STORM WATER CALCULATION MEMO
FOR:

La Crosse Distillery

La Crosse, WI
Excel Job # 1749960
BASED ON DSPS Plumbing Code, and SLAMM
October 26, 2017

Prepared By:
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PROJECT OVERVIEW

The proposed La Crosse Distillery project is situated on a 0.21 acre parcel in La Crosse, WI. The proposed redevelopment project is located on the north side of Vine Street and west side of 2nd Street (NW corner of Vine & 2nd) in the City of La Crosse. The proposed development will include a single story with mezzanine, 6,642 s.f. distillery and tasting building with a small patio on the south side fronting Vine Street and a loading dock area on the north side with access to 2nd Street. The existing site is completely developed and covered with buildings and impervious surfaces. The existing site stormwater drains overland to the west and north into the public right-of-ways. It appears the building roofs are internally drained and connected to City storm sewer.

Proposed site disturbance will be 0.31 acres as the majority of right-of-way areas will be reconstructed to up to the existing back of curb fronting the project. The right-of-way reconstruction will match existing and pervious pavers will be utilized to promote infiltration of the public sidewalk. Stormwater for the redevelopment project will drain to a new Hydro International Up-Flo Filter Manhole for stormwater quality treatment. This filter treatment manhole will be located in the loading dock area of the site and discharge to City storm sewer in 2nd Street. See the Civil Engineering plan set for the proposed stormwater quality system details & location.

WATER QUANTITY

City of La Crosse – Exempt.

WATER QUALITY

City of La Crosse – For redevelopment, 60% TSS reduction of load from impervious surfaces other than disconnected rooftops compared to no controls.

The proposed Hydro International Up-Flo Filter system will treat stormwater for stormwater quality. See attachment for the SLAMM calculations, inputs, and outputs. See the summary below:

	Particulate Solids For drainage Area (lbs)	Particulate Solids Yield After drainage and Controls (lbs)
Post Development	40.66	14.49
Total	40.66	14.49

Results: Pond TSS reduction = 14.49 / 40.47 = 0.3564(1-0.3564) x 100 = 65.36% TSS Removal
Therefore, stormwater quality requirements are met.

INFILTRATION

City of La Crosse (Redevelopment) –Exempt.

STORM SEWER PIPE DESIGN

All storm pipes were designed per the WI DSPS Plumbing Code. See Construction Plan set for calculations and basin areas.

EMERGENCY OVERFLOW ROUTE

In the event of storm sewer collection facilities becoming plugged or at capacity, overland overflow routes are available out of the loading dock into the public right-of way.

EROSION CONTROL

The following are practices that will be used to control sediment during construction:
Silt Fence – Silt fence will be placed around the perimeter of the site for perimeter control as well as downhill of any disturbed areas where sheet flow will exist.
Tracking Pads – Stone tracking pads will be placed at all construction entrances to the site to ensure dirt and soil tracked onto public roads is limited.
Inlet Protection – Inlet protection will be provided in storm inlets adjacent to the construction site.
Erosion Matting – Erosion matting will be placed on any steep slopes as well as ditch bottoms to ensure that these areas are permanently stabilized over time.
The erosion control locations, specifications, construction sequence, site stabilization notes, and seeding notes can be seen on civil sheets C1.0 and C1.3.

A USLE calculation spreadsheet has not been completed for this project as the entire site will be excavated below adjacent right-of-way grade for building footing and column construction. Therefore, the entire site will act as a sediment basin and no stormwater will leave the site until the structure is erected and covered in impervious surface. At that point, the stormwater will be routed through the proposed underground stormwater quality treatment facility.

ATTACHMENTS

SLAMM Calculations
Construction Plan Set

SLAMM for Windows Version 10.3.2

Data file name: F:\Job Files\1749960 La Crosse Distillery - La Crosse, WI\1749964 Civil\storm water report and calculations\1749960 Site SLAMM.mdb
Data file description: La Crosse Distillery
Rain file name: F:\Programs\civil\WinSLAMM\DEC06\WisReg - Minneapolis MN 1959.RAN
Particulate Solids Concentration file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\Freeway Dec06.std
Pollutant Relative Concentration file name: F:\Programs\civil\WinSLAMM\v10.3.2\Parameter Files\WI_GEO03.ppdx
Start of Winter Season: 11/04 End of Winter Season: 03/13
Model Run Start Date: 01/02/59 Model Run End Date: 12/28/59
Date of run: 10-25-2017 Time of run: 13:14:57
Total Area Modeled (acres): 0.210
Years in Model Run: 0.99

	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:	13722	-	47.47	40.66	-
Outfall Total with Controls:	13739	-0.12%	16.89	14.49	64.36%
Annualized Total After Outfall Controls:	13930			14.69	

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WinSLAMM Version 10.3.2
Rain file name: F:\Programs\civil\WinSLAMM\DEC06\WisReg - Minneapolis MN 1959.RAN
Particulate Solids Concentration file name:
F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name:
F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name:
F:\Programs\civil\WinSLAMM\v10.3.2\Parameter Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File:
F:\Programs\Civil\WinSLAMM\v10.3.2\Parameter Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/02/59 Study period ending date: 12/28/59
Start of Winter Season: 11/04 End of Winter Season: 03/13
Date: 10-25-2017 Time: 13:16:18
Site information:
La Crosse Distillery
LU# 1 - Commercial: Commercial 1 Total area (ac): 0.190
    1 - Roofs 1: 0.160 ac. Flat Connected Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz
    13 - Paved Parking 1: 0.020 ac. Connected Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz
    31 - Sidewalks 1: 0.010 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: OFFSITE Total area (ac): 0.020
    31 - Sidewalks 1: 0.020 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Upflo Filter CP# 1 (DS) - DS UpfloFilter # 1
Media Type: CPZ
Fraction of Area Served by Upflo Filters (0-1): 1.0
Height from Outlet Invert to Structure Top (ft): 4.0
Sump Depth (ft): 3.00
Sump Cleaning/Filter Replacement is not considered during the model run
Solve for Given Conditions
Number of filters: 2
Upflo Filter particle size distribution file name: Not needed - calculated by program