Michigan Department of Environmental Quality
Sanitary Sewer Overflow
Policy Statement
December 27, 2002

The Michigan Department of Environmental Quality (MDEQ) has consulted with a stakeholder group to develop guidance for implementing the May 2000 "Strategy for the Regulatory Control and Correction of Illegal Overflows from Separate Sanitary Sewer Systems in Michigan." The MDEQ and the stakeholder group recognize that Sanitary Sewer Overflows (SSOs) are a result of many different circumstances. The parties also recognize that there may be many different approaches to correcting SSOs. Given these considerations the SSO Guidance Document identifies the following as core elements of the program.

- State and Federal Regulations for SSOs require either the elimination of all SSOs or treatment of SSOs to the Federal categorical secondary wastewater treatment standard. The MDEQ acknowledges that total elimination or secondary treatment of all SSOs is not practical or economically feasible.

- The MDEQ does not authorize the discharge of raw or partially treated SSOs. However, enforcement discretion will be considered for communities experiencing SSOs that are implementing a corrective action program which is equivalent to the remedial design standard of the 25-year/24-hour storm, using growth conditions and normal soil moisture. An analysis of available data indicates that communities implementing corrective action programs to this remedial design standard will have on average less than one overflow per ten years.

- Corrective Action Programs (CAPs) to achieve the remedial design standard shall be contained in a legally enforceable document.
    a. CAPs shall be phased and contain progress reports, decision points, milestones, and time frames.
    b. Generally a CAP shall be completed within a 10 to 20 year timeframe.
    c. The Initial Phase, if not already completed previously, shall at a minimum include implementation of the Short-Term SSO Control Measures.
    d. The Implementation Phase shall detail the program to achieve the remedial design standard.

- Flexibility in establishing milestones and timeframes during the implementation phase will be considered on a case-by-case basis and will consider such information as:
    a. Cost of the corrective program,

b. The economic burden on the community and its ability to fund additional projects,
c. The type of corrective program implemented,
d. The complexity of implementing the corrective program,
e. The environmental gain the program will create, and
f. The relation the program has with other planned or ongoing programs.

Programs that focus on drying up separate sanitary sewer systems will be given consideration for longer timeframes to complete the implementation phase.

- Communities should plan and design future infrastructure operations and improvements with the goal of eventual elimination or treatment to the secondary wastewater treatment standards for all SSOs.

Michigan Department of Environmental Quality
Clarification Statement
Sanitary Sewer Overflow Policy Statement
Water Consortium Comments on SSO Policy

This correspondence is intended to provide clarification of the Michigan Department of Environmental Quality's (MDEQ) Sanitary Sewer Overflow (SSO) Policy Statement, dated December 27, 2002, with regard to the policy comments provided at the Water Consortium meeting of June 4, 2003. Clarification is provided to articulate MDEQ's position and interpretation of the SSO Policy Statement for the benefit of the local units of government. Responses are provided below to each of the bulleted comments received and discussed at the June 4 meeting.

1st Bullet

- **The policy does not state that the overall objective is to eliminate "preventable" SSO's. The advantage of focusing on the elimination of preventable events was the implicit recognition that all SSOs could not really be eliminated. Plus, it moved us toward trying to identify some remedial standard. The purpose and advantage of such a standard was that it would distinguish what can be eliminated from what cannot. This distinction is important for the regulatory agency, the community, and the public.**

  Importantly, the policy recognizes that total elimination is not feasible. But other language refers to the goal as eventual elimination of all SSOs, thus obfuscating the actual intent of the policy. The perception is that after achieving whatever is determined to be the remedial standard, the goal will not have been achieved, and that, in and of itself, will trigger other regulatory action. Instead, further regulatory action should be driven by environmental impact.

The SSO Policy Statement explicitly states that (1st page, first bullet): "The MDEQ acknowledges that total elimination or secondary treatment of all SSOs is not practical or economically feasible." Clearly, this is an affirmation on the agency's part that, despite compliance with the applicable remedial design standard, some SSOs will occur. The Policy Statement thus is intended to be a flexible instrument, with recognition that some communities may nonetheless continue to experience SSOs despite implementing a corrective action program equivalent to the remedial design standard of the 25-year/24-hour storm, using growth conditions and normal soil moisture. By defining the threshold of the extreme natural event as equivalent to the remedial design standard, the Policy Statement, does, in fact, distinguish SSOs that can be practicably and economically eliminated from those that cannot.

