



Bright Plan Civils  
2 West Barn  
Norton Lane  
Chichester PO20 3AF

File: D1833\_FLOW\_SW Design 1.2.pfd  
Network: 1  
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D1833  
Sunny Corner, Walberton  
(Pond System)

### Design Settings

|                       |                   |                                      |               |
|-----------------------|-------------------|--------------------------------------|---------------|
| Rainfall Methodology  | FSR               | Maximum Time of Concentration (mins) | 30.00         |
| Return Period (years) | 100               | Maximum Rainfall (mm/hr)             | 50.0          |
| Additional Flow (%)   | 40                | Minimum Velocity (m/s)               | 0.75          |
| FSR Region            | England and Wales | Connection Type                      | Level Soffits |
| M5-60 (mm)            | 20.000            | Minimum Backdrop Height (m)          | 0.200         |
| Ratio-R               | 0.350             | Preferred Cover Depth (m)            | 0.700         |
| CV                    | 0.750             | Include Intermediate Ground          | ✓             |
| Time of Entry (mins)  | 5.00              | Enforce best practice design rules   | x             |

### Nodes

| Name   | Area<br>(ha) | T of E<br>(mins) | Cover<br>Level<br>(m) | Diameter<br>(mm) | Easting<br>(m) | Northing<br>(m) | Depth<br>(m) |
|--------|--------------|------------------|-----------------------|------------------|----------------|-----------------|--------------|
| 1      | 0.025        | 5.00             | 19.000                | 450              | 496424.505     | 106443.291      | 0.550        |
| 2      | 0.044        | 5.00             | 19.375                | 450              | 496427.688     | 106459.546      | 0.525        |
| 3      | 0.030        | 5.00             | 19.275                | 1200             | 496423.407     | 106452.629      | 0.925        |
| 4      | 0.022        | 5.00             | 18.850                | 450              | 496410.445     | 106457.881      | 0.460        |
| 5      | 0.022        | 5.00             | 18.930                | 1200             | 496405.474     | 106451.075      | 0.830        |
| 6      | 0.010        | 5.00             | 18.540                | 450              | 496396.674     | 106455.319      | 0.540        |
| 7      | 0.007        | 5.00             | 17.990                | 450              | 496382.660     | 106448.974      | 0.690        |
| 8      | 0.020        | 5.00             | 18.150                | 1200             | 496386.624     | 106446.903      | 0.950        |
| 9      | 0.021        | 5.00             | 17.325                | 450              | 496384.562     | 106421.651      | 0.625        |
| 10     | 0.012        | 5.00             | 17.400                | 450              | 496376.853     | 106429.133      | 0.700        |
| 11     | 0.023        | 5.00             | 17.650                | 1200             | 496382.309     | 106433.913      | 1.100        |
| 12     | 0.005        | 5.00             | 17.700                | 1200             | 496372.187     | 106435.922      | 1.250        |
| 13     | 0.033        | 5.00             | 17.500                | 1200             | 496362.126     | 106443.123      | 1.150        |
| 14     | 0.000        |                  | 17.100                | 1200             | 496344.698     | 106446.602      | 0.850        |
| 14_OUT | 0.000        |                  | 17.100                | 1200             | 496341.217     | 106447.230      | 0.940        |
| 15     | 0.000        | 5.00             | 17.000                | 1200             | 496335.688     | 106453.373      | 0.900        |
| 16     | 0.000        |                  | 16.950                | 1200             | 496332.327     | 106452.620      | 0.900        |
| 16_OUT | 0.000        |                  | 16.750                | 1200             | 496328.718     | 106451.729      | 0.800        |

### Links

| Name  | US<br>Node | DS<br>Node | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
|-------|------------|------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| 1.000 | 1          | 3          | 9.402         | 0.600          | 18.450       | 18.350       | 0.100       | 94.0           | 150         | 5.15             | 50.0            |
| 2.000 | 2          | 3          | 8.135         | 0.600          | 18.850       | 18.350       | 0.500       | 16.3           | 150         | 5.05             | 50.0            |
| 1.001 | 3          | 5          | 18.000        | 0.600          | 18.350       | 18.100       | 0.250       | 72.0           | 150         | 5.40             | 50.0            |
| 3.000 | 4          | 5          | 8.428         | 0.600          | 18.390       | 18.100       | 0.290       | 29.1           | 150         | 5.07             | 50.0            |
| 1.002 | 5          | 8          | 19.306        | 0.600          | 18.100       | 17.200       | 0.900       | 21.5           | 150         | 5.55             | 50.0            |
| 4.000 | 6          | 8          | 13.108        | 0.600          | 18.000       | 17.200       | 0.800       | 16.4           | 150         | 5.09             | 50.0            |
| 6.000 | 7          | 12         | 16.734        | 0.600          | 17.300       | 17.200       | 0.100       | 167.3          | 150         | 5.36             | 50.0            |

| Name  | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) |
|-------|--------------|--------------|---------------|--------------------|--------------------|----------------|--------------------------|
| 1.000 | 1.036        | 18.3         | 4.7           | 0.400              | 0.775              | 0.025          | 0.0                      |
| 2.000 | 2.509        | 44.3         | 8.3           | 0.375              | 0.775              | 0.044          | 0.0                      |
| 1.001 | 1.186        | 21.0         | 18.8          | 0.775              | 0.680              | 0.099          | 0.0                      |
| 3.000 | 1.874        | 33.1         | 4.2           | 0.310              | 0.680              | 0.022          | 0.0                      |
| 1.002 | 2.184        | 38.6         | 27.1          | 0.680              | 0.800              | 0.143          | 0.0                      |
| 4.000 | 2.500        | 44.2         | 1.9           | 0.390              | 0.800              | 0.010          | 0.0                      |
| 6.000 | 0.774        | 13.7         | 1.3           | 0.540              | 0.350              | 0.007          | 0.0                      |



