
Appendix A: Intensity-Duration Frequency (IDF) Curve

Active coordinate

42° 58' 45" N, 79° 22' 14" W (42.979167,-79.370833)

Retrieved: Mon, 19 Sep 2022 06:13:48 GMT



Location summary

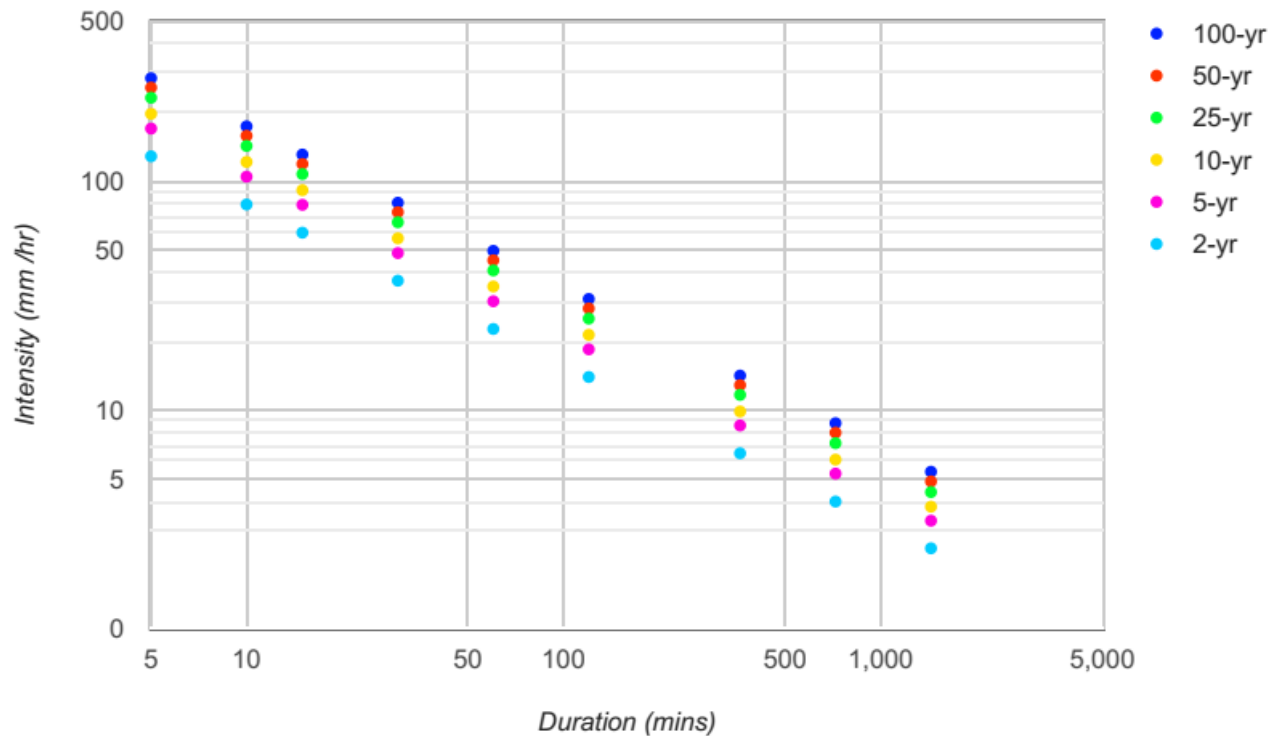
These are the locations in the selection.

IDF Curve: 42° 58' 45" N, 79° 22' 14" W (42.979167,-79.370833)

Results

An IDF curve was found.

Coordinate: 42.979167, -79.370833
IDF curve year: 2010



Coefficient summary**IDF Curve:** 42° 58' 45" N, 79° 22' 14" W (42.979167,-79.370833)

Retrieved: Mon, 19 Sep 2022 06:13:48 GMT

Data year: 2010**IDF curve year:** 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	22.7	30.0	34.8	40.9	45.3	49.8
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics**Rainfall intensity (mm hr⁻¹)**

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	128.9	79.4	59.8	36.9	22.7	14.0	6.5	4.0	2.5
5-yr	170.4	105.0	79.1	48.7	30.0	18.5	8.6	5.3	3.3
10-yr	197.7	121.8	91.7	56.5	34.8	21.4	9.9	6.1	3.8
25-yr	232.3	143.1	107.8	66.4	40.9	25.2	11.7	7.2	4.4
50-yr	257.3	158.5	119.4	73.5	45.3	27.9	12.9	8.0	4.9
100-yr	282.9	174.2	131.2	80.8	49.8	30.7	14.2	8.8	5.4

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	10.7	13.2	15.0	18.4	22.7	28.0	38.9	48.0	59.1
5-yr	14.2	17.5	19.8	24.4	30.0	37.0	51.4	63.4	78.1
10-yr	16.5	20.3	22.9	28.2	34.8	42.9	59.7	73.5	90.6
25-yr	19.4	23.9	26.9	33.2	40.9	50.4	70.1	86.4	106.5
50-yr	21.4	26.4	29.8	36.8	45.3	55.8	77.7	95.7	117.9
100-yr	23.6	29.0	32.8	40.4	49.8	61.4	85.4	105.2	129.6

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Last Modified: September 2016

Appendix B: Field Survey

Topographic Data Collections

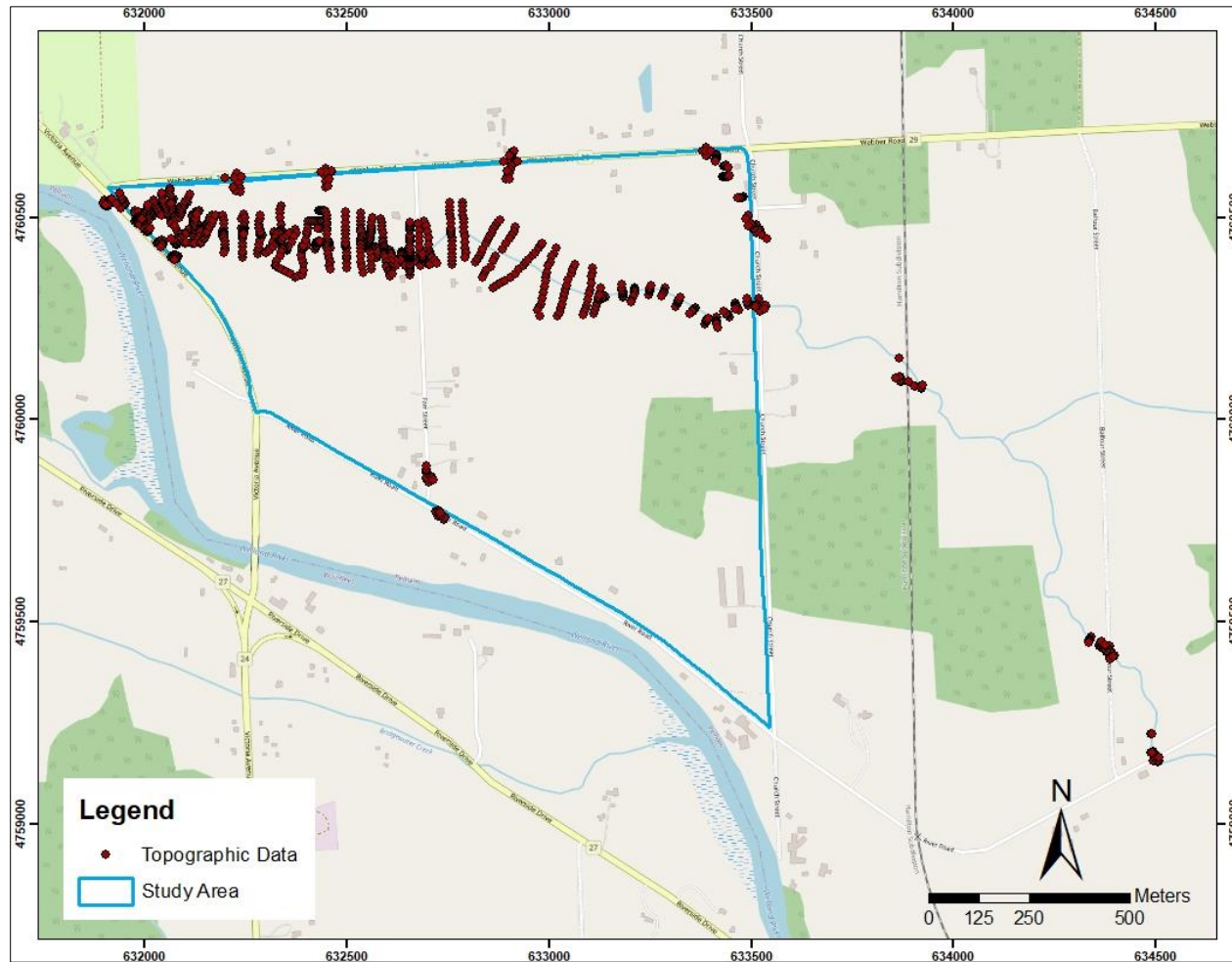


Figure B1: Collection of topographic data

Hydraulic Structure Survey

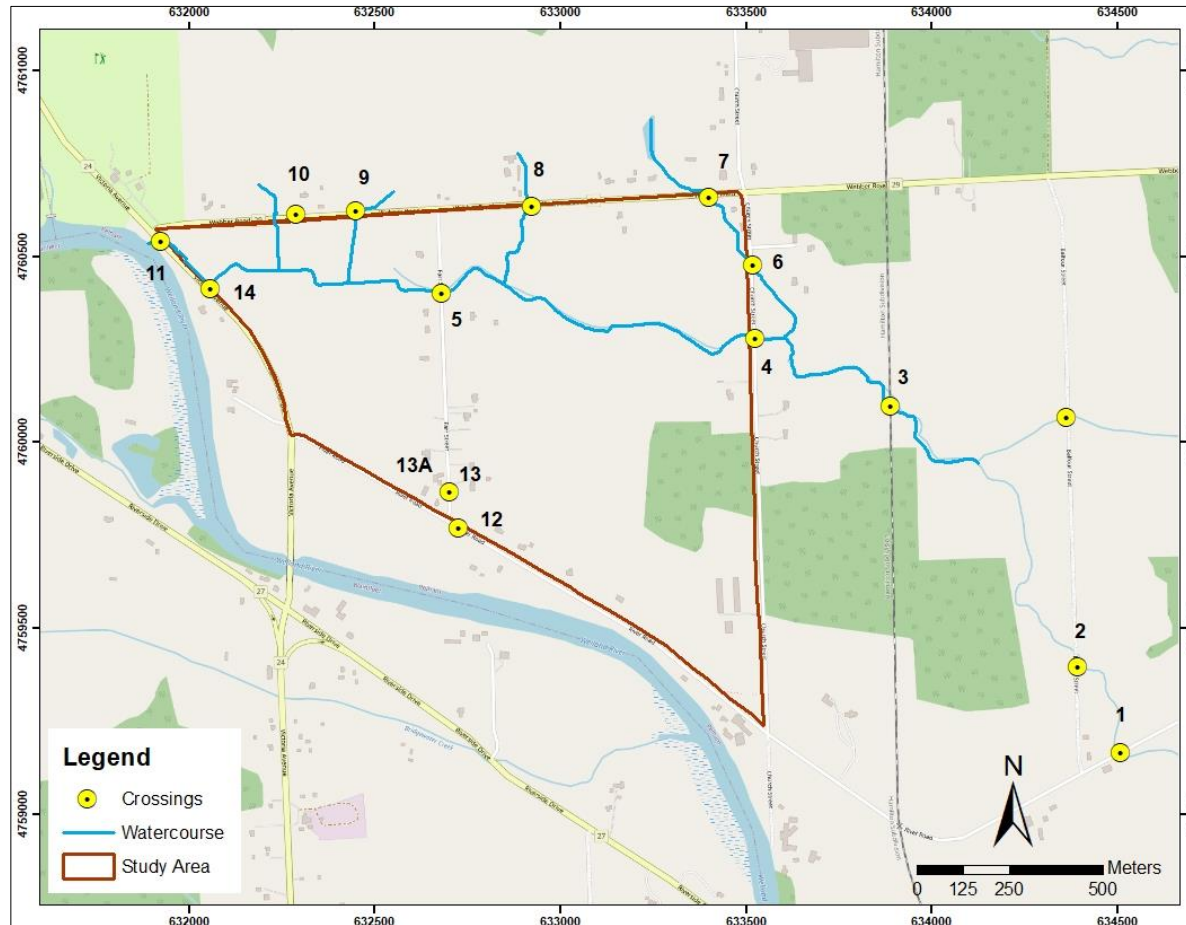


Figure B2: Locations of Crossings within the Study Area

Table B-1: Specifications of the Hydraulic Structures

Culvert no.	Road	Culvert Type	Shape	Measurements		
				Width (m)	Height (m)	Dia (m)
1	River Road	Box Culvert	Rectangular	2.45	2.2	
2	Balfour St.	2*CSP	Circular			2.1
3	Railway	1*CSP	Circular			1.25
4	Church St	1*CSP	Elliptical	1.15	0.8	
5	Farr St	1*CSP	Circular			0.6
6	Church St 2	1* Plastic Blade Culvert (new)	Circular			0.6
7	Webber#1	1*CSP	Circular			1.4
8	Webber#2	1*CSP	Circular			1.15
9	Webber#3	1*CSP	Circular			0.9
10	Webber#4	1*CSP	Circular			0.7
11	Victoria- Webber	1*CSP	Circular			0.5~0.9
12	River Road 2	1*CSP	Circular			0.45
13	Farr St 2	1*CSP	Circular			0.65
13A	Farr Rd-Ditch	1*CSP	Circular			0.45
14	Victoria Avenue Properties	1*CSP	Circular			0.6

Appendix C: Hydrological Model Parameters and SWMHYMO ID

*Table C1: Hydrological Model Parameters for 2-,5-,25- and 100-year Return Period Storm
Events*

Subbasin	Time to Peak (hr)	Area (hector)	Channel Slope (%)	CN Value	Initial Abstraction (mm)
SB01_1	0.869	17.36	0.42	70	7.44
SB01_2	0.701	15.56	0.1	80	7.00
SB02_1	1.444	27.50	0.66	68	7.12
SB02_2	0.461	4.75	0.1	82	7.00
SB03_1	0.212	1.14	0.1	82	7.75
SB03_2	0.621	10.92	0.1	69	8.32
SB04	0.786	19.72	0.1	70	8.51
SB05_1	0.575	29.50	0.1	68	7.16
SB05_2	1.306	10.39	0.02	70	7.35
SB05_3	1.159	8.51	0.02	65	9.23
SB06	1.350	21.20	0.105	71	7.92
SB07	1.737	11.36	0.105	68	7.15
SB08	0.499	8.98	0.5	80	6.75
SB09	0.568	14.34	0.1	73	8.38
SB10	0.729	11.38	0.48	72	8.97
SB11	0.083	14.81	0.1	78	7.60
SB12	0.459	6.02	0.1	78	7.35
SB13	0.117	0.07	0.1	78	7.35
SB14	0.607	15.85	0.1	78	7.34
SB15	0.543	7.95	0.75	78	7.35
SB16	1.297	16.71	0.61	78	7.35





Appendix D: SWMHYMO Input Files

2-year Return Period Storm Event

```

2      Metric units
*#*****
*# Project Name: [Pelham]      Project Number: [ 6HH ]
*# Date       : December 27, 2022
*# Modeller   : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng. ]
*# Company    : [ AHYDTECH Geomorphics Ltd., 22 Zecca Drive, Guelph, ON, N1L1T1]
*# License #   : 3556411
*#*****
START      TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
*%
*% [ ] <--storm filename, one per line for NSTORM time
*%-----|-----
*#*****
*#***** EXISTING CONDITION *****
*#***** 2-YEAR SCS 24 Hour Storm*****
*#*****
READ STORM      STORM_FILENAME=["2SCSToP.STM"]
*%-----|-----
*%-----|-----SB01-1-----|
CALIB NASHYD      ID=[1], NHYD=["SB01-1"], DT=[5]min, AREA=[17.36] (ha),
                  DWF=[0] (cms), CN/C=[70], IA=[7.44] (mm),
                  N=[3], TP=[0.869]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH_SB1-2-----|
ROUTE CHANNEL      IDout=[2], NHYD=["CH_SB1-2"], IDin=[1],
                  RDT=[5] (min),
                  CHLGTH=[286.85] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[1.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.3 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[0,177.19]
                  [6.3,175.95]
                  [7.8,175.82]
                  [9.8,175.8]
                  [11.2,176.3]
                  [15.8,177.11]
*-----|-----SB01-2-----|
CALIB STANDHYD      ID=[3], NHYD=["SB01-2"], DT=[1] (min), AREA=[15.56] (ha),
                  XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
                  SCS curve number CN=[80],
                  Pervious surfaces: IAper=[5.5] (mm), SLPP=[0.4] (%),
                  LGP=[50.15] (m), MNP=[0.25], SCP=[0.00] (min),
                  Impervious surfaces: IAimp=[1.5] (mm), SLPI=[0.5] (%),
                  LGI=[150.51] (m), MNI=[0.013],
                  SCI=[0.00] (min),
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*-----|-----SB02-1-----|
CALIB NASHYD      ID=[4], NHYD=["SB02-1"], DT=[5]min, AREA=[27.50] (ha),
                  DWF=[0] (cms), CN/C=[68], IA=[7.12] (mm),
                  N=[3], TP=[1.444]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH_SB2-2a-----|
ROUTE CHANNEL      IDout=[5], NHYD=["CH_SB2-2a"], IDin=[4],
                  RDT=[1] (min),
                  CHLGTH=[91.31] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[2.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,7.2 -0.035,9.7 0.055,17.2]
                  ( DISTANCE (m), ELEVATION (m))=[3.2,176.73]
                  [7.2,176.53]
                  [8.7,175.95]
                  [9.7,175.86]

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[10.7,176.15]
[17.2,176.85]
*-----|-----SB02-2-----|
CALIB STANDHYD ID=[6], NHYD=["SB02-2"], DT=[1] (min), AREA=[4.75] (ha),
XIMP=[0.60], TIMP=[0.80], DWF=[0.0] (cms), LOSS=[2],
SCS curve number CN=[82],
Pervious surfaces: IAPER=[5.5] (mm), SLPP=[0.6] (%),
LGP=[90.57] (m), MNP=[0.25], SCP=[0.00] (min),
Impervious surfaces: IAIMP=[1.5] (mm), SLPI=[0.5] (%),
LGI=[30.2] (m), MNI=[0.013], SCI=[0.00] (min),
RAINFALL=[ , , , ] (mm/hr), END=-1

*%-----|-----
*%-----|-----JN_1-----|
ADD HYD IDsum=[7], NHYD=["JN_1"], IDs to add=[2,3,5,6]
*%-----|-----CH_SB2-3-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB2-3"], IDin=[7],
RDT=[1] (min),
CHLGTH=[285.25] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[3.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
( DISTANCE (m), ELEVATION (m))=[0,177.19]
[6.8,175.95]
[7.8,175.82]
[10.1,175.80]
[12.3,176.33]
[15.8,177.11]

*%-----|-----
*%-----|-----SB03-1-----|
CALIB STANDHYD ID=[9], NHYD=["SB03-1"], DT=[1] (min), AREA=[1.14] (ha),
XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
SCS curve number CN=[82],
Pervious surfaces: IAPER=[5.0] (mm), SLPP=[0.5] (%),
LGP=[64.12] (m), MNP=[0.25], SCP=[0.00] (min),
Impervious surfaces: IAIMP=[2.75] (mm), SLPI=[0.3] (%),
LGI=[30] (m), MNI=[0.013], SCI=[0.00] (min),
RAINFALL=[ , , , ] (mm/hr), END=-1

*%-----|-----JN_2-----|
ADD HYD IDsum=[10], NHYD=["JN_2"], IDs to add=[8,9]
*%-----|-----
*%-----|-----CH_SB3-2-----|
ROUTE CHANNEL IDout=[1], NHYD=["CH_SB3-2"], IDin=[10],
RDT=[1] (min),
CHLGTH=[179.28] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[4.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
( DISTANCE (m), ELEVATION (m))=[0,177.19]
[6.8,175.95]
[7.8,175.82]
[10.1,175.80]
[12.3,176.33]
[15.8,177.11]

*-----|-----SB03-2-----|
CALIB NASHYD ID=[2], NHYD=["SB03-2"], DT=[5] min, AREA=[10.92] (ha),
DWF=[0] (cms), CN/C=[69], IA=[8.32] (mm),
N=[3], TP=[0.621] hrs,
RAINFALL=[ , , , ] (mm/hr), END=-1

*-----|-----SB04-----|
CALIB NASHYD ID=[3], NHYD=["SB04"], DT=[5] min, AREA=[19.72] (ha),
DWF=[0] (cms), CN/C=[70], IA=[8.51] (mm),
N=[3], TP=[.786] hrs,

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                                RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_3-----|
ADD HYD      IDsum=[4], NHYD=["JN_3"], IDs to add=[1,2,3]
*%-----|-----CH_SB5-1-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB5-1"], IDin=[4],
              RDT=[1] (min),
              CHLGTH=[451.02] (m),  CHSLOPE=[0.1] (%),
                                   FPSLOPE=[0.1] (%),
              SECNUM=[5.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                           [10.7,175.93]
                                           [18.7,175.53]
                                           [25.1,175.95]
                                           [30.1,176.15]
                                           [34.5,176.85]

*-----|-----SB05-1-----|
CALIB NASHYD  ID=[6], NHYD=["SB05-1"], DT=[5]min, AREA=[29.50] (ha),
              DWF=[0] (cms),  CN/C=[68],  IA=[7.16] (mm),
              N=[3], TP=[0.575]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_4-----|
ADD HYD      IDsum=[7], NHYD=["JN_4"], IDs to add=[5,6]
*%-----|-----CH_SB5-2-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB5-2"], IDin=[7],
              RDT=[1] (min),
              CHLGTH=[429.36] (m),  CHSLOPE=[0.02] (%),
                                   FPSLOPE=[0.02] (%),
              SECNUM=[6.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                           [10.7,175.93]
                                           [18.7,175.53]
                                           [25.1,175.95]
                                           [30.1,176.15]
                                           [34.5,176.85]

*-----|-----SB05-2-----|
CALIB NASHYD  ID=[9], NHYD=["SB05-2"], DT=[5]min, AREA=[10.39] (ha),
              DWF=[0] (cms),  CN/C=[70],  IA=[7.35] (mm),
              N=[3], TP=[1.306]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*-----|-----SB05-3-----|
CALIB NASHYD  ID=[10], NHYD=["SB05-3"], DT=[5]min, AREA=[8.51] (ha),
              DWF=[0] (cms),  CN/C=[65],  IA=[9.23] (mm),
              N=[3], TP=[1.159]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_5-----|
ADD HYD      IDsum=[1], NHYD=["JN_5"], IDs to add=[8,9,10]
*%-----|-----SB06-----|
CALIB NASHYD  ID=[2], NHYD=["SB06"], DT=[5]min, AREA=[21.20] (ha),
              DWF=[0] (cms),  CN/C=[71],  IA=[7.92] (mm),
              N=[3], TP=[1.350]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----SB07-----|
CALIB NASHYD  ID=[3], NHYD=["SB07"], DT=[5]min, AREA=[11.36] (ha),
              DWF=[0] (cms),  CN/C=[68],  IA=[7.15] (mm),
              N=[3], TP=[1.737]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_6-----|

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Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



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ADD HYD          IDsum=[4], NHYD=["JN_6"], IDs to add=[2,3]
*%-----|-----
ROUTE CHANNEL    IDout=[5], NHYD=["CH_SB8"], IDin=[4],
                  RDT=[5] (min),
                  CHLGTH=[490.44] (m),  CHSLOPE=[0.5] (%),
                                      FPSLOPE=[0.5] (%),
                  SECNUM=[7.1],      NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,10.1 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[4.7,176.80]
                                                  [6.8,175.95]
                                                  [8.2,175.82]
                                                  [10.1,175.97]
                                                  [12.3,176.33]
                                                  [15.8,177.01]

*%-----|-----SB08-----|
CALIB NASHYD      ID=[6], NHYD=["SB08"], DT=[5]min, AREA=[8.98] (ha),
                  DWF=[0] (cms),  CN/C=[80], IA=[6.75] (mm),
                  N=[3], TP=[0.499]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----
*%-----|-----JN_7-----|
ADD HYD          IDsum=[7], NHYD=["JN_7"], IDs to add=[1,5,6]
*%-----|-----CH_SB09-----|
ROUTE CHANNEL    IDout=[8], NHYD=["CH_SB9"], IDin=[7],
                  RDT=[1] (min),
                  CHLGTH=[410.25] (m),  CHSLOPE=[0.1] (%),
                                      FPSLOPE=[0.1] (%),
                  SECNUM=[8.1],      NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                  [6.8,175.95]
                                                  [7.8,175.82]
                                                  [10.1,175.80]
                                                  [12.3,176.33]
                                                  [15.8,179.11]

*-----|-----SB09-----|
CALIB NASHYD      ID=[9], NHYD=["SB09"], DT=[5]min, AREA=[14.34] (ha),
                  DWF=[0] (cms),  CN/C=[73], IA=[8.38] (mm),
                  N=[3], TP=[0.568]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*-----|-----SB10-----|
CALIB NASHYD      ID=[10], NHYD=["SB10"], DT=[5]min, AREA=[11.38] (ha),
                  DWF=[0] (cms),  CN/C=[72], IA=[8.97] (mm),
                  N=[3], TP=[0.729]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----
*%-----|-----JN_8-----|
ADD HYD          IDsum=[1], NHYD=["JN_8"], IDs to add=[8,9,10]
*%-----|-----CH_SB11-----|
ROUTE CHANNEL    IDout=[2], NHYD=["CH_SB11"], IDin=[1],
                  RDT=[1] (min),
                  CHLGTH=[302.05] (m),  CHSLOPE=[0.1] (%),
                                      FPSLOPE=[0.1] (%),
                  SECNUM=[9.1],      NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                  [6.8,175.95]
                                                  [7.8,175.82]
                                                  [10.1,175.80]
                                                  [12.3,176.33]
                                                  [15.8,179.11]

*%-----|-----SB11-----|
CALIB NASHYD      ID=[3], NHYD=["SB11"], DT=[1]min, AREA=[14.81] (ha),

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DWF=[0] (cms), CN/C=[78], IA=[7.6] (mm),
N=[3], TP=[0.083]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB16-----|
CALIB NASHYD ID=[4], NHYD=["SB16"], DT=[5]min, AREA=[16.71] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[1.297]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH-SB15-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB15"], IDin=[4],
RDT=[5] (min),
CHLGTH=[298.57] (m), CHSLOPE=[0.75] (%),
FPSLOPE=[0.75] (%),
SECNUM=[10.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
[16.7,175.36]
[22.8,175.22]
[27.5,175.29]
[35.5,175.52]
[40.2,175.65]
*%-----|-----SB15-----|
CALIB NASHYD ID=[6], NHYD=["SB15"], DT=[5]min, AREA=[7.95] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.543]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB14-----|
CALIB NASHYD ID=[7], NHYD=["SB14"], DT=[5]min, AREA=[15.85] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.607]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----JN_9-----|
ADD HYD IDsum=[8], NHYD=["JN_9"], IDs to add=[5,6,7]
*%-----|-----CH-SB12-----|
ROUTE CHANNEL IDout=[9], NHYD=["CH_SB12"], IDin=[8],
RDT=[5] (min),
CHLGTH=[222.25] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[11.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
[16.7,175.36]
[22.8,175.22]
[27.5,175.29]
[35.5,175.52]
[40.2,175.65]
*%-----|-----SB12-----|
CALIB NASHYD ID=[10], NHYD=["SB12"], DT=[5]min, AREA=[6.02] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.459]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----JN_10-----|
ADD HYD IDsum=[1], NHYD=["JN_10"], IDs to add=[2,3,9,10]
*%-----|-----
SAVE HYD ID=[1], # OF PCYCLES=[-1], ICASEsh=[1]
HYD_COMMENT=["JN_10"]
*%-----|-----
*%-----|-----
FINISH

