

Applicable Design Performance Criteria—5th Addition to Cherokee Park

Peak Flow Rate Control

City of Madison, chapter 37 of MGO

- Maintain pre-development peak runoff rates for the 2-, and 10-year, 24-hour events;
- Safely pass the 100-year, 24-hour event;

State Criteria, NR151

- The 2-year post-development peak discharge not to exceed the pre-development peak discharge;

Comparison of Existing and Proposed Peak Discharges

Scenario	Recurrence Interval and Peak Runoff (cfs)		
	2-year	10-year	100-year
Existing	4.9	17	40
Proposed	3.2	7.9	18

As shown in the table above, the proposed stormwater management plan exceeds local and state criteria for peak flow rate control. There are currently no standards for runoff volume control; however, under existing conditions the 5th Addition generates approximately 3.7 ac-ft of runoff for the 100-year, 24-hour storm. Proposed conditions will result in approximately 4.9 ac-ft of runoff, which is about a 30 percent increase. This increase is significantly less than the typical increase of triple the runoff volume for residential development.

Water Quality Control

City of Madison, chapter 37 of MGO

- Total Suspended Solids (TSS) reduced by 80% on an average annual basis, as compared to no controls;
- Infiltrate 90% of predevelopment infiltration volume or meet or exceed average annual recharge rate of 7.6 in/yr if more than 1% of site is dedicated to infiltration

State Criteria, NR151

- Total Suspended Solids (TSS) reduced by 80% on an average annual basis, as compared to no controls;
- Infiltrate 90% of predevelopment infiltration volume or dedicate at least 1% of site to infiltration

Summary of Proposed Water Quality Performance

	TSS (lbs.)	TSS (Percent)
Site Loading (Prior to Controls)	4,433	100
Infiltration	414	9.3
Trapped	3590	81
Total Removed	4004	90

Comparison of Existing and Proposed Stay-On

Existing (100%)	51.71 ac-ft
Existing (90%)	46.54 ac-ft
Proposed	45.17 ac-ft

Summary of Proposed Recharge Performance

Scenario	Annual Recharge (in.)
Existing	7.6
Proposed	7.81

The stormwater management plan far exceeds the 80% TSS removal, with a result of 90%. The stay-on goal of 90% is nearly met, with models indicating 87% stay-on. However, 1.4% of the site is dedicated to infiltration, exceeding state requirement of 1%, and the annual recharge rate of 7.6 in/yr is exceeded as shown in the above table.