### Links

| Name  | US Node | DS Node | Length (m) | ks (mm) / n | US IL (m) | DS IL (m) | Fall (m) | Slope (1:X) | Dia (mm) | T of C (mins) | Rain (mm/hr) |
|-------|---------|---------|------------|-------------|-----------|-----------|----------|-------------|----------|---------------|--------------|
| 1.003 | 8       | 11      | 13.688     | 0.600       | 17.200    | 16.625    | 0.575    | 23.8        | 150      | 5.66          | 50.0         |
| 5.000 | 9       | 11      | 12.467     | 0.600       | 16.700    | 16.625    | 0.075    | 166.2       | 150      | 5.27          | 50.0         |
| 7.000 | 10      | 12      | 8.238      | 0.600       | 16.700    | 16.625    | 0.075    | 109.8       | 150      | 5.14          | 50.0         |
| 1.004 | 11      | 12      | 10.319     | 0.600       | 16.550    | 16.450    | 0.100    | 103.2       | 225      | 5.80          | 50.0         |
| 1.005 | 12      | 13      | 12.372     | 0.600       | 16.450    | 16.350    | 0.100    | 123.7       | 225      | 5.97          | 50.0         |
| 1.006 | 13      | 14      | 17.772     | 0.600       | 16.350    | 16.250    | 0.100    | 177.7       | 225      | 6.27          | 50.0         |
| 1.007 | 14      | 14_OUT  | 3.537      | 0.600       | 16.250    | 16.200    | 0.050    | 70.7        | 225      | 6.31          | 50.0         |
| 8.000 | 15      | 16      | 3.444      | 0.600       | 16.100    | 16.050    | 0.050    | 68.9        | 150      | 5.05          | 50.0         |
| 8.001 | 16      | 16_OUT  | 3.717      | 0.600       | 16.050    | 15.950    | 0.100    | 37.2        | 150      | 5.08          | 50.0         |

| Name  | Vel (m/s) | Cap (l/s) | Flow (l/s) | US Depth (m) | DS Depth (m) | Σ Area (ha) | Σ Add Inflow (l/s) |
|-------|-----------|-----------|------------|--------------|--------------|-------------|--------------------|
| 1.003 | 2.072     | 36.6      | 32.8       | 0.800        | 0.875        | 0.173       | 0.0                |
| 5.000 | 0.776     | 13.7      | 4.0        | 0.475        | 0.875        | 0.021       | 0.0                |
| 7.000 | 0.958     | 16.9      | 2.3        | 0.550        | 0.925        | 0.012       | 0.0                |
| 1.004 | 1.287     | 51.2      | 41.2       | 0.875        | 1.025        | 0.217       | 0.0                |
| 1.005 | 1.174     | 46.7      | 45.7       | 1.025        | 0.925        | 0.241       | 0.0                |
| 1.006 | 0.977     | 38.9      | 52.0       | 0.925        | 0.625        | 0.274       | 0.0                |
| 1.007 | 1.557     | 61.9      | 52.0       | 0.625        | 0.675        | 0.274       | 0.0                |
| 8.000 | 1.213     | 21.4      | 0.0        | 0.750        | 0.750        | 0.000       | 0.0                |
| 8.001 | 1.656     | 29.3      | 0.0        | 0.750        | 0.650        | 0.000       | 0.0                |

### Simulation Settings

|                      |                   |                            |        |
|----------------------|-------------------|----------------------------|--------|
| Rainfall Methodology | FSR               | Analysis Speed             | Normal |
| FSR Region           | England and Wales | Skip Steady State          | x      |
| M5-60 (mm)           | 20.000            | Drain Down Time (mins)     | 240    |
| Ratio-R              | 0.350             | Additional Storage (m³/ha) | 20.0   |
| Summer CV            | 0.750             | Check Discharge Rate(s)    | x      |
| Winter CV            | 0.840             | Check Discharge Volume     | x      |

### Storm Durations

|    |     |     |     |     |      |      |      |      |       |
|----|-----|-----|-----|-----|------|------|------|------|-------|
| 15 | 60  | 180 | 360 | 600 | 960  | 2160 | 4320 | 7200 | 10080 |
| 30 | 120 | 240 | 480 | 720 | 1440 | 2880 | 5760 | 8640 |       |

| Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) |
|-----------------------|-----------------------|-----------------------|-----------------------|
| 30                    | 0                     | 0                     | 0                     |
| 100                   | 0                     | 0                     | 0                     |
| 100                   | 40                    | 0                     | 0                     |
| 100                   | 40                    | 10                    | 0                     |

### Node 16 Online Hydro-Brake® Control

|                          |        |                         |                                |
|--------------------------|--------|-------------------------|--------------------------------|
| Flap Valve               | x      | Objective               | (HE) Minimise upstream storage |
| Replaces Downstream Link | ✓      | Sump Available          | ✓                              |
| Invert Level (m)         | 16.050 | Product Number          | CTL-SHE-0070-1800-0600-1800    |
| Design Depth (m)         | 0.600  | Min Outlet Diameter (m) | 0.100                          |
| Design Flow (l/s)        | 1.8    | Min Node Diameter (mm)  | 1200                           |



#### **Node 14 OUT Online Orifice Control**

|                          |   |                  |        |                       |       |
|--------------------------|---|------------------|--------|-----------------------|-------|
| Flap Valve               | x | Invert Level (m) | 16.160 | Discharge Coefficient | 0.600 |
| Replaces Downstream Link | x | Diameter (m)     | 0.225  |                       |       |

#### **Node 15 Flow through Pond Storage Structure**

|                             |         |                           |        |                          |        |
|-----------------------------|---------|---------------------------|--------|--------------------------|--------|
| Base Inf Coefficient (m/hr) | 0.00000 | Porosity                  | 1.00   | Main Channel Length (m)  | 10.000 |
| Side Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 16.150 | Main Channel Slope (1:X) | 1000.0 |
| Safety Factor               | 2.0     | Time to half empty (mins) |        | Main Channel n           | 0.002  |

#### **Inlets** **14\_OUT**

| Depth (m) | Area (m <sup>2</sup> ) | Inf Area (m <sup>2</sup> ) | Depth (m) | Area (m <sup>2</sup> ) | Inf Area (m <sup>2</sup> ) |
|-----------|------------------------|----------------------------|-----------|------------------------|----------------------------|
| 0.000     | 200.0                  | 0.0                        | 1.000     | 378.0                  | 0.0                        |

