

### **Measure 3: Illicit Discharge and Detection**

According to the MPCA's *Guidance Manual For Small Municipal Separate Storm Sewer Systems*:

"Federal regulations define an illicit discharge as "...any discharge to a MS4 that is not composed entirely of storm water..." with some exceptions. These exceptions include discharges from NPDES-permitted industrial sources and fire-fighting activities. Illicit discharges are considered "illicit" because MS4s are not designed to accept, process, or discharge such non-storm water wastes. It is important to note that illicit does not mean illegal.

Illicit discharges enter the system through either direct connections (i.e. wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (i.e. infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health."

According to EPA definition in 40 CFR Part 122.26, non-storm discharges can include 'Water line flushing, landscape irrigation, diverted stream flows, rising groundwaters, uncontaminated ground water infiltration, and uncontaminated potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residence car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water.' **The EPA does not consider these discharges as "illicit" unless they are identified as significant contributors of pollutants by the individual MS4.**

UMD has not identified any of these discharges to be illicit in and of themselves and therefore none are specifically part of the SWPPP. However, several are addressed within the Construction Site Sediment and Erosion Control and Pollution Prevention and Good Housekeeping BMPs with relation to other construction and land use issues. If, upon further study, it is found that one of these discharges may actually be a "significant contributor of pollutants" to our MS4, it will be thoroughly investigated and appropriate BMP's developed.

To know if you have illicit discharges, you first have to know your system and your surroundings. As the outlying properties are relatively small and uncomplicated, with few buildings and single watersheds, we will be dealing mainly with the main campus area.

There are two distinct watersheds that flow through the campus:

The West Branch of Tischer Creek flows along the northeastern boundary of campus. It has several small tributaries that start in the Bagley Nature Area. Tischer Creek, including its branches, is a protected trout stream per MN Rules 6264.0050 Subpart 4 (78). Because of this, temperature increases from impervious surfaces must also be addressed along with the standard water quality issues. UMD has two ponds (Rock Hill and Eric Clarke) within this watershed. Rock Hill pond was built in the 1970's as a recreational pond and Eric Clarke pond

was built 1965 for storm water detention. UMD has several storm sewer outfalls into the West Branch of Tischer Creek.

Oregon Creek starts just above campus in a residential neighborhood and is piped down the south side of campus alternating between city and university storm sewer lines. 46 percent of the campus land area and 55 percent of the campus impervious surface discharge into this storm system. Part of this system is a campus sediment pond (Fire Hall Pond). Eight percent of the campus land area and eight percent of the campus impervious surface feed this pond, as well as several square blocks of city neighborhoods. Oregon Creek emerges as a surface stream one half block below campus. On the Lower Campus (listed on the *National Historic Register* as Old Main) Oregon Creek is partially confined by rock walls and passes under the Research Laboratory Building. From there it is intermittently confined to pipe by the City of Duluth until it empties into Lake Superior. Oregon Creek has experienced localized flooding and stream bank erosion downstream of campus.

Oregon Creek is not listed as a protected stream, and therefore UMD is not subject to more rigorous standards like the West Branch of Tischer Creek. However, because of the enclosed nature of Oregon Creek, the City of Duluth considers it part of their storm water system and claims its outfall into Lake Superior as a discharge point. Since Lake Superior is a restricted waters (MN Rules. 7050.0180, subp. 6 (A)), the City of Duluth will be held to the higher standard (i.e. no net gain) for this creek. In the spirit of cooperation with the City, UMD should follow the same standard if possible.

