



Design Settings

| | | | |
|-----------------------|----------------------|--------------------------------------|---------------|
| Rainfall Methodology | FSR | Maximum Time of Concentration (mins) | 5.00 |
| Return Period (years) | 2 | Maximum Rainfall (mm/hr) | 50.0 |
| Additional Flow (%) | 0 | Minimum Velocity (m/s) | 1.00 |
| FSR Region | Scotland and Ireland | Connection Type | Level Soffits |
| M5-60 (mm) | 14.000 | Minimum Backdrop Height (m) | 1.000 |
| Ratio-R | 0.300 | Preferred Cover Depth (m) | 1.200 |
| CV | 0.750 | Include Intermediate Ground | ✓ |
| Time of Entry (mins) | 5.00 | Enforce best practice design rules | ✓ |

Nodes

| Name | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easting (m) | Northing (m) | Depth (m) |
|------|-----------|---------------|-----------------|---------------|-------------|--------------|-----------|
| S1 | | 5.00 | 24.068 | 50 | 722103.049 | 754981.142 | 0.908 |
| S2 | | | 23.017 | 50 | 721963.510 | 755031.706 | 0.787 |
| S3 | | | 22.916 | 50 | 721959.249 | 755019.946 | 0.766 |
| S9 | | | 22.871 | 50 | 721940.943 | 755008.236 | 0.871 |
| S4 | | | 22.757 | 50 | 721928.923 | 754988.631 | 0.897 |
| S5 | | | 22.695 | 50 | 721926.863 | 754966.629 | 0.965 |
| S6 | | | 22.565 | 50 | 721932.931 | 754948.555 | 0.965 |
| S12 | | 5.00 | 23.632 | 50 | 722098.895 | 754969.206 | 0.902 |
| S21 | | | 23.380 | 50 | 722105.294 | 754949.310 | 0.840 |
| S19 | | | 22.880 | 50 | 722103.031 | 754928.568 | 0.520 |
| S20 | | | 22.490 | 50 | 722091.959 | 754910.090 | 0.320 |
| S13 | | | 22.244 | 50 | 722072.750 | 754897.509 | 0.264 |
| S14 | 0.014 | 5.00 | 22.101 | 450 | 722068.489 | 754885.749 | 0.231 |
| S15 | | 5.00 | 22.183 | 50 | 722079.765 | 754876.186 | 0.523 |
| S16 | | | 22.402 | 50 | 722031.523 | 754893.807 | 0.912 |
| S18 | | | 22.430 | 450 | 722031.516 | 754898.914 | 0.950 |
| PS1 | | 5.00 | 23.361 | 180 | 722084.151 | 754975.016 | 0.791 |
| PS2 | | | 23.117 | 180 | 722069.928 | 754983.699 | 0.637 |
| PS3 | | | 22.840 | 180 | 721990.587 | 755012.449 | 0.740 |
| PS4 | | | 22.870 | 180 | 721957.168 | 755010.617 | 0.910 |
| PS5 | | | 22.774 | 180 | 721938.882 | 754991.759 | 0.934 |
| PS7 | | | 22.660 | 180 | 721934.537 | 754967.545 | 0.940 |
| PS16 | | 5.00 | 23.381 | 180 | 722085.315 | 754973.936 | 0.901 |
| PS23 | | | 23.363 | 180 | 722093.105 | 754963.103 | 0.943 |
| PS17 | | | 23.287 | 180 | 722097.114 | 754950.152 | 0.917 |
| PS18 | | | 22.935 | 180 | 722095.521 | 754931.427 | 0.645 |
| PS19 | | | 22.546 | 180 | 722085.420 | 754915.188 | 0.336 |
| PS22 | | | 22.301 | 180 | 722070.916 | 754905.362 | 0.161 |
| PS20 | | | 22.356 | 180 | 722052.476 | 754902.523 | 0.296 |
| PS21 | | | 22.219 | 180 | 721962.071 | 754933.757 | 0.549 |
| PS24 | | 5.00 | 23.153 | 180 | 722078.287 | 754972.844 | 0.903 |
| PS25 | | | 23.198 | 180 | 722087.796 | 754961.364 | 1.000 |
| PS26 | | | 23.181 | 180 | 722091.839 | 754948.691 | 1.021 |
| PS27 | | | 22.860 | 180 | 722090.028 | 754932.446 | 0.760 |
| PS28 | | | 22.610 | 180 | 722081.795 | 754919.178 | 0.550 |
| PS29 | | | 22.371 | 180 | 722069.022 | 754910.498 | 0.381 |
| PS30 | | | 22.446 | 180 | 722054.108 | 754908.086 | 0.506 |
| PS8 | | 5.00 | 23.147 | 180 | 722077.656 | 754973.247 | 0.897 |
| PS9 | | | 23.091 | 180 | 722069.786 | 754977.958 | 0.871 |
| PS10 | | | 22.792 | 180 | 721988.713 | 755007.278 | 0.862 |
| PS11 | | | 22.810 | 180 | 721977.752 | 755009.425 | 0.920 |



Nodes

| Name | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easting (m) | Northing (m) | Depth (m) |
|------|-----------|---------------|-----------------|---------------|-------------|--------------|-----------|
| PS12 | | | 22.757 | 180 | 721943.916 | 754989.838 | 1.000 |
| PS13 | | | 22.647 | 180 | 721940.324 | 754968.283 | 0.947 |
| PS15 | | 5.00 | 22.808 | 180 | 721977.631 | 755008.975 | 0.898 |
| PS14 | | | 22.375 | 180 | 721954.153 | 754944.301 | 0.745 |
| PS6 | | | 22.397 | 180 | 721947.987 | 754942.332 | 0.797 |
| S10 | | 5.00 | 23.036 | 50 | 721934.466 | 755042.490 | 1.350 |
| S22 | 0.009 | 5.00 | 22.759 | 50 | 721912.845 | 754983.317 | 1.395 |
| S11 | 0.044 | 5.00 | 22.521 | 50 | 721899.836 | 754947.712 | 1.350 |
| S7 | 0.032 | 5.00 | 22.416 | 1500 | 721928.135 | 754935.724 | 1.326 |
| S8 | | | 21.500 | 50 | 721919.148 | 754911.169 | 0.541 |