```


5-year Return Period Storm Event

```

2      Metric units
*#*****
*# Project Name: [Pelham]      Project Number: [ 6HH ]
*# Date       : December 27, 2022
*# Modeller   : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng. ]
*# Company    : [ AHYDTECH Geomorphics Ltd., 22 Zecca Drive, Guelph, ON, N1L1T1]
*# License #   : 3556411
*#*****
START      TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
*%
*% [ ] <--storm filename, one per line for NSTORM time
*%-----|-----
*#*****
*#***** EXISTING CONDITION *****
*#***** 5-YEAR SCS 24 Hour Storm*****
*#*****
READ STORM      STORM_FILENAME=[ "5SCSToP.STM" ]
*%-----|-----
*%-----|-----SB01-1-----|
CALIB NASHYD      ID=[1], NHYD=["SB01-1"], DT=[5]min, AREA=[17.36] (ha),
                  DWF=[0] (cms), CN/C=[70], IA=[7.44] (mm),
                  N=[3], TP=[0.869]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH_SB1-2-----|
ROUTE CHANNEL      IDout=[2], NHYD=["CH_SB1-2"], IDin=[1],
                  RDT=[5] (min),
                  CHLGTH=[286.85] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[1.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.3 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[0,177.19]
                  [6.3,175.95]
                  [7.8,175.82]
                  [9.8,175.8]
                  [11.2,176.3]
                  [15.8,177.11]
*-----|-----SB01-2-----|
CALIB STANDHYD      ID=[3], NHYD=["SB01-2"], DT=[1] (min), AREA=[15.56] (ha),
                  XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
                  SCS curve number CN=[80],
                  Pervious surfaces: IAper=[5.5] (mm), SLPP=[0.4] (%),
                  LGP=[50.15] (m), MNP=[0.25], SCP=[0.00] (min),
                  Impervious surfaces: IAimp=[1.5] (mm), SLPI=[0.5] (%),
                  LGI=[150.51] (m), MNI=[0.013],
                  SCI=[0.00] (min),
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*-----|-----SB02-1-----|
CALIB NASHYD      ID=[4], NHYD=["SB02-1"], DT=[5]min, AREA=[27.50] (ha),
                  DWF=[0] (cms), CN/C=[68], IA=[7.12] (mm),
                  N=[3], TP=[1.444]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH_SB2-2a-----|
ROUTE CHANNEL      IDout=[5], NHYD=["CH_SB2-2a"], IDin=[4],
                  RDT=[1] (min),
                  CHLGTH=[91.31] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[2.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,7.2 -0.035,9.7 0.055,17.2]
                  ( DISTANCE (m), ELEVATION (m))=[3.2,176.73]
                  [7.2,176.53]
                  [8.7,175.95]
                  [9.7,175.86]

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[10.7,176.15]
[17.2,176.85]
*-----|-----SB02-2-----|
CALIB STANDHYD ID=[6], NHYD=["SB02-2"], DT=[1] (min), AREA=[4.75] (ha),
XIMP=[0.60], TIMP=[0.80], DWF=[0.0] (cms), LOSS=[2],
SCS curve number CN=[82],
Pervious surfaces: IAPer=[5.5] (mm), SLPP=[0.6] (%),
LGP=[90.57] (m), MNP=[0.25], SCP=[0.00] (min),
Impervious surfaces: IAimp=[1.5] (mm), SLPI=[0.5] (%),
LGI=[30.2] (m), MNI=[0.013], SCI=[0.00] (min),
RAINFALL=[ , , , , ] (mm/hr), END=-1

*%-----|-----JN_1-----|
*%-----|-----CH_SB2-3-----|
ADD HYD IDsum=[7], NHYD=["JN_1"], IDs to add=[2,3,5,6]
*%-----|-----CH_SB2-3-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB2-3"], IDin=[7],
RDT=[1] (min),
CHLGTH=[285.25] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[3.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
( DISTANCE (m), ELEVATION (m))=[0,177.19]
[6.8,175.95]
[7.8,175.82]
[10.1,175.80]
[12.3,176.33]
[15.8,177.11]

*%-----|-----SB03-1-----|
*%-----|-----SB03-1-----|
CALIB STANDHYD ID=[9], NHYD=["SB03-1"], DT=[1] (min), AREA=[1.14] (ha),
XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
SCS curve number CN=[82],
Pervious surfaces: IAPer=[5.0] (mm), SLPP=[0.5] (%),
LGP=[64.12] (m), MNP=[0.25], SCP=[0.00] (min),
Impervious surfaces: IAimp=[2.75] (mm), SLPI=[0.3] (%),
LGI=[30] (m), MNI=[0.013], SCI=[0.00] (min),
RAINFALL=[ , , , , ] (mm/hr), END=-1

*%-----|-----JN_2-----|
*%-----|-----JN_2-----|
ADD HYD IDsum=[10], NHYD=["JN_2"], IDs to add=[8,9]
*%-----|-----CH_SB3-2-----|
*%-----|-----CH_SB3-2-----|
ROUTE CHANNEL IDout=[1], NHYD=["CH_SB3-2"], IDin=[10],
RDT=[1] (min),
CHLGTH=[179.28] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[4.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
( DISTANCE (m), ELEVATION (m))=[0,177.19]
[6.8,175.95]
[7.8,175.82]
[10.1,175.80]
[12.3,176.33]
[15.8,177.11]

*-----|-----SB03-2-----|
CALIB NASHYD ID=[2], NHYD=["SB03-2"], DT=[5] min, AREA=[10.92] (ha),
DWF=[0] (cms), CN/C=[69], IA=[8.32] (mm),
N=[3], TP=[0.621] hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1

*-----|-----SB04-----|
CALIB NASHYD ID=[3], NHYD=["SB04"], DT=[5] min, AREA=[19.72] (ha),
DWF=[0] (cms), CN/C=[70], IA=[8.51] (mm),
N=[3], TP=[.786] hrs,

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                                RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_3-----|
ADD HYD      IDsum=[4], NHYD=["JN_3"], IDs to add=[1,2,3]
*%-----|-----CH_SB5-1-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB5-1"], IDin=[4],
              RDT=[1] (min),
              CHLGTH=[451.02] (m),  CHSLOPE=[0.1] (%),
                                   FPSLOPE=[0.1] (%),
              SECNUM=[5.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                           [10.7,175.93]
                                           [18.7,175.53]
                                           [25.1,175.95]
                                           [30.1,176.15]
                                           [34.5,176.85]

*-----|-----SB05-1-----|
CALIB NASHYD  ID=[6], NHYD=["SB05-1"], DT=[5]min, AREA=[29.50] (ha),
              DWF=[0] (cms),  CN/C=[68],  IA=[7.16] (mm),
              N=[3], TP=[0.575]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_4-----|
ADD HYD      IDsum=[7], NHYD=["JN_4"], IDs to add=[5,6]
*%-----|-----CH_SB5-2-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB5-2"], IDin=[7],
              RDT=[1] (min),
              CHLGTH=[429.36] (m),  CHSLOPE=[0.02] (%),
                                   FPSLOPE=[0.02] (%),
              SECNUM=[6.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                           [10.7,175.93]
                                           [18.7,175.53]
                                           [25.1,175.95]
                                           [30.1,176.15]
                                           [34.5,176.85]

*-----|-----SB05-2-----|
CALIB NASHYD  ID=[9], NHYD=["SB05-2"], DT=[5]min, AREA=[10.39] (ha),
              DWF=[0] (cms),  CN/C=[70],  IA=[7.35] (mm),
              N=[3], TP=[1.306]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*-----|-----SB05-3-----|
CALIB NASHYD  ID=[10], NHYD=["SB05-3"], DT=[5]min, AREA=[8.51] (ha),
              DWF=[0] (cms),  CN/C=[65],  IA=[9.23] (mm),
              N=[3], TP=[1.159]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_5-----|
ADD HYD      IDsum=[1], NHYD=["JN_5"], IDs to add=[8,9,10]
*%-----|-----SB06-----|
CALIB NASHYD  ID=[2], NHYD=["SB06"], DT=[5]min, AREA=[21.20] (ha),
              DWF=[0] (cms),  CN/C=[71],  IA=[7.92] (mm),
              N=[3], TP=[1.350]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----SB07-----|
CALIB NASHYD  ID=[3], NHYD=["SB07"], DT=[5]min, AREA=[11.36] (ha),
              DWF=[0] (cms),  CN/C=[68],  IA=[7.15] (mm),
              N=[3], TP=[1.737]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_6-----|

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Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



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ADD HYD          IDsum=[4], NHYD=["JN_6"], IDs to add=[2,3]
*%-----|-----
ROUTE CHANNEL    IDout=[5], NHYD=["CH_SB8"], IDin=[4],
                  RDT=[5] (min),
                  CHLGTH=[490.44] (m),  CHSLOPE=[0.5] (%),
                                      FPSLOPE=[0.5] (%),
                  SECNUM=[7.1],        NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,10.1 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[4.7,176.80]
                                                  [6.8,175.95]
                                                  [8.2,175.82]
                                                  [10.1,175.97]
                                                  [12.3,176.33]
                                                  [15.8,177.01]

*%-----|-----SB08-----|
CALIB NASHYD      ID=[6], NHYD=["SB08"], DT=[5]min, AREA=[8.98] (ha),
                  DWF=[0] (cms),  CN/C=[80], IA=[6.75] (mm),
                  N=[3], TP=[0.499]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----
*%-----|-----JN_7-----|
ADD HYD          IDsum=[7], NHYD=["JN_7"], IDs to add=[1,5,6]
*%-----|-----CH_SB09-----|
ROUTE CHANNEL    IDout=[8], NHYD=["CH_SB9"], IDin=[7],
                  RDT=[1] (min),
                  CHLGTH=[410.25] (m),  CHSLOPE=[0.1] (%),
                                      FPSLOPE=[0.1] (%),
                  SECNUM=[8.1],        NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                  [6.8,175.95]
                                                  [7.8,175.82]
                                                  [10.1,175.80]
                                                  [12.3,176.33]
                                                  [15.8,179.11]

*-----|-----SB09-----|
CALIB NASHYD      ID=[9], NHYD=["SB09"], DT=[5]min, AREA=[14.34] (ha),
                  DWF=[0] (cms),  CN/C=[73], IA=[8.38] (mm),
                  N=[3], TP=[0.568]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*-----|-----SB10-----|
CALIB NASHYD      ID=[10], NHYD=["SB10"], DT=[5]min, AREA=[11.38] (ha),
                  DWF=[0] (cms),  CN/C=[72], IA=[8.97] (mm),
                  N=[3], TP=[0.729]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----
*%-----|-----JN_8-----|
ADD HYD          IDsum=[1], NHYD=["JN_8"], IDs to add=[8,9,10]
*%-----|-----CH_SB11-----|
ROUTE CHANNEL    IDout=[2], NHYD=["CH_SB11"], IDin=[1],
                  RDT=[1] (min),
                  CHLGTH=[302.05] (m),  CHSLOPE=[0.1] (%),
                                      FPSLOPE=[0.1] (%),
                  SECNUM=[9.1],        NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                  [6.8,175.95]
                                                  [7.8,175.82]
                                                  [10.1,175.80]
                                                  [12.3,176.33]
                                                  [15.8,179.11]

*%-----|-----SB11-----|
CALIB NASHYD      ID=[3], NHYD=["SB11"], DT=[1]min, AREA=[14.81] (ha),

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DWF=[0] (cms), CN/C=[78], IA=[7.6] (mm),
N=[3], TP=[0.083]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB16-----|
CALIB NASHYD ID=[4], NHYD=["SB16"], DT=[5]min, AREA=[16.71] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[1.297]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH-SB15-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB15"], IDin=[4],
RDT=[5] (min),
CHLGTH=[298.57] (m), CHSLOPE=[0.75] (%),
FPSLOPE=[0.75] (%),
SECNUM=[10.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
[16.7,175.36]
[22.8,175.22]
[27.5,175.29]
[35.5,175.52]
[40.2,175.65]
*%-----|-----SB15-----|
CALIB NASHYD ID=[6], NHYD=["SB15"], DT=[5]min, AREA=[7.95] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.543]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB14-----|
CALIB NASHYD ID=[7], NHYD=["SB14"], DT=[5]min, AREA=[15.85] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.607]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----|
*%-----|-----JN_9-----|
ADD HYD IDsum=[8], NHYD=["JN_9"], IDs to add=[5,6,7]
*%-----|-----CH-SB12-----|
ROUTE CHANNEL IDout=[9], NHYD=["CH_SB12"], IDin=[8],
RDT=[5] (min),
CHLGTH=[222.25] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[11.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
[16.7,175.36]
[22.8,175.22]
[27.5,175.29]
[35.5,175.52]
[40.2,175.65]
*%-----|-----SB12-----|
CALIB NASHYD ID=[10], NHYD=["SB12"], DT=[5]min, AREA=[6.02] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.459]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----|
*%-----|-----JN_10-----|
ADD HYD IDsum=[1], NHYD=["JN_10"], IDs to add=[2,3,9,10]
*%-----|-----|
SAVE HYD ID=[1], # OF PCYCLES=[-1], ICASEsh=[1]
HYD_COMMENT=["JN_10"]
*%-----|-----|
*%-----|-----|
FINISH

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25-year Return Period Storm Event

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2      Metric units
*#*****
*# Project Name: [Pelham]      Project Number: [ 6HH ]
*# Date       : December 27, 2022
*# Modeller   : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng. ]
*# Company    : [ AHYDTECH Geomorphics Ltd., 22 Zecca Drive, Guelph, ON, N1L1T1]
*# License #   : 3556411
*#*****
START      TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
*%
*% [ ] <--storm filename, one per line for NSTORM time
*%-----|-----
*#*****
*#***** EXISTING CONDITION *****
*#***** 25-YEAR SCS 24 Hour Storm*****
*#*****
READ STORM      STORM_FILENAME=[ "25SCSToP.STM" ]
*%-----|-----
*%-----|-----SB01-1-----|
CALIB NASHYD      ID=[1], NHYD=["SB01-1"], DT=[5]min, AREA=[17.36] (ha),
                  DWF=[0] (cms), CN/C=[70], IA=[7.44] (mm),
                  N=[3], TP=[0.869]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH_SB1-2-----|
ROUTE CHANNEL      IDout=[2], NHYD=["CH_SB1-2"], IDin=[1],
                  RDT=[5] (min),
                  CHLGTH=[286.85] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[1.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.3 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[0,177.19]
                  [6.3,175.95]
                  [7.8,175.82]
                  [9.8,175.8]
                  [11.2,176.3]
                  [15.8,177.11]
*-----|-----SB01-2-----|
CALIB STANDHYD      ID=[3], NHYD=["SB01-2"], DT=[1] (min), AREA=[15.56] (ha),
                  XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
                  SCS curve number CN=[80],
                  Pervious surfaces: IAper=[5.5] (mm), SLPP=[0.4] (%),
                  LGP=[50.15] (m), MNP=[0.25], SCP=[0.00] (min),
                  Impervious surfaces: IAimp=[1.5] (mm), SLPI=[0.5] (%),
                  LGI=[150.51] (m), MNI=[0.013],
                  SCI=[0.00] (min),
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*-----|-----SB02-1-----|
CALIB NASHYD      ID=[4], NHYD=["SB02-1"], DT=[5]min, AREA=[27.50] (ha),
                  DWF=[0] (cms), CN/C=[68], IA=[7.12] (mm),
                  N=[3], TP=[1.444]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH_SB2-2a-----|
ROUTE CHANNEL      IDout=[5], NHYD=["CH_SB2-2a"], IDin=[4],
                  RDT=[1] (min),
                  CHLGTH=[91.31] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[2.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,7.2 -0.035,9.7 0.055,17.2]
                  ( DISTANCE (m), ELEVATION (m))=[3.2,176.73]
                  [7.2,176.53]
                  [8.7,175.95]
                  [9.7,175.86]

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[10.7,176.15]
[17.2,176.85]
*-----|-----SB02-2-----|
CALIB STANDHYD ID=[6], NHYD=["SB02-2"], DT=[1] (min), AREA=[4.75] (ha),
XIMP=[0.60], TIMP=[0.80], DWF=[0.0] (cms), LOSS=[2],
SCS curve number CN=[82],
Pervious surfaces: IAPER=[5.5] (mm), SLPP=[0.6] (%),
LGP=[90.57] (m), MNP=[0.25], SCP=[0.00] (min),
Impervious surfaces: IAIMP=[1.5] (mm), SLPI=[0.5] (%),
LGI=[30.2] (m), MNI=[0.013], SCI=[0.00] (min),
RAINFALL=[ , , , , ] (mm/hr), END=-1

*%-----|-----JN_1-----|
*%-----|-----CH_SB2-3-----|
ADD HYD IDsum=[7], NHYD=["JN_1"], IDs to add=[2,3,5,6]
*%-----|-----CH_SB2-3-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB2-3"], IDin=[7],
RDT=[1] (min),
CHLGTH=[285.25] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[3.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
( DISTANCE (m), ELEVATION (m))=[0,177.19]
[6.8,175.95]
[7.8,175.82]
[10.1,175.80]
[12.3,176.33]
[15.8,177.11]

*%-----|-----SB03-1-----|
*%-----|-----SB03-1-----|
CALIB STANDHYD ID=[9], NHYD=["SB03-1"], DT=[1] (min), AREA=[1.14] (ha),
XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
SCS curve number CN=[82],
Pervious surfaces: IAPER=[5.0] (mm), SLPP=[0.5] (%),
LGP=[64.12] (m), MNP=[0.25], SCP=[0.00] (min),
Impervious surfaces: IAIMP=[2.75] (mm), SLPI=[0.3] (%),
LGI=[30] (m), MNI=[0.013], SCI=[0.00] (min),
RAINFALL=[ , , , , ] (mm/hr), END=-1

*%-----|-----JN_2-----|
*%-----|-----CH_SB3-2-----|
ADD HYD IDsum=[10], NHYD=["JN_2"], IDs to add=[8,9]
*%-----|-----CH_SB3-2-----|
*%-----|-----CH_SB3-2-----|
ROUTE CHANNEL IDout=[1], NHYD=["CH_SB3-2"], IDin=[10],
RDT=[1] (min),
CHLGTH=[179.28] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[4.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
( DISTANCE (m), ELEVATION (m))=[0,177.19]
[6.8,175.95]
[7.8,175.82]
[10.1,175.80]
[12.3,176.33]
[15.8,177.11]

*-----|-----SB03-2-----|
CALIB NASHYD ID=[2], NHYD=["SB03-2"], DT=[5] min, AREA=[10.92] (ha),
DWF=[0] (cms), CN/C=[69], IA=[8.32] (mm),
N=[3], TP=[0.621] hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1

*-----|-----SB04-----|
CALIB NASHYD ID=[3], NHYD=["SB04"], DT=[5] min, AREA=[19.72] (ha),
DWF=[0] (cms), CN/C=[70], IA=[8.51] (mm),
N=[3], TP=[.786] hrs,

```

```

                                RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_3-----|
ADD HYD      IDsum=[4], NHYD=["JN_3"], IDs to add=[1,2,3]
*%-----|-----CH_SB5-1-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB5-1"], IDin=[4],
              RDT=[1] (min),
              CHLGTH=[451.02] (m),  CHSLOPE=[0.1] (%),
                                   FPSLOPE=[0.1] (%),
              SECNUM=[5.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                   [10.7,175.93]
                                   [18.7,175.53]
                                   [25.1,175.95]
                                   [30.1,176.15]
                                   [34.5,176.85]

*-----|-----SB05-1-----|
CALIB NASHYD  ID=[6], NHYD=["SB05-1"], DT=[5]min, AREA=[29.50] (ha),
              DWF=[0] (cms),  CN/C=[68],  IA=[7.16] (mm),
              N=[3], TP=[0.575]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_4-----|
ADD HYD      IDsum=[7], NHYD=["JN_4"], IDs to add=[5,6]
*%-----|-----CH_SB5-2-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB5-2"], IDin=[7],
              RDT=[1] (min),
              CHLGTH=[429.36] (m),  CHSLOPE=[0.02] (%),
                                   FPSLOPE=[0.02] (%),
              SECNUM=[6.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                   [10.7,175.93]
                                   [18.7,175.53]
                                   [25.1,175.95]
                                   [30.1,176.15]
                                   [34.5,176.85]

*-----|-----SB05-2-----|
CALIB NASHYD  ID=[9], NHYD=["SB05-2"], DT=[5]min, AREA=[10.39] (ha),
              DWF=[0] (cms),  CN/C=[70],  IA=[7.35] (mm),
              N=[3], TP=[1.306]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*-----|-----SB05-3-----|
CALIB NASHYD  ID=[10], NHYD=["SB05-3"], DT=[5]min, AREA=[8.51] (ha),
              DWF=[0] (cms),  CN/C=[65],  IA=[9.23] (mm),
              N=[3], TP=[1.159]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_5-----|
ADD HYD      IDsum=[1], NHYD=["JN_5"], IDs to add=[8,9,10]
*%-----|-----SB06-----|
CALIB NASHYD  ID=[2], NHYD=["SB06"], DT=[5]min, AREA=[21.20] (ha),
              DWF=[0] (cms),  CN/C=[71],  IA=[7.92] (mm),
              N=[3], TP=[1.350]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----SB07-----|
CALIB NASHYD  ID=[3], NHYD=["SB07"], DT=[5]min, AREA=[11.36] (ha),
              DWF=[0] (cms),  CN/C=[68],  IA=[7.15] (mm),
              N=[3], TP=[1.737]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1
*%-----|-----
*%-----|-----JN_6-----|

```


Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



```

ADD HYD          IDsum=[4], NHYD=["JN_6"], IDs to add=[2,3]
*%-----|-----
ROUTE CHANNEL    IDout=[5], NHYD=["CH_SB8"], IDin=[4],
                  RDT=[5] (min),
                  CHLGTH=[490.44] (m),  CHSLOPE=[0.5] (%),
                                      FPSLOPE=[0.5] (%),
                  SECNUM=[7.1],        NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,10.1 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[4.7,176.80]
                                                  [6.8,175.95]
                                                  [8.2,175.82]
                                                  [10.1,175.97]
                                                  [12.3,176.33]
                                                  [15.8,177.01]

*%-----|-----SB08-----|
CALIB NASHYD      ID=[6], NHYD=["SB08"], DT=[5]min, AREA=[8.98] (ha),
                  DWF=[0] (cms),  CN/C=[80], IA=[6.75] (mm),
                  N=[3], TP=[0.499]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----
*%-----|-----JN_7-----|
ADD HYD          IDsum=[7], NHYD=["JN_7"], IDs to add=[1,5,6]
*%-----|-----CH_SB09-----|
ROUTE CHANNEL    IDout=[8], NHYD=["CH_SB9"], IDin=[7],
                  RDT=[1] (min),
                  CHLGTH=[410.25] (m),  CHSLOPE=[0.1] (%),
                                      FPSLOPE=[0.1] (%),
                  SECNUM=[8.1],        NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                  [6.8,175.95]
                                                  [7.8,175.82]
                                                  [10.1,175.80]
                                                  [12.3,176.33]
                                                  [15.8,179.11]

*-----|-----SB09-----|
CALIB NASHYD      ID=[9], NHYD=["SB09"], DT=[5]min, AREA=[14.34] (ha),
                  DWF=[0] (cms),  CN/C=[73], IA=[8.38] (mm),
                  N=[3], TP=[0.568]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*-----|-----SB10-----|
CALIB NASHYD      ID=[10], NHYD=["SB10"], DT=[5]min, AREA=[11.38] (ha),
                  DWF=[0] (cms),  CN/C=[72], IA=[8.97] (mm),
                  N=[3], TP=[0.729]hrs,
                  RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----
*%-----|-----JN_8-----|
ADD HYD          IDsum=[1], NHYD=["JN_8"], IDs to add=[8,9,10]
*%-----|-----CH_SB11-----|
ROUTE CHANNEL    IDout=[2], NHYD=["CH_SB11"], IDin=[1],
                  RDT=[1] (min),
                  CHLGTH=[302.05] (m),  CHSLOPE=[0.1] (%),
                                      FPSLOPE=[0.1] (%),
                  SECNUM=[9.1],        NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                  [6.8,175.95]
                                                  [7.8,175.82]
                                                  [10.1,175.80]
                                                  [12.3,176.33]
                                                  [15.8,179.11]

*%-----|-----SB11-----|
CALIB NASHYD      ID=[3], NHYD=["SB11"], DT=[1]min, AREA=[14.81] (ha),

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DWF=[0] (cms), CN/C=[78], IA=[7.6] (mm),
N=[3], TP=[0.083]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB16-----|
CALIB NASHYD ID=[4], NHYD=["SB16"], DT=[5]min, AREA=[16.71] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[1.297]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH-SB15-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB15"], IDin=[4],
RDT=[5] (min),
CHLGTH=[298.57] (m), CHSLOPE=[0.75] (%),
FPSLOPE=[0.75] (%),
SECNUM=[10.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
[16.7,175.36]
[22.8,175.22]
[27.5,175.29]
[35.5,175.52]
[40.2,175.65]
*%-----|-----SB15-----|
CALIB NASHYD ID=[6], NHYD=["SB15"], DT=[5]min, AREA=[7.95] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.543]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB14-----|
CALIB NASHYD ID=[7], NHYD=["SB14"], DT=[5]min, AREA=[15.85] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.607]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----|
*%-----|-----JN_9-----|
ADD HYD IDsum=[8], NHYD=["JN_9"], IDs to add=[5,6,7]
*%-----|-----CH-SB12-----|
ROUTE CHANNEL IDout=[9], NHYD=["CH_SB12"], IDin=[8],
RDT=[5] (min),
CHLGTH=[222.25] (m), CHSLOPE=[0.1] (%),
FPSLOPE=[0.1] (%),
SECNUM=[11.1], NSEG=[3]
( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
[16.7,175.36]
[22.8,175.22]
[27.5,175.29]
[35.5,175.52]
[40.2,175.65]
*%-----|-----SB12-----|
CALIB NASHYD ID=[10], NHYD=["SB12"], DT=[5]min, AREA=[6.02] (ha),
DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
N=[3], TP=[0.459]hrs,
RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----|
*%-----|-----JN_10-----|
ADD HYD IDsum=[1], NHYD=["JN_10"], IDs to add=[2,3,9,10]
*%-----|-----|
SAVE HYD ID=[1], # OF PCYCLES=[-1], ICASEsh=[1]
HYD_COMMENT=["JN_10"]
*%-----|-----|
*%-----|-----|
FINISH

```

100-year Return Period Storm Event

```

2      Metric units
*#*****
*# Project Name: [Pelham]      Project Number: [ 6HH ]
*# Date       : December 27, 2022
*# Modeller    : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng. ]
*# Company     : [ AHYDTECH Geomorphics Ltd., 22 Zecca Drive, Guelph, ON, N1L1T1]
*# License #   : 3556411
*#*****
START      TZERO=[0.0], METOUT=[2], NSTORM=[0], NRUN=[0]
*%         [ ] <--storm filename, one per line for NSTORM time
*%-----|-----
*#*****
*#***** EXISTING CONDITION *****
*#***** 100-YEAR SCS 24 Hour Storm*****
*#*****
READ STORM      STORM_FILENAME=["100SCSToP.STM"]
*%-----|-----
*-----|-----SB01-1-----|
CALIB NASHYD      ID=[1], NHYD=["SB01-1"], DT=[5]min, AREA=[17.36] (ha),
                  DWF=[0] (cms), CN/C=[70], IA=[7.44] (mm),
                  N=[3], TP=[0.869]hrs,
                  RAINFALL=[ , , , ] (mm/hr), END=-1
*%-----|-----CH_SB1-2-----|
ROUTE CHANNEL      IDout=[2], NHYD=["CH_SB1-2"], IDin=[1],
                  RDT=[5] (min),
                  CHLGTH=[286.85] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[1.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,6.3 -0.035,9.8 0.055,15.8]
                  ( DISTANCE (m), ELEVATION (m))=[0,177.19]
                  [6.3,175.95]
                  [7.8,175.82]
                  [9.8,175.8]
                  [11.2,176.3]
                  [15.8,177.11]
*-----|-----SB01-2-----|
CALIB STANDHYD      ID=[3], NHYD=["SB01-2"], DT=[1] (min), AREA=[15.56] (ha),
                  XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
                  SCS curve number CN=[80],
                  Pervious surfaces: IAper=[5.5] (mm), SLPP=[0.4] (%),
                  LGP=[50.15] (m), MNP=[0.25], SCP=[0.00] (min),
                  Impervious surfaces: IAimp=[1.5] (mm), SLPI=[0.5] (%),
                  LGI=[150.51] (m), MNI=[0.013],
SCI=[0.00] (min),
                  RAINFALL=[ , , , ] (mm/hr), END=-1
*-----|-----SB02-1-----|
CALIB NASHYD      ID=[4], NHYD=["SB02-1"], DT=[5]min, AREA=[27.50] (ha),
                  DWF=[0] (cms), CN/C=[68], IA=[7.12] (mm),
                  N=[3], TP=[1.444]hrs,
                  RAINFALL=[ , , , ] (mm/hr), END=-1
*%-----|-----CH_SB2-2a-----|
ROUTE CHANNEL      IDout=[5], NHYD=["CH_SB2-2a"], IDin=[4],
                  RDT=[1] (min),
                  CHLGTH=[91.31] (m), CHSLOPE=[0.1] (%),
                  FPSLOPE=[0.1] (%),
                  SECNUM=[2.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,7.2 -0.035,9.7 0.055,17.2]
                  ( DISTANCE (m), ELEVATION (m))=[3.2,176.73]
                  [7.2,176.53]
                  [8.7,175.95]

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[9.7,175.86]
[10.7,176.15]
[17.2,176.85]
*-----SB02-2-----|
CALIB STANDHYD      ID=[6], NHYD=["SB02-2"], DT=[1] (min), AREA=[4.75] (ha),
                    XIMP=[0.60], TIMP=[0.80], DWF=[0.0] (cms), LOSS=[2],
                    SCS curve number CN=[82],
                    Pervious surfaces: IAper=[5.5] (mm), SLPP=[0.6] (%),
                                         LGP=[90.57] (m), MNP=[0.25], SCP=[0.00] (min),
                    Impervious surfaces: IAimp=[1.5] (mm), SLPI=[0.5] (%),
                                         LGI=[30.2] (m), MNI=[0.013], SCI=[0.00] (min),
                    RAINFALL=[ , , , , ] (mm/hr), END=-1

*%-----|
*%-----JN_1-----|
ADD HYD              IDsum=[7], NHYD=["JN_1"], IDs to add=[2,3,5,6]
*%-----CH_SB2-3-----|
ROUTE CHANNEL        IDout=[8], NHYD=["CH_SB2-3"], IDin=[7],
                    RDT=[1] (min),
                    CHLGTH=[285.25] (m), CHSLOPE=[0.1] (%),
                                         FPSLOPE=[0.1] (%),
                    SECNUM=[3.1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                    ( DISTANCE (m), ELEVATION (m))=[0,177.19]
                                         [6.8,175.95]
                                         [7.8,175.82]
                                         [10.1,175.80]
                                         [12.3,176.33]
                                         [15.8,177.11]

*%-----|
*%-----SB03-1-----|
CALIB STANDHYD      ID=[9], NHYD=["SB01-2"], DT=[1] (min), AREA=[1.14] (ha),
                    XIMP=[0.35], TIMP=[0.50], DWF=[0.0] (cms), LOSS=[2],
                    SCS curve number CN=[82],
                    Pervious surfaces: IAper=[5.0] (mm), SLPP=[0.5] (%),
                                         LGP=[64.12] (m), MNP=[0.25], SCP=[0.00] (min),
                    Impervious surfaces: IAimp=[2.75] (mm), SLPI=[0.3] (%),
                                         LGI=[30] (m), MNI=[0.013], SCI=[0.00] (min),
                    RAINFALL=[ , , , , ] (mm/hr), END=-1

*%-----JN_2-----|
ADD HYD              IDsum=[10], NHYD=["JN_2"], IDs to add=[8,9]
*%-----|
*%-----CH_SB3-2-----|
ROUTE CHANNEL        IDout=[1], NHYD=["CH_SB3-2"], IDin=[10],
                    RDT=[1] (min),
                    CHLGTH=[179.28] (m), CHSLOPE=[0.1] (%),
                                         FPSLOPE=[0.1] (%),
                    SECNUM=[4.1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
                    ( DISTANCE (m), ELEVATION (m))=[0,177.19]
                                         [6.8,175.95]
                                         [7.8,175.82]
                                         [10.1,175.80]
                                         [12.3,176.33]
                                         [15.8,177.11]

*-----SB03-2-----|
CALIB NASHYD         ID=[2], NHYD=["SB03-2"], DT=[5] min, AREA=[10.92] (ha),
                    DWF=[0] (cms), CN/C=[69], IA=[8.32] (mm),
                    N=[3], TP=[0.621] hrs,
                    RAINFALL=[ , , , , ] (mm/hr), END=-1

*-----SB04-----|
CALIB NASHYD         ID=[3], NHYD=["SB04"], DT=[5] min, AREA=[19.72] (ha),
                    DWF=[0] (cms), CN/C=[70], IA=[8.51] (mm),

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N=[3], TP=[.786]hrs,
RAINFALL=[ , , , , ](mm/hr), END=-1
*%-----|-----
*%-----|-----JN_3-----|
ADD HYD      IDsum=[4], NHYD=["JN_3"], IDs to add=[1,2,3]
*%-----|-----CH_SB5-1-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB5-1"], IDin=[4],
              RDT=[1](min),
              CHLGTH=[451.02](m), CHSLOPE=[0.1](%),
                                FPSLOPE=[0.1](%),
              SECNUM=[5.1], NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                                [10.7,175.93]
                                                [18.7,175.53]
                                                [25.1,175.95]
                                                [30.1,176.15]
                                                [34.5,176.85]
*-----|-----SB05-1-----|
CALIB NASHYD  ID=[6], NHYD=["SB05-1"], DT=[5]min, AREA=[29.50](ha),
              DWF=[0](cms), CN/C=[68], IA=[7.16](mm),
              N=[3], TP=[0.575]hrs,
              RAINFALL=[ , , , , ](mm/hr), END=-1
*%-----|-----
*%-----|-----JN_4-----|
ADD HYD      IDsum=[7], NHYD=["JN_4"], IDs to add=[5,6]
*%-----|-----CH_SB5-2-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB5-2"], IDin=[7],
              RDT=[1](min),
              CHLGTH=[429.36](m), CHSLOPE=[0.02](%),
                                FPSLOPE=[0.02](%),
              SECNUM=[6.1], NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,10.7 -0.035,25.1 0.055,34.5]
              ( DISTANCE (m), ELEVATION (m))=[3.30,176.73]
                                                [10.7,175.93]
                                                [18.7,175.53]
                                                [25.1,175.95]
                                                [30.1,176.15]
                                                [34.5,176.85]
*-----|-----SB05-2-----|
CALIB NASHYD  ID=[9], NHYD=["SB05-2"], DT=[5]min, AREA=[10.39](ha),
              DWF=[0](cms), CN/C=[70], IA=[7.35](mm),
              N=[3], TP=[1.306]hrs,
              RAINFALL=[ , , , , ](mm/hr), END=-1
*-----|-----SB05-3-----|
CALIB NASHYD  ID=[10], NHYD=["SB05-3"], DT=[5]min, AREA=[8.51](ha),
              DWF=[0](cms), CN/C=[65], IA=[9.23](mm),
              N=[3], TP=[1.159]hrs,
              RAINFALL=[ , , , , ](mm/hr), END=-1
*%-----|-----
*%-----|-----JN_5-----|
ADD HYD      IDsum=[1], NHYD=["JN_5"], IDs to add=[8,9,10]
*%-----|-----SB06-----|
CALIB NASHYD  ID=[2], NHYD=["SB06"], DT=[5]min, AREA=[21.20](ha),
              DWF=[0](cms), CN/C=[71], IA=[7.92](mm),
              N=[3], TP=[1.350]hrs,
              RAINFALL=[ , , , , ](mm/hr), END=-1
*%-----|-----SB07-----|
CALIB NASHYD  ID=[3], NHYD=["SB07"], DT=[5]min, AREA=[11.36](ha),
              DWF=[0](cms), CN/C=[68], IA=[7.15](mm),
              N=[3], TP=[1.737]hrs,
              RAINFALL=[ , , , , ](mm/hr), END=-1
*%-----|-----

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Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



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*%-----|-----JN_6-----|
ADD HYD      IDsum=[4], NHYD=["JN_6"], IDs to add=[2,3]
*%-----|-----|
ROUTE CHANNEL IDout=[5], NHYD=["CH_SB8"], IDin=[4],
              RDT=[5] (min),
              CHLGTH=[490.44] (m),  CHSLOPE=[0.5] (%),
                                   FPSLOPE=[0.5] (%),
              SECNUM=[7.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,10.1 0.055,15.8]
              ( DISTANCE (m), ELEVATION (m))=[4.7,176.80]
                                                [6.8,175.95]
                                                [8.2,175.82]
                                                [10.1,175.97]
                                                [12.3,176.33]
                                                [15.8,177.01]

*%-----|-----SB08-----|
CALIB NASHYD  ID=[6], NHYD=["SB08"], DT=[5]min, AREA=[8.98] (ha),
              DWF=[0] (cms),  CN/C=[80],  IA=[6.75] (mm),
              N=[3], TP=[0.499]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----|
*%-----|-----JN_7-----|
ADD HYD      IDsum=[7], NHYD=["JN_7"], IDs to add=[1,5,6]
*%-----|-----CH_SB09-----|
ROUTE CHANNEL IDout=[8], NHYD=["CH_SB9"], IDin=[7],
              RDT=[1] (min),
              CHLGTH=[410.25] (m),  CHSLOPE=[0.1] (%),
                                   FPSLOPE=[0.1] (%),
              SECNUM=[8.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
              ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                [6.8,175.95]
                                                [7.8,175.82]
                                                [10.1,175.80]
                                                [12.3,176.33]
                                                [15.8,179.11]

*-----|-----SB09-----|
CALIB NASHYD  ID=[9], NHYD=["SB09"], DT=[5]min, AREA=[14.34] (ha),
              DWF=[0] (cms),  CN/C=[73],  IA=[8.38] (mm),
              N=[3], TP=[0.568]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1

*-----|-----SB10-----|
CALIB NASHYD  ID=[10], NHYD=["SB10"], DT=[5]min, AREA=[11.38] (ha),
              DWF=[0] (cms),  CN/C=[72],  IA=[8.97] (mm),
              N=[3], TP=[0.729]hrs,
              RAINFALL=[ , , , , ] (mm/hr),  END=-1

*%-----|-----|
*%-----|-----JN_8-----|
ADD HYD      IDsum=[1], NHYD=["JN_8"], IDs to add=[8,9,10]
*%-----|-----CH_SB11-----|
ROUTE CHANNEL IDout=[2], NHYD=["CH_SB11"], IDin=[1],
              RDT=[1] (min),
              CHLGTH=[302.05] (m),  CHSLOPE=[0.1] (%),
                                   FPSLOPE=[0.1] (%),
              SECNUM=[9.1],        NSEG=[3]
              ( SEGROUGH, SEGDIST (m))=[0.055,6.8 -0.035,9.8 0.055,15.8]
              ( DISTANCE (m), ELEVATION (m))=[2.7,179.19]
                                                [6.8,175.95]
                                                [7.8,175.82]
                                                [10.1,175.80]
                                                [12.3,176.33]
                                                [15.8,179.11]

*%-----|-----SB11-----|

