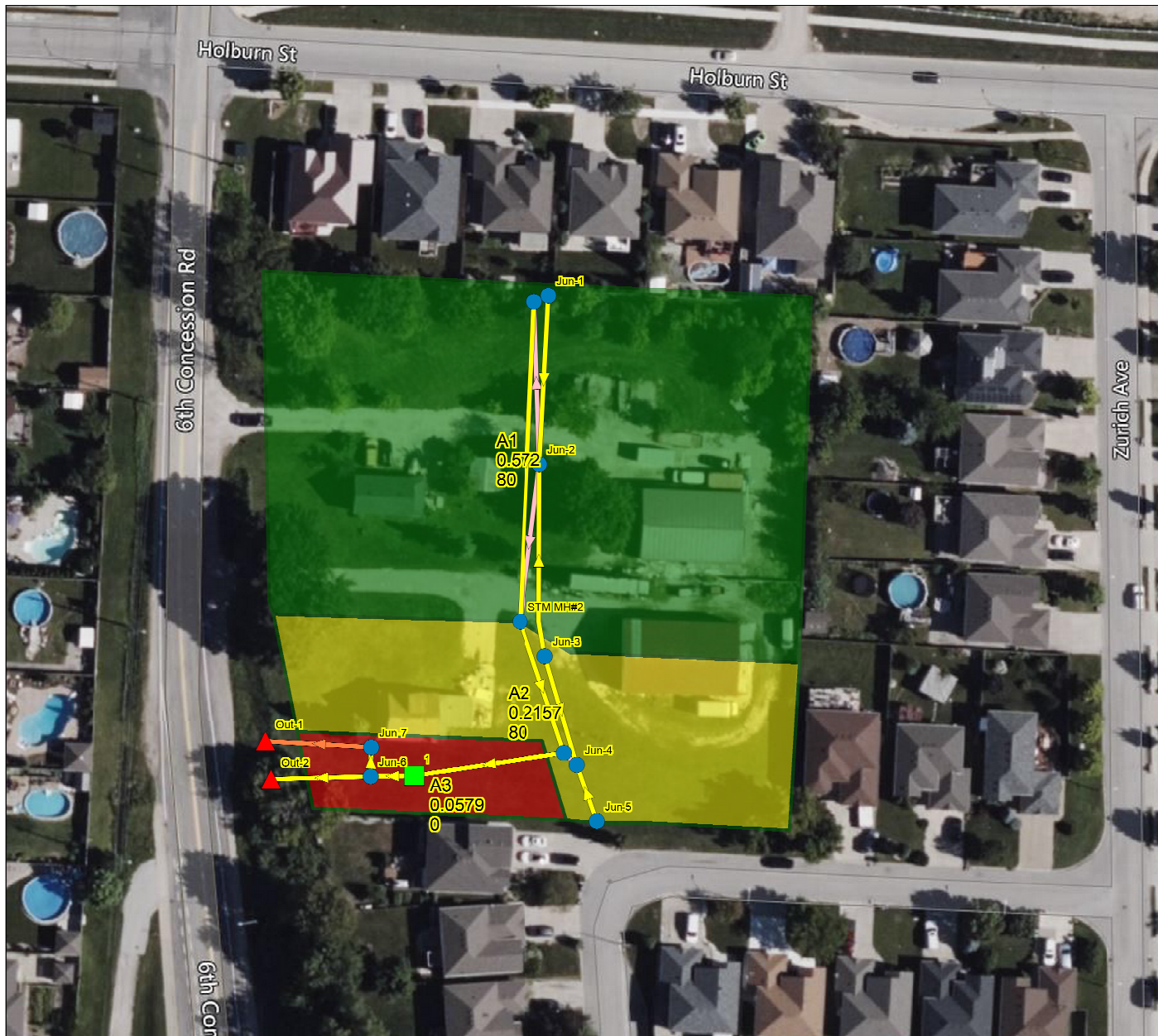


Appendix B

---

**PCSWMM Modelling – Input, Output files,  
Minor and Major System Profiles**



### Legend

- Junctions
  - ▲ Outfalls
  - Storages
  - Conduits
  - Pumps
  - Orifices
- Subcatchments
- Other
  - A1
  - A2
  - A3



35 m

# INPUT REPORT

[TITLE]

;;Project Title/Notes

[OPTIONS]

```
;;Option      Value
FLOW_UNITS    CMS
INFILTRATION  HORTON
FLOW_ROUTING  DYNWAVE
LINK_OFFSETS  ELEVATION
MIN_SLOPE     0
ALLOW_PONDING YES
SKIP_STEADY_STATE NO
```

```
START_DATE    09/02/2022
START_TIME    00:00:00
REPORT_START_DATE 09/02/2022
REPORT_START_TIME 00:00:00
END_DATE      09/04/2022
END_TIME      00:00:00
SWEEP_START   01/01
SWEEP_END     12/31
DRY_DAYS      0
REPORT_STEP   00:15:00
WET_STEP      00:01:00
DRY_STEP      00:01:00
ROUTING_STEP  0.5
RULE_STEP     00:00:00
```

```
INERTIAL_DAMPING NONE
NORMAL_FLOW_LIMITED BOTH
FORCE_MAIN_EQUATION H-W
VARIABLE_STEP 0.75
LENGTHENING_STEP 300
MIN_SURFAREA 0
MAX_TRIALS 8
HEAD_TOLERANCE 0.0015
SYS_FLOW_TOL 5
LAT_FLOW_TOL 5
MINIMUM_STEP 0.5
THREADS 6
```

[EVAPORATION]

```
;;Data Source Parameters
;;-----
CONSTANT 0.0
DRY_ONLY NO
```

[RAINGAGES]

```
;;Name      Format      Interval SCF      Source
;;-----
Raingage1   INTENSITY 0:15      1.0      TIMESERIES 5-Year-Chicago
```

[SUBCATCHMENTS]

;;Name	Rain Gage	Outlet	Area	%Imperv	Width	%Slope	CurbLen	SnowPack
A1	Raingage1	Jun-2	0.572	80	98.621	2	0	
A2	Raingage1	Jun-4	0.2157	80	37.19	2	0	
A3	Raingage1	1	0.0579	0	5.79	5	0	

[SUBAREAS]

;;Subcatchment	N-Imperv	N-Perv	S-Imperv	S-Perv	PctZero	RouteTo	PctRouted
A1	0.013	0.15	2.5	7.5	0	OUTLET	
A2	0.013	0.15	2.5	7.5	0	OUTLET	
A3	0.013	0.15	2.5	7.5	0	OUTLET	

[INFILTRATION]

;;Subcatchment	Param1	Param2	Param3	Param4	Param5
A1	75	0.5	4	7	0
A2	75	0.5	4	7	0
A3	75	0.5	4	7	0

[JUNCTIONS]

;;Name	Elevation	MaxDepth	InitDepth	SurDepth	Aponded
Jun-1	190.299	0.49	0	0	0
Jun-2	190.036	0.49	0	0	0
Jun-3	190.184	0.49	0	0	0
Jun-4	189.97	0.49	0	0	0
Jun-5	190.1	0.49	0	0	0
Jun-6	187.599	2.25	0	0	0
Jun-7	187.522	2.5	0	0	0
STM MH#1	188.355	1.94	0	0.49	0
STM MH#2	188.17	2.02	0	0.49	0
STM MH#3	188.003	2.054	0	0.49	0

[OUTFALLS]

;;Name	Elevation	Type	Stage Data	Gated	Route To
Out-1	189.1	FIXED	189.4	YES	
Out-2	189.1	FREE		YES	

[STORAGE]

;;Name	Elev.	MaxDepth	InitDepth	Shape	Curve Name/Params	N/A	Fevap	Psi
Ksat	IMD							

```

;;-----
1          187.62  2.06      0          TABULAR  UndergroundChamber          0      0

