

### Design Settings

|                                      |        |                                    |               |
|--------------------------------------|--------|------------------------------------|---------------|
| Rainfall Methodology                 | FEH-13 | Minimum Velocity (m/s)             | 0.75          |
| Return Period (years)                | 2      | Connection Type                    | Level Soffits |
| Additional Flow (%)                  | 0      | Minimum Backdrop Height (m)        | 1.000         |
| CV                                   | 0.850  | Preferred Cover Depth (m)          | 1.200         |
| Time of Entry (mins)                 | 5.00   | Include Intermediate Ground        | ✓             |
| Maximum Time of Concentration (mins) | 30.00  | Enforce best practice design rules | x             |
| Maximum Rainfall (mm/hr)             | 50.0   |                                    |               |

### Nodes

| Name    | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easting (m) | Northing (m) | Depth (m) |
|---------|-----------|---------------|-----------------|---------------|-------------|--------------|-----------|
| RE2     | 0.005     | 5.00          | 22.100          | 100           | 564499.181  | 172756.809   | 0.450     |
| S1      | 0.003     | 5.00          | 22.250          | 450           | 564507.009  | 172748.794   | 0.762     |
| S2      |           |               | 22.400          | 450           | 564515.668  | 172740.661   | 0.983     |
| S3      | 0.070     | 5.00          | 22.400          | 600           | 564522.243  | 172747.236   | 1.114     |
| S4      | 0.005     | 5.00          | 22.575          | 1200          | 564555.194  | 172747.236   | 1.401     |
| RE1     | 0.005     | 5.00          | 22.400          | 100           | 564506.529  | 172763.211   | 0.450     |
| S6      | 0.000     |               | 22.400          | 450           | 564512.872  | 172757.436   | 0.536     |
| S7      | 0.019     | 5.00          | 22.400          | 450           | 564516.427  | 172761.109   | 0.638     |
| S8      | 0.000     |               | 22.400          | 450           | 564542.602  | 172761.227   | 0.795     |
| S9      | 0.013     | 5.00          | 22.400          | 450           | 564544.842  | 172770.760   | 0.853     |
| S10     | 0.007     | 5.00          | 22.400          | 450           | 564555.194  | 172770.760   | 0.915     |
| S5      |           |               | 22.575          | 600           | 564555.164  | 172756.970   | 1.434     |
| S16     |           |               | 22.600          | 1200          | 564560.505  | 172757.035   | 1.503     |
| S12     |           |               | 22.300          | 450           | 564558.090  | 172772.925   | 1.319     |
| S13     |           |               | 22.310          | 450           | 564546.581  | 172772.492   | 1.398     |
| S14     |           |               | 22.200          | 450           | 564526.723  | 172766.430   | 1.413     |
| S18     | 0.004     | 5.00          | 21.750          | 450           | 564497.931  | 172757.032   | 0.772     |
| S19     |           |               | 21.800          | 450           | 564504.940  | 172763.958   | 0.921     |
| S15 HB  |           |               | 22.084          | 1200          | 564520.691  | 172766.393   | 1.350     |
| Outfall |           |               | 21.100          | 1200          | 564519.246  | 172774.056   | 0.463     |

### 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) |
|-------|---------|---------|------------|-------------|-----------|-----------|----------|-------------|----------|---------------|--------------|
| 1.000 | RE2     | S1      | 11.203     | 0.600       | 21.650    | 21.538    | 0.112    | 100.0       | 100      | 5.24          | 50.0         |
| 1.001 | S1      | S2      | 11.880     | 0.600       | 21.488    | 21.417    | 0.071    | 167.3       | 150      | 5.50          | 50.0         |
| 1.002 | S2      | S3      | 9.298      | 0.600       | 21.417    | 21.286    | 0.131    | 71.0        | 150      | 5.63          | 50.0         |
| 1.003 | S3      | S4      | 32.951     | 0.600       | 21.286    | 21.174    | 0.112    | 294.2       | 225      | 6.35          | 50.0         |
| 1.004 | S4      | S5      | 9.734      | 0.600       | 21.174    | 21.141    | 0.033    | 295.0       | 225      | 6.57          | 49.6         |
| 2.000 | RE1     | S6      | 8.578      | 0.600       | 21.950    | 21.868    | 0.082    | 104.6       | 100      | 5.19          | 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) | Pro Depth (mm) | Pro Velocity (m/s) |
|-------|-----------|-----------|------------|--------------|--------------|-------------|--------------------|----------------|--------------------|
| 1.000 | 0.769     | 6.0       | 0.8        | 0.350        | 0.612        | 0.005       | 0.0                | 24             | 0.521              |
| 1.001 | 0.774     | 13.7      | 1.2        | 0.612        | 0.833        | 0.008       | 0.0                | 30             | 0.477              |
| 1.002 | 1.195     | 21.1      | 1.2        | 0.833        | 0.964        | 0.008       | 0.0                | 24             | 0.647              |
| 1.003 | 0.757     | 30.1      | 12.0       | 0.889        | 1.176        | 0.078       | 0.0                | 99             | 0.716              |
| 1.004 | 0.756     | 30.1      | 12.6       | 1.176        | 1.209        | 0.083       | 0.0                | 102            | 0.723              |
| 2.000 | 0.751     | 5.9       | 0.8        | 0.350        | 0.432        | 0.005       | 0.0                | 25             | 0.519              |

### 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) |
|-------|---------|---------|------------|-------------|-----------|-----------|----------|-------------|----------|---------------|--------------|
| 2.001 | S6      | S7      | 5.112      | 0.600       | 21.864    | 21.762    | 0.102    | 50.1        | 150      | 5.25          | 50.0         |
| 2.002 | S7      | S8      | 26.175     | 0.600       | 21.762    | 21.605    | 0.157    | 166.7       | 150      | 5.81          | 50.0         |
| 2.003 | S8      | S9      | 9.793      | 0.600       | 21.605    | 21.547    | 0.058    | 168.8       | 150      | 6.02          | 50.0         |
| 2.004 | S9      | S10     | 10.352     | 0.600       | 21.547    | 21.485    | 0.062    | 167.0       | 150      | 6.25          | 50.0         |
| 2.005 | S10     | S5      | 13.790     | 0.600       | 21.485    | 21.141    | 0.344    | 40.1        | 150      | 6.39          | 50.0         |
| 1.005 | S5      | S16     | 5.341      | 0.600       | 21.141    | 21.097    | 0.044    | 121.4       | 225      | 6.64          | 49.3         |
| 1.006 | S16     | S12     | 16.072     | 0.600       | 21.097    | 20.981    | 0.116    | 138.6       | 225      | 6.89          | 48.4         |
| 1.007 | S12     | S13     | 11.517     | 0.600       | 20.981    | 20.912    | 0.069    | 166.9       | 150      | 7.13          | 47.5         |
| 1.008 | S13     | S14     | 20.763     | 0.600       | 20.912    | 20.787    | 0.125    | 166.1       | 150      | 7.58          | 46.1         |
| 1.009 | S14     | S15 HB  | 6.032      | 0.600       | 20.787    | 20.734    | 0.053    | 113.8       | 150      | 7.69          | 45.8         |
| 3.000 | S18     | S19     | 9.854      | 0.600       | 20.978    | 20.879    | 0.099    | 99.5        | 150      | 5.16          | 50.0         |
| 3.001 | S19     | S15 HB  | 15.938     | 0.600       | 20.879    | 20.734    | 0.145    | 109.9       | 150      | 5.44          | 50.0         |
| 1.010 | S15 HB  | Outfall | 7.798      | 0.600       | 20.734    | 20.637    | 0.097    | 80.0        | 100      | 7.84          | 45.3         |

