SENATE FISCAL AGENCY

APRIL SHOWERS BRING MAY...SEWER PROBLEMS
by Nobuko Nagata, Legislative Analyst

The Problem

Sanitary and wastewater sewer systems are generally designed to handle expected sanitary waste flows generated from residences and businesses during peak usage. Many sewer systems are aging, however, and maintenance, rehabilitation, and replacement are inevitable. In addition, the aging infrastructure is not equipped to handle the increased demands of current use. During extreme events such as heavy downpours or substantial snowmelt, the sewer capacity may become overloaded, which may lead to the backup of sewage into basements and/or overflows of untreated wastewater into nearby watercourses.

Inadequate sewer systems in recent years have been responsible for beach closings and threats to the water quality throughout the State, especially on and near Lake St. Clair. According to an article in the *Detroit News* (3-21-01), during last January and February alone, State environmental experts estimate that more than 800 million gallons of untreated and partially treated wastewater were discharged from Oakland, Macomb, and Wayne County wastewater treatment facilities and retention basins into area rivers and Lake St. Clair.

According to an article in the *CSO News,* it is estimated that combined sewer overflows (CSOs) affect 1,100 municipalities serving 43 million Americans. The article reports that a total of 15,000 discharges occur annually. Studies have shown that during peak storm events, as much as 95% of the raw sanitary sewage is dumped directly to the receiving stream. According to an article in the *U.S. News* (6-12-00), sewer backups in basements occur an estimated 400,000 times, and about 40,000 sanitary sewer overflow (SSO) occurrences are reported every year in the nation.

Further, many reports indicate that SSOs and CSOs, which may contain suspended solids, toxic chemicals, pathogens, grease, debris, human drugs, pesticides, and detergents, can pose a severe problem for the environment. These sewage discharges are among the largest threats to water quality, aquatic life, and public health.

Combined Sewer Overflows

Combined sewer overflows are overflows from sewer systems designed to carry both raw sewage and storm water. A combined sewer channels wastewater through an interceptor sewer to the wastewater treatment facility. During heavy rainfall or snowmelts, the interceptor may become overwhelmed by the excessive stormwater flow entering the system. A regulator holds the excess and acts as a dam until the water level within the sewer spills over. The untreated overflow then is discharged and enters the nearest watercourse or weak spot.

These discharges can severely contaminate ground or surface waters and damage water quality. Coupled with the aging of an inadequate wastewater infrastructure, factors such as groundwater infiltration, heavy rainstorms or snowmelts, and blockages have led to a sharp rise in CSOs, according to the Department of Environmental Quality (DEQ). The discharges can contain solid human waste, toxic pollutants, chemicals, oil, grease, soil sediments, and other waste and debris carried by stormwater from streets, roofs, and parking lots.

Sanitary Sewer Overflows

Separate sanitary sewers are intended to transport raw sewage directly to wastewater treatment facilities with no opportunity to enter the environment. Overloads can occur, however, in poorly designed or maintained systems. Broken pipes, inadvertent storm sewer connections, and failing pump stations also can cause SSOs. Sanitary sewer overflows are illegal and pose a severe problem to the environment and public health. These are discharges of raw or inadequately treated sewage from a separate sanitary sewer collection system before the sewage reaches a wastewater treatment plant. When an SSO occurs, raw sewage may be released into basements, city streets, buildings, and watercourses. According to the DEQ, SSOs have risen sharply due to the

same factors causing CSOs, as well as equipment failures and power outages, and can contain the same toxic elements. The number of communities that have SSO problems and the frequency and duration of SSOs are often unknown because not all discharges are reported.

Municipal Liability

Governmental agencies are required to provide certain necessary services, such as sewer systems, within municipalities, and are responsible for maintaining and upgrading these systems. Some residents blame their municipality for an aging sewer system and its frequent sewer backups. According to an article in the *Detroit Free Press* (1-30-01), at least 110 homes in Birmingham, 91 homes in Beverly Hills, and 20 homes in Farmington Hills experienced sewer overflows in their basements after heavy rain deluged the system in 1998. According to the sanitary sewer overflow county lookup program established by the DEQ, the following counties, among others, have reported cases of SSOs since July 10, 2000: Ingham County, 20 cases; Macomb County, 23 cases; Oakland County, 41 cases; Washtenaw County, 26 cases; and Wayne County, 35 cases.