```

[CONDUITS]

```

;;Name          From Node      To Node      Length      Roughness  InOffset    OutOffset    InitFlow    MaxFlow
;;-----
1          Jun-1          Jun-2          29.253      0.0153     190.299     190.036      0           0
2          Jun-3          Jun-2          33.306      0.0153     190.184     190.036      0           0
3          Jun-3          Jun-4          19.564      0.0153     190.184     189.97       0           0
4          Jun-5          Jun-4          10.39       0.0153     190.1       189.97       0           0
5          STM MH#3       1             11.3        0.0153     188.003     187.89       0           0
6          1             Jun-6          2.08        0.0153     187.62      187.599      0           0
7          Jun-6          Jun-7          7.666      0.013      187.599     187.522      0           0
8          Jun-6          Out-2          7.5         0.013      189.349     189.304      0           0
Pipe - (3)    STM MH#1       STM MH#2       55.42       0.013      188.355     188.2        0           0
Pipe - (4)    STM MH#2       STM MH#3       24.003      0.013      188.17      188.103      0           0

```

[PUMPS]

```

;;Name          From Node      To Node      Pump Curve    Status    Startup    Shutoff
;;-----
Pump-1         Jun-7          Out-1          1             OFF       0.5       0

```

[ORIFICES]

```

;;Name          From Node      To Node      Type          Offset      Qcoeff      Gated      CloseTime
;;-----
Orifice-1      Jun-2          STM MH#1     BOTTOM         190.036    0.65        NO         0
Orifice-2      Jun-4          STM MH#3     BOTTOM         189.97     0.65        NO         0
Orifice-3      Jun-2          STM MH#2     BOTTOM         190.036    0.65        NO         0

```

[XSECTIONS]

```

;;Link          Shape          Geom1          Geom2          Geom3          Geom4          Barrels      Culvert
;;-----
1          IRREGULAR     Road-Section   0              0              0              1
2          IRREGULAR     Road-Section   0              0              0              1
3          IRREGULAR     Road-Section   0              0              0              1
4          IRREGULAR     Road-Section   0              0              0              1
5          CIRCULAR      0.45          1              1              1              1
6          CIRCULAR      0.25          1              1              1              1
7          CIRCULAR      0.25          1              1              1              1
8          CIRCULAR      0.2           1              1              1              1
Pipe - (3)    CIRCULAR      0.45          1              1              1              1
Pipe - (4)    CIRCULAR      0.45          1              1              1              1
Orifice-1    CIRCULAR      0.57          0              0              0              0
Orifice-2    CIRCULAR      0.57          0              0              0              0
Orifice-3    CIRCULAR      0.57          0              0              0              0

```

[TRANSECTS]

```

;;Transect Data in HEC-2 format
;
NC 0.15      0.15      0.013
X1 Road-Section  9        5.5      14.5     0.0      0.0      0.0      0.0      0.0
GR 190.6     0         190.27   5.5      190.27   5.65     190.12   5.65     190.28   10
GR 190.12    14.35    190.27   14.35    190.27   14.5     190.6    20

```

[LOSSES]

```

;;Link          Kentry      Kexit      Kavg      Flap Gate    Seepage
;;-----
5          0.5         0.5        0         NO           0
6          0.5         0.5        0         NO           0
Pipe - (3)  0.5         0.5        0         NO           0
Pipe - (4)  0.5         0.5        0         NO           0

```

[CURVES]

```

;;Name          Type          X-Value      Y-Value
;;-----
1          Pump2        0            0
1          0.5         0.053
1          1           0.053
1          1.5         0.053
1          2           0.053
1          2.5         0.053

landscap-area  Storage      0            1.2
landscap-area  0.6         325

UndergroundChamber Storage  0            142
UndergroundChamber 0.23        142
UndergroundChamber 0.84        272
UndergroundChamber 1.45        272
UndergroundChamber 2.06        160

```

[TIMESERIES]

```

;;Name          Date          Time          Value
;;-----
100-YearChicago-Storm  0:00         3.95
100-YearChicago-Storm  0:15         4.87
100-YearChicago-Storm  0:30         6.36
100-YearChicago-Storm  0:45         9.19
100-YearChicago-Storm  1:00         16.45
100-YearChicago-Storm  1:15         46.45
100-YearChicago-Storm  1:30         143.67
100-YearChicago-Storm  1:45         32.45
100-YearChicago-Storm  2:00         17.25
100-YearChicago-Storm  2:15         11.53

```

100-YearChicago-Storm	2:30	8.62
100-YearChicago-Storm	2:45	6.87
100-YearChicago-Storm	3:00	5.71
100-YearChicago-Storm	3:15	4.89
100-YearChicago-Storm	3:30	4.28
100-YearChicago-Storm	3:45	3.81
100-YearChicago-Storm	4:00	0

5-Year-Chicago	0:00	2.58
5-Year-Chicago	0:15	3.13
5-Year-Chicago	0:30	4.02
5-Year-Chicago	0:45	5.66
5-Year-Chicago	1:00	9.76
5-Year-Chicago	1:15	26.72
5-Year-Chicago	1:30	88.4
5-Year-Chicago	1:45	18.73
5-Year-Chicago	2:00	10.21
5-Year-Chicago	2:15	6.99
5-Year-Chicago	2:30	5.33
5-Year-Chicago	2:45	4.31
5-Year-Chicago	3:00	3.64
5-Year-Chicago	3:15	3.15
5-Year-Chicago	3:30	2.78
5-Year-Chicago	3:45	2.49
5-Year-Chicago	4:00	0

SCS-100YEAR	0:00	0
SCS-100YEAR	2:00	1.08
SCS-100YEAR	4:00	1.62
SCS-100YEAR	6:00	1.62
SCS-100YEAR	8:00	2.16
SCS-100YEAR	10:00	3.24
SCS-100YEAR	12:00	25.92
SCS-100YEAR	14:00	8.64
SCS-100YEAR	16:00	3.24
SCS-100YEAR	18:00	2.16
SCS-100YEAR	20:00	1.62
SCS-100YEAR	22:00	1.62
SCS-100YEAR	24:00	1.08

UST	0:00	2.41
UST	0:15	2.43
UST	0:30	2.45
UST	0:45	2.46
UST	1:00	2.48
UST	1:15	2.51
UST	1:30	2.53
UST	1:45	2.55
UST	2:00	2.58
UST	2:15	2.61
UST	2:30	2.64
UST	2:45	2.67
UST	3:00	2.71
UST	3:15	2.74
UST	3:30	2.79
UST	3:45	2.83
UST	4:00	2.88
UST	4:15	2.94
UST	4:30	3.00
UST	4:45	3.07
UST	5:00	3.15
UST	5:15	3.23
UST	5:30	3.33
UST	5:45	3.45
UST	6:00	3.59
UST	6:15	3.75
UST	6:30	3.94
UST	6:45	4.18
UST	7:00	4.49
UST	7:15	4.89
UST	7:30	5.43
UST	7:45	6.20
UST	8:00	7.41
UST	8:15	9.56
UST	8:30	14.29
UST	8:45	32.01
UST	9:00	145.13
UST	9:15	48.51
UST	9:30	23.13
UST	9:45	15.08
UST	10:00	11.35
UST	10:15	9.23
UST	10:30	7.88
UST	10:45	6.94
UST	11:00	6.25
UST	11:15	5.73
UST	11:30	5.32
UST	11:45	4.99
UST	12:00	4.72
UST	12:15	4.49
UST	12:30	4.29
UST	12:45	4.12
UST	13:00	3.98
UST	13:15	3.85
UST	13:30	3.74

UST	13:45	3.63
UST	14:00	3.54
UST	14:15	3.46
UST	14:30	3.39
UST	14:45	3.32
UST	15:00	3.26
UST	15:15	3.20
UST	15:30	3.15
UST	15:45	3.10
UST	16:00	3.05
UST	16:15	3.01
UST	16:30	2.97
UST	16:45	2.93
UST	17:00	2.90
UST	17:15	2.87
UST	17:30	2.84
UST	17:45	2.81
UST	18:00	2.78
UST	18:15	2.76
UST	18:30	2.73
UST	18:45	2.71
UST	19:00	2.69
UST	19:15	2.67
UST	19:30	2.65
UST	19:45	2.63
UST	20:00	2.61
UST	20:15	2.59
UST	20:30	2.57
UST	20:45	2.56
UST	21:00	2.54
UST	21:15	2.53
UST	21:30	2.51
UST	21:45	2.50
UST	22:00	2.49
UST	22:15	2.47
UST	22:30	2.46
UST	22:45	2.45
UST	23:00	2.44
UST	23:15	2.43
UST	23:30	2.42
UST	23:45	2.41
UST	24:00	0.00