| Name  | Vel (m/s) | Cap (l/s) | Flow (l/s) | US Depth (m) | DS Depth (m) | Σ Area (ha) | Σ Add Inflow (l/s) | Pro Depth (mm) | Pro Velocity (m/s) |
|-------|-----------|-----------|------------|--------------|--------------|-------------|--------------------|----------------|--------------------|
| 2.001 | 1.424     | 25.2      | 0.8        | 0.386        | 0.488        | 0.005       | 0.0                | 18             | 0.635              |
| 2.002 | 0.775     | 13.7      | 3.7        | 0.488        | 0.645        | 0.024       | 0.0                | 53             | 0.658              |
| 2.003 | 0.770     | 13.6      | 3.7        | 0.645        | 0.703        | 0.024       | 0.0                | 53             | 0.654              |
| 2.004 | 0.775     | 13.7      | 5.7        | 0.703        | 0.765        | 0.037       | 0.0                | 67             | 0.738              |
| 2.005 | 1.594     | 28.2      | 6.8        | 0.765        | 1.284        | 0.044       | 0.0                | 50             | 1.315              |
| 1.005 | 1.185     | 47.1      | 19.2       | 1.209        | 1.278        | 0.127       | 0.0                | 100            | 1.125              |
| 1.006 | 1.109     | 44.1      | 18.9       | 1.278        | 1.094        | 0.127       | 0.0                | 102            | 1.065              |
| 1.007 | 0.775     | 13.7      | 18.5       | 1.169        | 1.248        | 0.127       | 0.0                | 150            | 0.789              |
| 1.008 | 0.777     | 13.7      | 18.0       | 1.248        | 1.263        | 0.127       | 0.0                | 150            | 0.791              |
| 1.009 | 0.941     | 16.6      | 17.9       | 1.263        | 1.200        | 0.127       | 0.0                | 150            | 0.959              |
| 3.000 | 1.007     | 17.8      | 0.6        | 0.622        | 0.771        | 0.004       | 0.0                | 19             | 0.466              |
| 3.001 | 0.958     | 16.9      | 0.6        | 0.771        | 1.200        | 0.004       | 0.0                | 20             | 0.452              |
| 1.010 | 0.861     | 6.8       | 18.2       | 1.250        | 0.363        | 0.131       | 0.0                | 100            | 0.884              |

### Pipeline Schedule

| Link  | Length (m) | Slope (1:X) | Dia (mm) | Link Type | US CL (m) | US IL (m) | US Depth (m) | DS CL (m) | DS IL (m) | DS Depth (m) |
|-------|------------|-------------|----------|-----------|-----------|-----------|--------------|-----------|-----------|--------------|
| 1.000 | 11.203     | 100.0       | 100      | Circular  | 22.100    | 21.650    | 0.350        | 22.250    | 21.538    | 0.612        |
| 1.001 | 11.880     | 167.3       | 150      | Circular  | 22.250    | 21.488    | 0.612        | 22.400    | 21.417    | 0.833        |
| 1.002 | 9.298      | 71.0        | 150      | Circular  | 22.400    | 21.417    | 0.833        | 22.400    | 21.286    | 0.964        |
| 1.003 | 32.951     | 294.2       | 225      | Circular  | 22.400    | 21.286    | 0.889        | 22.575    | 21.174    | 1.176        |
| 1.004 | 9.734      | 295.0       | 225      | Circular  | 22.575    | 21.174    | 1.176        | 22.575    | 21.141    | 1.209        |
| 2.000 | 8.578      | 104.6       | 100      | Circular  | 22.400    | 21.950    | 0.350        | 22.400    | 21.868    | 0.432        |
| 2.001 | 5.112      | 50.1        | 150      | Circular  | 22.400    | 21.864    | 0.386        | 22.400    | 21.762    | 0.488        |

| Link  | US Node | Dia (mm) | Node Type | MH Type   | DS Node | Dia (mm) | Node Type | MH Type   |
|-------|---------|----------|-----------|-----------|---------|----------|-----------|-----------|
| 1.000 | RE2     | 100      | Manhole   | Adoptable | S1      | 450      | Manhole   | Adoptable |
| 1.001 | S1      | 450      | Manhole   | Adoptable | S2      | 450      | Manhole   | Adoptable |
| 1.002 | S2      | 450      | Manhole   | Adoptable | S3      | 600      | Manhole   | Adoptable |
| 1.003 | S3      | 600      | Manhole   | Adoptable | S4      | 1200     | Manhole   | Adoptable |
| 1.004 | S4      | 1200     | Manhole   | Adoptable | S5      | 600      | Manhole   | Adoptable |
| 2.000 | RE1     | 100      | Manhole   | Adoptable | S6      | 450      | Manhole   | Adoptable |
| 2.001 | S6      | 450      | Manhole   | Adoptable | S7      | 450      | Manhole   | Adoptable |

Pipeline Schedule

| Link  | Length<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | Link<br>Type | US CL<br>(m) | US IL<br>(m) | US Depth<br>(m) | DS CL<br>(m) | DS IL<br>(m) | DS Depth<br>(m) |
|-------|---------------|----------------|-------------|--------------|--------------|--------------|-----------------|--------------|--------------|-----------------|
| 2.002 | 26.175        | 166.7          | 150         | Circular     | 22.400       | 21.762       | 0.488           | 22.400       | 21.605       | 0.645           |
| 2.003 | 9.793         | 168.8          | 150         | Circular     | 22.400       | 21.605       | 0.645           | 22.400       | 21.547       | 0.703           |
| 2.004 | 10.352        | 167.0          | 150         | Circular     | 22.400       | 21.547       | 0.703           | 22.400       | 21.485       | 0.765           |
| 2.005 | 13.790        | 40.1           | 150         | Circular     | 22.400       | 21.485       | 0.765           | 22.575       | 21.141       | 1.284           |
| 1.005 | 5.341         | 121.4          | 225         | Circular     | 22.575       | 21.141       | 1.209           | 22.600       | 21.097       | 1.278           |
| 1.006 | 16.072        | 138.6          | 225         | Circular     | 22.600       | 21.097       | 1.278           | 22.300       | 20.981       | 1.094           |
| 1.007 | 11.517        | 166.9          | 150         | Circular     | 22.300       | 20.981       | 1.169           | 22.310       | 20.912       | 1.248           |
| 1.008 | 20.763        | 166.1          | 150         | Circular     | 22.310       | 20.912       | 1.248           | 22.200       | 20.787       | 1.263           |
| 1.009 | 6.032         | 113.8          | 150         | Circular     | 22.200       | 20.787       | 1.263           | 22.084       | 20.734       | 1.200           |
| 3.000 | 9.854         | 99.5           | 150         | Circular     | 21.750       | 20.978       | 0.622           | 21.800       | 20.879       | 0.771           |
| 3.001 | 15.938        | 109.9          | 150         | Circular     | 21.800       | 20.879       | 0.771           | 22.084       | 20.734       | 1.200           |
| 1.010 | 7.798         | 80.0           | 100         | Circular     | 22.084       | 20.734       | 1.250           | 21.100       | 20.637       | 0.363           |

