

# Stormwater Modeling Summary

## Riverfront Redevelopment Roadway Improvements

City of Monona, Dane County, Wisconsin

### Project Description

The City of Monona is redeveloping the Yahara Commons neighborhood, located between the Yahara River, W. Broadway Avenue, and Bridge Road. The City is responsible for redeveloping Metropolitan Lane, a new city park, and a connecting driveway and parking area. The total redevelopment area is 7.5 acres. The City is responsible for 3.05 acres while private developers are responsible for the remaining 4.45 acres. The governing statutes are NR 151.11 and NR 151.122 for construction erosion control and total suspended solids performance standards. The project is exempt from peak discharge and infiltration performance standards because of NR 151.123(2)(b) and NR 151.124(3)(b)(3), respectively, because it is classified as a redevelopment. The site therefore need to meet 40% TSS Reduction. The proposed design achieves 55.02% TSS reduction through a combination of catch basin sumps and porous pavement. The municipal redevelopment will be constructed concurrently with private development adjacent to the road. This project succeeds the demolition project at the same site, WPDES Permit No. WI-S067831-05, Redevelopment #9 Building Demolition.

A WinSLAMM v 10.3.4 model was created to calculate the total site TSS loading and proposed reduction. Although some private developments will drain to the storm sewer, they were not included in the modeling because they will not affect catch basin performance. Only the pollutant loading from traffic areas were counted, with sidewalks, pervious, park, etc. land use conditions routed through an "Other Control Device." Table 1 below shows the WinSLAMM Land Use Conditions.

Table 5. WinSLAMM Land Use Conditions per Basin in Acres

Land Use	P4A	PP1	Park	P4C	P4B	PP2	PP3	PP5	PP4	PP6	O1
Pervious	0.02	0.02	0.01	0.16	0.33	0.01	0.00	0.00	0.00	0.00	0.01
Permeable Pavers	0.01	0.04	0.00	0.00	0.00	0.04	0.02	0.03	0.07	0.03	0.00
Sidewalk	0.01	0.03	0.02	0.10	0.19	0.01	0.00	0.00	0.00	0.00	0.00
Street	0.04	0.04	0.00	0.14	0.20	0.04	0.04	0.02	0.06	0.03	0.00
Driveway	0.00	0.00	0.00	0.14	0.18	0.00	0.00	0.00	0.00	0.00	0.01
Park	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paved Parking	0.00	0.00	0.00	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.08	0.13	0.75	0.55	1.12	0.10	0.06	0.05	0.13	0.06	0.02

The total yield was 1,685 lbs TSS. The post-control yield was 803.6 lbs TSS, with a total reduction of 52.31%, meeting the 40% performance standard. Figure 1 shows the land use conditions and drainage area of the site. Figure 2 shows the WinSLAMM interface, and Figure 3 shows the WinSLAMM output.

