

Report to the Mayor

Drainage Issues-North East Knox County

TASK

Determine if Knox County could either assist or influence others to correct or reduce the flooding conditions that are causing or may cause harm to farm lands located along the White's Creek in East Knox County.

As site visits were made and meetings held with three farmers, four home owners, and five government officials, it became apparent that the task should be expanded to determine the extent and cause of waterway flooding, fault and responsibility of the flooding, process and procedure problems, and Knox County's exposure, if any.

FINDINGS

There is harmful flooding in the entire White's Creek and Murphy Creek watersheds caused by the inadequate design and construction of structures and basins to sufficiently control, retard and dispose of surface water runoff in areas of land being developed above these watersheds.

Laws of County of Knox, State of Tennessee and Federal Government are not being fully enforced.

The Knox County Department of Engineering and Public Works Department is not fully enforcing regulations governing storm water management.

FIELD VISITS

Below are listed newly developed residential areas in the White/Murphy Creek watershed. Visits were made during late November, December 2004 and January 2005. Field trips were made (three in dry periods and four during rainfall events). The residential areas are:

- Turnbury Square
- Trey Brook
- Casa Bella
- Wyngate
- Beverly Square
- Murphy Road Subdivision
- Mont Richer
- Summer Rose

SITE VISIT OBSERVATIONS

In every project visited there were several deficiencies noted. These deficiencies exist in process, design, construction and oversight/compliance.

Concerns and Deficiencies:

- Lack of proper design/construction of detention and retention basins
- Drain outflows dump directly into floodways
- Building and backfilling over and into existing and platted sinkholes
- Back filling existing and platted wet lands
- Building in 100 and 500 year platted flood zones
- Filling into noted "50 foot no fill" zones
- Lack of follow up on constructed basins.
- Lack of "As Built" drawings and comparison with design.
- Construction site entrances creating erosion.
- Silt fencing constructed incorrectly and without maintenance.
- Sewer lines through floodways and sinkholes.
- Backfilling with stumps, rocks, waste, in violation of Knox County's 90% rule.
- Dumping construction runoff directly into street drains and outfalls without hay bales or silt fencing.

DISCUSSION

Dating back almost 30 years with the *Federal Clean Water Act* (1977), laws governing the water quality standards and storm water runoff have been in existence.

The *Knox County Erosion & Sediment Control Handbook* is almost 25 years old (June 1981). This *Handbook* was developed by Knox County Soil Conservation District in cooperation with the United States Department of Agriculture and the Knox County Metropolitan Planning Commission. The purpose of the Handbook "*is to help City and County officials develop and administer erosion and sediment control programs in developing areas.*" It contains "*standards and specifications and guidelines*" to minimize storm water erosion and sedimentation in developing new construction.

On May 23, 1994 Knox County Ordinance # 0-94-11-101 was adopted. Chapter 34 specifically addresses the issue of "FLOODS." One of its purposes is to "*Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters*" and to "*Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.*"

In addition, Knox County has adopted the *Storm Water Management Ordinance* (0-00-11-105). The Ordinance was written by the Department of Engineering and Public Works in December 2000. The purpose: "*WHEREAS, an ordinance is needed to regulate storm drainage facilities, grading, excavation, clearance, and other alteration of the land in*

order to limit the dangers of personal injury or property damage that may be caused by storm water runoff...”

In January 1999 the Department also adopted a ***Policy Statement of Development*** in Sinkhole Areas. This policy purpose is to *“protect sinkhole overflow, clogging of sinkholes due to sediment and debris and contamination of sinkholes due to storm water runoff.”*

General Permits for Construction (TNR10-0000) “For Storm Water Discharges From Construction Activities” are required before “construction activity including clearing, grading and excavation activities” can take place (June 27, 2000). The permit requires that *“All erosion and sediment controls must be designed to function properly in a two-year, 24-hour storm event.”*

Laws are in place and processes are in place *“to stabilize the soil; reduce damage from sediment and runoff to downstream areas; and enhance natural beauty.”*

FINDINGS

Based on site observations and appropriate review of State Law and Knox County Ordinances it can be concluded that Knox County has not always fully enforced regulations, design requirements and specifications.

Also it can be concluded that past Administrations have not always provided management oversight for water quality standards in the County. In short, this report finds that for various reasons full enforcement of Ordinances and State Law have not always occurred.

CASE LAW - STATE OF TENNESSEE

The following paragraphs are quoted directly from lawsuits filed by owners of lower lands against upper landowners concerning water control runoff issues:

“Under law of Tennessee, owner of higher land has no right, even in the course of use and improvement of his land, to collect surface water into a drain or ditch, increasing it in quantity or in a manner different from natural flow upon lower lands of another, to injury of such lands.”

