## Design Settings

| | | | |
|---|---|---|---|
| Rainfall Methodology | FEH-22 | Minimum Velocity (m/s) | 1.00 |
| Return Period (years) | 100 | Connection Type | Level Inverts |
| Additional Flow (%) | 0 | Minimum Backdrop Height (m) | 0.200 |
| CV | 1.000 | 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 | | |

## Adoptable Manhole Type

| Max Width (mm) | Diameter (mm) | Max Width (mm) | Diameter (mm) |
|---|---|---|---|
| 374 | 1200 | 749 | 1500 |
| 499 | 1350 | 900 | 1800 |

>900 Link+900 mm

| Max Depth (m) | Diameter (mm) | Max Depth (m) | Diameter (mm) |
|---|---|---|---|
| 1.500 | 1050 | 99.999 | 1200 |

## Circular Link Type

| | | | |
|---|---|---|---|
| Shape | Circular | Auto Increment (mm) | 75 |
| Barrels | 1 | Follow Ground | x |

**Available Diameters (mm)**

100 | 150

## Nodes

| Name | Area (ha) | T of E (mins) | Cover Level (m) | Diameter (mm) | Easting (m) | Northing (m) | Depth (m) |
|---|---|---|---|---|---|---|---|
| MH-0001-S | 0.121 | 5.00 | 8.525 | 2100 | 516573.619 | 290132.079 | 1.901 |
| MH-0002-S | 0.121 | 5.00 | 8.435 | 1350 | 516573.262 | 290118.072 | 1.685 |
| MH-0003-S | 0.128 | 5.00 | 8.620 | 1350 | 516560.609 | 290112.460 | 1.720 |
| MH-0004-S | 0.105 | 5.00 | 9.250 | 1350 | 516523.835 | 290096.252 | 1.850 |
| IC-0005-S | 0.072 | 5.00 | 9.550 | 1200 | 516464.797 | 290070.730 | 1.300 |
| MH-0051-S | 0.106 | 5.00 | 9.250 | 1200 | 516494.058 | 290083.332 | 1.525 |
| IC-0006-S | 0.022 | 5.00 | 9.500 | 1200 | 516473.337 | 290045.786 | 0.850 |
| IC-0007-S | 0.013 | 5.00 | 9.695 | 1200 | 516458.239 | 290085.395 | 1.110 |
| IC-0008-S | 0.023 | 5.00 | 9.550 | 1200 | 516457.126 | 290067.688 | 1.200 |
| IC-0009-S | 0.027 | 5.00 | 9.740 | 1200 | 516450.515 | 290084.941 | 1.080 |
| IC-0010-S | 0.019 | 5.00 | 9.800 | 1200 | 516439.934 | 290059.223 | 1.050 |
| IC-0011-S | 0.012 | 5.00 | 9.565 | 1200 | 516462.017 | 290057.077 | 0.990 |
| Outfall | 0.000 | | 8.120 | 1200 | 516586.874 | 290135.907 | 1.570 |