[REPORT]

```

;;Reporting Options
INPUT      YES
CONTROLS   YES
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

```

[TAGS]

[MAP]

```

DIMENSIONS      336706.12785      4679304.61725      336812.25915      4679413.35775
UNITS            Feet

```

[COORDINATES]

```

;;Node          X-Coord          Y-Coord
;;-----
Jun-1           336761.914          4679403.058
Jun-2           336759.667          4679373.902
Jun-3           336759.833          4679340.664
Jun-4           336764.879          4679321.772
Jun-5           336768.135          4679311.896
Jun-6           336729.071          4679320.588
Jun-7           336729.283          4679325.634
STM MH#1        336759.38           4679402.07
STM MH#2        336755.64           4679346.77
STM MH#3        336762.75           4679323.85
Out-1           336710.952          4679327.108
Out-2           336711.767          4679320.488
1               336736.544          4679320.512

```

[VERTICES]

```

;;Link          X-Coord          Y-Coord
;;-----
2               336758.948          4679346.68

```

[POLYGONS]

```

;;Subcatchment X-Coord          Y-Coord
;;-----
A1              336712.817          4679348.983
A1              336712.153          4679351.133
A1              336712.412          4679408.415
A1              336807.435          4679401.76
A1              336804.002          4679338.503
A1              336764.243          4679341.205
A1              336755.8           4679346.739
A1              336712.817          4679348.983
A2              336755.801          4679346.748
A2              336764.243          4679341.214
A2              336804.002          4679338.512
A2              336801.544          4679309.56
A2              336777.479          4679311.364
A2              336768.555          4679311.571

```

A2	336762.856	4679312.238
A2	336759.069	4679326.025
A2	336752.827	4679326.348
A2	336716.451	4679328.616
A2	336712.817	4679348.992
A2	336755.801	4679346.748
A3	336759.069	4679326.034
A3	336762.856	4679312.247
A3	336718.879	4679315.276
A3	336716.451	4679328.625
A3	336759.069	4679326.034

[SYMBOLS]

;;Gage	X-Coord	Y-Coord
;;-----	-----	-----

[BACKDROP]

FILE	"C:\Users\GSivakumar\Desktop\6th Concession Road\Site Plan xref.dxf"			
DIMENSIONS	336691.77	4679268.38	336855.42	4679439.57

**OUTPUT REPORT - 5YEAR 4 HOUR CHICAGO STORM - PUMPED OUTFLOW**

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

```

*****
Element Count
*****
Number of rain gages ..... 1
Number of subcatchments ... 3
Number of nodes ..... 13
Number of links ..... 14
Number of pollutants ..... 0
Number of land uses ..... 0
    
```

```

*****
Raingage Summary
*****
Name           Data Source           Data Type           Recording Interval
-----
Raingage1      5-Year-Chicago      INTENSITY          15 min.
    
```

```

*****
Subcatchment Summary
*****
Name           Area           Width           %Imperv           %Slope Rain Gage           Outlet
-----
A1              0.57           98.62           80.00           2.0000 Raingage1           Jun-2
A2              0.22           37.19           80.00           2.0000 Raingage1           Jun-4
A3              0.06           5.79            0.00           5.0000 Raingage1           1
    
```

```

*****
Node Summary
*****
Name           Type           Invert Elev.           Max. Depth           Ponded Area           External Inflow
-----
Jun-1          JUNCTION           190.30           0.49           0.0
Jun-2          JUNCTION           190.04           0.49           0.0
Jun-3          JUNCTION           190.18           0.49           0.0
Jun-4          JUNCTION           189.97           0.49           0.0
Jun-5          JUNCTION           190.10           0.49           0.0
Jun-6          JUNCTION           187.60           2.25           0.0
Jun-7          JUNCTION           187.52           2.50           0.0
STM MH#1       JUNCTION           188.35           1.94           0.0
STM MH#2       JUNCTION           188.17           2.02           0.0
STM MH#3       JUNCTION           188.00           2.05           0.0
Out-1          OUTFALL           189.10           0.00           0.0
Out-2          OUTFALL           189.10           0.40           0.0
1              STORAGE           187.62           2.06           0.0
    
```

```

*****
Link Summary
*****
Name           From Node           To Node           Type           Length           %Slope Roughness
-----
1              Jun-1              Jun-2            CONDUIT           29.3           0.8991           0.0130
2              Jun-3              Jun-2            CONDUIT           33.3           0.4444           0.0130
3              Jun-3              Jun-4            CONDUIT           19.6           1.0939           0.0130
4              Jun-5              Jun-4            CONDUIT           10.4           1.2513           0.0130
5              STM MH#3           1                CONDUIT           11.3           1.0001           0.0153
6              1                  Jun-6            CONDUIT           2.1            1.0097           0.0153
7              Jun-6              Jun-7            CONDUIT           7.7            1.0045           0.0130
8              Jun-6              Out-2            CONDUIT           7.5            0.6000           0.0130
Pipe - (3)     STM MH#1           STM MH#2         CONDUIT           55.4           0.2797           0.0130
Pipe - (4)     STM MH#2           STM MH#3         CONDUIT           24.0           0.2791           0.0130
Pump-1         Jun-7              Out-1            TYPE2 PUMP
Orifice-1      Jun-2              STM MH#1         ORIFICE
Orifice-2      Jun-4              STM MH#3         ORIFICE
Orifice-3      Jun-2              STM MH#2         ORIFICE
    
```

```

*****
Cross Section Summary
*****
Conduit           Shape           Full Depth           Full Area           Hyd. Rad.           Max. Width           No. of Barrels           Full Flow
-----
1              Road-Section           0.48           5.39           0.21           20.00           1           14.11
2              Road-Section           0.48           5.39           0.21           20.00           1           9.92
3              Road-Section           0.48           5.39           0.21           20.00           1           15.57
4              Road-Section           0.48           5.39           0.21           20.00           1           16.65
5              CIRCULAR           0.45           0.16           0.11           0.45           1           0.24
6              CIRCULAR           0.25           0.05           0.06           0.25           1           0.05
7              CIRCULAR           0.25           0.05           0.06           0.25           1           0.06
8              CIRCULAR           0.20           0.03           0.05           0.20           1           0.03
Pipe - (3)     CIRCULAR           0.45           0.16           0.11           0.45           1           0.15
Pipe - (4)     CIRCULAR           0.45           0.16           0.11           0.45           1           0.15
    
```



\*\*\*\*\*  
 Transect Summary  
 \*\*\*\*\*

Transect Road-Section

Area:	0.0005	0.0019	0.0042	0.0074	0.0116
	0.0167	0.0228	0.0297	0.0376	0.0465
	0.0562	0.0669	0.0785	0.0910	0.1045
	0.1192	0.1355	0.1526	0.1702	0.1884
	0.2072	0.2266	0.2465	0.2670	0.2881
	0.3097	0.3320	0.3547	0.3781	0.4020
	0.4265	0.4516	0.4772	0.5034	0.5301
	0.5575	0.5854	0.6139	0.6429	0.6725
	0.7027	0.7335	0.7648	0.7967	0.8291
	0.8622	0.8958	0.9299	0.9647	1.0000
Hrad:	0.0214	0.0429	0.0643	0.0858	0.1072
	0.1287	0.1501	0.1716	0.1930	0.2145
	0.2359	0.2574	0.2788	0.3003	0.3217
	0.3324	0.3605	0.3994	0.4362	0.4712
	0.5042	0.5356	0.5653	0.5935	0.6202
	0.6456	0.6698	0.6927	0.7145	0.7353
	0.7551	0.7739	0.7919	0.8090	0.8253
	0.8409	0.8558	0.8700	0.8836	0.8966
	0.9091	0.9210	0.9324	0.9433	0.9538
	0.9638	0.9734	0.9827	0.9915	1.0000
Width:	0.0261	0.0522	0.0783	0.1044	0.1305
	0.1566	0.1827	0.2088	0.2349	0.2610
	0.2871	0.3132	0.3393	0.3654	0.3915
	0.4386	0.4720	0.4880	0.5040	0.5200
	0.5360	0.5520	0.5680	0.5840	0.6000
	0.6160	0.6320	0.6480	0.6640	0.6800
	0.6960	0.7120	0.7280	0.7440	0.7600
	0.7760	0.7920	0.8080	0.8240	0.8400
	0.8560	0.8720	0.8880	0.9040	0.9200
	0.9360	0.9520	0.9680	0.9840	1.0000

