water supplier; or an explanation of why submittal of an updated plan is unnecessary and should not be required by the Department; and</p>	<p>Meets the requirement. See page 51, section 10.7</p>
<p>(7) If the municipal water supplier is requesting additional time to implement metering as required under OAR 690-086-0150(4)(b) or a benchmark established in a previously approved plan, documentation showing additional time is necessary to avoid unreasonable and excessive costs.</p>	<p>Does not apply, system is fully metered. See page 30, section 7.1</p>

OAR 690-086-0140 – Water Supplier Description

<p>(1) A description of the supplier's source(s) of water; including diversion, storage and regulation facilities; exchange agreements; intergovernmental cooperation agreements; and water supply or delivery contracts;</p>	<p>Meets the requirement.</p> <p>However, the previous plan mentioned an agreement to supply raw water to Santiam River Partners, LLC (see Section 2.7. page 2-14 of June, 2006 WMCP). Is this agreement still in place? If so, this will need to be addressed in plan.</p> <p>See pages 14-16, section 4.1- 4.4</p> <p>City Response – This information will be added to section 4.1 Source Water with language such as “Sweet Home does not currently have any interconnections with other cities or water districts for the supply of water. Although there remains an agreement for the City to potentially provide raw water to nearby undeveloped property currently owned by Santiam River Partners LLC, the provision is solely dependent on City discretion and is not guaranteed. The agreement provides Santiam River Partners LLC right of first refusal should another customer seeking raw water supply (i.e. manufacturing) request the raw water. Any/all raw water utilized herein shall also be dependent of any available water within existing water rights.”</p>
<p>(2) A delineation of the current service areas and an estimate of the population served and a description of the methodology(ies) used to make the estimate;</p>	<p>Meets the requirement.</p> <p>See pages 12-13, section 3.5</p>
<p>(3) An assessment of the adequacy and reliability of the existing water supply considering potential limitations on continued or expanded use under existing water rights resulting from existing and potential future restrictions on the community's water supply;</p>	<p>Does not comply.</p> <p>See pages 14-15, Section 4</p> <p>Please see attached for guidance document titled “Assessment of Existing Water Supplies (OAR 690-086-0140(3)).”</p> <p>City Response – This information will be added to section 4.1 Source Water with language such as “The City of Sweet Home holds senior water rights to other competing rights on the South Santiam river that has flow augmented from Foster Dam. Three of its permits are older than all but one 0.254 cubic feet per second certificate. Permits totaling 37.259 cfs, including Sweet Home's, exist on the river downstream of Sweet Home’s point of diversion at Foster Dam. Therefore, the water rights available to the City of Sweet Home should be adequate for the study period.</p> <p><i>Several fish species with habitat that include the Santiam River system are listed federally and locally as "protected", "threatened" or "endangered" and are otherwise protected by the intake screen previously mentioned.”</i></p>
<p>(4) A quantification of the water delivered by the water supplier that identifies current and available historic average annual water use, peak seasonal use, and average and peak day use;</p>	<p>Meets the requirement.</p> <p>See Section 5.2, pages 22-23 and tables 5.1 and 5.2</p>
<p>(5) A tabular list of water rights held by the municipal water supplier that includes the following information:</p>	

(a) Application, permit, transfer, and certificate numbers (as applicable);	<p>Does not comply.</p> <p>See pages 14-15 and page 20, Section 4.7 and table 4.6 Please see attached Water Right Inventory table.</p> <p>City Response – Water Right Inventory table has been updated appropriately.</p>
(b) Priority date(s);	<p>Does not comply.</p> <p>None identified in table 4.6, Please see attached Water Right Inventory table.</p> <p>City Response – Water Right Inventory table has been updated appropriately.</p>
(c) Source(s) of water;	<p>Does not comply.</p> <p>None identified in table 4.6, Please see attached Water Right Inventory table.</p> <p>City Response – Water Right Inventory table has been updated appropriately.</p>
(d) Type(s) of beneficial uses specified in the right;	<p>Does not comply.</p> <p>None identified in table 4.6, Please see attached Water Right Inventory table.</p> <p>City Response – Water Right Inventory table has been updated appropriately.</p>
(e) Maximum instantaneous and annual quantity of water allowed under each right;	<p>Does not comply.</p> <p>Only some identified in table 4.6, Please see attached Water Right Inventory table.</p> <p>City Response – Water Right Inventory table has been updated appropriately.</p>
(f) Maximum instantaneous and annual quantity of water diverted under each right to date;	<p>Does not comply.</p> <p>Need to identify – not found, Please see attached Water Right Inventory table.</p> <p>City Response – Water Right Inventory table has been updated appropriately.</p>
(g) Average monthly and daily diversions under each right for the previous year, and if available for the previous five years;	<p>Does not comply.</p> <p>Need to identify – not found, Please see attached Water Right Inventory table.</p> <p>City Response – Water Right Inventory table has been updated appropriately.</p>
(h) Currently authorized date for completion of development under each right; and	<p>Does not comply.</p> <p>Identify 10-1-2050 “C” dates for Permit S-49959 (see Section 4.7, page 21). Please see attached Water Right Inventory table.</p> <p>City Response – Table 4.6 Pg. 20 will be updated accordingly.</p>