The SSO Policy Statement also states that (2nd page, last bullet): "Communities should plan and design future infrastructure operations and improvements with the goal of eventual elimination or treatment to the secondary wastewater treatment standards for all SSOs." This sentence apparently has caused some consternation for certain readers of the policy. This closing goal statement, however, should not be viewed or interpreted as being in conflict with the other provisions of the Policy Statement. The goal statement merely articulates what must be the goal of *any* SSO corrective action program, i.e., that in striving to achieve compliance with the Michigan Natural Resources and Environmental Protection Act (NREPA) and the federal Clean Water Act (CWA), it is essential that sewer system operators have ongoing improvement as part of a long-term goal of eliminating SSOs and minimizing the residual risk of events adversely impacting public health and the environment.

2nd and 7th Bullets

- **The communities and the Consortium are advocating programs and policies that result in maximum use of existing infrastructure if the environment can be protected. This is entirely consistent with several state initiatives, including several that focus on urban revitalization.**

Some of the opportunities for implementing this policy of maximizing use of existing infrastructure can be made manifest in guidance the agency issues defining acceptable corrective actions in an enforceable order. Some include preferential treatment of sanitary flows and treating limited quantities of SSO's at CSO treatment facilities (if the incremental increased flow will not create adverse environmental impacts in the receiving water, etc.).

These opportunities are not mentioned in the guidance. It could be that is because MDEQ disapproves (which is the popular perception.) Or, it could be that MDEQ intends to consider those items in case specific circumstances.

- **Regional approaches to infrastructure issues, whether water, sewer, or transportation, are increasingly viewed as favorable for a variety of reasons. That is why we suggest the policy explicitly promote regional SSO remedial strategies where existing infrastructure can be maximized, the environment can be protected and cost savings can be achieved. This is appropriate even if it lengthens the timeframe needed to complete the Corrective Action Program.**

Where consistent with state and federal law, the MDEQ encourages maximizing the use of existing infrastructure, and using regional approaches, where appropriate, for corrective action programs. The MDEQ will entertain case specific circumstances to utilize preferential treatment concepts on an interim and permanent basis for corrective action programs, and has approved such concepts in the past. The MDEQ may also consider on a case by case basis, as part of an SSO corrective action program, the implementation of an offset program of incremental reductions in wet weather infiltration/inflow or other needed sewer system improvement in consideration of the issuance of construction permits for new sewers to accommodate growth and development.

Lastly, the MDEQ looks favorably on regional approaches to SSO corrective programs where shown to be appropriate, cost effective and accepted by the local units of government involved. The MDEQ recognizes that the correction to SSOs may be complex, and there may be many approaches to their correction. The SSO Policy Statement takes these factors into consideration and allows for the flexibility to establish corrective programs for the different circumstances encountered.

3rd Bullet

- **During the discussions, there seemed to be a prevailing preference for extensive reduction in wet weather inflow. Some even saw this as an acceptable end in a corrective action. Providing more incentives (financial and technical) to encourage the elimination of wet weather inflow sources (such as footing drains wherever feasible) would improve the policy. One such incentive would be to allow communities that commit to extensive inflow reduction to base any further action on the effectiveness of the program after implementation. Of course, this would be subject to some demonstration that the inflow reduction would be effective in reducing SSOs.**

In developing corrective programs for SSOs, the Policy Statement provides flexibility for establishing phasing of projects, milestones, timeframes and decision points. The Policy Statement does *not* discourage extensive wet weather inflow reduction programs as a means of SSO correction. As long as the proposed corrective action program will comply with state and federal law, the program can be tailored to allow the specific community to seek financial aid (SRLF funding) or technical assistance (pilot footing drain removal projects). Phasing, milestones, and decision points can be set up in the corrective action program to allow the community to demonstrate the effectiveness of the program and any further implementation requirements if needed.

