An Introduction to Strategic Water Loss Reduction

Webinar 1: Understanding the Problem

When you know better you do better

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AN INTRODUCTION TO STRATEGIC WATER LOSS REDUCTION
GEOGRAPHICAL DISTRIBUTION OF TODAY’S ATTENDEES

Mainland US

Hawaii

Alaska
WHY STRATEGIC WATER LOSS REDUCTION?

- LIMITED WATER RESOURCES
- NEED TO MAXIMIZE SYSTEM REVENUES
- INCREASING COSTS OF PRODUCTION, INCLUDING INCREASED ENERGY COSTS
- WATER QUALITY IMPACTS
WHY STRATEGIC WATER LOSS REDUCTION?

HELPS YOU DECIDE THE NATURE OF THE PROBLEM AND THE BEST WAY TO SPEND YOUR LIMITED DOLLARS TO ADDRESS IT.
DOES THIS LOOK FAMILIAR??

Water Produced - Water Sold = Water Loss
What does this number represent??

- A. Amount of water lost from the system
- B. How inaccurate the customer meters are
- C. Nothing/Of No Value
- D. Non-Revenue Water
- E. Unaccounted For Water
THE VALUE REPRESENTS: NON-REVENUE WATER

- Water Use for City, Town, Muni Purposes
- Illegal Water Use
- Water Use by Water Utility for flushing or other purposes
- Lost Water
- Inaccurate Meters
- Poor Data Handling
WHY DOES IT MATTER WHAT THAT NUMBER REPRESENTS?

If we don’t understand the nature of the problem, we may apply the wrong solution.
WE NEED TO THINK STRATEGICALLY
WATER LOSS AS A PROCESS

Establish Nature of the Problem

Set Goals

Develop Funding Plan
(Assess Potential for Increased Revenue to Fund Part of the Program)

Prioritize Strategies for Implementation

Choose Appropriate Strategies
Establish Nature of the Problem
CONDUCT A WATER BALANCE OR WATER AUDIT TO DETERMINE NATURE OF THE PROBLEM
LOOKS A LITTLE INTIMIDATING

BUT, IF YOU GO THROUGH SYSTEMATICALLY, NOT SO BAD

Plus... THERE ARE GOOD RESOURCES TO HELP YOU
ONE OF THE BEST IS AWWA’s WATER AUDIT TOOL

AVAILABLE FOR FREE ON AWWA’S WEBSITE
AN AUDIT HELPS YOU ACCOUNT FOR ALL WATER IN YOUR SYSTEM

Billed Authorized Consumption

Revenue Water

- Billed Water Exported
- Billed Metered Consumption
- Billed Unmetered Consumption

ONLY WATER FOR WHICH YOU RECEIVE REVENUE
AN AUDIT HELPS YOU ACCOUNT FOR ALL WATER IN YOUR SYSTEM

WATER YOU PRODUCE BUT RECEIVE NO REVENUE FOR
AN AUDIT HELPS YOU ACCOUNT FOR ALL WATER IN YOUR SYSTEM

Authorized Use; Do Not Bill

Unbilled Authorized Consumption

Apparent Losses

Real Losses

Non-Revenue Water

Unbilled Metered Consumption

Unbilled Unmetered Consumption

Unauthorized Consumption

Customer Metering Inaccuracies

Systematic Data Handling Error

Leakage on Mains

Leakage on Service Lines

Leakage & Overflows at Storage

WATER YOU PRODUCE BUT RECEIVE NO REVENUE FOR
AN AUDIT HELPS YOU ACCOUNT FOR ALL WATER IN YOUR SYSTEM

“Paper Losses”

WATER YOU PRODUCE BUT RECEIVE NO REVENUE FOR
AN AUDIT HELPS YOU ACCOUNT FOR ALL WATER IN YOUR SYSTEM

WATER YOU PRODUCE BUT RECEIVE NO REVENUE FOR

“Real” Water Loss

Unbilled Authorized Consumption
Unbilled Metered Consumption
Unbilled Unmetered Consumption
Unauthorized Consumption
Customer Metering Inaccuracies
Systematic Data Handling Error

Non-Revenue Water
Leakage on Mains
Leakage on Service Lines
Leakage & Overflows at Storage

Apparent Losses
Real Losses
THE RESULTS OF THE AUDIT WILL TELL YOU THE NATURE OF THE PROBLEM
Have you done a water audit?

Time for a Poll

Question

A. Yes, using the AWWA methodology
B. Yes, using other methodology
C. No, but we are planning on it
D. No
E. Not Applicable (Not a water system)
Establish Nature of the Problem

Set Goals
SET GOALS FOR YOUR WATER LOSS PROGRAM

WHAT ARE YOU TRYING TO ACHIEVE?