Links (Input)

| 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 | S1 | S2 | 148.417 | 0.600 | 23.160 | 22.230 | 0.930 | 159.6 | 150 | 5.00 | 44.0 |
| 1.001 | S2 | S3 | 12.508 | 0.600 | 22.230 | 22.150 | 0.080 | 156.4 | 150 | 5.00 | 44.0 |
| 1.002 | S3 | S9 | 21.731 | 0.600 | 22.150 | 22.000 | 0.150 | 144.9 | 150 | 5.00 | 44.0 |
| 1.003 | S9 | S4 | 22.997 | 0.600 | 22.000 | 21.860 | 0.140 | 164.3 | 150 | 5.00 | 44.0 |
| 1.004 | S4 | S5 | 22.098 | 0.600 | 21.860 | 21.730 | 0.130 | 170.0 | 150 | 5.00 | 44.0 |
| 1.005 | S5 | S6 | 19.066 | 0.600 | 21.730 | 21.600 | 0.130 | 146.7 | 150 | 5.00 | 44.0 |
| 1.006 | S6 | S7 | 13.697 | 0.600 | 21.600 | 21.090 | 0.510 | 26.9 | 150 | 5.00 | 44.0 |
| 2.000 | S12 | S21 | 20.899 | 0.600 | 22.730 | 22.540 | 0.190 | 110.0 | 150 | 5.00 | 44.0 |
| 2.001 | S21 | S19 | 20.865 | 0.600 | 22.540 | 22.360 | 0.180 | 115.9 | 150 | 5.00 | 44.0 |
| 2.002 | S19 | S20 | 21.541 | 0.600 | 22.360 | 22.170 | 0.190 | 113.4 | 150 | 5.00 | 44.0 |
| 2.003 | S20 | S13 | 22.962 | 0.600 | 22.170 | 21.980 | 0.190 | 120.9 | 150 | 5.00 | 44.0 |
| 2.004 | S13 | S14 | 12.508 | 0.600 | 21.980 | 21.870 | 0.110 | 113.7 | 150 | 5.00 | 44.0 |
| 2.005 | S14 | S18 | 39.247 | 0.600 | 21.870 | 21.480 | 0.390 | 100.6 | 150 | 5.00 | 44.0 |
| 3.000 | S15 | S16 | 51.359 | 0.600 | 21.660 | 21.490 | 0.170 | 302.1 | 150 | 5.00 | 44.0 |
| 3.001 | S16 | S18 | 5.107 | 0.600 | 21.490 | 21.480 | 0.010 | 510.7 | 150 | 5.00 | 44.0 |
| 2.006 | S18 | S7 | 109.739 | 0.600 | 21.480 | 21.090 | 0.390 | 281.4 | 225 | 5.00 | 44.0 |
| 4.000 | PS1 | PS2 | 16.664 | 0.600 | 22.570 | 22.480 | 0.090 | 185.2 | 100 | 5.00 | 44.0 |
| 4.001 | PS2 | PS3 | 84.390 | 0.600 | 22.480 | 22.100 | 0.380 | 222.1 | 150 | 5.00 | 44.0 |
| 4.002 | PS3 | PS4 | 33.469 | 0.600 | 22.100 | 21.960 | 0.140 | 239.1 | 150 | 5.00 | 44.0 |
| 4.003 | PS4 | PS5 | 26.268 | 0.600 | 21.960 | 21.840 | 0.120 | 218.9 | 150 | 5.00 | 44.0 |
| 4.004 | PS5 | PS7 | 24.601 | 0.600 | 21.840 | 21.720 | 0.120 | 205.0 | 150 | 5.00 | 44.0 |
| 4.005 | PS7 | PS6 | 28.576 | 0.600 | 21.720 | 21.600 | 0.120 | 238.1 | 150 | 5.00 | 44.0 |
| 5.000 | PS16 | PS23 | 13.342 | 0.600 | 22.480 | 22.420 | 0.060 | 222.4 | 100 | 5.00 | 44.0 |
| 5.001 | PS23 | PS17 | 13.557 | 0.600 | 22.420 | 22.370 | 0.050 | 271.1 | 100 | 5.00 | 44.0 |
| 5.002 | PS17 | PS18 | 18.793 | 0.600 | 22.370 | 22.290 | 0.080 | 234.9 | 100 | 5.00 | 44.0 |
| 5.003 | PS18 | PS19 | 19.124 | 0.600 | 22.290 | 22.210 | 0.080 | 239.1 | 100 | 5.00 | 44.0 |
| 5.004 | PS19 | PS22 | 17.520 | 0.600 | 22.210 | 22.140 | 0.070 | 250.3 | 100 | 5.00 | 44.0 |
| 5.005 | PS22 | PS20 | 18.657 | 0.600 | 22.140 | 22.060 | 0.080 | 233.2 | 100 | 5.00 | 44.0 |
| 5.006 | PS20 | PS21 | 95.648 | 0.600 | 22.060 | 21.670 | 0.390 | 245.3 | 150 | 5.00 | 44.0 |
| 5.007 | PS21 | PS6 | 16.490 | 0.600 | 21.670 | 21.600 | 0.070 | 235.6 | 150 | 5.00 | 44.0 |
| 6.000 | PS24 | PS25 | 14.907 | 0.600 | 22.250 | 22.198 | 0.052 | 286.7 | 100 | 5.00 | 44.0 |
| 6.001 | PS25 | PS26 | 13.302 | 0.600 | 22.198 | 22.160 | 0.038 | 350.1 | 100 | 5.00 | 44.0 |
| 6.002 | PS26 | PS27 | 16.345 | 0.600 | 22.160 | 22.100 | 0.060 | 272.4 | 100 | 5.00 | 44.0 |
| 6.003 | PS27 | PS28 | 15.615 | 0.600 | 22.100 | 22.060 | 0.040 | 390.4 | 100 | 5.00 | 44.0 |
| 6.004 | PS28 | PS29 | 15.443 | 0.600 | 22.060 | 21.990 | 0.070 | 220.6 | 100 | 5.00 | 44.0 |
| 6.005 | PS29 | PS30 | 15.108 | 0.600 | 21.990 | 21.940 | 0.050 | 302.2 | 100 | 5.00 | 44.0 |
| 6.006 | PS30 | PS14 | 106.313 | 0.600 | 21.940 | 21.630 | 0.310 | 342.9 | 225 | 5.00 | 44.0 |



Links (Input)

| 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) |
|-------|---------|---------|------------|-------------|-----------|-----------|----------|-------------|----------|---------------|--------------|
| 7.000 | PS8 | PS9 | 9.172 | 0.600 | 22.250 | 22.220 | 0.030 | 305.7 | 100 | 5.00 | 44.0 |
| 7.001 | PS9 | PS10 | 86.212 | 0.600 | 22.220 | 21.930 | 0.290 | 297.3 | 225 | 5.00 | 44.0 |
| 7.002 | PS10 | PS11 | 11.169 | 0.600 | 21.930 | 21.890 | 0.040 | 279.2 | 225 | 5.00 | 44.0 |
| 7.003 | PS11 | PS12 | 39.096 | 0.600 | 21.890 | 21.757 | 0.133 | 294.0 | 225 | 5.00 | 44.0 |
| 7.004 | PS12 | PS13 | 21.853 | 0.600 | 21.757 | 21.700 | 0.057 | 383.4 | 225 | 5.00 | 44.0 |
| 7.005 | PS13 | PS14 | 27.684 | 0.600 | 21.700 | 21.630 | 0.070 | 395.5 | 225 | 5.00 | 44.0 |
| 8.000 | PS15 | PS14 | 68.803 | 0.600 | 21.910 | 21.630 | 0.280 | 245.7 | 300 | 5.00 | 44.0 |
| 6.007 | PS14 | PS6 | 6.473 | 0.600 | 21.630 | 21.600 | 0.030 | 215.8 | 300 | 5.00 | 44.0 |
| 4.006 | PS6 | S7 | 20.923 | 0.600 | 21.600 | 21.140 | 0.460 | 45.5 | 300 | 5.00 | 44.0 |
| 9.000 | S10 | S22 | 63.000 | 0.600 | 21.686 | 21.364 | 0.322 | 195.7 | 150 | 5.00 | 44.0 |
| 9.001 | S22 | S11 | 37.906 | 0.600 | 21.364 | 21.171 | 0.193 | 196.4 | 150 | 5.00 | 44.0 |
| 9.002 | S11 | S7 | 30.733 | 0.600 | 21.171 | 21.090 | 0.081 | 379.4 | 225 | 5.00 | 44.0 |
| 1.007 | S7 | S8 | 26.148 | 0.600 | 21.090 | 20.959 | 0.131 | 199.6 | 150 | 5.00 | 44.0 |