| Link  | US<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type | DS<br>Node | Dia<br>(mm) | Node<br>Type | MH<br>Type |
|-------|------------|-------------|--------------|------------|------------|-------------|--------------|------------|
| 2.002 | S7         | 450         | Manhole      | Adoptable  | S8         | 450         | Manhole      | Adoptable  |
| 2.003 | S8         | 450         | Manhole      | Adoptable  | S9         | 450         | Manhole      | Adoptable  |
| 2.004 | S9         | 450         | Manhole      | Adoptable  | S10        | 450         | Manhole      | Adoptable  |
| 2.005 | S10        | 450         | Manhole      | Adoptable  | S5         | 600         | Manhole      | Adoptable  |
| 1.005 | S5         | 600         | Manhole      | Adoptable  | S16        | 1200        | Manhole      | Adoptable  |
| 1.006 | S16        | 1200        | Manhole      | Adoptable  | S12        | 450         | Manhole      | Adoptable  |
| 1.007 | S12        | 450         | Manhole      | Adoptable  | S13        | 450         | Manhole      | Adoptable  |
| 1.008 | S13        | 450         | Manhole      | Adoptable  | S14        | 450         | Manhole      | Adoptable  |
| 1.009 | S14        | 450         | Manhole      | Adoptable  | S15 HB     | 1200        | Manhole      | Adoptable  |
| 3.000 | S18        | 450         | Manhole      | Adoptable  | S19        | 450         | Manhole      | Adoptable  |
| 3.001 | S19        | 450         | Manhole      | Adoptable  | S15 HB     | 1200        | Manhole      | Adoptable  |
| 1.010 | S15 HB     | 1200        | Manhole      | Adoptable  | Outfall    | 1200        | Manhole      | Adoptable  |

Simulation Settings

|                      |        |                        |        |                            |     |
|----------------------|--------|------------------------|--------|----------------------------|-----|
| Rainfall Methodology | FEH-13 | Analysis Speed         | Normal | Additional Storage (m³/ha) | 0.0 |
| Summer CV            | 0.850  | Skip Steady State      | x      | Check Discharge Rate(s)    | x   |
| Winter CV            | 0.900  | Drain Down Time (mins) | 1440   | Check Discharge Volume     | x   |

Storm Durations

|    |    |    |     |     |     |     |     |     |     |     |      |
|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440 |
|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 2                        | 0                        | 0                        | 0                        |
| 10                       | 0                        | 0                        | 0                        |
| 30                       | 0                        | 0                        | 0                        |
| 50                       | 0                        | 0                        | 0                        |
| 100                      | 0                        | 0                        | 0                        |
| 100                      | 40                       | 0                        | 0                        |
| 100                      | 45                       | 0                        | 0                        |

#### **Node S15 HB Online Hydro-Brake® Control**

|                          |        |                         |                                |
|--------------------------|--------|-------------------------|--------------------------------|
| Flap Valve               | x      | Objective               | (HE) Minimise upstream storage |
| Replaces Downstream Link | ✓      | Sump Available          | ✓                              |
| Invert Level (m)         | 20.734 | Product Number          | CTL-SHE-0069-2000-0900-2000    |
| Design Depth (m)         | 0.900  | Min Outlet Diameter (m) | 0.100                          |
| Design Flow (l/s)        | 2.0    | Min Node Diameter (mm)  | 1200                           |

#### **Node S16 Depth/Area Storage Structure**

|                             |         |               |      |                           |        |
|-----------------------------|---------|---------------|------|---------------------------|--------|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 21.047 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity      | 0.95 | Time to half empty (mins) | 456    |

| Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) |
|--------------|---------------------------|-------------------------------|--------------|---------------------------|-------------------------------|--------------|---------------------------|-------------------------------|
| 0.000        | 172.0                     | 0.0                           | 0.800        | 172.0                     | 0.0                           | 0.801        | 0.0                       | 0.0                           |

#### **Node S2 Depth/Area Storage Structure**

|                             |         |               |      |                           |        |
|-----------------------------|---------|---------------|------|---------------------------|--------|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 21.417 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity      | 0.95 | Time to half empty (mins) | 4      |

| Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Inf Area<br>(m <sup>2</sup> ) |
|--------------|---------------------------|-------------------------------|--------------|---------------------------|-------------------------------|--------------|---------------------------|-------------------------------|
| 0.000        | 5.0                       | 0.0                           | 0.800        | 5.0                       | 0.0                           | 0.801        | 0.0                       | 0.0                           |

