



**Simulation Settings**

|                      |        |                        |        |                            |     |
|----------------------|--------|------------------------|--------|----------------------------|-----|
| Rainfall Methodology | FEH-22 | Analysis Speed         | Normal | Additional Storage (m³/ha) | 0.0 |
| Summer CV            | 1.000  | Skip Steady State      | x      | Check Discharge Rate(s)    | x   |
| Winter CV            | 1.000  | Drain Down Time (mins) | 240    | Check Discharge Volume     | x   |

**Storm Durations**

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

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 2                        | 0                        | 0                        | 0                        |

**Results for 2 year Critical Storm Duration. Lowest mass balance: 98.65%**

| Node Event       | US Node         | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | EX S9           | 10          | 23.808    | 0.018     | 1.0          | 0.0203        | 0.0000     | OK         |
| 15 minute summer | EX S10          | 10          | 23.590    | 0.018     | 1.0          | 0.0198        | 0.0000     | OK         |
| 15 minute summer | EX S11          | 10          | 23.591    | 0.141     | 10.6         | 0.1523        | 0.0000     | OK         |
| 15 minute summer | 2.000:50%       | 10          | 23.589    | 0.254     | 16.1         | 0.0000        | 0.0000     | SURCHARGED |
| 15 minute summer | EX S12          | 10          | 23.575    | 0.355     | 31.3         | 0.4017        | 0.0000     | SURCHARGED |
| 15 minute summer | TW 1372mm SEWER | 1           | 23.446    | 1.372     | 31.0         | 0.0000        | 0.0000     | OK         |

| Link Event (Outflow) | US Node | Link  | DS Node         | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|----------------------|---------|-------|-----------------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer     | EX S9   | 1.000 | EX S10          | 1.0           | 0.862          | 0.029    | 0.0066        |                    |
| 15 minute summer     | EX S10  | 1.001 | EX S12          | 1.0           | 0.089          | 0.029    | 0.0858        |                    |
| 15 minute summer     | EX S11  | 2.000 | 2.000:50%       | 10.4          | 0.585          | 0.192    | 0.3493        |                    |
| 15 minute summer     | EX S11  | 2.000 | EX S12          | 15.9          | 0.415          | 0.294    | 0.4213        |                    |
| 15 minute summer     | EX S12  | 1.002 | TW 1372mm SEWER | 31.0          | 0.779          | 0.314    | 1.2780        | 10.9               |



Simulation Settings

|                      |        |                        |        |                            |     |
|----------------------|--------|------------------------|--------|----------------------------|-----|
| Rainfall Methodology | FEH-22 | Analysis Speed         | Normal | Additional Storage (m³/ha) | 0.0 |
| Summer CV            | 1.000  | Skip Steady State      | x      | Check Discharge Rate(s)    | x   |
| Winter CV            | 1.000  | Drain Down Time (mins) | 240    | Check Discharge Volume     | x   |

Storm Durations

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

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 5                        | 0                        | 0                        | 0                        |



Results for 5 year Critical Storm Duration. Lowest mass balance: 99.19%

| Node Event           | US Node         | Peak (mins) | Level (m)       | Depth (m)     | Inflow (l/s)   | Node Vol (m³) | Flood (m³)    | Status             |
|----------------------|-----------------|-------------|-----------------|---------------|----------------|---------------|---------------|--------------------|
| 15 minute summer     | EX S9           | 10          | 23.813          | 0.023         | 1.7            | 0.0255        | 0.0000        | OK                 |
| 15 minute summer     | EX S10          | 10          | 23.812          | 0.240         | 2.7            | 0.2717        | 0.0000        | SURCHARGED         |
| 15 minute summer     | EX S11          | 10          | 23.861          | 0.411         | 18.6           | 0.4443        | 0.0000        | SURCHARGED         |
| 15 minute summer     | 2.000:50%       | 10          | 23.846          | 0.511         | 27.5           | 0.0000        | 0.0000        | SURCHARGED         |
| 15 minute summer     | EX S12          | 10          | 23.811          | 0.591         | 52.8           | 0.6681        | 0.0000        | SURCHARGED         |
| 15 minute summer     | TW 1372mm SEWER | 1           | 23.446          | 1.372         | 52.0           | 0.0000        | 0.0000        | OK                 |
| Link Event (Outflow) | US Node         | Link        | DS Node         | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) | Discharge Vol (m³) |
| 15 minute summer     | EX S9           | 1.000       | EX S10          | 1.7           | 0.838          | 0.048         | 0.0545        |                    |
| 15 minute summer     | EX S10          | 1.001       | EX S12          | 5.8           | 0.350          | 0.167         | 0.1611        |                    |
| 15 minute summer     | EX S11          | 2.000       | 2.000:50%       | 17.6          | 0.642          | 0.324         | 0.4213        |                    |
| 15 minute summer     | EX S11          | 2.000       | EX S12          | 26.7          | 0.671          | 0.493         | 0.4213        |                    |
| 15 minute summer     | EX S12          | 1.002       | TW 1372mm SEWER | 52.0          | 1.307          | 0.527         | 1.2780        | 20.0               |