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## 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PN001 | MH-0001-S | Outfall | 13.797 | 0.600 | 6.624 | 6.550 | 0.074 | 186.4 | 225 | 6.41 | 50.0 |
| PN002 | MH-0002-S | MH-0001-S | 14.012 | 0.600 | 6.750 | 6.625 | 0.125 | 112.1 | 600 | 6.17 | 50.0 |
| PN003 | MH-0003-S | MH-0002-S | 13.842 | 0.600 | 6.900 | 6.750 | 0.150 | 92.3 | 600 | 6.07 | 50.0 |
| PN004 | MH-0004-S | MH-0003-S | 40.187 | 0.600 | 7.400 | 6.900 | 0.500 | 80.4 | 600 | 5.98 | 50.0 |
| PN005 | IC-0005-S | MH-0051-S | 31.859 | 0.600 | 8.250 | 7.725 | 0.525 | 60.7 | 450 | 5.46 | 50.0 |
| PN051 | MH-0051-S | MH-0004-S | 32.459 | 0.600 | 7.725 | 7.400 | 0.325 | 99.9 | 450 | 5.73 | 50.0 |
| PN006 | IC-0006-S | IC-0005-S | 26.365 | 0.600 | 8.650 | 8.250 | 0.400 | 65.9 | 300 | 5.23 | 50.0 |
| PN007 | IC-0007-S | IC-0005-S | 16.065 | 0.600 | 8.585 | 8.250 | 0.335 | 48.0 | 225 | 5.14 | 50.0 |
| PN008 | IC-0008-S | IC-0005-S | 8.252 | 0.600 | 8.350 | 8.250 | 0.100 | 82.5 | 300 | 5.26 | 50.0 |
| PN009 | IC-0009-S | IC-0008-S | 18.476 | 0.600 | 8.660 | 8.350 | 0.310 | 59.6 | 225 | 5.18 | 50.0 |
| PN010 | IC-0010-S | IC-0008-S | 19.163 | 0.600 | 8.750 | 8.350 | 0.400 | 47.9 | 225 | 5.17 | 50.0 |
| PN011 | IC-0011-S | IC-0008-S | 11.684 | 0.600 | 8.575 | 8.350 | 0.225 | 51.9 | 225 | 5.11 | 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) |
|---|---|---|---|---|---|---|---|---|---|
| PN001 | 0.954 | 37.9 | 139.0 | 1.676 | 1.345 | 0.769 | 0.0 | 225 | 0.972 |
| PN002 | 2.299 | 650.1 | 117.1 | 1.085 | 1.300 | 0.648 | 0.0 | 171 | 1.761 |
| PN003 | 2.535 | 716.8 | 95.2 | 1.120 | 1.085 | 0.527 | 0.0 | 146 | 1.787 |
| PN004 | 2.717 | 768.3 | 72.1 | 1.250 | 1.120 | 0.399 | 0.0 | 123 | 1.737 |
| PN005 | 2.613 | 415.6 | 34.0 | 0.850 | 1.075 | 0.188 | 0.0 | 86 | 1.597 |
| PN051 | 2.034 | 323.5 | 53.1 | 1.075 | 1.400 | 0.294 | 0.0 | 123 | 1.519 |
| PN006 | 1.939 | 137.1 | 4.0 | 0.550 | 1.000 | 0.022 | 0.0 | 35 | 0.871 |
| PN007 | 1.893 | 75.3 | 2.3 | 0.885 | 1.075 | 0.013 | 0.0 | 27 | 0.857 |
| PN008 | 1.732 | 122.4 | 14.6 | 0.900 | 1.000 | 0.081 | 0.0 | 69 | 1.176 |
| PN009 | 1.697 | 67.5 | 4.9 | 0.855 | 0.975 | 0.027 | 0.0 | 41 | 0.996 |
| PN010 | 1.894 | 75.3 | 3.4 | 0.825 | 0.975 | 0.019 | 0.0 | 33 | 0.976 |
| PN011 | 1.819 | 72.3 | 2.2 | 0.765 | 0.975 | 0.012 | 0.0 | 27 | 0.823 |

## 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| PN001 | 13.797 | 186.4 | 225 | Circular | 8.525 | 6.624 | 1.676 | 8.120 | 6.550 | 1.345 |
| PN002 | 14.012 | 112.1 | 600 | Circular | 8.435 | 6.750 | 1.085 | 8.525 | 6.625 | 1.300 |
| PN003 | 13.842 | 92.3 | 600 | Circular | 8.620 | 6.900 | 1.120 | 8.435 | 6.750 | 1.085 |
| PN004 | 40.187 | 80.4 | 600 | Circular | 9.250 | 7.400 | 1.250 | 8.620 | 6.900 | 1.120 |
| PN005 | 31.859 | 60.7 | 450 | Circular | 9.550 | 8.250 | 0.850 | 9.250 | 7.725 | 1.075 |

| Link | US Node | Dia (mm) | Node Type | MH Type | DS Node | Dia (mm) | Node Type | MH Type |
|---|---|---|---|---|---|---|---|---|
| PN001 | MH-0001-S | 2100 | Manhole | Adoptable | Outfall | 1200 | Manhole | Adoptable |
| PN002 | MH-0002-S | 1350 | Manhole | Adoptable | MH-0001-S | 2100 | Manhole | Adoptable |
| PN003 | MH-0003-S | 1350 | Manhole | Adoptable | MH-0002-S | 1350 | Manhole | Adoptable |
| PN004 | MH-0004-S | 1350 | Manhole | Adoptable | MH-0003-S | 1350 | Manhole | Adoptable |
| PN005 | IC-0005-S | 1200 | Manhole | Adoptable | MH-0051-S | 1200 | Manhole | Adoptable |

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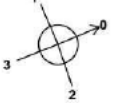
## Pipeline Schedule

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| PN051 | 32.459 | 99.9 | 450 | Circular | 9.250 | 7.725 | 1.075 | 9.250 | 7.400 | 1.400 |
| PN006 | 26.365 | 65.9 | 300 | Circular | 9.500 | 8.650 | 0.550 | 9.550 | 8.250 | 1.000 |
| PN007 | 16.065 | 48.0 | 225 | Circular | 9.695 | 8.585 | 0.885 | 9.550 | 8.250 | 1.075 |
| PN008 | 8.252 | 82.5 | 300 | Circular | 9.550 | 8.350 | 0.900 | 9.550 | 8.250 | 1.000 |
| PN009 | 18.476 | 59.6 | 225 | Circular | 9.740 | 8.660 | 0.855 | 9.550 | 8.350 | 0.975 |
| PN010 | 19.163 | 47.9 | 225 | Circular | 9.800 | 8.750 | 0.825 | 9.550 | 8.350 | 0.975 |
| PN011 | 11.684 | 51.9 | 225 | Circular | 9.565 | 8.575 | 0.765 | 9.550 | 8.350 | 0.975 |