**Results for 2 year Critical Storm Duration. Lowest mass balance: 99.88%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter  | RE2     | 10          | 21.674    | 0.024     | 0.8          | 0.0002        | 0.0000     | OK         |
| 15 minute summer  | S1      | 10          | 21.520    | 0.032     | 1.2          | 0.0050        | 0.0000     | OK         |
| 15 minute winter  | S2      | 12          | 21.440    | 0.023     | 1.2          | 0.1148        | 0.0000     | OK         |
| 15 minute summer  | S3      | 10          | 21.383    | 0.097     | 11.6         | 0.0274        | 0.0000     | OK         |
| 15 minute summer  | S4      | 11          | 21.283    | 0.109     | 12.2         | 0.1237        | 0.0000     | OK         |
| 15 minute winter  | RE1     | 10          | 21.975    | 0.025     | 0.8          | 0.0002        | 0.0000     | OK         |
| 15 minute winter  | S6      | 11          | 21.882    | 0.018     | 0.7          | 0.0028        | 0.0000     | OK         |
| 15 minute summer  | S7      | 11          | 21.815    | 0.053     | 3.6          | 0.0085        | 0.0000     | OK         |
| 15 minute summer  | S8      | 11          | 21.658    | 0.053     | 3.6          | 0.0085        | 0.0000     | OK         |
| 15 minute summer  | S9      | 11          | 21.615    | 0.068     | 5.5          | 0.0109        | 0.0000     | OK         |
| 15 minute summer  | S10     | 11          | 21.534    | 0.049     | 6.4          | 0.0078        | 0.0000     | OK         |
| 15 minute summer  | S5      | 11          | 21.251    | 0.110     | 18.6         | 0.0310        | 0.0000     | OK         |
| 180 minute winter | S16     | 136         | 21.155    | 0.058     | 5.2          | 9.4456        | 0.0000     | OK         |
| 120 minute summer | S12     | 78          | 21.155    | 0.174     | 5.3          | 0.0277        | 0.0000     | SURCHARGED |
| 180 minute winter | S13     | 132         | 21.153    | 0.241     | 3.8          | 0.0383        | 0.0000     | SURCHARGED |
| 180 minute winter | S14     | 132         | 21.150    | 0.363     | 3.4          | 0.0578        | 0.0000     | SURCHARGED |
| 180 minute winter | S18     | 132         | 21.149    | 0.171     | 0.4          | 0.0273        | 0.0000     | SURCHARGED |
| 180 minute winter | S19     | 132         | 21.149    | 0.270     | 0.7          | 0.0430        | 0.0000     | SURCHARGED |
| 180 minute winter | S15 HB  | 132         | 21.149    | 0.415     | 3.0          | 0.4699        | 0.0000     | SURCHARGED |
| 15 minute summer  | Outfall | 1           | 20.637    | 0.000     | 2.0          | 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               | RE2     | 1.000        | S1      | 0.7           | 0.519          | 0.123    | 0.0161        |                    |
| 15 minute summer               | S1      | 1.001        | S2      | 1.2           | 0.598          | 0.088    | 0.0257        |                    |
| 15 minute winter               | S2      | 1.002        | S3      | 1.1           | 0.207          | 0.053    | 0.0630        |                    |
| 15 minute summer               | S3      | 1.003        | S4      | 11.5          | 0.659          | 0.383    | 0.5823        |                    |
| 15 minute summer               | S4      | 1.004        | S5      | 12.1          | 0.633          | 0.403    | 0.1864        |                    |
| 15 minute winter               | RE1     | 2.000        | S6      | 0.7           | 0.509          | 0.127    | 0.0126        |                    |
| 15 minute winter               | S6      | 2.001        | S7      | 0.8           | 0.239          | 0.030    | 0.0171        |                    |
| 15 minute summer               | S7      | 2.002        | S8      | 3.6           | 0.652          | 0.263    | 0.1466        |                    |
| 15 minute summer               | S8      | 2.003        | S9      | 3.6           | 0.532          | 0.262    | 0.0657        |                    |
| 15 minute summer               | S9      | 2.004        | S10     | 5.4           | 0.856          | 0.398    | 0.0661        |                    |
| 15 minute summer               | S10     | 2.005        | S5      | 6.4           | 0.683          | 0.229    | 0.1292        |                    |
| 15 minute summer               | S5      | 1.005        | S16     | 18.4          | 1.037          | 0.390    | 0.0948        |                    |
| 180 minute winter              | S16     | 1.006        | S12     | 4.3           | 0.594          | 0.098    | 0.3292        |                    |
| 120 minute summer              | S12     | 1.007        | S13     | 5.0           | 0.678          | 0.362    | 0.2028        |                    |
| 180 minute winter              | S13     | 1.008        | S14     | 3.4           | 0.549          | 0.250    | 0.3655        |                    |
| 180 minute winter              | S14     | 1.009        | S15 HB  | 3.0           | 0.279          | 0.179    | 0.1062        |                    |
| 180 minute winter              | S18     | 3.000        | S19     | -0.3          | 0.363          | -0.016   | 0.1735        |                    |
| 180 minute winter              | S19     | 3.001        | S15 HB  | -0.7          | 0.076          | -0.040   | 0.2806        |                    |
| 180 minute winter              | S15 HB  | Hydro-Brake® | Outfall | 2.0           |                |          |               | 22.9               |

**Results for 10 year Critical Storm Duration. Lowest mass balance: 99.88%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer  | RE2     | 11          | 21.686    | 0.036     | 1.6          | 0.0003        | 0.0000     | OK         |
| 15 minute summer  | S1      | 10          | 21.534    | 0.046     | 2.6          | 0.0073        | 0.0000     | OK         |
| 15 minute summer  | S2      | 11          | 21.452    | 0.035     | 2.6          | 0.1701        | 0.0000     | OK         |
| 15 minute summer  | S3      | 11          | 21.447    | 0.161     | 25.0         | 0.0456        | 0.0000     | OK         |
| 15 minute summer  | S4      | 11          | 21.362    | 0.188     | 26.0         | 0.2123        | 0.0000     | OK         |
| 15 minute summer  | RE1     | 11          | 21.987    | 0.037     | 1.6          | 0.0003        | 0.0000     | OK         |
| 15 minute summer  | S6      | 11          | 21.890    | 0.026     | 1.6          | 0.0041        | 0.0000     | OK         |
| 15 minute summer  | S7      | 10          | 21.844    | 0.082     | 7.8          | 0.0131        | 0.0000     | OK         |
| 15 minute summer  | S8      | 11          | 21.693    | 0.088     | 7.7          | 0.0140        | 0.0000     | OK         |
| 15 minute summer  | S9      | 11          | 21.655    | 0.108     | 11.7         | 0.0172        | 0.0000     | OK         |
| 15 minute summer  | S10     | 11          | 21.559    | 0.074     | 13.9         | 0.0118        | 0.0000     | OK         |
| 15 minute summer  | S5      | 11          | 21.324    | 0.183     | 39.7         | 0.0517        | 0.0000     | OK         |
| 180 minute winter | S16     | 172         | 21.248    | 0.151     | 9.7          | 24.7019       | 0.0000     | OK         |
| 180 minute winter | S12     | 172         | 21.247    | 0.266     | 5.3          | 0.0424        | 0.0000     | SURCHARGED |
| 180 minute winter | S13     | 168         | 21.246    | 0.334     | 4.3          | 0.0531        | 0.0000     | SURCHARGED |
| 180 minute winter | S14     | 168         | 21.244    | 0.457     | 3.5          | 0.0726        | 0.0000     | SURCHARGED |
| 180 minute winter | S18     | 168         | 21.243    | 0.265     | 0.6          | 0.0421        | 0.0000     | SURCHARGED |
| 180 minute winter | S19     | 168         | 21.243    | 0.364     | 0.8          | 0.0579        | 0.0000     | SURCHARGED |
| 180 minute winter | S15 HB  | 168         | 21.243    | 0.509     | 3.1          | 0.5756        | 0.0000     | SURCHARGED |
| 15 minute summer  | Outfall | 1           | 20.637    | 0.000     | 2.0          | 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 summer               | RE2     | 1.000        | S1      | 1.6           | 0.641          | 0.265    | 0.0280        |                    |
| 15 minute summer               | S1      | 1.001        | S2      | 2.6           | 0.698          | 0.187    | 0.0449        |                    |
| 15 minute summer               | S2      | 1.002        | S3      | 2.5           | 0.251          | 0.117    | 0.0961        |                    |
| 15 minute summer               | S3      | 1.003        | S4      | 24.4          | 0.765          | 0.812    | 1.0845        |                    |
| 15 minute summer               | S4      | 1.004        | S5      | 25.8          | 0.738          | 0.858    | 0.3403        |                    |
| 15 minute summer               | RE1     | 2.000        | S6      | 1.6           | 0.627          | 0.271    | 0.0219        |                    |
| 15 minute summer               | S6      | 2.001        | S7      | 1.6           | 0.289          | 0.064    | 0.0304        |                    |
| 15 minute summer               | S7      | 2.002        | S8      | 7.7           | 0.763          | 0.560    | 0.2676        |                    |
| 15 minute summer               | S8      | 2.003        | S9      | 7.7           | 0.631          | 0.563    | 0.1189        |                    |
| 15 minute summer               | S9      | 2.004        | S10     | 11.7          | 1.044          | 0.853    | 0.1152        |                    |
| 15 minute summer               | S10     | 2.005        | S5      | 13.9          | 0.921          | 0.493    | 0.1814        |                    |
| 15 minute summer               | S5      | 1.005        | S16     | 39.5          | 1.234          | 0.838    | 0.1704        |                    |
| 180 minute winter              | S16     | 1.006        | S12     | 5.3           | 0.611          | 0.121    | 0.5466        |                    |
| 180 minute winter              | S12     | 1.007        | S13     | 4.3           | 0.641          | 0.311    | 0.2028        |                    |
| 180 minute winter              | S13     | 1.008        | S14     | 3.5           | 0.562          | 0.256    | 0.3655        |                    |
| 180 minute winter              | S14     | 1.009        | S15 HB  | 3.1           | 0.268          | 0.188    | 0.1062        |                    |
| 180 minute winter              | S18     | 3.000        | S19     | 0.5           | 0.348          | 0.031    | 0.1735        |                    |
| 180 minute winter              | S19     | 3.001        | S15 HB  | -0.8          | 0.306          | -0.047   | 0.2806        |                    |
| 180 minute winter              | S15 HB  | Hydro-Brake® | Outfall | 2.0           |                |          |               | 43.7               |

