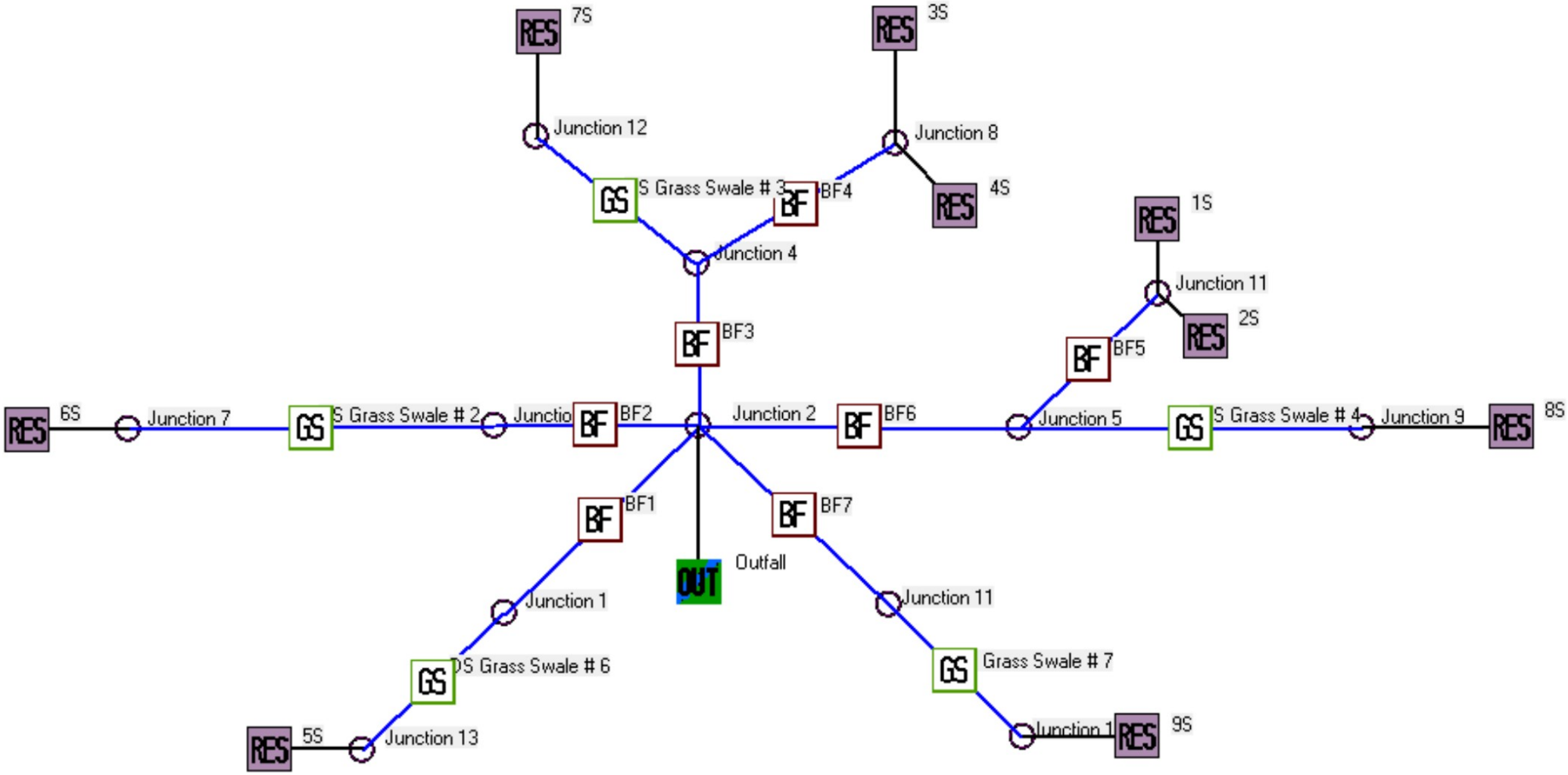
RES
7S
RES
3S
Junction 12
Junction 8
GS
S Grass Swale # 3
BF
BF4
RES
4S
RES
1S
Junction 4
Junction 11
BF
BF3
RES
2S
BF
BF5
RES
6S
Junction 7
GS
S Grass Swale # 2
Junctio
BF
BF2
Junction 2
BF
BF6
Junction 5
GS
S Grass Swale # 4
Junction 9
RES
8S
BF
BF1
BF
BF7
OUT
Outfall
Junction 1
Junction 11
GS
DS Grass Swale # 6
GS
Grass Swale # 7
RES
5S
Junction 13
Junction 1
RES
9S

Data file name: U:\2 Clients\Karl Schilling 11\Highway 35 Development\Slamm\Total Project 20180405.mdb
WinSLAMM Version 10.3.4
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 04-05-2018 Time: 16:05:01
Site information:

LU# 1 - Residential: 1S Total area (ac): 0.454
  1 - Roofs 1: 0.005 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  13 - Paved Parking 1: 0.174 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  25 - Driveways 1: 0.006 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  31 - Sidewalks 1: 0.024 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  51 - Small Landscaped Areas 1: 0.245 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Residential: 6S Total area (ac): 2.409
  1 - Roofs 1: 0.381 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  13 - Paved Parking 1: 0.220 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  31 - Sidewalks 1: 0.011 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  51 - Small Landscaped Areas 1: 1.797 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Residential: 3S Total area (ac): 7.413
  1 - Roofs 1: 0.664 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
  13 - Paved Parking 1: 0.685 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

```
     25 - Driveways 1:  0.040 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.169 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  5.855 ac.    Normal Sandy    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 4 - Residential:  2S     Total area (ac):  0.599
     13 - Paved Parking 1:  0.398 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.022 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.082 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.097 ac.    Normal Sandy    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 5 - Residential:  8S     Total area (ac):  1.105
     1 - Roofs 1:  0.177 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.928 ac.    Normal Sandy    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 6 - Residential:  9S     Total area (ac):  4.711
     1 - Roofs 1:  0.798 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  1.063 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.029 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.821 ac.    Normal Sandy    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 7 - Residential:  4S     Total area (ac):  1.582
     1 - Roofs 1:  0.071 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  0.459 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.056 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.121 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.875 ac.    Normal Sandy    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 8 - Residential:  7S     Total area (ac):  1.451
     1 - Roofs 1:  0.385 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.066 ac.    Normal Sandy    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

LU# 9 - Residential:  5S     Total area (ac):  1.970
     1 - Roofs 1:  0.272 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
```

```
     13 - Paved Parking 1:  0.274 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.322 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.102 ac.    Normal Sandy    Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz


      Control Practice 1:  Biofilter CP# 1 (DS) - BF1
         1.  Top area (square feet) =  2951
         2.  Bottom aea (square feet) =  200
         3.  Depth (ft):   5
         4.  Biofilter width (ft) - for Cost Purposes Only:   4
         5.  Infiltration rate (in/hr) =  0.5
         6.  Random infiltration rate generation?  No
         7.  Infiltration rate fraction (side):   1
         8.  Infiltration rate fraction (bottom):   1
         9.  Depth of biofilter that is rock filled (ft) 0
         10.  Porosity of rock filled volume =  0
         11.  Engineered soil infiltration rate:   3.6
         12.  Engineered soil depth (ft) =  2
         13.  Engineered soil porosity =  0.27
         14. Percent solids reduction due to flow through engineered soil =  80
         15. Biofilter peak to average flow ratio =  3.8
         16. Number of biofiltration control devices =  1
         17. Particle size distribution file:  Not needed - calculated by program
         18. Initial water surface elevation (ft):   0
         Soil Data                        Soil Type Fraction in Eng. Soil
             User-Defined Soil Type         1.000
         Biofilter Outlet/Discharge Characteristics:
             Outlet type:  Broad Crested Weir
                    1.  Weir crest length (ft):   5
                    2.  Weir crest width (ft):   2
                    3.  Height of datum to bottom of weir opening:   4
             Outlet type:  Drain Tile/Underdrain
                    1.  Underdrain outlet diameter (ft):   0.5
                    2.  Invert elevation above datum (ft):   0
                    3.  Number of underdrain outlets:   2

      Control Practice 2:  Biofilter CP# 2 (DS) - BF2
         1.  Top area (square feet) =  4837
```

```
   2.  Bottom aea (square feet) =  200
   3.  Depth (ft):   5
   4.  Biofilter width (ft) - for Cost Purposes Only:   4
   5.  Infiltration rate (in/hr) =  0.5
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  2
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
   Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Soil Type         1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   5
              2.  Weir crest width (ft):   2
              3.  Height of datum to bottom of weir opening:   4
       Outlet type:  Drain Tile/Underdrain
              1.  Underdrain outlet diameter (ft):   0.5
              2.  Invert elevation above datum (ft):   0
              3.  Number of underdrain outlets:   2

Control Practice 3:  Biofilter CP# 3 (DS) - BF3
   1.  Top area (square feet) =  8235
   2.  Bottom aea (square feet) =  108
   3.  Depth (ft):   5
   4.  Biofilter width (ft) - for Cost Purposes Only:   4
   5.  Infiltration rate (in/hr) =  0.5
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
```

```
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  2
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
   Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Soil Type         1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
               1.  Weir crest length (ft):   5
               2.  Weir crest width (ft):   2
               3.  Height of datum to bottom of weir opening:   4
       Outlet type:  Drain Tile/Underdrain
               1.  Underdrain outlet diameter (ft):   0.5
               2.  Invert elevation above datum (ft):   0
               3.  Number of underdrain outlets:   2

Control Practice 4:  Biofilter CP# 4 (DS) - BF5
   1.  Top area (square feet) =  3133
   2.  Bottom aea (square feet) =  300
   3.  Depth (ft):   4
   4.  Biofilter width (ft) - for Cost Purposes Only:   4
