

ILLICIT DISCHARGE ELIMINATION PLAN (IDEP)

Submitted in partial fulfillment of the State of Michigan National Pollutant Discharge Elimination System Permit Application for Coverage of Storm Water Discharges by:

GENESEE COUNTY PHASE II PARTICIPANTS

2003 Genesee County Phase II Communities:

Argentine Township; Atlas Township; Burton; Clayton Township; Clio; Davison; Davison Township; Fenton; Fenton Township; Flint Township; Flushing; Flushing Township; Forest Township; Gaines Township; Gaines Village of; Genesee Township; Goodrich Village of; Grand Blanc; Grand Blanc Township; Lennon Village of; Linden; Montrose; Montrose Township; Mount Morris; Mount Morris Township; Mundy Township; Otisville Village of; Richfield Township; Swartz Creek; Thetford Township; Vienna Township; Genesee County.

Since 2003 several Communities are no longer Phase II Communities: Atlas Township; Forest Township; Gaines Village of; Goodrich Village of; Lennon Village of; Montrose; Montrose Township; Otisville Village of; Thetford Township. Although these communities are no longer Phase II, they still participate in the E342 Contract with the County and one of the services provided is IDEP. Through this 2003-2008 permit cycle, all E342 Contract members will have IDEP performed in their communities, on their behalf.

The Municipal Separate Storm Water Discharge Permit requires that all MS4s develop an illicit discharge elimination plan (IDEP). The major components of the Genesee County IDEP plan to be performed by Genesee County are highlighted below. These components include field verification of outfall locations, reviewing eliminating illicit discharges, reviewing the legal authority, minimizing seepage from septic systems and sanitary sewers, and the coordination of activities.

Field Verification of Outfall Locations

As described in the outfall map section of this 2003 application, the outfall maps are based on an office review of the best available information and were not field verified. An important part of the IDEP work will be to field verify the location of mapped outfalls and to walk each *watercourse* in the County to identify unmapped outfalls. The watercourses to be walked were identified from the State GIS hydro layer. Additionally, ownership (municipal MS4 or private) will be determined for each outfall found. This work will be accomplished as part of all IDEP field investigations (dry weather screening).

Reviewing the Legal Authority

The overall legal authority for the Genesee County Drain Commissioner (GCDC) to prohibit illicit discharges is contained in the Michigan Drain Code of 1956, Section 280.423, which is included with this section. This authority applies to all legally established county drains. The GCDC together with local community representatives is reviewing the current legal authority and enforcement procedures. The forthcoming County storm water ordinance template being developed will provide local municipalities with the authority to prohibit illicit discharges and manage outfalls for all municipal drainage systems.

Eliminating Illicit Discharges and Connections

One of the primary actions under IDEP is to identify and remove all illicit discharges and connections from the municipal storm sewer system. Genesee County has prepared outfall maps identifying the outfalls, currently known, within the limits of Genesee County as presented previously. The outfall maps were created in ArcView GIs, this information will be used to establish a database for guiding the screening of outfalls for dry weather flow.

To achieve IDEP requirements, each outfall will be screened for signs of illicit discharge. Where illicit discharges are suspected, systematic investigation upstream of the outfall will be conducted to trace the discharge to the source. The Michigan Drain Code Section 280.423 prohibits sanitary connections to county drains and gives the GCDC authority to remove illegal connections. An excerpt of the relevant pages from the Michigan Drain Code is attached. The preliminary count of outfalls for Genesee County is as follows:

1. Lower Flint	203
2. Middle Flint	416
3. Upper Flint	102
4. Shiawassee	115
5. Cass	35
Total Outfalls	871

It should be noted that the GCDC has until April 1, 2009 to investigate these outfalls. It is the intention of the GCDC to walk all the County waterways.

The process of locating and removing illicit connections is illustrated in an attached Work Plan Flow Chart. The flow chart is discussed in detail below. Forms for recording field inventory information and observations if dry weather flow is observed are also included with this section. The dry weather screening form could be used multiple times at a single site if a suspected connection or discharge requires follow-up site visits.

The GCDC has prepared an outfall map using a GIS mapping system that will be used to establish a database for guiding the screening of outfalls for dry weather flow. The outfalls will be observed in the field during dry weather conditions, 72 hours with less than 0.10 inches of rainfall, and the sites will be checked for intermittent flows if suspected. If flow is present, it will be visually observed, checked for odors, and tested for representative tracer parameters such as pH, temperature, E. coli, fecal coliform, detergents, ammonia, and total organic carbon. All of these tests, except for pH and temperature, will be performed by a professional contract laboratory. Test results and observations will be used to identify areas that require follow-up investigations. When the initial testing has identified a potential problem, the land use and type of buildings in the area will be considered to determine the next course of action. Based on the land use and the results of the observations and chemical testing, additional manholes will be investigated. Tracing of the pollutant stream will continue by manhole investigations until the source is isolated within a relatively short reach of sewer. Dye testing of building fixtures will then be used to locate the source.

Dye testing will be scheduled at individual buildings following notification of the building owner to explain the need for this investigation and how it will be performed. In general, dye testing will be used as the final step to gain positive identification of an illicit connection. Televising the sewer may be used

to further isolate the pollutant source or may be used if dye testing does not reveal the source of the problem. This approach is intended to locate illicit connections in the most cost-effective and efficient manner possible. It will focus the use of dye testing in those areas with the highest potential for illicit connections.