<p>Environmental Concerns:</p> <p>(i) Identification of any streamflow-dependent species listed by a state or federal agency as sensitive, threatened or endangered that are present in the source, any listing of the source as water quality limited and the water quality parameters for which the source was listed, and any designation of the source as being in a critical ground water area.</p>	<p>Does no comply.</p> <p>See pages 14, 15 (Section 4) and 20 (Section 4.6).</p> <p>City Response – This information will be added to section 4.1 Source Water with language such as “The City of Sweet Home holds senior water rights to other competing rights on the South Santiam river that has flow augmented from Foster Dam. Three of its permits are older than all but one 0.254 cubic feet per second certificate. Permits totaling 37.259 cfs, including Sweet Home’s, exist on the river downstream of Sweet Home’s point of diversion at Foster Dam. Therefore, the water rights available to the City of Sweet Home should be adequate for the study period.</p> <p><i>Several fish species with habitat that include the Santiam River system are listed federally and locally as "protected", "threatened" or "endangered" and are otherwise protected by the intake screen previously mentioned.”</i></p> <p>Please modify this to include everything listed on the water inventory spreadsheet under “source issues” for each water right, or at least refer the reader to the WR Inventory Table.</p>
<p>(6) A description of customers served including other water suppliers and the estimated numbers; general water use characteristics of residences, commercial and industrial facilities, and any other uses; and a comparison of the quantities of water used in each sector with the quantities reported in the water supplier's previously submitted water management and conservation plan and progress reports;</p>	<p>Does not comply.</p> <p>WMCP does not compare quantity of water used in each sector with quantity reported in the water suppliers previous WMCP.</p> <p>See pages 17-18, Section 4.5</p> <p>City response – Table 4.3 Pg. 17 will be updated to include comparable 2004 and 2010 data identified in 2010 Progress Report.</p> <p>Table 4.4 Pg. 18 cannot be updated with previous data as those records are currently not available at this time. Comparable data herein will be included in next WMCP update/review.</p>
<p>(7) Identification and description of interconnections with other municipal supply systems;</p>	<p>Does not comply.</p> <p>Plan does not address this.</p> <p>Please note, does the city still have an agreement with Santiam River Partners, LLC (see Section 2.7, page 2-14 of previous WMCP (June 2006)?)</p> <p>City Response – This information will be added to section 4.1 Source Water with language such as “Sweet Home does not currently have any interconnections with other cities or water districts for the supply of water. Although there remains an agreement for the City to potentially provide raw water to nearby undeveloped property currently owned by Santiam River Partners LLC, the provision is solely dependent on City discretion and is not guaranteed. The agreement provides Santiam River Partners LLC right of first refusal should another customer seeking raw water supply (i.e. manufacturing) request the raw water. Any/all raw water utilized herein shall also be dependent of any available water within existing water rights.”</p>

