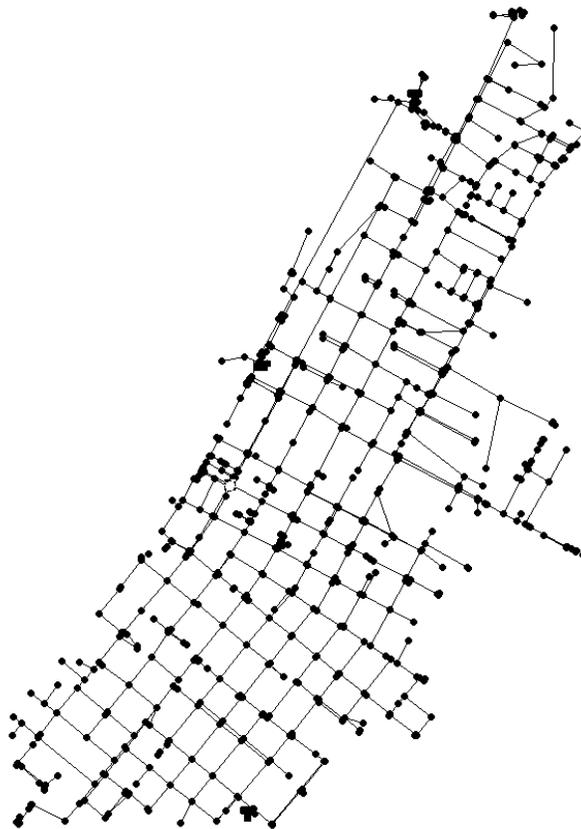# SYSTEM ID: KY 1

NARRATIVE DESCRIPTION

KY 1 is primarily a grid system in Kentucky with the following assets: 2 Tanks, 1 Pumps, 0 Pumping Stations, 0 Water Treatment Plant, and approximately 215282 feet of pipe. KY 1 provides 2.0 million gallons of water per day to its 6,400 customers at approximately $8.00 and per 1,000 gallons of water. Water loss for KY 1 is estimated at 21% of the water produced.
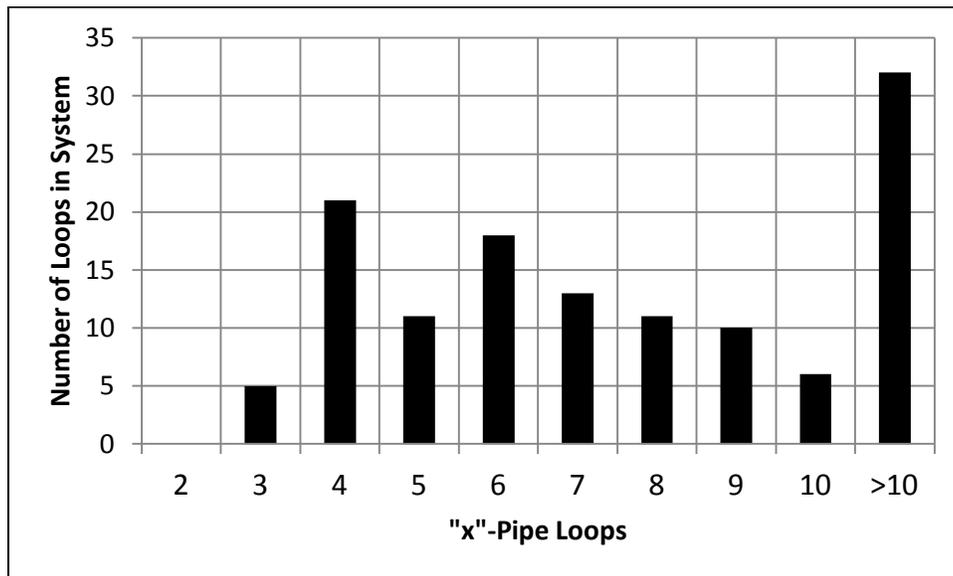
NETWORK SCHEMATIC:

HISTORY OF THE NETWORK FILE

KY 2 was originally created by Matthew Jolly and Steven Hoagland in 2014 as part of the article "Classification of Water Distribution Systems for Research Applications" which was presented in 2015 in the *World Environmental and Water Resources Congress*.