#### **Node 2 Carpark Storage Structure**

|                             |         |                           |        |               |       |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 18.915 | Slope (1:X)   | 34.0  |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 3      | Depth (m)     | 0.350 |
| Safety Factor               | 2.0     | Width (m)                 | 10.000 | Inf Depth (m) |       |
| Porosity                    | 0.32    | Length (m)                | 20.300 |               |       |

#### **Node 1 Carpark Storage Structure**

|                             |         |                           |        |               |       |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 18.490 | Slope (1:X)   | 65.8  |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 14     | Depth (m)     | 0.400 |
| Safety Factor               | 2.0     | Width (m)                 | 10.000 | Inf Depth (m) |       |
| Porosity                    | 0.32    | Length (m)                | 9.500  |               |       |

#### **Node 4 Carpark Storage Structure**

|                             |         |                           |        |               |       |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 18.390 | Slope (1:X)   | 67.5  |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 8      | Depth (m)     | 0.350 |
| Safety Factor               | 2.0     | Width (m)                 | 5.000  | Inf Depth (m) |       |
| Porosity                    | 0.32    | Length (m)                | 13.800 |               |       |

#### **Node 6 Carpark Storage Structure**

|                             |         |                           |        |               |       |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 18.080 | Slope (1:X)   | 53.1  |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 0      | Depth (m)     | 0.350 |
| Safety Factor               | 2.0     | Width (m)                 | 5.000  | Inf Depth (m) |       |
| Porosity                    | 0.32    | Length (m)                | 7.000  |               |       |

#### **Node 7 Carpark Storage Structure**

|                             |         |                           |        |               |       |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 17.400 | Slope (1:X)   | 26.4  |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 0      | Depth (m)     | 0.350 |
| Safety Factor               | 2.0     | Width (m)                 | 5.000  | Inf Depth (m) |       |
| Porosity                    | 0.32    | Length (m)                | 9.400  |               |       |



### Node 9 Carpark Storage Structure

|                             |         |                           |        |               |       |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 16.865 | Slope (1:X)   | 28.7  |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 16     | Depth (m)     | 0.350 |
| Safety Factor               | 2.0     | Width (m)                 | 8.600  | Inf Depth (m) |       |
| Porosity                    | 0.32    | Length (m)                | 18.300 |               |       |

### Node 10 Carpark Storage Structure

|                             |         |                           |        |               |       |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 16.940 | Slope (1:X)   | 212.5 |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 16     | Depth (m)     | 0.350 |
| Safety Factor               | 2.0     | Width (m)                 | 7.500  | Inf Depth (m) |       |
| Porosity                    | 0.32    | Length (m)                | 9.330  |               |       |

### Approval Settings

|                                  |         |                                       |       |
|----------------------------------|---------|---------------------------------------|-------|
| Node Size                        | ✓       | Maximum Full Bore Velocity (m/s)      | 3.000 |
| Node Losses                      | ✓       | Proportional Velocity                 | ✓     |
| Link Size                        | ✓       | Return Period (years)                 |       |
| Minimum Diameter (mm)            | 150     | Minimum Proportional Velocity (m/s)   | 0.750 |
| Link Length                      | ✓       | Maximum Proportional Velocity (m/s)   | 3.000 |
| Maximum Length (m)               | 100.000 | Surcharged Depth                      | ✓     |
| Coordinates                      | ✓       | Return Period (years)                 |       |
| Accuracy (m)                     | 1.000   | Maximum Surcharged Depth (m)          | 0.100 |
| Crossings                        | ✓       | Flooding                              | ✓     |
| Cover Depth                      | ✓       | Return Period (years)                 | 30    |
| Minimum Cover Depth (m)          |         | Time to Half Empty                    | x     |
| Maximum Cover Depth (m)          | 3.000   | Discharge Rates                       | ✓     |
| Backdrops                        | ✓       | 1 year (l/s)                          |       |
| Minimum Backdrop Height (m)      |         | 30 year (l/s)                         |       |
| Maximum Backdrop Height (m)      | 1.500   | 100 year (l/s)                        |       |
| Full Bore Velocity               | ✓       | Discharge Volume                      | ✓     |
| Minimum Full Bore Velocity (m/s) |         | 100 year 360 minute (m <sup>3</sup> ) |       |

### Rainfall

| Event                     | Peak Intensity (mm/hr) | Average Intensity (mm/hr) |
|---------------------------|------------------------|---------------------------|
| 30 year 15 minute summer  | 256.857                | 72.682                    |
| 30 year 15 minute winter  | 180.251                | 72.682                    |
| 30 year 30 minute summer  | 170.915                | 48.363                    |
| 30 year 30 minute winter  | 119.940                | 48.363                    |
| 30 year 60 minute summer  | 116.589                | 30.811                    |
| 30 year 60 minute winter  | 77.459                 | 30.811                    |
| 30 year 120 minute summer | 72.033                 | 19.036                    |
| 30 year 120 minute winter | 47.857                 | 19.036                    |
| 30 year 180 minute summer | 55.147                 | 14.191                    |
| 30 year 180 minute winter | 35.847                 | 14.191                    |
| 30 year 240 minute summer | 43.392                 | 11.467                    |
| 30 year 240 minute winter | 28.828                 | 11.467                    |
| 30 year 360 minute summer | 33.005                 | 8.493                     |
| 30 year 360 minute winter | 21.454                 | 8.493                     |
| 30 year 480 minute summer | 25.938                 | 6.855                     |
| 30 year 480 minute winter | 17.232                 | 6.855                     |
| 30 year 600 minute summer | 21.207                 | 5.801                     |
| 30 year 600 minute winter | 14.490                 | 5.801                     |