<p>(8) A schematic of the system that shows the sources of water, storage facilities, treatment facilities, major transmission and distribution lines, pump stations, interconnections with other municipal supply systems, and the existing and planned future service area; and</p>	<p>Meets the requirement. See pages 21, Section 4.9 and figure 4.1</p>
<p>(9) A quantification and description of system leakage that includes any available information regarding the locations of significant losses.</p>	<p>Meets the requirement. See pages 18-19, Section Table 4-5 (page 20) year 2015 water loss -26%. However, a better, more accurate quantification of leakage is needed.</p>
<p>OAR 690-086-0150 – Water Conservation Element</p>	
<p>(1) A progress report on the conservation measures scheduled for implementation in a water management and conservation plan previously approved by the Department, if any;</p>	<p>Does not meet the requirement. Additional information is needed on why leak detection has not been implemented yet. See appendix H. City Response – leak detection has been implemented and will be identified more clearly in section (e) below.</p>
<p>(2) A description of the water supplier's water use measurement and reporting program and a statement that the program complies with the measurement standards in OAR Chapter 690, Division 85, that a time extension or waiver has been granted, or that the standards are not applicable;</p>	<p>Meets the requirement. See pages 30-32, Section 7.7 (page 33) and Appendix D</p>
<p>(3) A description of other conservation measures, if any, currently implemented by the water supplier, including any measures required under water supply contracts;</p>	<p>Meets the requirement. See pages 30-34 and appendix H</p>
<p>General Comment on OAR 690-086-0150(4) below: Appendix H would be better served included as part of Section 7. City Response – will attempt to appropriately location in Section 7 of the report as recommended.</p>	
<p>(4) A description of the specific activities, along with a schedule that establishes five-year benchmarks, for implementation of each of the following conservation measures that are required of all municipal water suppliers:</p>	
<p>(a) An annual water audit that includes a systematic and documented methodology for estimating any un-metered authorized and unauthorized uses;</p>	<p>Meets the requirement. See pages 30 – 31, Section 7.3 and appendix D</p>
<p>(b) If the system is not fully metered, a program to install meters on all un-metered water service connections. The program shall start immediately after the plan is approved and shall identify the number of meters to be installed each year with full metering completed within five years of approval of the water management and conservation plan;</p>	<p>Does not apply. System is fully metered. See page 18, Section 4.6 and page 30, Section 7.1.</p>

<p>(c) A meter testing and maintenance program;</p>	<p>Additional information needed.</p> <p>See Appendix H and Section 7.8, page 34.</p> <p>Your previous WMCP established a conservation benchmark to test large meters by January 2016.</p> <ul style="list-style-type: none"> Was this ever implemented? City Response – City has tested large meters on an “as needed” basis but has not done so on any regular scheduled program. <p>The City needs to develop a schedule for doing so, please set this as a benchmark for to be completed in the next five (5) years.</p> <p>Section 7.2, page 30 states the city replaces service meters on an annual basis.</p> <ul style="list-style-type: none"> Over the past 5 years, how many meters were replaced each year? Approximately 500 services meters have been replaced since the initial WMCP document and we attempt to replace meters on a 10-year cycle per Manufacturer recommendation.
<p>(d) A rate structure under which customers' bills are based, at least in part, on the quantity of water metered at the service connections;</p>	<p>Meets the requirement.</p> <p>See pages 31-32, Section 7.5.</p>
<p>(e) If the annual water audit indicates that system leakage exceeds 10 percent, a regularly scheduled and systematic program to detect leaks in the transmission and distribution system using methods and technology appropriate to the size and capabilities of the municipal water supplier; and</p>	<p>Does not comply.</p> <p>See pages 28-29, Section 6.8.</p> <p>System leakage was 26% for 2015 (page 20).</p> <p>Sweet Home must set a conservation benchmark in the WMCP to implement a leak detection program within the next 5 years.</p> <p>City Response – Section 6.8 Leak Detection Page 28, second paragraph mentions a comprehensive leak detection survey & report in which the City can prioritize fixes based upon leak severity. The City proposes to survey at least 25% of the entire distribution system annually beginning by no later than fiscal year 2017-2018.</p>
<p>(f) A public education program to encourage efficient water use and the use of low water use landscaping that includes regular communication of the supplier's water conservation activities and schedule to customers;</p>	<p>Meets the requirement.</p> <p>See page 33, section 7.6 and appendix H.</p>
<p>(5) If the supplier proposes to expand or initiate diversion of water under an extended permit for which resource issues have been identified under OAR 690-086-0140(5)(i), a description of the specific activities, along with a schedule that establishes five-year benchmarks, for implementation of:</p>	
<p>A system-wide leak repair or line replacement program to reduce system leakage to no more than 15 percent or sufficient information to demonstrate that system leakage currently is no more than 15 percent.</p>	<p>Does not apply.</p> <p>WMCP is not asking for additional water at this time.</p>

