

Stormwater Utility Plan

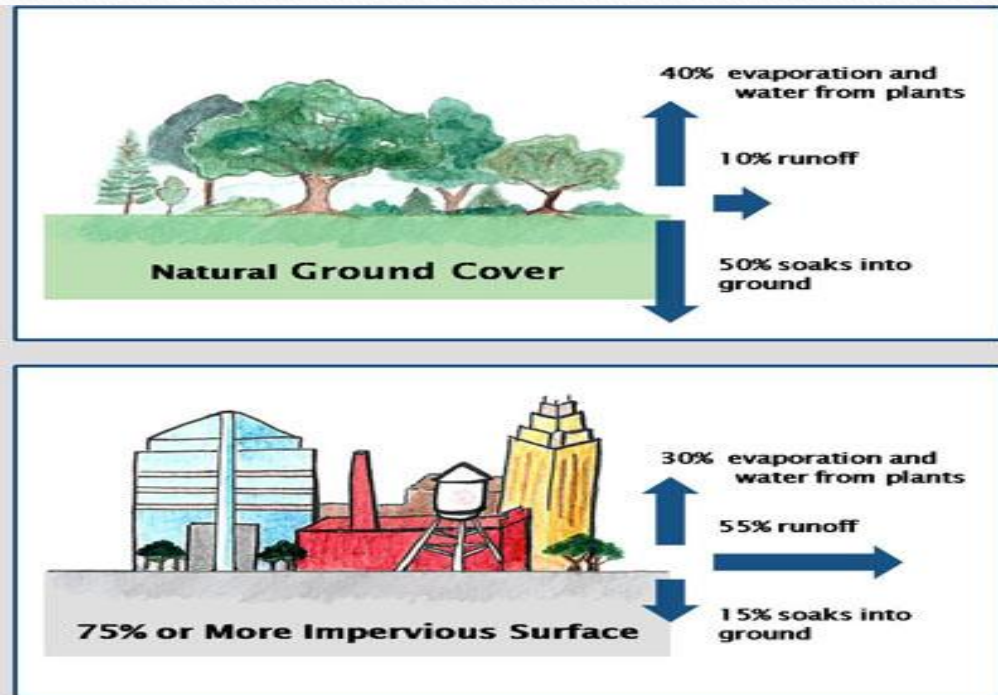
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What is Stormwater Runoff?

- **Stormwater runoff** is rain or snow that can't be absorb into the ground. It is created when rain or snow falls on roads, driveways, parking lots, rooftops and other paved or other surfaces that do not allow water to soak into the ground.

Problems with Stormwater Runoff

- It contains all kinds of contamination like oil, grease, fertilizers, pesticides, trash debris and even metals.
- Stormwater runoff can carry high concentrations of these contaminants to nearby lakes, rivers, streams and clean water supplies.
- The threat is so great that it rivals discharges from factories and sewer plants.
- http://www.pleasantprairieonline.com/services/cleanwater_rutility/clean_water_utility.pdf