The City of Auburn Hills provides an example of an approved extensive wet weather inflow reduction program (footing drain removal project) as a means of SSO corrective action. The City of Auburn Hills chose to correct their SSO problem by utilizing complete footing drain removal. The program included in their administrative order allowed footing drain removal as a way to correct the problem, with milestones set in the order to evaluate the effectiveness of the program. If the footing drain removal project proved to be ineffective in removing the necessary

excess flows, then the City committed to additional structural improvements necessary to correct the SSO problem and comply with state and federal law. In the case of Auburn Hills, the footing drain removal project thus far has been effective, and although the project has not yet been completed, the MDEQ has agreed that no further structural improvements will be necessary to correct the SSO problem and comply with appropriate requirements.

The MDEQ has also provided considerable flexibility in its most recent administrative consent orders for SSO corrective action programs by allowing for reasonable milestones, timeframes and decision points for phasing in corrective projects, and the flexibility to explore various means of achieving compliance. Examples would be recently issued administrative consent orders for the City of Center Line, City of Fraser and Clinton Township.

4th Bullet

- **Financial impacts and "ability to pay" are key considerations when developing Corrective Action Programs and compliance schedules. For some communities, reaching the design standard in 10-20 years will be difficult to impossible. Should the acceptability of longer time frames be clearer or the remedial standard be different in some communities?**

By defining the extreme natural event as equivalent to the remedial design standard, the SSO Policy Statement distinguishes between SSOs that can be practicably and economically eliminated and those that cannot. In the opinion of the MDEQ, the remedial design standard comports with state and federal law and, thus, must be the same for all communities with correctable SSO problems. At the end of the day, the affirmative obligation of all regulated communities is to comply with NREPA and the CWA.

The SSO Policy Statement does provide the flexibility to consider on a case by case basis the cost of the corrective program and the economic burden on the community and its ability to fund additional projects. As outlined in the policy, completion timeframes will take into consideration the ability to pay, if justified. Moreover, schedules in administrative consent orders are set to take advantage of the low interest State Revolving Loan Fund Program.

Lastly, the SSO Policy Statement does take into account the economic burden imposed on SSO communities by relaxing the time frame to complete the corrective program to a period of generally 10-20 years. Historically, SSO corrective program schedules contained in MDEQ orders required completion in a 5-10 year period of time.

5th Bullet

- **We need to consider the extent and severity of SSO impact on the receiving water when developing Corrective Action Programs, priorities and compliance schedules. A key mechanism for guiding such decisions could be watershed plans. Making that explicit in the policy would help promote the attractiveness of comprehensive watershed plans and careful evaluation of impacts and priorities focused on water quality and environmental benefits. It would also dovetail with the ongoing stormwater management effort which is being implemented across the region.**

When considering the development of SSO corrective action programs, the SSO Policy Statement does provide the flexibility for consideration of the type of corrective program to be implemented, the complexity of implementing the corrective program, the environmental benefits of the program, and the relation the program has with other planned or ongoing programs. A watershed approach could be a mechanism for guiding such decisions as long as the proposed watershed plan acknowledges that SSOs are violations of state and federal law and cannot be authorized under the NPDES permit program.

6th Bullet

- **MDEQ already distributed the agreed upon short-term measures. It seems they should be delineated in the policy or included as an attachment.**

A listing of the Short-Term SSO Control Measures, as outlined in the SSO Policy Statement for initial phase SSO corrective action program implementation, are attached to this statement of clarification (Attachment A).

