

2.7 Land Use/Land Cover

The land use and land cover of a watershed has a great influence on water quality and stream stability. The watershed's land cover directly impacts stream hydrology by influencing the amount of stormwater runoff. Forested and grassland areas produce significantly less runoff during a rain event than impervious areas. Impervious cover is defined as any surface within a watershed that are impermeable to infiltration of rainfall into underlying soils/groundwater, including rooftops, parking lots, streets, sidewalks, driveways, and even hardpacked dirt roads. Impervious cover is a major influence on streams and streamlife, because of the way it changes the amount and duration of stormwater that gets to the stream. Generally, the more impervious surface there is in a watershed, the less groundwater recharge (which supplies summer low flows), and the greater the magnitude of stormflows (and related erosion in streambeds). In addition to degrading streams, watersheds with a high percentage of impervious are prone to larger and more frequent floods, which cause property damage through inundation, as well as ecological harm resulting from the lower base flows. Impervious surfaces can also raise the temperature of runoff, which reduces dissolved oxygen in the stream, harms some gamefish populations, and promotes excess algal growth

Although presence of vegetated streamside buffer zones or wetlands can help counteract impervious cover impacts, a watershed exceeding 10% impervious cover will generally have difficulty supporting a high quality stream system, and will begin to exhibit characteristics such as eroding banks, poor biological diversity, and high bacterial levels.

Property Use Classification

Land Use	Acres	Percent
PARKS_FOREST_OPEN_SPACE	15843.65	61.33
GENERAL_LD_RESIDENTIAL	4712.15	18.24
RESIDENTIAL_VACANT	2909.75	11.26
SEASON_LD_RESIDENTIAL	667.34	2.58
LIVESTOCK_AGRICULTURE	472.2	1.83
SERVICE_COMMERCIAL	401.7	1.55
MOB_HOME_LD_RESIDENTIAL	322.43	1.25
HOTEL_COMMERCIAL	166.8	0.65
SKI_CENTERS_OPEN_SPACE	105.5	0.41
AGRICULT_VACANT	95.63	0.37
FIELD_CROPS_AGRICULTURE	50	0.19
OFFICE_COMMERCIAL	36.5	0.14
UTILITIES_INDUSTRIAL	25.83	0.10
GENERAL_HD_RESIDENTIAL	11.86	0.05
GOVERNMENTAL	5.5	0.02
INSTITUTIONAL	3.5	0.01
CEMETERIES_OPEN_SPACE	3	0.01
RETAIL_COMMERCIAL	1	0.00
Total Acres	25834.34	100

To assess the property use in the West Kill watershed, the property use classifications as documented on the records of the Greene County Real Property Tax Service Department, was studied. As shown in the chart, the overwhelming majority of property type, with 15,944 acres, is wild, forested, conservation land & public parks. Most of this forest land is owned by the State of New York and under current state laws will remain undeveloped. Residential property type follows in a distant second with 4,712 acres. Residential property in the watershed is predominantly one-family year round residences, located primarily along the West Kill and its tributaries. This growth pattern is expected, due to the topography of the watershed, because the most suitable building sites are located in the valley. While there are a few tax parcels designated as community services, industrial, public services, and recreation & entertainment property types, combined they make up less than 3% of the watershed.

Current Land Cover

Land cover in the West Kill watershed was studied using the LANDSAT TM 1992 data GIS coverage created by the NYC DEP. As show in the table, approximately % of the watershed is covered by coniferous, deciduous, or mixed forest, while grass land cover makes up the remaining %. Impervious cover in the West Kill watershed is currently less than %. Proper land use planning to direct development and preserve sensitive areas can be utilized to maintain this low level of impervious cover.

Land Cover	Acres	% Cover
Forest Coniferous	2,850	14%
Forest Deciduous	15,080	73%
Forest Mixed	2,317	11%
Grass	379	2%
Impervious Surface	7	0%
Water	21	0%

