



MUSKEGON COUNTY

M I C H I G A N

OFFICE OF THE DRAIN COMMISSIONER



Brenda M. Moore
Drain Commissioner
moorebr@co.muskegon.mi.us

141 E. Apple Avenue
Muskegon, Michigan
49442-3404

231-724-6219
(Fax) 231-724-3480
www.co.muskegon.mi.us/492/Drain-Commissioner

Spring flooding!

Each year we receive numerous calls from frustrated property owners who want help with spring flooding issues. The worst thing about these calls is that most of the time nothing can be done immediately about the situation because the water must subside before equipment can be brought in; no matter who is responsible to provide service. For example, when water is high it is very difficult to determine if a culvert is clogged, undersized or collapsed. The *toughest* springtime situation is frozen ground, a quick melt, and rain. Water that would normally soak into the ground is rushing overland and clogging drainage systems. This situation is magnified, in part, because groundwater levels are now on the rise and soils cannot absorb as much water as they once could.

The other unfortunate truth about the calls we receive is our office only has jurisdiction over established county drains. Legally we cannot work in most roadside ditches or intervene in private drainage matters. We do try, however, to provide information to help residents work through their problem. Following is information regarding the most common issues we get calls about.

Property owners pumping water onto another person's land or doing something physically to the earth to change surface water flow.

Property owners are not supposed to shed their water on neighboring properties, nor are they supposed to make changes to the earth to redirect or add to natural flow. When this occurs one land owner is affecting another land owner's property rights. These cases are civil matters between property owners, i.e., you must work it out with the neighbor or take legal action against them. If the earth changes are associated with new construction, the Building Code addresses site drainage. Building Codes are administered by local units of government. Also, if a structure is known to have flooding issues the property owner or Realtor are supposed to disclose that information as part of a sale.

Flooded Road Ditches

When the ground is frozen and there is a quick thaw road ditches can back up quickly. Road ditches must be contained within the limits of the road right-of-way so there are size limitations. It is the County Road Commission (not the Drain Commissioner's Office) that most often has the responsibility for maintaining roadside ditches. Their number is **788-2381**. In cities it is the local department of public works that takes care of street drainage.

It is important to note that while the Road Commission maintains most roadside ditches in townships; 1) the roadside ditches are meant to drain the roadway, not private property, and; 2) private culverts to driveways are the responsibility of each property owner. Property owners are supposed to receive permits from the Road Commission to place a culvert but they don't always do so. Part of the permit process addresses proper sizing and placement of the driveway culvert. Aside of a rush of storm water or snowmelt hitting a road drain in a short time, following are

In cases where drainage issues affect multiple properties or long expanses of roadway the option of a special road or drainage project is possible. However, this requires citizen petitions and results in a special assessment to the properties served. The township can work through a special assessment process for road improvements. The Drain Commissioner's office can take petitions for drainage projects.

common problems associated with private culverts that can impact an entire road ditch:

- A property owner (or contractor) uses a culvert that is too small to properly pass water through the system.
- A property owner (or contractor) sets the culvert too high or too low in the ditch line, backing up water.
- A culvert becomes clogged with mud/debris due to lack of owner maintenance, limiting its ability to pass water.
- An aged culvert collapses and acts as a dam.
- The ditch has been used by people to dispose of soil, yard waste or other debris, obstructing its flow.

Again, driveway culverts are the responsibility of private property owners. One problem culvert can impact numerous properties. Note: the County Road Commission has some enforcement authority in the case of troublesome culverts. When a section of road ditch is also a part of a county drain, our office has some enforcement authority as well. Unmaintained private culverts can also become the subject of a civil suit.

Water in basements

Water can get into basements when surface water backs up because natural or manmade drainage systems are overly taxed. The most common source of water in basements, however, comes from ground water. Although surface water and ground water often cross paths, they can also act independently.

There is an "ordinary high groundwater" mark that can be seen when digging below the soil; it is a line where groundwater has discolored the soil via oxidation. This is called the "mottling" line. Because of our proximity to Lake Michigan there are many areas in the county with high groundwater. Groundwater levels are cyclical and can vary in depth over decades. Unfortunately, many homes built in the last several decades were built during low groundwater. Some builders were not diligent about keeping basement floors above the ordinary high groundwater mark (mottling line). Ground water is rising again and many homes that have not had problems in the past are having them now.

People in high groundwater areas take numerous measures to protect their property:

- They choose not to have a basement.
- They haul in sufficient fill to raise the level of the home. This is most effective when the basement floor is 18-24 inches above the ordinary high ground water mark (mottling line).
- Installing foundation drains and using sump pumps, with a back-up pump and generator (in case of power failure) to pump water out of the basement. There is, however, a danger if water is pumped too fast; soil can flush from under the footing and floor causing structural failure. A lack of a proper discharge point may also be problematic.
- Where walk-out basements allow surface water intrusion; removing the slider or door; adding a couple of blocks at floor level then replacing the exit with a window. This addresses surface water, but a sump pump is still generally needed.
- Waterproofing the footing or area below the groundwater level if water intrusion is smaller amounts (a few inches). Dampness, mold, and mildew may still be a factor. See: <http://www.epa.gov/mold/moldguide.html>
Note: If water is an issue at higher volumes hydrostatic pressure of the groundwater pushing on the foundation can "pop" the floor, causing new leaks or structural damage to the home.
- Where there is room; filling basements and crawl spaces with sand, above the groundwater level, then capping the area with cement. This can solve the water problem but at the cost of interior space.
- If a full basement is desired it is possible to physically raise the home and add several blocks to the basement. This is the most expensive option, but it can give you a usable basement. As with the previous option the areas between the high groundwater mark and the bottom of the new basement area is filled with sand and capped with cement.