**Simulation Settings**

|                      |        |                        |        |                            |     |
|----------------------|--------|------------------------|--------|----------------------------|-----|
| Rainfall Methodology | FEH-22 | Analysis Speed         | Normal | Additional Storage (m³/ha) | 0.0 |
| Summer CV            | 1.000  | Skip Steady State      | x      | Check Discharge Rate(s)    | x   |
| Winter CV            | 1.000  | Drain Down Time (mins) | 240    | Check Discharge Volume     | x   |

**Storm Durations**

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

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 30                       | 0                        | 0                        | 0                        |



Results for 30 year Critical Storm Duration. Lowest mass balance: 99.55%

| Node Event       | US Node         | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | EX S9           | 11          | 24.391    | 0.601     | 5.3          | 0.6800        | 0.0000     | FLOOD RISK |
| 15 minute summer | EX S10          | 11          | 24.387    | 0.815     | 7.6          | 0.9218        | 0.0000     | SURCHARGED |
| 15 minute summer | EX S11          | 11          | 24.500    | 1.050     | 33.0         | 1.1340        | 0.3084     | FLOOD      |
| 15 minute summer | 2.000:50%       | 11          | 24.463    | 1.128     | 47.1         | 0.0000        | 0.0000     | SURCHARGED |
| 15 minute summer | EX S12          | 11          | 24.377    | 1.157     | 89.1         | 1.3089        | 0.0000     | SURCHARGED |
| 15 minute summer | TW 1372mm SEWER | 1           | 23.446    | 1.372     | 84.0         | 0.0000        | 0.0000     | OK         |

| Link Event (Outflow) | US Node | Link  | DS Node         | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|----------------------|---------|-------|-----------------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer     | EX S9   | 1.000 | EX S10          | 6.9           | 0.836          | 0.198    | 0.0996        |                    |
| 15 minute summer     | EX S10  | 1.001 | EX S12          | 12.9          | 0.735          | 0.369    | 0.1611        |                    |
| 15 minute summer     | EX S11  | 2.000 | 2.000:50%       | 29.4          | 0.739          | 0.542    | 0.4213        |                    |
| 15 minute summer     | EX S11  | 2.000 | EX S12          | 44.5          | 1.119          | 0.821    | 0.4213        |                    |
| 15 minute summer     | EX S12  | 1.002 | TW 1372mm SEWER | 84.0          | 2.112          | 0.852    | 1.2780        | 36.4               |



**Simulation Settings**

|                      |        |                        |        |                            |     |
|----------------------|--------|------------------------|--------|----------------------------|-----|
| Rainfall Methodology | FEH-22 | Analysis Speed         | Normal | Additional Storage (m³/ha) | 0.0 |
| Summer CV            | 1.000  | Skip Steady State      | x      | Check Discharge Rate(s)    | x   |
| Winter CV            | 1.000  | Drain Down Time (mins) | 240    | Check Discharge Volume     | x   |

**Storm Durations**

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

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 100                      | 0                        | 0                        | 0                        |

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.72%

| Node Event       | US Node         | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | EX S9           | 10          | 24.495    | 0.705     | 7.7          | 0.7976        | 0.0000     | FLOOD RISK |
| 15 minute summer | EX S10          | 10          | 24.486    | 0.914     | 12.6         | 1.0333        | 0.0000     | FLOOD RISK |
| 15 minute summer | EX S11          | 9           | 24.500    | 1.050     | 44.3         | 1.1340        | 5.6467     | FLOOD      |
| 15 minute summer | 2.000:50%       | 9           | 24.504    | 1.169     | 46.7         | 0.0000        | 0.0000     | SURCHARGED |
| 15 minute summer | EX S12          | 10          | 24.468    | 1.248     | 97.9         | 1.4120        | 0.0000     | SURCHARGED |
| 15 minute summer | TW 1372mm SEWER | 1           | 23.446    | 1.372     | 87.9         | 0.0000        | 0.0000     | OK         |

| Link Event (Outflow) | US Node | Link  | DS Node         | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|----------------------|---------|-------|-----------------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer     | EX S9   | 1.000 | EX S10          | 7.2           | 0.907          | 0.207    | 0.0996        |                    |
| 15 minute summer     | EX S10  | 1.001 | EX S12          | 12.7          | 0.721          | 0.362    | 0.1611        |                    |
| 30 minute summer     | EX S11  | 2.000 | 2.000:50%       | 28.8          | 0.723          | 0.531    | 0.4213        |                    |
| 15 minute winter     | EX S11  | 2.000 | EX S12          | 43.9          | 1.105          | 0.811    | 0.4213        |                    |
| 15 minute summer     | EX S12  | 1.002 | TW 1372mm SEWER | 87.9          | 2.211          | 0.892    | 1.2780        | 43.8               |