Simulation Settings

| | | | |
|----------------------|----------------------|----------------------------|--------|
| Rainfall Methodology | FSR | Analysis Speed | Normal |
| FSR Region | Scotland and Ireland | Skip Steady State | x |
| M5-60 (mm) | 14.000 | Drain Down Time (mins) | 240 |
| Ratio-R | 0.300 | 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 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440 |
|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|

| Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) |
|-----------------------|-----------------------|-----------------------|-----------------------|
| 2 | 20 | 0 | 0 |
| 30 | 20 | 0 | 0 |
| 100 | 20 | 0 | 0 |

Node S7 Online Hydro-Brake® Control

| | | | |
|--------------------------|--------|-------------------------|--------------------------------|
| Flap Valve | x | Objective | (HE) Minimise upstream storage |
| Replaces Downstream Link | ✓ | Sump Available | ✓ |
| Invert Level (m) | 21.090 | Product Number | CTL-SHE-0131-1000-2000-1000 |
| Design Depth (m) | 2.000 | Min Outlet Diameter (m) | 0.150 |
| Design Flow (l/s) | 10.0 | Min Node Diameter (mm) | 1500 |

Node S18 Carpark Storage Structure

| | | | | | |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m) | 21.480 | Slope (1:X) | 300.0 |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | | Depth (m) | 0.450 |
| Safety Factor | 2.0 | Width (m) | 10.000 | Inf Depth (m) | |
| Porosity | 0.30 | Length (m) | 50.000 | | |

Node S14 Carpark Storage Structure

| | | | | | |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m) | 21.870 | Slope (1:X) | 300.0 |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 96 | Depth (m) | 0.450 |
| Safety Factor | 2.0 | Width (m) | 20.000 | Inf Depth (m) | |
| Porosity | 0.30 | Length (m) | 50.000 | | |



Node S15 Carpark Storage Structure

| | | | | | |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m) | 21.660 | Slope (1:X) | 300.0 |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | | Depth (m) | 0.450 |
| Safety Factor | 2.0 | Width (m) | 10.000 | Inf Depth (m) | |
| Porosity | 0.30 | Length (m) | 50.000 | | |

Node PS21 Carpark Storage Structure

| | | | | | |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m) | 21.670 | Slope (1:X) | 300.0 |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 224 | Depth (m) | 0.450 |
| Safety Factor | 2.0 | Width (m) | 20.000 | Inf Depth (m) | |
| Porosity | 0.30 | Length (m) | 50.000 | | |

Node PS14 Carpark Storage Structure

| | | | | | |
|-----------------------------|---------|---------------------------|--------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m) | 21.630 | Slope (1:X) | 300.0 |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 197 | Depth (m) | 0.450 |
| Safety Factor | 2.0 | Width (m) | 20.000 | Inf Depth (m) | |
| Porosity | 0.30 | Length (m) | 36.000 | | |



Results for 2 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|-------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 15 minute summer | S1 | 1 | 23.160 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 1.000:50% | 11 | 22.786 | 0.091 | 10.1 | 0.0000 | 0.0000 | OK |
| 15 minute winter | S2 | 12 | 22.324 | 0.094 | 9.5 | 0.0002 | 0.0000 | OK |
| 15 minute winter | S3 | 12 | 22.239 | 0.089 | 9.2 | 0.0002 | 0.0000 | OK |
| 15 minute winter | S9 | 13 | 22.092 | 0.092 | 9.2 | 0.0002 | 0.0000 | OK |
| 15 minute winter | S4 | 13 | 21.951 | 0.091 | 9.1 | 0.0002 | 0.0000 | OK |
| 15 minute winter | S5 | 15 | 21.867 | 0.137 | 9.3 | 0.0003 | 0.0000 | OK |
| 30 minute winter | S6 | 24 | 21.839 | 0.239 | 7.6 | 0.0005 | 0.0000 | SURCHARGED |
| 15 minute summer | S12 | 1 | 22.730 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S21 | 1 | 22.540 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S19 | 1 | 22.360 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S20 | 1 | 22.170 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S13 | 1 | 21.980 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 30 minute winter | S14 | 22 | 21.894 | 0.024 | 1.6 | 0.5344 | 0.0000 | OK |
| 180 minute winter | S15 | 156 | 21.804 | 0.144 | 3.6 | 9.2831 | 0.0000 | OK |
| 180 minute winter | 3.000:50% | 156 | 21.803 | 0.228 | 3.7 | 0.0000 | 0.0000 | SURCHARGED |
| 180 minute winter | S16 | 148 | 21.803 | 0.313 | 2.8 | 0.0006 | 0.0000 | SURCHARGED |
| 180 minute winter | S18 | 148 | 21.803 | 0.323 | 15.8 | 36.0305 | 0.0000 | SURCHARGED |
| 180 minute winter | 2.006:50% | 144 | 21.803 | 0.518 | 14.8 | 0.0000 | 0.0000 | SURCHARGED |
| 15 minute summer | PS1 | 1 | 22.570 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS2 | 1 | 22.480 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 4.001:50% | 11 | 22.391 | 0.101 | 9.8 | 0.0000 | 0.0000 | OK |
| 15 minute winter | PS3 | 12 | 22.205 | 0.105 | 9.5 | 0.0026 | 0.0000 | OK |
| 15 minute winter | PS4 | 12 | 22.062 | 0.102 | 9.2 | 0.0025 | 0.0000 | OK |
| 15 minute winter | PS5 | 13 | 21.938 | 0.098 | 9.0 | 0.0024 | 0.0000 | OK |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|-------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute summer | S1 | 1.000 | 1.000:50% | 0.0 | 0.000 | 0.000 | 0.4014 | |
| 15 minute winter | S1 | 1.000 | S2 | 9.5 | 0.856 | 0.681 | 0.8302 | |
| 15 minute winter | S2 | 1.001 | S3 | 9.2 | 0.821 | 0.652 | 0.1406 | |
| 15 minute winter | S3 | 1.002 | S9 | 9.2 | 0.831 | 0.623 | 0.2397 | |
| 15 minute winter | S9 | 1.003 | S4 | 9.1 | 0.812 | 0.661 | 0.2584 | |
| 15 minute winter | S4 | 1.004 | S5 | 9.3 | 0.770 | 0.683 | 0.2978 | |
| 15 minute winter | S5 | 1.005 | S6 | 8.5 | 0.940 | 0.583 | 0.3287 | |
| 15 minute winter | S6 | 1.006 | S7 | 8.4 | 0.475 | 0.243 | 0.2411 | |
| 15 minute summer | S12 | 2.000 | S21 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S21 | 2.001 | S19 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S19 | 2.002 | S20 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S20 | 2.003 | S13 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S13 | 2.004 | S14 | 0.0 | 0.000 | 0.000 | 0.0098 | |
| 30 minute winter | S14 | 2.005 | S18 | 0.9 | 0.257 | 0.054 | 0.3794 | |
| 120 minute winter | S15 | 3.000 | 3.000:50% | -4.0 | -0.259 | -0.391 | 0.4484 | |
| 15 minute winter | S15 | 3.000 | S16 | 5.6 | 0.605 | 0.552 | 0.4491 | |
| 15 minute winter | S16 | 3.001 | S18 | 5.6 | 0.922 | 0.719 | 0.0899 | |
| 30 minute winter | S18 | 2.006 | 2.006:50% | -22.6 | -0.669 | -0.735 | 2.1822 | |
| 15 minute summer | S18 | 2.006 | S7 | -21.6 | -0.544 | -0.702 | 2.1822 | |
| 15 minute summer | PS1 | 4.000 | PS2 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS2 | 4.001 | 4.001:50% | 0.0 | 0.000 | 0.000 | 0.2575 | |
| 15 minute winter | PS2 | 4.001 | PS3 | 9.5 | 0.743 | 0.803 | 0.5444 | |
| 15 minute winter | PS3 | 4.002 | PS4 | 9.2 | 0.719 | 0.807 | 0.4328 | |
| 15 minute winter | PS4 | 4.003 | PS5 | 9.0 | 0.734 | 0.756 | 0.3231 | |
| 15 minute winter | PS5 | 4.004 | PS7 | 9.1 | 0.744 | 0.739 | 0.3258 | |