### Rainfall

| Event                       | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) |
|-----------------------------|------------------------------|---------------------------------|
| 30 year 720 minute summer   | 18.876                       | 5.059                           |
| 30 year 720 minute winter   | 12.686                       | 5.059                           |
| 30 year 960 minute summer   | 15.471                       | 4.074                           |
| 30 year 960 minute winter   | 10.248                       | 4.074                           |
| 30 year 1440 minute summer  | 11.187                       | 2.998                           |
| 30 year 1440 minute winter  | 7.519                        | 2.998                           |
| 30 year 2160 minute summer  | 7.973                        | 2.203                           |
| 30 year 2160 minute winter  | 5.494                        | 2.203                           |
| 30 year 2880 minute summer  | 6.602                        | 1.769                           |
| 30 year 2880 minute winter  | 4.437                        | 1.769                           |
| 30 year 4320 minute summer  | 4.961                        | 1.297                           |
| 30 year 4320 minute winter  | 3.267                        | 1.297                           |
| 30 year 5760 minute summer  | 4.062                        | 1.040                           |
| 30 year 5760 minute winter  | 2.629                        | 1.040                           |
| 30 year 7200 minute summer  | 3.436                        | 0.876                           |
| 30 year 7200 minute winter  | 2.217                        | 0.876                           |
| 30 year 8640 minute summer  | 2.988                        | 0.762                           |
| 30 year 8640 minute winter  | 1.929                        | 0.762                           |
| 30 year 10080 minute summer | 2.656                        | 0.677                           |
| 30 year 10080 minute winter | 1.714                        | 0.677                           |
| 100 year 15 minute summer   | 332.829                      | 94.179                          |
| 100 year 15 minute winter   | 233.564                      | 94.179                          |
| 100 year 30 minute summer   | 223.565                      | 63.261                          |
| 100 year 30 minute winter   | 156.888                      | 63.261                          |
| 100 year 60 minute summer   | 153.288                      | 40.510                          |
| 100 year 60 minute winter   | 101.841                      | 40.510                          |
| 100 year 120 minute summer  | 94.610                       | 25.003                          |
| 100 year 120 minute winter  | 62.857                       | 25.003                          |
| 100 year 180 minute summer  | 72.093                       | 18.552                          |
| 100 year 180 minute winter  | 46.863                       | 18.552                          |
| 100 year 240 minute summer  | 56.427                       | 14.912                          |
| 100 year 240 minute winter  | 37.489                       | 14.912                          |
| 100 year 360 minute summer  | 42.650                       | 10.975                          |
| 100 year 360 minute winter  | 27.724                       | 10.975                          |
| 100 year 480 minute summer  | 33.356                       | 8.815                           |
| 100 year 480 minute winter  | 22.161                       | 8.815                           |
| 100 year 600 minute summer  | 27.165                       | 7.430                           |
| 100 year 600 minute winter  | 18.561                       | 7.430                           |
| 100 year 720 minute summer  | 24.098                       | 6.458                           |
| 100 year 720 minute winter  | 16.195                       | 6.458                           |
| 100 year 960 minute summer  | 19.641                       | 5.172                           |
| 100 year 960 minute winter  | 13.011                       | 5.172                           |
| 100 year 1440 minute summer | 14.083                       | 3.774                           |
| 100 year 1440 minute winter | 9.465                        | 3.774                           |
| 100 year 2160 minute summer | 9.945                        | 2.748                           |
| 100 year 2160 minute winter | 6.852                        | 2.748                           |
| 100 year 2880 minute summer | 8.177                        | 2.192                           |
| 100 year 2880 minute winter | 5.496                        | 2.192                           |
| 100 year 4320 minute summer | 6.081                        | 1.590                           |
| 100 year 4320 minute winter | 4.005                        | 1.590                           |
| 100 year 5760 minute summer | 4.940                        | 1.265                           |
| 100 year 5760 minute winter | 3.198                        | 1.265                           |



### Rainfall

| Event                                     | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) |
|-------------------------------------------|------------------------------|---------------------------------|
| 100 year 7200 minute summer               | 4.154                        | 1.060                           |
| 100 year 7200 minute winter               | 2.681                        | 1.060                           |
| 100 year 8640 minute summer               | 3.596                        | 0.917                           |
| 100 year 8640 minute winter               | 2.321                        | 0.917                           |
| 100 year 10080 minute summer              | 3.184                        | 0.812                           |
| 100 year 10080 minute winter              | 2.055                        | 0.812                           |
| 100 year +40% CC 15 minute summer         | 465.961                      | 131.851                         |
| 100 year +40% CC 15 minute winter         | 326.990                      | 131.851                         |
| 100 year +40% CC 30 minute summer         | 312.991                      | 88.566                          |
| 100 year +40% CC 30 minute winter         | 219.643                      | 88.566                          |
| 100 year +40% CC 60 minute summer         | 214.603                      | 56.713                          |
| 100 year +40% CC 60 minute winter         | 142.577                      | 56.713                          |
| 100 year +40% CC 120 minute summer        | 132.454                      | 35.004                          |
| 100 year +40% CC 120 minute winter        | 87.999                       | 35.004                          |
| 100 year +40% CC 180 minute summer        | 100.931                      | 25.973                          |
| 100 year +40% CC 180 minute winter        | 65.608                       | 25.973                          |
| 100 year +40% CC 240 minute summer        | 78.998                       | 20.877                          |
| 100 year +40% CC 240 minute winter        | 52.485                       | 20.877                          |
| 100 year +40% CC 360 minute summer        | 59.710                       | 15.365                          |
| 100 year +40% CC 360 minute winter        | 38.813                       | 15.365                          |
| 100 year +40% CC 480 minute summer        | 46.699                       | 12.341                          |
| 100 year +40% CC 480 minute winter        | 31.026                       | 12.341                          |
| 100 year +40% CC 600 minute summer        | 38.031                       | 10.402                          |
| 100 year +40% CC 600 minute winter        | 25.985                       | 10.402                          |
| 100 year +40% CC 720 minute summer        | 33.737                       | 9.042                           |
| 100 year +40% CC 720 minute winter        | 22.673                       | 9.042                           |
| 100 year +40% CC 960 minute summer        | 27.497                       | 7.241                           |
| 100 year +40% CC 960 minute winter        | 18.215                       | 7.241                           |
| 100 year +40% CC 1440 minute summer       | 19.716                       | 5.284                           |
| 100 year +40% CC 1440 minute winter       | 13.250                       | 5.284                           |
| 100 year +40% CC 2160 minute summer       | 13.923                       | 3.848                           |
| 100 year +40% CC 2160 minute winter       | 9.593                        | 3.848                           |
| 100 year +40% CC 2880 minute summer       | 11.448                       | 3.068                           |
| 100 year +40% CC 2880 minute winter       | 7.694                        | 3.068                           |
| 100 year +40% CC 4320 minute summer       | 8.514                        | 2.226                           |
| 100 year +40% CC 4320 minute winter       | 5.607                        | 2.226                           |
| 100 year +40% CC 5760 minute summer       | 6.916                        | 1.771                           |
| 100 year +40% CC 5760 minute winter       | 4.477                        | 1.771                           |
| 100 year +40% CC 7200 minute summer       | 5.815                        | 1.483                           |
| 100 year +40% CC 7200 minute winter       | 3.753                        | 1.483                           |
| 100 year +40% CC 8640 minute summer       | 5.034                        | 1.284                           |
| 100 year +40% CC 8640 minute winter       | 3.249                        | 1.284                           |
| 100 year +40% CC 10080 minute summer      | 4.457                        | 1.137                           |
| 100 year +40% CC 10080 minute winter      | 2.877                        | 1.137                           |
| 100 year +40% CC +10% A 15 minute summer  | 465.961                      | 131.851                         |
| 100 year +40% CC +10% A 15 minute winter  | 326.990                      | 131.851                         |
| 100 year +40% CC +10% A 30 minute summer  | 312.991                      | 88.566                          |
| 100 year +40% CC +10% A 30 minute winter  | 219.643                      | 88.566                          |
| 100 year +40% CC +10% A 60 minute summer  | 214.603                      | 56.713                          |
| 100 year +40% CC +10% A 60 minute winter  | 142.577                      | 56.713                          |
| 100 year +40% CC +10% A 120 minute summer | 132.454                      | 35.004                          |
| 100 year +40% CC +10% A 120 minute winter | 87.999                       | 35.004                          |