| Link | US Node | Dia (mm) | Node Type | MH Type | DS Node | Dia (mm) | Node Type | MH Type |
|---|---|---|---|---|---|---|---|---|
| PN051 | MH-0051-S | 1200 | Manhole | Adoptable | MH-0004-S | 1350 | Manhole | Adoptable |
| PN006 | IC-0006-S | 1200 | Manhole | Adoptable | IC-0005-S | 1200 | Manhole | Adoptable |
| PN007 | IC-0007-S | 1200 | Manhole | Adoptable | IC-0005-S | 1200 | Manhole | Adoptable |
| PN008 | IC-0008-S | 1200 | Manhole | Adoptable | IC-0005-S | 1200 | Manhole | Adoptable |
| PN009 | IC-0009-S | 1200 | Manhole | Adoptable | IC-0008-S | 1200 | Manhole | Adoptable |
| PN010 | IC-0010-S | 1200 | Manhole | Adoptable | IC-0008-S | 1200 | Manhole | Adoptable |
| PN011 | IC-0011-S | 1200 | Manhole | Adoptable | IC-0008-S | 1200 | Manhole | Adoptable |

## Manhole Schedule

| Node | Easting (m) | Northing (m) | CL (m) | Depth (m) | Dia (mm) | Connections | | Link | IL (m) | Dia (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| MH-0001-S | 516573.619 | 290132.079 | 8.525 | 1.901 | 2100 |  | 1 | PN002 | 6.625 | 600 |
| | | | | | | | 0 | PN001 | 6.624 | 225 |
| MH-0002-S | 516573.262 | 290118.072 | 8.435 | 1.685 | 1350 |  | 1 | PN003 | 6.750 | 600 |
| | | | | | | | 0 | PN002 | 6.750 | 600 |
| MH-0003-S | 516560.609 | 290112.460 | 8.620 | 1.720 | 1350 |  | 1 | PN004 | 6.900 | 600 |
| | | | | | | | 0 | PN003 | 6.900 | 600 |
| MH-0004-S | 516523.835 | 290096.252 | 9.250 | 1.850 | 1350 |  | 1 | PN051 | 7.400 | 450 |
| | | | | | | | 0 | PN004 | 7.400 | 600 |
| IC-0005-S | 516464.797 | 290070.730 | 9.550 | 1.300 | 1200 |  | 1 | PN007 | 8.250 | 225 |
| | | | | | | | 2 | PN006 | 8.250 | 300 |
| | | | | | | | 3 | PN008 | 8.250 | 300 |
| | | | | | | | 0 | PN005 | 8.250 | 450 |
| MH-0051-S | 516494.058 | 290083.332 | 9.250 | 1.525 | 1200 |  | 1 | PN005 | 7.725 | 450 |
| | | | | | | | 0 | PN051 | 7.725 | 450 |

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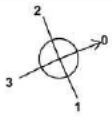
## Manhole Schedule

| Node | Easting (m) | Northing (m) | CL (m) | Depth (m) | Dia (mm) | Connections | Link | IL (m) | Dia (mm) |
|---|---|---|---|---|---|---|---|---|---|
| IC-0006-S | 516473.337 | 290045.786 | 9.500 | 0.850 | 1200 |  0 | PN006 | 8.650 | 300 |
| IC-0007-S | 516458.239 | 290085.395 | 9.695 | 1.110 | 1200 |  0 | PN007 | 8.585 | 225 |
| IC-0008-S | 516457.126 | 290067.688 | 9.550 | 1.200 | 1200 |  1 | PN011 | 8.350 | 225 |
| | | | | | | 2 | PN009 | 8.350 | 225 |
| | | | | | | 3 | PN010 | 8.350 | 225 |
| | | | | | | 0 | PN008 | 8.350 | 300 |
| IC-0009-S | 516450.515 | 290084.941 | 9.740 | 1.080 | 1200 |  0 | PN009 | 8.660 | 225 |
| IC-0010-S | 516439.934 | 290059.223 | 9.800 | 1.050 | 1200 |  0 | PN010 | 8.750 | 225 |
| IC-0011-S | 516462.017 | 290057.077 | 9.565 | 0.990 | 1200 |  0 | PN011 | 8.575 | 225 |
| Outfall | 516586.874 | 290135.907 | 8.120 | 1.570 | 1200 |  1 | PN001 | 6.550 | 225 |