**Results for 30 year Critical Storm Duration. Lowest mass balance: 99.88%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter  | RE2     | 10          | 21.693    | 0.043     | 2.2          | 0.0003        | 0.0000     | OK         |
| 15 minute summer  | S1      | 12          | 21.555    | 0.067     | 3.5          | 0.0107        | 0.0000     | OK         |
| 15 minute summer  | S2      | 12          | 21.546    | 0.129     | 3.8          | 0.6328        | 0.0000     | OK         |
| 15 minute summer  | S3      | 12          | 21.536    | 0.250     | 31.0         | 0.0709        | 0.0000     | SURCHARGED |
| 15 minute summer  | S4      | 12          | 21.423    | 0.249     | 31.3         | 0.2817        | 0.0000     | SURCHARGED |
| 15 minute winter  | RE1     | 10          | 21.994    | 0.044     | 2.2          | 0.0003        | 0.0000     | OK         |
| 15 minute winter  | S6      | 11          | 21.894    | 0.030     | 2.2          | 0.0047        | 0.0000     | OK         |
| 15 minute summer  | S7      | 10          | 21.862    | 0.100     | 10.4         | 0.0159        | 0.0000     | OK         |
| 15 minute summer  | S8      | 11          | 21.721    | 0.116     | 10.3         | 0.0184        | 0.0000     | OK         |
| 15 minute summer  | S9      | 11          | 21.687    | 0.140     | 15.5         | 0.0223        | 0.0000     | OK         |
| 15 minute summer  | S10     | 11          | 21.581    | 0.096     | 18.3         | 0.0153        | 0.0000     | OK         |
| 15 minute summer  | S5      | 12          | 21.375    | 0.234     | 48.0         | 0.0663        | 0.0000     | SURCHARGED |
| 180 minute winter | S16     | 176         | 21.322    | 0.225     | 12.7         | 36.9636       | 0.0000     | SURCHARGED |
| 180 minute winter | S12     | 176         | 21.322    | 0.341     | 5.4          | 0.0542        | 0.0000     | SURCHARGED |
| 180 minute winter | S13     | 176         | 21.321    | 0.409     | 4.3          | 0.0650        | 0.0000     | SURCHARGED |
| 180 minute winter | S14     | 176         | 21.319    | 0.532     | 3.3          | 0.0846        | 0.0000     | SURCHARGED |
| 180 minute winter | S18     | 176         | 21.318    | 0.340     | 0.5          | 0.0541        | 0.0000     | SURCHARGED |
| 180 minute winter | S19     | 176         | 21.318    | 0.439     | 0.6          | 0.0698        | 0.0000     | SURCHARGED |
| 180 minute winter | S15 HB  | 176         | 21.318    | 0.584     | 2.9          | 0.6608        | 0.0000     | SURCHARGED |
| 15 minute summer  | Outfall | 1           | 20.637    | 0.000     | 2.0          | 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               | RE2     | 1.000        | S1      | 2.2           | 0.692          | 0.357    | 0.0349        |                    |
| 15 minute summer               | S1      | 1.001        | S2      | 3.5           | 0.711          | 0.253    | 0.1409        |                    |
| 15 minute summer               | S2      | 1.002        | S3      | 9.0           | 0.559          | 0.427    | 0.1567        |                    |
| 15 minute summer               | S3      | 1.003        | S4      | 29.1          | 0.782          | 0.966    | 1.3105        |                    |
| 15 minute summer               | S4      | 1.004        | S5      | 30.2          | 0.763          | 1.006    | 0.3871        |                    |
| 15 minute winter               | RE1     | 2.000        | S6      | 2.2           | 0.677          | 0.366    | 0.0274        |                    |
| 15 minute winter               | S6      | 2.001        | S7      | 2.1           | 0.304          | 0.085    | 0.0380        |                    |
| 15 minute summer               | S7      | 2.002        | S8      | 10.3          | 0.799          | 0.751    | 0.3492        |                    |
| 15 minute summer               | S8      | 2.003        | S9      | 10.1          | 0.652          | 0.743    | 0.1552        |                    |
| 15 minute summer               | S9      | 2.004        | S10     | 15.4          | 1.066          | 1.122    | 0.1502        |                    |
| 15 minute summer               | S10     | 2.005        | S5      | 18.2          | 1.120          | 0.647    | 0.2034        |                    |
| 15 minute summer               | S5      | 1.005        | S16     | 48.2          | 1.255          | 1.024    | 0.1986        |                    |
| 180 minute winter              | S16     | 1.006        | S12     | 5.4           | 0.597          | 0.122    | 0.6389        |                    |
| 180 minute winter              | S12     | 1.007        | S13     | 4.3           | 0.633          | 0.312    | 0.2028        |                    |
| 180 minute winter              | S13     | 1.008        | S14     | 3.3           | 0.557          | 0.240    | 0.3655        |                    |
| 180 minute winter              | S14     | 1.009        | S15 HB  | 2.9           | 0.267          | 0.173    | 0.1062        |                    |
| 180 minute winter              | S18     | 3.000        | S19     | 0.3           | 0.348          | 0.020    | 0.1735        |                    |
| 180 minute winter              | S19     | 3.001        | S15 HB  | 0.5           | 0.306          | 0.030    | 0.2806        |                    |
| 180 minute winter              | S15 HB  | Hydro-Brake® | Outfall | 2.0           |                |          |               | 57.5               |