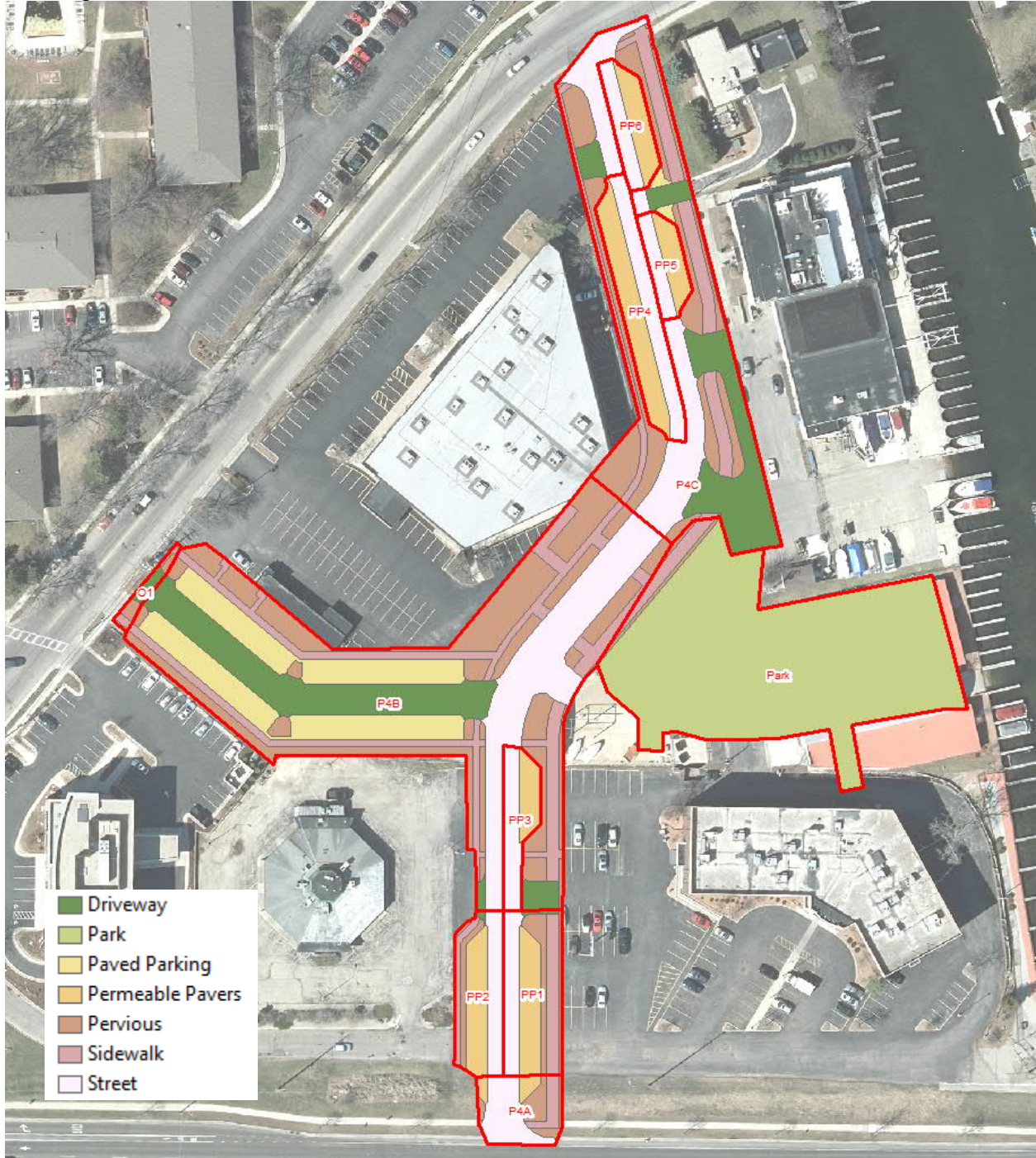


Figure 1. Drainage Area and Proposed Land Use Conditions

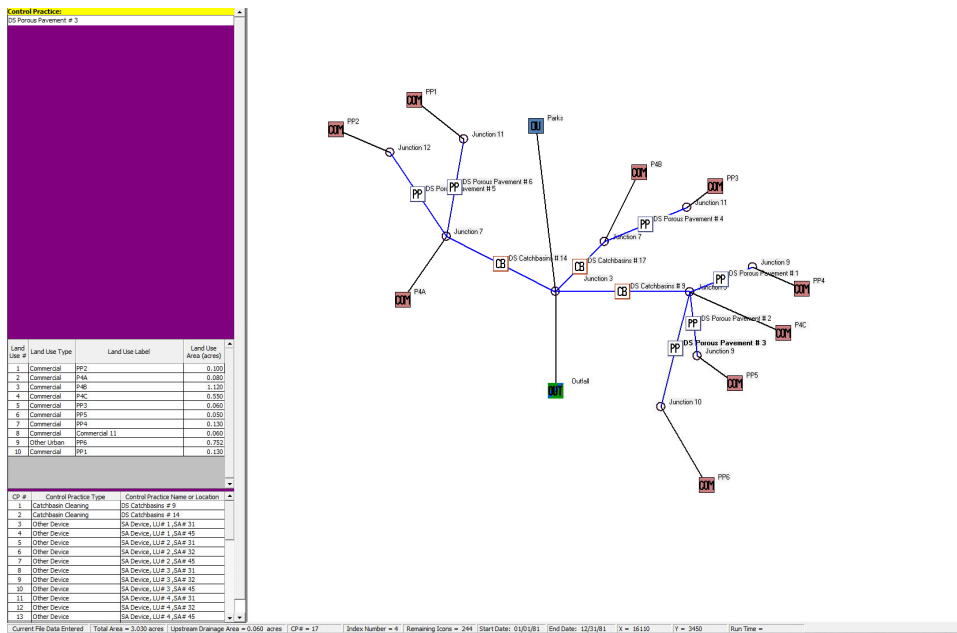


Figure 2. WinSLAMM Interface

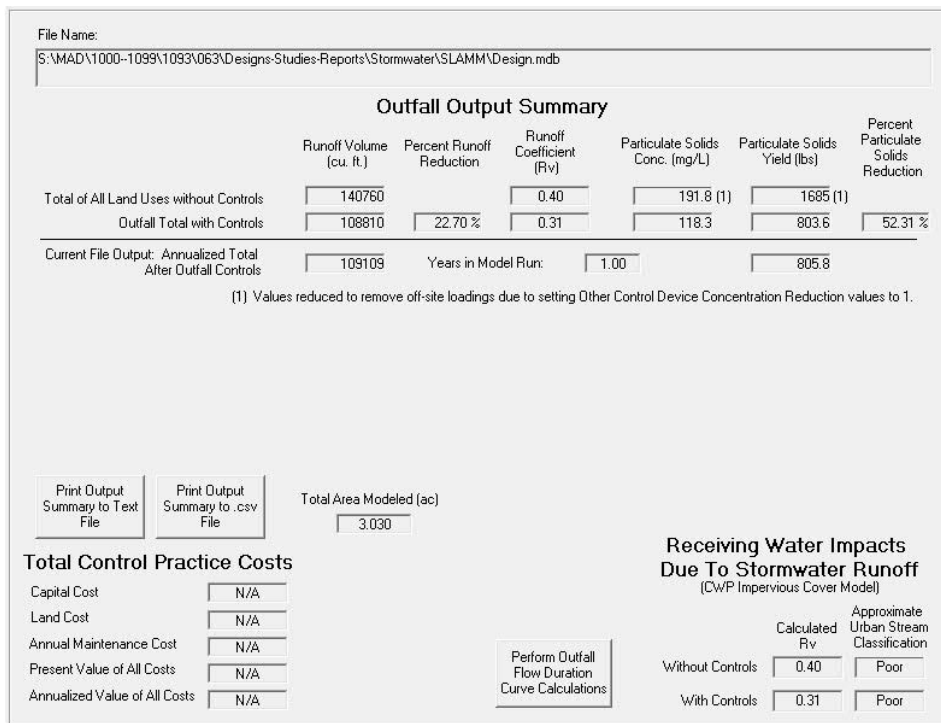


Figure 3. WinSLAMM Output