

Land Use Map



ROOT RIVER LAND USE

| LAND USE CATEGORY | SQUARE MILES | PERCENTAGE |
|--|--------------|-------------|
| Agriculture | 92 | 46% |
| Low Density Residential | 26 | 13% |
| High Density Residential | 4 | 2% |
| Commercial | 1 | 1% |
| Outdoor Recreational, Wetland, Woodland | 28 | 14% |
| Transportation, Communication, Utilities | 18 | 9% |
| Manufacturing and Industrial | 28 | 14% |
| Surface Water | 1 | 1% |
| Root River Watershed | 198 | 100% |

LEGEND

Root River Watershed

SEWRPC 2000 Land Use

- Agriculture
- Low Density Residential
- High Density Residential
- Commercial
- Outdoor Recreation, Wetland, and Woodland
- Transportation, Communication, and Utilities
- Manufacturing and Industrial
- Surface Water

Land Use & Stream Flow

Land use and stream flow are crucial to the health of our water resources. The strong relationship between land use and stream flow directly impacts water quality. How we develop and maintain land within our watersheds affects both the quality and quantity of water in our streams, rivers, and lakes. As the watershed develops, the natural ecology and flow characteristics of our streams and rivers can be greatly altered.

Water quality and stream flow (both high or low) are influenced by numerous factors that include: size of the watershed, climate, meteorological events (e.g. rainstorms), geology (e.g. soil types), polluted discharges, and most notably the type and amount of development within the watershed (e.g. land use).

Natural Meadows and Forests 75% - 100% Paved Surfaces



Consider the amount of rainfall that seeps into the ground, evaporates into the air, and runs off the land. In areas with low levels of development, depending on soil conditions, as much as 50 percent of rainfall can be absorbed directly into the ground, with only about 10

percent of this water running off the land. In contrast, where the land has been extensively developed, as in highly urbanized areas, very little water is absorbed into the ground. Instead, more than half of the water runs off the land because of hard impervious surfaces like buildings, streets, and parking lots.

These increases in runoff volumes from highly developed areas often contribute to frequent and more severe flooding problems. Additionally, this runoff also picks up a variety of pollutants from the surrounding landscape and carries it to the stream.

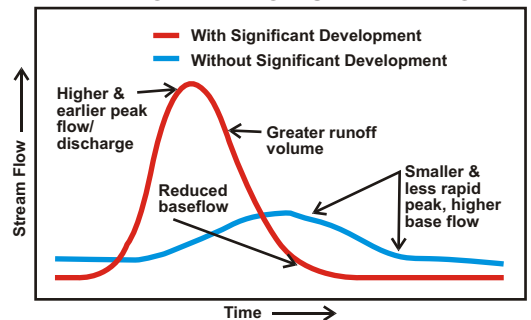
Even small storms in highly developed areas can produce dramatic “pulses” of high flows and pollutant loads.

Because these high flow pulses occur on a more or less regular basis, they can lead to stream channel erosion, bank instability, pollutant-related toxicity to aquatic organisms, and washout

of aquatic organisms that live in the stream upon which fish feed.

While there are environmental consequences to high flows during wet periods, the conditions of lower flow and higher water temperature during dry periods are equally as stressful. This occurs because rainfall flows off the land too quickly in urbanized areas, not having the time to replenish the groundwater flow to the stream in a slow, sustainable manner. This reduction of “baseflow,” the drying of streams and streambeds, prevents the formation of diverse aquatic life communities and healthy fish populations.

IMPACTS OF WATERSHED DEVELOPMENT ON STREAM FLOW



It is well known that the quality and quantity of water in a stream are directly related to the physical characteristics of its drainage area. As individuals, perhaps the greatest way we can influence water quality is by being mindful of how we develop and maintain the land within our watersheds.

Land Use and Stream Flow

The Root River Watershed is primarily comprised of agricultural and open spaces (i.e. forest, wetland, surface water, parkland) representing 62% of the land use; manufacturing, industrial, transportation, and commercial activities account for 24% of the land use. Low and high density residential development represent the remaining 15% of the land use in the Root River Watershed. The majority of the watershed in the Racine County area is made up of agricultural land use; however, there is an ever-increasing demand for additional residential development.