\*\*\*\*\*  
 NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.  
 \*\*\*\*\*

\*\*\*\*\*

Analysis Options

\*\*\*\*\*

Flow Units ..... CMS

Process Models:

Rainfall/Runoff ..... YES  
 RDII ..... NO  
 Snowmelt ..... NO  
 Groundwater ..... NO  
 Flow Routing ..... YES  
 Ponding Allowed ..... YES  
 Water Quality ..... NO  
 Infiltration Method ..... HORTON  
 Flow Routing Method ..... DYNWAVE  
 Surcharge Method ..... EXTRAN  
 Starting Date ..... 09/02/2022 00:00:00  
 Ending Date ..... 09/04/2022 00:00:00  
 Antecedent Dry Days ..... 0.0  
 Report Time Step ..... 00:15:00  
 Wet Time Step ..... 00:01:00  
 Dry Time Step ..... 00:01:00  
 Routing Time Step ..... 0.50 sec  
 Variable Time Step ..... YES  
 Maximum Trials ..... 8  
 Number of Threads ..... 1  
 Head Tolerance ..... 0.001500 m

\*\*\*\*\*

Control Actions Taken

\*\*\*\*\*

	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
*****	-----	-----
Total Precipitation .....	0.042	49.475
Evaporation Loss .....	0.000	0.000
Infiltration Loss .....	0.006	7.171
Surface Runoff .....	0.034	40.465
Final Storage .....	0.002	1.863
Continuity Error (%) .....	-0.049	

	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
*****	-----	-----
Dry Weather Inflow .....	0.000	0.000

```

Wet Weather Inflow ..... 0.034 0.342
Groundwater Inflow ..... 0.000 0.000
RDII Inflow ..... 0.000 0.000
External Inflow ..... 0.000 0.000
External Outflow ..... 0.034 0.342
Flooding Loss ..... 0.000 0.000
Evaporation Loss ..... 0.000 0.000
Exfiltration Loss ..... 0.000 0.000
Initial Stored Volume .... 0.000 0.000
Final Stored Volume ..... 0.000 0.000
Continuity Error (%) ..... 0.080

```

```

*****
Time-Step Critical Elements
*****
None

```

```

*****
Highest Flow Instability Indexes
*****
All links are stable.

```

```

*****
Routing Time Step Summary
*****
Minimum Time Step      : 0.50 sec
Average Time Step      : 0.50 sec
Maximum Time Step      : 0.50 sec
Percent in Steady State : 0.00
Average Iterations per Step : 2.00
Percent Not Converging  : 0.00
Time Step Frequencies  :
  0.500 - 0.500 sec    : 100.00 %
  0.500 - 0.500 sec    : 0.00 %
  0.500 - 0.500 sec    : 0.00 %
  0.500 - 0.500 sec    : 0.00 %
  0.500 - 0.500 sec    : 0.00 %

```

```

*****
Subcatchment Runoff Summary
*****

```

Peak Runoff		Total	Total	Total	Total	Imperv	Perv	Total	Total
Runoff	Coeff	Precip	Runon	Evap	Infil	Runoff	Runoff	Runoff	Runoff
Subcatchment		mm	mm	mm	mm	mm	mm	mm	10^6 ltr
CMS									
A1		49.47	0.00	0.00	5.59	37.60	4.31	41.91	0.24
0.13	0.847								
A2		49.47	0.00	0.00	5.59	37.60	4.31	41.91	0.09
0.05	0.847								
A3		49.47	0.00	0.00	28.73	0.00	20.76	20.76	0.01
0.00	0.420								

```

*****
Node Depth Summary
*****

```

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
Jun-1	JUNCTION	0.00	0.00	190.30	0 00:00	0.00
Jun-2	JUNCTION	0.00	0.07	190.11	0 01:45	0.07
Jun-3	JUNCTION	0.00	0.00	190.18	0 00:00	0.00
Jun-4	JUNCTION	0.00	0.06	190.03	0 01:45	0.06
Jun-5	JUNCTION	0.00	0.00	190.10	0 00:00	0.00
Jun-6	JUNCTION	0.03	0.76	188.35	0 01:52	0.75
Jun-7	JUNCTION	0.02	0.97	188.49	0 01:33	0.76
STM MH#1	JUNCTION	0.01	0.25	188.60	0 01:45	0.24
STM MH#2	JUNCTION	0.01	0.39	188.56	0 01:45	0.38
STM MH#3	JUNCTION	0.01	0.48	188.48	0 01:45	0.47
Out-1	OUTFALL	0.30	0.30	189.40	0 00:00	0.30
Out-2	OUTFALL	0.00	0.00	189.10	0 00:00	0.00
1	STORAGE	0.03	0.82	188.44	0 01:52	0.81

```

*****
Node Inflow Summary
*****

```

Maximum Lateral Inflow	Maximum Total Inflow	Time of Max Occurrence	Lateral Inflow Volume	Total Inflow Volume	Flow Balance Error
------------------------	----------------------	------------------------	-----------------------	---------------------	--------------------

Node	Type	CMS	CMS	days hr:min	10^6 ltr	10^6 ltr	Percent
Jun-1	JUNCTION	0.000	0.000	0 00:00	0	0	0.000 ltr
Jun-2	JUNCTION	0.132	0.132	0 01:45	0.24	0.24	-0.004
Jun-3	JUNCTION	0.000	0.000	0 00:00	0	0	0.000 ltr
Jun-4	JUNCTION	0.050	0.050	0 01:45	0.0904	0.0904	-0.003
Jun-5	JUNCTION	0.000	0.000	0 00:00	0	0	0.000 ltr
Jun-6	JUNCTION	0.000	0.062	0 01:33	0	0.342	0.002
Jun-7	JUNCTION	0.000	0.068	0 01:33	0	0.342	-0.020
STM MH#1	JUNCTION	0.000	0.066	0 01:45	0	0.12	-0.040
STM MH#2	JUNCTION	0.000	0.129	0 01:44	0	0.24	0.486
STM MH#3	JUNCTION	0.000	0.175	0 01:44	0	0.329	-0.079
Out-1	OUTFALL	0.000	0.053	0 01:33	0	0.342	0.000
Out-2	OUTFALL	0.000	0.000	0 00:00	0	0	0.000 ltr
1	STORAGE	0.004	0.175	0 01:44	0.012	0.341	-0.147

TOTAL INFLOW TO POND

\*\*\*\*\*  
Node Surcharge Summary  
\*\*\*\*\*

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
Jun-7	JUNCTION	1.61	0.719	1.531

\*\*\*\*\*  
Node Flooding Summary  
\*\*\*\*\*

No nodes were flooded.