<p>(6) If the supplier serves a population greater than 1,000 and proposes to expand or initiate diversion of water under an extended permit for which resource issues have been identified under OAR 690-086-0140(5)(i), or if the supplier serves a population greater than 7,500, a description of the specific activities, along with a schedule that establishes five-year benchmarks, for implementation of each of the following measures; or documentation showing that implementation of the measures is neither feasible nor appropriate for ensuring the efficient use of water and the prevention of waste:</p>	
<p>(a) A system-wide leak repair program or line replacement to reduce system leakage to 15 percent, and if the reduction of system leakage to 15 percent is found to be feasible and appropriate, to reduce system leakage to 10 percent;</p>	<p>Does not comply.</p> <p>This is not addressed in Section 7, pages 30-34.</p> <p>Since Sweet Home serves a population greater than 7500 and their 2015 water loss was 26%, this rule requirement applies. Sweet Home must set a 5 year benchmark to evaluate and if feasible, implement a system-wide leak repair program or lines replacement to reduce system leakage to 15%, and if the reduction of system leakage to 15% is found to be feasible and appropriate, to reduce leakage to 10% within the next 5 years.</p> <p>City Response – As mentioned above and referenced in Section 6.8 Leak Detection Page 28, second paragraph mentions a comprehensive leak detection survey & report in which the City can prioritize fixes based upon leak severity. The City proposes to survey at least 25% of the entire distribution system annually beginning by no later than fiscal year 2017-2018. Additionally, and in conjunction with the aforementioned, Section 7.4 identifies the ongoing effort of replacing all existing 2-in galvanized iron pipe by the end 2018.</p>
<p>(b) Technical and financial assistance programs to encourage and aid residential, commercial and industrial customers in implementation of conservation measures;</p>	<p>Does not comply.</p> <p>This is not addressed in Section 7, pages 30-34.</p> <p>Since Sweet Home serves a population greater than 7500 and their 2015 water loss was 26%, this rule requirement applies. Sweet Home must provide a technical and financial assistance program to encourage and aid residential, commercial and industrial customers in implementation of conservation measures.</p> <p>City Response – The City has, and will continue to, contact users by phone on a monthly basis when meter readings indicate potential high usage and/or possible leaks. Customer notification will also take place when other indications become apparent by the City as able.</p>

<p>(c) Supplier financed retrofitting or replacement of existing inefficient water using fixtures, including distribution of residential conservation kits and rebates for customer investments in water conservation;</p>	<p>Does not comply.</p> <p>This is not addressed in Section 7, pages 30-34.</p> <p>Since Sweet Home serves a population greater than 7500 and their 2015 water loss was 26%, this rule requirement applies.</p> <p>Sweet Home must have a program for supplier financed retrofitting or replacement of existing inefficient water using fixtures, including distribution of residential conservation kits and rebates for customer investments in water conservation.</p> <p>Potential resources: http://energytrust.org/residential/incentives/Appliances/ http://www.oregon.gov/energy/RESIDENTIAL/pages/residential_energy_tax_credits.aspx</p> <p>City Response – within 90 days of WMCP plan approval the City will create paper handouts regarding the above referenced resources to all customers requesting utility service. Additionally, the City will distribute this same information to all existing customers at least quarterly as a billing “insert” with the utility billing as well as identifying the web links on the City website.</p>
<p>(d) Adoption of rate structures, billing schedules, and other associated programs that support and encourage water conservation;</p>	<p>Meets the requirement.</p> <p>See pages 31-32, Section 7 and appendix H.</p>
<p>(e) Water reuse, recycling, and non-potable water opportunities; and</p>	<p>Does not comply.</p> <p>This is not addressed in Section 7, pages 30-34.</p> <p>Since Sweet Home serves a population greater than 7500 and their 2015 water loss was 26%, this rule requirement applies.</p> <p>Is the water from Sweet Home’s Wastewater Treatment plant being reused in any beneficial way?</p> <p>City Response – the effluent from the wastewater treatment facility is not currently eligible for beneficial reuse as it is not approved for anything other than discharge directly into the South Santiam River. Additionally, given the physical location and other constraints of the effluent point of the plant, it would be difficult and expensive to divert the flow. Please add the statement above to the WMCP.</p>
<p>(f) Any other conservation measures identified by the water supplier that would improve water use efficiency.</p>	<p>Meets the requirement.</p> <p>See appendix H.</p> <p>Please note: more advertising of some of the programs available might be helpful to Sweet Home’s customers.</p>