Results for 2 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|-------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|--------|
| 30 minute winter | PS7 | 23 | 21.849 | 0.129 | 7.6 | 0.0032 | 0.0000 | OK |
| 15 minute summer | PS16 | 1 | 22.480 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS23 | 1 | 22.420 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS17 | 1 | 22.370 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS18 | 1 | 22.290 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS19 | 1 | 22.210 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS22 | 1 | 22.140 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS20 | 1 | 22.060 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 5.006:50% | 12 | 21.967 | 0.102 | 9.8 | 0.6202 | 0.0000 | OK |
| 120 minute winter | PS21 | 96 | 21.810 | 0.140 | 9.5 | 17.6205 | 0.0000 | OK |
| 15 minute summer | PS24 | 1 | 22.250 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS25 | 1 | 22.198 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS26 | 1 | 22.160 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS27 | 1 | 22.100 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS28 | 1 | 22.060 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS29 | 1 | 21.990 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS30 | 1 | 21.940 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 6.006:50% | 11 | 21.913 | 0.128 | 17.5 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS8 | 1 | 22.250 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS9 | 1 | 22.220 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 7.001:50% | 11 | 22.195 | 0.120 | 17.5 | 0.4127 | 0.0000 | OK |
| 15 minute winter | PS10 | 12 | 22.056 | 0.126 | 16.7 | 0.0031 | 0.0000 | OK |
| 15 minute winter | PS11 | 12 | 22.009 | 0.119 | 16.3 | 0.0030 | 0.0000 | OK |
| 15 minute winter | PS12 | 13 | 21.890 | 0.133 | 16.4 | 0.0033 | 0.0000 | OK |
| 60 minute winter | PS13 | 44 | 21.835 | 0.135 | 9.6 | 0.0034 | 0.0000 | OK |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|-------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute winter | PS7 | 4.005 | PS6 | 8.1 | 0.595 | 0.712 | 0.4722 | |
| 15 minute summer | PS16 | 5.000 | PS23 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS23 | 5.001 | PS17 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS17 | 5.002 | PS18 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS18 | 5.003 | PS19 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS19 | 5.004 | PS22 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS22 | 5.005 | PS20 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS20 | 5.006 | 5.006:50% | 0.0 | 0.000 | 0.000 | 0.2966 | |
| 15 minute winter | PS20 | 5.006 | PS21 | 8.3 | 0.998 | 0.738 | 0.4216 | |
| 30 minute winter | PS21 | 5.007 | PS6 | -9.1 | -0.572 | -0.793 | 0.2709 | |
| 15 minute summer | PS24 | 6.000 | PS25 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS25 | 6.001 | PS26 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS26 | 6.002 | PS27 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS27 | 6.003 | PS28 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS28 | 6.004 | PS29 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS29 | 6.005 | PS30 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS30 | 6.006 | 6.006:50% | 0.0 | 0.000 | 0.000 | 0.5992 | |
| 15 minute winter | PS30 | 6.006 | PS14 | 17.0 | 0.782 | 0.609 | 1.2473 | |
| 15 minute summer | PS8 | 7.000 | PS9 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS9 | 7.001 | 7.001:50% | 0.0 | 0.000 | 0.000 | 0.4467 | |
| 15 minute winter | PS9 | 7.001 | PS10 | 16.7 | 0.758 | 0.556 | 0.9473 | |
| 15 minute winter | PS10 | 7.002 | PS11 | 16.3 | 0.741 | 0.527 | 0.2468 | |
| 15 minute winter | PS11 | 7.003 | PS12 | 16.4 | 0.726 | 0.545 | 0.8835 | |
| 15 minute winter | PS12 | 7.004 | PS13 | 16.0 | 0.671 | 0.609 | 0.5301 | |
| 15 minute winter | PS13 | 7.005 | PS14 | 15.6 | 0.599 | 0.604 | 0.7633 | |



Results for 2 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 15 minute winter | PS15 | 10 | 21.963 | 0.053 | 2.6 | 0.0013 | 0.0000 | OK |
| 15 minute winter | 8.000:50% | 11 | 21.961 | 0.191 | 55.2 | 1.1095 | 0.0000 | OK |
| 60 minute winter | PS14 | 45 | 21.833 | 0.203 | 48.7 | 30.8704 | 0.0000 | OK |
| 60 minute winter | PS6 | 45 | 21.828 | 0.228 | 24.4 | 0.0057 | 0.0000 | OK |
| 30 minute winter | S10 | 24 | 21.866 | 0.180 | 4.4 | 0.0004 | 0.0000 | SURCHARGED |
| 60 minute winter | 9.000:50% | 41 | 21.857 | 0.332 | 7.3 | 2.0016 | 0.0000 | SURCHARGED |
| 60 minute winter | S22 | 42 | 21.843 | 0.479 | 6.0 | 0.0628 | 0.0000 | SURCHARGED |
| 60 minute winter | S11 | 44 | 21.826 | 0.655 | 7.3 | 0.4285 | 0.0000 | SURCHARGED |
| 60 minute winter | S7 | 45 | 21.824 | 0.734 | 27.0 | 1.6504 | 0.0000 | SURCHARGED |
| 15 minute summer | S8 | 1 | 20.959 | 0.000 | 9.8 | 0.0000 | 0.0000 | OK |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|--------------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute winter | PS15 | 8.000 | 8.000:50% | -2.6 | -0.126 | -0.037 | 0.9522 | |
| 15 minute winter | PS15 | 8.000 | PS14 | 53.3 | 1.493 | 0.756 | 1.2856 | |
| 15 minute winter | PS14 | 6.007 | PS6 | 25.5 | 1.134 | 0.339 | 0.3042 | |
| 15 minute winter | PS6 | 4.006 | S7 | 29.8 | 0.766 | 0.181 | 1.2629 | |
| 30 minute winter | S10 | 9.000 | 9.000:50% | -4.4 | -0.275 | -0.346 | 0.5546 | |
| 15 minute winter | S10 | 9.000 | S22 | 10.3 | 0.769 | 0.813 | 0.5546 | |
| 15 minute winter | S22 | 9.001 | S11 | 8.4 | 0.627 | 0.663 | 0.6673 | |
| 15 minute summer | S11 | 9.002 | S7 | 9.5 | 0.379 | 0.358 | 1.2223 | |
| 15 minute summer | S7 | Hydro-Brake® | S8 | 9.8 | | | | 65.7 |



Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|-------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 15 minute summer | S1 | 1 | 23.160 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 1.000:50% | 12 | 22.900 | 0.205 | 18.4 | 0.0000 | 0.0000 | SURCHARGED |
| 15 minute winter | S2 | 15 | 22.454 | 0.224 | 15.1 | 0.0004 | 0.0000 | SURCHARGED |
| 15 minute winter | S3 | 15 | 22.389 | 0.239 | 14.5 | 0.0005 | 0.0000 | SURCHARGED |
| 15 minute winter | S9 | 15 | 22.280 | 0.280 | 14.0 | 0.0006 | 0.0000 | SURCHARGED |
| 30 minute winter | S4 | 24 | 22.180 | 0.320 | 12.4 | 0.0006 | 0.0000 | SURCHARGED |
| 30 minute winter | S5 | 24 | 22.099 | 0.369 | 10.3 | 0.0007 | 0.0000 | SURCHARGED |
| 30 minute winter | S6 | 26 | 22.034 | 0.434 | 10.6 | 0.0009 | 0.0000 | SURCHARGED |
| 15 minute summer | S12 | 1 | 22.730 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S21 | 1 | 22.540 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S19 | 1 | 22.360 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S20 | 1 | 22.170 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S13 | 1 | 21.980 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 240 minute winter | S14 | 232 | 21.958 | 0.087 | 3.3 | 7.0027 | 0.0000 | OK |
| 240 minute winter | S15 | 232 | 21.958 | 0.298 | 6.4 | 32.1496 | 0.0000 | SURCHARGED |
| 240 minute winter | 3.000:50% | 232 | 21.958 | 0.383 | 6.4 | 0.0000 | 0.0000 | SURCHARGED |
| 240 minute winter | S16 | 232 | 21.957 | 0.467 | 5.1 | 0.0009 | 0.0000 | SURCHARGED |
| 240 minute winter | S18 | 232 | 21.957 | 0.477 | 14.7 | 55.1342 | 0.0000 | SURCHARGED |
| 180 minute winter | 2.006:50% | 132 | 21.970 | 0.685 | 16.6 | 0.0000 | 0.0000 | SURCHARGED |
| 15 minute summer | PS1 | 1 | 22.570 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | PS2 | 12 | 22.557 | 0.077 | 3.4 | 0.0019 | 0.0000 | OK |
| 15 minute winter | 4.001:50% | 11 | 22.551 | 0.261 | 17.8 | 0.0000 | 0.0000 | SURCHARGED |
| 15 minute winter | PS3 | 14 | 22.356 | 0.256 | 13.7 | 0.0064 | 0.0000 | SURCHARGED |
| 30 minute winter | PS4 | 23 | 22.225 | 0.265 | 12.3 | 0.0066 | 0.0000 | SURCHARGED |
| 30 minute winter | PS5 | 25 | 22.140 | 0.300 | 12.0 | 0.0075 | 0.0000 | SURCHARGED |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|-------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute summer | S1 | 1.000 | 1.000:50% | 0.0 | 0.000 | 0.000 | 0.6532 | |
| 15 minute summer | S1 | 1.000 | S2 | 15.2 | 0.928 | 1.086 | 1.2911 | |
| 15 minute winter | S2 | 1.001 | S3 | 14.5 | 0.879 | 1.025 | 0.2202 | |
| 15 minute summer | S3 | 1.002 | S9 | 14.4 | 0.893 | 0.979 | 0.3826 | |
| 15 minute winter | S9 | 1.003 | S4 | 13.3 | 0.850 | 0.967 | 0.4049 | |
| 15 minute winter | S4 | 1.004 | S5 | 11.0 | 0.780 | 0.813 | 0.3890 | |
| 15 minute winter | S5 | 1.005 | S6 | 10.8 | 0.908 | 0.739 | 0.3357 | |
| 15 minute winter | S6 | 1.006 | S7 | 10.7 | 0.609 | 0.311 | 0.2411 | |
| 15 minute summer | S12 | 2.000 | S21 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S21 | 2.001 | S19 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S19 | 2.002 | S20 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S20 | 2.003 | S13 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S13 | 2.004 | S14 | 0.0 | 0.000 | 0.000 | 0.0153 | |
| 180 minute winter | S14 | 2.005 | S18 | -3.4 | -0.247 | -0.194 | 0.5509 | |
| 120 minute winter | S15 | 3.000 | 3.000:50% | -7.4 | -0.422 | -0.727 | 0.4521 | |
| 15 minute winter | S15 | 3.000 | S16 | 9.2 | 0.685 | 0.904 | 0.4521 | |
| 15 minute winter | S16 | 3.001 | S18 | 8.5 | 1.069 | 1.104 | 0.0899 | |
| 30 minute winter | S18 | 2.006 | 2.006:50% | -30.5 | -0.792 | -0.992 | 2.1822 | |
| 15 minute winter | S18 | 2.006 | S7 | -24.6 | -0.619 | -0.799 | 2.1822 | |
| 15 minute summer | PS1 | 4.000 | PS2 | 0.0 | 0.000 | 0.000 | 0.0363 | |
| 15 minute winter | PS2 | 4.001 | 4.001:50% | -3.4 | -0.263 | -0.289 | 0.5649 | |
| 15 minute winter | PS2 | 4.001 | PS3 | 13.7 | 0.781 | 1.161 | 0.7428 | |
| 15 minute winter | PS3 | 4.002 | PS4 | 12.9 | 0.754 | 1.130 | 0.5892 | |
| 15 minute winter | PS4 | 4.003 | PS5 | 12.6 | 0.772 | 1.053 | 0.4624 | |
| 15 minute summer | PS5 | 4.004 | PS7 | 11.5 | 0.780 | 0.935 | 0.4331 | |



Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|-------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 30 minute winter | PS7 | 25 | 22.069 | 0.349 | 10.4 | 0.0087 | 0.0000 | SURCHARGED |
| 15 minute summer | PS16 | 1 | 22.480 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS23 | 1 | 22.420 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS17 | 1 | 22.370 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS18 | 1 | 22.290 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS19 | 1 | 22.210 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS22 | 1 | 22.140 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS20 | 1 | 22.060 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 5.006:50% | 12 | 22.031 | 0.166 | 17.9 | 1.6255 | 0.0000 | SURCHARGED |
| 180 minute winter | PS21 | 176 | 21.959 | 0.289 | 16.7 | 61.8080 | 0.0000 | SURCHARGED |
| 15 minute summer | PS24 | 1 | 22.250 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS25 | 1 | 22.198 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS26 | 1 | 22.160 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS27 | 1 | 22.100 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS28 | 1 | 22.060 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 60 minute winter | PS29 | 45 | 22.031 | 0.041 | 0.5 | 0.0010 | 0.0000 | OK |
| 60 minute winter | PS30 | 46 | 22.031 | 0.091 | 2.1 | 0.0023 | 0.0000 | OK |
| 60 minute winter | 6.006:50% | 46 | 22.031 | 0.246 | 17.8 | 0.0000 | 0.0000 | SURCHARGED |
| 15 minute winter | PS8 | 13 | 22.254 | 0.004 | 0.1 | 0.0001 | 0.0000 | OK |
| 15 minute winter | PS9 | 12 | 22.256 | 0.036 | 1.6 | 0.0009 | 0.0000 | OK |
| 15 minute winter | 7.001:50% | 11 | 22.249 | 0.174 | 31.9 | 0.8761 | 0.0000 | OK |
| 15 minute winter | PS10 | 12 | 22.117 | 0.187 | 28.1 | 0.0047 | 0.0000 | OK |
| 30 minute winter | PS11 | 22 | 22.079 | 0.189 | 24.4 | 0.0047 | 0.0000 | OK |
| 30 minute winter | PS12 | 23 | 22.038 | 0.281 | 24.2 | 0.0070 | 0.0000 | SURCHARGED |
| 60 minute winter | PS13 | 46 | 22.031 | 0.331 | 15.5 | 0.0083 | 0.0000 | SURCHARGED |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|-------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute winter | PS7 | 4.005 | PS6 | 9.8 | 0.560 | 0.860 | 0.5031 | |
| 15 minute summer | PS16 | 5.000 | PS23 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS23 | 5.001 | PS17 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS17 | 5.002 | PS18 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS18 | 5.003 | PS19 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS19 | 5.004 | PS22 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS22 | 5.005 | PS20 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS20 | 5.006 | 5.006:50% | 0.0 | 0.000 | 0.000 | 0.4210 | |
| 15 minute winter | PS20 | 5.006 | PS21 | 12.3 | 1.051 | 1.096 | 0.6987 | |
| 30 minute winter | PS21 | 5.007 | PS6 | -17.8 | -1.019 | -1.549 | 0.2903 | |
| 15 minute summer | PS24 | 6.000 | PS25 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS25 | 6.001 | PS26 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS26 | 6.002 | PS27 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS27 | 6.003 | PS28 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS28 | 6.004 | PS29 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 60 minute winter | PS29 | 6.005 | PS30 | -0.5 | -0.126 | -0.139 | 0.0795 | |
| 15 minute winter | PS30 | 6.006 | 6.006:50% | -2.3 | -0.129 | -0.081 | 1.0601 | |
| 15 minute winter | PS30 | 6.006 | PS14 | 28.8 | 0.902 | 1.033 | 1.9579 | |
| 15 minute winter | PS8 | 7.000 | PS9 | -0.1 | -0.069 | -0.022 | 0.0121 | |
| 15 minute winter | PS9 | 7.001 | 7.001:50% | -1.6 | -0.104 | -0.052 | 0.7879 | |
| 15 minute winter | PS9 | 7.001 | PS10 | 28.1 | 0.843 | 0.940 | 1.4580 | |
| 15 minute winter | PS10 | 7.002 | PS11 | 27.7 | 0.820 | 0.896 | 0.3829 | |
| 15 minute winter | PS11 | 7.003 | PS12 | 27.4 | 0.801 | 0.911 | 1.4685 | |
| 15 minute winter | PS12 | 7.004 | PS13 | 25.6 | 0.731 | 0.972 | 0.8691 | |
| 15 minute winter | PS13 | 7.005 | PS14 | 23.0 | 0.630 | 0.888 | 1.1010 | |



Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 15 minute winter | PS15 | 12 | 22.079 | 0.169 | 4.9 | 0.0042 | 0.0000 | OK |
| 15 minute winter | 8.000:50% | 12 | 22.073 | 0.303 | 100.9 | 2.7887 | 0.0000 | SURCHARGED |
| 60 minute winter | PS14 | 47 | 22.026 | 0.396 | 84.6 | 72.6636 | 0.0000 | SURCHARGED |
| 60 minute winter | PS6 | 47 | 22.019 | 0.419 | 32.4 | 0.0105 | 0.0000 | SURCHARGED |
| 60 minute winter | S10 | 43 | 22.081 | 0.395 | 2.5 | 0.0008 | 0.0000 | SURCHARGED |
| 60 minute winter | 9.000:50% | 44 | 22.081 | 0.556 | 11.1 | 5.6324 | 0.0000 | SURCHARGED |
| 60 minute winter | S22 | 45 | 22.056 | 0.692 | 6.1 | 0.0907 | 0.0000 | SURCHARGED |
| 60 minute winter | S11 | 45 | 22.020 | 0.849 | 12.1 | 0.5550 | 0.0000 | SURCHARGED |
| 60 minute winter | S7 | 46 | 22.013 | 0.923 | 29.2 | 2.0770 | 0.0000 | SURCHARGED |
| 15 minute summer | S8 | 1 | 20.959 | 0.000 | 9.8 | 0.0000 | 0.0000 | OK |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|--------------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute summer | PS15 | 8.000 | 8.000:50% | -5.4 | -0.208 | -0.077 | 1.7766 | |
| 15 minute summer | PS15 | 8.000 | PS14 | 88.2 | 1.687 | 1.250 | 2.0578 | |
| 15 minute winter | PS14 | 6.007 | PS6 | 33.8 | 1.151 | 0.449 | 0.4558 | |
| 15 minute winter | PS6 | 4.006 | S7 | 28.2 | 0.749 | 0.171 | 1.4734 | |
| 15 minute summer | S10 | 9.000 | 9.000:50% | -6.1 | -0.346 | -0.481 | 0.5546 | |
| 15 minute winter | S10 | 9.000 | S22 | 11.9 | 0.800 | 0.943 | 0.5546 | |
| 15 minute summer | S22 | 9.001 | S11 | 9.3 | 0.618 | 0.736 | 0.6673 | |
| 30 minute summer | S11 | 9.002 | S7 | 15.1 | 0.381 | 0.573 | 1.2223 | |
| 15 minute summer | S7 | Hydro-Brake® | S8 | 9.8 | | | | 120.4 |



Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|-------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 15 minute winter | S1 | 14 | 23.169 | 0.009 | 0.7 | 0.0000 | 0.0000 | OK |
| 15 minute winter | 1.000:50% | 12 | 23.170 | 0.475 | 23.8 | 0.0000 | 0.0000 | SURCHARGED |
| 30 minute winter | S2 | 23 | 22.630 | 0.400 | 14.9 | 0.0008 | 0.0000 | SURCHARGED |
| 30 minute winter | S3 | 24 | 22.559 | 0.409 | 14.3 | 0.0008 | 0.0000 | SURCHARGED |
| 30 minute winter | S9 | 27 | 22.467 | 0.467 | 14.1 | 0.0009 | 0.0000 | SURCHARGED |
| 30 minute winter | S4 | 28 | 22.384 | 0.524 | 11.9 | 0.0010 | 0.0000 | SURCHARGED |
| 60 minute winter | S5 | 44 | 22.336 | 0.606 | 10.0 | 0.0012 | 0.0000 | SURCHARGED |
| 60 minute winter | S6 | 45 | 22.298 | 0.698 | 9.6 | 0.0014 | 0.0000 | SURCHARGED |
| 15 minute summer | S12 | 1 | 22.730 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S21 | 1 | 22.540 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S19 | 1 | 22.360 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | S20 | 1 | 22.170 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 360 minute winter | S13 | 352 | 22.060 | 0.080 | 0.1 | 0.0002 | 0.0000 | OK |
| 360 minute winter | S14 | 352 | 22.060 | 0.190 | 6.1 | 32.1408 | 0.0000 | SURCHARGED |
| 240 minute winter | S15 | 240 | 22.060 | 0.400 | 9.9 | 47.4507 | 0.0000 | SURCHARGED |
| 360 minute winter | 3.000:50% | 344 | 22.060 | 0.485 | 7.7 | 0.0000 | 0.0000 | SURCHARGED |
| 120 minute winter | S16 | 80 | 22.082 | 0.592 | 10.4 | 0.0012 | 0.0000 | SURCHARGED |
| 120 minute winter | S18 | 80 | 22.110 | 0.630 | 27.8 | 55.1585 | 0.0000 | SURCHARGED |
| 120 minute winter | 2.006:50% | 84 | 22.197 | 0.912 | 27.8 | 0.0000 | 0.0000 | SURCHARGED |
| 15 minute winter | PS1 | 13 | 22.794 | 0.224 | 2.5 | 0.0056 | 0.0000 | SURCHARGED |
| 15 minute winter | PS2 | 13 | 22.788 | 0.308 | 6.7 | 0.0077 | 0.0000 | SURCHARGED |
| 15 minute winter | 4.001:50% | 13 | 22.775 | 0.485 | 23.0 | 0.0000 | 0.0000 | SURCHARGED |
| 30 minute winter | PS3 | 23 | 22.538 | 0.438 | 13.5 | 0.0109 | 0.0000 | SURCHARGED |
| 60 minute winter | PS4 | 44 | 22.407 | 0.447 | 11.6 | 0.0112 | 0.0000 | SURCHARGED |
| 60 minute winter | PS5 | 44 | 22.364 | 0.524 | 10.5 | 0.0131 | 0.0000 | SURCHARGED |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|-------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute winter | S1 | 1.000 | 1.000:50% | -0.7 | -0.068 | -0.051 | 0.6699 | |
| 15 minute winter | S1 | 1.000 | S2 | 16.2 | 0.928 | 1.157 | 1.3064 | |
| 15 minute summer | S2 | 1.001 | S3 | 15.1 | 0.880 | 1.070 | 0.2202 | |
| 15 minute summer | S3 | 1.002 | S9 | 14.9 | 0.902 | 1.013 | 0.3826 | |
| 15 minute winter | S9 | 1.003 | S4 | 13.3 | 0.847 | 0.965 | 0.4049 | |
| 15 minute winter | S4 | 1.004 | S5 | 12.0 | 0.846 | 0.881 | 0.3890 | |
| 15 minute winter | S5 | 1.005 | S6 | 11.7 | 0.828 | 0.797 | 0.3357 | |
| 15 minute winter | S6 | 1.006 | S7 | 11.5 | 0.653 | 0.334 | 0.2411 | |
| 15 minute summer | S12 | 2.000 | S21 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S21 | 2.001 | S19 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S19 | 2.002 | S20 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | S20 | 2.003 | S13 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 180 minute winter | S13 | 2.004 | S14 | -0.1 | -0.018 | -0.007 | 0.1566 | |
| 120 minute winter | S14 | 2.005 | S18 | -10.0 | -0.684 | -0.565 | 0.6909 | |
| 120 minute winter | S15 | 3.000 | 3.000:50% | -13.1 | -0.746 | -1.297 | 0.4521 | |
| 60 minute winter | S15 | 3.000 | S16 | -11.1 | -0.632 | -1.098 | 0.4521 | |
| 60 minute winter | S16 | 3.001 | S18 | -12.9 | -0.733 | -1.667 | 0.0899 | |
| 30 minute winter | S18 | 2.006 | 2.006:50% | -34.2 | -0.873 | -1.112 | 2.1822 | |
| 30 minute winter | S18 | 2.006 | S7 | -28.3 | -0.712 | -0.920 | 2.1822 | |
| 15 minute summer | PS1 | 4.000 | PS2 | -2.8 | -0.365 | -0.642 | 0.1304 | |
| 15 minute winter | PS2 | 4.001 | 4.001:50% | -6.7 | -0.449 | -0.568 | 0.7428 | |
| 15 minute summer | PS2 | 4.001 | PS3 | 14.6 | 0.829 | 1.232 | 0.7428 | |
| 15 minute winter | PS3 | 4.002 | PS4 | 13.7 | 0.776 | 1.198 | 0.5892 | |
| 15 minute winter | PS4 | 4.003 | PS5 | 12.8 | 0.776 | 1.074 | 0.4624 | |
| 15 minute winter | PS5 | 4.004 | PS7 | 11.3 | 0.787 | 0.920 | 0.4331 | |



Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|-------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 60 minute winter | PS7 | 45 | 22.325 | 0.605 | 9.2 | 0.0151 | 0.0000 | SURCHARGED |
| 15 minute summer | PS16 | 1 | 22.480 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS23 | 1 | 22.420 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS17 | 1 | 22.370 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS18 | 1 | 22.290 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS19 | 1 | 22.210 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute summer | PS22 | 1 | 22.140 | 0.000 | 0.0 | 0.0000 | 0.0000 | OK |
| 15 minute winter | PS20 | 14 | 22.086 | 0.026 | 1.0 | 0.0006 | 0.0000 | OK |
| 15 minute winter | 5.006:50% | 13 | 22.080 | 0.215 | 23.1 | 2.7367 | 0.0000 | SURCHARGED |
| 180 minute winter | PS21 | 176 | 22.065 | 0.395 | 23.4 | 93.3611 | 0.0000 | SURCHARGED |
| 60 minute winter | PS24 | 49 | 22.294 | 0.044 | 0.5 | 0.0011 | 0.0000 | OK |
| 60 minute winter | PS25 | 49 | 22.293 | 0.095 | 1.1 | 0.0024 | 0.0000 | OK |
| 60 minute winter | PS26 | 49 | 22.291 | 0.131 | 1.5 | 0.0033 | 0.0000 | SURCHARGED |
| 60 minute winter | PS27 | 49 | 22.289 | 0.189 | 2.2 | 0.0047 | 0.0000 | SURCHARGED |
| 60 minute winter | PS28 | 47 | 22.290 | 0.230 | 3.0 | 0.0057 | 0.0000 | SURCHARGED |
| 60 minute winter | PS29 | 47 | 22.294 | 0.304 | 3.7 | 0.0076 | 0.0000 | SURCHARGED |
| 60 minute winter | PS30 | 45 | 22.305 | 0.365 | 6.3 | 0.0091 | 0.0000 | SURCHARGED |
| 60 minute winter | 6.006:50% | 44 | 22.305 | 0.520 | 23.2 | 0.0000 | 0.0000 | SURCHARGED |
| 60 minute winter | PS8 | 47 | 22.332 | 0.082 | 0.9 | 0.0021 | 0.0000 | OK |
| 60 minute winter | PS9 | 47 | 22.332 | 0.112 | 2.7 | 0.0028 | 0.0000 | OK |
| 60 minute winter | 7.001:50% | 46 | 22.330 | 0.255 | 23.2 | 1.8734 | 0.0000 | SURCHARGED |
| 60 minute winter | PS10 | 46 | 22.321 | 0.391 | 23.1 | 0.0098 | 0.0000 | SURCHARGED |
| 60 minute winter | PS11 | 46 | 22.318 | 0.428 | 21.6 | 0.0107 | 0.0000 | SURCHARGED |
| 60 minute winter | PS12 | 46 | 22.308 | 0.551 | 20.4 | 0.0138 | 0.0000 | SURCHARGED |
| 60 minute winter | PS13 | 46 | 22.302 | 0.602 | 18.8 | 0.0151 | 0.0000 | SURCHARGED |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|-------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute winter | PS7 | 4.005 | PS6 | 10.9 | 0.620 | 0.955 | 0.5031 | |
| 15 minute summer | PS16 | 5.000 | PS23 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS23 | 5.001 | PS17 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS17 | 5.002 | PS18 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS18 | 5.003 | PS19 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS19 | 5.004 | PS22 | 0.0 | 0.000 | 0.000 | 0.0000 | |
| 15 minute summer | PS22 | 5.005 | PS20 | 0.0 | 0.000 | 0.000 | 0.0034 | |
| 15 minute winter | PS20 | 5.006 | 5.006:50% | -1.0 | -0.084 | -0.085 | 0.4692 | |
| 30 minute winter | PS20 | 5.006 | PS21 | 13.9 | 0.960 | 1.236 | 0.8418 | |
| 60 minute winter | PS21 | 5.007 | PS6 | -25.3 | -1.436 | -2.200 | 0.2903 | |
| 60 minute winter | PS24 | 6.000 | PS25 | -0.5 | -0.131 | -0.152 | 0.0816 | |
| 60 minute winter | PS25 | 6.001 | PS26 | -1.1 | -0.237 | -0.333 | 0.1030 | |
| 60 minute winter | PS26 | 6.002 | PS27 | -1.5 | -0.256 | -0.419 | 0.1279 | |
| 60 minute winter | PS27 | 6.003 | PS28 | -2.2 | -0.293 | -0.732 | 0.1222 | |
| 60 minute winter | PS28 | 6.004 | PS29 | -3.0 | -0.387 | -0.751 | 0.1208 | |
| 60 minute winter | PS29 | 6.005 | PS30 | -3.7 | -0.477 | -1.087 | 0.1182 | |
| 30 minute winter | PS30 | 6.006 | 6.006:50% | -6.6 | -0.194 | -0.237 | 2.1141 | |
| 15 minute winter | PS30 | 6.006 | PS14 | 33.4 | 0.928 | 1.198 | 2.1141 | |
| 15 minute winter | PS8 | 7.000 | PS9 | -1.0 | -0.244 | -0.287 | 0.0579 | |
| 15 minute winter | PS9 | 7.001 | 7.001:50% | -3.6 | -0.159 | -0.121 | 1.1824 | |
| 15 minute winter | PS9 | 7.001 | PS10 | 32.4 | 0.861 | 1.082 | 1.7144 | |
| 15 minute winter | PS10 | 7.002 | PS11 | 31.6 | 0.843 | 1.023 | 0.4442 | |
| 15 minute winter | PS11 | 7.003 | PS12 | 30.3 | 0.821 | 1.006 | 1.5549 | |
| 15 minute winter | PS12 | 7.004 | PS13 | 27.6 | 0.749 | 1.050 | 0.8691 | |
| 15 minute winter | PS13 | 7.005 | PS14 | 24.6 | 0.642 | 0.951 | 1.1010 | |



Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 98.33%

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m ³) | Flood (m ³) | Status |
|------------------|-----------|-------------|-----------|-----------|--------------|----------------------------|-------------------------|------------|
| 60 minute winter | PS15 | 44 | 22.332 | 0.422 | 3.9 | 0.0105 | 0.0000 | SURCHARGED |
| 60 minute winter | 8.000:50% | 44 | 22.323 | 0.553 | 73.3 | 9.2896 | 0.0000 | SURCHARGED |
| 60 minute winter | PS14 | 45 | 22.297 | 0.667 | 100.4 | 84.3707 | 0.0000 | SURCHARGED |
| 60 minute winter | PS6 | 45 | 22.280 | 0.680 | 47.8 | 0.0170 | 0.0000 | SURCHARGED |
| 60 minute winter | S10 | 49 | 22.301 | 0.615 | 2.4 | 0.0012 | 0.0000 | SURCHARGED |
| 60 minute winter | 9.000:50% | 48 | 22.301 | 0.776 | 14.5 | 10.9676 | 0.0000 | SURCHARGED |
| 60 minute winter | S22 | 47 | 22.288 | 0.924 | 7.0 | 0.1211 | 0.0000 | SURCHARGED |
| 60 minute winter | S11 | 45 | 22.275 | 1.104 | 14.7 | 0.7220 | 0.0000 | SURCHARGED |
| 60 minute winter | S7 | 45 | 22.270 | 1.180 | 36.1 | 2.6554 | 0.0000 | SURCHARGED |
| 15 minute summer | S8 | 1 | 20.959 | 0.000 | 9.8 | 0.0000 | 0.0000 | OK |

| Link Event (Outflow) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m ³) | Discharge Vol (m ³) |
|----------------------|---------|--------------|-----------|---------------|----------------|----------|----------------------------|---------------------------------|
| 15 minute summer | PS15 | 8.000 | 8.000:50% | -7.8 | -0.215 | -0.111 | 2.3661 | |
| 15 minute winter | PS15 | 8.000 | PS14 | 105.9 | 1.702 | 1.501 | 2.4226 | |
| 60 minute winter | PS14 | 6.007 | PS6 | 41.2 | 1.051 | 0.546 | 0.4558 | |
| 30 minute winter | PS6 | 4.006 | S7 | 24.8 | 0.809 | 0.150 | 1.4734 | |
| 15 minute summer | S10 | 9.000 | 9.000:50% | -7.5 | -0.438 | -0.593 | 0.5546 | |
| 15 minute summer | S10 | 9.000 | S22 | 13.1 | 0.798 | 1.036 | 0.5546 | |
| 15 minute winter | S22 | 9.001 | S11 | 10.1 | 0.645 | 0.804 | 0.6673 | |
| 30 minute summer | S11 | 9.002 | S7 | 19.3 | 0.486 | 0.730 | 1.2223 | |
| 15 minute summer | S7 | Hydro-Brake® | S8 | 9.8 | | | | 146.0 |