Under the governmental immunity law, governmental agencies are immune from tort liability in the exercise or discharge of a governmental function. There are several exceptions to governmental immunity, however, that allow recovery by people injured as a result of a municipality's actions. In 1998, the Michigan Court of Appeals held that municipalities may be held liable for sewer backups without a showing of negligence under the trespass-nuisance exception to governmental immunity (*CS&P, Inc.* v *City of Midland*, 229 Mich App 141). Apparently, this decision has resulted in numerous lawsuits against municipalities for sewer overflows.

Costs

According to a study by Public Sector Consultants, a Lansing "think tank", an estimated $1.7 billion will be required to address remaining CSO problems over the next 12 years, and preliminary information indicates that several hundred million dollars will be needed to address the known SSO problems over the next decade. In addition, Federal stormwater regulations will require most urban communities in Michigan to face additional costs associated with water pollution control requirements within the next three years. The Southeast Michigan Council of Governments estimates the cost of future sewer improvements needed in Metro Detroit at more than $10 billion. The following are the costs of some sewer projects already under way or planned: Mt. Clemens, $28 million sewer separation and pollution abatement program; Clinton Township, $24 million interceptor sewer construction; Fraser and Clinton Township, $50 million to eliminate overflows; 12 Towns project, $150 million for expansion of an underground retention basin; Evergreen-Farmington drain system, $250 million for improvements; Birmingham, $12 million in bonds for sewer relief projects to prevent flooding; and Detroit, more than $1 billion to upgrade sewage treatment plant construction of an underground retention basin and other improvements.

The State Water Pollution Control Revolving Fund provides low-interest loans to assist qualified municipalities in funding wastewater treatment improvements, although the need for assistance far exceeds the funding available. This source of financing is discussed in detail in the preceding article, "Wastewater Control Project Funding in Michigan".

Proposed Legislation

In the current legislative session, several Senate bills have been introduced to address sewage issues.

Senate Bill 105 (S-3) would appropriate and transfer up to $25 million from the Budget Stabilization Fund to the State Water Pollution Control Revolving Fund for each of the following fiscal years: 2001-02, 2002-03, 2003-04, 2004-05, and 2005-06. (This proposal also is discussed in the preceding article.)

Senate Bill 106 provides that if a water pollution control project requiring assistance from the State Revolving Fund were a sewage treatment works project or a stormwater treatment project, the priority list criteria for project plans submitted by municipalities would have to include a determination of whether a project was necessary to comply with an order, permit, or other document with an enforceable schedule for addressing a municipality's sewage-related water pollution problems that was issued by the DEQ or entered as part of an action brought by the State against the municipality. The bill also provides that a municipality could voluntarily agree to an order, permit, or other document with an enforceable schedule.

Senate Bill 107 would require the DEQ to establish standards for residential on-site sewage disposal systems; require a system to be inspected before a home was sold; and require counties to provide educational materials to on-site disposal system owners.

Senate Bill 108 (S-2) would require the DEQ to implement a statewide water quality monitoring program to identify sources and locations of sewer discharges and assess their impact on water quality.

Senate Bill 109 (S-1) would give municipalities immunity from civil liability for noneconomic damages caused as the result of the backup of a sewer system if the municipalities were complying with, or entered into, a DEQ order to address sewage-related water pollution problems.

Except for Senate Bill 107, the bills have been passed by the Senate. Senate Bill 105 (S-3) has been referred to the House Committee on Land Use and Environment. Senate Bills 106, 108 (S-2), and 109 (S-1) were referred to the House Committee on Conservation and Outdoor Recreation. Senate Bill 107 remains before the Senate Committee on Natural Resources and Environmental Affairs. Analyses of the proposals may be found on the Legislature's Internet site (http://www.michiganlegislature.org).