

More Trees Means Less Stormwater Runoff

Trees function as nonstructural stormwater management facilities. Here's how they work and why they are a part of the City of Griffin stormwater management plan:

1. Trees slow stormwater flow, reducing the volume of water that must be managed in urban areas and decreasing the amount of runoff that containment facilities must store.
2. Trees intercept rainwater on leaves, branches and trunks, slowing its movement into channelized drainage areas.
3. Stormwater volume is diminished when some intercepted water evaporates into the atmosphere and some soaks into the soil. The net reduction in total volume and peak flow lessens the potential for flooding, a critical concern during heavy rains.
4. Trees provide their greatest benefit during light rains by increasing soil permeability, which facilitates groundwater recharge. Reducing impervious surfaces and increasing tree cover promotes the movement of water into the water table.
5. Long-term studies document trees' ability to reduce the movement of stormwater and cut peak flow rates that cause flooding and overtax stormwater sewers. The Natural Resource Conservation Service has measured the effects of stormwater movement across various land covers over the last 50 years. Based on these studies, engineers developed predictive models that calculate the volume of water produced from a given rainstorm and land cover (*TR-55: Urban Hydrology of Small Watersheds*). Stormwater management facilities' construction costs are calculated based on these models.
6. Urban areas could reduce their stormwater runoff and save millions of dollars by increasing their tree cover. In Fayetteville, Arkansas, increasing tree canopy from 27% to 40% would reduce their stormwater runoff by 31% valued at an additional \$43 million in capital improvement savings (represents \$2/cubic ft. cost to contain stormwater runoff. American Forests, *UEA of Benton and Washington Counties, Arkansas, 2002*)

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