**Results for 50 year Critical Storm Duration. Lowest mass balance: 99.88%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer  | RE2     | 10          | 21.696    | 0.046     | 2.5          | 0.0004        | 0.0000     | OK         |
| 15 minute summer  | S1      | 12          | 21.620    | 0.132     | 3.9          | 0.0209        | 0.0000     | OK         |
| 15 minute summer  | S2      | 12          | 21.611    | 0.194     | 9.1          | 0.9544        | 0.0000     | SURCHARGED |
| 15 minute summer  | S3      | 12          | 21.600    | 0.314     | 34.4         | 0.0890        | 0.0000     | SURCHARGED |
| 15 minute summer  | S4      | 12          | 21.461    | 0.287     | 33.2         | 0.3241        | 0.0000     | SURCHARGED |
| 15 minute summer  | RE1     | 10          | 21.997    | 0.047     | 2.5          | 0.0004        | 0.0000     | OK         |
| 15 minute summer  | S6      | 10          | 21.895    | 0.031     | 2.4          | 0.0050        | 0.0000     | OK         |
| 15 minute summer  | S7      | 10          | 21.871    | 0.109     | 11.8         | 0.0173        | 0.0000     | OK         |
| 15 minute summer  | S8      | 11          | 21.772    | 0.167     | 11.6         | 0.0266        | 0.0000     | SURCHARGED |
| 15 minute summer  | S9      | 11          | 21.722    | 0.175     | 17.0         | 0.0278        | 0.0000     | SURCHARGED |
| 15 minute summer  | S10     | 12          | 21.593    | 0.108     | 20.0         | 0.0172        | 0.0000     | OK         |
| 15 minute summer  | S5      | 12          | 21.401    | 0.260     | 53.0         | 0.0735        | 0.0000     | SURCHARGED |
| 180 minute winter | S16     | 180         | 21.362    | 0.265     | 14.6         | 43.5062       | 0.0000     | SURCHARGED |
| 180 minute winter | S12     | 180         | 21.362    | 0.381     | 5.2          | 0.0605        | 0.0000     | SURCHARGED |
| 180 minute winter | S13     | 176         | 21.360    | 0.448     | 4.1          | 0.0713        | 0.0000     | SURCHARGED |
| 180 minute winter | S14     | 176         | 21.358    | 0.571     | 4.0          | 0.0909        | 0.0000     | SURCHARGED |
| 180 minute winter | S18     | 176         | 21.358    | 0.380     | 0.6          | 0.0604        | 0.0000     | SURCHARGED |
| 180 minute winter | S19     | 176         | 21.358    | 0.479     | 0.9          | 0.0761        | 0.0000     | SURCHARGED |
| 180 minute winter | S15 HB  | 176         | 21.358    | 0.624     | 3.5          | 0.7054        | 0.0000     | SURCHARGED |
| 15 minute summer  | Outfall | 1           | 20.637    | 0.000     | 2.0          | 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 summer               | RE2     | 1.000        | S1      | 2.4           | 0.712          | 0.402    | 0.0545        |                    |
| 15 minute summer               | S1      | 1.001        | S2      | 4.3           | 0.732          | 0.317    | 0.2019        |                    |
| 15 minute summer               | S2      | 1.002        | S3      | 11.0          | 0.709          | 0.521    | 0.1637        |                    |
| 15 minute summer               | S3      | 1.003        | S4      | 31.3          | 0.796          | 1.041    | 1.3105        |                    |
| 15 minute summer               | S4      | 1.004        | S5      | 33.5          | 0.842          | 1.114    | 0.3871        |                    |
| 15 minute summer               | RE1     | 2.000        | S6      | 2.4           | 0.697          | 0.411    | 0.0299        |                    |
| 15 minute summer               | S6      | 2.001        | S7      | 2.4           | 0.309          | 0.095    | 0.0417        |                    |
| 15 minute summer               | S7      | 2.002        | S8      | 11.6          | 0.812          | 0.849    | 0.4020        |                    |
| 15 minute summer               | S8      | 2.003        | S9      | 11.0          | 0.650          | 0.805    | 0.1724        |                    |
| 15 minute summer               | S9      | 2.004        | S10     | 16.7          | 1.080          | 1.219    | 0.1614        |                    |
| 15 minute summer               | S10     | 2.005        | S5      | 19.5          | 1.162          | 0.694    | 0.2151        |                    |
| 15 minute summer               | S5      | 1.005        | S16     | 53.2          | 1.348          | 1.129    | 0.2022        |                    |
| 180 minute winter              | S16     | 1.006        | S12     | 5.2           | 0.590          | 0.119    | 0.6392        |                    |
| 180 minute winter              | S12     | 1.007        | S13     | 4.1           | 0.628          | 0.301    | 0.2028        |                    |
| 180 minute winter              | S13     | 1.008        | S14     | 4.0           | 0.558          | 0.290    | 0.3655        |                    |
| 180 minute winter              | S14     | 1.009        | S15 HB  | 3.5           | 0.267          | 0.208    | 0.1062        |                    |
| 180 minute winter              | S18     | 3.000        | S19     | 0.5           | 0.348          | 0.026    | 0.1735        |                    |
| 180 minute winter              | S19     | 3.001        | S15 HB  | -0.9          | 0.306          | -0.050   | 0.2806        |                    |
| 180 minute winter              | S15 HB  | Hydro-Brake® | Outfall | 2.0           |                |          |               | 65.3               |