**Simulation Settings**

|                      |        |                        |        |                            |     |
|----------------------|--------|------------------------|--------|----------------------------|-----|
| Rainfall Methodology | FEH-22 | Analysis Speed         | Normal | Additional Storage (m³/ha) | 0.0 |
| Summer CV            | 1.000  | Skip Steady State      | x      | Check Discharge Rate(s)    | x   |
| Winter CV            | 1.000  | Drain Down Time (mins) | 240    | Check Discharge Volume     | x   |

**Storm Durations**

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

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

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.81%

| Node Event       | US Node         | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | EX S9           | 9           | 24.560    | 0.770     | 10.8         | 0.8709        | 0.1685     | FLOOD      |
| 15 minute summer | EX S10          | 9           | 24.556    | 0.984     | 16.4         | 1.1124        | 0.0000     | FLOOD RISK |
| 15 minute summer | EX S11          | 8           | 24.500    | 1.050     | 89.8         | 1.1340        | 17.2272    | FLOOD      |
| 15 minute summer | 2.000:50%       | 10          | 24.542    | 1.207     | 44.1         | 0.0000        | 0.0000     | SURCHARGED |
| 15 minute summer | EX S12          | 9           | 24.546    | 1.326     | 109.4        | 1.4997        | 0.0000     | SURCHARGED |
| 15 minute summer | TW 1372mm SEWER | 1           | 23.446    | 1.372     | 91.1         | 0.0000        | 0.0000     | OK         |

| Link Event (Outflow) | US Node | Link  | DS Node         | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|----------------------|---------|-------|-----------------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer     | EX S9   | 1.000 | EX S10          | 6.5           | 0.864          | 0.185    | 0.0996        |                    |
| 15 minute summer     | EX S10  | 1.001 | EX S12          | -16.4         | -0.932         | -0.469   | 0.1611        |                    |
| 30 minute summer     | EX S11  | 2.000 | 2.000:50%       | 30.8          | 0.774          | 0.569    | 0.4213        |                    |
| 30 minute winter     | EX S11  | 2.000 | EX S12          | 44.7          | 1.125          | 0.826    | 0.4213        |                    |
| 15 minute summer     | EX S12  | 1.002 | TW 1372mm SEWER | 91.1          | 2.291          | 0.924    | 1.2780        | 52.2               |



Simulation Settings

|                      |                   |                   |        |                            |     |
|----------------------|-------------------|-------------------|--------|----------------------------|-----|
| Rainfall Methodology | FSR               | Summer CV         | 1.000  | Drain Down Time (mins)     | 240 |
| FSR Region           | England and Wales | Winter CV         | 1.000  | Additional Storage (m³/ha) | 0.0 |
| M5-60 (mm)           | 21.000            | Analysis Speed    | Normal | Check Discharge Rate(s)    | x   |
| Ratio-R              | 0.432             | Skip Steady State | x      | Check Discharge Volume     | x   |

Storm Durations

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

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 1                        | 0                        | 0                        | 0                        |

Results for 1 year Critical Storm Duration. Lowest mass balance: 98.75%

| Node Event       | US Node         | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status     |
|------------------|-----------------|-------------|-----------|-----------|--------------|---------------|------------|------------|
| 15 minute summer | EX S9           | 9           | 23.809    | 0.019     | 1.1          | 0.0210        | 0.0000     | OK         |
| 15 minute summer | EX S10          | 10          | 23.598    | 0.026     | 1.1          | 0.0291        | 0.0000     | OK         |
| 15 minute summer | EX S11          | 10          | 23.617    | 0.167     | 11.6         | 0.1802        | 0.0000     | OK         |
| 15 minute summer | 2.000:50%       | 10          | 23.612    | 0.277     | 17.8         | 0.0000        | 0.0000     | SURCHARGED |
| 15 minute summer | EX S12          | 10          | 23.597    | 0.377     | 33.7         | 0.4264        | 0.0000     | SURCHARGED |
| 15 minute summer | TW 1372mm SEWER | 1           | 23.446    | 1.372     | 33.5         | 0.0000        | 0.0000     | OK         |

| Link Event (Outflow) | US Node | Link  | DS Node         | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|----------------------|---------|-------|-----------------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer     | EX S9   | 1.000 | EX S10          | 1.1           | 0.885          | 0.032    | 0.0092        |                    |
| 15 minute summer     | EX S10  | 1.001 | EX S12          | 1.1           | 0.100          | 0.032    | 0.0897        |                    |
| 15 minute summer     | EX S11  | 2.000 | 2.000:50%       | 11.6          | 0.599          | 0.214    | 0.3779        |                    |
| 15 minute summer     | EX S11  | 2.000 | EX S12          | 17.6          | 0.442          | 0.325    | 0.4213        |                    |
| 15 minute summer     | EX S12  | 1.002 | TW 1372mm SEWER | 33.5          | 0.843          | 0.340    | 1.2780        | 11.9               |

