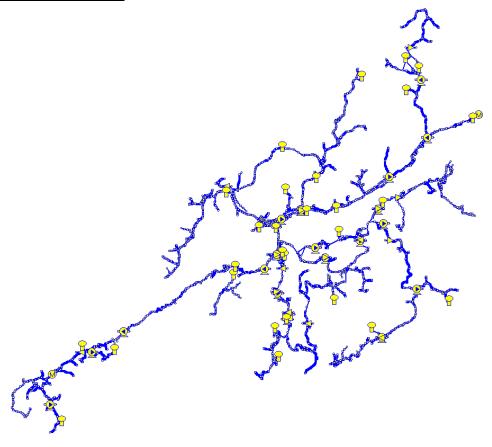# SYSTEM ID: KY 11

NARRATIVE DESCRIPTION

KY 11 is primarily a branched system in Kentucky with the following assets: 28 Tanks, 21 Pumps, 1 Water Treatment Plant, and approximately 1467297 feet of pipe. KY 11 provides 1.93 million gallons of water per day to its 5,330 customers at a rate which ranges between $9.00 and $12.00 per 1,000 gallons of water. Water loss for KY 11 is estimated at 21% of the water produced.
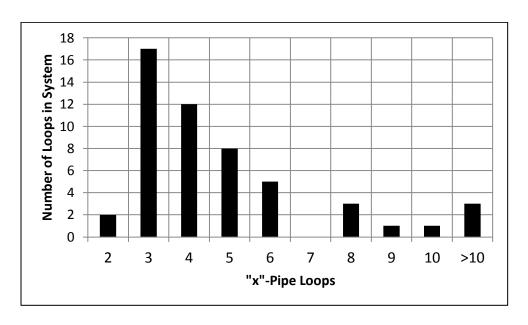
NETWORK SCHEMATIC:

HISTORY OF THE NETWORK FILE

KY 11 was originally created by Matthew Jolly and Amanda Lothes in 2012 as part of the journal article "Research Database of Water Distribution System Models" which was published in 2014 in the *Journal of Water Resources Planning & Management*. This model was updated by Stacey Schal in 2013, and then updated again by Steven Hoagland in 2014.

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.

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DETAILED DATA SUMMARIES

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PHYSICAL ASSETS:

Asset Type:	# of Assets
Master Meters	-
Tanks	28
Pumps	21
Pump Stations	NA
Water Treatment Plants	1

NETWORK CHARACTERISTICS:

# Total Pipes:	846
# Branch Pipes:	583
Ratio (Branch Pipes / Total Pipes):	0.689
# Junction Nodes	795
# Reservoirs	1
# Tanks	28
# Regulating Valves	0
# Isolation Values	Unknown
# Hydrants	Unknown
Elevation Data	YES

PIPE DATA:

Diameter (in)	Length (ft)
1	-
1.3	-
1.5	10
2	120,304
3	174,476
4	254,423
6	560,906
8	291,061
12	53,156
16	12,961
18	-
20	-

PUMP DATA:

Pump Horsepower	YES
Pump Curves:	NO

DEMAND STATISTICS:

Demographic Type	Population	Households
Directly Serviceable:	15,608	7,060
Indirectly Serviceable:	9,712	4,620
Total Serviceable:	25,320	11,680

Production Statistics	
Total Annual Volume Produced (MG):	916.690
Total Annual Volume Purchased (MG):	
Total Annual Volume Provided (MG):	916.690
Estimated Annual Water Loss:	21%

Water Costs	
Customer Type	Cost per 1000 gallons
Customers within the municipality	$9.26
Customers outside the municipality	$11.94

CUSTOMERS AND USAGE:

Customer Type	Customer Count	Average Demand (MG)
Wholesale:	3	58.31
Residential:	5006	342.6
Commercial:	321	3.461
Institutional:		
Industrial:		
Other:		
Total Customers:	5330	
Flushing, Maintenance & Fire Protection:		318.285
Total Water Usage:		722.656

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