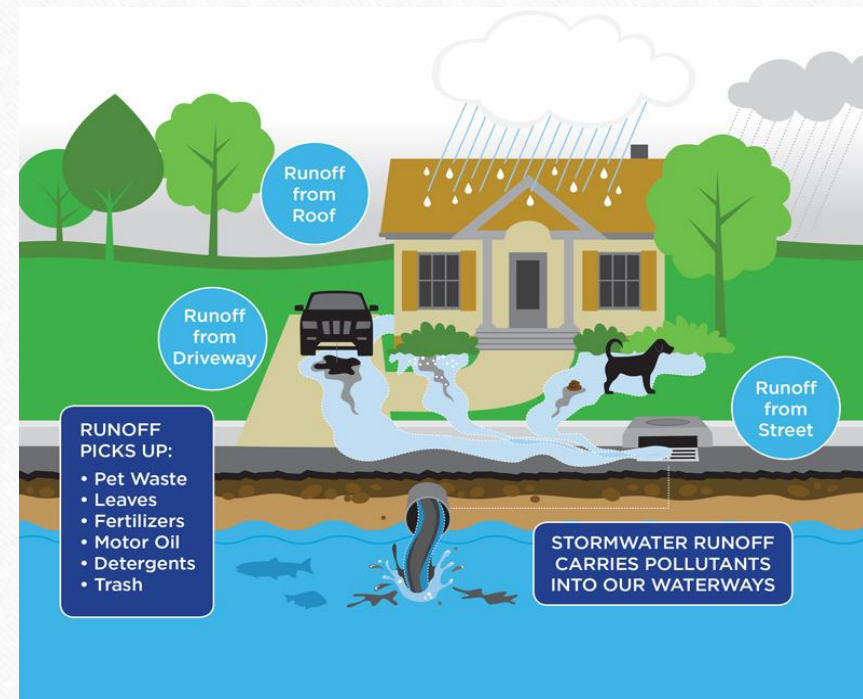
Examples

Town of Waynesville Hazelwood Office - Utility & Tax Office



Where does it all go?

- As you can see by the illustration, stormwater runoff could go into several places such as a natural system like a river or stream.
- It could also find its way into our water basins and sewer drainage system infrastructure.



<http://www.cantonga.gov/gov/departments/public/stormwater.htm>

Why Do We Need a Clean Water Utility?

- The Town of Waynesville prides itself on providing a clean water supply to all of its citizens.
- In order to compliment this invaluable service and to maintain the integrity of our water system a proposed stormwater fee should be considered to help maintain that vital part of our infrastructure.

How would it work?

- A service charge would be created that would distribute the cost of stormwater management based on how a property generates stormwater runoff rather than the assessed value of the property.
- This would appear on the customer's monthly utility statement.

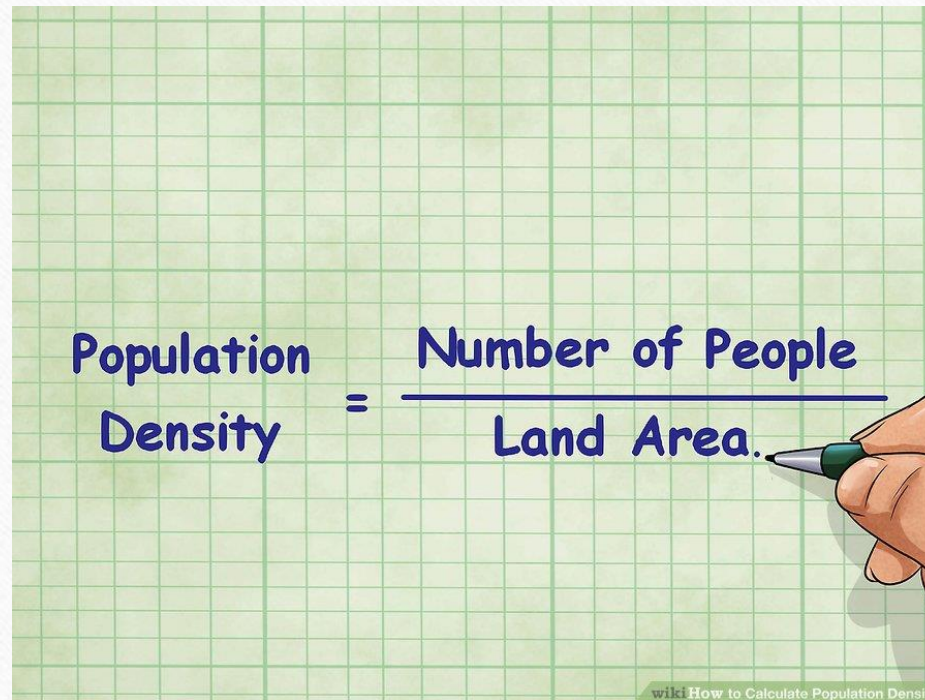
How would it be calculated?

- In order for calculations and the proper fees to be assessed, there are a few things that the Town of Waynesville must consider.
- First, a compilation of all the property that is inside the Town of Waynesville that would qualify for the stormwater fee would have to be determined by measuring the impervious service area by square footage.