```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



```

CALIB NASHYD      ID=[3], NHYD=["SB11"], DT=[1]min, AREA=[14.81] (ha),
                  DWF=[0] (cms), CN/C=[78], IA=[7.6] (mm),
                  N=[3], TP=[0.083]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB16-----|
CALIB NASHYD      ID=[4], NHYD=["SB16"], DT=[5]min, AREA=[16.71] (ha),
                  DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
                  N=[3], TP=[1.297]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----CH-SB15-----|
ROUTE CHANNEL     IDout=[5], NHYD=["CH_SB15"], IDin=[4],
                  RDT=[5] (min),
                  CHLGTH=[298.57] (m), CHSLOPE=[0.75] (%),
                                      FPSLOPE=[0.75] (%),
                  SECNUM=[10.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
                  ( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
                                      [16.7,175.36]
                                      [22.8,175.22]
                                      [27.5,175.29]
                                      [35.5,175.52]
                                      [40.2,175.65]
*%-----|-----SB15-----|
CALIB NASHYD      ID=[6], NHYD=["SB15"], DT=[5]min, AREA=[7.95] (ha),
                  DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
                  N=[3], TP=[0.543]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----SB14-----|
CALIB NASHYD      ID=[7], NHYD=["SB14"], DT=[5]min, AREA=[15.85] (ha),
                  DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
                  N=[3], TP=[0.607]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----JN_9-----|
*%-----|-----CH-SB12-----|
ADD HYD           IDsum=[8], NHYD=["JN_9"], IDs to add=[5,6,7]
*%-----|-----CH-SB12-----|
ROUTE CHANNEL     IDout=[9], NHYD=["CH_SB12"], IDin=[8],
                  RDT=[5] (min),
                  CHLGTH=[222.25] (m), CHSLOPE=[0.1] (%),
                                      FPSLOPE=[0.1] (%),
                  SECNUM=[11.1], NSEG=[3]
                  ( SEGROUGH, SEGDIST (m))=[0.055,16.7 -0.035,27.5 0.055,40.2]
                  ( DISTANCE (m), ELEVATION (m))=[8.8,175.65]
                                      [16.7,175.36]
                                      [22.8,175.22]
                                      [27.5,175.29]
                                      [35.5,175.52]
                                      [40.2,175.65]
*%-----|-----SB12-----|
CALIB NASHYD      ID=[10], NHYD=["SB12"], DT=[5]min, AREA=[6.02] (ha),
                  DWF=[0] (cms), CN/C=[78], IA=[7.35] (mm),
                  N=[3], TP=[0.459]hrs,
                  RAINFALL=[ , , , , ] (mm/hr), END=-1
*%-----|-----JN_10-----|
*%-----|-----CH-SB12-----|
ADD HYD           IDsum=[1], NHYD=["JN_10"], IDs to add=[2,3,9,10]
*%-----|-----JN_10-----|
SAVE HYD          ID=[1], # OF PCYCLES=[-1], ICASEsh=[1]
                  HYD_COMMENT=["JN_10"]
*%-----|-----JN_10-----|
*%-----|-----JN_10-----|

```

Appendix E: SWMHYMO Output Files



2-year Return Period Storm Event

```
=====
SSSSS  W  W  M  M  H  H  Y  Y  M  M  OOO      222      000      11      77777 =====
S      W  W  W  MM MM  H  H  Y  Y  MM MM  O  O      2      0  0      11      7  7
SSSSS  W  W  W  M  M  M  HHHHH  Y  M  M  M  O  O      2      0  0      11      7  Ver4.05.0
      S  W  W  M  M  H  H  Y  M  M  O  O      222      0  0      11      7  APR 2017
SSSSS  W  W  M  M  H  H  Y  M  M  OOO      2      0  0      11      7  =====
      2      0  0      11      7  # 3556411
      StormWater Management HYdrologic Model      222      000      11      7  =====

*****
***** SWMHYMO Ver4.05.0 *****
***** A single event and continuous hydrologic simulation model *****
***** based on the principles of HYMO and its successors *****
***** OTTHYMO-83 and OTTHYMO-89. *****
***** Distributed by: J.F. Sabourin and Associates Inc. *****
***** Ottawa, Ontario: (613) 836-3884 *****
***** Gatineau, Quebec: (819) 243-6858 *****
***** E-Mail: swmhymo@jfsa.com *****
*****

+++++
+++++ Licensed user: AHYDTECH Geomorphinc Ltd +++++
+++++ Guelph SERIAL#:3556411 +++++
+++++

*****
***** +++++ PROGRAM ARRAY DIMENSIONS +++++ *****
***** Maximum value for ID numbers : 11 *****
***** Max. number of rainfall points: 105408 *****
***** Max. number of flow points : 105408 *****
*****

***** SUMMARY OUTPUT *****
*****
* RUN DATE: 2022-12-28 TIME: 13:18:11 RUN COUNTER: 000003 *
*****
* Input file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\2-yr\2YR_Pelham.dat *
* Output file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\2-yr\2YR_Pelham.out *
* Summary file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\2-yr\2YR_Pelham.sum *
* User comments: *
* 1: *
* 2: *
* 3: *
*****

# *****
# Project Name: [Pelham] Project Number: [ 6HH ]
# Date : December 27, 2022
# Modeller : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng. ]
# Company : [ AHYDTECH Geomorphinc Ltd., 22 Zecca Drive, Guelph, ON, N1L1T1]
# License # : 3556411
# *****
RUN#:COMMAND#
R0001:C00001-----
START
[TZERO = .00 hrs on 0]
[METOUT= 2 (1=imperial, 2=metric output)]
[NSSTORM= 0 ]
[NRUN = 0001 ]
# *****
# ***** EXISTING CONDITION *****
# ***** 2-YEAR SCS 24 Hour Storm*****
# *****
R0001:C00002-----
READ STORM
Filename = 2SCSToP.STM
Comment = 2yr 24hr SCS
[SDT=10.00:SDUR= 24.00:PTOT= 59.10]
R0001:C00003-----DTmin-ID:NHYD-----AREAA-QPEAKCms-TpeakDate_hh:mm---RVmm-R.C.---DWfCms
CALIB NASHYD 5.0 01:SB01-1 17.36 .214 No_date 12:45 16.63 .281 .000
[CN= 70.0: N= 3.00: Tp= .87]
R0001:C00004-----DTmin-ID:NHYD-----AREAA-QPEAKCms-TpeakDate_hh:mm---RVmm-R.C.---DWfCms
ROUTE CHANNEL -> 5.0 01:SB01-1 17.36 .214 No_date 12:45 16.63 n/a .000
[RTD= 5.00] out<- 5.0 02:CH_SB1-2 17.36 .204 No_date 13:00 16.63 n/a .000
```

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```

[L/S/n= 287./ .100/.035]
{Vmax= .272:Dmax= .232}
R0001:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB STANDHYD 1.0 03:SB01-2 15.56 .647 No_date 12:01 39.03 .660 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 80.0]
[Pervious area: IAper= 5.50:SLPP= .40:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.50:SLPI= .50:LGI= 151.:MNI=.013:SCI= .0]
R0001:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 04:SB02-1 27.50 .235 No_date 13:30 15.75 .267 .000
[CN= 68.0: N= 3.00: Tp= 1.44]
R0001:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 04:SB02-1 27.50 .235 No_date 13:30 15.75 n/a .000
[RTD= 1.00] out<- 1.0 05:CH_SB2-2a 27.50 .234 No_date 13:31 15.75 n/a .000
[L/S/n= 91./ .100/.035]
{Vmax= .287:Dmax= .407}
R0001:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB STANDHYD 1.0 06:SB02-2 4.75 .277 No_date 12:00 49.64 .840 .000
[XIMP=.60:TIMP=.80]
[LOSS= 2 :CN= 82.0]
[Pervious area: IAper= 5.50:SLPP= .60:LGP= 91.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.50:SLPI= .50:LGI= 30.:MNI=.013:SCI= .0]
R0001:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ADD HYD 5.0 02:CH_SB1-2 17.36 .204 No_date 13:00 16.63 n/a .000
+ 1.0 03:SB01-2 15.56 .647 No_date 12:01 39.03 n/a .000
+ 1.0 05:CH_SB2-2a 27.50 .234 No_date 13:31 15.75 n/a .000
+ 1.0 06:SB02-2 4.75 .277 No_date 12:00 49.64 n/a .000
SUM= 1.0 07:JN_1 65.17 1.064 No_date 12:00 24.01 n/a .000
R0001:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 07:JN_1 65.17 1.064 No_date 12:00 24.01 n/a .000
[RTD= 1.00] out<- 1.0 08:CH_SB2-3 65.17 .972 No_date 12:02 24.01 n/a .000
[L/S/n= 285./ .100/.035]
{Vmax= .427:Dmax= .511}
R0001:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB STANDHYD 1.0 09:SB01-2 1.14 .051 No_date 12:00 39.94 .676 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 82.0]
[Pervious area: IAper= 5.00:SLPP= .50:LGP= 64.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 2.75:SLPI= .30:LGI= 30.:MNI=.013:SCI= .0]
R0001:C00012-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ADD HYD 1.0 08:CH_SB2-3 65.17 .972 No_date 12:02 24.01 n/a .000
+ 1.0 09:SB01-2 1.14 .051 No_date 12:00 39.94 n/a .000
SUM= 1.0 10:JN_2 66.31 1.020 No_date 12:01 24.29 n/a .000
R0001:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 10:JN_2 66.31 1.020 No_date 12:01 24.29 n/a .000
[RTD= 1.00] out<- 1.0 01:CH_SB3-2 66.31 .965 No_date 12:03 24.29 n/a .000
[L/S/n= 179./ .100/.035]
{Vmax= .423:Dmax= .501}
R0001:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 02:SB03-2 10.92 .153 No_date 12:25 15.64 .265 .000
[CN= 69.0: N= 3.00: Tp= .62]
R0001:C00015-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 03:SB04 19.72 .247 No_date 12:35 16.05 .272 .000
[CN= 70.0: N= 3.00: Tp= .79]
R0001:C00016-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ADD HYD 1.0 01:CH_SB3-2 66.31 .965 No_date 12:03 24.29 n/a .000
+ 5.0 02:SB03-2 10.92 .153 No_date 12:25 15.64 n/a .000
+ 5.0 03:SB04 19.72 .247 No_date 12:35 16.05 n/a .000
SUM= 1.0 04:JN_3 96.95 1.283 No_date 12:24 21.64 n/a .000
R0001:C00017-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 04:JN_3 96.95 1.283 No_date 12:24 21.64 n/a .000
[RTD= 1.00] out<- 1.0 05:CH_SB5-1 96.95 1.205 No_date 12:45 21.64 n/a .000
[L/S/n= 451./ .100/.035]
{Vmax= .352:Dmax= .452}
R0001:C00018-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 06:SB05-1 29.50 .438 No_date 12:20 15.73 .266 .000
[CN= 68.0: N= 3.00: Tp= .57]
R0001:C00019-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ADD HYD 1.0 05:CH_SB5-1 96.95 1.205 No_date 12:45 21.64 n/a .000
+ 5.0 06:SB05-1 29.50 .438 No_date 12:20 15.73 n/a .000
SUM= 1.0 07:JN_4 126.45 1.602 No_date 12:31 20.26 n/a .000
R0001:C00020-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 07:JN_4 126.45 1.602 No_date 12:31 20.26 n/a .000
[RTD= 1.00] out<- 1.0 08:CH_SB5-2 126.45 1.344 No_date 12:59 20.26 n/a .000
[L/S/n= 429./ .020/.035]
{Vmax= .214:Dmax= .654}
R0001:C00021-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 09:SB05-2 10.39 .101 No_date 13:20 16.67 .282 .000
[CN= 70.0: N= 3.00: Tp= 1.31]
R0001:C00022-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm-----RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 10:SB05-3 8.51 .069 No_date 13:10 13.33 .225 .000

```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



```

[CN= 65.0: N= 3.00: Tp= 1.16]
R0001:C00023-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ADD HYD          1.0 08:CH_SB5-2      126.45    1.344 No_date   12:59    20.26    n/a     .000
                  +    5.0 09:SB05-2      10.39      .101 No_date   13:20    16.67    n/a     .000
                  +    5.0 10:SB05-3       8.51      .069 No_date   13:10    13.33    n/a     .000
                SUM=    1.0 01:JN_5      145.35    1.509 No_date   13:01    19.60    n/a     .000
R0001:C00024-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 02:SB06        21.20      .204 No_date   13:25    16.91    .286    .000
[CN= 71.0: N= 3.00: Tp= 1.35]
R0001:C00025-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 03:SB07        11.36      .086 No_date   13:50    15.74    .266    .000
[CN= 68.0: N= 3.00: Tp= 1.74]
R0001:C00026-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ADD HYD          5.0 02:SB06        21.20      .204 No_date   13:25    16.91    n/a     .000
                  +    5.0 03:SB07        11.36      .086 No_date   13:50    15.74    n/a     .000
                SUM=    5.0 04:JN_6        32.56      .287 No_date   13:30    16.50    n/a     .000
R0001:C00027-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ROUTE CHANNEL    ->    5.0 04:JN_6        32.56      .287 No_date   13:30    16.50    n/a     .000
[RD= 5.00] out<-  5.0 05:CH_SB8        32.56      .283 No_date   13:40    16.50    n/a     .000
[L/S/n= 490./ .500/.035]
{Vmax= .537:Dmax= .220}
R0001:C00028-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 06:SB08         8.98      .227 No_date   12:15    23.66    .400    .000
[CN= 80.0: N= 3.00: Tp= .50]
R0001:C00029-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ADD HYD          1.0 01:JN_5      145.35    1.509 No_date   13:01    19.60    n/a     .000
                  +    5.0 05:CH_SB8        32.56      .283 No_date   13:40    16.50    n/a     .000
                  +    5.0 06:SB08         8.98      .227 No_date   12:15    23.66    n/a     .000
                SUM=    1.0 07:JN_7      186.89    1.886 No_date   13:02    19.25    n/a     .000
R0001:C00030-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ROUTE CHANNEL    ->    1.0 07:JN_7      186.89    1.886 No_date   13:02    19.25    n/a     .000
[RD= 1.00] out<-  1.0 08:CH_SB9      186.89    1.855 No_date   13:10    19.25    n/a     .000
[L/S/n= 410./ .100/.035]
{Vmax= .552:Dmax= .706}
R0001:C00031-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 09:SB09        14.34      .245 No_date   12:20    17.78    .301    .000
[CN= 73.0: N= 3.00: Tp= .57]
R0001:C00032-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB10        11.38      .157 No_date   12:30    16.88    .286    .000
[CN= 72.0: N= 3.00: Tp= .73]
R0001:C00033-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ADD HYD          1.0 08:CH_SB9      186.89    1.855 No_date   13:10    19.25    n/a     .000
                  +    5.0 09:SB09        14.34      .245 No_date   12:20    17.78    n/a     .000
                  +    5.0 10:SB10        11.38      .157 No_date   12:30    16.88    n/a     .000
                SUM=    1.0 01:JN_8      212.61    2.148 No_date   13:02    19.03    n/a     .000
R0001:C00034-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ROUTE CHANNEL    ->    1.0 01:JN_8      212.61    2.148 No_date   13:02    19.03    n/a     .000
[RD= 1.00] out<-  1.0 02:CH_SB11      212.61    2.123 No_date   13:07    19.03    n/a     .000
[L/S/n= 302./ .100/.035]
{Vmax= .571:Dmax= .753}
R0001:C00035-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      1.0 03:SB11        14.81      .509 No_date   12:00    21.54    .364    .000
[CN= 78.0: N= 3.00: Tp= .08]
R0001:C00036-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 04:SB16        16.71      .217 No_date   13:15    21.70    .367    .000
[CN= 78.0: N= 3.00: Tp= 1.30]
R0001:C00037-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ROUTE CHANNEL    ->    5.0 04:SB16        16.71      .217 No_date   13:15    21.70    n/a     .000
[RD= 5.00] out<-  5.0 05:CH_SB15        16.71      .215 No_date   13:25    21.70    n/a     .000
[L/S/n= 299./ .750/.035]
{Vmax= .366:Dmax= .103}
R0001:C00038-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 06:SB15         7.95      .174 No_date   12:15    21.70    .367    .000
[CN= 78.0: N= 3.00: Tp= .54]
R0001:C00039-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 07:SB14        15.85      .326 No_date   12:20    21.70    .367    .000
[CN= 78.0: N= 3.00: Tp= .61]
R0001:C00040-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ADD HYD          5.0 05:CH_SB15        16.71      .215 No_date   13:25    21.70    n/a     .000
                  +    5.0 06:SB15         7.95      .174 No_date   12:15    21.70    n/a     .000
                  +    5.0 07:SB14        15.85      .326 No_date   12:20    21.70    n/a     .000
                SUM=    5.0 08:JN_9        40.51      .619 No_date   12:30    21.70    n/a     .000
R0001:C00041-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
ROUTE CHANNEL    ->    5.0 08:JN_9        40.51      .619 No_date   12:30    21.70    n/a     .000
[RD= 5.00] out<-  5.0 09:CH_SB12        40.51      .586 No_date   12:45    21.70    n/a     .000
[L/S/n= 222./ .100/.035]
{Vmax= .244:Dmax= .234}
R0001:C00042-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB12         6.02      .144 No_date   12:10    21.70    .367    .000
[CN= 78.0: N= 3.00: Tp= .46]
R0001:C00043-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms

```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



AHYDTECH GEOMORPHIC
ADVANCED HYDROLOGY HYDRAULIC GEOMORPHOLOGY

```

ADD HYD          1.0 02:CH_SB11      212.61    2.123 No_date    13:07    19.03    n/a      .000
                  +    1.0 03:SB11      14.81      .509 No_date    12:00    21.54    n/a      .000
                  +    5.0 09:CH_SB12    40.51      .586 No_date    12:45    21.70    n/a      .000
                  +    5.0 10:SB12      6.02      .144 No_date    12:10    21.70    n/a      .000
                  SUM=    1.0 01:JN_10    273.95    2.900 No_date    12:58    19.62    n/a      .000
R0001:C00044-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
SAVE HYD          1.0 01:JN_10      273.95    2.900 No_date    12:58    19.62    n/a      .000
    fname :JN_10.0001
    remark:JN_10
R0001:C00045-----
FINISH
*****
WARNINGS / ERRORS / NOTES
-----
Simulation ended on 2022-12-28      at 13:18:11
=====

```



5-year Storm Event

```
=====
SSSSS W W M M H H Y Y M M OOO 222 000 11 77777 =====
S W W W MM MM H H Y Y MM MM O O 2 0 0 11 7 7
SSSSS W W W M M M HHHH Y M M M O O 2 0 0 11 7 Ver4.05.0
S W W M M H H Y M M O O 222 0 0 11 7 APR 2017
SSSSS W W M M H H Y M M OOO 2 0 0 11 7 =====
                                           2 0 0 11 7 # 3556411
                                           222 000 11 7 =====

StormWater Management Hydrologic Model

*****
***** SWMHYMO Ver4.05.0 *****
***** A single event and continuous hydrologic simulation model *****
***** based on the principles of HYMO and its successors *****
***** OTTHYMO-83 and OTTHYMO-89. *****
*****
***** Distributed by: J.F. Sabourin and Associates Inc. *****
***** Ottawa, Ontario: (613) 836-3884 *****
***** Gatineau, Quebec: (819) 243-6858 *****
***** E-Mail: swmhymo@jfsa.com *****
*****

++++++
++++++ Licensed user: AHYDTECH Geomorphics Ltd. ++++++
++++++ Guelph SERIAL#:3556411 ++++++
++++++

*****
***** +++++ PROGRAM ARRAY DIMENSIONS +++++ *****
***** Maximum value for ID numbers : 11 *****
***** Max. number of rainfall points: 105408 *****
***** Max. number of flow points : 105408 *****
*****

***** SUMMARY OUTPUT *****
*****
* RUN DATE: 2022-12-28 TIME: 13:18:58 RUN COUNTER: 000004 *
*****
* Input file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\5-yr\5YR_Pelham.dat *
* Output file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\5-yr\5YR_Pelham.out *
* Summary file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\5-yr\5YR_Pelham.sum *
* User comments: *
* 1: *
* 2: *
* 3: *
*****

# *****
# Project Name: [Pelham] Project Number: [ 6HH
# ]
# Date : December 27,
2022
# Modeller : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng.
# ]
# Company : [ AHYDTECH Geomorphics Ltd., 22 Zecca Drive, Guelph, ON,
NIL1T1]
# License # :
3556411
# *****
RUN#:COMMAND#
R0001:C00001-----
START
[TZERO = .00 hrs on 0]
[METOUT= 2 (1=imperial, 2=metric output)]
[NSTORM= 0 ]
[NRUN = 0001 ]
# *****
# ***** EXISTING CONDITION *****
# ***** 5-YEAR SCS 24 Hour Storm *****
# *****
R0001:C00002-----
READ STORM
Filename = 5SCSToP.STM
Comment = 5yr 24hr SCS
[SDT=10.00:SDUR= 24.00:PTOT= 78.10]
R0001:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 01:SB01-1 17.36 .367 No_date 12:40 27.81 .356 .000
[CN= 70.0: N= 3.00: Tp= .87]
R0001:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL -> 5.0 01:SB01-1 17.36 .367 No_date 12:40 27.81 n/a .000
[RDT= 5.00] out<- 5.0 02:CH_SB1-2 17.36 .353 No_date 12:55 27.81 n/a .000
[L/S/n= 287./ .100/.035]
[Vmax= .327:Dmax= .303]
R0001:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB STANDHYD 1.0 03:SB01-2 15.56 .973 No_date 12:00 55.71 .713 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 80.0]
[Pervious area: IAper= 5.50:SLPP= .40:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.50:SLPI= .50:LGI= 151.:MNI=.013:SCI= .0]
```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



AHYDTECH GEOMORPHIC
ADVANCED HYDROLOGY HYDRAULIC GEOMORPHOLOGY

```

R0001:C00006-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 04:SB02-1      27.50      .403 No_date 13:25 26.45 .339 .000
[CN= 68.0: N= 3.00: Tp= 1.44]

R0001:C00007-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL    -> 5.0 04:SB02-1      27.50      .403 No_date 13:25 26.45 n/a .000
[RD= 1.00] out<- 1.0 05:CH_SB2-2a      27.50      .402 No_date 13:30 26.45 n/a .000
[L/S/n= 91./ .100/.035]
{Vmax= .315:Dmax= .509}

R0001:C00008-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB STANDHYD   1.0 06:SB02-2        4.75      .386 No_date 12:00 67.96 .870 .000
[XIMP=.60:TIMP=.80]
[LOSS= 2 :CN= 82.0]
[Pervious area: IAPER= 5.50:SLPP= .60:LGP= 91.:MNP=.250:SCP= .0]
[Impervious area: IAIMP= 1.50:SLPI= .50:LGI= 30.:MNI=.013:SCI= .0]

R0001:C00009-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ADD HYD
+ 1.0 02:CH_SB1-2      17.36      .353 No_date 12:55 27.81 n/a .000
+ 1.0 03:SB01-2      15.56      .973 No_date 12:00 55.71 n/a .000
+ 1.0 05:CH_SB2-2a      27.50      .402 No_date 13:30 26.45 n/a .000
+ 1.0 06:SB02-2        4.75      .386 No_date 12:00 67.96 n/a .000
SUM= 1.0 07:JN_1        65.17      1.647 No_date 12:00 36.82 n/a .000

R0001:C00010-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL    -> 1.0 07:JN_1        65.17      1.647 No_date 12:00 36.82 n/a .000
[RD= 1.00] out<- 1.0 08:CH_SB2-3      65.17      1.508 No_date 12:01 36.82 n/a .000
[L/S/n= 285./ .100/.035]
{Vmax= .472:Dmax= .636}

R0001:C00011-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB STANDHYD   1.0 09:SB01-2        1.14      .076 No_date 12:00 56.97 .729 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 82.0]
[Pervious area: IAPER= 5.00:SLPP= .50:LGP= 64.:MNP=.250:SCP= .0]
[Impervious area: IAIMP= 2.75:SLPI= .30:LGI= 30.:MNI=.013:SCI= .0]

R0001:C00012-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ADD HYD
+ 1.0 08:CH_SB2-3      65.17      1.508 No_date 12:01 36.82 n/a .000
+ 1.0 09:SB01-2        1.14      .076 No_date 12:00 56.97 n/a .000
SUM= 1.0 10:JN_2        66.31      1.582 No_date 12:01 37.17 n/a .000

R0001:C00013-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL    -> 1.0 10:JN_2        66.31      1.582 No_date 12:01 37.17 n/a .000
[RD= 1.00] out<- 1.0 01:CH_SB3-2      66.31      1.499 No_date 12:02 37.17 n/a .000
[L/S/n= 179./ .100/.035]
{Vmax= .469:Dmax= .624}

R0001:C00014-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 02:SB03-2      10.92      .268 No_date 12:20 26.48 .339 .000
[CN= 69.0: N= 3.00: Tp= .62]

R0001:C00015-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 03:SB04        19.72      .431 No_date 12:35 27.14 .347 .000
[CN= 70.0: N= 3.00: Tp= .79]

R0001:C00016-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ADD HYD
+ 1.0 01:CH_SB3-2      66.31      1.499 No_date 12:02 37.17 n/a .000
+ 5.0 02:SB03-2      10.92      .268 No_date 12:20 26.48 n/a .000
+ 5.0 03:SB04        19.72      .431 No_date 12:35 27.14 n/a .000
SUM= 1.0 04:JN_3      96.95      2.088 No_date 12:20 33.93 n/a .000

R0001:C00017-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL    -> 1.0 04:JN_3      96.95      2.088 No_date 12:20 33.93 n/a .000
[RD= 1.00] out<- 1.0 05:CH_SB5-1      96.95      1.978 No_date 12:38 33.93 n/a .000
[L/S/n= 451./ .100/.035]
{Vmax= .415:Dmax= .536}

R0001:C00018-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 06:SB05-1      29.50      .753 No_date 12:20 26.42 .338 .000
[CN= 68.0: N= 3.00: Tp= .57]

R0001:C00019-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ADD HYD
+ 1.0 05:CH_SB5-1      96.95      1.978 No_date 12:38 33.93 n/a .000
+ 5.0 06:SB05-1      29.50      .753 No_date 12:20 26.42 n/a .000
SUM= 1.0 07:JN_4      126.45      2.681 No_date 12:29 32.17 n/a .000

R0001:C00020-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL    -> 1.0 07:JN_4      126.45      2.681 No_date 12:29 32.17 n/a .000
[RD= 1.00] out<- 1.0 08:CH_SB5-2      126.45      2.271 No_date 12:56 32.17 n/a .000
[L/S/n= 429./ .020/.035]
{Vmax= .247:Dmax= .802}

R0001:C00021-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 09:SB05-2      10.39      .172 No_date 13:15 27.87 .357 .000
[CN= 70.0: N= 3.00: Tp= 1.31]

R0001:C00022-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 10:SB05-3        8.51      .123 No_date 13:10 23.07 .295 .000
[CN= 65.0: N= 3.00: Tp= 1.16]

R0001:C00023-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ADD HYD
+ 1.0 08:CH_SB5-2      126.45      2.271 No_date 12:56 32.17 n/a .000
+ 5.0 09:SB05-2      10.39      .172 No_date 13:15 27.87 n/a .000
+ 5.0 10:SB05-3        8.51      .123 No_date 13:10 23.07 n/a .000
SUM= 1.0 01:JN_5      145.35      2.558 No_date 12:56 31.33 n/a .000

R0001:C00024-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 02:SB06        21.20      .350 No_date 13:20 28.32 .363 .000
[CN= 71.0: N= 3.00: Tp= 1.35]

R0001:C00025-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD      5.0 03:SB07        11.36      .147 No_date 13:50 26.43 .338 .000
[CN= 68.0: N= 3.00: Tp= 1.74]

R0001:C00026-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ADD HYD
+ 5.0 02:SB06        21.20      .350 No_date 13:20 28.32 n/a .000
+ 5.0 03:SB07        11.36      .147 No_date 13:50 26.43 n/a .000
SUM= 5.0 04:JN_6        32.56      .492 No_date 13:25 27.66 n/a .000

