

Northeast Woodford County Water District Water Loss Prevention and Leak Detection Program

The following plan outlines processes and procedures that the Northeast Woodford County Water District will conduct on a routine basis (both in a reactive and proactive mode) to identify and repair water line leaks, identify and monitor un-metered water usage, and reduce its overall water loss.

1. ROUTINE PROCEDURES (Daily/Weekly/Monthly/Yearly)

- A. **COMMUNICATIONS:** Monthly meetings to address the status of water loss by contractor and board members are planned to assure a unified effort to minimize water loss.
- B. **MASTER METERS:** Read and record all master meter readings throughout the distribution system at approximately the same time each day.
- C. **RECORDING READING:** All master meter readings shall be recorded in log books or on spreadsheets. Record readings of both registers on compound meters.
- D. **CONSISTENT METER READING SCHEDULES:** Establish a schedule wherein all customer meters are read at approximately the same time each month to ensure that any inconsistencies are identified and potential service line problems are identified and corrected.
- E. **CONTRACTOR RESPONSIBILITIES:** All personnel (meter readers, maintenance, etc.) shall immediately report to their supervisor any identified water leaks, tank overflows, telemetry problems, or other concerns that are presently or could result in water leaks or loss. A work order will be generated by the

supervisor to address the problem immediately or at the earliest possible time, given the urgency of the problem reported.

F. **CONTRACTOR PERSONNEL (continued):** All contractor personnel shall immediately report any customer reported leaks, tank overflows, pressure problems, or other issues (whether during regular operational hours or after hours) to the appropriate personnel. The contractor will generate work order and make a determination as to whether a field crew needs to be dispatched immediately or later, based on the urgency of the problem.

G. **RECORDING DATA:** Daily and monthly records (via computer data bases, manual logs, or spreadsheets) shall be maintained by appropriate contractor personnel to record and analyze the following information:

- Daily & weekly master meter reading
- Pump station run times
- Estimated water losses from line breaks, tanks overflows, hydrant usage, etc.
- Metered customer water sales
- Other un-metered water usage

H. **DATA ANALYSIS:** Water purchased and usage data obtained and recorded (item F. above) shall be evaluated and analyzed on a daily/weekly/monthly basis to determine:

- Water purchase amounts
- Metered usage
- Known losses from line breaks, etc.
- Water loss by distribution zone

I. **METER TESTING AND REPLACEMENT:** Pursuant to PCS regulations, customer meters will be tested and/or replaced on a periodic schedule to ensure that they are registering water accurately.

- All 2" meters will be tested every three years.
- All 1" and 3/4" meters are to be tested or replaced new every ten years.
- All meters will be replaced as warranted.

2. LEAK DETECTION PROCEDURES

- A. **CONTRACTOR PERSONNEL:** On a bi-yearly (as routine system operations permit), Contractor personnel will be assigned to leak detection shifts after hours (typically 11:00 p.m. to 4:00 a.m.). Customer usage is minimal at this time and allows field personnel to go valve to valve (and often meter to meter) with listening devices and detect abnormal flows. Personnel will perform leak detection in those areas with the highest known water loss, based on routine data collection and analysis.
- B. **OUTSIDE CONSULTANTS:** Outside consultants will be hired as circumstances and funding dictate. The Water District has routinely utilized the services of Kentucky Rural Water in this process.

3. CAPITAL IMPROVEMENTS

As funding permits, the District will prioritize and acquire/install the following:

- A. **FLOW METER:** One of the most important tools in detecting water usage and loss is a portable flow meter. As funds are available, the Water District will purchase one of these units.
- B. **GATE VALVES:** All gate valves will be exercised as recommended in the Kentucky Division of Water Regulations. Valves which fail to operate properly will be replaced as funding permits.
- C. **MAPS:** The Water District will maintain updated distribution system maps. Accurate maps depicting line size and location are vital to leak detection.
- D. **REPLACEMENT OF OLDER TRANSMISSION MAINS:** As noted above much of the distribution system has been replaced as the original community systems were merged hydraulically. As funding permits, new projects to replace remaining older pipe in the distribution system will be developed.