

# What is the Common Standard?

- Volume Reduction in the Amount Equal to One Inch of Runoff from the Newly Constructed Site Impervious Surfaces
- Many cities use 1" as the standard for volume reduction (Water Quality Control Volume).
- Many states have adopted volume reduction requirements ranging from 0.60" –1.5"

# What is WQCV?

- Water Quality Control Volume is a specific volume of stormwater runoff (about half of the runoff from a 2-year storm).
- The 2 year storm has a “1 in 2 chance” or 50% chance of happening in any given year.

# WQCV Standard

- Stormwater BMPs are designed to capture and provide treatment for that specific volume (the WQCV)
- This WQCV is equivalent to the runoff from an 80<sup>th</sup> percentile storm, meaning that 80 percent of the most frequently occurring storms are fully captured and treated and larger events are partially treated.

# What are other States doing?

- Colorado – detention & WQCV standard  $> 0.6''$
- Iowa – detention  $1''-1\frac{1}{4}''$  for 24 hrs & WQ std.
- Minnesota - detention & WQCV standard  $1.09''-1.46''$  &  $\frac{1}{2}''$  runoff from new impervious surfaces
- Missouri - detention & WQCV treatment std  $1.14''-1.37''$  for 24 hrs.
- South Dakota - detention & WQCV treatment std.

City	Standard	Stormwater Utility Fee	Incentives/Credits
Arvada, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">Yes</a>	?
Aurora, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">Yes</a>	?
Boulder, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">Yes</a>	Yes
Centennial, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">Yes</a>	<a href="#">Yes</a>
Colorado Springs, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">Yes</a>	under review
Denver, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	Yes	Yes
Fort Collins, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	Yes	?
Lake Wood, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">Yes</a>	No
Pubelo, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">Yes</a>	Yes
Thorton, CO	WQCV 80 percentile storm event (USDCM Chap 3) > 0.6"	<a href="#">No</a>	No
Westminster, CO	WQCV 5 & 100 Yr Storm	<a href="#">Yes</a>	?
Des Moines, IA	1 1/4" Rainfall Det for 24 hrs	Yes	Yes
Cedar Rapids, IA	1" Rainfall Det for 24 Hrs	Permissible	Yes
Olathae, KS	1 Yr Storm	Yes	Yes
Overland Park, KS	90% Mean Annual Event/Conditional	<a href="#">Yes</a>	Yes
Wichita, KS	<a href="#">1.2" of Rainfall (85% of all storms)</a>	Yes	Yes
Topeka, KS	WQ per specific pollutants, per review	<a href="#">Yes</a>	Yes
Columbia, MO	WQC 1.3 inches	<a href="#">Yes</a>	?
Independence, MO	Voluntary - No requirement	<a href="#">Yes</a>	?
Kansas City, MO	90% Mean Annual Event/Conditional	<a href="#">Yes</a>	Yes
Springfield, MO	WQCV first 1/2" of runoff or first 1" over entire development	<a href="#">?</a>	?
St. Louis, MO	water quality volume of runoff from 1.14 inches of rainfall	<a href="#">Yes</a>	?
Minneapolis, MN	1st 1/2" x new impervious area of runoff	<a href="#">Yes</a>	<a href="#">Yes</a>
Rochester, MN	1.09" - 1.46" WQ Event 90-95% Rain Depth	<a href="#">Yes</a>	<a href="#">Yes</a>
St. Paul, MN	1st 1/2" x new impervious area of runoff	<a href="#">Yes</a>	?
Lincoln, NE	Voluntary WQCV 1st 1/2" x new impervious area of runoff	<a href="#">No</a>	No
Omaha, NE	1st 1/2" x new impervious area of runoff	Charges Fee	No
Sioux Falls, SD	WQCV 80 percentile storm event	Yes	Yes

# Why One Inch?

- 80-90% of all rainfall events are 1 inch or less
- First Flush” of runoff has the highest concentration of pollutants.
- Treatment cost increases from 0.5” to 1” are low (pipe, rock, excavation, plants)
- Stormwater treatment after first 1” of runoff is minimal