## Simulation Settings

| | | | | | |
|---|---|---|---|---|---|
| Rainfall Methodology | FEH-22 | Analysis Speed | Normal | Starting Level (m) | |
| Rainfall Events | Singular | Skip Steady State | x | Check Discharge Rate(s) | x |
| Summer CV | 1.000 | Drain Down Time (mins) | 1440 | Check Discharge Volume | x |
| Winter CV | 1.000 | Additional Storage (m³/ha) | 0.0 | | |

### Storm Durations

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

| Return Period (years) | Climate Change (CC %) | Additional Area (A %) | Additional Flow (Q %) |
|---|---|---|---|
| 2 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 |
| 30 | 35 | 0 | 0 |
| 100 | 0 | 0 | 0 |
| 100 | 40 | 0 | 0 |

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## Node MH-0001-S Online Hydro-Brake® Control

| | | | |
|---|---|---|---|
| Flap Valve | x | Objective | (CL) Minimise blockage risk |
| Replaces Downstream Link | ✓ | Sump Available | ✓ |
| Invert Level (m) | 6.624 | Product Number | CTL-SCL-0078-3600-1650-3600 |
| Design Depth (m) | 1.650 | Min Outlet Diameter (m) | 0.100 |
| Design Flow (l/s) | 3.6 | Min Node Diameter (mm) | 1200 |

## Node MH-0001-S Depth/Area Storage Structure

| | | | | | |
|---|---|---|---|---|---|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0 | Invert Level (m) | 6.624 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity | 0.95 | Time to half empty (mins) | |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|---|---|---|---|---|---|---|---|---|
| 0.000 | 220.0 | 0.0 | 0.800 | 220.0 | 0.0 | 0.801 | 0.0 | 0.0 |

## Node MH-0001-S Depth/Area Storage Structure

| | | | | | |
|---|---|---|---|---|---|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0 | Invert Level (m) | 6.624 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity | 1.00 | Time to half empty (mins) | 855 |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|---|---|---|---|---|---|---|---|---|
| 0.000 | 0.0 | 0.0 | 1.400 | 19.2 | 0.0 | 1.701 | 0.0 | 0.0 |
| 1.399 | 0.0 | 0.0 | 1.700 | 52.0 | 0.0 | | | |

## Node MH-0001-S Depth/Area Storage Structure

| | | | | | |
|---|---|---|---|---|---|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0 | Invert Level (m) | 6.624 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity | 0.30 | Time to half empty (mins) | 690 |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|---|---|---|---|---|---|---|---|---|
| 0.000 | 0.0 | 0.0 | 1.500 | 456.0 | 0.0 | 1.801 | 0.0 | 0.0 |
| 1.499 | 0.0 | 0.0 | 1.800 | 456.0 | 0.0 | | | |

## Node MH-0001-S Depth/Area Storage Structure

| | | | | | |
|---|---|---|---|---|---|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0 | Invert Level (m) | 6.750 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity | 1.00 | Time to half empty (mins) | |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|---|---|---|---|---|---|---|---|---|
| 0.000 | 0.0 | 0.0 | 0.050 | 157.0 | 0.0 | 1.650 | 461.0 | 0.0 |

## Node MH-0004-S Depth/Area Storage Structure

| | | | | | |
|---|---|---|---|---|---|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0 | Invert Level (m) | 7.400 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity | 0.30 | Time to half empty (mins) | |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|---|---|---|---|---|---|---|---|---|
| 0.000 | 0.0 | 0.0 | 1.450 | 1435.0 | 0.0 | 1.751 | 0.0 | 0.0 |
| 1.449 | 0.0 | 0.0 | 1.750 | 1435.0 | 0.0 | | | |

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## Node MH-0003-S Depth/Area Storage Structure

| | | | | | |
|---|---|---|---|---|---|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0 | Invert Level (m) | 6.900 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity | 0.30 | Time to half empty (mins) | 120 |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|---|---|---|---|---|---|---|---|---|
| 0.000 | 0.0 | 0.0 | 1.320 | 1285.0 | 0.0 | 1.621 | 0.0 | 0.0 |
| 1.319 | 0.0 | 0.0 | 1.620 | 1285.0 | 0.0 | | | |

## Node MH-0002-S Depth/Area Storage Structure

| | | | | | |
|---|---|---|---|---|---|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0 | Invert Level (m) | 6.750 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity | 0.30 | Time to half empty (mins) | 960 |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|---|---|---|---|---|---|---|---|---|
| 0.000 | 0.0 | 0.0 | 1.360 | 1565.0 | 0.0 | 1.661 | 0.0 | 0.0 |
| 1.359 | 0.0 | 0.0 | 1.660 | 1565.0 | 0.0 | | | |

## Other (defaults)

| | | | | | |
|---|---|---|---|---|---|
| Entry Loss (manhole) | 0.250 | Entry Loss (junction) | 0.000 | Apply Recommended Losses | x |
| Exit Loss (manhole) | 0.250 | Exit Loss (junction) | 0.000 | Flood Risk (m) | 0.300 |