R0001:C00027-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL    -> 5.0 04:JN_6        32.56      .492 No_date 13:25 27.66 n/a .000
[RD= 5.00] out<- 5.0 05:CH_SB8      32.56      .488 No_date 13:35 27.66 n/a .000
[L/S/n= 490./ .500/.035]
{Vmax= .646:Dmax= .275}

R0001:C00028-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C---DWFcms

```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



AHYDTECH GEOMORPHIC
ADVANCED HYDROLOGY HYDRAULIC GEOMORPHOLOGY

```
CALIB NASHYD      5.0 06:SB08      8.98      .368 No_date 12:10 37.75 .483      .000
[CN= 80.0: N= 3.00: Tp= .50]
R0001:C00029-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD          1.0 01:JN_5      145.35      2.558 No_date 12:56 31.33 n/a      .000
+               5.0 05:CH_SB8      32.56      .488 No_date 13:35 27.66 n/a      .000
+               5.0 06:SB08      8.98      .368 No_date 12:10 37.75 n/a      .000
SUM=            1.0 07:JN_7      186.89      3.200 No_date 12:56 31.01 n/a      .000
R0001:C00030-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 07:JN_7      186.89      3.200 No_date 12:56 31.01 n/a      .000
[RDT= 1.00] out<- 1.0 08:CH_SB9      186.89      3.142 No_date 13:04 31.01 n/a      .000
[L/S/n= 410./ .100/.035]
[Vmax= .645:Dmax= .930]
R0001:C00031-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 09:SB09      14.34      .420 No_date 12:20 29.70 .380      .000
[CN= 73.0: N= 3.00: Tp= .57]
R0001:C00032-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB10      11.38      .275 No_date 12:30 28.46 .364      .000
[CN= 72.0: N= 3.00: Tp= .73]
R0001:C00033-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD          1.0 08:CH_SB9      186.89      3.142 No_date 13:04 31.01 n/a      .000
+               5.0 09:SB09      14.34      .420 No_date 12:20 29.70 n/a      .000
+               5.0 10:SB10      11.38      .275 No_date 12:30 28.46 n/a      .000
SUM=            1.0 01:JN_8      212.61      3.676 No_date 12:56 30.78 n/a      .000
R0001:C00034-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 01:JN_8      212.61      3.676 No_date 12:56 30.78 n/a      .000
[RDT= 1.00] out<- 1.0 02:CH_SB11      212.61      3.643 No_date 12:57 30.78 n/a      .000
[L/S/n= 302./ .100/.035]
[Vmax= .673:Dmax= 1.002]
R0001:C00035-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      1.0 03:SB11      14.81      .811 No_date 12:00 34.97 .448      .000
[CN= 78.0: N= 3.00: Tp= .08]
R0001:C00036-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 04:SB16      16.71      .359 No_date 13:15 35.15 .450      .000
[CN= 78.0: N= 3.00: Tp= 1.30]
R0001:C00037-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 04:SB16      16.71      .359 No_date 13:15 35.15 n/a      .000
[RDT= 5.00] out<- 5.0 05:CH_SB15      16.71      .356 No_date 13:25 35.15 n/a      .000
[L/S/n= 299./ .750/.035]
[Vmax= .422:Dmax= .126]
R0001:C00038-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 06:SB15      7.95      .289 No_date 12:15 35.15 .450      .000
[CN= 78.0: N= 3.00: Tp= .54]
R0001:C00039-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 07:SB14      15.85      .542 No_date 12:20 35.15 .450      .000
[CN= 78.0: N= 3.00: Tp= .61]
R0001:C00040-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD          5.0 05:CH_SB15      16.71      .356 No_date 13:25 35.15 n/a      .000
+               5.0 06:SB15      7.95      .289 No_date 12:15 35.15 n/a      .000
+               5.0 07:SB14      15.85      .542 No_date 12:20 35.15 n/a      .000
SUM=            5.0 08:JN_9      40.51      1.042 No_date 12:25 35.15 n/a      .000
R0001:C00041-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 08:JN_9      40.51      1.042 No_date 12:25 35.15 n/a      .000
[RDT= 5.00] out<- 5.0 09:CH_SB12      40.51      .990 No_date 12:40 35.15 n/a      .000
[L/S/n= 222./ .100/.035]
[Vmax= .277:Dmax= .293]
R0001:C00042-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB12      6.02      .239 No_date 12:10 35.15 .450      .000
[CN= 78.0: N= 3.00: Tp= .46]
R0001:C00043-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD          1.0 02:CH_SB11      212.61      3.643 No_date 12:57 30.78 n/a      .000
+               1.0 03:SB11      14.81      .811 No_date 12:00 34.97 n/a      .000
+               5.0 09:CH_SB12      40.51      .990 No_date 12:40 35.15 n/a      .000
+               5.0 10:SB12      6.02      .239 No_date 12:10 35.15 n/a      .000
SUM=            1.0 01:JN_10      273.95      4.960 No_date 12:56 31.75 n/a      .000
R0001:C00044-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
SAVE HYD          1.0 01:JN_10      273.95      4.960 No_date 12:56 31.75 n/a      .000
fname :JN_10.0001
remark:JN_10
R0001:C00045-----
FINISH
```

***** WARNINGS / ERRORS / NOTES

Simulation ended on 2022-12-28 at 13:18:58



25-year Storm Event

```
=====
SSSSS  W  W  M  M  H  H  Y  Y  M  M  OOO      222      000      11      77777  =====
S      W  W  W  MM MM  H  H  Y  Y  MM MM  O  O      2      0      0      11      7      7
SSSSS  W  W  W  M  M  M  HHHHH  Y  M  M  M  O  O      2      0      0      11      7  Ver4.05.0
S      W  W  M  M  H  H  Y  M  M  O  O      222      0      0      11      7  APR 2017
SSSSS  W  W  M  M  H  H  Y  M  M  OOO      2      0      0      11      7  =====
                                           2      0      0      11      7  # 3556411
                                           222      000      11      7  =====

StormWater Management Hydrologic Model

*****
***** SWMHYMO Ver4.05.0 *****
***** A single event and continuous hydrologic simulation model *****
***** based on the principles of HYMO and its successors *****
***** OTTHYMO-83 and OTTHYMO-89. *****
*****
***** Distributed by: J.F. Sabourin and Associates Inc. *****
***** Ottawa, Ontario: (613) 836-3884 *****
***** Gatineau, Quebec: (819) 243-6858 *****
***** E-Mail: swmhymo@jfsa.com *****
*****

++++++
++++++ Licensed user: AHYDTECH Geomorphinc Ltd ++++++
++++++ Guelph SERIAL#:3556411 ++++++
++++++

*****
***** +++++ PROGRAM ARRAY DIMENSIONS +++++ *****
***** Maximum value for ID numbers : 11 *****
***** Max. number of rainfall points: 105408 *****
***** Max. number of flow points : 105408 *****
*****

***** SUMMARY OUTPUT *****
*****
* RUN DATE: 2022-12-28 TIME: 13:19:42 RUN COUNTER: 000005 *
*****
* Input file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\25-yr\25YR_Pelham.dat *
* Output file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\25-yr\25YR_Pelham.out *
* Summary file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\25-yr\25YR_Pelham.sum *
* User comments: *
* 1: *
* 2: *
* 3: *
*****

# *****
# Project Name: [Pelham] Project Number: [ 6HH ]
# Date : December 27, 2022
# Modeller : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng. ]
# Company : [ AHYDTECH Geomorphinc Ltd., 22 Zecca Drive, Guelph, ON, N1L1T1 ]
# License # : 3556411
# *****
# RUN#:COMMAND#
R0001:C00001-----
START
[TZERO = .00 hrs on 0]
[METOUT= 2 (1=imperial, 2=metric output)]
[NSTORM= 0 ]
[NRUN = 0001 ]
# *****
# ***** EXISTING CONDITION *****
# ***** 25-YEAR SCS 24 Hour Storm *****
# *****
R0001:C00002-----
READ STORM
Filename = 25SCSToP.STM
Comment = 25yr 24hr SCS
[SDT=10.00:SDUR= 24.00:PTOT= 106.50]
R0001:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 01:SB01-1 17.36 .637 No_date 12:40 47.20 .443 .000
[CN= 70.0: N= 3.00: Tp= .87]
R0001:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 01:SB01-1 17.36 .637 No_date 12:40 47.20 n/a .000
[RD= 5.00] out<- 5.0 02:CH_SBI-2 17.36 .617 No_date 12:50 47.20 n/a .000
[L/S/n= 287./ .100/.035]
[Vmax= .387:Dmax= .400]
R0001:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB STANDHYD 1.0 03:SB01-2 15.56 1.496 No_date 12:00 81.74 .767 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 80.0]
[Pervious area: IApr= 5.50:SLPP= .40:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IApr= 1.50:SLPI= .50:LGI= 151.:MNI=.013:SCI= .0]
R0001:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 04:SB02-1 27.50 .701 No_date 13:25 45.12 .424 .000
[CN= 68.0: N= 3.00: Tp= 1.44]
R0001:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 04:SB02-1 27.50 .701 No_date 13:25 45.12 n/a .000
```


Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



AHYDTECH GEOMORPHIC
ADVANCED HYDROLOGY HYDRAULIC GEOMORPHOLOGY

```
[RDT= 1.00] out<- 1.0 05:CH_SB2-2a 27.50 .700 No_date 13:25 45.12 n/a .000
[L/S/n= 91./ .100/.035]
{Vmax= .348:Dmax= .634}
R0001:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB STANDHYD 1.0 06:SB02-2 4.75 .551 No_date 12:00 95.71 .899 .000
[XIMP=.60:TIMP=.80]
[LOSS= 2 :CN= 82.0]
[Pervious area: IApr= 5.50:SLPP= .60:LGP= 91.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.50:SLPI= .50:LGI= 30.:MNI=.013:SCI= .0]
R0001:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ADD HYD 5.0 02:CH_SB1-2 17.36 .617 No_date 12:50 47.20 n/a .000
+ 1.0 03:SB01-2 15.56 1.496 No_date 12:00 81.74 n/a .000
+ 1.0 05:CH_SB2-2a 27.50 .700 No_date 13:25 45.12 n/a .000
+ 1.0 06:SB02-2 4.75 .551 No_date 12:00 95.71 n/a .000
SUM= 1.0 07:JN_1 65.17 2.611 No_date 12:00 58.10 n/a .000
R0001:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL -> 1.0 07:JN_1 65.17 2.611 No_date 12:00 58.10 n/a .000
[RDT= 1.00] out<- 1.0 08:CH_SB2-3 65.17 2.412 No_date 12:01 58.10 n/a .000
[L/S/n= 285./ .100/.035]
{Vmax= .522:Dmax= .796}
R0001:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB STANDHYD 1.0 09:SB01-2 1.14 .115 No_date 12:00 83.37 .783 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 82.0]
[Pervious area: IApr= 5.00:SLPP= .50:LGP= 64.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 2.75:SLPI= .30:LGI= 30.:MNI=.013:SCI= .0]
R0001:C00012-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ADD HYD 1.0 08:CH_SB2-3 65.17 2.412 No_date 12:01 58.10 n/a .000
+ 1.0 09:SB01-2 1.14 .115 No_date 12:00 83.37 n/a .000
SUM= 1.0 10:JN_2 66.31 2.522 No_date 12:01 58.54 n/a .000
R0001:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL -> 1.0 10:JN_2 66.31 2.522 No_date 12:01 58.54 n/a .000
[RDT= 1.00] out<- 1.0 01:CH_SB3-2 66.31 2.398 No_date 12:01 58.54 n/a .000
[L/S/n= 179./ .100/.035]
{Vmax= .518:Dmax= .783}
R0001:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 02:SB03-2 10.92 .471 No_date 12:20 45.41 .426 .000
[CN= 69.0: N= 3.00: Tp= .62]
R0001:C00015-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 03:SB04 19.72 .757 No_date 12:30 46.42 .436 .000
[CN= 70.0: N= 3.00: Tp= .79]
R0001:C00016-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ADD HYD 1.0 01:CH_SB3-2 66.31 2.398 No_date 12:01 58.54 n/a .000
+ 5.0 02:SB03-2 10.92 .471 No_date 12:20 45.41 n/a .000
+ 5.0 03:SB04 19.72 .757 No_date 12:30 46.42 n/a .000
SUM= 1.0 04:JN_3 96.95 3.457 No_date 12:17 54.59 n/a .000
R0001:C00017-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL -> 1.0 04:JN_3 96.95 3.457 No_date 12:17 54.59 n/a .000
[RDT= 1.00] out<- 1.0 05:CH_SB5-1 96.95 3.281 No_date 12:33 54.59 n/a .000
[L/S/n= 451./ .100/.035]
{Vmax= .474:Dmax= .645}
R0001:C00018-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 06:SB05-1 29.50 1.312 No_date 12:15 45.09 .423 .000
[CN= 68.0: N= 3.00: Tp= .57]
R0001:C00019-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ADD HYD 1.0 05:CH_SB5-1 96.95 3.281 No_date 12:33 54.59 n/a .000
+ 5.0 06:SB05-1 29.50 1.312 No_date 12:15 45.09 n/a .000
SUM= 1.0 07:JN_4 126.45 4.530 No_date 12:25 52.38 n/a .000
R0001:C00020-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL -> 1.0 07:JN_4 126.45 4.530 No_date 12:25 52.38 n/a .000
* [RDT= 1.00] out<- 1.0 08:CH_SB5-2 126.45 3.923 No_date 12:38 52.38 n/a .000
[L/S/n= 429./ .020/.035]
{Vmax= .284:Dmax= .998}
R0001:C00021-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 09:SB05-2 10.39 .297 No_date 13:15 47.26 .444 .000
[CN= 70.0: N= 3.00: Tp= 1.31]
R0001:C00022-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 10:SB05-3 8.51 .221 No_date 13:05 40.43 .380 .000
[CN= 65.0: N= 3.00: Tp= 1.16]
R0001:C00023-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ADD HYD 1.0 08:CH_SB5-2 126.45 3.923 No_date 12:38 52.38 n/a .000
+ 5.0 09:SB05-2 10.39 .297 No_date 13:15 47.26 n/a .000
+ 5.0 10:SB05-3 8.51 .221 No_date 13:05 40.43 n/a .000
SUM= 1.0 01:JN_5 145.35 4.397 No_date 12:42 51.31 n/a .000
R0001:C00024-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 02:SB06 21.20 .605 No_date 13:15 48.03 .451 .000
[CN= 71.0: N= 3.00: Tp= 1.35]
R0001:C00025-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 03:SB07 11.36 .255 No_date 13:45 45.10 .423 .000
[CN= 68.0: N= 3.00: Tp= 1.74]
R0001:C00026-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ADD HYD 5.0 02:SB06 21.20 .605 No_date 13:15 48.03 n/a .000
+ 5.0 03:SB07 11.36 .255 No_date 13:45 45.10 n/a .000
SUM= 5.0 04:JN_6 32.56 .852 No_date 13:25 47.01 n/a .000
R0001:C00027-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ROUTE CHANNEL -> 5.0 04:JN_6 32.56 .852 No_date 13:25 47.01 n/a .000
[RDT= 5.00] out<- 5.0 05:CH_SB8 32.56 .846 No_date 13:35 47.01 n/a .000
[L/S/n= 490./ .500/.035]
{Vmax= .764:Dmax= .351}
R0001:C00028-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
CALIB NASHYD 5.0 06:SB08 8.98 .604 No_date 12:10 60.95 .572 .000
[CN= 80.0: N= 3.00: Tp= .50]
R0001:C00029-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C---DWFcms
ADD HYD 1.0 01:JN_5 145.35 4.397 No_date 12:42 51.31 n/a .000
+ 5.0 05:CH_SB8 32.56 .846 No_date 13:35 47.01 n/a .000
```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



AHYDTECH GEOMORPHIC
ADVANCED HYDROLOGY HYDRAULIC GEOMORPHOLOGY

```
+      5.0 06:SB08      8.98      .604 No_date 12:10 60.95 n/a .000
SUM=    1.0 07:JN_7      186.89    5.492 No_date 12:50 51.03 n/a .000
R0001:C00030-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    1.0 07:JN_7      186.89    5.492 No_date 12:50 51.03 n/a .000
[RDt= 1.00] out<-    1.0 08:CH_SB9    186.89    5.403 No_date 12:58 51.03 n/a .000
[L/S/n= 410./ .100/.035]
{Vmax= .759:Dmax= 1.243}
R0001:C00031-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 09:SB09      14.34      .727 No_date 12:15 50.13 .471 .000
[CN= 73.0: N= 3.00: Tp= .57]
R0001:C00032-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB10      11.38      .480 No_date 12:25 48.46 .455 .000
[CN= 72.0: N= 3.00: Tp= .73]
R0001:C00033-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD
+      1.0 08:CH_SB9    186.89    5.403 No_date 12:58 51.03 n/a .000
+      5.0 09:SB09      14.34      .727 No_date 12:15 50.13 n/a .000
+      5.0 10:SB10      11.38      .480 No_date 12:25 48.46 n/a .000
SUM=    1.0 01:JN_8      212.61    6.388 No_date 12:41 50.83 n/a .000
R0001:C00034-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    1.0 01:JN_8      212.61    6.388 No_date 12:41 50.83 n/a .000
[RDt= 1.00] out<-    1.0 02:CH_SB11    212.61    6.313 No_date 12:48 50.83 n/a .000
[L/S/n= 302./ .100/.035]
{Vmax= .791:Dmax= 1.346}
R0001:C00035-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      1.0 03:SB11      14.81      1.299 No_date 12:00 57.35 .539 .000
[CN= 78.0: N= 3.00: Tp= .08]
R0001:C00036-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 04:SB16      16.71      .598 No_date 13:10 57.56 .540 .000
[CN= 78.0: N= 3.00: Tp= 1.30]
R0001:C00037-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    5.0 04:SB16      16.71      .598 No_date 13:10 57.56 n/a .000
[RDt= 5.00] out<-    5.0 05:CH_SB15    16.71      .595 No_date 13:15 57.56 n/a .000
[L/S/n= 299./ .750/.035]
{Vmax= .493:Dmax= .154}
R0001:C00038-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 06:SB15      7.95      .481 No_date 12:15 57.56 .540 .000
[CN= 78.0: N= 3.00: Tp= .54]
R0001:C00039-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 07:SB14      15.85      .902 No_date 12:20 57.56 .540 .000
[CN= 78.0: N= 3.00: Tp= .61]
R0001:C00040-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD
+      5.0 05:CH_SB15    16.71      .595 No_date 13:15 57.56 n/a .000
+      5.0 06:SB15      7.95      .481 No_date 12:15 57.56 n/a .000
+      5.0 07:SB14      15.85      .902 No_date 12:20 57.56 n/a .000
SUM=    5.0 08:JN_9      40.51    1.755 No_date 12:25 57.56 n/a .000
R0001:C00041-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    5.0 08:JN_9      40.51    1.755 No_date 12:25 57.56 n/a .000
[RDt= 5.00] out<-    5.0 09:CH_SB12    40.51    1.677 No_date 12:35 57.56 n/a .000
[L/S/n= 222./ .100/.035]
{Vmax= .311:Dmax= .368}
R0001:C00042-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB12      6.02      .396 No_date 12:10 57.56 .540 .000
[CN= 78.0: N= 3.00: Tp= .46]
R0001:C00043-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD
+      1.0 02:CH_SB11    212.61    6.313 No_date 12:48 50.83 n/a .000
+      1.0 03:SB11      14.81      1.299 No_date 12:00 57.35 n/a .000
+      5.0 09:CH_SB12    40.51    1.677 No_date 12:35 57.56 n/a .000
+      5.0 10:SB12      6.02      .396 No_date 12:10 57.56 n/a .000
SUM=    1.0 01:JN_10      273.95    8.552 No_date 12:45 52.33 n/a .000
R0001:C00044-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
SAVE HYD      1.0 01:JN_10      273.95    8.552 No_date 12:45 52.33 n/a .000
fname :JN_10.0001
remark:JN_10
R0001:C00045-----
FINISH
```

WARNINGS / ERRORS / NOTES

Simulation ended on 2022-12-28 at 13:19:42



100-year Storm Event

```
=====
SSSSS  W  W  M  M  H  H  Y  Y  M  M  OOO      222  000  11  77777 =====
S      W  W  W  MM MM  H  H  Y  Y  MM MM  O  O      2  0  0  11  7  7
SSSSS  W  W  W  M  M  M  HHHHH  Y  M  M  M  O  O      2  0  0  11  7  Ver4.05.0
S      W  W  M  M  H  H  Y  M  M  O  O      222  0  0  11  7  APR 2017
SSSSS  W  W  M  M  H  H  Y  M  M  OOO      2  0  0  11  7  =====
                                           2  0  0  11  7  # 3556411
                                           222  000  11  7  =====

StormWater Management Hydrologic Model

*****
***** SWMHYMO Ver4.05.0 *****
***** A single event and continuous hydrologic simulation model *****
***** based on the principles of HYMO and its successors *****
***** OTTHYMO-83 and OTTHYMO-89. *****
*****
***** Distributed by: J.F. Sabourin and Associates Inc. *****
***** Ottawa, Ontario: (613) 836-3884 *****
***** Gatineau, Quebec: (819) 243-6858 *****
***** E-Mail: swmhymo@jfsa.com *****
*****

+++++
+++++ Licensed user: AHYDTECH Geomorphinc Ltd +++++
+++++ Guelph SERIAL#:3556411 +++++
+++++

*****
***** +++++ PROGRAM ARRAY DIMENSIONS +++++ *****
***** Maximum value for ID numbers : 11 *****
***** Max. number of rainfall points: 105408 *****
***** Max. number of flow points : 105408 *****
*****

***** SUMMARY OUTPUT *****
*****
* RUN DATE: 2022-12-28 TIME: 13:17:11 RUN COUNTER: 000002 *
*****
* Input file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\100-yr\100YR_Pelham.dat *
* Output file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\100-yr\100YR_Pelham.out *
* Summary file: C:\Users\HP\Desktop\Office\Pelham\V14\V14\100-yr\100YR_Pelham.sum *
* User comments: *
* 1: *
* 2: *
* 3: *
*****

# *****
# Project Name: [Pelham] Project Number: [ 6HH ]
# Date : December 27, 2022
# Modeller : [ Dr. Bahar SM, P. Geo.(Ltd), P. Eng. ]
# Company : [ AHYDTECH Geomorphinc Ltd., 22 Zecca Drive, Guelph, ON, N1L1T1 ]
# License # : 3556411
# *****
# RUN#:COMMAND#
R0001:C00001-----
START
[TZERO = .00 hrs on 0]
[METOUT= 2 (1=imperial, 2=metric output)]
[NSTORM= 0 ]
[NRUN = 0001 ]
# *****
# ***** EXISTING CONDITION *****
# ***** 100-YEAR SCS 24 Hour Storm*****
# *****
R0001:C00002-----
READ STORM
Filename = 100SCSToP.STM
Comment = 100yr 24hr SCS
[SDT=10.00:SDUR= 24.00:PTOT= 129.60]
R0001:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 01:SB01-1 17.36 .882 No_date 12:35 64.60 .498 .000
[CN= 70.0: N= 3.00: Tp= .87]
R0001:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 01:SB01-1 17.36 .882 No_date 12:35 64.60 n/a .000
[RDT= 5.00] out<- 5.0 02:CH_SBL-2 17.36 .856 No_date 12:45 64.60 n/a .000
[L/S/n= 287./ .100/.035]
{Vmax= .424:Dmax= .471}
R0001:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB STANDHYD 1.0 03:SB01-2 15.56 1.936 No_date 12:00 103.48 .798 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 80.0]
[Pervious area: IAPER= 5.50:SLPP= .40:LGP= 50.:MNP=.250:SCP= .0]
[Impervious area: IAImp= 1.50:SLPI= .50:LGI= 151.:MNI=.013:SCI= .0]
R0001:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 04:SB02-1 27.50 .972 No_date 13:20 61.99 .478 .000
[CN= 68.0: N= 3.00: Tp= 1.44]
R0001:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 04:SB02-1 27.50 .972 No_date 13:20 61.99 n/a .000
```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



```

[RDT= 1.00] out<- 1.0 05:CH_SB2-2a 27.50 .970 No_date 13:25 61.99 n/a .000
[L/S/n= 91./ .100/.035]
{Vmax= .372:Dmax= .715}
R0001:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB STANDHYD 1.0 06:SB02-2 4.75 .686 No_date 12:00 118.46 .914 .000
[XIMP=.60:TIMP=.80]
[LOSS= 2 :CN= 82.0]
[Pervious area: IAPER= 5.50:SLPP= .60:LGP= 91.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 1.50:SLPI= .50:LGI= 30.:MNI=.013:SCI= .0]
R0001:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ADD HYD 5.0 02:CH_SB1-2 17.36 .856 No_date 12:45 64.60 n/a .000
+ 1.0 03:SB01-2 15.56 1.936 No_date 12:00 103.48 n/a .000
+ 1.0 05:CH_SB2-2a 27.50 .970 No_date 13:25 61.99 n/a .000
+ 1.0 06:SB02-2 4.75 .686 No_date 12:00 118.46 n/a .000
SUM= 1.0 07:JN_1 65.17 3.450 No_date 12:00 76.70 n/a .000
R0001:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 07:JN_1 65.17 3.450 No_date 12:00 76.70 n/a .000
[RDT= 1.00] out<- 1.0 08:CH_SB2-3 65.17 3.204 No_date 12:01 76.70 n/a .000
[L/S/n= 285./ .100/.035]
{Vmax= .553:Dmax= .911}
R0001:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB STANDHYD 1.0 09:SB01-2 1.14 .148 No_date 12:00 105.35 .813 .000
[XIMP=.35:TIMP=.50]
[LOSS= 2 :CN= 82.0]
[Pervious area: IAPER= 5.00:SLPP= .50:LGP= 64.:MNP=.250:SCP= .0]
[Impervious area: IAimp= 2.75:SLPI= .30:LGI= 30.:MNI=.013:SCI= .0]
R0001:C00012-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ADD HYD 1.0 08:CH_SB2-3 65.17 3.204 No_date 12:01 76.70 n/a .000
+ 1.0 09:SB01-2 1.14 .148 No_date 12:00 105.35 n/a .000
SUM= 1.0 10:JN_2 66.31 3.345 No_date 12:01 77.20 n/a .000
R0001:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 10:JN_2 66.31 3.345 No_date 12:01 77.20 n/a .000
[RDT= 1.00] out<- 1.0 01:CH_SB3-2 66.31 3.202 No_date 12:02 77.20 n/a .000
[L/S/n= 179./ .100/.035]
{Vmax= .550:Dmax= .898}
R0001:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 02:SB03-2 10.92 .656 No_date 12:20 62.49 .482 .000
[CN= 69.0: N= 3.00: Tp= .62]
R0001:C00015-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 03:SB04 19.72 1.054 No_date 12:30 63.77 .492 .000
[CN= 70.0: N= 3.00: Tp= .79]
R0001:C00016-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ADD HYD 1.0 01:CH_SB3-2 66.31 3.202 No_date 12:02 77.20 n/a .000
+ 5.0 02:SB03-2 10.92 .656 No_date 12:20 62.49 n/a .000
+ 5.0 03:SB04 19.72 1.054 No_date 12:30 63.77 n/a .000
SUM= 1.0 04:JN_3 96.95 4.656 No_date 12:17 72.81 n/a .000
R0001:C00017-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 04:JN_3 96.95 4.656 No_date 12:17 72.81 n/a .000
[RDT= 1.00] out<- 1.0 05:CH_SB5-1 96.95 4.434 No_date 12:30 72.81 n/a .000
[L/S/n= 451./ .100/.035]
{Vmax= .515:Dmax= .724}
R0001:C00018-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 06:SB05-1 29.50 1.825 No_date 12:15 61.96 .478 .000
[CN= 68.0: N= 3.00: Tp= .57]
R0001:C00019-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ADD HYD 1.0 05:CH_SB5-1 96.95 4.434 No_date 12:30 72.81 n/a .000
+ 5.0 06:SB05-1 29.50 1.825 No_date 12:15 61.96 n/a .000
SUM= 1.0 07:JN_4 126.45 6.183 No_date 12:25 70.28 n/a .000
R0001:C00020-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 1.0 07:JN_4 126.45 6.183 No_date 12:25 70.28 n/a .000
* [RDT= 1.00] out<- 1.0 08:CH_SB5-2 126.45 5.417 No_date 12:36 70.28 n/a .000
[L/S/n= 429./ .020/.035]
{Vmax= .309:Dmax= 1.142}
R0001:C00021-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 09:SB05-2 10.39 .411 No_date 13:10 64.67 .499 .000
[CN= 70.0: N= 3.00: Tp= 1.31]
R0001:C00022-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 10:SB05-3 8.51 .312 No_date 13:05 56.35 .435 .000
[CN= 65.0: N= 3.00: Tp= 1.16]
R0001:C00023-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ADD HYD 1.0 08:CH_SB5-2 126.45 5.417 No_date 12:36 70.28 n/a .000
+ 5.0 09:SB05-2 10.39 .411 No_date 13:10 64.67 n/a .000
+ 5.0 10:SB05-3 8.51 .312 No_date 13:05 56.35 n/a .000
SUM= 1.0 01:JN_5 145.35 6.064 No_date 12:36 69.06 n/a .000
R0001:C00024-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 02:SB06 21.20 .836 No_date 13:15 65.68 .507 .000
[CN= 71.0: N= 3.00: Tp= 1.35]
R0001:C00025-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 03:SB07 11.36 .354 No_date 13:45 61.96 .478 .000
[CN= 68.0: N= 3.00: Tp= 1.74]
R0001:C00026-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ADD HYD 5.0 02:SB06 21.20 .836 No_date 13:15 65.68 n/a .000
+ 5.0 03:SB07 11.36 .354 No_date 13:45 61.96 n/a .000
SUM= 5.0 04:JN_6 32.56 1.177 No_date 13:20 64.38 n/a .000
R0001:C00027-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL -> 5.0 04:JN_6 32.56 1.177 No_date 13:20 64.38 n/a .000
[RDT= 5.00] out<- 5.0 05:CH_SB8 32.56 1.172 No_date 13:30 64.38 n/a .000
[L/S/n= 490./ .500/.035]
{Vmax= .836:Dmax= .406}
R0001:C00028-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD 5.0 06:SB08 8.98 .807 No_date 12:10 80.99 .625 .000
[CN= 80.0: N= 3.00: Tp= .50]
R0001:C00029-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate hh:mm---RVmm-R.C.---DWFcms
ADD HYD 1.0 01:JN_5 145.35 6.064 No_date 12:36 69.06 n/a .000
+ 5.0 05:CH_SB8 32.56 1.172 No_date 13:30 64.38 n/a .000

```

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham



AHYDTECH GEOMORPHIC
ADVANCED HYDROLOGY HYDRAULIC GEOMORPHOLOGY

