



Stormwater Success Story: Clean Streets and Roads a Key to Clean Creeks

Lexington's Division of Streets and Roads maintains all city and county roads, excluding state routes, federal highways, and interstates. While most people visualize this vast network of pavement as vital to moving people, packages, and cargo around town, city streets and roads perform another equally important function.

"When it rains or when the snow melts, our roads literally become transportation for stormwater," said Jennifer Carey, who oversees compliance with the city's permit for stormwater discharges. "In fact, when you hear the term 'MS4' – or municipal separate storm sewer system – a big part of that system is our roads that transport excess rainwater to underground stormwater pipes and eventually to Fayette County's many creeks."

A look around town reveals the role of roadways in moving water. Streets are installed at a lower elevation than the surrounding development, and designed to collect runoff that doesn't soak into the ground. The pavement is usually higher – or "crowned" – in the middle, so water flows along the elevated curbs. And at each dip in the pavement, a strategically placed inlet stands ready to move the water from the curb line to underground pipes that empty into Wolf Run, Town Branch, East and West Hickman, Cane Run, North and South Elkhorn, and other city creeks.



Keeping construction sediment off the road protects public safety and prevents muddy runoff to creeks.

With the streets serving effectively as a source of inflow into the creeks, water quality becomes a concern. Oil, grease, dirt, trash – anything on the pavement can be carried to the stream. That's where the Division of Streets and Roads comes in.

"We are very aware of our role in keeping our waterways clean," said Rob Allen, Deputy Director of the Division of Streets and Roads. "Everything we do can have an impact on water quality. We're constantly looking at our operations – our maintenance yard, storage facilities, and field activities – to make sure runoff passes through and stays clean."

Allen's staff of 73 includes workers involved in street sweeping, pothole and curb repair, snow removal, sidewalk handicap ramp installation, and maintenance of various bridges and drainage channels within the Urban Service Area. They even provide routine and emergency servicing of storm sewer drains, to make sure streets don't flood when debris clogs the inlets.

Every year, the Division of Streets and Roads removes more than 6,500 tons of road dirt and debris from city streets. That's nearly 420 dump truck loads of oil, grease, dirt, and litter not washed into Lexington's creeks.

"Our street sweeping, sediment control, and general housekeeping activities probably provide the greatest benefit to the city in terms of water quality," Allen said. "For example, our street sweepers pick up between 110 and 130 tons of road dirt every week. We average about 542 tons per month, sometimes more depending on the time of year." City crews also prevent rainwater runoff contamination by keeping things like road salt, soil and aggregate stockpiles, and other pollutants under cover – in sheds, buildings, or tarped down and away from the drainage system.



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Over the past few years, the staff at the Division of Streets and Roads has made other changes to their operations and facilities. Allen said that all large vehicle washing activities are now conducted at a special wash site near the Town Branch Wastewater Treatment Plant, so that washwater can be treated before it is discharged. Vehicle washwater flowing untreated into storm drains can add detergents, oil, and other pollutants to local streams. Lexington has significantly reduced its salt use by pre-treating roads with a liquid brine before ice and snowstorms, which keeps the frozen mix from sticking to the pavement as it becomes compacted by vehicle traffic. The loosened sheets of ice and snow can be plowed away much easier, leaving the pavement exposed to the sun and drying conditions.

With the help of Dann Dettman, the LFUCG Division of Environmental Services Compliance Coordinator, Allen's staff also reconfigured some key drainage items at the city's roadway maintenance facilities on Old Frankfort Pike. "Dann helped us design and build a very successful containment system to catch salt-laden water runoff from our auxiliary road salt pile," Allen said. "The runoff previously flowed into a sediment pond, and then directly into the creek. The new setup is much better, and helps to reduce our overall runoff from the yard."



The LFUCG Division of Streets and Roads pre-treats roads with a liquid brine mixture before ice and snowstorms, to keep the frozen mix from sticking to the pavement. This practice reduces the overall amount of salt needed to treat local roadways during the winter months. (Photo by Charles Bertram)

Another drainage improvement is the oil and grit separator installed in the large service and parking lot at the Old Frankfort Pike facility. "We put the separator in our back lot, to catch runoff from the parking and vehicle service area," Allen said. "As the runoff enters the inlet, it is routed through a treatment insert," he said. "The separator skims off oil and grease from the top of the flow and settles out the grit and other solids, which fall into a sedimentation chamber via gravity. It really helps to keep our runoff discharges clean."

The list of stormwater-friendly operations, maintenance, and management practices goes on from there: soil piles are covered or removed from job sites to prevent muddy runoff; fueling and vehicle maintenance activities are conducted under roof or otherwise away from storm drains; spills are cleaned up promptly and completely – not hosed down the storm drains; and the staff's "stormwater radar" is improved through intra-divisional consultation and regular training.

"Safety is always first with us, of course," Allen said. "But clean water is right up there at the top as well. We want to do our part to keep our streets, roads, and creeks safe and clean, for everybody in Lexington."