**Rainfall**

| Event                                       | Peak<br>Intensity<br>(mm/hr) | Average<br>Intensity<br>(mm/hr) |
|---------------------------------------------|------------------------------|---------------------------------|
| 100 year +40% CC +10% A 180 minute summer   | 100.931                      | 25.973                          |
| 100 year +40% CC +10% A 180 minute winter   | 65.608                       | 25.973                          |
| 100 year +40% CC +10% A 240 minute summer   | 78.998                       | 20.877                          |
| 100 year +40% CC +10% A 240 minute winter   | 52.485                       | 20.877                          |
| 100 year +40% CC +10% A 360 minute summer   | 59.710                       | 15.365                          |
| 100 year +40% CC +10% A 360 minute winter   | 38.813                       | 15.365                          |
| 100 year +40% CC +10% A 480 minute summer   | 46.699                       | 12.341                          |
| 100 year +40% CC +10% A 480 minute winter   | 31.026                       | 12.341                          |
| 100 year +40% CC +10% A 600 minute summer   | 38.031                       | 10.402                          |
| 100 year +40% CC +10% A 600 minute winter   | 25.985                       | 10.402                          |
| 100 year +40% CC +10% A 720 minute summer   | 33.737                       | 9.042                           |
| 100 year +40% CC +10% A 720 minute winter   | 22.673                       | 9.042                           |
| 100 year +40% CC +10% A 960 minute summer   | 27.497                       | 7.241                           |
| 100 year +40% CC +10% A 960 minute winter   | 18.215                       | 7.241                           |
| 100 year +40% CC +10% A 1440 minute summer  | 19.716                       | 5.284                           |
| 100 year +40% CC +10% A 1440 minute winter  | 13.250                       | 5.284                           |
| 100 year +40% CC +10% A 2160 minute summer  | 13.923                       | 3.848                           |
| 100 year +40% CC +10% A 2160 minute winter  | 9.593                        | 3.848                           |
| 100 year +40% CC +10% A 2880 minute summer  | 11.448                       | 3.068                           |
| 100 year +40% CC +10% A 2880 minute winter  | 7.694                        | 3.068                           |
| 100 year +40% CC +10% A 4320 minute summer  | 8.514                        | 2.226                           |
| 100 year +40% CC +10% A 4320 minute winter  | 5.607                        | 2.226                           |
| 100 year +40% CC +10% A 5760 minute summer  | 6.916                        | 1.771                           |
| 100 year +40% CC +10% A 5760 minute winter  | 4.477                        | 1.771                           |
| 100 year +40% CC +10% A 7200 minute summer  | 5.815                        | 1.483                           |
| 100 year +40% CC +10% A 7200 minute winter  | 3.753                        | 1.483                           |
| 100 year +40% CC +10% A 8640 minute summer  | 5.034                        | 1.284                           |
| 100 year +40% CC +10% A 8640 minute winter  | 3.249                        | 1.284                           |
| 100 year +40% CC +10% A 10080 minute summer | 4.457                        | 1.137                           |
| 100 year +40% CC +10% A 10080 minute winter | 2.877                        | 1.137                           |