   5.  Infiltration rate (in/hr) =  0.5
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  2
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
```

```
   18. Initial water surface elevation (ft):   0
   Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Soil Type         1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   5
              2.  Weir crest width (ft):   2
              3.  Height of datum to bottom of weir opening:   3
       Outlet type:  Drain Tile/Underdrain
              1.  Underdrain outlet diameter (ft):   0.5
              2.  Invert elevation above datum (ft):   0
              3.  Number of underdrain outlets:   2

Control Practice 5:  Grass Swale CP# 1 (DS) - DS Grass Swale # 2
   Total drainage area (acres)= 2.409
   Fraction of drainage area served by swales (ac) = 1.00
   Swale density (ft/ac) = 202.49
   Total swale length (ft) = 488
   Average swale length to outlet (ft)= 244
   Typical bottom width (ft) = 6.0
   Typical swale side slope (_H:1V) = 3.0
   Typical longitudinal slope (ft.H/ft.V) = 0.010
   Swale retardance factor:  B
   Typical grass height (in) = 6.0
   Swale dynamic infiltration rate (in/hr)= 0.500
   Typical swale depth (ft) for cost analysis (optional) = 0.0
   Particle size distribution file name: Not needed - calculated by program
   Use total swale length instead of swale density for infiltration calculations:  False

Control Practice 6:  Grass Swale CP# 2 (DS) - DS Grass Swale # 3
   Total drainage area (acres)= 1.451
   Fraction of drainage area served by swales (ac) = 1.00
   Swale density (ft/ac) = 374.91
   Total swale length (ft) = 544
   Average swale length to outlet (ft)= 272
   Typical bottom width (ft) = 6.0
   Typical swale side slope (_H:1V) = 3.0
   Typical longitudinal slope (ft.H/ft.V) = 0.010
   Swale retardance factor:  B
```

```
   Typical grass height (in) = 6.0
   Swale dynamic infiltration rate (in/hr)= 0.500
   Typical swale depth (ft) for cost analysis (optional) = 0.0
   Particle size distribution file name: Not needed - calculated by program
   Use total swale length instead of swale density for infiltration calculations:  False

Control Practice 7:  Grass Swale CP# 3 (DS) - DS Grass Swale # 4
   Total drainage area (acres)= 1.105
   Fraction of drainage area served by swales (ac) = 1.00
   Swale density (ft/ac) = 197.10
   Total swale length (ft) = 218
   Average swale length to outlet (ft)= 109
   Typical bottom width (ft) = 6.0
   Typical swale side slope (_H:1V) = 3.0
   Typical longitudinal slope (ft.H/ft.V) = 0.010
   Swale retardance factor:  B
   Typical grass height (in) = 6.0
   Swale dynamic infiltration rate (in/hr)= 0.500
   Typical swale depth (ft) for cost analysis (optional) = 0.0
   Particle size distribution file name: Not needed - calculated by program
   Use total swale length instead of swale density for infiltration calculations:  False

Control Practice 8:  Biofilter CP# 5 (DS) - BF6
   1.  Top area (square feet) =  6987
   2.  Bottom aea (square feet) =  216
   3.  Depth (ft):   5
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.5
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  2
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
```

```
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
   Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Soil Type         1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
               1.  Weir crest length (ft):   5
               2.  Weir crest width (ft):   5
               3.  Height of datum to bottom of weir opening:   4
       Outlet type:  Drain Tile/Underdrain
               1.  Underdrain outlet diameter (ft):   0.5
