

# ***SYSTEM ID: KY 7***

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## **NARRATIVE DESCRIPTION**

KY 7 is primarily a grid system in Kentucky with the following assets: 3 Tanks, 1 Pump, 1 Water Treatment Plant, and approximately 418896 feet of pipe. KY 7 provides 1.53 million gallons of water per day to its 3,479 customers at a rate which ranges between \$5.10 and \$8.93 per 1,000 gallons of water. Water loss for KY 7 is estimated at 29% of the water produced.

## **NETWORK SCHEMATIC:**



## **HISTORY OF THE NETWORK FILE**

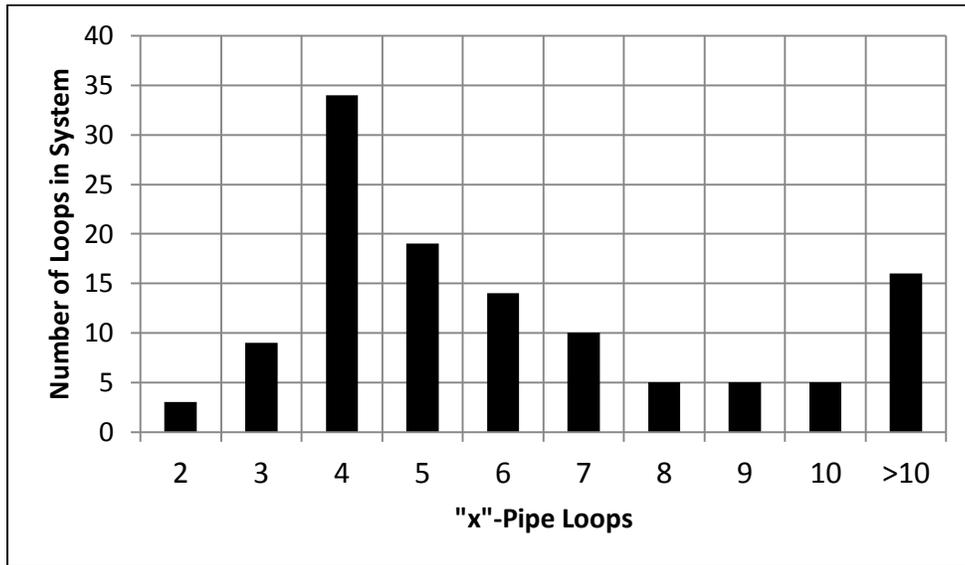
KY 7 was originally created by Matthew Jolly and Amanda Lothes in 2012 as part of the journal article “Research Database of Water Distribution System Models” which was published in 2014

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

## DETAILED DATA SUMMARIES

### PHYSICAL ASSETS:

<b>Asset Type:</b>	<b># of Assets</b>
Master Meters	-
Tanks	3
Pumps	1
Pump Stations	NA
Water Treatment Plants	1

### NETWORK CHARACTERISTICS:

# Total Pipes:	603
# Branch Pipes:	182
Ratio (Branch Pipes / Total Pipes):	0.302
# Junction Nodes	484
# Reservoirs	1
# Tanks	3
# Regulating Valves	0
# Isolation Values	Unknown
# Hydrants	Unknown
Elevation Data	YES

### PIPE DATA:

<b>Diameter (in)</b>	<b>Length (ft)</b>
1	-
1.3	-
1.5	-
2	21,313
3	21,257
4	82,459
6	120,230
8	94,131
12	5,965
16	73,541
18	-
20	-

**PUMP DATA:**

Pump Horsepower	YES
Pump Curves:	NO

**DEMAND STATISTICS:**

<b>Demographic Type</b>	<b>Population</b>	<b>Households</b>
Directly Serviceable:	7,008	3,442
Indirectly Serviceable:	12,029	6,487
Total Serviceable:	19,037	9,929

<b>Production Statistics</b>	
Total Annual Volume Produced (MG):	615.198
Total Annual Volume Purchased (MG):	
Total Annual Volume Provided (MG):	615.198
Estimated Annual Water Loss:	29%

<b>Water Costs</b>	
Customer Type	Cost per 1000 gallons
Customers within the municipality	\$5.10
Customers outside the municipality	\$8.93

**CUSTOMERS AND USAGE:**

<b>Customer Type</b>	<b>Customer Count</b>	<b>Average Demand (MG)</b>
Wholesale:	3	160.861
Residential:	3,039	129.511
Commercial:	289	30.635
Institutional:	129	27.348
Industrial:	9	30.310
Other:	10	49.216
Total Customers:	3,479	
Flushing, Maintenance & Fire Protection:		11.471
Total Water Usage:		439.352

**DATA FILE ATTRIBUTES:**

<b>ATTRIBUTE</b>		<b>UNITS</b>
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