8th Bullet

- **The guidance indicates that enforcement discretion will be considered for parties doing what is required in a corrective action program. The language adds nothing to the guidance since a regulatory agency always "considers" whether and when to exercise its enforcement authority before undertaking some action. It does not provide any assurance to a party who is undertaking corrective action measures (which have presumably been accepted by the state as an appropriate program). MDEQ has indicated that an affirmative defense policy is not acceptable, even though such a provision is being considered for inclusion in the new federal regulations. Something more than "consideration" of enforcement discretion is needed.**

The MDEQ disagrees that reference in the SSO Policy Statement to "enforcement discretion" is of little value. There are few instances in which MDEQ policy pronouncements explicitly assert that the agency will exercise its enforcement discretion in a given context or under certain conditions. Far from being a hollow gesture, inclusion of such language in the policy is a clear commitment to the regulated communities that the MDEQ will genuinely consider the exercise of enforcement discretion where a community continues to experience SSO problems but is acting in good faith to implement an approved corrective action program. Simply put, for the MDEQ to agree to an "affirmative defense" would be contrary to NREPA and the CWA. It would place our NPDES delegation from the USEPA at risk, and could encourage citizen suit actions to enforce federal law in those instances in which the "affirmative defense" applied. It is doubtful that this is not an outcome the regulated communities would find desirable.

9th Bullet

- **Acknowledge, and to the extent possible, accept prior agency approvals of recent capital improvement programs to correct system deficiencies where these may be to a lesser design standard (which was previously satisfactory to MDEQ).**

The MDEQ accepts and acknowledges, to the extent that these systems are in compliance with NREPA and the CWA, recent SSO improvement programs to correct system deficiencies to a lesser design criteria than the 25 year/24 hour remedial design standard. However, the agency will continue to consider its compliance and enforcement options with respect to areas that either have an existing SSO, or are contributing excess wastewater flows to an existing downstream SSO.

10th Bullet

- **The policy proposes that the 25 year- 24 hour summer storm be established as the remedial design standard for SSOs. This is an extremely complex and controversial issue. A recent review of other state SSO programs indicates that the Michigan proposal is far more restrictive than what is considered acceptable elsewhere (see attachment). Furthermore, cost estimates for SSO control programs sized to meet this standard have recently been revised to reflect the additional expense likely to be needed to upgrade the internal sewer transport capacity to convey these flows. Based on this information, it is questionable whether the 25 year – 24 hour storm is cost effective. The acceptability of the proposed design storm will, to some extent, be tied to the willingness to accept lesser design standards for recently upgraded sewer systems (per the above bullet item). Nevertheless, some discussion of the reasonableness and appropriateness of this issue is warranted.**

The SSO policy statement defines the remedial design standard for SSO corrective action programs as equivalent to the 25-year/24-hour storm, using growth conditions and normal soil moisture. The remedial design standard further can be defined as comparable to the extreme natural event. To say MDEQ's remedial design standard is far more restrictive than what is considered acceptable in other state SSO programs is inaccurate. Most other states have not adopted a remedial design standard for SSO corrective programs, and appear to rely on case by case determinations to insure compliance with their respective state laws and the CWA. Also, the data we have reviewed for states with design criteria for controlling SSOs doesn't show the MDEQ's remedial design standard to be far more restrictive than what is considered acceptable elsewhere. In fact, the MDEQ's remedial design standard appears to be somewhere in the middle to top third bracket (Attachment B).

Regardless, the remedial design standard referenced in the SSO Policy Statement is not a new design standard for controlling SSO problems in the State of Michigan. The standard has been applied to over 60 communities statewide to correct SSO problems. Notably, many of these community projects have received either Federal grant funding or SRLF loan funding for their projects. One criteria to receive such funding, is that the project must be cost effective and affordable for the local unit of government involved.

During the discussions held by the SSO workgroup, one of the main topics of discussion was the remedial design standard for SSO control. The issue of an appropriate remedial design standard was scrutinized, analyzed, hydraulically modeled and studied for cost effectiveness. The conclusion from that examination was that the 25 year/24-hour remedial design standard was at the knee of the curve cost effective breakpoint for all design criteria studied. The MDEQ thus believes that the 25 year/24 hour remedial design standard set forth in the SSO Policy Statement is appropriate, reasonable, cost effective and affordable and, based on past historical records, provides the measure of protection needed for public health and the environment.

However, the MDEQ will consider alternative remedial design standards on a case by case basis, if a community can demonstrate that a remedial design standard equivalent to a storm less than the 25-year/24-hour storm would result in the same or lower frequency of SSO discharge as that assumed by the MDEQ in this policy (i.e., less than one SSO discharge per ten years on average) by general application of the 25-year/24-hour storm as the remedial design standard.