```
+      5.0 06:SB08      8.98      .807 No_date 12:10 80.99 n/a .000
SUM=    1.0 07:JN_7      186.89      7.569 No_date 12:47 68.82 n/a .000
R0001:C00030-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    1.0 07:JN_7      186.89      7.569 No_date 12:47 68.82 n/a .000
[RDt= 1.00] out<-    1.0 08:CH_SB9      186.89      7.434 No_date 12:48 68.82 n/a .000
[L/S/n= 410./ .100/.035]
{Vmax= .830:Dmax= 1.474}
R0001:C00031-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 09:SB09      14.34      1.001 No_date 12:15 68.29 .527 .000
[CN= 73.0: N= 3.00: Tp= .57]
R0001:C00032-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB10      11.38      .666 No_date 12:25 66.32 .512 .000
[CN= 72.0: N= 3.00: Tp= .73]
R0001:C00033-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD      1.0 08:CH_SB9      186.89      7.434 No_date 12:48 68.82 n/a .000
+      5.0 09:SB09      14.34      1.001 No_date 12:15 68.29 n/a .000
+      5.0 10:SB10      11.38      .666 No_date 12:25 66.32 n/a .000
SUM=    1.0 01:JN_8      212.61      8.850 No_date 12:37 68.65 n/a .000
R0001:C00034-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    1.0 01:JN_8      212.61      8.850 No_date 12:37 68.65 n/a .000
[RDt= 1.00] out<-    1.0 02:CH_SB11      212.61      8.745 No_date 12:44 68.65 n/a .000
[L/S/n= 302./ .100/.035]
{Vmax= .867:Dmax= 1.603}
R0001:C00035-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      1.0 03:SB11      14.81      1.712 No_date 12:00 76.86 .593 .000
[CN= 78.0: N= 3.00: Tp= .08]
R0001:C00036-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 04:SB16      16.71      .807 No_date 13:10 77.08 .595 .000
[CN= 78.0: N= 3.00: Tp= 1.30]
R0001:C00037-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    5.0 04:SB16      16.71      .807 No_date 13:10 77.08 n/a .000
[RDt= 5.00] out<-    5.0 05:CH_SB15      16.71      .803 No_date 13:15 77.08 n/a .000
[L/S/n= 299./ .750/.035]
{Vmax= .541:Dmax= .173}
R0001:C00038-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 06:SB15      7.95      .649 No_date 12:15 77.08 .595 .000
[CN= 78.0: N= 3.00: Tp= .54]
R0001:C00039-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 07:SB14      15.85      1.217 No_date 12:15 77.08 .595 .000
[CN= 78.0: N= 3.00: Tp= .61]
R0001:C00040-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD      5.0 05:CH_SB15      16.71      .803 No_date 13:15 77.08 n/a .000
+      5.0 06:SB15      7.95      .649 No_date 12:15 77.08 n/a .000
+      5.0 07:SB14      15.85      1.217 No_date 12:15 77.08 n/a .000
SUM=    5.0 08:JN_9      40.51      2.383 No_date 12:25 77.08 n/a .000
R0001:C00041-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ROUTE CHANNEL ->    5.0 08:JN_9      40.51      2.383 No_date 12:25 77.08 n/a .000
[RDt= 5.00] out<-    5.0 09:CH_SB12      40.51      2.283 No_date 12:35 77.08 n/a .000
[L/S/n= 222./ .100/.035]
{Vmax= .332:Dmax= .421}
R0001:C00042-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
CALIB NASHYD      5.0 10:SB12      6.02      .533 No_date 12:10 77.08 .595 .000
[CN= 78.0: N= 3.00: Tp= .46]
R0001:C00043-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
ADD HYD      1.0 02:CH_SB11      212.61      8.745 No_date 12:44 68.65 n/a .000
+      1.0 03:SB11      14.81      1.712 No_date 12:00 76.86 n/a .000
+      5.0 09:CH_SB12      40.51      2.283 No_date 12:35 77.08 n/a .000
+      5.0 10:SB12      6.02      .533 No_date 12:10 77.08 n/a .000
SUM=    1.0 01:JN_10      273.95      11.784 No_date 12:42 70.53 n/a .000
R0001:C00044-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
SAVE HYD      1.0 01:JN_10      273.95      11.784 No_date 12:42 70.53 n/a .000
fname :JN_10.0001
remark:JN_10
R0001:C00045-----
FINISH
```

WARNINGS / ERRORS / NOTES

Simulation ended on 2022-12-28 at 13:17:11

Appendix F: Geometric Data Developed in HEC-RAS

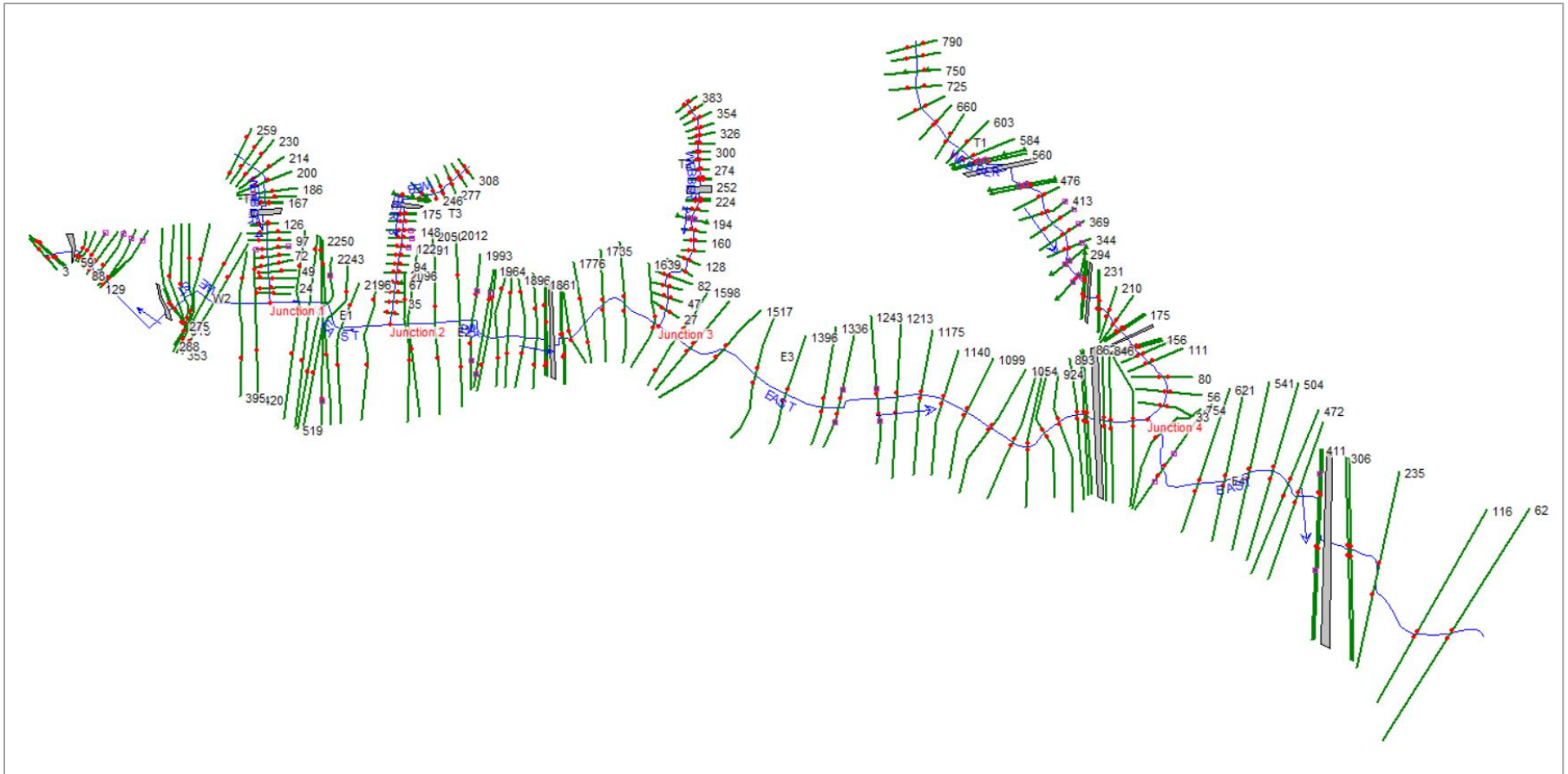
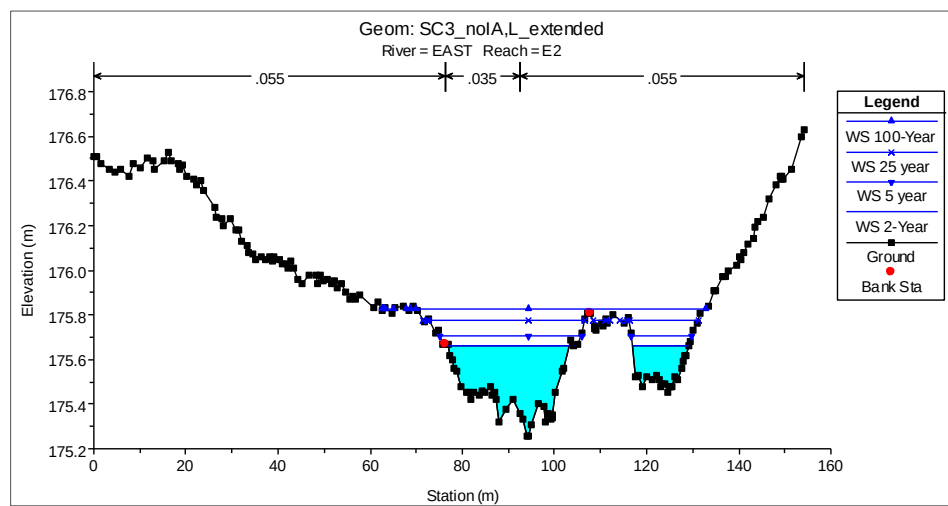
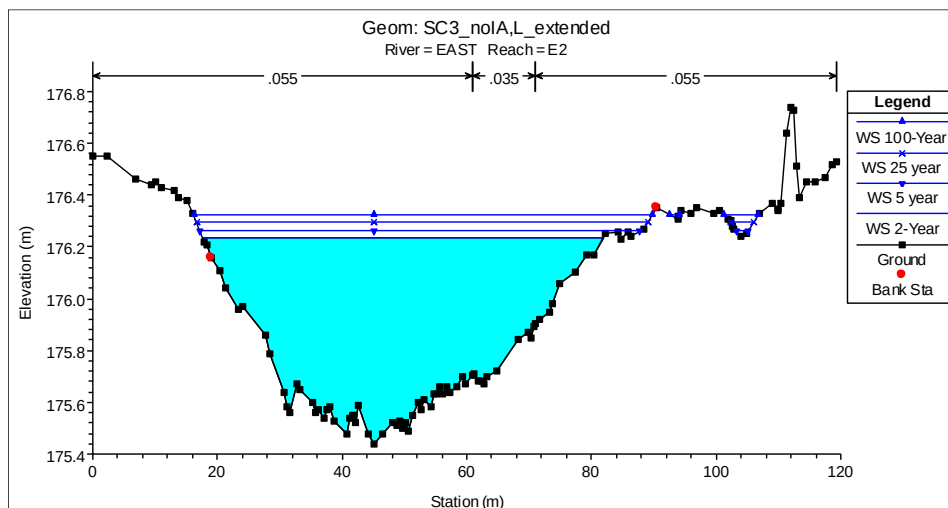
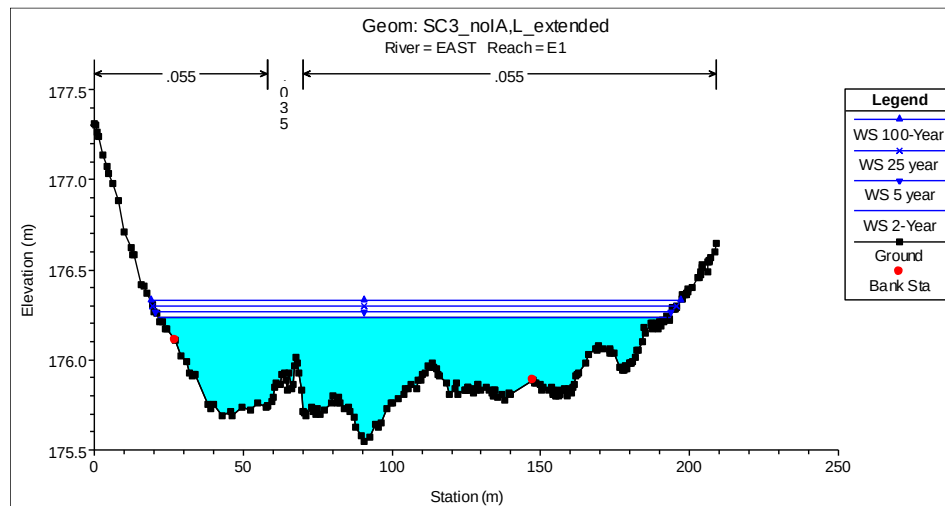


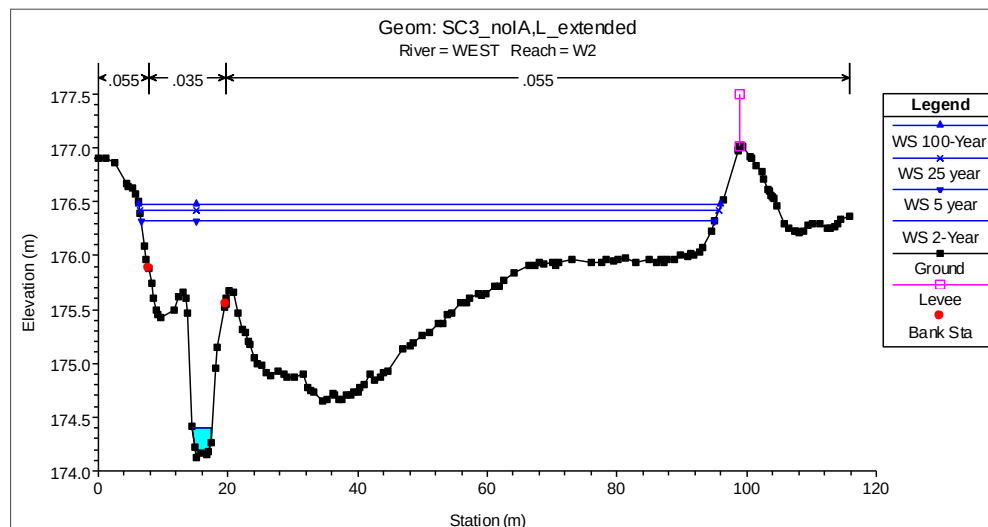
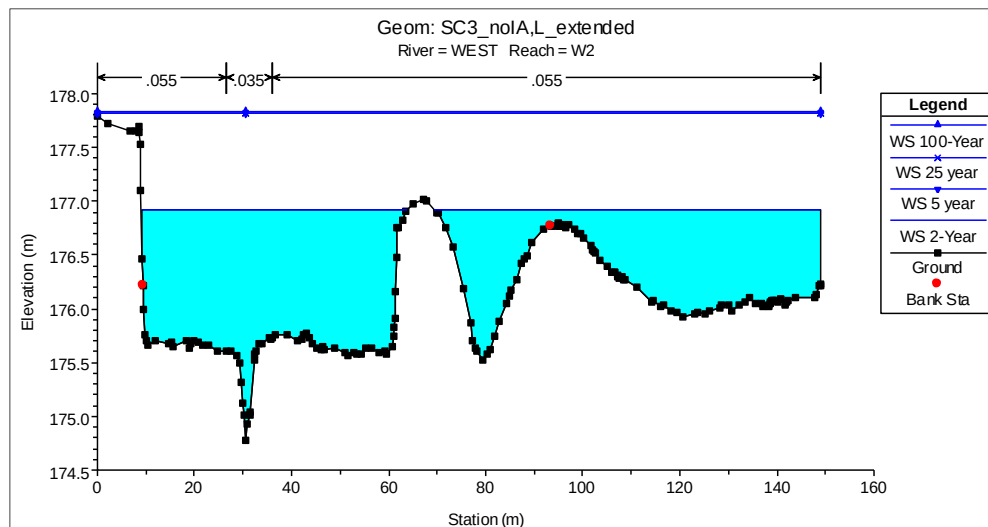
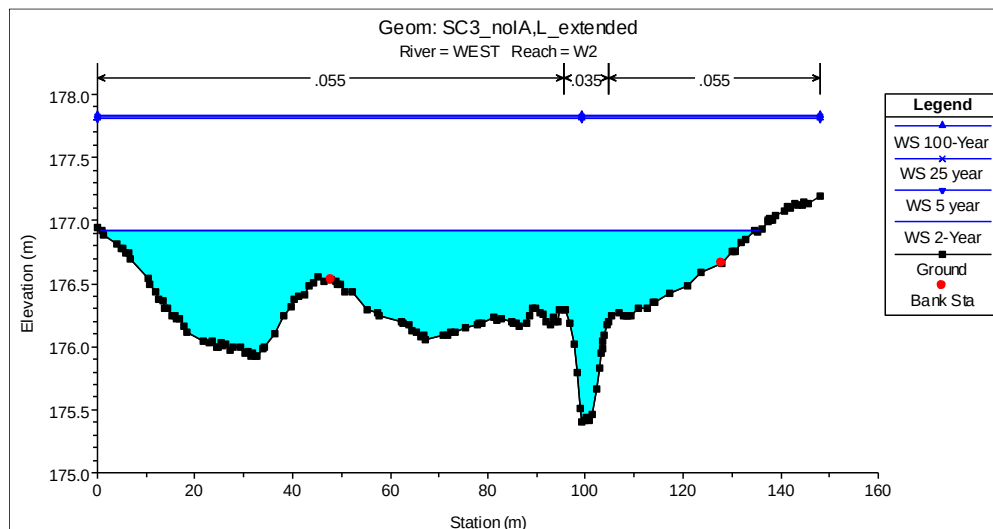
Figure 1: Geometric Data Developed in HEC-RAS

Appendix G: Cross-sections of the Channel

Some Cross-sections along the East Channel



Some Cross-sections along the West Channel







Appendix H: HEC-RAS Model Inundation Maps

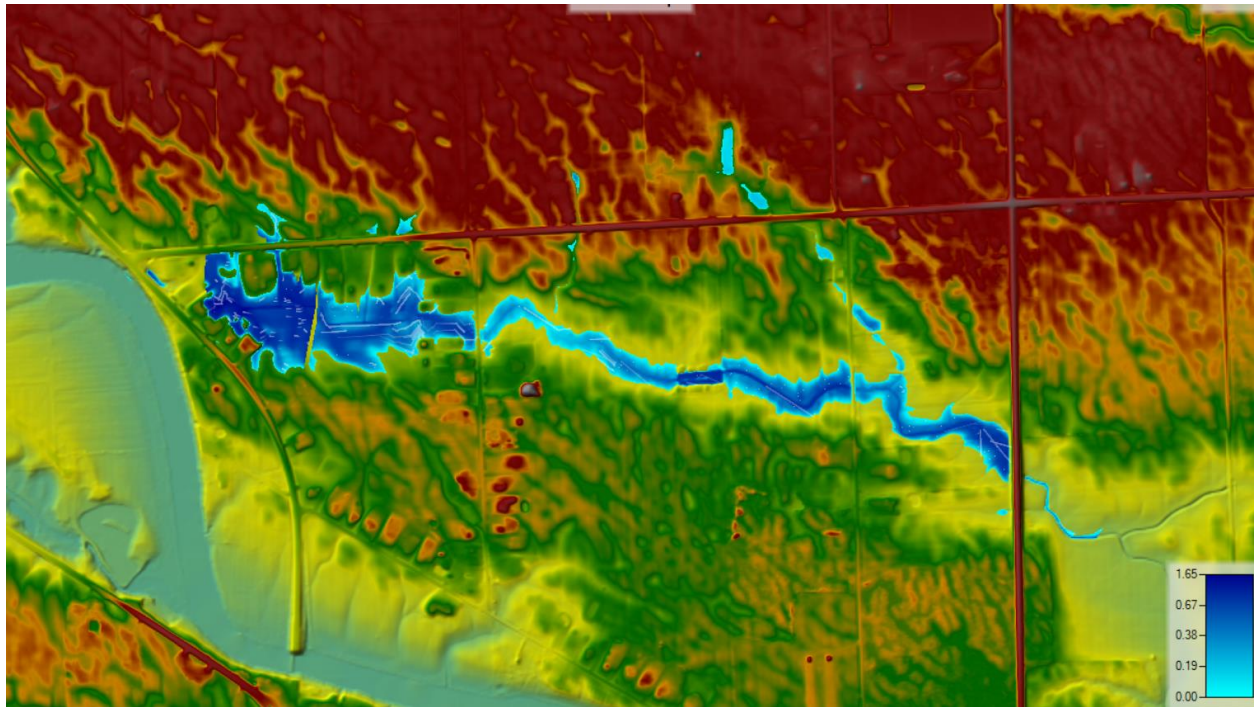


Figure H1: Inundation Map for 2-Year Return period flood event

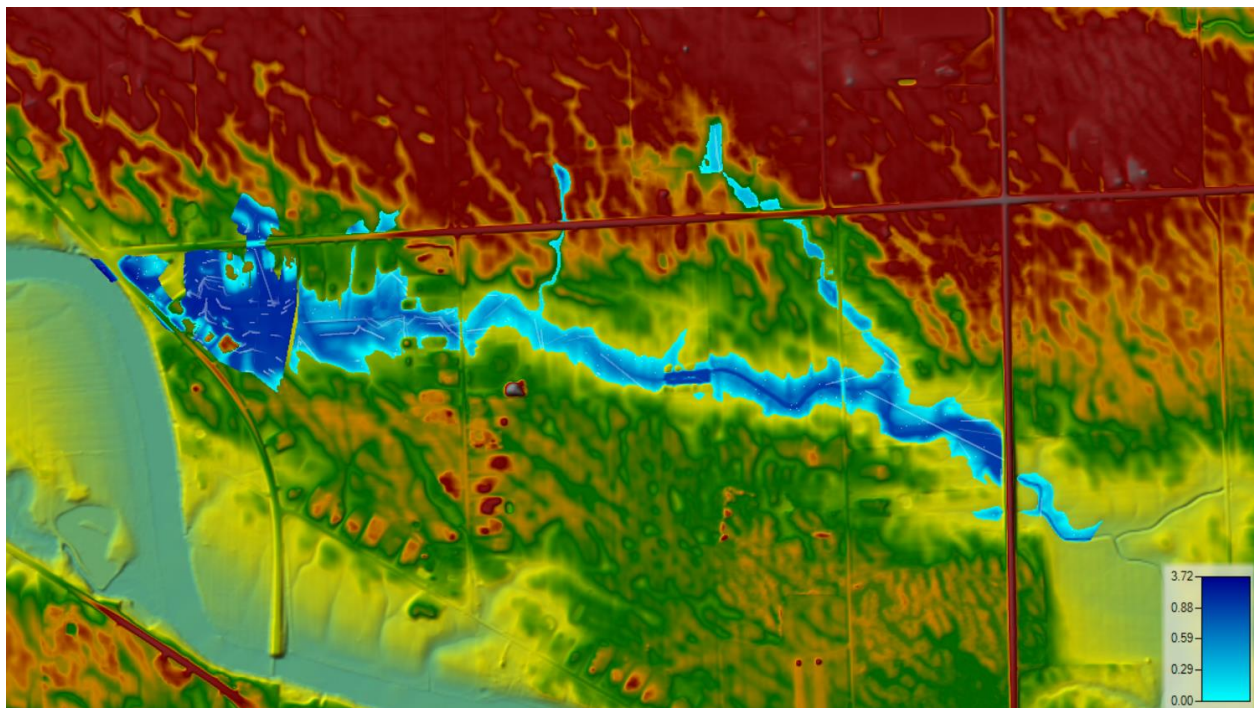


Figure H2: Inundation Map for 100-Year Return period flood event



Appendix I: HEC-RAS Model Output Summary Table

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEST	W1	519	2--Year	0.22	175.4	176.92	175.55	176.92	0	0	182.23	202.63	0
WEST	W1	519	5 -Year	0.32	175.4	177.81	175.6	177.81	0	0	372.36	215.52	0
WEST	W1	519	25 - Year	0.5	175.4	177.82	175.63	177.82	0	0	374.66	215.52	0
WEST	W1	519	100-- Year	0.65	175.4	177.83	175.65	177.83	0	0	376.31	215.52	0
WEST	W1	504	2--Year	0.22	175.4	176.92		176.92	0	0	145.68	185.78	0
WEST	W1	504	5 -Year	0.32	175.4	177.81		177.81	0	0	327.4	209.8	0
WEST	W1	504	25 - Year	0.5	175.4	177.82		177.82	0	0	329.64	209.8	0
WEST	W1	504	100-- Year	0.65	175.4	177.83		177.83	0	0	331.24	209.8	0
WEST	W1	485	2--Year	0.22	175.45	176.92		176.92	0	0	161.75	167.8	0
WEST	W1	485	5 -Year	0.32	175.45	177.81		177.81	0	0	311.5	167.8	0
WEST	W1	485	25 - Year	0.5	175.45	177.82		177.82	0	0	313.29	167.8	0
WEST	W1	485	100-- Year	0.65	175.45	177.83		177.83	0	0	314.57	167.8	0
WEST	W2	420	2--Year	0.43	175.4	176.92		176.92	0	0.01	85.17	135.11	0
WEST	W2	420	5 -Year	0.69	175.4	177.81		177.81	0	0	215.25	148	0
WEST	W2	420	25 - Year	1.14	175.4	177.82		177.82	0	0.01	216.83	148	0
WEST	W2	420	100-- Year	1.53	175.4	177.83		177.83	0	0.01	217.96	148	0
WEST	W2	395	2--Year	0.43	175.34	176.92		176.92	0	0	87.29	107.42	0
WEST	W2	395	5 -Year	0.69	175.34	177.81		177.81	0	0	197.77	145.1	0
WEST	W2	395	25 - Year	1.14	175.34	177.82		177.82	0	0.01	199.31	145.1	0
WEST	W2	395	100-- Year	1.53	175.34	177.83		177.83	0	0.01	200.43	145.1	0
WEST	W2	353	2--Year	0.43	175.28	176.92		176.92	0	0.01	58.21	60.84	0
WEST	W2	353	5 -Year	0.69	175.28	177.81		177.81	0	0.01	123.83	89.3	0

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEST	W2	353	25 - Year	1.14	175.28	177.82		177.82	0	0.01	124.79	89.3	0
WEST	W2	353	100-- Year	1.53	175.28	177.83		177.83	0	0.01	125.47	89.3	0
WEST	W2	340	2--Year	0.43	175.26	176.92		176.92	0	0.01	64.17	68.72	0
WEST	W2	340	5 -Year	0.69	175.26	177.81		177.81	0	0.01	135.62	93.3	0
WEST	W2	340	25 - Year	1.14	175.26	177.82		177.82	0	0.01	136.61	93.3	0
WEST	W2	340	100-- Year	1.53	175.26	177.83		177.83	0	0.01	137.32	93.3	0
WEST	W2	317	2--Year	0.43	175.11	176.92		176.92	0	0.01	79.12	86.79	0
WEST	W2	317	5 -Year	0.69	175.11	177.81		177.81	0	0	160.83	93.8	0
WEST	W2	317	25 - Year	1.14	175.11	177.82		177.82	0	0.01	161.82	93.8	0
WEST	W2	317	100-- Year	1.53	175.11	177.83		177.83	0	0.01	162.54	93.8	0
WEST	W2	313	2--Year	0.43	175.08	176.92		176.92	0	0.01	79.44	87.51	0
WEST	W2	313	5 -Year	0.69	175.08	177.81		177.81	0	0	161.87	96.3	0
WEST	W2	313	25 - Year	1.14	175.08	177.82		177.82	0	0.01	162.89	96.3	0
WEST	W2	313	100-- Year	1.53	175.08	177.83		177.83	0	0.01	163.63	96.3	0
WEST	W2	300	2--Year	0.43	175.11	176.92		176.92	0	0.01	98.3	119.5	0
WEST	W2	300	5 -Year	0.69	175.11	177.81		177.81	0	0	208.48	128.2	0
WEST	W2	300	25 - Year	1.14	175.11	177.82		177.82	0	0.01	209.84	128.2	0
WEST	W2	300	100-- Year	1.53	175.11	177.83		177.83	0	0.01	210.82	128.2	0
WEST	W2	288	2--Year	0.43	175.05	176.92		176.92	0	0.01	85.53	81.66	0
WEST	W2	288	5 -Year	0.69	175.05	177.81		177.81	0	0	170.58	105.8	0
WEST	W2	288	25 - Year	1.14	175.05	177.82		177.82	0	0.01	171.71	105.8	0

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEST	W2	288	100-- Year	1.53	175.05	177.83		177.83	0	0.01	172.52	105.8	0
WEST	W2	275	2--Year	0.43	175	176.92		176.92	0	0.01	112.01	119.36	0
WEST	W2	275	5 -Year	0.69	175	177.81		177.81	0	0.01	236.44	149	0
WEST	W2	275	25 - Year	1.14	175	177.82		177.82	0	0.01	238.03	149	0
WEST	W2	275	100-- Year	1.53	175	177.83		177.83	0	0.01	239.17	149	0
WEST	W2	273	2--Year	0.43	174.77	176.92	175.16	176.92	0	0	123.72	134.2	0
WEST	W2	273	5 -Year	0.69	174.77	177.81	175.24	177.81	0	0	249.41	149	0
WEST	W2	273	25 - Year	1.14	174.77	177.82	175.34	177.82	0	0	250.99	149	0
WEST	W2	273	100-- Year	1.53	174.77	177.83	175.41	177.83	0	0.01	252.14	149	0
WEST	W2	200		Culvert									
WEST	W2	129	2--Year	0.43	174.09	174.41		174.43	0.003179	0.61	0.71	2.91	0.39
WEST	W2	129	5 -Year	0.69	174.09	176.33		176.33	0	0.01	59.76	46.1	0
WEST	W2	129	25 - Year	1.14	174.09	176.43		176.43	0	0.02	64.24	46.33	0.01
WEST	W2	129	100-- Year	1.53	174.09	176.48		176.48	0.000001	0.03	66.72	46.45	0.01
WEST	W2	128	2--Year	0.43	174.13	174.4	174.31	174.43	0.005145	0.7	0.61	2.94	0.49
WEST	W2	128	5 -Year	0.69	174.13	176.33	174.37	176.33	0	0.01	78.62	88.43	0
WEST	W2	128	25 - Year	1.14	174.13	176.43	174.44	176.43	0	0.02	87.24	89.32	0.01
WEST	W2	128	100-- Year	1.53	174.13	176.48	174.5	176.48	0.000001	0.03	92.03	89.83	0.01
WEST	W2	123	2--Year	0.43	174.13	174.3	174.3	174.37	0.023354	1.18	0.36	2.53	0.99
WEST	W2	123	5 -Year	0.69	174.13	176.33	174.35	176.33	0	0.02	64.74	80.36	0
WEST	W2	123	25 - Year	1.14	174.13	176.43	174.44	176.43	0.000001	0.03	72.89	84.6	0.01

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEST	W2	123	100-- Year	1.53	174.13	176.48	174.49	176.48	0.000001	0.03	77.42	84.79	0.01
WEST	W2	107	2--Year	0.43	173.86	174.28	174.05	174.28	0.00055	0.22	1.94	8.81	0.15
WEST	W2	107	5 -Year	0.69	173.86	176.33	174.09	176.33	0	0.02	52.25	69.64	0
WEST	W2	107	25 - Year	1.14	173.86	176.43	174.14	176.43	0	0.02	59.76	80.85	0.01
WEST	W2	107	100-- Year	1.53	173.86	176.48	174.18	176.48	0.000001	0.03	64.1	81.49	0.01
WEST	W2	88	2--Year	0.43	173.5	174.28		174.28	0.000049	0.11	4.01	10.04	0.05
WEST	W2	88	5 -Year	0.69	173.5	176.33		176.33	0	0.02	57.49	70.28	0
WEST	W2	88	25 - Year	1.14	173.5	176.43		176.43	0	0.03	64.44	73.05	0.01
WEST	W2	88	100-- Year	1.53	173.5	176.48		176.48	0	0.03	68.38	75	0.01
WEST	W2	78	2--Year	0.43	173.37	174.28	173.55	174.28	0.000027	0.08	5.07	11.46	0.04
WEST	W2	78	5 -Year	0.69	173.37	176.33	173.61	176.33	0	0.01	67.14	62.7	0
WEST	W2	78	25 - Year	1.14	173.37	176.43	173.68	176.43	0	0.02	73.26	63.46	0
WEST	W2	78	100-- Year	1.53	173.37	176.48	173.74	176.48	0	0.03	76.66	63.86	0.01
WEST	W2	65	2--Year	0.43	173.1	174.28		174.28	0.000014	0.07	6.11	11.29	0.03
WEST	W2	65	5 -Year	0.69	173.1	176.33		176.33	0	0.01	65.23	54.42	0
WEST	W2	65	25 - Year	1.14	173.1	176.43		176.43	0	0.02	70.54	55.07	0
WEST	W2	65	100-- Year	1.53	173.1	176.48		176.48	0	0.03	73.49	55.3	0.01
WEST	W2	59	2--Year	0.43	172.95	174.28	173.31	174.28	0.00001	0.06	6.96	11.79	0.03
WEST	W2	59	5 -Year	0.69	172.95	176.33	173.39	176.33	0	0.02	58.55	47.71	0
WEST	W2	59	25 - Year	1.14	172.95	176.43	173.5	176.43	0	0.02	63.21	48.27	0
WEST	W2	59	100-- Year	1.53	172.95	176.48	173.55	176.48	0	0.03	65.81	48.9	0.01

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEST	W2	40		Culvert									
WEST	W2	16	2--Year	0.43	171.33	171.65		171.66	0.001867	0.3	1.45	6.18	0.2
WEST	W2	16	5 -Year	0.69	171.33	171.73		171.74	0.00185	0.35	1.98	6.49	0.2
WEST	W2	16	25 - Year	1.14	171.33	171.84		171.85	0.0019	0.42	2.71	6.84	0.21
WEST	W2	16	100-- Year	1.53	171.33	175.06		175.06	0	0.02	118.76	66.8	0
WEST	W2	12	2--Year	0.43	171.3	171.55	171.55	171.63	0.059023	1.25	0.34	2.23	1.01
WEST	W2	12	5 -Year	0.69	171.3	171.61	171.61	171.71	0.054768	1.4	0.49	2.53	1.01
WEST	W2	12	25 - Year	1.14	171.3	171.7	171.7	171.82	0.051088	1.57	0.72	2.94	1.01
WEST	W2	12	100-- Year	1.53	171.3	175.06		175.06	0	0.01	166.57	77.4	0
WEST	W2	3	2--Year	0.43	171.33	171.4	171.36	171.4	0.005709	0.27	1.84	32.37	0.39
WEST	W2	3	5 -Year	0.69	171.33	171.42	171.38	171.42	0.0057	0.33	2.5	34.37	0.41
WEST	W2	3	25 - Year	1.14	171.33	171.45	171.39	171.45	0.005699	0.4	3.5	38.3	0.43
WEST	W2	3	100-- Year	1.53	171.33	175.06	171.41	175.06	0	0.01	232.4	65	0
WEBBE R 4	T4	259	2--Year	0.21	176.95	177.03	177.01	177.04	0.009164	0.36	0.6	13.39	0.54
WEBBE R 4	T4	259	5 -Year	0.37	176.95	177.89	177.03	177.89	0	0.01	28.4	43.94	0.01
WEBBE R 4	T4	259	25 - Year	0.64	176.95	177.91	177.05	177.91	0.000001	0.02	29.08	44.24	0.01
WEBBE R 4	T4	259	100-- Year	0.88	176.95	177.92	177.06	177.92	0.000003	0.03	29.39	44.37	0.01
WEBBE R 4	T4	246	2--Year	0.21	176.87	177.01		177.01	0.000658	0.15	1.45	17.1	0.16
WEBBE R 4	T4	246	5 -Year	0.37	176.87	177.89		177.89	0	0.01	32.44	51.06	0

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham

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Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 4	T4	175	2--Year	0.21	176.53	176.99		176.99	0.000063	0.08	2.82	16.47	0.06
WEBBE R 4	T4	175	5 -Year	0.37	176.53	177.89		177.89	0	0.01	37.93	53.76	0
WEBBE R 4	T4	175	25 - Year	0.64	176.53	177.91		177.91	0.000001	0.02	38.76	54.19	0.01
WEBBE R 4	T4	175	100-- Year	0.88	176.53	177.92		177.92	0.000001	0.03	39.13	54.38	0.01
WEBBE R 4	T4	167	2--Year	0.21	176.32	176.99		176.99	0.000012	0.04	7.35	33.69	0.02
WEBBE R 4	T4	167	5 -Year	0.37	176.32	177.89		177.89	0	0.01	47.35	49.6	0
WEBBE R 4	T4	167	25 - Year	0.64	176.32	177.91		177.91	0	0.02	48.11	49.6	0.01
WEBBE R 4	T4	167	100-- Year	0.88	176.32	177.92		177.92	0.000001	0.03	48.45	49.6	0.01
WEBBE R 4	T4	166	2--Year	0.21	175.99	176.99	176.34	176.99	0.000012	0.04	7.16	32.45	0.02
WEBBE R 4	T4	166	5 -Year	0.37	175.99	177.89	176.42	177.89	0	0.01	46.27	49.3	0
WEBBE R 4	T4	166	25 - Year	0.64	175.99	177.91	176.53	177.91	0	0.02	47.03	49.3	0.01
WEBBE R 4	T4	166	100-- Year	0.88	175.99	177.92	176.61	177.92	0.000001	0.03	47.37	49.3	0.01
WEBBE R 4	T4	145		Culvert									
WEBBE R 4	T4	126	2--Year	0.21	175.86	176.92		176.92	0.000003	0.03	8.1	28.57	0.01
WEBBE R 4	T4	126	5 -Year	0.37	175.86	177.81		177.81	0	0.01	43.91	42.9	0
WEBBE R 4	T4	126	25 - Year	0.64	175.86	177.82		177.82	0	0.02	44.37	42.9	0.01
WEBBE R 4	T4	126	100-- Year	0.88	175.86	177.83		177.83	0.000001	0.03	44.7	42.9	0.01
WEBBE R 4	T4	124	2--Year	0.21	175.8	176.92		176.92	0.000004	0.03	6.34	17.09	0.02

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 4	T4	124	5 -Year	0.37	175.8	177.81		177.81	0	0.01	41.34	44	0
WEBBE R 4	T4	124	25 - Year	0.64	175.8	177.82		177.82	0	0.02	41.81	44	0.01
WEBBE R 4	T4	124	100-- Year	0.88	175.8	177.83		177.83	0.000001	0.03	42.15	44	0.01
WEBBE R 4	T4	110	2--Year	0.21	175.79	176.92		176.92	0.000002	0.03	7.57	13.08	0.01
WEBBE R 4	T4	110	5 -Year	0.37	175.79	177.81		177.81	0	0.02	30.1	35.8	0
WEBBE R 4	T4	110	25 - Year	0.64	175.79	177.82		177.82	0.000001	0.03	30.48	35.8	0.01
WEBBE R 4	T4	110	100-- Year	0.88	175.79	177.83		177.83	0.000001	0.04	30.75	35.8	0.01
WEBBE R 4	T4	97	2--Year	0.21	175.77	176.92		176.92	0.000001	0.03	8	12.39	0.01
WEBBE R 4	T4	97	5 -Year	0.37	175.77	177.81		177.81	0	0.02	27.17	32.32	0
WEBBE R 4	T4	97	25 - Year	0.64	175.77	177.82		177.82	0.000001	0.03	27.51	32.43	0.01
WEBBE R 4	T4	97	100-- Year	0.88	175.77	177.83		177.83	0.000001	0.04	27.76	32.51	0.01
WEBBE R 4	T4	84	2--Year	0.21	175.74	176.92	175.89	176.92	0.000004	0.03	6.45	10.85	0.01
WEBBE R 4	T4	84	5 -Year	0.37	175.74	177.81	175.94	177.81	0	0.02	22.83	28.48	0.01
WEBBE R 4	T4	84	25 - Year	0.64	175.74	177.82	176	177.82	0.000001	0.03	23.13	29.01	0.01
WEBBE R 4	T4	84	100-- Year	0.88	175.74	177.83	176.05	177.83	0.000003	0.04	23.35	29.39	0.01
WEBBE R 4	T4	72	2--Year	0.21	175.76	176.92		176.92	0	0.01	19.3	28.76	0
WEBBE R 4	T4	72	5 -Year	0.37	175.76	177.81		177.81	0	0.01	48.07	39.3	0
WEBBE R 4	T4	72	25 - Year	0.64	175.76	177.82		177.82	0	0.02	48.48	39.3	0
WEBBE R 4	T4	72	100-- Year	0.88	175.76	177.83		177.83	0	0.02	48.79	39.3	0.01

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 4	T4	59	2--Year	0.21	175.57	176.92		176.92	0	0.01	29.34	36.67	0
WEBBE R 4	T4	59	5 -Year	0.37	175.57	177.81		177.81	0	0.01	69.47	47.4	0
WEBBE R 4	T4	59	25 - Year	0.64	175.57	177.82		177.82	0	0.01	69.98	47.4	0
WEBBE R 4	T4	59	100-- Year	0.88	175.57	177.83		177.83	0	0.02	70.34	47.4	0
WEBBE R 4	T4	49	2--Year	0.21	175.64	176.92		176.92	0	0.01	37.11	44.42	0
WEBBE R 4	T4	49	5 -Year	0.37	175.64	177.81		177.81	0	0.01	80.89	49.3	0
WEBBE R 4	T4	49	25 - Year	0.64	175.64	177.82		177.82	0	0.01	81.41	49.3	0
WEBBE R 4	T4	49	100-- Year	0.88	175.64	177.83		177.83	0	0.01	81.79	49.3	0
WEBBE R 4	T4	38	2--Year	0.21	175.5	176.92		176.92	0	0.01	43.86	50.3	0
WEBBE R 4	T4	38	5 -Year	0.37	175.5	177.81		177.81	0	0	88.75	50.3	0
WEBBE R 4	T4	38	25 - Year	0.64	175.5	177.82		177.82	0	0.01	89.28	50.3	0
WEBBE R 4	T4	38	100-- Year	0.88	175.5	177.83		177.83	0	0.01	89.67	50.3	0
WEBBE R 4	T4	24	2--Year	0.21	175.45	176.92		176.92	0	0	46.44	45.8	0
WEBBE R 4	T4	24	5 -Year	0.37	175.45	177.81		177.81	0	0	87.32	45.8	0
WEBBE R 4	T4	24	25 - Year	0.64	175.45	177.82		177.82	0	0.01	87.81	45.8	0
WEBBE R 4	T4	24	100-- Year	0.88	175.45	177.83		177.83	0	0.01	88.16	45.8	0
WEBBE R 4	T4	16	2--Year	0.21	175.44	176.92		176.92	0	0.01	34.92	36.6	0
WEBBE R 4	T4	16	5 -Year	0.37	175.44	177.81		177.81	0	0.01	67.58	36.6	0

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham

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Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 3	T3	246	2--Year	0.24	177.04	177.36		177.37	0.002449	0.31	0.75	3.56	0.22
WEBBE R 3	T3	246	5 -Year	0.4	177.04	177.44		177.45	0.002981	0.38	1.07	4.72	0.25
WEBBE R 3	T3	246	25 - Year	0.7	177.04	177.53		177.53	0.00314	0.43	1.63	8.88	0.32
WEBBE R 3	T3	246	100-- Year	0.97	177.04	177.56		177.58	0.003731	0.49	1.99	10.34	0.35
WEBBE R 3	T3	230	2--Year	0.24	176.95	177.29		177.31	0.00649	0.67	0.35	2.27	0.52
WEBBE R 3	T3	230	5 -Year	0.4	176.95	177.34		177.37	0.008338	0.83	0.54	5.38	0.61
WEBBE R 3	T3	230	25 - Year	0.7	176.95	177.37	177.37	177.44	0.014751	1.17	0.76	7.89	0.82
WEBBE R 3	T3	230	100-- Year	0.97	176.95	177.48		177.5	0.005149	0.8	1.89	14.14	0.5
WEBBE R 3	T3	216	2--Year	0.24	176.87	177.1	177.1	177.14	0.03072	0.8	0.29	26.93	1.01
WEBBE R 3	T3	216	5 -Year	0.4	176.87	177.14	177.14	177.18	0.027563	0.9	0.45	29.54	1
WEBBE R 3	T3	216	25 - Year	0.7	176.87	177.29	177.18	177.3	0.00221	0.27	3	43.43	0.29
WEBBE R 3	T3	216	100-- Year	0.97	176.87	177.49		177.49	0.000067	0.1	11.48	45.04	0.06
WEBBE R 3	T3	213	2--Year	0.24	176.46	176.89	176.76	176.91	0.003978	0.6	0.39	9.36	0.41
WEBBE R 3	T3	213	5 -Year	0.4	176.46	177.05	176.83	177.06	0.00387	0.52	0.78	23.61	0.41
WEBBE R 3	T3	213	25 - Year	0.7	176.46	177.29	176.93	177.29	0.000675	0.19	4.09	40.57	0.17
WEBBE R 3	T3	213	100-- Year	0.97	176.46	177.49	176.99	177.49	0.000047	0.09	12.32	42.52	0.05
WEBBE R 3	T3	195		Culvert									
WEBBE R 3	T3	175	2--Year	0.24	176.31	176.55	176.54	176.61	0.020015	1.03	0.23	1.71	0.9

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 3	T3	175	5 -Year	0.4	176.31	176.62	176.6	176.69	0.019085	1.17	0.34	2.04	0.91
WEBBE R 3	T3	175	25 - Year	0.7	176.31	176.72	176.68	176.79	0.014405	1.2	0.59	2.72	0.82
WEBBE R 3	T3	175	100-- Year	0.97	176.31	176.81		176.87	0.012417	1.1	0.89	4.25	0.77
WEBBE R 3	T3	173	2--Year	0.24	176.3	176.52		176.58	0.018703	1.02	0.23	1.65	0.87
WEBBE R 3	T3	173	5 -Year	0.4	176.3	176.59	176.57	176.66	0.017922	1.18	0.34	1.91	0.89
WEBBE R 3	T3	173	25 - Year	0.7	176.3	176.67	176.65	176.77	0.016868	1.35	0.52	2.23	0.89
WEBBE R 3	T3	173	100-- Year	0.97	176.3	176.75		176.85	0.014213	1.38	0.7	2.53	0.84
WEBBE R 3	T3	162	2--Year	0.24	176.16	176.4		176.43	0.009122	0.78	0.3	1.85	0.62
WEBBE R 3	T3	162	5 -Year	0.4	176.16	176.48		176.52	0.008548	0.88	0.46	2.23	0.63
WEBBE R 3	T3	162	25 - Year	0.7	176.16	176.6		176.64	0.006438	0.91	0.77	2.89	0.57
WEBBE R 3	T3	162	100-- Year	0.97	176.16	176.65		176.71	0.01015	1.03	0.94	4.24	0.7