**Results for 30 year Critical Storm Duration. Lowest mass balance: 84.14%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter  | 1       | 13          | 18.641    | 0.191     | 12.9         | 2.6171        | 0.0000     | SURCHARGED |
| 15 minute winter  | 2       | 10          | 18.909    | 0.059     | 14.6         | 0.1086        | 0.0000     | OK         |
| 15 minute winter  | 3       | 13          | 18.633    | 0.283     | 24.5         | 0.5035        | 0.0000     | SURCHARGED |
| 15 minute winter  | 4       | 10          | 18.437    | 0.047     | 7.3          | 0.1771        | 0.0000     | OK         |
| 15 minute winter  | 5       | 12          | 18.432    | 0.332     | 34.8         | 0.5518        | 0.0000     | SURCHARGED |
| 15 minute winter  | 6       | 10          | 18.028    | 0.028     | 3.3          | 0.0147        | 0.0000     | OK         |
| 15 minute winter  | 7       | 10          | 17.342    | 0.042     | 2.3          | 0.0152        | 0.0000     | OK         |
| 15 minute winter  | 8       | 12          | 17.823    | 0.623     | 41.8         | 0.9662        | 0.0000     | SURCHARGED |
| 15 minute winter  | 9       | 13          | 17.108    | 0.408     | 9.7          | 1.6424        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 10      | 14          | 16.995    | 0.295     | 5.4          | 0.8796        | 0.0000     | SURCHARGED |
| 15 minute winter  | 11      | 13          | 17.100    | 0.550     | 45.9         | 0.8513        | 0.0000     | SURCHARGED |
| 15 minute winter  | 12      | 13          | 16.991    | 0.541     | 48.0         | 0.6552        | 0.0000     | SURCHARGED |
| 15 minute winter  | 13      | 12          | 16.854    | 0.504     | 53.7         | 0.8600        | 0.0000     | SURCHARGED |
| 30 minute winter  | 14      | 24          | 16.615    | 0.365     | 52.4         | 0.4126        | 0.0000     | SURCHARGED |
| 30 minute winter  | 14_OUT  | 25          | 16.542    | 0.382     | 52.4         | 0.4325        | 0.0000     | OK         |
| 360 minute winter | 15      | 352         | 16.518    | 0.418     | 9.7          | 0.4725        | 0.0000     | SURCHARGED |
| 360 minute winter | 16      | 352         | 16.517    | 0.467     | 4.9          | 0.5285        | 0.0000     | SURCHARGED |
| 15 minute summer  | 16_OUT  | 1           | 15.950    | 0.000     | 1.8          | 0.0000        | 0.0000     | OK         |

| Link Event<br>(Upstream Depth) | US Node | Link              | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------------------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 1       | 1.000             | 3       | 14.8          | 0.911          | 0.807    | 0.1655        |                    |
| 15 minute winter               | 2       | 2.000             | 3       | 14.5          | 1.029          | 0.328    | 0.0978        |                    |
| 15 minute winter               | 3       | 1.001             | 5       | 21.6          | 1.512          | 1.032    | 0.3169        |                    |
| 15 minute winter               | 4       | 3.000             | 5       | 7.1           | 0.639          | 0.214    | 0.0942        |                    |
| 15 minute winter               | 5       | 1.002             | 8       | 32.6          | 2.017          | 0.845    | 0.3399        |                    |
| 15 minute winter               | 6       | 4.000             | 8       | 3.3           | 0.356          | 0.074    | 0.1300        |                    |
| 15 minute winter               | 7       | 6.000             | 12      | 2.2           | 0.568          | 0.164    | 0.0660        |                    |
| 15 minute winter               | 8       | 1.003             | 11      | 36.4          | 2.116          | 0.995    | 0.2410        |                    |
| 15 minute winter               | 9       | 5.000             | 11      | 8.5           | 0.570          | 0.621    | 0.2195        |                    |
| 15 minute winter               | 10      | 7.000             | 12      | 6.5           | 0.632          | 0.382    | 0.1450        |                    |
| 15 minute winter               | 11      | 1.004             | 12      | 44.2          | 1.112          | 0.864    | 0.4104        |                    |
| 15 minute winter               | 12      | 1.005             | 13      | 48.4          | 1.217          | 1.037    | 0.4920        |                    |
| 15 minute winter               | 13      | 1.006             | 14      | 53.4          | 1.343          | 1.374    | 0.7068        |                    |
| 30 minute winter               | 14      | 1.007             | 14_OUT  | 52.4          | 1.317          | 0.846    | 0.1407        |                    |
| 30 minute winter               | 14_OUT  | Flow through pond | 15      | 49.6          | 0.169          | 0.000    | 52.1326       |                    |
| 360 minute winter              | 15      | 8.000             | 16      | 4.9           | 0.443          | 0.228    | 0.0606        |                    |
| 360 minute winter              | 16      | Hydro-Brake®      | 16_OUT  | 1.8           |                |          |               | 56.6               |



**Results for 100 year Critical Storm Duration. Lowest mass balance: 84.14%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter  | 1       | 14          | 18.740    | 0.290     | 22.5         | 5.7072        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 2       | 11          | 18.932    | 0.082     | 18.9         | 0.1621        | 0.0000     | OK         |
| 15 minute winter  | 3       | 12          | 18.731    | 0.381     | 31.2         | 0.6782        | 0.0000     | SURCHARGED |
| 15 minute winter  | 4       | 13          | 18.534    | 0.144     | 9.4          | 1.2855        | 0.0000     | OK         |
| 15 minute winter  | 5       | 13          | 18.522    | 0.422     | 36.1         | 0.7004        | 0.0000     | SURCHARGED |
| 15 minute winter  | 6       | 10          | 18.032    | 0.032     | 4.3          | 0.0167        | 0.0000     | OK         |
| 15 minute winter  | 7       | 10          | 17.348    | 0.048     | 3.0          | 0.0174        | 0.0000     | OK         |
| 15 minute winter  | 8       | 12          | 17.959    | 0.759     | 43.1         | 1.1773        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 9       | 13          | 17.190    | 0.490     | 13.2         | 2.7231        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 10      | 14          | 17.065    | 0.365     | 11.7         | 2.4925        | 0.0000     | SURCHARGED |
| 15 minute winter  | 11      | 13          | 17.179    | 0.629     | 47.6         | 0.9749        | 0.0000     | SURCHARGED |
| 15 minute winter  | 12      | 14          | 17.061    | 0.611     | 51.4         | 0.7398        | 0.0000     | SURCHARGED |
| 15 minute winter  | 13      | 12          | 16.916    | 0.566     | 56.5         | 0.9645        | 0.0000     | SURCHARGED |
| 60 minute winter  | 14      | 43          | 16.696    | 0.446     | 50.3         | 0.5045        | 0.0000     | SURCHARGED |
| 360 minute winter | 14_OUT  | 360         | 16.651    | 0.491     | 17.2         | 0.5552        | 0.0000     | OK         |
| 480 minute winter | 15      | 464         | 16.641    | 0.541     | 8.1          | 0.6114        | 0.0000     | SURCHARGED |
| 480 minute winter | 16      | 464         | 16.640    | 0.590     | 4.7          | 0.6673        | 0.0000     | SURCHARGED |
| 15 minute summer  | 16_OUT  | 1           | 15.950    | 0.000     | 1.8          | 0.0000        | 0.0000     | OK         |