               2.  Invert elevation above datum (ft):   0
               3.  Number of underdrain outlets:   2

Control Practice 9:  Biofilter CP# 6 (DS) - BF7
   1.  Top area (square feet) =  1545
   2.  Bottom aea (square feet) =  216
   3.  Depth (ft):   5
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  2
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
   Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Soil Type         1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
               1.  Weir crest length (ft):   5
               2.  Weir crest width (ft):   5
```

```
               3.  Height of datum to bottom of weir opening:   4
        Outlet type:  Drain Tile/Underdrain
               1.  Underdrain outlet diameter (ft):   0.5
               2.  Invert elevation above datum (ft):   0
               3.  Number of underdrain outlets:   2

Control Practice 10:  Biofilter CP# 7 (DS) - BF4
   1.  Top area (square feet) =  30000
   2.  Bottom aea (square feet) =  564
   3.  Depth (ft):   6
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.5
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  2
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
   Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Soil Type         1.000
   Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
               1.  Weir crest length (ft):   5
               2.  Weir crest width (ft):   5
               3.  Height of datum to bottom of weir opening:   5
       Outlet type:  Drain Tile/Underdrain
               1.  Underdrain outlet diameter (ft):   0.5
               2.  Invert elevation above datum (ft):   0
               3.  Number of underdrain outlets:   2

Control Practice 11:  Grass Swale CP# 4 (DS) - DS Grass Swale # 6
   Total drainage area (acres)= 1.970
```

```
   Fraction of drainage area served by swales (ac) = 1.00
   Swale density (ft/ac) = 136.55
   Total swale length (ft) = 269
   Average swale length to outlet (ft)= 135
   Typical bottom width (ft) = 6.0
   Typical swale side slope (_H:1V) = 3.0
   Typical longitudinal slope (ft.H/ft.V) = 0.010
   Swale retardance factor:  B
   Typical grass height (in) = 12.0
   Swale dynamic infiltration rate (in/hr)= 0.500
   Typical swale depth (ft) for cost analysis (optional) = 0.0
   Particle size distribution file name: Not needed - calculated by program
   Use total swale length instead of swale density for infiltration calculations:  False

Control Practice 12:  Grass Swale CP# 5 (DS) - DS Grass Swale # 7
   Total drainage area (acres)= 4.711
   Fraction of drainage area served by swales (ac) = 1.00
   Swale density (ft/ac) = 83.89
   Total swale length (ft) = 395
   Average swale length to outlet (ft)= 198
   Typical bottom width (ft) = 6.0
   Typical swale side slope (_H:1V) = 3.0
   Typical longitudinal slope (ft.H/ft.V) = 0.010
   Swale retardance factor:  B
   Typical grass height (in) = 12.0
   Swale dynamic infiltration rate (in/hr)= 0.500
   Typical swale depth (ft) for cost analysis (optional) = 0.0
   Particle size distribution file name: Not needed - calculated by program
   Use total swale length instead of swale density for infiltration calculations:  False
```

SLAMM for Windows Version 10.3.4

Data file name: U:\2 Clients\Karl Schilling 11\Highway 35 Development\Slamm\Total Project 20180405.mdb
Data file description:
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 04-05-2018 Time of run: 16:04:38
Total Area Modeled (acres): 21.694
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	594834	-	86.34	3206	-
Outfall Total with Controls:	191714	67.77%	31.54	377.4	88.23%
Annualized Total After Outfall Controls:	192241			378.5	