**Results for 100 year Critical Storm Duration. Lowest mass balance: 99.88%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer  | RE2     | 12          | 21.730    | 0.080     | 2.9          | 0.0006        | 0.0000     | OK         |
| 15 minute summer  | S1      | 12          | 21.715    | 0.227     | 5.8          | 0.0361        | 0.0000     | SURCHARGED |
| 15 minute summer  | S2      | 12          | 21.707    | 0.290     | 8.5          | 1.4251        | 0.0000     | SURCHARGED |
| 15 minute summer  | S3      | 12          | 21.695    | 0.409     | 40.1         | 0.1157        | 0.0000     | SURCHARGED |
| 15 minute summer  | S4      | 12          | 21.509    | 0.335     | 38.3         | 0.3791        | 0.0000     | SURCHARGED |
| 15 minute summer  | RE1     | 10          | 22.001    | 0.051     | 2.9          | 0.0004        | 0.0000     | OK         |
| 15 minute summer  | S6      | 12          | 21.961    | 0.096     | 2.9          | 0.0153        | 0.0000     | OK         |
| 15 minute summer  | S7      | 12          | 21.955    | 0.193     | 13.7         | 0.0307        | 0.0000     | SURCHARGED |
| 15 minute summer  | S8      | 12          | 21.838    | 0.233     | 11.9         | 0.0370        | 0.0000     | SURCHARGED |
| 15 minute summer  | S9      | 12          | 21.785    | 0.238     | 18.4         | 0.0379        | 0.0000     | SURCHARGED |
| 15 minute summer  | S10     | 12          | 21.658    | 0.173     | 21.8         | 0.0275        | 0.0000     | SURCHARGED |
| 240 minute winter | S5      | 236         | 21.431    | 0.290     | 13.9         | 0.0820        | 0.0000     | SURCHARGED |
| 240 minute winter | S16     | 236         | 21.431    | 0.334     | 13.7         | 54.8007       | 0.0000     | SURCHARGED |
| 240 minute winter | S12     | 236         | 21.430    | 0.449     | 4.7          | 0.0714        | 0.0000     | SURCHARGED |
| 240 minute winter | S13     | 232         | 21.429    | 0.517     | 3.9          | 0.0822        | 0.0000     | SURCHARGED |
| 240 minute winter | S14     | 232         | 21.427    | 0.640     | 3.3          | 0.1017        | 0.0000     | SURCHARGED |
| 240 minute winter | S18     | 232         | 21.426    | 0.448     | 0.5          | 0.0712        | 0.0000     | SURCHARGED |
| 240 minute winter | S19     | 232         | 21.426    | 0.547     | 0.7          | 0.0869        | 0.0000     | SURCHARGED |
| 240 minute winter | S15 HB  | 232         | 21.426    | 0.692     | 3.0          | 0.7824        | 0.0000     | SURCHARGED |
| 15 minute summer  | Outfall | 1           | 20.637    | 0.000     | 2.0          | 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 summer               | RE2     | 1.000        | S1      | 3.0           | 0.715          | 0.497    | 0.0816        |                    |
| 15 minute summer               | S1      | 1.001        | S2      | 5.0           | 0.687          | 0.366    | 0.2091        |                    |
| 15 minute summer               | S2      | 1.002        | S3      | 13.0          | 0.739          | 0.616    | 0.1637        |                    |
| 15 minute summer               | S3      | 1.003        | S4      | 36.1          | 0.907          | 1.198    | 1.3105        |                    |
| 15 minute summer               | S4      | 1.004        | S5      | 38.5          | 0.968          | 1.281    | 0.3871        |                    |
| 15 minute summer               | RE1     | 2.000        | S6      | 2.9           | 0.723          | 0.487    | 0.0464        |                    |
| 15 minute summer               | S6      | 2.001        | S7      | 4.0           | 0.314          | 0.159    | 0.0756        |                    |
| 15 minute summer               | S7      | 2.002        | S8      | 11.9          | 0.822          | 0.871    | 0.4608        |                    |
| 15 minute summer               | S8      | 2.003        | S9      | 12.0          | 0.684          | 0.885    | 0.1724        |                    |
| 15 minute summer               | S9      | 2.004        | S10     | 17.8          | 1.091          | 1.299    | 0.1822        |                    |
| 15 minute summer               | S10     | 2.005        | S5      | 20.5          | 1.192          | 0.729    | 0.2428        |                    |
| 240 minute winter              | S5      | 1.005        | S16     | 13.7          | 0.867          | 0.290    | 0.2124        |                    |
| 240 minute winter              | S16     | 1.006        | S12     | 4.7           | 0.599          | 0.107    | 0.6392        |                    |
| 240 minute winter              | S12     | 1.007        | S13     | 3.9           | 0.611          | 0.283    | 0.2028        |                    |
| 240 minute winter              | S13     | 1.008        | S14     | 3.3           | 0.541          | 0.241    | 0.3655        |                    |
| 240 minute winter              | S14     | 1.009        | S15 HB  | 3.0           | 0.263          | 0.179    | 0.1062        |                    |
| 240 minute winter              | S18     | 3.000        | S19     | 0.4           | 0.348          | 0.022    | 0.1735        |                    |
| 240 minute winter              | S19     | 3.001        | S15 HB  | -0.7          | 0.306          | -0.040   | 0.2806        |                    |
| 240 minute winter              | S15 HB  | Hydro-Brake® | Outfall | 2.0           |                |          |               | 83.8               |

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.88%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter  | RE2     | 12          | 22.041    | 0.391     | 4.0          | 0.0031        | 0.0000     | FLOOD RISK |
| 15 minute winter  | S1      | 12          | 22.010    | 0.522     | 4.8          | 0.0831        | 0.0000     | FLOOD RISK |
| 15 minute winter  | S2      | 12          | 21.999    | 0.582     | 17.1         | 2.8594        | 0.0000     | SURCHARGED |
| 15 minute winter  | S3      | 12          | 21.987    | 0.701     | 55.7         | 0.1983        | 0.0000     | SURCHARGED |
| 15 minute winter  | S4      | 12          | 21.661    | 0.487     | 50.8         | 0.5508        | 0.0000     | SURCHARGED |
| 15 minute summer  | RE1     | 12          | 22.312    | 0.362     | 4.0          | 0.0029        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S6      | 12          | 22.293    | 0.429     | 3.9          | 0.0683        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S7      | 12          | 22.292    | 0.530     | 15.9         | 0.0842        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S8      | 12          | 22.121    | 0.516     | 13.2         | 0.0820        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S9      | 12          | 22.052    | 0.505     | 21.2         | 0.0803        | 0.0000     | SURCHARGED |
| 15 minute summer  | S10     | 12          | 21.865    | 0.380     | 25.2         | 0.0605        | 0.0000     | SURCHARGED |
| 360 minute winter | S5      | 344         | 21.603    | 0.462     | 13.9         | 0.1308        | 0.0000     | SURCHARGED |
| 360 minute winter | S16     | 352         | 21.603    | 0.506     | 13.8         | 83.2086       | 0.0000     | SURCHARGED |
| 360 minute winter | S12     | 352         | 21.603    | 0.622     | 3.8          | 0.0989        | 0.0000     | SURCHARGED |
| 360 minute winter | S13     | 344         | 21.601    | 0.689     | 3.1          | 0.1096        | 0.0000     | SURCHARGED |
| 360 minute winter | S14     | 344         | 21.598    | 0.811     | 2.8          | 0.1290        | 0.0000     | SURCHARGED |
| 360 minute winter | S18     | 344         | 21.597    | 0.619     | 0.5          | 0.0985        | 0.0000     | FLOOD RISK |
| 360 minute winter | S19     | 344         | 21.597    | 0.718     | 0.4          | 0.1142        | 0.0000     | FLOOD RISK |
| 360 minute winter | S15 HB  | 344         | 21.597    | 0.863     | 2.6          | 0.9766        | 0.0000     | SURCHARGED |
| 15 minute summer  | Outfall | 1           | 20.637    | 0.000     | 2.0          | 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               | RE2     | 1.000        | S1      | 3.4           | 0.733          | 0.563    | 0.0877        |                    |
| 15 minute winter               | S1      | 1.001        | S2      | 6.3           | 0.720          | 0.461    | 0.2091        |                    |
| 15 minute winter               | S2      | 1.002        | S3      | 16.5          | 0.936          | 0.780    | 0.1637        |                    |
| 15 minute winter               | S3      | 1.003        | S4      | 47.7          | 1.198          | 1.584    | 1.3105        |                    |
| 15 minute winter               | S4      | 1.004        | S5      | 50.8          | 1.277          | 1.689    | 0.3871        |                    |
| 15 minute summer               | RE1     | 2.000        | S6      | 3.9           | 0.707          | 0.653    | 0.0671        |                    |
| 15 minute summer               | S6      | 2.001        | S7      | 6.0           | 0.339          | 0.237    | 0.0900        |                    |
| 15 minute summer               | S7      | 2.002        | S8      | 13.2          | 0.842          | 0.964    | 0.4608        |                    |
| 15 minute summer               | S8      | 2.003        | S9      | 14.6          | 0.831          | 1.074    | 0.1724        |                    |
| 15 minute summer               | S9      | 2.004        | S10     | 20.7          | 1.175          | 1.511    | 0.1822        |                    |
| 15 minute summer               | S10     | 2.005        | S5      | 24.9          | 1.416          | 0.885    | 0.2428        |                    |
| 360 minute winter              | S5      | 1.005        | S16     | 13.8          | 0.788          | 0.292    | 0.2124        |                    |
| 360 minute winter              | S16     | 1.006        | S12     | 3.8           | 0.566          | 0.087    | 0.6392        |                    |
| 360 minute winter              | S12     | 1.007        | S13     | 3.1           | 0.582          | 0.229    | 0.2028        |                    |
| 360 minute winter              | S13     | 1.008        | S14     | 2.8           | 0.529          | 0.206    | 0.3655        |                    |
| 360 minute winter              | S14     | 1.009        | S15 HB  | 2.6           | 0.262          | 0.157    | 0.1062        |                    |
| 360 minute winter              | S18     | 3.000        | S19     | 0.4           | 0.278          | 0.024    | 0.1735        |                    |
| 360 minute winter              | S19     | 3.001        | S15 HB  | 0.4           | 0.328          | 0.025    | 0.2806        |                    |
| 360 minute winter              | S15 HB  | Hydro-Brake® | Outfall | 2.0           |                |          |               | 129.5              |

**Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.88%**

| Node Event        | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|-------------------|---------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute winter  | RE2     | 12          | 22.081    | 0.431     | 4.1          | 0.0035        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S1      | 12          | 22.050    | 0.562     | 5.6          | 0.0893        | 0.0000     | FLOOD RISK |
| 15 minute winter  | S2      | 12          | 22.039    | 0.622     | 16.9         | 3.0516        | 0.0000     | SURCHARGED |
| 15 minute summer  | S3      | 12          | 22.026    | 0.740     | 58.0         | 0.2095        | 0.0000     | SURCHARGED |
| 15 minute summer  | S4      | 12          | 21.681    | 0.507     | 52.3         | 0.5735        | 0.0000     | SURCHARGED |
| 15 minute summer  | RE1     | 12          | 22.362    | 0.412     | 4.1          | 0.0033        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S6      | 12          | 22.342    | 0.478     | 4.0          | 0.0761        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S7      | 12          | 22.341    | 0.579     | 15.8         | 0.0920        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S8      | 12          | 22.162    | 0.557     | 13.5         | 0.0885        | 0.0000     | FLOOD RISK |
| 15 minute summer  | S9      | 12          | 22.090    | 0.543     | 21.7         | 0.0863        | 0.0000     | SURCHARGED |
| 15 minute summer  | S10     | 12          | 21.895    | 0.410     | 25.8         | 0.0652        | 0.0000     | SURCHARGED |
| 360 minute winter | S5      | 352         | 21.630    | 0.489     | 14.5         | 0.1385        | 0.0000     | SURCHARGED |
| 360 minute winter | S16     | 352         | 21.630    | 0.533     | 14.4         | 87.6478       | 0.0000     | SURCHARGED |
| 360 minute winter | S12     | 352         | 21.630    | 0.649     | 3.5          | 0.1032        | 0.0000     | SURCHARGED |
| 360 minute winter | S13     | 344         | 21.628    | 0.716     | 3.0          | 0.1139        | 0.0000     | SURCHARGED |
| 360 minute winter | S14     | 344         | 21.625    | 0.838     | 2.6          | 0.1333        | 0.0000     | SURCHARGED |
| 360 minute winter | S18     | 344         | 21.624    | 0.646     | 0.5          | 0.1028        | 0.0000     | FLOOD RISK |
| 360 minute winter | S19     | 344         | 21.624    | 0.745     | 0.4          | 0.1185        | 0.0000     | FLOOD RISK |
| 360 minute winter | S15 HB  | 344         | 21.624    | 0.890     | 2.5          | 1.0069        | 0.0000     | SURCHARGED |
| 15 minute summer  | Outfall | 1           | 20.637    | 0.000     | 2.0          | 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               | RE2     | 1.000        | S1      | 3.5           | 0.740          | 0.575    | 0.0877        |                    |
| 15 minute summer               | S1      | 1.001        | S2      | 6.5           | 0.713          | 0.478    | 0.2091        |                    |
| 15 minute winter               | S2      | 1.002        | S3      | 17.0          | 0.968          | 0.807    | 0.1637        |                    |
| 15 minute summer               | S3      | 1.003        | S4      | 49.0          | 1.232          | 1.628    | 1.3105        |                    |
| 15 minute summer               | S4      | 1.004        | S5      | 52.2          | 1.313          | 1.737    | 0.3871        |                    |
| 15 minute summer               | RE1     | 2.000        | S6      | 4.0           | 0.717          | 0.671    | 0.0671        |                    |
| 15 minute summer               | S6      | 2.001        | S7      | 6.1           | 0.466          | 0.243    | 0.0900        |                    |
| 15 minute summer               | S7      | 2.002        | S8      | 13.5          | 0.845          | 0.987    | 0.4608        |                    |
| 15 minute summer               | S8      | 2.003        | S9      | 15.0          | 0.853          | 1.102    | 0.1724        |                    |
| 15 minute summer               | S9      | 2.004        | S10     | 21.2          | 1.202          | 1.545    | 0.1822        |                    |
| 15 minute summer               | S10     | 2.005        | S5      | 25.5          | 1.451          | 0.907    | 0.2428        |                    |
| 360 minute winter              | S5      | 1.005        | S16     | 14.4          | 0.773          | 0.306    | 0.2124        |                    |
| 360 minute winter              | S16     | 1.006        | S12     | 3.5           | 0.553          | 0.079    | 0.6392        |                    |
| 360 minute winter              | S12     | 1.007        | S13     | 3.0           | 0.590          | 0.218    | 0.2028        |                    |
| 360 minute winter              | S13     | 1.008        | S14     | 2.6           | 0.532          | 0.192    | 0.3655        |                    |
| 360 minute winter              | S14     | 1.009        | S15 HB  | 2.5           | 0.262          | 0.149    | 0.1062        |                    |
| 360 minute winter              | S18     | 3.000        | S19     | 0.4           | 0.278          | 0.024    | 0.1735        |                    |
| 360 minute winter              | S19     | 3.001        | S15 HB  | 0.4           | 0.328          | 0.024    | 0.2806        |                    |
| 360 minute winter              | S15 HB  | Hydro-Brake® | Outfall | 2.0           |                |          |               | 134.8              |