“If proprietor of higher lands alters natural condition of his property, and collects surface and rainwater together at bottom of his estate and pours it in a concentrated form and in unnatural quantities upon land below, he will be responsible under law of Tennessee for all damage thereof caused to possessor of lower lands.”

“A wrongful interference with the natural drainage of surface water causing injury to another landowner constitutes an actionable nuisance under law of Tennessee.”

"A servient estate is bound to take the natural flow of surface water; but the owner of the dominant one cannot collect it and cast it on the lower proprietor in a different manner from which it flowed by nature, nor may he materially increase the quantity thereof to the injury of the lower land."

"...Each riparian owner has an equal right to have the stream flow through his land in its natural channel, without material diminution in quantity or alteration in quality...."

"...The upper owner cannot artificially increase in the natural quantity of water or change its natural manner of flow by collecting and discharging it upon the lower land at a different place or in a different manner from its natural discharge."

RECOMMENDATIONS TO THE MAYOR

It is recommended that several changes happen as expeditiously as possible. Processes, design, specifications, permitting procedures and penalty/fines are already in place, therefore, the following recommendations should not be significant in cost or cause major disruption:

1. Since the County and City have in place a growth policy Agreement, the County must abide by all sections including drainage compliance. **Recommend going before County Commission to adopt the drainage standards at least as strict as the City's Stormwater Ordinance that was in place when the urban growth Agreement was signed in 2001.**
2. The County and City engineers now only have a "professional relationship." A working cooperation between departments and department directors is important. **Recommend forming a committee to ensure the two departments are working together with common goals for the improvement and enforcement of drainage and water quality standards through out the entire county. This committee should focus on ensuring the continuing development within both the City and County in a safe manner and in the most effective, cost efficient way.**
3. The Engineering and Public Works Department employees have the responsibility but do not act as the "watchdog" for the public to ensure proper enforcement of Knox County's existing drainage standards. **Recommend reinforcing with all department employees the responsibility and then holding the Department employees, including the Director, accountable for full enforcement of all regulations.**
4. As built plans are essential for all construction projects. These as built plans should include grading as well as the construction of the sediment and runoff control basins. **Recommend all projects must submit an "AS BUILT" drawing**

for all projects. These drawings must have the engineering stamp of the project engineer and the Department's stamp of approval.

5. There appears to be inconsistency from subdivision to subdivision in ownership of basins constructed. This case is especially true once the original developer no longer owns any subdivision property. **Recommend that ownership of the basin lands be deeded to the Homeowner's Association or the owners of the land holding the drainage basins.**
6. MPC appears to approve projects without always "asking hard questions." **Recommend the University of Tennessee be charged with an Executive Education Seminar for all existing MPC members. This seminar should be a requirement for any newly appointed members.**
7. Builders, contractors, and developers act without regard to drainage design because fines or fees are not being levied against the ones that are breaking the law. Fines can be levied up to \$1,000 for each offence and for each day conditions are not remedied. **Recommend a compliant process for the ease of fining and issuing stop orders if grading contractors and builders are not adhering to the design and specifications.**
8. Inspections of job sites are not being made to ensure compliance. **Recommend allowing other County-building inspectors (with proper education, responsibility and authority) to monitor and inspect for the proper design of and construction implementation in the sediment and runoff basins. Also recommend hiring additional inspectors to ensure such inspections are made in a timely manner.**
9. **Recommend all grading permits be required to have all documentation in a preprinted packet (engineering designs, specifications of all detention and retention, drawings showing contours and slope configuration, drain tile outfalls, all approvals, etc) before any grading begins.**
10. **Recommend strict guidelines for the post development documentation and for the submitting of "As Built" drawings after the completion of any project. Recommend the original Engineer for the project stamp the drawings certifying that the post construction site work, drainage calculations, detention/retention construction, etc are built to Knox County standards.**

REQUIRED FIELD TRIP NEEDED

A field trip should be made with an engineer qualified in drainage design and water quality issues to existing job sites in the White's Creek and Murphy Creek watershed. Accompanying the Engineer should be representatives of the County Mayor's staff.

The Engineer should recommend ways to correct the existing violations in design to mitigate the damage now being imposed to the lower landowners in these watersheds. Recommendation – Knox County must insist the developers (permit holders) fix existing conditions for detention and/or retention of storm water runoff in each of the existing development sites. Knox County Ordinance # 0-94-3-101 adopted May 23, 1994 Sec. 34-57 requires, “Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make such corrections required thereby shall be cause to issue a stop work order for the project.”

In addition to the above, Knox County should help in appropriate manner the farmer's of the watershed. This assistance should include the review of aids and grants that can be used to help correct sediment build up of the “blue-line streams” that run through these farms.

RESPECTFULLY SUBMITTED
FEBRUARY 23, 2005