OAR 690-086-0160 – Municipal Water Curtailment Element	
(1) A description of the type, frequency and magnitude of supply deficiencies within the past 10 years and current capacity limitation. The description shall include an assessment of the ability of the water supplier to maintain delivery during long-term drought or other source shortages caused by a natural disaster, source contamination, legal restrictions on water use, or other circumstances;	Meets the requirement. See pages 35-36, and 39, Sections 8.1, 8.2., and 8.5.
(2) A list of three or more stages of alert for potential shortage or water service difficulties. The stages shall range from a potential or mild alert, increasing through a serious situation to a critical emergency;	Meets the requirement. See section 8.3-8.4, pages 37-38. Great job on three stages of alert and defining staff responsibilities in an emergency so they can respond more quickly.
(3) A description of pre-determined levels of severity of shortage or water service difficulties that will trigger the curtailment actions under each stage of alert to provide the greatest assurance of maintaining potable supplies for human consumption; and	Meets the requirement. See section 8.3-8.4, pages 37-38. Great job on three stages of alert and defining staff responsibilities in an emergency so they can respond more quickly.
(4) A list of specific standby water use curtailment actions for each stage of alert ranging from notice to the public of a potential alert, increasing through limiting nonessential water use, to rationing and/or loss of service at the critical alert stage.	Meets the requirement. See section 8.3-8.4, pages 37-38. Great job on three stages of alert and defining staff responsibilities in an emergency so they can respond more quickly.
OAR 690-086-0170 – Municipal Water Supply Element	
(1) A delineation of the current and future service areas consistent with state land use law that includes available data on population projections and anticipated development consistent with relevant acknowledged comprehensive land use plans and urban service agreements or other relevant growth projections;	Meets the requirement. See Section 3.5, pages 12-13, Section 5.3, pages 23-24, table 5.3 and figure 4.1 for current and future service areas. Please note: there is no mention of the Santiam River Club as referenced in 2006 WMCP.
(2) An estimated schedule that identifies when the water supplier expects to fully exercise each of the water rights and water use permits currently held by the supplier;	Meets the requirement. See Section 4.6, pages 20-21.
(3) Based on the information in (1), an estimate of the water supplier's water demand projections for 10 and 20 years, and at the option of the municipal water supplier, longer periods;	Meets the requirement. See Section 5.3 and Table 5.3, pages 23-24. Please clarify: Year 2040 peak demand projection = 2757 gpm (6.14 cfs), but last paragraph, page 22 – states that 2014 peak day demand was 2427 gpm (5.41 cfs), is this correct?

<p>(4) A comparison of the projected water needs and the sources of water currently available to the municipal water supplier and to any other suppliers to be served considering the reliability of existing sources;</p>	<p>Does not comply.</p> <p>See Section 5.3, page 23. No discussion is made about reliability of existing water sources.</p> <p><i>City Response – This information will be added to section 5.1 General with language such as “As was referenced in Section 4 of this document, The City of Sweet Home holds senior water rights to other competing rights on the South Santiam river that has flow augmented from Foster Dam. Three of its permits are older than all but one 0.254 cubic feet per second certificate. Permits totaling 37.259 cfs, including Sweet Home’s, exist on the river downstream of Sweet Home’s point of diversion at Foster Dam. Therefore, the water rights available to the City of Sweet Home should be adequate for the study period.</i></p> <p><i>The source point for the municipal water supply comes from the Foster Dam, a flood control dam that regulates minimum river flows downstream, that has a minimum lake level requirement for river flow and fish habitat. The City will have access to entire allotment of water rights necessary for the study period unless the unlikely event of complete dam failure in which the lake water level would potentially fall below the intake structure.”</i></p>
<p>(5) If any expansion or initial diversion of water allocated under existing permits is necessary to meet the needs shown in (3), an analysis of alternative sources of water that considers availability, reliability, feasibility and likely environmental impacts. The analysis shall consider the extent to which the projected water needs can be satisfied through:</p>	
<p>(a) Implementation of conservation measures identified under OAR 690-086-0150;</p>	<p>Does not apply.</p> <p>See Section 5.3, pages 23-24.</p> <p>Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>(b) Interconnection with other municipal supply systems and cooperative regional water management; and</p>	<p>Does not apply.</p> <p>Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>(c) Any other conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources.</p>	<p>Does not apply.</p> <p>Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>(6) If any expansion or initial diversion of water allocated under existing permits is necessary to meet the needs shown in (3), a quantification of the maximum rate and monthly volume of water to be diverted under each of the permits;</p>	<p>Does not apply.</p> <p>Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>