WEBBE R 3	T3	148	2--Year	0.24	176.03	176.32	176.23	176.34	0.004627	0.6	0.39	2.17	0.45
WEBBE R 3	T3	148	5 -Year	0.4	176.03	176.4	176.29	176.43	0.004921	0.7	0.58	2.68	0.48
WEBBE R 3	T3	148	25 - Year	0.7	176.03	176.52	176.37	176.54	0.007451	0.71	0.99	7.04	0.57
WEBBE R 3	T3	148	100-- Year	0.97	176.03	176.59	176.43	176.61	0.004343	0.67	1.55	9.28	0.46
WEBBE R 3	T3	136	2--Year	0.24	175.96	176.29	176.15	176.3	0.002724	0.5	0.47	2.34	0.35
WEBBE R 3	T3	136	5 -Year	0.4	175.96	176.36	176.22	176.38	0.003673	0.62	0.65	2.93	0.42
WEBBE R 3	T3	136	25 - Year	0.7	175.96	176.45	176.3	176.48	0.004246	0.7	1	4.13	0.46
WEBBE R 3	T3	136	100-- Year	0.97	175.96	176.53	176.36	176.56	0.004591	0.68	1.44	7.55	0.47

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 3	T3	122	2--Year	0.24	175.86	176.27	176.07	176.28	0.001103	0.35	0.67	2.89	0.23
WEBBE R 3	T3	122	5 -Year	0.4	175.86	176.33	176.13	176.34	0.001758	0.47	0.85	3.31	0.3
WEBBE R 3	T3	122	25 - Year	0.7	175.86	176.42	176.21	176.43	0.002496	0.59	1.18	4.25	0.36
WEBBE R 3	T3	122	100-- Year	0.97	175.86	176.48	176.26	176.51	0.002903	0.64	1.51	5.4	0.39
WEBBE R 3	T3	109	2--Year	0.24	175.85	176.26		176.26	0.000833	0.32	0.75	3.01	0.2
WEBBE R 3	T3	109	5 -Year	0.4	175.85	176.31		176.32	0.001452	0.45	0.9	3.28	0.27
WEBBE R 3	T3	109	25 - Year	0.7	175.85	176.38		176.4	0.002229	0.6	1.16	3.72	0.34
WEBBE R 3	T3	109	100-- Year	0.97	175.85	176.44		176.47	0.002686	0.69	1.4	4.18	0.38
WEBBE R 3	T3	94	2--Year	0.24	175.81	176.25		176.25	0.000789	0.31	0.75	2.96	0.2
WEBBE R 3	T3	94	5 -Year	0.4	175.81	176.28		176.3	0.001575	0.46	0.87	3.19	0.28
WEBBE R 3	T3	94	25 - Year	0.7	175.81	176.34		176.36	0.002807	0.66	1.07	3.55	0.38
WEBBE R 3	T3	94	100-- Year	0.97	175.81	176.39		176.42	0.003663	0.78	1.24	3.9	0.44
WEBBE R 3	T3	82	2--Year	0.24	175.81	176.24		176.24	0.000562	0.27	0.89	3.48	0.17
WEBBE R 3	T3	82	5 -Year	0.4	175.81	176.27		176.28	0.001205	0.4	1	3.67	0.25
WEBBE R 3	T3	82	25 - Year	0.7	175.81	176.31		176.33	0.002416	0.6	1.16	3.95	0.36
WEBBE R 3	T3	82	100-- Year	0.97	175.81	176.35		176.38	0.003484	0.74	1.31	4.28	0.43
WEBBE R 3	T3	67	2--Year	0.24	175.54	176.24		176.24	0.000182	0.15	1.61	6.7	0.1
WEBBE R 3	T3	67	5 -Year	0.4	175.54	176.26		176.27	0.000439	0.22	1.81	7.72	0.15

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham

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Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 2	T2	368	2--Year	0.25	177.33	177.83	177.48	177.83	0.000045	0.09	2.8	8.87	0.05
WEBBE R 2	T2	368	5 -Year	0.43	177.33	177.95	177.5	177.95	0.000055	0.11	4.04	11.81	0.06
WEBBE R 2	T2	368	25 - Year	0.76	177.33	178.13		178.13	0.000044	0.12	6.39	14.81	0.05
WEBBE R 2	T2	368	100-- Year	1.05	177.33	178.27		178.28	0.000037	0.13	8.93	20.92	0.05
WEBBE R 2	T2	354	2--Year	0.25	177.39	177.83		177.83	0.000024	0.07	3.55	10.56	0.04
WEBBE R 2	T2	354	5 -Year	0.43	177.39	177.95		177.95	0.000027	0.09	4.97	13.17	0.04
WEBBE R 2	T2	354	25 - Year	0.76	177.39	178.13		178.13	0.000027	0.11	7.95	19.56	0.04
WEBBE R 2	T2	354	100-- Year	1.05	177.39	178.27		178.28	0.000024	0.12	11.49	28.15	0.04
WEBBE R 2	T2	339	2--Year	0.25	177.42	177.82		177.83	0.000428	0.23	1.07	4.89	0.15
WEBBE R 2	T2	339	5 -Year	0.43	177.42	177.95		177.95	0.000369	0.23	2.18	12.59	0.14
WEBBE R 2	T2	339	25 - Year	0.76	177.42	178.12		178.13	0.000161	0.21	4.97	19.37	0.1
WEBBE R 2	T2	339	100-- Year	1.05	177.42	178.27		178.27	0.000093	0.2	8.31	24.73	0.08
WEBBE R 2	T2	326	2--Year	0.25	177.42	177.82		177.82	0.000466	0.24	1.02	3.99	0.15
WEBBE R 2	T2	326	5 -Year	0.43	177.42	177.94		177.94	0.000417	0.27	1.7	7.09	0.15
WEBBE R 2	T2	326	25 - Year	0.76	177.42	178.12		178.12	0.000262	0.26	3.95	17.05	0.13
WEBBE R 2	T2	326	100-- Year	1.05	177.42	178.27		178.27	0.00014	0.23	6.89	22.19	0.1
WEBBE R 2	T2	314	2--Year	0.25	177.43	177.81		177.81	0.000678	0.3	0.81	2.93	0.18
WEBBE R 2	T2	314	5 -Year	0.43	177.43	177.93		177.94	0.000704	0.36	1.19	3.38	0.19
WEBBE R 2	T2	314	25 - Year	0.76	177.43	178.11		178.12	0.000637	0.41	1.86	4.05	0.19

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 2	T2	314	100-- Year	1.05	177.43	178.26		178.27	0.000578	0.4	2.76	10.18	0.19
WEBBE R 2	T2	300	2--Year	0.25	177.38	177.79		177.8	0.001619	0.44	0.56	2.19	0.28
WEBBE R 2	T2	300	5 -Year	0.43	177.38	177.91		177.92	0.001599	0.51	0.84	2.57	0.28
WEBBE R 2	T2	300	25 - Year	0.76	177.38	178.09		178.11	0.001337	0.55	1.37	3.25	0.27
WEBBE R 2	T2	300	100-- Year	1.05	177.38	178.24		178.26	0.001172	0.55	1.92	4.17	0.26
WEBBE R 2	T2	288	2--Year	0.25	177.43	177.76		177.77	0.003155	0.56	0.44	2.05	0.38
WEBBE R 2	T2	288	5 -Year	0.43	177.43	177.88		177.9	0.002532	0.6	0.72	2.48	0.35
WEBBE R 2	T2	288	25 - Year	0.76	177.43	178.07		178.09	0.001745	0.6	1.26	3.24	0.31
WEBBE R 2	T2	288	100-- Year	1.05	177.43	178.23		178.24	0.001321	0.58	1.83	4.07	0.27
WEBBE R 2	T2	274	2--Year	0.25	177.4	177.72		177.73	0.00269	0.51	0.48	2.26	0.35
WEBBE R 2	T2	274	5 -Year	0.43	177.4	177.85		177.86	0.001847	0.53	0.81	2.64	0.31
WEBBE R 2	T2	274	25 - Year	0.76	177.4	178.05		178.06	0.001299	0.54	1.41	3.39	0.27
WEBBE R 2	T2	274	100-- Year	1.05	177.4	178.21		178.23	0.000979	0.52	2.04	4.65	0.24
WEBBE R 2	T2	260	2--Year	0.25	177.33	177.69		177.7	0.001592	0.42	0.59	2.48	0.28
WEBBE R 2	T2	260	5 -Year	0.43	177.33	177.83		177.84	0.001166	0.44	0.98	2.99	0.25
WEBBE R 2	T2	260	25 - Year	0.76	177.33	178.04		178.05	0.000907	0.44	1.72	4.44	0.23
WEBBE R 2	T2	260	100-- Year	1.05	177.33	178.2		178.21	0.000652	0.41	2.57	5.8	0.2
WEBBE R 2	T2	257	2--Year	0.25	177.25	177.65	177.58	177.69	0.01014	0.9	0.27	1.34	0.64

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 2	T2	257	5 -Year	0.43	177.25	177.8	177.66	177.83	0.006101	0.81	0.53	2.14	0.52
WEBBE R 2	T2	257	25 - Year	0.76	177.25	178.03	177.77	178.04	0.00264	0.59	1.29	4.73	0.36
WEBBE R 2	T2	257	100-- Year	1.05	177.25	178.2	177.86	178.21	0.001064	0.46	2.31	6.74	0.24
WEBBE R 2	T2	252		Culvert									
WEBBE R 2	T2	227	2--Year	0.25	177.14	177.5		177.51	0.003365	0.56	0.44	2.12	0.39
WEBBE R 2	T2	227	5 -Year	0.43	177.14	177.56		177.59	0.004854	0.72	0.59	2.55	0.48
WEBBE R 2	T2	227	25 - Year	0.76	177.14	177.63		177.67	0.007729	0.98	0.77	2.99	0.62
WEBBE R 2	T2	227	100-- Year	1.05	177.14	177.67		177.74	0.010393	1.17	0.9	3.35	0.72
WEBBE R 2	T2	224	2--Year	0.25	177.16	177.49		177.5	0.003041	0.49	0.5	2.78	0.37
WEBBE R 2	T2	224	5 -Year	0.43	177.16	177.55		177.57	0.004128	0.61	0.7	3.54	0.44
WEBBE R 2	T2	224	25 - Year	0.76	177.16	177.61		177.65	0.006041	0.8	0.95	4.3	0.54
WEBBE R 2	T2	224	100-- Year	1.05	177.16	177.65		177.7	0.007481	0.93	1.13	4.79	0.61
WEBBE R 2	T2	210	2--Year	0.25	177.19	177.44		177.45	0.005173	0.48	0.51	4.42	0.45
WEBBE R 2	T2	210	5 -Year	0.43	177.19	177.48		177.5	0.006849	0.57	0.76	6.39	0.53
WEBBE R 2	T2	210	25 - Year	0.76	177.19	177.54		177.56	0.006695	0.66	1.16	8.36	0.54
WEBBE R 2	T2	210	100-- Year	1.05	177.19	177.57		177.6	0.006401	0.73	1.5	9.72	0.55
WEBBE R 2	T2	194	2--Year	0.25	177.16	177.37	177.3	177.38	0.003519	0.41	0.65	8.73	0.38
WEBBE R 2	T2	194	5 -Year	0.43	177.16	177.42	177.34	177.43	0.002763	0.44	1.23	13.1	0.35

Drainage Study of the Farr, Webber, and River Road Area of the Town of Pelham

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Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 2	T2	109	2--Year	0.25	176.31	176.57		176.59	0.006999	0.65	0.38	2.58	0.55
WEBBE R 2	T2	109	5 -Year	0.43	176.31	176.64		176.67	0.007098	0.74	0.58	3.34	0.57
WEBBE R 2	T2	109	25 - Year	0.76	176.31	176.72		176.76	0.007183	0.83	0.92	4.53	0.59
WEBBE R 2	T2	109	100-- Year	1.05	176.31	176.8		176.83	0.007754	0.74	1.42	8.76	0.59
WEBBE R 2	T2	82	2--Year	0.25	176.07	176.29		176.32	0.014487	0.85	0.29	2.28	0.77
WEBBE R 2	T2	82	5 -Year	0.43	176.07	176.35		176.39	0.015066	0.98	0.44	2.92	0.8
WEBBE R 2	T2	82	25 - Year	0.76	176.07	176.42	176.4	176.48	0.015629	1.07	0.71	4.27	0.83
WEBBE R 2	T2	82	100-- Year	1.05	176.07	176.46	176.44	176.53	0.016258	1.16	0.91	4.92	0.87
WEBBE R 2	T2	65	2--Year	0.25	175.89	176.11		176.13	0.008547	0.62	0.4	3.42	0.59
WEBBE R 2	T2	65	5 -Year	0.43	175.89	176.16		176.18	0.009513	0.72	0.59	4.45	0.63
WEBBE R 2	T2	65	25 - Year	0.76	175.89	176.22		176.25	0.010403	0.84	0.9	5.75	0.68
WEBBE R 2	T2	65	100-- Year	1.05	175.89	176.26		176.3	0.010561	0.92	1.15	6.59	0.7
WEBBE R 2	T2	47	2--Year	0.25	175.81	176	175.95	176.01	0.004584	0.41	0.61	6.32	0.42
WEBBE R 2	T2	47	5 -Year	0.43	175.81	176.04	175.98	176.05	0.005206	0.49	0.87	7.42	0.46
WEBBE R 2	T2	47	25 - Year	0.76	175.81	176.09	176.02	176.11	0.005946	0.61	1.24	8.47	0.51
WEBBE R 2	T2	47	100-- Year	1.05	175.81	176.12	176.05	176.15	0.006575	0.69	1.54	10.14	0.55
WEBBE R 2	T2	27	2--Year	0.25	175.7	175.79	175.79	175.81	0.033734	0.65	0.38	8.87	0.99
WEBBE R 2	T2	27	5 -Year	0.43	175.7	175.81	175.81	175.84	0.030617	0.75	0.58	10	0.99
WEBBE R 2	T2	27	25 - Year	0.76	175.7	175.84	175.84	175.88	0.028531	0.9	0.85	11.13	1.01

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 2	T2	27	100-- Year	1.05	175.7	175.86	175.86	175.91	0.026841	0.95	1.14	13.24	1
WEBBE R 1	T1	790	2--Year	0.2	177.34	177.5	177.38	177.5	0.000069	0.06	3.22	23.27	0.05
WEBBE R 1	T1	790	5 -Year	0.35	177.34	177.55	177.38	177.55	0.000067	0.08	4.52	23.65	0.06
WEBBE R 1	T1	790	25 - Year	0.6	177.34	177.61	177.4	177.61	0.000089	0.1	5.81	24.12	0.07
WEBBE R 1	T1	790	100-- Year	0.84	177.34	177.64	177.41	177.64	0.000108	0.13	6.69	24.42	0.08
WEBBE R 1	T1	773	2--Year	0.2	177.34	177.49		177.5	0.000154	0.08	2.64	25.8	0.08
WEBBE R 1	T1	773	5 -Year	0.35	177.34	177.55		177.55	0.000107	0.09	4.08	26.09	0.07
WEBBE R 1	T1	773	25 - Year	0.6	177.34	177.6		177.6	0.000121	0.11	5.48	26.37	0.08
WEBBE R 1	T1	773	100-- Year	0.84	177.34	177.64		177.64	0.000137	0.13	6.43	26.58	0.08
WEBBE R 1	T1	750	2--Year	0.2	177.37	177.49		177.49	0.000106	0.07	3.01	27.11	0.07
WEBBE R 1	T1	750	5 -Year	0.35	177.37	177.55		177.55	0.00008	0.08	4.55	27.39	0.06
WEBBE R 1	T1	750	25 - Year	0.6	177.37	177.6		177.6	0.000096	0.1	6.02	27.92	0.07
WEBBE R 1	T1	750	100-- Year	0.84	177.37	177.64		177.64	0.000112	0.12	7.01	30.28	0.08
WEBBE R 1	T1	725	2--Year	0.2	177.32	177.49		177.49	0.000125	0.07	2.81	25.82	0.07
WEBBE R 1	T1	725	5 -Year	0.35	177.32	177.55		177.55	0.00009	0.08	4.3	26.31	0.06
WEBBE R 1	T1	725	25 - Year	0.6	177.32	177.6		177.6	0.000107	0.11	5.73	28.61	0.07
WEBBE R 1	T1	725	100-- Year	0.84	177.32	177.63		177.64	0.000123	0.13	6.85	33.87	0.08
WEBBE R 1	T1	692	2--Year	0.2	177.31	177.49		177.49	0.000119	0.09	2.55	21.24	0.07

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 1	T1	692	5 -Year	0.35	177.31	177.54		177.54	0.000107	0.1	3.8	21.88	0.07
WEBBE R 1	T1	692	25 - Year	0.6	177.31	177.59		177.6	0.000147	0.14	5.04	28.88	0.09
WEBBE R 1	T1	692	100-- Year	0.84	177.31	177.63		177.63	0.000184	0.17	6.15	35.37	0.1
WEBBE R 1	T1	660	2--Year	0.2	177.23	177.41	177.41	177.47	0.023377	1.03	0.21	2.31	0.96
WEBBE R 1	T1	660	5 -Year	0.35	177.23	177.48	177.48	177.53	0.019284	0.99	0.41	4.03	0.89
WEBBE R 1	T1	660	25 - Year	0.6	177.23	177.53	177.53	177.57	0.027006	0.98	0.69	7.46	1.01
WEBBE R 1	T1	660	100-- Year	0.84	177.23	177.55	177.55	177.6	0.030414	1.08	0.87	8.81	1.08
WEBBE R 1	T1	628	2--Year	0.2	177	177.17	177.07	177.17	0.000449	0.15	1.37	12.09	0.14
WEBBE R 1	T1	628	5 -Year	0.35	177	177.21	177.08	177.21	0.000475	0.19	1.94	13.34	0.15
WEBBE R 1	T1	628	25 - Year	0.6	177	177.26	177.11	177.26	0.00069	0.24	2.72	17.69	0.18
WEBBE R 1	T1	628	100-- Year	0.84	177	177.32	177.13	177.33	0.000481	0.24	3.96	22.3	0.16
WEBBE R 1	T1	603	2--Year	0.2	176.94	177.17		177.17	0.000026	0.05	4.43	25.15	0.03
WEBBE R 1	T1	603	5 -Year	0.35	176.94	177.21		177.21	0.000037	0.06	5.59	25.67	0.04
WEBBE R 1	T1	603	25 - Year	0.6	176.94	177.26		177.26	0.000059	0.09	6.84	26.63	0.06
WEBBE R 1	T1	603	100-- Year	0.84	176.94	177.32		177.32	0.000057	0.1	8.59	28.71	0.06
WEBBE R 1	T1	584	2--Year	0.2	176.93	177.16		177.16	0.000067	0.07	3.05	20.67	0.06
WEBBE R 1	T1	584	5 -Year	0.35	176.93	177.21		177.21	0.000089	0.09	4.02	23.45	0.07
WEBBE R 1	T1	584	25 - Year	0.6	176.93	177.26		177.26	0.000128	0.13	5.24	26.99	0.08
WEBBE R 1	T1	584	100-- Year	0.84	176.93	177.32		177.32	0.000109	0.14	7.06	29.88	0.08

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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 1	T1	566	2--Year	0.2	176.9	177.11	177.11	177.16	0.026348	0.95	0.21	2.27	0.99
WEBBE R 1	T1	566	5 -Year	0.35	176.9	177.16	177.16	177.2	0.026764	0.93	0.38	4.21	0.99
WEBBE R 1	T1	566	25 - Year	0.6	176.9	177.23	177.23	177.25	0.009875	0.67	1.43	41.3	0.63
WEBBE R 1	T1	566	100-- Year	0.84	176.9	177.31	177.24	177.32	0.000931	0.28	5.03	42.68	0.21
WEBBE R 1	T1	560	2--Year	0.2	176.53	176.79	176.83	176.92	0.055804	1.6	0.13	0.97	1.41
WEBBE R 1	T1	560	5 -Year	0.35	176.53	176.98	176.9	177.03	0.009456	0.94	0.37	1.65	0.63
WEBBE R 1	T1	560	25 - Year	0.6	176.53	177.16	177	177.19	0.005263	0.64	0.98	36.9	0.48
WEBBE R 1	T1	560	100-- Year	0.84	176.53	177.31	177.11	177.31	0.000682	0.24	5.12	40.35	0.18
WEBBE R 1	T1	520		Culvert									
WEBBE R 1	T1	476	2--Year	0.2	176.48	176.57	176.55	176.58	0.010597	0.48	0.43	6.46	0.6
WEBBE R 1	T1	476	5 -Year	0.35	176.48	176.62	176.57	176.63	0.004922	0.45	0.78	7.27	0.44
WEBBE R 1	T1	476	25 - Year	0.6	176.48	176.72	176.6	176.73	0.002489	0.36	1.85	31.68	0.32
WEBBE R 1	T1	476	100-- Year	0.84	176.48	176.79	176.62	176.79	0.000822	0.27	4.11	34.59	0.2
WEBBE R 1	T1	469	2--Year	0.2	176.11	176.39	176.39	176.47	0.02553	1.24	0.16	3.1	1.03
WEBBE R 1	T1	469	5 -Year	0.35	176.11	176.46	176.46	176.56	0.022432	1.39	0.25	3.64	1.01
WEBBE R 1	T1	469	25 - Year	0.6	176.11	176.56	176.56	176.68	0.020753	1.56	0.39	4.54	1.01
WEBBE R 1	T1	469	100-- Year	0.84	176.11	176.62	176.62	176.76	0.019896	1.67	0.5	14.18	1.01

Drainage Study of the Farr, Webber, and River Road Area
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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 1	T1	440	2--Year	0.2	175.98	176.21	176.12	176.22	0.002444	0.39	0.53	3.67	0.32
WEBBE R 1	T1	440	5 -Year	0.35	175.98	176.26	176.15	176.27	0.002942	0.48	0.73	4.19	0.37
WEBBE R 1	T1	440	25 - Year	0.6	175.98	176.44	176.21	176.45	0.000921	0.37	1.64	5.78	0.22
WEBBE R 1	T1	440	100-- Year	0.84	175.98	176.47	176.24	176.48	0.001381	0.47	1.79	6.03	0.27
WEBBE R 1	T1	413	2--Year	0.2	175.99	176.15	176.09	176.15	0.002533	0.31	0.66	6.62	0.31
WEBBE R 1	T1	413	5 -Year	0.35	175.99	176.22	176.11	176.22	0.001263	0.31	1.15	7.29	0.24
WEBBE R 1	T1	413	25 - Year	0.6	175.99	176.44	176.14	176.44	0.000229	0.21	3.04	9.77	0.12
WEBBE R 1	T1	413	100-- Year	0.84	175.99	176.46	176.17	176.46	0.000361	0.27	3.25	9.99	0.15
WEBBE R 1	T1	393	2--Year	0.2	175.97	176.15	176.01	176.15	0.000032	0.05	4.35	27.7	0.04
WEBBE R 1	T1	393	5 -Year	0.35	175.97	176.22	176.01	176.22	0.000027	0.06	6.35	28.06	0.04
WEBBE R 1	T1	393	25 - Year	0.6	175.97	176.44	176.03	176.44	0.000009	0.05	12.52	29.08	0.02
WEBBE R 1	T1	393	100-- Year	0.84	175.97	176.46	176.03	176.46	0.000014	0.06	13.18	29.19	0.03
WEBBE R 1	T1	369	2--Year	0.2	175.96	176.15	176.02	176.15	0.000222	0.12	1.66	10.7	0.1
WEBBE R 1	T1	369	5 -Year	0.35	175.96	176.22	176.03	176.22	0.00019	0.14	2.44	11.11	0.1
WEBBE R 1	T1	369	25 - Year	0.6	175.96	176.44	176.06	176.44	0.000062	0.12	4.96	12.25	0.06
WEBBE R 1	T1	369	100-- Year	0.84	175.96	176.46	176.07	176.46	0.000102	0.16	5.22	12.53	0.08
WEBBE R 1	T1	344	2--Year	0.2	175.88	176.13	176.02	176.13	0.002408	0.4	0.5	3.2	0.33
WEBBE R 1	T1	344	5 -Year	0.35	175.88	176.2	176.06	176.21	0.002457	0.46	0.76	4	0.34
WEBBE R 1	T1	344	25 - Year	0.6	175.88	176.43	176.12	176.43	0.00054	0.29	2.13	7.98	0.17

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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 1	T1	231	2--Year	0.2	175.17	175.71		175.71	0.000021	0.05	5.2	33.58	0.03
WEBBE R 1	T1	231	5 -Year	0.35	175.17	175.72		175.72	0.000051	0.07	5.57	34.11	0.05
WEBBE R 1	T1	231	25 - Year	0.6	175.17	175.74		175.75	0.000111	0.12	6.26	35.2	0.08
WEBBE R 1	T1	231	100-- Year	0.84	175.17	175.76		175.76	0.000163	0.15	6.88	36.57	0.09
WEBBE R 1	T1	228	2--Year	0.2	175.15	175.71		175.71	0.000067	0.05	4.35	29.47	0.04
WEBBE R 1	T1	228	5 -Year	0.35	175.15	175.72		175.72	0.000163	0.09	4.68	30.88	0.06
WEBBE R 1	T1	228	25 - Year	0.6	175.15	175.74		175.74	0.000357	0.13	5.3	33.69	0.09
WEBBE R 1	T1	228	100-- Year	0.84	175.15	175.76		175.76	0.000514	0.17	5.89	34.72	0.1
WEBBE R 1	T1	210	2--Year	0.2	175.29	175.71		175.71	0.000006	0.04	7.8	29.63	0.02
WEBBE R 1	T1	210	5 -Year	0.35	175.29	175.72		175.72	0.000016	0.06	8.11	29.89	0.03
WEBBE R 1	T1	210	25 - Year	0.6	175.29	175.74		175.74	0.000041	0.1	8.67	30.44	0.05
WEBBE R 1	T1	210	100-- Year	0.84	175.29	175.76		175.76	0.000066	0.13	9.17	30.92	0.06
WEBBE R 1	T1	193	2--Year	0.2	175.23	175.71		175.71	0.000006	0.04	7.4	27.58	0.02
WEBBE R 1	T1	193	5 -Year	0.35	175.23	175.72		175.72	0.000017	0.07	7.69	28.56	0.03
WEBBE R 1	T1	193	25 - Year	0.6	175.23	175.74		175.74	0.000044	0.11	8.21	29.32	0.05
WEBBE R 1	T1	193	100-- Year	0.84	175.23	175.76		175.76	0.000072	0.14	8.68	29.97	0.07
WEBBE R 1	T1	175	2--Year	0.2	175.15	175.71		175.71	0.000002	0.02	13.39	36.97	0.01
WEBBE R 1	T1	175	5 -Year	0.35	175.15	175.72		175.72	0.000004	0.04	13.77	37.38	0.02

Drainage Study of the Farr, Webber, and River Road Area
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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
WEBBE R 1	T1	175	25 - Year	0.6	175.15	175.74		175.74	0.000011	0.06	14.44	38.03	0.03
WEBBE R 1	T1	175	100-- Year	0.84	175.15	175.76		175.76	0.000019	0.08	15.04	38.6	0.04
WEBBE R 1	T1	173	2--Year	0.2	175.16	175.71	175.23	175.71	0.000003	0.02	12.89	34.4	0.01
WEBBE R 1	T1	173	5 -Year	0.35	175.16	175.72	175.25	175.72	0.000007	0.03	13.24	34.73	0.01
WEBBE R 1	T1	173	25 - Year	0.6	175.16	175.74	175.26	175.74	0.000018	0.05	13.87	35.31	0.02
WEBBE R 1	T1	173	100-- Year	0.84	175.16	175.76	175.27	175.76	0.000031	0.06	14.42	35.81	0.03
WEBBE R 1	T1	165		Culvert									
WEBBE R 1	T1	156	2--Year	0.2	175.01	175.15		175.16	0.019569	0.44	0.52	9.31	0.52
WEBBE R 1	T1	156	5 -Year	0.35	175.01	175.18		175.19	0.016249	0.38	0.94	14.69	0.47
WEBBE R 1	T1	156	25 - Year	0.6	175.01	175.22		175.23	0.011184	0.41	1.54	17.53	0.42
WEBBE R 1	T1	156	100-- Year	0.84	175.01	175.25		175.26	0.007333	0.41	2.21	19.51	0.36
WEBBE R 1	T1	152	2--Year	0.2	174.94	175.13		175.13	0.002756	0.19	1.2	16.03	0.2
WEBBE R 1	T1	152	5 -Year	0.35	174.94	175.16		175.17	0.002564	0.21	1.78	18.13	0.2
WEBBE R 1	T1	152	25 - Year	0.6	174.94	175.2		175.21	0.00288	0.25	2.5	20.22	0.22
WEBBE R 1	T1	152	100-- Year	0.84	174.94	175.24		175.25	0.002221	0.26	3.37	22.75	0.2
WEBBE R 1	T1	135	2--Year	0.2	174.9	175.02	175.02	175.05	0.030558	0.8	0.26	4	1.01
WEBBE R 1	T1	135	5 -Year	0.35	174.9	175.05	175.05	175.09	0.027316	0.88	0.41	6.07	0.99
WEBBE R 1	T1	135	25 - Year	0.6	174.9	175.13		175.15	0.007624	0.54	1.32	16.71	0.54

Drainage Study of the Farr, Webber, and River Road Area
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WEBBE R 1	T1	135	100-- Year	0.84	174.9	175.22		175.22	0.001697	0.38	2.96	24.08	0.28
WEBBE R 1	T1	111	2--Year	0.2	174.74	174.85	174.89	174.97	0.137202	1.57	0.13	2.28	2.09
WEBBE R 1	T1	111	5 -Year	0.35	174.74	175	174.92	175.01	0.005915	0.44	0.8	9.11	0.47
WEBBE R 1	T1	111	25 - Year	0.6	174.74	175.14		175.14	0.000514	0.23	3.46	27.33	0.16
WEBBE R 1	T1	111	100-- Year	0.84	174.74	175.22		175.22	0.000268	0.2	5.76	31.74	0.12
WEBBE R 1	T1	80	2--Year	0.2	174.6	174.88	174.71	174.88	0.000164	0.1	2.05	15.6	0.08
WEBBE R 1	T1	80	5 -Year	0.35	174.6	175		175	0.000054	0.09	4.43	22.28	0.05
WEBBE R 1	T1	80	25 - Year	0.6	174.6	175.14		175.14	0.000036	0.09	8.02	29.55	0.05
WEBBE R 1	T1	80	100-- Year	0.84	174.6	175.22		175.22	0.000035	0.1	10.41	32.46	0.05