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**Results for 2 year Critical Storm Duration. Lowest mass balance: 99.16%**

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status |
|---|---|---|---|---|---|---|---|---|
| 360 minute summer | MH-0001-S | 344 | 7.042 | 0.418 | 57.9 | 136.4371 | 0.0000 | SURCHARGED |
| 360 minute summer | MH-0002-S | 336 | 7.047 | 0.297 | 28.7 | 0.4249 | 0.0000 | OK |
| 15 minute summer | MH-0003-S | 11 | 7.061 | 0.161 | 88.7 | 0.2310 | 0.0000 | OK |
| 15 minute summer | MH-0004-S | 11 | 7.518 | 0.118 | 67.2 | 0.1687 | 0.0000 | OK |
| 15 minute summer | IC-0005-S | 11 | 8.333 | 0.083 | 32.2 | 0.0939 | 0.0000 | OK |
| 15 minute summer | MH-0051-S | 11 | 7.848 | 0.123 | 50.0 | 0.1392 | 0.0000 | OK |
| 15 minute summer | IC-0006-S | 10 | 8.684 | 0.034 | 3.8 | 0.0385 | 0.0000 | OK |
| 15 minute summer | IC-0007-S | 10 | 8.612 | 0.027 | 2.3 | 0.0303 | 0.0000 | OK |
| 15 minute summer | IC-0008-S | 10 | 8.423 | 0.073 | 14.0 | 0.0830 | 0.0000 | OK |
| 15 minute summer | IC-0009-S | 10 | 8.700 | 0.040 | 4.7 | 0.0452 | 0.0000 | OK |
| 15 minute summer | IC-0010-S | 10 | 8.782 | 0.032 | 3.3 | 0.0360 | 0.0000 | OK |
| 15 minute summer | IC-0011-S | 10 | 8.601 | 0.026 | 2.1 | 0.0297 | 0.0000 | OK |
| 15 minute summer | Outfall | 1 | 6.550 | 0.000 | 3.1 | 0.0000 | 0.0000 | OK |

| Link Event (Upstream Depth) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|---|---|---|---|---|---|---|---|---|
| 360 minute summer | MH-0001-S | Hydro-Brake® | Outfall | 3.2 | | | | 191.6 |
| 360 minute summer | MH-0002-S | PN002 | MH-0001-S | 52.4 | 0.678 | 0.081 | 2.4402 | |
| 15 minute summer | MH-0003-S | PN003 | MH-0002-S | 89.4 | 1.331 | 0.125 | 0.9302 | |
| 15 minute summer | MH-0004-S | PN004 | MH-0003-S | 67.6 | 1.361 | 0.088 | 2.0088 | |
| 15 minute summer | IC-0005-S | PN005 | MH-0051-S | 31.8 | 1.164 | 0.076 | 0.8782 | |
| 15 minute summer | MH-0051-S | PN051 | MH-0004-S | 49.9 | 1.465 | 0.154 | 1.1054 | |
| 15 minute summer | IC-0006-S | PN006 | IC-0005-S | 3.7 | 0.388 | 0.027 | 0.2665 | |
| 15 minute summer | IC-0007-S | PN007 | IC-0005-S | 2.3 | 0.302 | 0.030 | 0.1279 | |
| 15 minute summer | IC-0008-S | PN008 | IC-0005-S | 13.7 | 0.945 | 0.112 | 0.1203 | |
| 15 minute summer | IC-0009-S | PN009 | IC-0008-S | 4.7 | 0.598 | 0.069 | 0.1475 | |
| 15 minute summer | IC-0010-S | PN010 | IC-0008-S | 3.3 | 0.463 | 0.043 | 0.1403 | |
| 15 minute summer | IC-0011-S | PN011 | IC-0008-S | 2.1 | 0.320 | 0.029 | 0.0806 | |

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**Results for 30 year Critical Storm Duration. Lowest mass balance: 99.16%**