What is a Calculable Impervious Surface?

- An **impervious** surface is one that does not allow water to infiltrate to the soil **layer**.
- Things like homes, garages, commercial buildings, etc. are impervious surfaces.
- Areas covered with grass or that are planted (such as forests or gardens) are not counted as **impervious surface**. For billing purposes, wooden **decks** (without roofs) and the area of swimming pools that actually hold water are **considered** pervious.

How to Calculate Density Population



A hand-drawn illustration on a green grid background. The text 'Population Density = Number of People / Land Area.' is written in blue ink. A cartoon hand holding a green pen is shown writing the final period at the end of the sentence. The formula is presented as a fraction with 'Number of People' in the numerator and 'Land Area' in the denominator, separated by a horizontal line.

$$\text{Population Density} = \frac{\text{Number of People}}{\text{Land Area.}}$$

wikiHow to Calculate Population Density

Town of Waynesville

Density Population

- **Population** = 10,137 (7-1-17 State Certified Estimate)
- **Square Miles** = 6.9
- **Density Population**= 1,469.13
- <http://www.waynesvillenc.gov/about-waynesville>

Residential

- Estimated customers 3,747
- Average Equivalent Residential Unit (ERU)= 2,125sq.ft.
- Possible revenue potential per year \$90,000 at \$2.00 per month

These are projected numbers as some property sites may have multiple occupancies. (e.g. Hickory Hollow Apartments)

Commercial

- Estimated customers 1,983
- Average ERU= 7,636 sq.ft.
- $(\text{Commercial ERU} / \text{Residential ERU}) * 2 = \7.18 per month with a Max cap of \$10
- Possible revenue potential per year \$170,855.28
- These are projected numbers as some property sites may have multiple occupancies.(e.g. Waynesville Plaza)

Estimated Revenues for Stormwater

- Total estimated revenues for stormwater is \$260,855.28 per year.
- This is a projection of possible revenues from both Residential and Commercial.
- This could vary as some parcels may have more than one building structure or how it is classified on the tax scroll versus the utility billing.

NPDES Phase 2 Stormwater Minimum Control Measures

- Public Education and Outreach
- Public Participation/ Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

Funding usage

- Education
- Leaf Cleaning
- Vacuum Cleaning
- Street Sweeping
- Construction
- Stream Relocation
- Stream Restoration



Education and Outreach

- Haywood Waterways
- Kids in The Creek
- Big Sweep and Other Cleanup Programs
- Adopt a Stream Program
- Rain Barrel Workshops
- Stream Restoration



Machinery

- Street Sweeper- High maintenance and repairs, Significant increase to EPA emissions charge \$18 - \$45 thousand dollars yearly to dispose of contents.
- Availability to purchase a backup Street Sweeper in case of breakdown.



Machinery

- Availability to purchase a leaf vacuum
- Availability to purchase a cam robot with tilt/pan to check pipes for problems.
- Availability to purchase a vacuum pump.



Drain Maintenance

- Leaf cleaning to prevent drains clogging.
- Street sweeping to collect garbage so it does not enter drains or water ways.
- Vacuum cleaning to remove water and debris from clogged drains so repairs can take place.



Tools

- Trash trap (Trash Trout) for polluted creeks
- Trash traps (Netting) for high use areas
- Curb Inlet Covers to keep trash out of drains



Construction

- Repairs and upgrading drainage systems .
- Replacing old infrastructure with modernized systems.
- New infrastructure to new projects or sites that see high volumes of water.
- Possible to convert roundabout into rain gardens.



Stream Relocation

- Materials
- Engineer oversight
- Man power
- \$52,000.00



Stream Restoration

- Planting along the river to hold the bank in place
- Adding rocks to the river to control flow
- Reshaping impacted areas to sustain high water levels



Why it Matters

- Helps prevent flooding of rivers and drainage systems
- Waynesville has a healthy outdoor community
- Keeping water clean helps show the town is environmentally involved
- Fishermen enjoy Richland Creek a Mountain Heritage Trout Stream



Any Questions?