WEBBE R 1	T1	56	2--Year	0.2	174.52	174.87		174.88	0.00005	0.07	3.37	20.37	0.05
WEBBE R 1	T1	56	5 -Year	0.35	174.52	175		175	0.000027	0.07	6.54	29.53	0.04
WEBBE R 1	T1	56	25 - Year	0.6	174.52	175.14		175.14	0.000021	0.08	11.1	36.54	0.04
WEBBE R 1	T1	56	100-- Year	0.84	174.52	175.22		175.22	0.000022	0.09	14.13	42.16	0.04
WEBBE R 1	T1	33	2--Year	0.2	174.38	174.87		174.87	0.000009	0.04	7.69	39.23	0.02
WEBBE R 1	T1	33	5 -Year	0.35	174.38	175		175	0.000007	0.04	13.32	49.34	0.02
WEBBE R 1	T1	33	25 - Year	0.6	174.38	175.14		175.14	0.000006	0.05	20.84	61.56	0.02
WEBBE R 1	T1	33	100-- Year	0.84	174.38	175.22		175.22	0.000007	0.06	25.94	69.32	0.02
EAST	E1	2250	2--Year	0.43	175.55	176.24	175.66	176.24	0	0.01	64.19	171.76	0
EAST	E1	2250	5 -Year	0.65	175.55	176.26	175.68	176.26	0.000001	0.01	68.89	173.29	0

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EAST	E1	2250	25 - Year	1	175.55	176.3	175.72	176.3	0.000001	0.01	75.1	176.14	0.01
EAST	E1	2250	100-- Year	1.29	175.55	176.33	175.73	176.33	0.000002	0.02	80.67	178.05	0.01
EAST	E1	2243	2--Year	0.43	175.43	176.24	175.57	176.24	0	0.01	62.26	141.82	0
EAST	E1	2243	5 -Year	0.65	175.43	176.26	175.6	176.26	0.000001	0.01	66.14	142.95	0
EAST	E1	2243	25 - Year	1	175.43	176.3	175.63	176.3	0.000001	0.01	71.25	144.87	0.01
EAST	E1	2243	100-- Year	1.29	175.43	176.33	175.64	176.33	0.000002	0.02	75.83	146.29	0.01
EAST	E1	2223	2--Year	0.43	175.41	176.24		176.24	0	0.01	58.35	143.55	0
EAST	E1	2223	5 -Year	0.65	175.41	176.26		176.26	0.000001	0.01	62.28	145.47	0.01
EAST	E1	2223	25 - Year	1	175.41	176.3		176.3	0.000001	0.02	67.46	146.36	0.01
EAST	E1	2223	100-- Year	1.29	175.41	176.33		176.33	0.000002	0.02	72.09	147.97	0.01
EAST	E1	2196	2--Year	0.43	175.42	176.24		176.24	0	0.01	51.63	117.37	0
EAST	E1	2196	5 -Year	0.65	175.42	176.26		176.26	0.000001	0.01	54.85	119.03	0.01
EAST	E1	2196	25 - Year	1	175.42	176.3		176.3	0.000002	0.02	59.13	121.9	0.01
EAST	E1	2196	100-- Year	1.29	175.42	176.33		176.33	0.000002	0.02	62.98	123.13	0.01
EAST	E1	2155	2--Year	0.43	175.37	176.24		176.24	0	0.01	60.43	138.35	0
EAST	E1	2155	5 -Year	0.65	175.37	176.26		176.26	0.000001	0.01	64.2	138.93	0
EAST	E1	2155	25 - Year	1	175.37	176.3		176.3	0.000001	0.01	69.15	139.9	0.01
EAST	E1	2155	100-- Year	1.29	175.37	176.33		176.33	0.000002	0.02	73.55	141.42	0.01
EAST	E2	2096	2--Year	0.94	175.41	176.24		176.24	0.000001	0.02	66.22	162.47	0.01
EAST	E2	2096	5 -Year	1.44	175.41	176.26		176.26	0.000003	0.02	70.69	166.48	0.01
EAST	E2	2096	25 - Year	2.25	175.41	176.3		176.3	0.000006	0.03	76.7	170.91	0.01

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E2	2096	100-- Year	2.95	175.41	176.33		176.33	0.000008	0.04	82.08	172.89	0.02
EAST	E2	2091	2--Year	0.94	175.42	176.24		176.24	0.000001	0.02	65.93	145.55	0.01
EAST	E2	2091	5 -Year	1.44	175.42	176.26		176.26	0.000002	0.02	69.97	151.3	0.01
EAST	E2	2091	25 - Year	2.25	175.42	176.3		176.3	0.000005	0.03	75.6	168.22	0.01
EAST	E2	2091	100-- Year	2.95	175.42	176.33		176.33	0.000007	0.04	80.91	170.73	0.02
EAST	E2	2050	2--Year	0.94	175.44	176.24		176.24	0.000001	0.02	70.24	156.72	0.01
EAST	E2	2050	5 -Year	1.44	175.44	176.26		176.26	0.000003	0.02	74.5	157.75	0.01
EAST	E2	2050	25 - Year	2.25	175.44	176.3		176.3	0.000005	0.03	80.12	160.34	0.01
EAST	E2	2050	100-- Year	2.95	175.44	176.33		176.33	0.000007	0.04	85.14	162.02	0.02
EAST	E2	2012	2--Year	0.94	175.45	176.24		176.24	0.000002	0.02	65.83	168.36	0.01
EAST	E2	2012	5 -Year	1.44	175.45	176.26		176.26	0.000003	0.02	70.39	168.63	0.01
EAST	E2	2012	25 - Year	2.25	175.45	176.3		176.3	0.000006	0.03	76.35	169.73	0.01
EAST	E2	2012	100-- Year	2.95	175.45	176.33		176.33	0.000009	0.04	81.64	170.22	0.02
EAST	E2	1993	2--Year	0.94	175.43	176.24	175.62	176.24	0.000011	0.04	23.13	60.7	0.02
EAST	E2	1993	5 -Year	1.44	175.43	176.26	175.65	176.26	0.000021	0.06	24.77	61.66	0.03
EAST	E2	1993	25 - Year	2.25	175.43	176.3	175.69	176.3	0.000041	0.09	26.94	62.33	0.04
EAST	E2	1993	100-- Year	2.95	175.43	176.33	175.73	176.33	0.000058	0.11	28.87	62.91	0.05
EAST	E2	1964	2--Year	0.94	175.45	176.24	175.6	176.24	0.000008	0.03	27.36	61.99	0.02
EAST	E2	1964	5 -Year	1.44	175.45	176.26	175.63	176.26	0.000016	0.05	29.02	62.43	0.02
EAST	E2	1964	25 - Year	2.25	175.45	176.3	175.66	176.3	0.000031	0.07	31.18	62.99	0.03
EAST	E2	1964	100-- Year	2.95	175.45	176.33	175.7	176.33	0.000044	0.09	33.1	63.48	0.04

Drainage Study of the Farr, Webber, and River Road Area
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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E2	1954	2--Year	0.94	175.44	176.24		176.24	0.000006	0.03	31.32	82.65	0.01
EAST	E2	1954	5 -Year	1.44	175.44	176.26		176.26	0.000012	0.04	33.56	85.55	0.02
EAST	E2	1954	25 - Year	2.25	175.44	176.3		176.3	0.000023	0.07	36.52	86.23	0.03
EAST	E2	1954	100-- Year	2.95	175.44	176.33		176.33	0.000033	0.08	39.14	86.33	0.03
EAST	E2	1938	2--Year	0.94	175.44	176.23		176.23	0.000006	0.03	30.16	64.61	0.01
EAST	E2	1938	5 -Year	1.44	175.44	176.26		176.26	0.000012	0.05	31.96	72.62	0.02
EAST	E2	1938	25 - Year	2.25	175.44	176.3		176.3	0.000024	0.07	34.5	75.98	0.03
EAST	E2	1938	100-- Year	2.95	175.44	176.33		176.33	0.000034	0.08	36.86	80.84	0.04
EAST	E2	1922	2--Year	0.94	175.47	176.23		176.23	0.000006	0.03	27.68	51.95	0.01
EAST	E2	1922	5 -Year	1.44	175.47	176.26		176.26	0.000012	0.05	29.05	52.47	0.02
EAST	E2	1922	25 - Year	2.25	175.47	176.3		176.3	0.000024	0.07	30.86	53.63	0.03
EAST	E2	1922	100-- Year	2.95	175.47	176.33		176.33	0.000036	0.09	32.48	55.81	0.04
EAST	E2	1896	2--Year	0.94	175.47	176.23		176.23	0.000006	0.03	28.28	56.61	0.02
EAST	E2	1896	5 -Year	1.44	175.47	176.26		176.26	0.000012	0.05	29.78	57.67	0.02
EAST	E2	1896	25 - Year	2.25	175.47	176.29		176.29	0.000025	0.07	31.75	59.08	0.03
EAST	E2	1896	100-- Year	2.95	175.47	176.32		176.32	0.000036	0.09	33.51	60.31	0.04
EAST	E2	1876	2--Year	0.94	175.43	176.23		176.23	0.000005	0.03	34.61	88.22	0.01
EAST	E2	1876	5 -Year	1.44	175.43	176.26		176.26	0.000009	0.04	36.92	88.85	0.02
EAST	E2	1876	25 - Year	2.25	175.43	176.29		176.29	0.000018	0.06	39.9	89.67	0.03
EAST	E2	1876	100-- Year	2.95	175.43	176.32		176.32	0.000026	0.07	42.57	91.36	0.03
EAST	E2	1861	2--Year	0.94	175.3	176.23		176.23	0.000004	0.03	35.64	89.26	0.01

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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E2	1861	5 -Year	1.44	175.3	176.26		176.26	0.000008	0.04	37.98	90.09	0.02
EAST	E2	1861	25 - Year	2.25	175.3	176.29		176.29	0.000016	0.05	41.02	92.43	0.03
EAST	E2	1861	100-- Year	2.95	175.3	176.32		176.32	0.000023	0.07	43.76	93.32	0.03
EAST	E2	1857	2--Year	0.94	175.2	176.23	175.57	176.23	0.000003	0.03	35.3	81.65	0.01
EAST	E2	1857	5 -Year	1.44	175.2	176.26	175.59	176.26	0.000007	0.04	37.46	83.65	0.02
EAST	E2	1857	25 - Year	2.25	175.2	176.29	175.62	176.29	0.000014	0.06	40.31	87.23	0.02
EAST	E2	1857	100-- Year	2.95	175.2	176.32	175.64	176.32	0.000002	0.07	42.92	90.49	0.03
EAST	E2	1840		Culvert									
EAST	E2	1821	2--Year	0.94	175.17	175.66		175.66	0.000337	0.17	5.79	31.26	0.12
EAST	E2	1821	5 -Year	1.44	175.17	175.71		175.71	0.000423	0.21	7.32	33.58	0.14
EAST	E2	1821	25 - Year	2.25	175.17	175.78		175.78	0.000506	0.25	9.82	44.88	0.15
EAST	E2	1821	100-- Year	2.95	175.17	175.83		175.83	0.000495	0.26	12.5	56.88	0.15
EAST	E2	1819	2--Year	0.94	175.26	175.66		175.66	0.000233	0.14	7.75	38.86	0.09
EAST	E2	1819	5 -Year	1.44	175.26	175.71		175.71	0.000297	0.16	9.74	43.96	0.1
EAST	E2	1819	25 - Year	2.25	175.26	175.78		175.78	0.000318	0.2	12.99	54.59	0.11
EAST	E2	1819	100-- Year	2.95	175.26	175.83		175.83	0.000335	0.22	16.17	66.33	0.12
EAST	E2	1807	2--Year	0.94	175.25	175.66		175.66	0.000342	0.2	6.68	47.33	0.13
EAST	E2	1807	5 -Year	1.44	175.25	175.7		175.7	0.000379	0.24	8.95	52.85	0.14
EAST	E2	1807	25 - Year	2.25	175.25	175.77		175.77	0.000369	0.27	12.82	58.47	0.15
EAST	E2	1807	100-- Year	2.95	175.25	175.82		175.83	0.000351	0.29	16.05	62.99	0.15
EAST	E2	1776	2--Year	0.94	175.31	175.65		175.65	0.000109	0.09	10.94	55.46	0.06

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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E2	1776	5 -Year	1.44	175.31	175.7		175.7	0.000141	0.11	13.6	61.17	0.07
EAST	E2	1776	25 - Year	2.25	175.31	175.76		175.76	0.00016	0.13	17.9	66.2	0.08
EAST	E2	1776	100-- Year	2.95	175.31	175.82		175.82	0.000165	0.14	21.49	69.26	0.08
EAST	E2	1735	2--Year	0.94	175.2	175.65		175.65	0.000049	0.1	14.54	66.87	0.05
EAST	E2	1735	5 -Year	1.44	175.2	175.69		175.69	0.000069	0.13	17.57	70.12	0.07
EAST	E2	1735	25 - Year	2.25	175.2	175.76		175.76	0.000088	0.16	22.52	76.84	0.08
EAST	E2	1735	100-- Year	2.95	175.2	175.81		175.81	0.000096	0.18	26.72	81.88	0.08
EAST	E2	1697	2--Year	0.94	175.27	175.64		175.65	0.000166	0.14	8.35	45.59	0.09
EAST	E2	1697	5 -Year	1.44	175.27	175.69		175.69	0.000208	0.18	10.36	48.24	0.11
EAST	E2	1697	25 - Year	2.25	175.27	175.75		175.76	0.000238	0.22	13.92	67.04	0.12
EAST	E2	1697	100-- Year	2.95	175.27	175.81		175.81	0.000247	0.25	17.66	76.63	0.12
EAST	E2	1639	2--Year	0.94	175.43	175.58	175.58	175.61	0.023482	0.9	1.3	18.72	0.94
EAST	E2	1639	5 -Year	1.44	175.43	175.63		175.65	0.011937	0.66	2.83	39.97	0.68
EAST	E2	1639	25 - Year	2.25	175.43	175.71		175.72	0.003047	0.48	6.64	56.01	0.37
EAST	E2	1639	100-- Year	2.95	175.43	175.77		175.78	0.001593	0.43	10.16	61.74	0.28
EAST	E3	1598	2--Year	1.83	175.31	175.55	175.46	175.56	0.002834	0.28	6.45	51.98	0.26
EAST	E3	1598	5 -Year	2.98	175.31	175.62	175.49	175.62	0.002084	0.3	9.9	57.26	0.23
EAST	E3	1598	25 - Year	4.9	175.31	175.7	175.52	175.7	0.001719	0.33	14.98	66.07	0.22
EAST	E3	1598	100-- Year	6.63	175.31	175.76	175.55	175.77	0.001556	0.35	19.13	71.47	0.21
EAST	E3	1571	2--Year	1.83	175.23	175.5		175.5	0.001536	0.39	6.27	40.15	0.28
EAST	E3	1571	5 -Year	2.98	175.23	175.57		175.58	0.001401	0.46	9.38	49.13	0.28

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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E3	1571	25 - Year	4.9	175.23	175.65		175.66	0.001289	0.53	14.01	56.77	0.28
EAST	E3	1571	100-- Year	6.63	175.23	175.72		175.73	0.001221	0.57	17.73	60.25	0.28
EAST	E3	1517	2--Year	1.83	175.1	175.47		175.48	0.000256	0.2	12.78	62.38	0.12
EAST	E3	1517	5 -Year	2.98	175.1	175.55		175.55	0.000282	0.24	17.29	64.83	0.13
EAST	E3	1517	25 - Year	4.9	175.1	175.63		175.63	0.000338	0.3	23.12	71.28	0.15
EAST	E3	1517	100-- Year	6.63	175.1	175.69		175.7	0.000377	0.35	27.7	76.44	0.16
EAST	E3	1452	2--Year	1.83	175	175.46		175.46	0.000151	0.17	14.87	62.34	0.09
EAST	E3	1452	5 -Year	2.98	175	175.53		175.53	0.000194	0.22	19.35	67.68	0.11
EAST	E3	1452	25 - Year	4.9	175	175.61		175.61	0.000253	0.28	24.99	71.64	0.13
EAST	E3	1452	100-- Year	6.63	175	175.67		175.67	0.000295	0.32	29.38	75.25	0.14
EAST	E3	1396	2--Year	1.83	174.91	175.45		175.45	0.000139	0.18	14.25	56.8	0.09
EAST	E3	1396	5 -Year	2.98	174.91	175.52		175.52	0.000205	0.24	18.2	64.45	0.11
EAST	E3	1396	25 - Year	4.9	174.91	175.59		175.6	0.000293	0.32	23.44	71.59	0.14
EAST	E3	1396	100-- Year	6.63	174.91	175.65		175.66	0.000352	0.38	27.66	77.11	0.16
EAST	E3	1336	2--Year	1.83	174.87	175.45		175.45	0.000115	0.17	14.05	57.22	0.08
EAST	E3	1336	5 -Year	2.98	174.87	175.51		175.51	0.000176	0.23	17.7	62.89	0.11
EAST	E3	1336	25 - Year	4.9	174.87	175.58		175.58	0.000267	0.32	22.39	69.35	0.14
EAST	E3	1336	100-- Year	6.63	174.87	175.63		175.64	0.000334	0.37	26.12	72.76	0.15
EAST	E3	1310	2--Year	1.83	174.65	175.44	175.06	175.44	0.000091	0.15	14.25	48.26	0.08
EAST	E3	1310	5 -Year	2.98	174.65	175.5	175.11	175.5	0.000152	0.22	18.04	73.55	0.1
EAST	E3	1310	25 - Year	4.9	174.65	175.57	175.17	175.58	0.000234	0.29	23.57	84.97	0.13

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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E3	1310	100-- Year	6.63	174.65	175.62	175.21	175.63	0.000291	0.35	28.16	93.01	0.14
EAST	E3	1243	2--Year	1.83	174.32	175.44	174.52	175.44	0.00001	0.08	23.84	29.64	0.03
EAST	E3	1243	5 -Year	2.98	174.32	175.5	174.56	175.5	0.000021	0.12	25.58	30.17	0.04
EAST	E3	1243	25 - Year	4.9	174.32	175.57	174.62	175.57	0.000045	0.18	27.62	30.97	0.06
EAST	E3	1243	100-- Year	6.63	174.32	175.62	174.66	175.62	0.00007	0.23	29.15	31.53	0.07
EAST	E3	1213	2--Year	1.83	174.31	175.44		175.44	0.000005	0.06	31.78	42.89	0.02
EAST	E3	1213	5 -Year	2.98	174.31	175.5		175.5	0.00001	0.09	34.32	44.72	0.03
EAST	E3	1213	25 - Year	4.9	174.31	175.57		175.57	0.000022	0.14	37.72	56.9	0.04
EAST	E3	1213	100-- Year	6.63	174.31	175.62		175.62	0.000034	0.18	40.77	67.6	0.05
EAST	E3	1175	2--Year	1.83	174.31	175.44		175.44	0.000043	0.14	24.95	86.14	0.06
EAST	E3	1175	5 -Year	2.98	174.31	175.5		175.5	0.000072	0.2	30.01	90.39	0.07
EAST	E3	1175	25 - Year	4.9	174.31	175.56		175.57	0.000122	0.27	36.04	94.54	0.1
EAST	E3	1175	100-- Year	6.63	174.31	175.61		175.61	0.000165	0.33	40.63	98.3	0.11
EAST	E3	1140	2--Year	1.83	174.34	175.44		175.44	0.000051	0.15	20.73	66.28	0.06
EAST	E3	1140	5 -Year	2.98	174.34	175.5		175.5	0.000092	0.21	24.56	71.67	0.08
EAST	E3	1140	25 - Year	4.9	174.34	175.56		175.56	0.000162	0.29	29.29	79.46	0.11
EAST	E3	1140	100-- Year	6.63	174.34	175.6		175.61	0.000224	0.36	32.98	82.95	0.13
EAST	E3	1099	2--Year	1.83	174.35	175.44		175.44	0.000046	0.15	19.86	54.89	0.06
EAST	E3	1099	5 -Year	2.98	174.35	175.49		175.49	0.000086	0.21	22.93	58.1	0.08
EAST	E3	1099	25 - Year	4.9	174.35	175.55		175.55	0.000164	0.31	26.51	62.21	0.11
EAST	E3	1099	100-- Year	6.63	174.35	175.59		175.6	0.000238	0.39	29.2	65.45	0.14

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Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E3	1054	2--Year	1.83	174.29	175.44		175.44	0.000029	0.13	25.42	63.06	0.05
EAST	E3	1054	5 -Year	2.98	174.29	175.49		175.49	0.000057	0.19	28.86	66.17	0.07
EAST	E3	1054	25 - Year	4.9	174.29	175.55		175.55	0.000112	0.28	32.73	70.04	0.09
EAST	E3	1054	100-- Year	6.63	174.29	175.59		175.59	0.000169	0.36	35.6	74.25	0.12
EAST	E3	1012	2--Year	1.83	174.34	175.44		175.44	0.000013	0.09	37	80.73	0.03
EAST	E3	1012	5 -Year	2.98	174.34	175.49		175.49	0.000026	0.13	41.32	83.79	0.05
EAST	E3	1012	25 - Year	4.9	174.34	175.54		175.55	0.000053	0.2	46.09	86.97	0.07
EAST	E3	1012	100-- Year	6.63	174.34	175.58		175.58	0.000081	0.25	49.49	89.19	0.08
EAST	E3	988	2--Year	1.83	174.34	175.44		175.44	0.000017	0.1	33.68	79.7	0.04
EAST	E3	988	5 -Year	2.98	174.34	175.49		175.49	0.000035	0.15	37.99	84.87	0.05
EAST	E3	988	25 - Year	4.9	174.34	175.54		175.54	0.000069	0.22	42.8	89.18	0.07
EAST	E3	988	100-- Year	6.63	174.34	175.58		175.58	0.000103	0.28	46.22	91.82	0.09
EAST	E3	953	2--Year	1.83	174.29	175.43		175.43	0.00002	0.11	29.81	71.12	0.04
EAST	E3	953	5 -Year	2.98	174.29	175.49		175.49	0.00004	0.16	33.58	75.02	0.06
EAST	E3	953	25 - Year	4.9	174.29	175.54		175.54	0.00008	0.23	37.76	79.2	0.08
EAST	E3	953	100-- Year	6.63	174.29	175.58		175.58	0.00012	0.29	40.71	81.15	0.1
EAST	E3	924	2--Year	1.83	174.26	175.43		175.43	0.000022	0.12	29.18	68.73	0.04
EAST	E3	924	5 -Year	2.98	174.26	175.49		175.49	0.000044	0.17	32.78	71.95	0.06
EAST	E3	924	25 - Year	4.9	174.26	175.54		175.54	0.000089	0.25	36.69	76.13	0.08
EAST	E3	924	100-- Year	6.63	174.26	175.57		175.58	0.000137	0.32	39.45	79.42	0.1
EAST	E3	893	2--Year	1.83	174.33	175.43		175.43	0.000016	0.11	32.82	76.83	0.04

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E3	893	5 -Year	2.98	174.33	175.48		175.48	0.000033	0.16	36.86	82.23	0.05
EAST	E3	893	25 - Year	4.9	174.33	175.54		175.54	0.000068	0.23	41.27	87.65	0.07
EAST	E3	893	100-- Year	6.63	174.33	175.57		175.57	0.000105	0.3	44.34	92.34	0.09
EAST	E3	882	2--Year	1.83	174.27	175.43		175.43	0.00001	0.08	42.71	97.58	0.03
EAST	E3	882	5 -Year	2.98	174.27	175.48		175.48	0.00002	0.12	47.82	103.31	0.04
EAST	E3	882	25 - Year	4.9	174.27	175.54		175.54	0.000041	0.18	53.29	107.49	0.06
EAST	E3	882	100-- Year	6.63	174.27	175.57		175.57	0.000063	0.22	57.04	109.9	0.07
EAST	E3	877	2--Year	1.83	174.04	175.43	174.54	175.43	0.000011	0.08	40.28	93.45	0.03
EAST	E3	877	5 -Year	2.98	174.04	175.48	174.65	175.48	0.000023	0.12	45.14	98.9	0.04
EAST	E3	877	25 - Year	4.9	174.04	175.54	174.82	175.54	0.000047	0.18	50.44	105.1	0.06
EAST	E3	877	100-- Year	6.63	174.04	175.57	174.93	175.57	0.000071	0.23	54.09	108.23	0.08
EAST	E3	862		Culvert									
EAST	E3	850	2--Year	1.83	173.95	174.88		174.88	0.000129	0.19	15.53	61.63	0.09
EAST	E3	850	5 -Year	2.98	173.95	175.01		175.01	0.000113	0.21	23.81	69.59	0.09
EAST	E3	850	25 - Year	4.9	173.95	175.15		175.15	0.000118	0.24	33.98	78.13	0.09
EAST	E3	850	100-- Year	6.63	173.95	175.22		175.23	0.000135	0.28	40.46	90.24	0.1
EAST	E3	846	2--Year	1.83	174.32	174.88		174.88	0.000086	0.15	19.04	64.5	0.07
EAST	E3	846	5 -Year	2.98	174.32	175.01		175.01	0.000082	0.18	28.02	76.93	0.08
EAST	E3	846	25 - Year	4.9	174.32	175.15		175.15	0.000093	0.22	40.56	102.18	0.08
EAST	E3	846	100-- Year	6.63	174.32	175.22		175.23	0.000103	0.25	48.65	106.15	0.09
EAST	E3	805	2--Year	1.83	174.32	174.87		174.88	0.000451	0.3	7.96	34.38	0.16

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E3	805	5 -Year	2.98	174.32	175		175	0.000371	0.34	13.02	49.25	0.16
EAST	E3	805	25 - Year	4.9	174.32	175.14		175.14	0.000349	0.39	21.33	69.67	0.16
EAST	E3	805	100-- Year	6.63	174.32	175.21		175.22	0.000368	0.43	26.94	74.77	0.16
EAST	E4	754	2--Year	2.92	174.2	174.87		174.87	0.000118	0.18	24.75	72.72	0.09
EAST	E4	754	5 -Year	4.84	174.2	175		175	0.000127	0.22	34.37	80.67	0.09
EAST	E4	754	25 - Year	8.09	174.2	175.13		175.14	0.000158	0.29	45.85	89.25	0.11
EAST	E4	754	100-- Year	10.53	174.2	175.21		175.21	0.000182	0.33	52.93	101.31	0.12
EAST	E4	695	2--Year	2.92	174.12	174.86	174.5	174.86	0.000205	0.25	16.54	66.07	0.12
EAST	E4	695	5 -Year	4.84	174.12	174.99	174.56	174.99	0.0002	0.29	25.51	74.48	0.12
EAST	E4	695	25 - Year	8.09	174.12	175.12	174.62	175.13	0.00024	0.37	36.46	90.54	0.13
EAST	E4	695	100-- Year	10.53	174.12	175.2	174.68	175.2	0.000269	0.41	43.83	107.88	0.14
EAST	E4	621	2--Year	2.92	174.04	174.85		174.85	0.000161	0.23	16.96	49.06	0.1
EAST	E4	621	5 -Year	4.84	174.04	174.97		174.98	0.0002	0.3	23.95	65.48	0.12
EAST	E4	621	25 - Year	8.09	174.04	175.1		175.11	0.000264	0.39	33.44	80.63	0.14
EAST	E4	621	100-- Year	10.53	174.04	175.18		175.18	0.000292	0.43	39.44	83.56	0.15
EAST	E4	580	2--Year	2.92	174.05	174.84		174.85	0.000091	0.2	23.41	74.88	0.08
EAST	E4	580	5 -Year	4.84	174.05	174.97		174.97	0.000105	0.24	33.04	80.07	0.09
EAST	E4	580	25 - Year	8.09	174.05	175.1		175.1	0.000141	0.31	43.66	85.84	0.11
EAST	E4	580	100-- Year	10.53	174.05	175.17		175.17	0.000168	0.36	50	90.13	0.12
EAST	E4	541	2--Year	2.92	173.94	174.84		174.84	0.000069	0.18	21.75	43.95	0.07
EAST	E4	541	5 -Year	4.84	173.94	174.96		174.97	0.000101	0.25	27.54	50.12	0.09

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E4	541	25 - Year	8.09	173.94	175.09		175.09	0.000164	0.35	34.91	71.13	0.12
EAST	E4	541	100-- Year	10.53	173.94	175.16		175.17	0.000236	0.44	40.54	89.32	0.14
EAST	E4	504	2--Year	2.92	173.97	174.84		174.84	0.000029	0.13	34.1	67.59	0.05
EAST	E4	504	5 -Year	4.84	173.97	174.96		174.96	0.000044	0.17	42.75	75.16	0.06
EAST	E4	504	25 - Year	8.09	173.97	175.09		175.09	0.000074	0.24	52.67	84.57	0.08
EAST	E4	504	100-- Year	10.53	173.97	175.16		175.16	0.0001	0.3	58.76	94.95	0.09
EAST	E4	472	2--Year	2.92	173.91	174.84		174.84	0.000016	0.1	39.91	73.06	0.04
EAST	E4	472	5 -Year	4.84	173.91	174.96		174.96	0.000026	0.14	49.36	81.54	0.05
EAST	E4	472	25 - Year	8.09	173.91	175.09		175.09	0.000044	0.2	59.92	89.07	0.06
EAST	E4	472	100-- Year	10.53	173.91	175.15		175.16	0.000059	0.24	66.16	96.45	0.07
EAST	E4	447	2--Year	2.92	173.87	174.84		174.84	0.000017	0.1	45.86	94.12	0.04
EAST	E4	447	5 -Year	4.84	173.87	174.96		174.96	0.000026	0.14	57.69	100.16	0.05