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status |
|---|---|---|---|---|---|---|---|---|
| 480 minute winter | MH-0001-S | 472 | 7.606 | 0.982 | 55.4 | 362.8246 | 0.0000 | SURCHARGED |
| 480 minute winter | MH-0002-S | 472 | 7.607 | 0.857 | 44.2 | 1.2263 | 0.0000 | SURCHARGED |
| 600 minute winter | MH-0003-S | 600 | 7.609 | 0.709 | 22.8 | 1.0139 | 0.0000 | SURCHARGED |
| 15 minute summer | MH-0004-S | 10 | 7.614 | 0.214 | 196.2 | 0.3069 | 0.0000 | OK |
| 15 minute summer | IC-0005-S | 10 | 8.394 | 0.144 | 93.2 | 0.1633 | 0.0000 | OK |
| 15 minute summer | MH-0051-S | 10 | 7.951 | 0.226 | 145.3 | 0.2555 | 0.0000 | OK |
| 15 minute summer | IC-0006-S | 10 | 8.707 | 0.057 | 11.0 | 0.0643 | 0.0000 | OK |
| 15 minute summer | IC-0007-S | 10 | 8.629 | 0.044 | 6.5 | 0.0502 | 0.0000 | OK |
| 15 minute summer | IC-0008-S | 10 | 8.488 | 0.138 | 40.3 | 0.1558 | 0.0000 | OK |
| 15 minute summer | IC-0009-S | 10 | 8.728 | 0.068 | 13.5 | 0.0766 | 0.0000 | OK |
| 15 minute summer | IC-0010-S | 10 | 8.804 | 0.054 | 9.5 | 0.0606 | 0.0000 | OK |
| 15 minute summer | IC-0011-S | 10 | 8.619 | 0.044 | 6.0 | 0.0492 | 0.0000 | OK |
| 15 minute summer | Outfall | 1 | 6.550 | 0.000 | 3.2 | 0.0000 | 0.0000 | OK |

| Link Event (Upstream Depth) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|---|---|---|---|---|---|---|---|---|
| 480 minute winter | MH-0001-S | Hydro-Brake® | Outfall | 3.2 | | | | 308.5 |
| 480 minute winter | MH-0002-S | PN002 | MH-0001-S | 49.3 | 0.702 | 0.076 | 3.9469 | |
| 600 minute winter | MH-0003-S | PN003 | MH-0002-S | 23.0 | 0.773 | 0.032 | 3.8990 | |
| 15 minute summer | MH-0004-S | PN004 | MH-0003-S | 196.1 | 1.625 | 0.255 | 4.8632 | |
| 15 minute summer | IC-0005-S | PN005 | MH-0051-S | 92.3 | 1.512 | 0.222 | 1.9671 | |
| 15 minute summer | MH-0051-S | PN051 | MH-0004-S | 144.0 | 1.885 | 0.445 | 2.5017 | |
| 15 minute summer | IC-0006-S | PN006 | IC-0005-S | 10.9 | 0.527 | 0.080 | 0.5641 | |
| 15 minute summer | IC-0007-S | PN007 | IC-0005-S | 6.5 | 0.409 | 0.086 | 0.2605 | |
| 15 minute summer | IC-0008-S | PN008 | IC-0005-S | 39.8 | 1.231 | 0.325 | 0.2685 | |
| 15 minute summer | IC-0009-S | PN009 | IC-0008-S | 13.4 | 0.761 | 0.199 | 0.3280 | |
| 15 minute summer | IC-0010-S | PN010 | IC-0008-S | 9.4 | 0.588 | 0.125 | 0.3132 | |
| 15 minute summer | IC-0011-S | PN011 | IC-0008-S | 6.0 | 0.399 | 0.082 | 0.1801 | |

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**Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.16%**

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status |
|---|---|---|---|---|---|---|---|---|
| 720 minute winter | MH-0001-S | 705 | 8.012 | 1.388 | 41.1 | 505.8925 | 0.0000 | SURCHARGED |
| 600 minute winter | MH-0002-S | 600 | 8.012 | 1.262 | 49.3 | 1.8055 | 0.0000 | SURCHARGED |
| 720 minute winter | MH-0003-S | 720 | 8.014 | 1.114 | 26.1 | 1.5938 | 0.0000 | SURCHARGED |
| 720 minute winter | MH-0004-S | 720 | 8.013 | 0.613 | 19.7 | 0.8766 | 0.0000 | SURCHARGED |
| 15 minute summer | IC-0005-S | 10 | 8.423 | 0.173 | 125.8 | 0.1961 | 0.0000 | OK |
| 720 minute winter | MH-0051-S | 705 | 8.012 | 0.287 | 14.5 | 0.3242 | 0.0000 | OK |
| 15 minute summer | IC-0006-S | 10 | 8.716 | 0.066 | 14.9 | 0.0747 | 0.0000 | OK |
| 15 minute summer | IC-0007-S | 10 | 8.637 | 0.052 | 8.8 | 0.0584 | 0.0000 | OK |
| 15 minute summer | IC-0008-S | 10 | 8.518 | 0.168 | 54.4 | 0.1901 | 0.0000 | OK |
| 15 minute summer | IC-0009-S | 10 | 8.739 | 0.079 | 18.2 | 0.0895 | 0.0000 | OK |
| 15 minute summer | IC-0010-S | 10 | 8.812 | 0.062 | 12.8 | 0.0705 | 0.0000 | OK |
| 15 minute summer | IC-0011-S | 10 | 8.626 | 0.051 | 8.1 | 0.0571 | 0.0000 | OK |
| 15 minute summer | Outfall | 1 | 6.550 | 0.000 | 3.2 | 0.0000 | 0.0000 | OK |