\*\*\*\*\*  
Storage Volume Summary  
\*\*\*\*\*

Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
1	0.004	1	0	0	0.153	33	0 01:52	0.062

REQUIRED STORAGE

\*\*\*\*\*  
Outfall Loading Summary  
\*\*\*\*\*

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
Out-1	18.59	0.011	0.053	0.342
Out-2	0.00	0.000	0.000	0.000
System	9.30	0.011	0.053	0.342

\*\*\*\*\*  
Link Flow Summary  
\*\*\*\*\*

Link	Type	Maximum  Flow  CMS	Time of Max Occurrence days hr:min	Maximum  Veloc  m/sec	Max/ Full Flow	Max/ Full Depth
1	CHANNEL	0.000	0 00:00	0.00	0.00	0.08
2	CHANNEL	0.000	0 00:00	0.00	0.00	0.08
3	CHANNEL	0.000	0 00:00	0.00	0.00	0.06
4	CHANNEL	0.000	0 00:00	0.00	0.00	0.06
5	CONDUIT	0.172	0 01:43	1.33	0.71	1.00
6	CONDUIT	0.062	0 01:33	1.25	1.21	1.00
7	CONDUIT	0.068	0 01:33	1.60	1.13	1.00
8	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
Pipe - (3)	CONDUIT	0.064	0 01:44	0.64	0.42	0.68
Pipe - (4)	CONDUIT	0.125	0 01:44	1.04	0.83	0.86
Pump-1	PUMP	0.053	0 01:33		1.00	
Orifice-1	ORIFICE	0.066	0 01:45			
Orifice-2	ORIFICE	0.050	0 01:45			
Orifice-3	ORIFICE	0.066	0 01:45			

\*\*\*\*\*  
Flow Classification Summary  
\*\*\*\*\*

Adjusted ----- Fraction of Time in Flow Class -----


Conduit	/Actual Length	Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
1	1.00	0.63	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1.00	0.63	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	1.00	0.66	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.00	0.66	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	1.00	0.02	0.00	0.00	0.03	0.00	0.00	0.96	0.00	0.00
6	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.44	0.00
7	1.00	0.02	0.00	0.00	0.67	0.32	0.00	0.00	0.40	0.00
8	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pipe - (3)	1.00	0.02	0.00	0.00	0.05	0.00	0.00	0.93	0.02	0.00
Pipe - (4)	1.00	0.02	0.00	0.00	0.02	0.00	0.00	0.96	0.00	0.00

\*\*\*\*\*  
 Conduit Surcharge Summary  
 \*\*\*\*\*

Conduit	----- Both Ends	Hours Full Upstream	----- Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
5	0.07	0.07	0.54	0.01	0.02
6	1.49	1.56	1.51	1.40	1.37
7	1.51	1.51	1.61	0.01	0.01

\*\*\*\*\*  
 Pumping Summary  
 \*\*\*\*\*

Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve Low	High
Pump-1	18.59	1	0.00	0.01	0.05	0.341	1.32	0.0	0.0

 PUMP OUTFLOW

Analysis begun on: Wed Sep 7 09:19:36 2022  
 Analysis ended on: Wed Sep 7 09:19:39 2022  
 Total elapsed time: 00:00:03

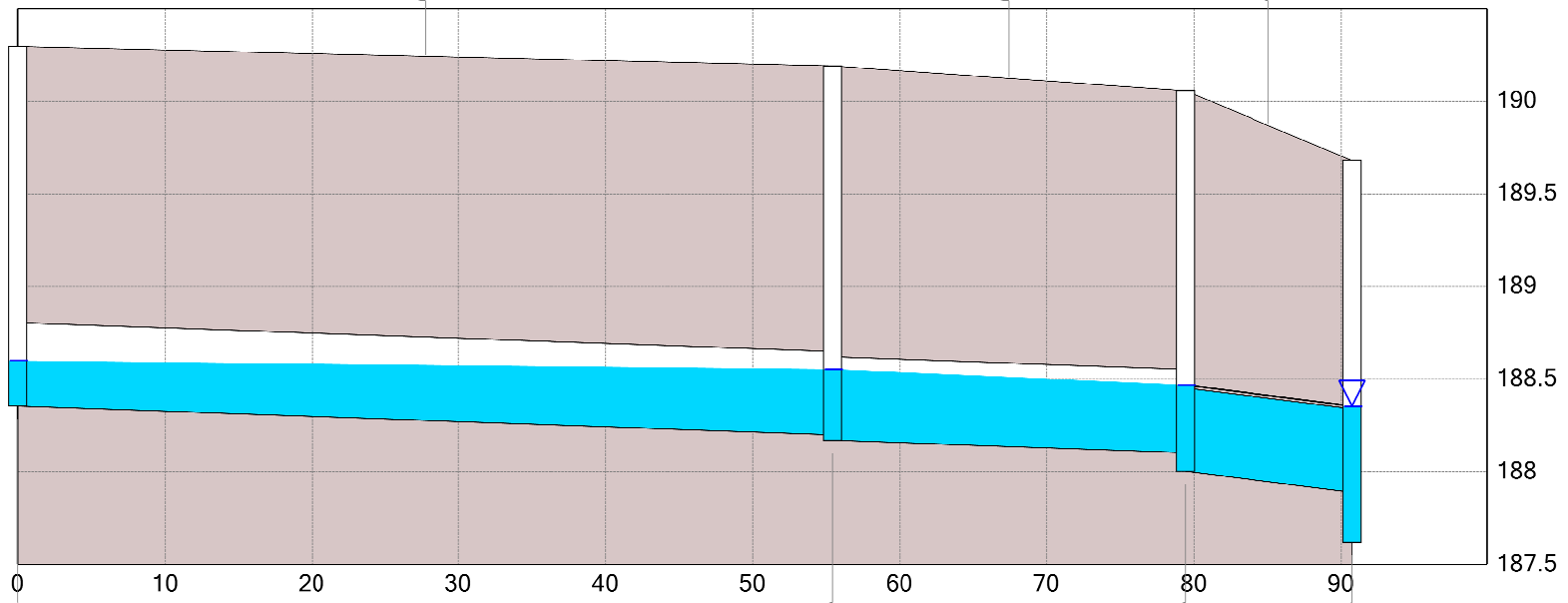
HGL

Time: 9/2/2022 1:45:00 AM

Conduit Pipe - (3)  
Flow = 0.064 m<sup>3</sup>/s  
Length = 55.42 m  
Depth = 0.45 m  
Velocity = 0.567 m/s  
Slope = 0.0028 m/m  
Invert1 = 188.355 m  
Invert2 = 188.2 m

Conduit Pipe - (4)  
Flow = 0.124 m<sup>3</sup>/s  
Length = 24.003 m  
Depth = 0.45 m  
Velocity = 0.875 m/s  
Slope = 0.00279 m/m  
Invert1 = 188.17 m  
Invert2 = 188.103 m

Conduit 5  
Flow = 0.171 m<sup>3</sup>/s  
Length = 11.3 m  
Depth = 0.45 m  
Velocity = 1.076 m/s  
Slope = 0.01 m/m  
Invert1 = 188.003 m  
Invert2 = 187.89 m



Junction STM MH#1  
CWSEL = 188.5995 m  
Max. CWSEL = 188.5995 m  
Rim Elev. = 190.295 m  
Invert Elev. = 188.355 m

Junction STM MH#2  
CWSEL = 188.5543 m  
Max. CWSEL = 188.5543 m  
Rim Elev. = 190.19 m  
Invert Elev. = 188.17 m

Junction STM MH#3  
CWSEL = 188.4693 m  
Max. CWSEL = 188.4693 m  
Rim Elev. = 190.057 m  
Invert Elev. = 188.003 m

Storage 1  
CWSEL = 188.3543 m  
Max. CWSEL = 188.3543 m  
Rim Elev. = 189.68 m  
Invert Elev. = 187.62 m

