



Data file name: U:\Makepeace Engineering\2 Clients\Uploaded\Karl Schilling 11\Highway 35  
Development\Slamm\Total Project 20180405-V10.3.mdb  
WinSLAMM Version 10.4.0  
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.ppd  
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: 06-25-2025 Time: 12:42:27  
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): 7.412

1 - Roofs 1: 0.750 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz  
13 - Paved Parking 1: 0.741 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: 0.183 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz  
51 - Small Landscaped Areas 1: 5.698 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 area (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 area (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 area (square feet) = 108
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 4

1. Top area (square feet) = 3133
2. Bottom area (square feet) = 300
3. Depth (ft): 4.42
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: 3.42

    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 area (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 area (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) = 20000
- 2. Bottom area (square feet) = 564
- 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 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 10.4.0

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Data file name: U:\Makepeace Engineering\2 Clients\Uploaded\Karl Schilling 11\Highway 35 Development\Slamm\Total Project 20180405-V10.3.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\_GE003.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: 06-25-2025 Time of run: 12:40:32

Total Area Modeled (acres): 21.693

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:	608226	-	85.92	3262	-
Outfall Total with Controls:	200472	67.04%	32.39	405.4	87.57%
Annualized Total After Outfall Controls:	201023			406.5	