With an understanding of water quality issues, there are specific illicit discharge requirements as listed in MPCA's General Permit. The University must:

1. Develop a storm sewer map (section V.G.3.a)
2. Prohibit non-storm discharges through ordinance or other regulatory mechanism and implement appropriate enforcement procedures and actions (section V.G.3.b.)
3. Develop and implement a program to detect and address non-storm discharges, including illegal dumping (section V.G.3.c)
4. Inform employees and the general public in our MS4 area of hazards associated with illegal discharges and improper disposal of wastes (section V.G.3.d)
5. Address categories of non-storm water discharges or flows, only if we identify them as significant contributors of pollutants to our system (section V.G.3.e)

Best management practices addressing illicit dumping or discharges during construction or maintenance procedures are included in the Construction Storm Water Runoff Control and Pollution Prevention/Good Housekeeping measures. Appendix L contains a master table of all BMPs and which minimum measures they address. The Regional Surface Water Education Program described in UMD 101 under Public Education and Outreach's best management practices will address the hazards associated with illegal discharges and improper disposal of wastes.

### **Illicit Discharge Best Management Practice Summaries**

#### UMD 301 - Mapping Storm Water System

UMD already has detailed storm sewer maps for the campus, available from Facilities Management. These maps already meet the goal of identifying all storm sewer pipes greater than 24 inches and include pipes much smaller. These maps also identify the receiving waters and interconnected City of Duluth lines. Over the next few years, those outlying properties currently unmapped will be addressed, although none have pipes greater than 24 inches.

#### UMD 302 – Illicit Connection Detection

Spring 2003 we are videotaping our major storm lines verifying line location and looking for any currently unknown connections. Standard dry weather inspections are not applicable because underground springs and high groundwater tables cause year-round flows. To control the groundwater, most of our building foundations are drain tiled and discharge directly into these storm lines.

#### UMD 303 – Non-Storm Water Discharge Prohibition

This is a University wide BMP to prohibit non-storm water discharges through ordinance or other regulatory means as required in Part V(G)(3)(b) of the General Permit. Reference UMTC 305

### **Regulatory Programs Overlapping with Illicit Discharge Requirements**

There are many other highly developed regulatory programs, which meet the intent of identifying and addressing illicit discharge. For example,

**SPCC-** UMD recently completed its SPCC Plan for oil tanks and is working on its modification to include other types of oil storage containers such as transformers, elevator equipment, etc. In essence, this plan requires an engineer's evaluation of spill containment measures to minimize releases to the environment. The University is reviewing oil storage containers for the potential for spills to the environment and is developing structural and non-structural improvements. In some instances, structural secondary containments are being installed/enhanced. In other instances, operational procedures including training are being developed to safely handle oils and clean up spills if applicable. AST and UST requirements overlap with SPCC and provide monitoring to document tank integrity among other protections.

**Chemical Hygiene Plan** – The University's Chemical Hygiene Plan requires training of safe and appropriate chemical transportation, storage, use and disposal. Students, staff and faculty are trained in these requirements. This is a requirement for new students and faculty before working in University laboratories. These requirements are monitored through the U of M Department of Environmental Health and Safety.

**RCRA Regulations** – The U of M has constructed a state-of-the-art integrated waste management facility (IWMF) at the Twin Cities campus, for treating and disposing of hazardous materials. As a source specific category under the EPA Phase 1 Rule, IWMF

included many structural and operational best management practices to virtually eliminate any exposure of significant materials to storm water. In terms of structural BMPs, the facility is designed so that all significant materials are stored indoors. Even chemical unloading occurs in an enclosed loading dock with spill protection. The IWMF facility maintains appropriate equipment and training to respond to chemical spills on the UMTC campus. The equipment includes a spill response truck with secondary containment so that if a spill happened inside the truck during transportation, it would be contained. On the Duluth campus, hazardous materials needing disposal are collected, stored, and shipped to the IWMF under the direction of a U of M Department of Environmental Health and Safety employee stationed in Duluth.

U of M EHS staff are regularly trained on spill response procedures. The U of M maintains an after-hour emergency response' pager system to ensure that appropriate expertise available for after hours emergencies.

The U of M already has formal programs for addressing these types of possible illicit discharges in its system, and many other overlapping regulatory programs that also protect water quality.