## Small System Considerations

Brennan Kelly, PE Aqua Pennsylvania, Inc.



AWWA Water Audit Tool			
	Aqua System	Customers	Avg Demand
1	Roaring Creek	16,600	4.7 mgd
2	Hop Bottom	65	10,500 gpd
3	Warden Place	44	9,500 gpd
4	Rivercrest	214	49,000 gpd
5	Eagle Rock	818	111,000 gpd
6	Maple Hills	63	10,200 gpd
7	Spring House Farms	250	46,500 gpd
8	Hawley	622	140,000 gpd
9	Waymart	377	170,000 gpd
10	Honesdale	1,500	612,000 gpd
11	Susquehanna	4,700	1.5 mgd

### Data Gathering Challenge

- Small system Opex wrapped into larger Division financial tracking
  - Chemical costs and usage
  - Labor

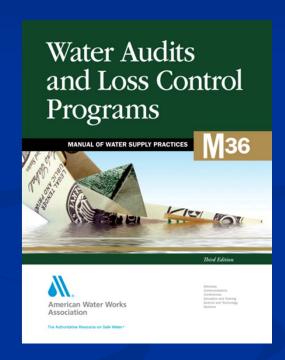
#### Audit Tool – Efficiency Indicators

- Unavoidable Annual Real Losses (UARL)
  - Not yet fully proven for systems with:
    - Avg. Pressure <35 PSI
    - Small customer base (Length Mains x 32 + Conn. <3000)
  - More data will help validate and refine UARL calculation for small systems
- Other Metrics still valid:
  - Gal./connection/day
  - Gal./mile/day

#### Other References for Small Systems

- AWWA M36 Manual
  - Chapter 7: Considerations for Small Systems

Access AWWA
Water Loss Control
webpages at: <a href="www.awwa.org">www.awwa.org</a>



# Questions?

Brennan Kelly P.E. btkelly@aquaamerica.com