

Operational data we need to display (front-End)

2022-09-19

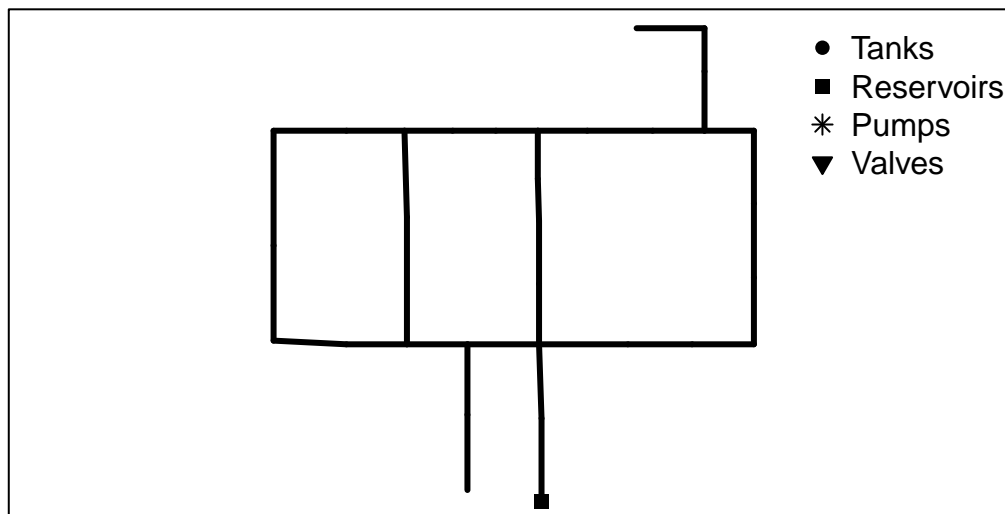
Purpose

The purpose of this document is to share and describe the data that we have to display for the operator from the operational perspective.

```
library(epanetReader)
library(tidyr)
n1 <- read.inp("~/Projects/LeakDB/CCWI-WDSA2018/Benchmarks/Hanoi_CMH/Scenario-1/Hanoi_CMH_Scenario-1.inp")
```

Pipeline layout

The pipeline layout is consistent across all the operating scenarios.



Elements of the pipeline

```
names(n1)

## [1] "Title"      "Junctions"  "Tanks"      "Reservoirs" "Pipes"
## [6] "Pumps"      "Valves"     "Demands"    "Patterns"   "Curves"
## [11] "Controls"   "Rules"      "Energy"     "Status"     "Emitters"
## [16] "Quality"    "Sources"    "Reactions"  "Mixing"     "Times"
## [21] "Report"     "Options"    "Coordinates" "Vertices"   "Labels"
## [26] "Backdrop"   "Tags"
```

Junctions Pipes metadata we need to display

```
n1[2:7]

## $Junctions
##   ID Elevation   Demand Pattern
## 1  10         30 155.77580   P_10
```

```

## 2 11      30 135.71031    P_11
## 3 12      30 158.93342    P_12
## 4 13      30 295.17816    P_13
## 5 14      30 181.99949    P_14
## 6 15      30  68.22532    P_15
## 7 16      30  85.60412    P_16
## 8 17      30 224.89915    P_17
## 9 18      30 427.13213    P_18
## 10 19     30  15.99945    P_19
## 11 2      30 280.17574     P_2
## 12 20     30 331.24825    P_20
## 13 21     30 243.43853    P_21
## 14 22     30 123.14023    P_22
## 15 23     30 256.18534    P_23
## 16 24     30 248.65171    P_24
## 17 25     30  49.52698    P_25
## 18 26     30 263.54669    P_26
## 19 27     30 112.81802    P_27
## 20 28     30  83.06254    P_28
## 21 29     30  96.71243    P_29
## 22 3      30 220.82910     P_3
## 23 30     30 105.36210    P_30
## 24 31     30  25.60799    P_31
## 25 32     30 248.08018    P_32
## 26 4      30  34.16768     P_4
## 27 5      30 222.60561     P_5
## 28 6      30 319.13726     P_6
## 29 7      30 360.92830     P_7
## 30 8      30 169.13246     P_8
## 31 9      30 139.56333     P_9
##
## $Tanks
## NULL
##
## $Reservoirs
## ID Head Pattern
## 1 1 100      NA
##
## $Pipes
## ID Node1 Node2 Length Diameter Roughness MinorLoss Status
## 1 1 1 2 101.8227 1032.5788 132.0315 0 Open
## 2 10 10 11 987.5174 781.0109 117.0064 0 Open
## 3 11 11 12 1238.7269 801.7894 134.9172 0 Open
## 4 12 12 13 3352.5162 610.0255 129.3119 0 Open
## 5 13 10 14 801.1631 432.5173 142.5197 0 Open
## 6 14 14 15 522.6046 410.2378 137.8775 0 Open
## 7 15 15 16 550.5200 293.9906 135.7511 0 Open
## 8 16 17 16 2858.3929 369.3999 131.5999 0 Open
## 9 17 17 18 1773.9333 514.2606 137.0129 0 Open
## 10 18 18 19 782.5734 605.5914 120.8565 0 Open
## 11 19 19 3 403.2065 586.4745 132.9782 0 Open
## 12 2 2 3 1337.5068 950.9962 120.4167 0 Open
## 13 20 3 20 2252.8315 950.7895 121.7172 0 Open
## 14 21 20 21 1443.3665 552.3491 124.3549 0 Open

```

##	15	22	21	22	506.5600	313.5412	120.6469	0	Open
##	16	23	20	23	2714.0274	1046.6808	118.6827	0	Open
##	17	24	23	24	1193.2357	756.5249	141.5037	0	Open
##	18	25	24	25	1256.2352	737.6673	127.0521	0	Open
##	19	26	26	25	825.7778	477.4439	132.1164	0	Open
##	20	27	27	26	285.6935	274.3641	131.8654	0	Open
##	21	28	16	27	773.1004	313.1806	131.7228	0	Open
##	22	29	23	28	1556.4000	418.5538	134.4003	0	Open
##	23	3	3	4	942.1140	942.9965	142.5124	0	Open
##	24	30	28	29	1997.2368	412.2381	126.4847	0	Open
##	25	31	29	30	1553.0820	294.2326	121.5079	0	Open
##	26	32	30	31	153.1708	318.5912	130.3373	0	Open
##	27	33	32	31	892.1622	441.3251	126.9478	0	Open
##	28	34	25	32	970.7698	492.1122	119.2366	0	Open
##	29	4	4	5	1177.5737	1046.3161	139.6072	0	Open
##	30	5	5	6	1451.7704	1090.5739	140.6532	0	Open
##	31	6	6	7	437.3368	1039.9756	129.3940	0	Open
##	32	7	7	8	837.9012	1056.0821	127.8199	0	Open
##	33	8	8	9	857.5721	1038.2016	125.6884	0	Open
##	34	9	9	10	815.7009	992.5071	132.6997	0	Open
##									
##	\$Pumps								
##	NULL								
##									
##	\$Valves								
##	NULL								