| Link Event (Upstream Depth) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|---|---|---|---|---|---|---|---|---|
| 720 minute winter | MH-0001-S | Hydro-Brake® | Outfall | 3.3 | | | | 369.8 |
| 600 minute winter | MH-0002-S | PN002 | MH-0001-S | 46.4 | 0.704 | 0.071 | 3.9469 | |
| 720 minute winter | MH-0003-S | PN003 | MH-0002-S | 49.2 | 0.684 | 0.069 | 3.8990 | |
| 720 minute winter | MH-0004-S | PN004 | MH-0003-S | 19.7 | 0.894 | 0.026 | 11.3198 | |
| 15 minute summer | IC-0005-S | PN005 | MH-0051-S | 124.7 | 1.592 | 0.300 | 2.5138 | |
| 720 minute winter | MH-0051-S | PN051 | MH-0004-S | 14.5 | 1.024 | 0.045 | 4.3009 | |
| 15 minute summer | IC-0006-S | PN006 | IC-0005-S | 14.8 | 0.564 | 0.108 | 0.7071 | |
| 15 minute summer | IC-0007-S | PN007 | IC-0005-S | 8.7 | 0.441 | 0.116 | 0.3188 | |
| 15 minute summer | IC-0008-S | PN008 | IC-0005-S | 53.7 | 1.306 | 0.439 | 0.3415 | |
| 15 minute summer | IC-0009-S | PN009 | IC-0008-S | 18.1 | 0.811 | 0.268 | 0.4090 | |
| 15 minute summer | IC-0010-S | PN010 | IC-0008-S | 12.7 | 0.623 | 0.169 | 0.3905 | |
| 15 minute summer | IC-0011-S | PN011 | IC-0008-S | 8.1 | 0.421 | 0.111 | 0.2247 | |

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**Results for 100 year Critical Storm Duration. Lowest mass balance: 99.16%**

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status |
|---|---|---|---|---|---|---|---|---|
| 720 minute winter | MH-0001-S | 705 | 7.999 | 1.375 | 47.3 | 500.7584 | 0.0000 | SURCHARGED |
| 720 minute winter | MH-0002-S | 705 | 7.999 | 1.249 | 31.9 | 1.7878 | 0.0000 | SURCHARGED |
| 720 minute winter | MH-0003-S | 705 | 7.999 | 1.099 | 25.8 | 1.5723 | 0.0000 | SURCHARGED |
| 720 minute winter | MH-0004-S | 705 | 7.999 | 0.599 | 19.5 | 0.8572 | 0.0000 | OK |
| 15 minute summer | IC-0005-S | 10 | 8.418 | 0.168 | 120.1 | 0.1904 | 0.0000 | OK |
| 720 minute winter | MH-0051-S | 705 | 7.999 | 0.274 | 14.3 | 0.3098 | 0.0000 | OK |
| 15 minute summer | IC-0006-S | 10 | 8.714 | 0.064 | 14.2 | 0.0729 | 0.0000 | OK |
| 15 minute summer | IC-0007-S | 10 | 8.635 | 0.050 | 8.4 | 0.0570 | 0.0000 | OK |
| 15 minute summer | IC-0008-S | 10 | 8.513 | 0.163 | 51.9 | 0.1841 | 0.0000 | OK |
| 15 minute summer | IC-0009-S | 10 | 8.737 | 0.077 | 17.4 | 0.0874 | 0.0000 | OK |
| 15 minute summer | IC-0010-S | 10 | 8.811 | 0.061 | 12.2 | 0.0688 | 0.0000 | OK |
| 15 minute summer | IC-0011-S | 10 | 8.624 | 0.049 | 7.7 | 0.0557 | 0.0000 | OK |
| 15 minute summer | Outfall | 1 | 6.550 | 0.000 | 3.2 | 0.0000 | 0.0000 | OK |

