

# 5 Things to Know About **ROADSIDE DITCHES**



**1**

**Ditches prevent unsafe accumulation of rainwater on the roadway**

**2**

**Ditches help protect the roadway base**

**3**

**Ditches help mitigate flooding from heavy rains**

**4**

**Ditches help maintain healthy water quality in receiving streams**

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**Ditches have much lower construction costs than pipe drainage systems**



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# 5 Things to Know About ROADSIDE DITCHES

1



## Ditches prevent unsafe accumulation of rainwater on the roadway

An open ditch allows water to move fully away from the road surface while piped storm systems use the edge of the roadway to convey the water until it reaches a point of interception. An open ditch continuously intercepts rainwater flowing toward the roadway from adjacent land. A roadway drainage ditch is less likely to allow accumulation of water on or near a roadway surface.

2



## Ditches help protect the roadway base

The base is the foundation supporting the load of traffic on the asphalt roadway. Water trapped in the base weakens the structure of the roadway, leading to premature failure. During cold weather, freezing and thawing of water trapped in the base cause rapid deterioration of the pavement. An open ditch of enough depth provides continuous drainage of the base.

3



## Ditches help mitigate flooding from heavy rainfall

Open ditches have more capability than a piped system to mitigate flooding from heavy rainfall. During extreme rainfall events, flow in a roadway drainage ditch is limited by driveway culverts or water elevations at discharge points. When that happens, each roadway ditch becomes a small detention basin, storing excess water until discharge capacity becomes available. A piped system does not have capability to store excess water and accelerates water flow, making downstream flooding conditions worse.

4



## Ditches help maintain healthy water quality in receiving streams

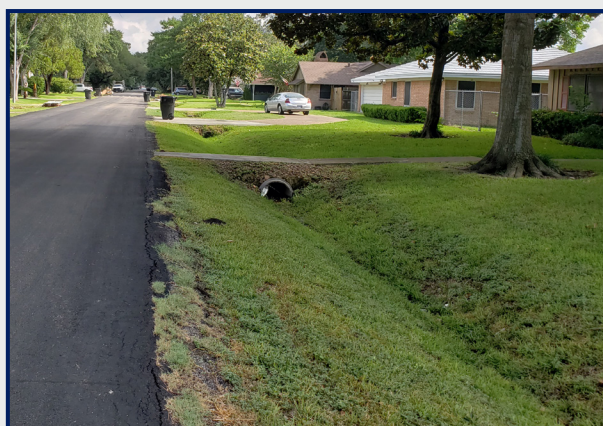
Vegetation in roadside ditches provide valuable filtering of water. Roadways accumulate rubber tire wear, lubricants and other substances from wear and weathering of vehicles. These are washed from roadways by rainwater. Ditch vegetation helps to trap these substances and reduce flow rates promoting settlement of solid particles and preventing them from entering natural waterways. Ditches increase storage of excess rainwater which helps reduce downstream erosion and impact on stream habitats by high concentrations of suspended solids. The detection of illicit discharges is easier in open ditches than in piped systems.

5



## Ditches have much lower construction costs than pipe drainage systems

Piped drainage systems, including storm sewers, catch basins, manholes, headwalls and under drain piping are much more costly to construct than roadside ditches. If a piped drainage system is constructed without adding adequate under-drain elements, additional costs arise for roadway repair and reconstruction due to deterioration caused by the inadequate base drainage.



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