EAST	E4	447	25 - Year	8.09	173.87	175.09		175.09	0.000044	0.2	71.07	117.77	0.06
EAST	E4	447	100-- Year	10.53	173.87	175.15		175.15	0.000056	0.23	79.28	123.8	0.07
EAST	E4	411	2--Year	2.92	173.7	174.84	173.94	174.84	0.000002	0.04	83.51	110.63	0.01
EAST	E4	411	5 -Year	4.84	173.7	174.96	173.97	174.96	0.000004	0.05	97.24	114.13	0.02
EAST	E4	411	25 - Year	8.09	173.7	175.09	174.01	175.09	0.000007	0.08	111.66	118.41	0.02
EAST	E4	411	100-- Year	10.53	173.7	175.15	174.03	175.15	0.000009	0.1	119.72	119.89	0.03
EAST	E4	387	2--Year	2.92	173.53	174.84	173.7	174.84	0.000002	0.04	85.8	119.19	0.01
EAST	E4	387	5 -Year	4.84	173.53	174.96	173.75	174.96	0.000003	0.05	101.44	135.27	0.02
EAST	E4	387	25 - Year	8.09	173.53	175.09	173.81	175.09	0.000006	0.08	118.95	146.66	0.02

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E4	387	100-- Year	10.53	173.53	175.15	173.85	175.15	0.000008	0.09	129.2	156.66	0.03
EAST	E4	345		Culvert									
EAST	E4	306	2--Year	2.92	173.38	174.03		174.08	0.0061	1.05	2.81	9.14	0.59
EAST	E4	306	5 -Year	4.84	173.38	174.17		174.24	0.006168	1.16	4.33	14.37	0.6
EAST	E4	306	25 - Year	8.09	173.38	174.27	174.21	174.36	0.010769	1.41	6.21	23.26	0.78
EAST	E4	306	100-- Year	10.53	173.38	174.3	174.28	174.43	0.012608	1.64	7.08	24.44	0.86
EAST	E4	301	2--Year	2.92	173.31	173.86	173.86	174.03	0.018539	1.81	1.62	4.94	1.01
EAST	E4	301	5 -Year	4.84	173.31	174.08	174.08	174.19	0.017505	1.43	3.58	20.26	0.94
EAST	E4	301	25 - Year	8.09	173.31	174.17	174.17	174.3	0.016173	1.6	5.79	27.65	0.94
EAST	E4	301	100-- Year	10.53	173.31	174.22	174.22	174.37	0.015291	1.73	7.27	30.8	0.94
EAST	E4	235	2--Year	2.92	173.02	173.76	173.26	173.76	0.00017	0.22	13.05	27.98	0.1
EAST	E4	235	5 -Year	4.84	173.02	173.92	173.32	173.92	0.000203	0.26	19.02	44.17	0.12
EAST	E4	235	25 - Year	8.09	173.02	174.09	173.41	174.1	0.000278	0.3	29.48	79.19	0.14
EAST	E4	235	100-- Year	10.53	173.02	174.17	173.46	174.18	0.000274	0.33	36.29	85.46	0.14
EAST	E4	116	2--Year	2.92	172.73	173.64		173.7	0.004166	1.07	2.75	7.14	0.5
EAST	E4	116	5 -Year	4.84	172.73	173.76	173.55	173.84	0.006323	1.32	4.25	18.3	0.62
EAST	E4	116	25 - Year	8.09	172.73	173.88	173.83	173.99	0.006754	1.56	7.14	26.47	0.66
EAST	E4	116	100-- Year	10.53	172.73	173.96		174.08	0.006522	1.65	9.32	29.16	0.66
EAST	E4	62	2--Year	2.92	172.64	173.55	173.16	173.57	0.001282	0.64	6.01	33.87	0.29
EAST	E4	62	5 -Year	4.84	172.64	173.67	173.36	173.69	0.001281	0.71	10.98	44.36	0.29
EAST	E4	62	25 - Year	8.09	172.64	173.81	173.57	173.83	0.001279	0.78	17.48	49.39	0.3

Drainage Study of the Farr, Webber, and River Road Area
of the Town of Pelham



Output Summary Table

River	Rea ch	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev(m)	Crit W.S.(m)	E.G. Elev(m)	E.G. Slope(m/m)	Vel Chnl(m/s)	Flow Area(m2)	Top Width(m)	Froude # Chl
EAST	E4	62	100-- Year	10.53	172.64	173.89	173.65	173.92	0.00128	0.81	21.74	51.86	0.3



Appendix J: Terms of Reference



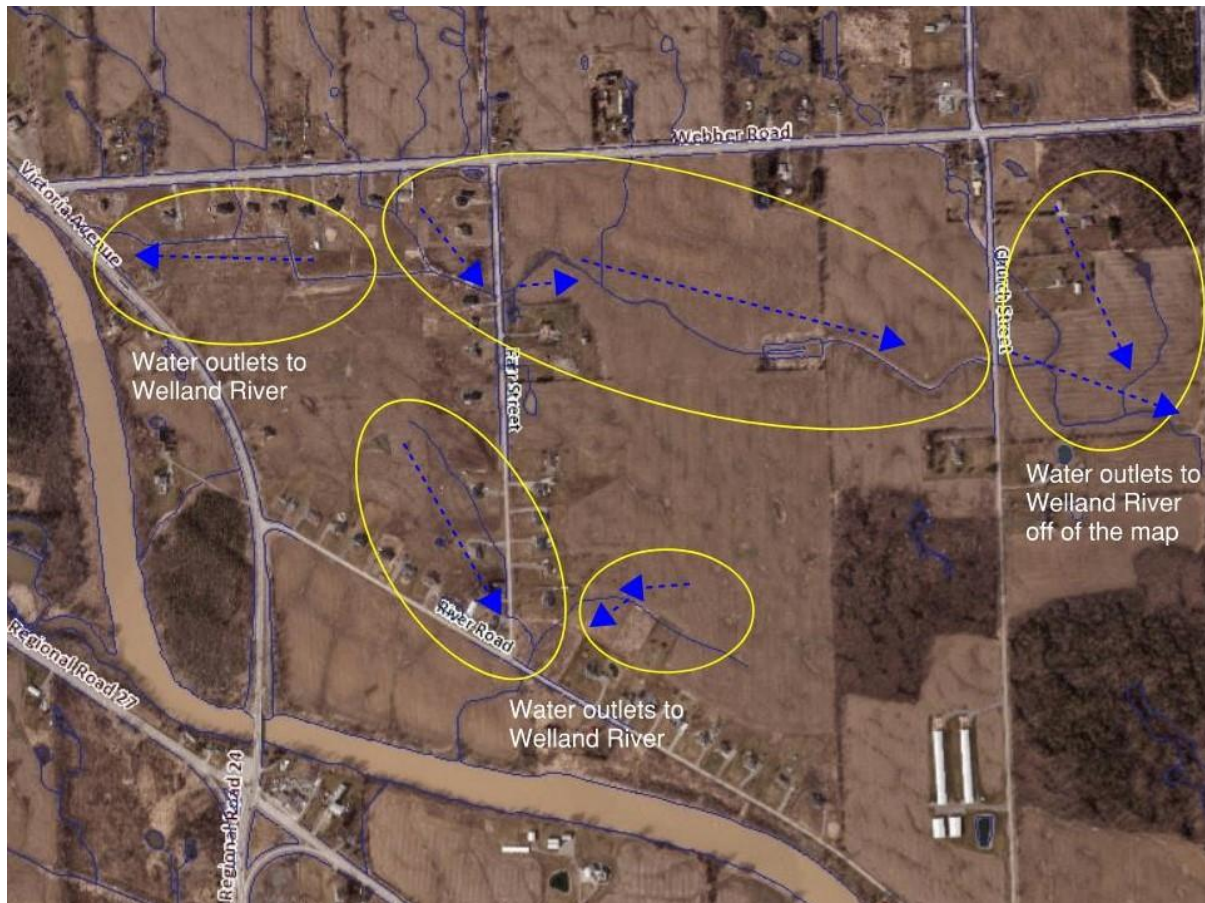
Terms of Reference

Drainage Study Farr, Webber and River Road Area

The Town of Pelham is seeking consulting engineering services to undertake a Drainage Study for the Farr, Webber and River Road area of the Town. Residential and farm property in the area has been experiencing drainage issues, i.e. flooding, from unplanned rural residential development and wet weather. There is no stormwater management plan associated with the rural residential uses and the area is not serviced by a municipal drain.

Drainage in the area is associated with overland flows being directed towards a series of natural and constructed drainage channels that outlet to the Welland River. Some of the natural watercourses are regulated by the Niagara Peninsula Conservation Authority. The area is characterized by a mix of rural and agricultural land uses. The Town does not have any geotechnical or soil reports of the area.

The purpose of the Drainage Study is to confirm the drainage patterns and flows of the area, identify areas experiencing drainage issues and identify potential options to resolve the drainage issues.



Farr and River Roads are under the jurisdiction of the Town of Pelham and Webber Road and Victoria Avenue are under the jurisdiction of the Region of Niagara.

Project Task/Scope of Work

The following major tasks shall be undertaken by the proponent in completing the Drainage Study for the Farr, Webber and River Road area.

1. Background Information and Data Collection
 - ✓ Project kick off meeting with Municipal staff to gain understanding of the project scope and of the drainage issues in the area
 - ✓ Obtain available background information and mapping of the area
 - ✓ Obtain historic air photos of the area in order to identify any changes to the local drainage regime.
 - ✓ Obtain any engineering drawings that may exist for the roads in the study area including details regarding the culvert crossings for the areas of interest.

- ✓ Collect and review agency information and policies including Niagara Peninsula Conservation Authority, Region of Niagara
- ✓ Conduct site visit (including obtaining permission from private landowners within the study area to inspect as much of the study area as possible).
- ✓ Public consultation including virtual and in-person open house format consultations and interviews with affected landowners and use of the Town on-line engagement platform.

2. Draft Drainage Study

- ✓ Undertake a topographic survey of critical areas in order to conclusively determine the flow directions of the water features.
- ✓ Analysis of drainage issues.
- ✓ Determine if the water features within the study area meet the NPCA definition of a watercourse namely: 'an identifiable depression in the ground which a flow of water regularly or continuously occurs'.
- ✓ Identify and analyze potential options and best practices for addressing drainage issues on municipal and private property
- ✓ Input from Town staff and agencies on draft report
- ✓ Public Information Session to present the draft report

3. Final Drainage Study

- ✓ Review and assess feedback received
- ✓ Finalize Drainage Study findings and recommendations
- ✓ Public consultation to present the final report.
- ✓ Presentation to Council

Evaluation Criteria

Evaluation Criteria	Points
Firm's Qualifications and Similar Work Experience	10
Project Team Experience	20
Project Understanding and Approach	25
Work Plan, Methodology and Quality Assurance	25
Project Schedule	10
Fees	10
Total	100

Schedule

It is expected that the Town would receive the final Drainage Study by July 31, 2022.

The proponent should include the anticipated start and completion date for each date, list of deliverables and submission dates to the Town and external agencies.

Deliverables

A final Drainage Study of the area that confirms the drainage patterns and flow of the area and provides options for private property owners to address drainage issues and municipal responsibilities and improvements that may be required to improve drainage in the area.

Budget

The upset budget for this project is \$50,000.

2022-CS-05 - Drainage Study, Farr, Webber and River Road Area

Opening Date: March 17, 2022 10:00 AM

Closing Date: April 7, 2022 2:00 PM

Schedule of Prices

The Bidder hereby Bids and offers to enter into the Contract referred to and to supply and do all or any part of the Work which is set out or called for in this Bid, at the unit prices, and/or lump sums, hereinafter stated. HST is additional. In lawful money of Canada.

The first table is a Summary Table which provides your Sub-Total for each pricing table and also indicates whether or not the table is mandatory or not. Asterisk's within the table denotes a "**MANDATORY**" line item.

If the line item and/or table is "**NON-MANDATORY**" and you are not bidding on it, leave the table and/or line item blank. Do not enter a \$0.00 dollar value unless you are prepared to provide the line item at zero dollars to the Owner.

If a table is "**NON-MANDATORY**" and you are bidding on it, you must bid on all line items with an asterisk.

If there are multiple tables, you must click the "**EDIT PRICING**" button inside the Summary Table to display the applicable Pricing Table that you wish to bid on.

Pricing

With completion of this pricing list you have carefully examined the documents enclosed and have a clear and comprehensive knowledge of the Goods and/or services required. By submitting the information, you agree and consent to therewith to have the authorization to bind.

Line Item	Description	Quantity	unit price *	UNIT OF MEASURE	TOTAL	
1	Pricing, complete scope (Full submission package to be uploaded to electronic folder provided)	1		LOT		*
Subtotal:						

Summary Table

Bid Form	Amount
Pricing	
Subtotal Contract Amount:	

Specifications

Acknowledgement

Description	Yes - No *
ACKNOWLEDGEMENT: It is expected that the Town would receive the final Drainage Study by July 31, 2022.	☐ Yes ☐ No

References

All references stated shall be for the same or similar scope as the one described in this Bid.

For newly formed business entity including, corporations, partnerships and sole proprietors or a Contractor teaming arrangement you shall state below in the Client Column that you were not the "Contractor" for the named project and should state whose past experience on the named project is relevant to that reference.

The Town of Pelham may NOT be used as a reference

Reference Form

Minimum three (3) References

Line Item	Company Name *	Contact Name *	Telephone # *	email *	Date Work Undertaken: (eg: May 2018) *	Nature of Assignment *
1						
2						
3						
4						
5						

Subcontractors

The Bidder shall state all Subcontractor(s) and type of Work proposed to be used for this project. Bidders shall not indicate "TBD" (To Be Determined) or "TBA" (To Be Announced) or similar wording and shall not indicate multiple choices of Subcontractor names for any Subcontractor category in their list of Subcontractors.

List of Subcontractors

The tenderer shall list hereunder the names of all sub-contractors intended to be used in the execution of this work subject to the approval of the Contract Administrator.

All work not performed directly by the Contractor's forces shall be included in this list. Unless this list is properly completed, the Tender may be disqualified. All changes to this list must be approved by the Contract Administrator.

SUB-TRADE	NAME OF SUB-CONTRACTOR	ADDRESS OF SUB-CONTRACTOR

Documents

Ensure your Bid submission document(s) conforms to the following:

1. Documents should be in PDF format. Documents should NOT be provided in any other format.
2. Documents should NOT have a security password, as the Owner may not be able to open the file. It is the Bidder's sole responsibility to ensure that their uploaded document(s) are not either defective, corrupted or blank and that the documents

can be opened and viewed by the Owner.

3. The Owner may reject any Bid where any document(s) cannot be opened and viewed by the Owner.

4. If a Bidder requires to upload more than one (1) document, the Bidder should combine the documents into one Zipped file, as per instructions stated below.

If uploading a zipped file containing more than one (1) document, please ensure each document is named, in relation to the submission format item responding to, for example, if responding to the Previous Experience category save the document as "Previous Experience".

- Submission (FULL) One PDF document * (mandatory)

To compress (or zip) a file or folder, follow these steps

1. Locate the file or folder that want to compress.
2. Right-click the file or folder, point to **Send to**, and then click **Compressed (zipped) folder**.

A new compressed folder is created in the same location. To rename it, right-click the folder, click **Rename**, and then type the new name.

To upload a document follow these steps

1. Click on the browse button to locate the file on your computer or network
2. Click the upload button
3. After the file has been successfully uploaded, a link to the document will appear on the screen, along with the time/date that it was uploaded.
4. If you have completed your document upload and are ready to finalize your submission then click the "Continue with Submission" button at the bottom of the screen. Or you may save and come back later.
5. If you need to remove the document, click the remove button next to the document name.

Addenda, Terms and Conditions

The Bidder has carefully examined the Bid Call documents and has a clear and comprehensive knowledge of the Goods and/or Services required under the Bid Call Documents. By submitting the Bid, the Bidder agrees and consents to the terms, conditions and provisions of the Bid Call Document, and offers to provide the Goods and/or Services in accordance therewith and the person signing below is authorized to bind the Bidder

The Bidder hereby acknowledges and agrees:

1. To provide all goods, services and construction, as more specifically set out and in accordance with the Owner's Bid Call Document, including but not limited to the scope of work, specifications, drawings, Addenda (if issued by the Owner), the terms and conditions, etc. stated therein, which are expressly acknowledged and made part of this Contract.
2. This Bid is made without any connections, knowledge, comparison of figures or arrangements with any other company, firm or person making a Bid for the same Work and is in all respects fair and without collusion or fraud.
3. I/WE do hereby Bid and offer to enter into a Contract to do all the Work as specified in the Bid Call Document(s) which shall include all costs but not limited to; freight, duty, currency, etc. in accordance with the prices and terms as submitted by the Bidder herein.
4. If I/WE withdraw this Bid before the formal Contract is executed by the Awarded Bidder for the said Work or Ninety (90) Calendar Days, whichever event first occurs, the amount of the Bid Deposit accompanying this Bid (if applicable to this bid) shall be forfeited to the Owner.
5. If the Bid is accepted, I/WE agree to furnish all required documentation, as required by the Bid Call Document(s) within Ten (10) Calendar Days after notification of Award.
6. I/We acknowledge and agree that any issued Addendum/Addenda forms part of the Bid Call Document.
7. I/We, certify that we are in full compliance with Section 6 of Ontario Regulation 429/07, Accessibility Standards for Customer Service, made under the Accessibility for Ontarians with Disabilities Act, 2005. If requested, we are able to provide written proof that all employees have been trained as required under the act. I/We shall be aware and sensitive to accessibility and disability issues.
8. I/WE (including any related or affiliated entities and any principal thereof) have no unresolved litigation with the Owner.
9. I/WE have read and agree to the WSIB DECLARATION and if awarded, shall submit to the Town at the time of entering into the Contract, and every sixty (60) days thereafter a satisfactory Certificate of Clearance from the Ontario WSIB. Ontario WSIB Clearance Certificates and updates will continue to be retained by the Town. Such clearance certificates shall indicate that the Contractor and any prior approved Sub-Contractor(s) have complied with the requirements of the Ontario WSIB and is (are) in good standing on the books of the Ontario WSIB. The Board may, at any time during the performance or upon completion of the Contract, require a further declaration that all such assessments or compensations have been paid.
10. I/WE have read and agree to the following Agreement to Abide by the Established Process.

The Town is advising each of the Towns Council Members, staff, volunteers and agents that the integrity of the bidding process requires observance of the following ground rules:

1. All communications, including requests for information, between Bidders and the Town must be between only the representatives of the Town and each Bidder, named below, who have been authorized and designated for that particular purpose.
2. Apart from the communications between and among the designated representatives, there must be no communication between the Town and any representative of the Bidder, and no giving of information with respect to the Bid Call Document and the Contract.
3. Any attempt on the part of any Bidder, or any of its employees, agents, contractors, subcontractors or representatives to contact any persons other than the designated representatives with respect to the Bid Call Document, or any action or

violation of the above requirements, will be grounds for disqualification, and the Town may, in its discretion, in addition to any other rights or remedies available at law, reject any potential or actual Bid submitted by that Bidder.

4. Proponents must accept and agree to observe the contents of this “Agreement to Abide by Established Process”, inform their staff thereof, and ensure their compliance therewith.

11. I/WE acknowledge and agree that should it be determined that any statements provided in our / my Bid are false or in error, the Town may reject my Bid as non-compliant.

12. I/WE acknowledge and agree to be bound by the [General Terms and Conditions](#)



I/WE agree to be bound by the terms and conditions contained in the Bid Document and any applicable Addenda, and the person named below has the authority to submit this bid on behalf of the Bidder.

Conflict of Interest

Each Bidder shall declare in its Bid any situation that may be a conflict of interest or a potential or perceived conflict of interest of the Proponent, including but not limited to its obligations to the Board, the Contract, the Contract Price or any Customer.

Section 5(1) of the Municipal Conflicts of Interest Act states; where a member, either on his or her own behalf or while acting for, by, with or through another, has any pecuniary interest, direct or indirect, in any matter and is present at a meeting of the council or local board at which the matter is the subject of consideration, the member.

- (a) shall, prior to any consideration of the matter at the meeting, disclose the interest and the general nature thereof;
- (b) shall not take part in the discussion of, or vote on any question in respect of the matter; and
- (c) shall not attempt in any way whether before, during or after the meeting to influence the voting on any such question.

The Town has a fiduciary responsibility to ensure that such behaviour is not permitted and reserves the right to remove from eligibility, the name of any Bidder for failure to comply with the above conditions. The Bidder declares that this Bid is not made in connection with any other Bidder submitting an offer for the same commodity/service and is, in all respects, fair and without collusion or fraud. Based on the above, do you believe your firm may be in possible conflict of interest? Please check appropriate answer

☒ Yes ☐ No

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Bid Document. The Bidder acknowledges receipt of the addenda and the price(s) quoted incorporate such addenda.

Please check the box in the column "I have reviewed this addendum" below to acknowledge each of the addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
There have not been any addenda issued for this bid.		