

## Water Loss Prevention and Leak Detection Program

Nebo Water District consists of approximately 103 miles of water mains that serves 1610 plus customers. Our water is purchased from the City of Madisonville and is fed through 1 master meter with 3 tanks and 3 pump stations. Our system does not have emergency tie- ins. Although the percentages have gone from as high as 19.0% to as low as 3.7% in 2023, we are still focused on lowering these numbers and keeping them in an acceptable percentile.

Nebo Water District utilizes this plan that follows as a guideline to our scheduled routine in order to detect and control our water loss. District has installed 2" by-pass meters at all 3 water towers and has installed a 1 1/2' meter at valve 110 on Ky. 502 for leak detection on approximately 20 miles of rural water lines. We also use our master meter for leak detection on Madisonville pressure zone.

### 1. Routine Procedures

- a. Communications: Monthly water loss reports by District Manager are brought forth to Commissioners at each monthly business meeting.
- b. Master Meter: Located on the corner of Industrial Park Rd, and Nebo Rd. is to be read at the start of each day at 7:00 a.m.
- c. Record Readings: All Master Meter Readings will be calculated and recorded daily.
- d. Scheduled Meter Reading: There are 3 routes. These meters are to be routinely read each month by 1st, 10th, 20th,
- e. Field Personnel Monitoring: Any leaks, Scada Inconsistencies, etc., observed by maintenance or meter reader are to be immediately reported to District Manager who will then determine the situation's urgency and dispatch all information to

office personnel so it can be documented, and the leak repaired at first opportunity.

- f. Office Personnel Duties: Office Personnel are to collect all Information, and immediately report to District Manager any of the following:
  - i. Leaks reported by customers
  - ii. Damage reported to mains or service lines caused from outside sources
- g. Emergency Duties: They will maintain an emergency telephone in order to receive any after-hours call of leaks reported in order to address these matters immediately.
- h. Recording Data: The following records will be kept by District Manager on a daily/monthly basis using manual logs, computer spreadsheets in order for Manager and Board Members to monitor water loss activity.
  - i. Daily/Weekly master meter readings
  - ii. Run time of pump stations
  - iii. Edits of meter reading overage use
  - iv. Annual flushing of hydrants
  - v. Flushing of leaks and customer complaints
  - vi. Water purchased and sold
- i. Meter Tests/Replacement: As followed by PSC guidelines, are replaced and tested on the following schedule:
  - i. 3/4" and 1" meters are every 10 years
  - ii. 2" meters every 4 years
  - iii. 4" or larger and Master Meter tested annually

## 2. Leak Detection Procedures

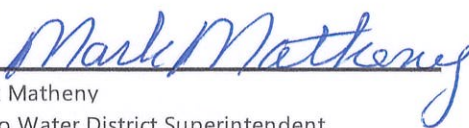
- a. Master meter flow is the first indication of water loss, The meter is read every day at the same time for consistency.
- b. Tank Draws: Scada can be used to monitor flows in off demand hours. Demand factors can be used to evaluate these flows. Pump run times are also used to indicate water loss.
- c. Valves are located approximately every 3,000 feet These are used for isolation and as listening point for leaks.

- d. Outside Consultant: We have received assistance from Kentucky Rural Water Association. They will provide expertise in finding leaks that do not surface.

### 3. Distribution Improvements

- a. The following are improvements that have improved water loss percentages:
  - i. 2" meters installed at each of the 3 tanks to assist in leak isolation. By shutting down the valves and monitoring the usage through these meters, leaks can be detected. Listening devices will also be used with this technique.
  - ii. Valve Maintenance: Exercising valves to determine ones that are in need of repair or replacement.

A PSC approved water loss spreadsheet is used monthly to document water accountability.

**X**   
Mark Matheny  
Nebo Water District Superintendent