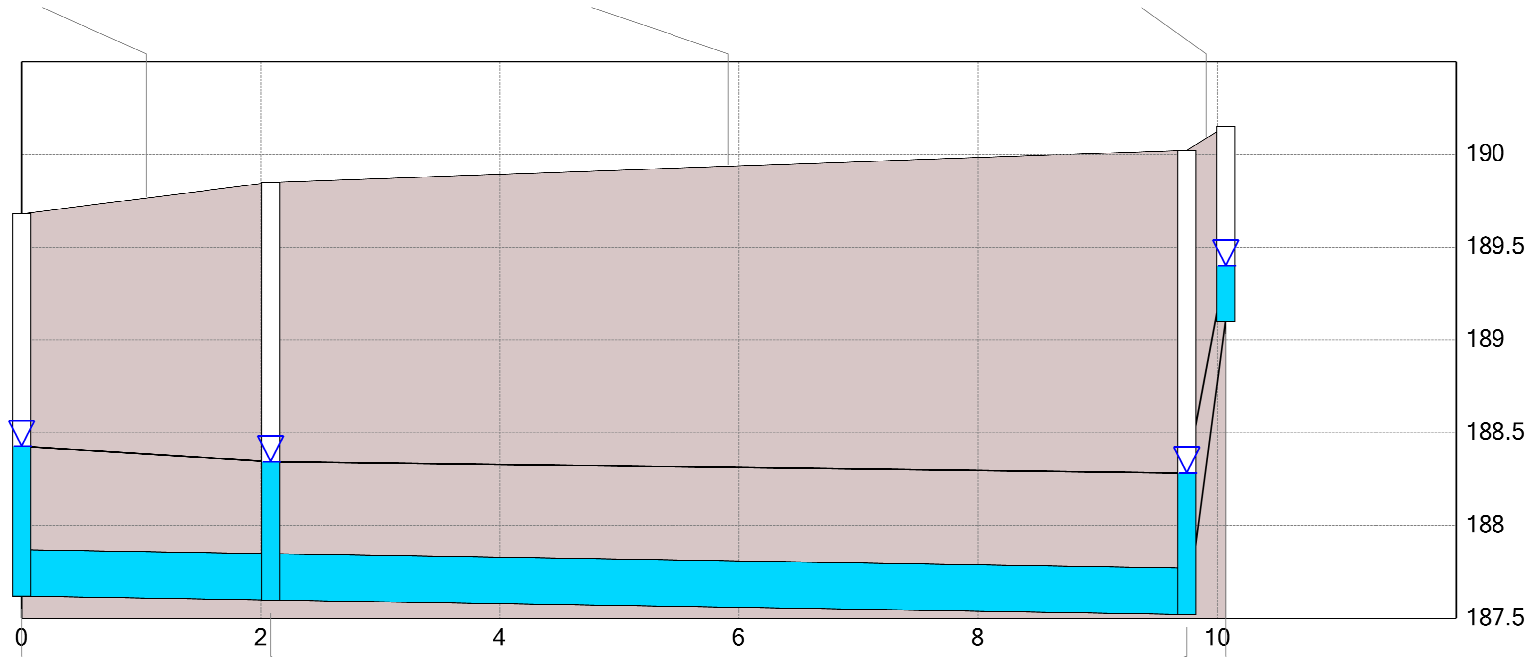
— HGL

Time: 9/2/2022 2:00:00 AM

Conduit 6  
Flow = 0.053 m<sup>3</sup>/s  
Length = 2.08 m  
Depth = 0.25 m  
Velocity = 1.079 m/s  
Slope = 0.0101 m/m  
Invert1 = 187.62 m  
Invert2 = 187.599 m

Conduit 7  
Flow = 0.053 m<sup>3</sup>/s  
Length = 7.666 m  
Depth = 0.25 m  
Velocity = 1.08 m/s  
Slope = 0.01 m/m  
Invert1 = 187.599 m  
Invert2 = 187.522 m

Pump Pump-1  
Flow = 0.053 m<sup>3</sup>/s  
  
Velocity = 0 m/s



Storage 1  
CWSEL = 188.4272 m  
Max. CWSEL = 188.4272 m  
Rim Elev. = 189.68 m  
Invert Elev. = 187.62 m

Junction Jun-6  
CWSEL = 188.345 m  
Max. CWSEL = 188.345 m  
Rim Elev. = 189.849 m  
Invert Elev. = 187.599 m

Junction Jun-7  
CWSEL = 188.2842 m  
Max. CWSEL = 188.2842 m  
Rim Elev. = 190.022 m  
Invert Elev. = 187.522 m

Outfall Out-1  
CWSEL = 189.4 m  
Max. CWSEL = 189.4 m  
Rim Elev. = 190.151 m  
Invert Elev. = 189.1 m

**OUTPUT REPORT - 100YEAR 4 HOUR CHICAGO STORM - PUMPED OUTFLOW**

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.015)

```

*****
Element Count
*****
Number of rain gages ..... 1
Number of subcatchments ... 3
Number of nodes ..... 13
Number of links ..... 14
Number of pollutants ..... 0
Number of land uses ..... 0
    
```

```

*****
Raingage Summary
*****
Name           Data Source           Data      Recording
                Type                Type      Interval
-----
Raingage1      100-YearChicago-Storm  INTENSITY  15 min.
    
```

```

*****
Subcatchment Summary
*****
Name           Area      Width  %Imperv  %Slope Rain Gage      Outlet
-----
A1             0.57     98.62   80.00   2.0000 Raingage1      Jun-2
A2             0.22     37.19   80.00   2.0000 Raingage1      Jun-4
A3             0.06      5.79    0.00    5.0000 Raingage1       1
    
```

```

*****
Node Summary
*****
Name           Type           Invert    Max.      Poned     External
                Elev.         Depth     Area     Inflow
-----
Jun-1          JUNCTION      190.30    0.49     0.0
Jun-2          JUNCTION      190.04    0.49     0.0
Jun-3          JUNCTION      190.18    0.49     0.0
Jun-4          JUNCTION      189.97    0.49     0.0
Jun-5          JUNCTION      190.10    0.49     0.0
Jun-6          JUNCTION      187.60    2.25     0.0
Jun-7          JUNCTION      187.52    2.50     0.0
STM MH#1       JUNCTION      188.35    1.94     0.0
STM MH#2       JUNCTION      188.17    2.02     0.0
STM MH#3       JUNCTION      188.00    2.05     0.0
Out-1          OUTFALL       189.10    0.00     0.0
Out-2          OUTFALL       189.10    0.40     0.0
1              STORAGE       187.62    2.06     0.0
    
```

```

*****
Link Summary
*****
Name           From Node      To Node      Type           Length  %Slope Roughness
-----
1              Jun-1          Jun-2        CONDUIT         29.3   0.8991  0.0130
2              Jun-3          Jun-2        CONDUIT         33.3   0.4444  0.0130
3              Jun-3          Jun-4        CONDUIT         19.6   1.0939  0.0130
4              Jun-5          Jun-4        CONDUIT         10.4   1.2513  0.0130
5              STM MH#3       1            CONDUIT         11.3   1.0001  0.0153
6              1              Jun-6        CONDUIT          2.1   1.0097  0.0153
7              Jun-6          Jun-7        CONDUIT          7.7   1.0045  0.0130
8              Jun-6          Out-2        CONDUIT          7.5   0.6000  0.0130
Pipe - (3)     STM MH#1       STM MH#2     CONDUIT         55.4   0.2797  0.0130
Pipe - (4)     STM MH#2       STM MH#3     CONDUIT         24.0   0.2791  0.0130
Pump-1         Jun-7          Out-1        TYPE2 PUMP
Orifice-1      Jun-2          STM MH#1     ORIFICE
Orifice-2      Jun-4          STM MH#3     ORIFICE
Orifice-3      Jun-2          STM MH#2     ORIFICE
    
```

```

*****
Cross Section Summary
*****
Conduit        Shape           Full      Full      Hyd.      Max.      No. of      Full
                Depth          Area      Rad.      Width    Barrels   Flow
-----
1              Road-Section   0.48     5.39     0.21     20.00     1      14.11
2              Road-Section   0.48     5.39     0.21     20.00     1       9.92
3              Road-Section   0.48     5.39     0.21     20.00     1     15.57
4              Road-Section   0.48     5.39     0.21     20.00     1     16.65
5              CIRCULAR       0.45     0.16     0.11     0.45     1       0.24
6              CIRCULAR       0.25     0.05     0.06     0.25     1       0.05
7              CIRCULAR       0.25     0.05     0.06     0.25     1       0.06
8              CIRCULAR       0.20     0.03     0.05     0.20     1       0.03
Pipe - (3)     CIRCULAR       0.45     0.16     0.11     0.45     1       0.15
Pipe - (4)     CIRCULAR       0.45     0.16     0.11     0.45     1       0.15
    
```