Attachment A
Short-Term SSO Control Measures

1. Document current sewer system conditions including the size, age, and condition of sanitary sewers, and the carrying capacity of existing sewers that are likely to contribute to the creation of sewer surcharges or SSO conditions; determine the estimated frequency, volume, location, and receiving water of SSO discharges; perform staff training in monitoring and reporting of untreated or partially treated sewage discharges onto land or into the waters of the state to assure that required notifications and reports are submitted accurately and timely; develop a data system for reporting of sewage backup into basements; determine the impact of any requests for new sewage loading to sewers in areas subject to basement backups, SSOs, or treatment facility bypassing; identify areas that may have inadequate storm sewer systems that may contribute to the problems within the sanitary sewer system.

2. Quantify existing flows (average and peak for dry and wet weather conditions) through a flow monitoring program; determine infiltration and inflow (I/I) contributions for logical sub sections of the sewer system; collect rainfall measurements with recording rain gauges for further flow monitoring data analysis; collect groundwater table level measurements for flow monitoring analysis.

3. Determine the "excessive" component of I/I based on a comparison of the estimated cost required to remove the flow versus the cost to transport and adequately treat wet weather flows. This assessment may need to be carried out on a phased basis, with elimination of readily removable I/I sources being completed before attempting a more rigorous cost comparison addressing more difficult sources.

4. Estimate or measure the contribution from footing drains (if footing drains are connected to the system or if footing drain flow is discharged to the sewerage system by sump pumps) and determine what potential methods are available to remove/reduce this flow component; undertake pilot projects to assess the feasibility of voluntary or mandatory footing drain removal; provide public education of the economic and capacity benefits of footing drain removal.

5. Prepare and implement a detailed operation and maintenance plan to consolidate, prevent or minimize SSOs to the maximum extent possible; perform staff training, or training updates, on issues of wet weather flow exclusion from sanitary sewers and SSO prevention.

6. Provide power reliability equipment for pump stations using emergency generators, portable pumps, or dual power supplies; provide modifications to pumping stations for generator hookup or force main pump around flanges.

7. Evaluate and institute sewer use ordinances to assure that clear water from new footing drains, roof downspouts, or other inflow sources are not authorized to be connected to sanitary sewers. Train building inspectors, meter readers, water and wastewater utility staff on ordinance compliance; conduct sewer system assessments to determine compliance with footing drain, downspout and yard drain prohibitions; compile and analyze data to identify priority areas for ordinance compliance initiatives.

8. Conduct physical surveys and smoke/dye testing in suspect areas to ensure that inflow sources are not connected.

9. Develop and design the project(s) needed to remove excess I/I (including footing drain flows, if feasible) based on a schedule that includes completion of a Sanitary Sewer Evaluation Survey to specifically identify the sources of excess I/I, followed by construction of needed short-term sewer rehabilitation projects; coordinate implementation of storm sewer system improvements in areas with poor drainage.

10. Identify, obtain permits where necessary, and implement beneficial short-term SSO and basement backup control measures.

11. Identify measures and schedules necessary to assure timely funding availability for necessary short- and long-term projects.

12. Evaluate additional long-term SSO control measures that may be necessary including the removal of excess I/I, provision of storage facilities and/or transport to treatment facilities and expansion of treatment facilities.

13. Conduct public education outreach programs throughout the investigation and program development period to assure public understanding of the issues involved and support for the needed improvement actions being taken.