| Link Event<br>(Upstream Depth) | US Node | Link              | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------------------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 1       | 1.000             | 3       | 18.3          | 1.052          | 0.996    | 0.1655        |                    |
| 15 minute winter               | 2       | 2.000             | 3       | 18.3          | 1.185          | 0.412    | 0.1118        |                    |
| 15 minute winter               | 3       | 1.001             | 5       | 22.4          | 1.530          | 1.069    | 0.3169        |                    |
| 15 minute winter               | 4       | 3.000             | 5       | 9.6           | 0.664          | 0.290    | 0.1473        |                    |
| 15 minute winter               | 5       | 1.002             | 8       | 33.2          | 2.028          | 0.860    | 0.3399        |                    |
| 15 minute winter               | 6       | 4.000             | 8       | 4.3           | 0.442          | 0.097    | 0.1330        |                    |
| 15 minute winter               | 7       | 6.000             | 12      | 2.9           | 0.609          | 0.211    | 0.0797        |                    |
| 15 minute winter               | 8       | 1.003             | 11      | 38.1          | 2.178          | 1.042    | 0.2410        |                    |
| 15 minute winter               | 9       | 5.000             | 11      | 10.0          | 0.571          | 0.732    | 0.2195        |                    |
| 15 minute winter               | 10      | 7.000             | 12      | 10.1          | 0.673          | 0.599    | 0.1450        |                    |
| 15 minute winter               | 11      | 1.004             | 12      | 47.2          | 1.186          | 0.922    | 0.4104        |                    |
| 15 minute winter               | 12      | 1.005             | 13      | 50.2          | 1.263          | 1.076    | 0.4920        |                    |
| 15 minute winter               | 13      | 1.006             | 14      | 56.1          | 1.412          | 1.445    | 0.7068        |                    |
| 60 minute winter               | 14      | 1.007             | 14_OUT  | 50.0          | 1.259          | 0.809    | 0.1407        |                    |
| 360 minute winter              | 14_OUT  | Flow through pond | 15      | 9.7           | 0.042          | 0.000    | 118.1012      |                    |
| 480 minute winter              | 15      | 8.000             | 16      | 4.7           | 0.461          | 0.221    | 0.0606        |                    |
| 480 minute winter              | 16      | Hydro-Brake®      | 16_OUT  | 1.8           |                |          |               | 72.5               |

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 84.14%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter  | 1       | 14          | 18.996    | 0.546     | 33.4         | 10.5613       | 0.0000     | FLOOD RISK |
| 15 minute winter  | 2       | 12          | 19.042    | 0.192     | 26.4         | 0.8781        | 0.0000     | SURCHARGED |
| 30 minute winter  | 3       | 23          | 18.961    | 0.611     | 34.3         | 1.0875        | 0.0000     | SURCHARGED |
| 15 minute winter  | 4       | 15          | 18.684    | 0.294     | 18.5         | 4.5756        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 5       | 14          | 18.675    | 0.575     | 38.3         | 0.9553        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 6       | 13          | 18.139    | 0.139     | 6.0          | 0.2247        | 0.0000     | OK         |
| 15 minute winter  | 7       | 10          | 17.358    | 0.058     | 4.2          | 0.0210        | 0.0000     | OK         |
| 15 minute winter  | 8       | 12          | 18.132    | 0.932     | 44.0         | 1.4465        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 9       | 14          | 17.323    | 0.623     | 17.8         | 5.0857        | 0.0000     | FLOOD RISK |
| 30 minute winter  | 10      | 24          | 17.197    | 0.497     | 14.5         | 5.5132        | 0.0000     | FLOOD RISK |
| 30 minute winter  | 11      | 23          | 17.313    | 0.763     | 49.6         | 1.1812        | 0.0000     | SURCHARGED |
| 30 minute winter  | 12      | 24          | 17.193    | 0.743     | 53.5         | 0.9001        | 0.0000     | SURCHARGED |
| 30 minute winter  | 13      | 23          | 17.033    | 0.683     | 59.5         | 1.1644        | 0.0000     | SURCHARGED |
| 480 minute winter | 14      | 480         | 16.871    | 0.621     | 19.4         | 0.7023        | 0.0000     | FLOOD RISK |
| 480 minute winter | 14_OUT  | 472         | 16.861    | 0.701     | 19.3         | 0.7928        | 0.0000     | OK         |
| 480 minute winter | 15      | 464         | 16.857    | 0.757     | 10.7         | 0.8564        | 0.0000     | FLOOD RISK |
| 480 minute winter | 16      | 464         | 16.857    | 0.807     | 5.3          | 0.9125        | 0.0000     | FLOOD RISK |
| 15 minute summer  | 16_OUT  | 1           | 15.950    | 0.000     | 1.8          | 0.0000        | 0.0000     | OK         |

| Link Event<br>(Upstream Depth) | US Node | Link              | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------------------|---------|---------------|----------------|----------|---------------|--------------------|
| 15 minute winter               | 1       | 1.000             | 3       | 19.6          | 1.115          | 1.071    | 0.1655        |                    |
| 15 minute winter               | 2       | 2.000             | 3       | 22.3          | 1.330          | 0.503    | 0.1432        |                    |
| 30 minute winter               | 3       | 1.001             | 5       | 21.3          | 1.525          | 1.016    | 0.3169        |                    |
| 15 minute winter               | 4       | 3.000             | 5       | 13.2          | 0.755          | 0.399    | 0.1484        |                    |
| 15 minute winter               | 5       | 1.002             | 8       | 33.4          | 2.025          | 0.865    | 0.3399        |                    |
| 15 minute winter               | 6       | 4.000             | 8       | 5.5           | 0.441          | 0.125    | 0.2269        |                    |
| 15 minute winter               | 7       | 6.000             | 12      | 4.1           | 0.669          | 0.300    | 0.1028        |                    |
| 15 minute winter               | 8       | 1.003             | 11      | 39.6          | 2.248          | 1.080    | 0.2410        |                    |
| 15 minute winter               | 9       | 5.000             | 11      | 9.2           | 0.557          | 0.670    | 0.2195        |                    |
| 30 minute winter               | 10      | 7.000             | 12      | 11.1          | 0.631          | 0.655    | 0.1450        |                    |
| 30 minute winter               | 11      | 1.004             | 12      | 48.2          | 1.213          | 0.943    | 0.4104        |                    |
| 30 minute winter               | 12      | 1.005             | 13      | 50.7          | 1.275          | 1.086    | 0.4920        |                    |
| 30 minute winter               | 13      | 1.006             | 14      | 58.9          | 1.480          | 1.515    | 0.7068        |                    |
| 480 minute winter              | 14      | 1.007             | 14_OUT  | 19.3          | 0.917          | 0.312    | 0.1407        |                    |
| 480 minute winter              | 14_OUT  | Flow through pond | 15      | 10.7          | 0.026          | 0.000    | 184.4794      |                    |
| 480 minute winter              | 15      | 8.000             | 16      | 5.3           | 0.449          | 0.246    | 0.0606        |                    |
| 480 minute winter              | 16      | Hydro-Brake®      | 16_OUT  | 2.1           |                |          |               | 80.1               |

**Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 84.14%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 30 minute winter  | 1       | 21          | 19.000    | 0.550     | 28.6         | 10.6153       | 1.8872     | FLOOD      |
| 15 minute winter  | 2       | 13          | 19.092    | 0.242     | 29.0         | 1.4948        | 0.0000     | FLOOD RISK |
| 30 minute winter  | 3       | 21          | 19.013    | 0.663     | 36.9         | 1.2226        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 4       | 15          | 18.730    | 0.340     | 21.0         | 5.6632        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 5       | 14          | 18.724    | 0.624     | 38.1         | 1.0687        | 0.0000     | FLOOD RISK |
| 15 minute winter  | 6       | 12          | 18.167    | 0.167     | 6.6          | 0.4210        | 0.0000     | SURCHARGED |
| 15 minute winter  | 7       | 10          | 17.361    | 0.061     | 4.6          | 0.0233        | 0.0000     | OK         |
| 15 minute winter  | 8       | 12          | 18.150    | 0.950     | 45.3         | 1.5143        | 0.2909     | FLOOD      |
| 30 minute winter  | 9       | 20          | 17.325    | 0.625     | 13.5         | 5.1776        | 1.9891     | FLOOD      |
| 30 minute winter  | 10      | 23          | 17.222    | 0.522     | 16.2         | 6.1114        | 0.0000     | FLOOD RISK |
| 30 minute winter  | 11      | 22          | 17.326    | 0.776     | 51.0         | 1.2346        | 0.0000     | SURCHARGED |
| 30 minute winter  | 12      | 23          | 17.218    | 0.768     | 54.3         | 0.9356        | 0.0000     | SURCHARGED |
| 60 minute winter  | 13      | 42          | 17.072    | 0.722     | 55.5         | 1.2720        | 0.0000     | SURCHARGED |
| 480 minute winter | 14      | 488         | 16.928    | 0.678     | 21.4         | 0.7672        | 0.0000     | FLOOD RISK |
| 600 minute winter | 14_OUT  | 600         | 16.924    | 0.764     | 17.7         | 0.8637        | 0.0000     | OK         |
| 480 minute winter | 15      | 464         | 16.919    | 0.819     | 16.2         | 0.9263        | 0.0000     | FLOOD RISK |
| 480 minute winter | 16      | 464         | 16.918    | 0.868     | 4.9          | 0.9822        | 0.0000     | FLOOD RISK |
| 15 minute summer  | 16_OUT  | 1           | 15.950    | 0.000     | 1.8          | 0.0000        | 0.0000     | OK         |

| Link Event<br>(Upstream Depth) | US Node | Link              | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|---------|-------------------|---------|---------------|----------------|----------|---------------|--------------------|
| 30 minute winter               | 1       | 1.000             | 3       | 19.4          | 1.103          | 1.060    | 0.1655        |                    |
| 15 minute winter               | 2       | 2.000             | 3       | 23.5          | 1.354          | 0.529    | 0.1432        |                    |
| 30 minute winter               | 3       | 1.001             | 5       | 21.6          | 1.529          | 1.032    | 0.3169        |                    |
| 15 minute winter               | 4       | 3.000             | 5       | 13.9          | 0.799          | 0.421    | 0.1484        |                    |
| 15 minute winter               | 5       | 1.002             | 8       | 33.9          | 2.030          | 0.877    | 0.3399        |                    |
| 15 minute winter               | 6       | 4.000             | 8       | 6.1           | 0.530          | 0.138    | 0.2308        |                    |
| 15 minute winter               | 7       | 6.000             | 12      | 4.5           | 0.684          | 0.326    | 0.1095        |                    |
| 15 minute winter               | 8       | 1.003             | 11      | 39.6          | 2.249          | 1.081    | 0.2410        |                    |
| 30 minute winter               | 9       | 5.000             | 11      | 7.3           | 0.555          | 0.530    | 0.2195        |                    |
| 30 minute winter               | 10      | 7.000             | 12      | 11.9          | 0.678          | 0.705    | 0.1450        |                    |
| 30 minute winter               | 11      | 1.004             | 12      | 48.5          | 1.220          | 0.949    | 0.4104        |                    |
| 30 minute winter               | 12      | 1.005             | 13      | 50.7          | 1.275          | 1.086    | 0.4920        |                    |
| 60 minute winter               | 13      | 1.006             | 14      | 55.0          | 1.384          | 1.416    | 0.7068        |                    |
| 480 minute winter              | 14      | 1.007             | 14_OUT  | 21.3          | 0.905          | 0.344    | 0.1407        |                    |
| 600 minute winter              | 14_OUT  | Flow through pond | 15      | 14.2          | 0.039          | 0.000    | 204.0729      |                    |
| 480 minute winter              | 15      | 8.000             | 16      | 4.9           | 0.465          | 0.230    | 0.0606        |                    |
| 480 minute winter              | 16      | Hydro-Brake®      | 16_OUT  | 2.1           |                |          |               | 81.9               |