\*\*\*\*\*  
 Transect Summary  
 \*\*\*\*\*

Transect Road-Section

Area:	0.0005	0.0019	0.0042	0.0074	0.0116
	0.0167	0.0228	0.0297	0.0376	0.0465
	0.0562	0.0669	0.0785	0.0910	0.1045
	0.1192	0.1355	0.1526	0.1702	0.1884
	0.2072	0.2266	0.2465	0.2670	0.2881
	0.3097	0.3320	0.3547	0.3781	0.4020
	0.4265	0.4516	0.4772	0.5034	0.5301
	0.5575	0.5854	0.6139	0.6429	0.6725
	0.7027	0.7335	0.7648	0.7967	0.8291
	0.8622	0.8958	0.9299	0.9647	1.0000
Hrad:	0.0214	0.0429	0.0643	0.0858	0.1072
	0.1287	0.1501	0.1716	0.1930	0.2145
	0.2359	0.2574	0.2788	0.3003	0.3217
	0.3324	0.3605	0.3994	0.4362	0.4712
	0.5042	0.5356	0.5653	0.5935	0.6202
	0.6456	0.6698	0.6927	0.7145	0.7353
	0.7551	0.7739	0.7919	0.8090	0.8253
	0.8409	0.8558	0.8700	0.8836	0.8966
	0.9091	0.9210	0.9324	0.9433	0.9538
	0.9638	0.9734	0.9827	0.9915	1.0000
Width:	0.0261	0.0522	0.0783	0.1044	0.1305
	0.1566	0.1827	0.2088	0.2349	0.2610
	0.2871	0.3132	0.3393	0.3654	0.3915
	0.4386	0.4720	0.4880	0.5040	0.5200
	0.5360	0.5520	0.5680	0.5840	0.6000
	0.6160	0.6320	0.6480	0.6640	0.6800
	0.6960	0.7120	0.7280	0.7440	0.7600
	0.7760	0.7920	0.8080	0.8240	0.8400
	0.8560	0.8720	0.8880	0.9040	0.9200
	0.9360	0.9520	0.9680	0.9840	1.0000

\*\*\*\*\*  
 NOTE: The summary statistics displayed in this report are based on results found at every computational time step, not just on results from each reporting time step.  
 \*\*\*\*\*

\*\*\*\*\*

Analysis Options

\*\*\*\*\*

Flow Units ..... CMS  
 Process Models:  
 Rainfall/Runoff ..... YES  
 RDII ..... NO  
 Snowmelt ..... NO  
 Groundwater ..... NO  
 Flow Routing ..... YES  
 Ponding Allowed ..... YES  
 Water Quality ..... NO  
 Infiltration Method ..... HORTON  
 Flow Routing Method ..... DYNWAVE  
 Surcharge Method ..... EXTRAN  
 Starting Date ..... 09/02/2022 00:00:00  
 Ending Date ..... 09/04/2022 00:00:00  
 Antecedent Dry Days ..... 0.0  
 Report Time Step ..... 00:15:00  
 Wet Time Step ..... 00:01:00  
 Dry Time Step ..... 00:01:00  
 Routing Time Step ..... 0.50 sec  
 Variable Time Step ..... YES  
 Maximum Trials ..... 8  
 Number of Threads ..... 1  
 Head Tolerance ..... 0.001500 m

\*\*\*\*\*

Control Actions Taken

\*\*\*\*\*

	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
*****	-----	-----
Total Precipitation .....	0.069	81.588
Evaporation Loss .....	0.000	0.000
Infiltration Loss .....	0.006	7.206
Surface Runoff .....	0.061	72.565
Final Storage .....	0.002	1.863
Continuity Error (%) .....	-0.057	

	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
*****	-----	-----
Dry Weather Inflow .....	0.000	0.000



```

Wet Weather Inflow ..... 0.061 0.614
Groundwater Inflow ..... 0.000 0.000
RDII Inflow ..... 0.000 0.000
External Inflow ..... 0.000 0.000
External Outflow ..... 0.061 0.614
Flooding Loss ..... 0.000 0.000
Evaporation Loss ..... 0.000 0.000
Exfiltration Loss ..... 0.000 0.000
Initial Stored Volume .... 0.000 0.000
Final Stored Volume ..... 0.000 0.000
Continuity Error (%) ..... 0.000

```

```

*****
Time-Step Critical Elements
*****
None

```

```

*****
Highest Flow Instability Indexes
*****
All links are stable.

```

```

*****
Routing Time Step Summary
*****
Minimum Time Step      : 0.50 sec
Average Time Step      : 0.50 sec
Maximum Time Step      : 0.50 sec
Percent in Steady State : 0.00
Average Iterations per Step : 2.00
Percent Not Converging  : 0.00
Time Step Frequencies  :
  0.500 - 0.500 sec    : 100.00 %
  0.500 - 0.500 sec    : 0.00 %
  0.500 - 0.500 sec    : 0.00 %
  0.500 - 0.500 sec    : 0.00 %
  0.500 - 0.500 sec    : 0.00 %

```

```

*****
Subcatchment Runoff Summary
*****

```

Peak Runoff		Total	Total	Total	Total	Imperv	Perv	Total	Total
Runoff	Coeff	Precip	Runon	Evap	Infil	Runoff	Runoff	Runoff	Runoff
Subcatchment		mm	mm	mm	mm	mm	mm	mm	10^6 ltr
CMS									
A1	0.23	81.59	0.00	0.00	5.61	63.31	10.72	74.03	0.42
A2	0.09	81.59	0.00	0.00	5.61	63.31	10.72	74.03	0.16
A3	0.01	81.59	0.00	0.00	28.91	0.00	52.70	52.70	0.03

```

*****
Node Depth Summary
*****

```

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
Jun-1	JUNCTION	0.00	0.00	190.30	0 00:00	0.00
Jun-2	JUNCTION	0.00	0.11	190.14	0 01:45	0.11
Jun-3	JUNCTION	0.00	0.00	190.18	0 00:00	0.00
Jun-4	JUNCTION	0.00	0.09	190.06	0 01:45	0.09
Jun-5	JUNCTION	0.00	0.00	190.10	0 00:00	0.00
Jun-6	JUNCTION	0.06	1.37	188.97	0 02:04	1.36
Jun-7	JUNCTION	0.07	1.38	188.91	0 02:04	1.37
STM MH#1	JUNCTION	0.03	1.20	189.56	0 01:45	1.20
STM MH#2	JUNCTION	0.04	1.27	189.44	0 01:45	1.27
STM MH#3	JUNCTION	0.04	1.19	189.20	0 01:45	1.18
Out-1	OUTFALL	0.60	0.60	189.70	0 00:00	0.60
Out-2	OUTFALL	0.00	0.00	189.10	0 00:00	0.00
1	STORAGE	0.07	1.43	189.05	0 02:04	1.42

```

*****
Node Inflow Summary
*****

```

Maximum Lateral Inflow	Maximum Total Inflow	Time of Max Occurrence	Lateral Inflow Volume	Total Inflow Volume	Flow Balance Error
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Node	Type	CMS	CMS	days hr:min	10^6 ltr	10^6 ltr	Percent
Jun-1	JUNCTION	0.000	0.000	0 00:00	0	0	0.000 ltr
Jun-2	JUNCTION	0.226	0.226	0 01:45	0.423	0.423	-0.002
Jun-3	JUNCTION	0.000	0.000	0 00:00	0	0	0.000 ltr
Jun-4	JUNCTION	0.085	0.085	0 01:45	0.16	0.16	-0.002
Jun-5	JUNCTION	0.000	0.000	0 00:00	0	0	0.000 ltr
Jun-6	JUNCTION	0.000	0.062	0 01:22	0	0.614	0.001
Jun-7	JUNCTION	0.000	0.067	0 01:22	0	0.614	-0.011
STM MH#1	JUNCTION	0.000	0.113	0 01:45	0	0.212	-0.004
STM MH#2	JUNCTION	0.000	0.225	0 01:45	0	0.423	0.279
STM MH#3	JUNCTION	0.000	0.310	0 01:45	0	0.582	-0.062
Out-1	OUTFALL	0.000	0.053	0 01:22	0	0.614	0.000
Out-2	OUTFALL	0.000	0.000	0 00:00	0	0	0.000 ltr
1	STORAGE	0.015	0.324	0 01:45	0.0305	0.613	-0.124

**TOTAL INFLOW TO POND**

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Node Surcharge Summary  
\*\*\*\*\*

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
Jun-7	JUNCTION	3.26	1.134	1.116
STM MH#1	JUNCTION	0.99	0.631	0.739
STM MH#2	JUNCTION	1.43	0.705	0.745
STM MH#3	JUNCTION	1.77	0.623	0.861

\*\*\*\*\*  
Node Flooding Summary  
\*\*\*\*\*

No nodes were flooded.