Attachment B

PROJECTED PERFORMANCE OBJECTIVES OF SANITARY SEWER REHABILITATION PROJECTS

	Community	Population	Ave. Annual Wet Weather Overflows	Annual Frequency of Return Storm	Return Storm Period (years)	Return Storm Duration (hours)	Rainfall Depth (inches)	Rainfall Intensity (in/hr)
1	Baytown, Texas	70,000		0.025@	>100			
2	Bentonville, Arkansas	17,000		0.025@	>100			
3	Cincinnati, OH	22,724		0.025@	100			
4	Commerce, Texas	10,000		0.025@	>100			
5	Eureka Springs, Arkansas	1,890		0.025@	>100			
6	Friendswood, Texas	31,000		0.025@	>100			
7	Hamilton, Ohio	65,000		0.025@	>100			
8	Honolulu, HI	687,475		0.025@	100			
9	Jackson, Tennessee	50,000		0.025@	>100			
10	Little Rock, Arkansas	185,000		0.025@	>100			
11	Ponca City, Oklahoma	25,000		0.025@	>100			
12	Wayne County, MI	167,939	0.2	0.025@	100			
13	Buena Vista, Michigan	11,000	2	0.04	25	24	3.8	0.16
14	Enid, Oklahoma	47,000	2	0.04	25	24	6.5	0.27
15	Frankenmuth, Michigan	4,400		0.04	25	24	4	0.17
16	Lancaster, Texas	22,400		0.04	25	24	6	0.25
17	Lansing, Michigan	155,000		0.04	25			
18	Marlette, Michigan	1,900		0.04	25	24		
19	Midland, Michigan	42,000	3	0.04	25	24		
20	Pine Bluff, Arkansas	63,000		0.04	25	24	7	0.29
21	King County, Washington	1,100,000		0.05	20			
22	Covington, Louisiana	10,000	<1	0.1	10	24	8	0.33
23	Fairfield, Ohio	43,000	<1	0.1	10	24		
24	Johnson County, Kansas	340,000		0.1	10			
25	Kerrville, Texas	18,000	<1	0.1	10	24	6	0.25
26	Monmouth, Oregon	7,700		0.1	10*			
27	The Dalles, Oregon	14,000		0.1	10*			
28	Waldport, Oregon	1,750		0.1	10*			
29	Addison, IL	17,138		0.2	5			
30	Belvidere, IL	15,193		0.2	5			
31	Benton, Arkansas	17,000		0.2	5			
32	Crowley, Louisiana	16,000	1	0.2	5			
33	Fayetteville, Arkansas	58,000		0.2	5			
34	Haltom, Texas	35,000		0.2	5	1	2.6	2.60
35	Henryetta, Oklahoma	1,100		0.2	5	24	5	0.21
36	Indian Creek, KS	72,000		0.2	5			
37	Mission Township, KS	45,309		0.2	5			
38	Nashville Tennessee	400,000		0.2	5	24	4.5	0.19
39	Saint Charles, IL	16,935		0.2	5			
40	Tulsa, Oklahoma	360,000		0.2	5	1		
41	Turkey Creek, KS	50,404		0.2	5			
42	Elmhurst, IL	42,029		0.33	3			
43	Galveston, Texas	59,000		0.5	2	4	3.5	0.88
44	Greenville, Texas	25,000	1	0.5	2	0.5	1.3	2.60
45	Houston, Texas	1,700,000		0.5	2			
46	New London, CT	40,000		0.5	2			
47	Norman, Oklahoma	80,000	3	0.5	2	24	3.5	0.15
48	South Houston, Texas	15,000		0.5	2	24	6	0.25
49	Witchita Falls, Texas	103,000		0.5	2	24	4	0.17
50	Bellingham, Washington	60,000		1	1			
51	Charlotte, NC	338,854		1	1			

	Community	Population	Ave. Annual Wet Weather Overflows	Annual Frequency of Return Storm	Return Storm Period (years)	Return Storm Duration (hours)	Rainfall Depth (inches)	Rainfall Intensity (av. in/hr)
52	Edmond, Oklahoma	67,000		1	1	24	3	0.13
53	Fort Scott, Kansas	8,500		1	1	24	3	0.13
54	Fort Smith, Arkansas	86,000		1	1	24	3.5	0.15
55	Greenville, SC	125,884		1	1			
56	Idabel, Oklahoma	10,000		1	1	1	1.5	1.50
57	Jewett City, CT	3,500		1	1			
58	Lexington, Kentucky	240,000		1	1			
59	Vinita, Oklahoma	4,800		1	1	1	1.5	1.50
60	Hot Springs, Arkansas	35,000		1.25	0.8	1	1	1.00