<p>(7) For any expansion or initial diversion of water under existing permits, a description of mitigation actions the water supplier is taking to comply with legal requirements including but not limited to the Endangered Species Act, Clean Water Act, Safe Drinking Water Act; and</p>	<p>Does not apply. Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>(8) If acquisition of new water rights will be necessary within the next 20 years to meet the needs shown in (3), an analysis of alternative sources of the additional water that considers availability, reliability, feasibility and likely environmental impacts and a schedule for development of the new sources of water. The analysis shall consider the extent to which the need for new water rights can be eliminated through:</p>	
<p>(a) Implementation of conservation measures identified under OAR 690-086-0150;</p>	<p>Does not apply. See Section 5.3, pages 23-24. Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>(b) Interconnection with other municipal supply systems and cooperative regional water management; and</p>	<p>Does not apply. See Section 5.3, pages 23-24. Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>(c) Any other conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources.</p>	<p>Does not apply. See Section 5.3, pages 23-24. Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>OAR 690-086-0130 – Approval Criteria for Access to Water under an Extended Permit</p>	
<p>Requests for Greenlight Water:</p>	
<p>(7) If during the next 20 years the maximum rate of water diverted under an extended permit will be greater than the maximum rate authorized for diversion under the extension or previously approved water management and conservation plan;</p>	
<p>(a) The plan includes a schedule for development of any conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources, unless the supplier has provided sufficient justification for the factors used in selecting other sources for development or the supplier serves a population of less than 1,000;</p>	<p>Does not apply. See Section 5.3, pages 23-24. Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>
<p>(b) Increased use from the source is the most feasible and appropriate water supply alternative available to the supplier; and</p>	<p>Does not apply. See Section 5.3, pages 23-24. Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).</p>

(c) If mitigation is legally required to address limitations or restrictions on the development of permits for which resource issues are identified under OAR 690-086-0140(5)(i), the plan contains documentation that the supplier is complying with the mitigation requirements. The Department may consult with federal and state agencies in making this determination; and

Does not apply.

See Section 5.3, pages 23-24.

Sweet Home is not requesting authorization to divert any additional water under non-certificated portion of Permit S-49959 (remaining portion is 1.99 cfs).

February 7, 2003 – dp
REVISED: July 1, 2010 - ljj

Water Right Inventory

To comply with OAR 690-086-0140(5) ...A tabular list of water rights held by the municipal water supplier [as defined in OAR 690-086-0030(6)] that includes the following information:

Applicati on No. (5)(a)	Permit No. (5)(a)	Priority Date (5)(b)	Certificate No. (5)(a)	Transfer No. (5)(a)	Source (5)(c)	Use (5)(d)	Maximum Allowed Rate(cfs) (5)(e)	Allowed Rate under Development Limitations (cfs) (5)(e)	Actual Diversion				Authorized Completion Date (5)(h)	Source Issues <i>Identification of:</i> • ST&E species present in the source; • Water quality limited parameters listed for the source; and/or • Source well(s) located within a Critical Ground Water Area (5)(i)	Notes (Facility Name, Reliability Issues or Problems, Etc.)
									Maximum Instantane ous Rate Diverted to Date (cfs) (5)(f) 3.43	Maximum Annual Quantity Diverted to Date (MG) (5)(f) 484.274	Average Monthly Diversion (MG) (5)(g) 40.356167	Average Daily Diversion (Gallons) (5)(g) 1,345,205.57			
S14057	S10140	4/24/1931	Cancelled by Special Order Volume 84, page 643, issued 7-5-2011, approving a change in character of use under T-8414, please note this also cancelled a portion (0.924 cfs) of the water right evidenced by Certificate 9288) 9288	T-8414	Ames Creek	Municipal	0.076	N/A	0	0	0	0	(set by Special Order Vol. 84, page 643 approving T-8414, CBU was due 10-1-2013, not yet received. Sweet Home either needs to submit CBU or submit transfer extension application) 10/1/2012	State -Listed as Sensitive -Chinook Salmon, Western Brook Lamprey, Pacific Lamprey, Steelhead, Oregon Chub Federal -Listed as Threatened – Pacific Eulachon, Upper Willamette R. Steelhead, Chinook Salmon Water Quality Limited - TMDL Biological Criteria, Habitat Modification for salmonid fish and Temperature year round.	
S17422	S13151	7/14/1938	(Certificate 13741 cancelled by Special Order Vol. 75, page 876, approving a change in point of diversion) 88300	T-8662	South Santiam R.	Municipal	0.6	N/A	0.6	141.54339700	11.63370390	957,415.434	N/A	State -Listed as Sensitive -Chinook Salmon, Western Brook Lamprey, Pacific Lamprey, Steelhead, Oregon Chub Federal -Listed as Threatened – Pacific Eulachon, Upper Willamette R. Steelhead, Chinook Salmon Water Quality Limited - TMDL Biological Criteria, Habitat Modification for salmonid fish and Temperature year round.	
S25810	S20525	4/16/1951	88301	N/A	South Santiam R.	Municipal	7.0	N/A	2.83	342.73060255	28.72246310	387,790.130	N/A	State -Listed as Sensitive -Chinook Salmon, Western Brook Lamprey, Pacific Lamprey, Steelhead, Oregon Chub Federal -Listed as Threatened – Pacific Eulachon, Upper Willamette R. Steelhead, Chinook Salmon Water Quality Limited - TMDL Biological Criteria, Habitat Modification for salmonid fish and Temperature year round.	
S57037	S49959	4/8/1986	88302	N/A	South Santiam R.	Municipal	3.51 (partial perfection)	3.51	0	0	0	0	N/A	State -Listed as Sensitive -Chinook Salmon, Western Brook Lamprey, Pacific Lamprey, Steelhead, Oregon Chub Federal -Listed as Threatened – Pacific Eulachon, Upper Willamette R. Steelhead, Chinook Salmon Water Quality Limited - TMDL Biological Criteria, Habitat Modification for salmonid fish and Temperature year round.	
S57037	S49959	4/8/1986	N/A	N/A	South Santiam R.	Municipal	1.99 (non-certificated portion)	0.0	0	0	0	0	10/1/2050	State -Listed as Sensitive -Chinook Salmon, Western Brook Lamprey, Pacific Lamprey, Steelhead Federal -Listed as Threatened – Pacific Eulachon, Upper Willamette R. Steelhead, Chinook Salmon Water Quality Limited - TMDL Biological Criteria, Habitat Modification for salmonid fish and Temperature year round.	

City of Sweet Home
WMCP Five-Year Conservation Benchmarks

Benchmarks	Start Date	Frequency		Progress
Ongoing Efforts				
Leak Detection and repair	Ongoing	Annually		
Pipe replacement	Ongoing	Annually	✓	On task
Planned programs				
Free customer water audits	July 2006	On-call	✓	Still available – no requests yet
Customer Service meter testing	July 2006	On-call	✓	On task
Provide U.S. EPA “Water Saver” software to large water users	July 2006	As needed	✓	Still available – no requests yet
Conservation training for large water users	December 2006	As needed	✓	Still available – no requests yet
Annual review of unaccounted for water	January 2006	Annually	✓	On task
Test Larger service meters, city property meters and production meters	January 2016	5 years		<u>City will begin representative sample testing of meters 2” or larger by no later than end of calendar year 2017. Target upto 20% per year with minimum target 5% each year.</u>
Test major piping, valves, and fire hydrants	July 2006	Annually	✓	On task
Make conservation presentations to local school children	2016	2 times / year		
Distribute water conservation brochures in water bills	July 2011	2 times / year	✓	Posted as link to official City website www.ci.sweet-home.or.us
Test new touch-read meters	August 2006	Minimum 20% annually	✓	New meters have +-98% accuracy out of box when installed. When usage is questioned, meter is automatically replaced over 10 years old.

- ✓ Frequency being met – On task
- ❖ Partial progress on frequency – improved focus suggested!
- Frequency not met – Improvement required!