\*\*\*\*\*  
Storage Volume Summary  
\*\*\*\*\*

Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
1	0.014	3	0	0	0.319	70	0 02:04	0.062

**REQUIRED STORAGE**

\*\*\*\*\*  
Outfall Loading Summary  
\*\*\*\*\*

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
Out-1	19.71	0.018	0.053	0.614
Out-2	0.00	0.000	0.000	0.000
System	9.85	0.018	0.053	0.614

\*\*\*\*\*  
Link Flow Summary  
\*\*\*\*\*

Link	Type	Maximum  Flow  CMS	Time of Max Occurrence days hr:min	Maximum  Veloc  m/sec	Max/ Full Flow	Max/ Full Depth
1	CHANNEL	0.000	0 00:00	0.00	0.00	0.11
2	CHANNEL	0.000	0 00:00	0.00	0.00	0.11
3	CHANNEL	0.000	0 00:00	0.00	0.00	0.09
4	CHANNEL	0.000	0 00:00	0.00	0.00	0.09
5	CONDUIT	0.309	0 01:45	1.95	1.28	1.00
6	CONDUIT	0.062	0 01:22	1.25	1.21	1.00
7	CONDUIT	0.067	0 01:22	1.59	1.13	1.00
8	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
Pipe - (3)	CONDUIT	0.112	0 01:45	0.71	0.75	1.00
Pipe - (4)	CONDUIT	0.225	0 01:45	1.41	1.49	1.00
Pump-1	PUMP	0.053	0 01:22		1.00	
Orifice-1	ORIFICE	0.113	0 01:45			
Orifice-2	ORIFICE	0.085	0 01:45			
Orifice-3	ORIFICE	0.113	0 01:45			

\*\*\*\*\*  
Flow Classification Summary  
\*\*\*\*\*

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class								
		Up Dry	Down Dry	Sub Dry	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl	
1	1.00	0.62	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1.00	0.62	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	1.00	0.66	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1.00	0.66	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	1.00	0.01	0.00	0.00	0.06	0.00	0.00	0.93	0.00	0.00
6	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00
7	1.00	0.01	0.00	0.00	0.86	0.13	0.00	0.00	0.77	0.00
8	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pipe - (3)	1.00	0.01	0.00	0.00	0.07	0.00	0.00	0.92	0.02	0.00
Pipe - (4)	1.00	0.01	0.00	0.00	0.05	0.00	0.00	0.93	0.00	0.00

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Conduit Surge Summary  
\*\*\*\*\*

Conduit	Hours Full			Hours	Hours
	Both Ends	Upstream	Dnstream	Above Full Normal Flow	Capacity Limited
5	2.00	2.06	2.21	0.19	0.17
6	3.09	3.15	3.12	2.99	2.97
7	3.12	3.12	3.26	0.01	0.01
Pipe - (3)	1.29	1.29	1.64	0.01	0.01
Pipe - (4)	1.69	1.71	1.82	0.22	0.20

\*\*\*\*\*  
Pumping Summary  
\*\*\*\*\*

Pump	Percent Utilized	Number of Start-Ups	Min	Avg	Max	Total	Power Usage Kw-hr	% Time Off Pump Curve	
			Flow CMS	Flow CMS	Flow CMS	Volume 10^6 ltr		Low	High
Pump-1	19.71	1	0.00	0.02	0.05	0.613	2.16	0.0	0.0

Analysis begun on: Wed Sep 7 10:00:17 2022  
Analysis ended on: Wed Sep 7 10:00:19 2022  
Total elapsed time: 00:00:02

← PUMP OUTFLOW

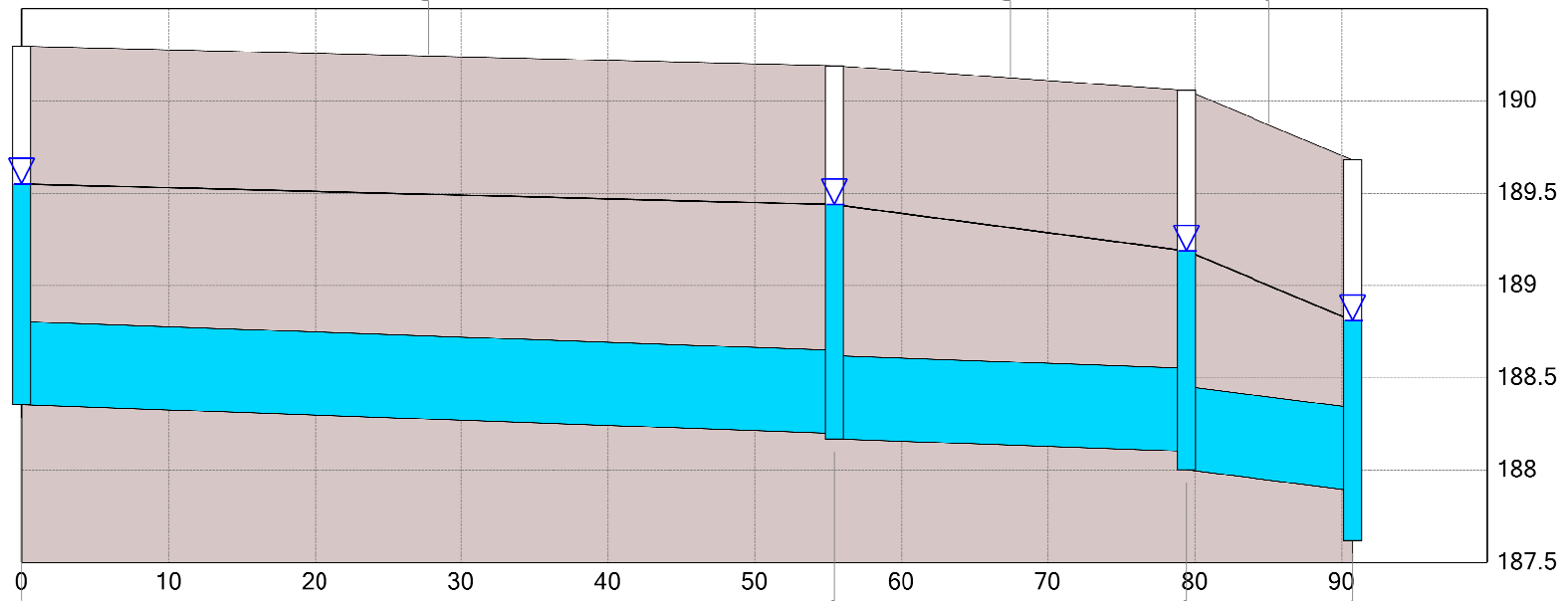
HGL

Time: 9/2/2022 1:45:00 AM

Conduit Pipe - (3)  
Flow = 0.112 m<sup>3</sup>/s  
Length = 55.42 m  
Depth = 0.45 m  
Velocity = 0.706 m/s  
Slope = 0.0028 m/m  
Invert1 = 188.355 m  
Invert2 = 188.2 m

Conduit Pipe - (4)  
Flow = 0.225 m<sup>3</sup>/s  
Length = 24.003 m  
Depth = 0.45 m  
Velocity = 1.413 m/s  
Slope = 0.00279 m/m  
Invert1 = 188.17 m  
Invert2 = 188.103 m

Conduit 5  
Flow = 0.309 m<sup>3</sup>/s  
Length = 11.3 m  
Depth = 0.45 m  
Velocity = 1.945 m/s  
Slope = 0.01 m/m  
Invert1 = 188.003 m  
Invert2 = 187.89 m



Junction STM MH#1  
CWSEL = 189.5501 m  
Max. CWSEL = 189.5501 m  
Rim Elev. = 190.295 m  
Invert Elev. = 188.355 m

Junction STM MH#2  
CWSEL = 189.4385 m  
Max. CWSEL = 189.4385 m  
Rim Elev. = 190.19 m  
Invert Elev. = 188.17 m

Junction STM MH#3  
CWSEL = 189.1876 m  
Max. CWSEL = 189.1876 m  
Rim Elev. = 190.057 m  
Invert Elev. = 188.003 m

Storage 1  
CWSEL = 188.8103 m  
Max. CWSEL = 188.8103 m  
Rim Elev. = 189.68 m  
Invert Elev. = 187.62 m