AVAILABLE INFORMATION

Physical attributes		YES
Schematic diagram		YES
Network geometry data		YES
GIS data file		YES
Background map		YES
Elevation data		YES
Pipe data		YES
Pipe material		YES
Pipe age		YES
Pipe pressure class		YES
Nominal or actual diameters		YES
Pump data		YES
Useful horsepower		YES
Pump operating curves		NO
Tank data		YES
Elevation data		YES
Stage storage curves		NO
Water quality information		NO
Valve data		NO
PRV/FCV data		NO
Isolation valve data		NO
Hydrant data		NO
Demand data		YES
Total system demand		YES
Nodal demand data		YES
Temporal data demands		YES
System leakage		YES
Hydraulic data		YES
Hydraulically calibrated model		NO
Field hydraulic calibration data		NO
Water quality data		NO
Disinfection method		NO
Chlorine residual data		NO
Booster station data		NO
Fluoride/Chloride field data		NO
Water quality calibrated model		NO
Operational data		NO
SCADA datasets		NO
Operational rules		NO

PIPE/LOOP HISTROGRAM:

REFERENCES:

Jolly, M. D., Lothes, A. D., Bryson, L. S., & Ormsbee, L. (2014). Research Database of Water Distribution System Models. *Journal of Water Resources Planning and Management,* 410-416.

<p style="text-align: center;">**DETAILED DATA SUMMARIES**</p>

PHYSICAL ASSETS:

Asset Type:	# of Assets
Master Meters	1
Tanks	2
Pumps	1
Pump Stations	NA
Water Treatment Plants	1

NETWORK CHARACTERISTICS:

# Total Pipes:	984
# Branch Pipes:	322
Ratio (Branch Pipes / Total Pipes):	0.327
# Junction Nodes	858
# Reservoirs	1
# Tanks	2
# Regulating Valves	0
# Isolation Values	Unknown
# Hydrants	Unknown
Elevation Data	YES

PIPE DATA:

Diameter (in)	Length (ft)
0.75	92
1	5240
1.25	4069
1.5	5935
2	16732
2.5	670
3	4818
4	25699
5	3812
6	58301
8	34379
10	1454
12	28688
14	515
18	4454
20	13962
24	2569
36	3197

PUMP DATA:

Pump Horsepower	YES
Pump Curves:	NO

DEMAND STATISTICS:

Demographic Type	Population	Households
Directly Serviceable:	16,025	6,468
Indirectly Serviceable:		
Total Serviceable:	16,025	6,468

Production Statistics	
Total Annual Volume Produced (MG):	
Total Annual Volume Purchased (MG):	490.702
Total Annual Volume Provided (MG):	490.702
Estimated Annual Water Loss:	21%

Water Costs	
Customer Type	Cost per 1000 gallons
Customers within the municipality	$8.18
Customers outside the municipality	

CUSTOMERS AND USAGE:

Customer Type	Customer Count	Average Demand (MG)
Wholesale:		
Residential:	6,148	313.230
Commercial:	273	36.253
Institutional:		
Industrial:	1	12.476
Other:		
Total Customers:	6,422	
Flushing, Maintenance & Fire Protection:		27.879
Total Water Usage:		389.838

DATA FILE ATTRIBUTES:

ATTRIBUTE		UNITS
Pipe Length & Diameter	X	Feet
Pipe Age	X	Yr. Installed
Node Elevation	X	Feet
Node Demand	X	GPM
Valves		
Hydrants		
Tank Levels	X	Feet
Tank Volume	X	Cubic Feet
PRVs		
WTP	X	
WTP Capacity	X	GPD
Pump Data	X	HP