Goals

1. 

2. 

3. 
USE SMART AS A GUIDE

GOAL SETTING

SPECIFIC
MEASURABLE
ATTAINABLE
RELEVANT
TIME-BOUND
Have you set goals related to water loss?

A. Yes, we have goals and we measure how well we meet them
B. Yes, we have goals, but we don’t measure whether we meet them or not
C. No, but we are working on it
D. No
E. Not Applicable (not a water system)
Establish Nature of the Problem

Set Goals

CHOOSE APPROPRIATE STRATEGIES
STRATEGIES RELATED TO AUTHORIZED UNBILLED CONSUMPTION
STRATEGIES RELATED TO “PAPER” LOSSES
STRATEGIES RELATED TO “REAL” LOSSES

FOCUS OF WEBINAR 2
Establish Nature of the Problem

Set Goals

PRIORITIZE STRATEGIES FOR IMPLEMENTATION

CHOOSE APPROPRIATE STRATEGIES
CONSIDERATIONS IN PRIORITIZING

SIZE OF THE PROBLEM

COST OF ADDRESSING THE PROBLEM

RESOURCES NEEDED TO ADDRESS THE PROBLEM

CRITICALITY OF ASSETS

POTENTIAL TO GENERATE REVENUE

HOW WELL IT ADDRESSES THE GOALS

FOCUS OF WEBINAR 3
Establish Nature of the Problem

Set Goals

PRIORITIZE STRATEGIES FOR IMPLEMENTATION

CHOOSE APPROPRIATE STRATEGIES

Develop Funding Plan

(Please Potential for Increased Revenue to Fund Part of the Program)
CONSIDERATIONS WITH FUNDING

- WILL THE WATER SAVINGS OFFSET COSTS?
- WILL REVENUE BE GENERATED TO PAY FOR ALL OR PART?
- WILL SAVINGS FROM REDUCED CATASTROPHIC EVENTS BE USED?
- CAN THE PROGRAM BE USED TO SAVE MONEY ON PIPE REPLACEMENT?
- IS THERE A BUDGET FOR WATER LOSS REDUCTION?
- IS THERE PUBLIC SUPPORT FOR A PROGRAM OF THIS TYPE?
TAKING IT TO YOUR FACILITY

DEVELOP YOUR TEAM
TAKING IT TO YOUR FACILITY

COMPLETE AWWA WATER AUDIT

AWWA Water Loss Control Committee (WLCC) Free Water Audit Software v4.2

PURPOSE: This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

USE: The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons on the left below. Descriptions of each sheet are also given below.

THE FOLLOWING KEY APPLIES THROUGHOUT:
- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Please begin by providing the following information, then proceed through each sheet in the workbook:

- **NAME OF CITY OR UTILITY:**
- **REPORTING YEAR:**
- **START DATE (MM/YY):**
- **END DATE (MM/YY):**
- **NAME OF CONTACT PERSON:**
- **E-MAIL:**
- **TELEPHONE:**
- **FAX:**

PLEASE SELECT PREFERRED REPORTING UNITS FOR WATER VOLUME

Click to advance to sheet.

The current sheet

**Instructions**

- **Enter the required data on this worksheet to calculate the water balance**

**Water Balance**

- The values entered in the Reporting Worksheet are used to populate the water balance
TAking It To Your Facility

Set some goals for what you would like to achieve

Goals

1. 
2. 
3. 

TAKING IT TO YOUR FACILITY

TUNE INTO WEBINARS 2 AND 3 TO LEARN MORE ABOUT OPTIONS FOR ADDRESSING REAL LOSSES
ASSISTANCE AVAILABLE

Would you be interested in assistance with…

A. Asset Management
B. Rates and Finance
C. Water System Collaboration
D. Multiple Funding
E. Energy Efficiency
FOLLOW UP

We will contact attendees with:

• Answers to webinar questions
• Access to resources for water loss
• Other types of assistance
UPCOMING WEBINARS

3/6/14 Asset Management Core Component 1 – The Current State of Assets (Rebroadcast)

3/7/14 Leadership Part II – Effective Messaging

3/12/14 Water System Partnerships & Regionalization – The Water Company Model

3/17/14 Water Loss Reduction – Part II

3/31/14 Water Loss Reduction – Part III

To register: efecnetwork.org/upcoming
WE WANT TO THANK EPA FOR PROVIDING FUNDING FOR THIS PROJECT