| Link Event (Upstream Depth) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|---|---|---|---|---|---|---|---|---|
| 720 minute winter | MH-0001-S | Hydro-Brake® | Outfall | 3.3 | | | | 368.1 |
| 720 minute winter | MH-0002-S | PN002 | MH-0001-S | 43.3 | 0.656 | 0.067 | 3.9469 | |
| 720 minute winter | MH-0003-S | PN003 | MH-0002-S | 26.2 | 0.687 | 0.037 | 3.8990 | |
| 720 minute winter | MH-0004-S | PN004 | MH-0003-S | 19.5 | 0.893 | 0.025 | 11.3150 | |
| 15 minute summer | IC-0005-S | PN005 | MH-0051-S | 119.1 | 1.580 | 0.287 | 2.4181 | |
| 720 minute winter | MH-0051-S | PN051 | MH-0004-S | 14.3 | 1.019 | 0.044 | 4.2110 | |
| 15 minute summer | IC-0006-S | PN006 | IC-0005-S | 14.1 | 0.558 | 0.103 | 0.6824 | |
| 15 minute summer | IC-0007-S | PN007 | IC-0005-S | 8.3 | 0.436 | 0.111 | 0.3092 | |
| 15 minute summer | IC-0008-S | PN008 | IC-0005-S | 51.3 | 1.295 | 0.419 | 0.3289 | |
| 15 minute summer | IC-0009-S | PN009 | IC-0008-S | 17.3 | 0.804 | 0.256 | 0.3956 | |
| 15 minute summer | IC-0010-S | PN010 | IC-0008-S | 12.1 | 0.618 | 0.161 | 0.3776 | |
| 15 minute summer | IC-0011-S | PN011 | IC-0008-S | 7.7 | 0.420 | 0.106 | 0.2172 | |

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**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.16%**

| Node Event | US Node | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status |
|---|---|---|---|---|---|---|---|---|
| 960 minute winter | MH-0001-S | 945 | 8.284 | 1.660 | 45.0 | 649.6251 | 0.0000 | FLOOD RISK |
| 960 minute winter | MH-0002-S | 945 | 8.284 | 1.534 | 34.1 | 83.9655 | 0.0000 | FLOOD RISK |
| 960 minute winter | MH-0003-S | 945 | 8.284 | 1.384 | 27.0 | 26.7166 | 0.0000 | SURCHARGED |
| 960 minute winter | MH-0004-S | 945 | 8.284 | 0.884 | 21.8 | 1.2645 | 0.0000 | SURCHARGED |
| 15 minute summer | IC-0005-S | 10 | 8.461 | 0.211 | 168.4 | 0.2385 | 0.0000 | OK |
| 960 minute winter | MH-0051-S | 945 | 8.284 | 0.559 | 16.1 | 0.6318 | 0.0000 | SURCHARGED |
| 15 minute summer | IC-0006-S | 10 | 8.726 | 0.076 | 19.9 | 0.0864 | 0.0000 | OK |
| 15 minute summer | IC-0007-S | 10 | 8.645 | 0.060 | 11.7 | 0.0674 | 0.0000 | OK |
| 15 minute summer | IC-0008-S | 10 | 8.558 | 0.208 | 72.8 | 0.2356 | 0.0000 | OK |
| 15 minute summer | IC-0009-S | 10 | 8.753 | 0.093 | 24.4 | 0.1049 | 0.0000 | OK |
| 15 minute summer | IC-0010-S | 10 | 8.822 | 0.072 | 17.1 | 0.0819 | 0.0000 | OK |
| 15 minute summer | IC-0011-S | 10 | 8.633 | 0.058 | 10.8 | 0.0660 | 0.0000 | OK |
| 15 minute summer | Outfall | 1 | 6.550 | 0.000 | 3.2 | 0.0000 | 0.0000 | OK |

| Link Event (Upstream Depth) | US Node | Link | DS Node | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|---|---|---|---|---|---|---|---|---|
| 960 minute winter | MH-0001-S | Hydro-Brake® | Outfall | 3.6 | | | | 472.3 |
| 960 minute winter | MH-0002-S | PN002 | MH-0001-S | 41.4 | 0.643 | 0.064 | 3.9469 | |
| 960 minute winter | MH-0003-S | PN003 | MH-0002-S | 28.8 | 0.674 | 0.040 | 3.8990 | |
| 960 minute winter | MH-0004-S | PN004 | MH-0003-S | 20.4 | 0.812 | 0.027 | 11.3198 | |
| 15 minute summer | IC-0005-S | PN005 | MH-0051-S | 166.9 | 1.649 | 0.402 | 3.2184 | |
| 960 minute winter | MH-0051-S | PN051 | MH-0004-S | 16.1 | 1.035 | 0.050 | 5.1429 | |
| 15 minute summer | IC-0006-S | PN006 | IC-0005-S | 19.7 | 0.593 | 0.144 | 0.8834 | |
| 15 minute summer | IC-0007-S | PN007 | IC-0005-S | 11.6 | 0.467 | 0.155 | 0.3782 | |
| 15 minute summer | IC-0008-S | PN008 | IC-0005-S | 72.1 | 1.378 | 0.589 | 0.4337 | |
| 15 minute summer | IC-0009-S | PN009 | IC-0008-S | 24.3 | 0.860 | 0.360 | 0.4972 | |
| 15 minute summer | IC-0010-S | PN010 | IC-0008-S | 17.0 | 0.656 | 0.226 | 0.4735 | |
| 15 minute summer | IC-0011-S | PN011 | IC-0008-S | 10.7 | 0.441 | 0.149 | 0.2720 | |

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