Field investigations to identify specific illicit connection locations will be performed by consultant contract. When illicit connections are located, the GCDC is provided with specific details, which will be used to prepare a letter to notify the property owner of the violation and require corrective action by the property owner. Prioritization of potential illicit connection is done through a combination of when they are initially detected (chronologically) and by geographical location (trying to maximize resources through scheduling investigation that are close to each other). If the property owner does not respond in the specified time frame, follow-up enforcement action will be taken by the GCDC. When the property owner has indicated that a connection has been eliminated, GCDC staff will inspect the site to confirm that the corrections were completed.

Updated maps are currently provided in the 2006-2007 annual report, Section 10, that reflect ownership, status of any illicit connections found, as well as corrections to the original information in the permit.

Minimizing Seepage from Septic Systems and Sanitary Sewers

A map of the sanitary sewer service areas will be prepared to define areas where sanitary service is available and septic tanks can be prohibited. Those areas with the possibility of septic tanks were produced and are included in the watershed management plans. As part of the actions in the Watershed Management Plan, Genesee County will pursue a time of sale septic tank inspection ordinance and coordinate such activities with the County Public Health Department. The need to establish requirements to correct problems with failing septic tank systems will be evaluated and appropriate actions taken to address deficiencies.

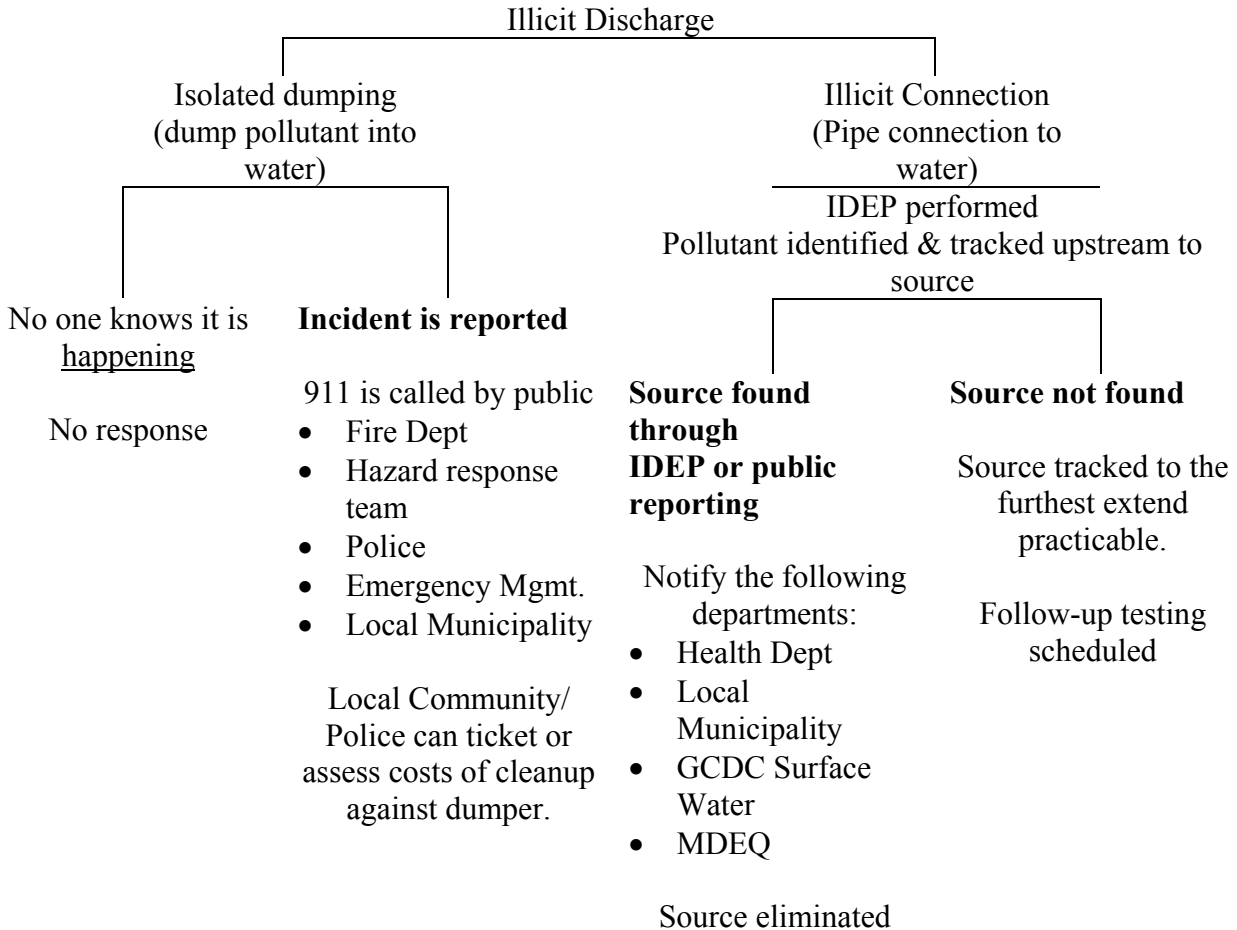
The potential for sanitary sewer leakage entering storm drain systems will be addressed as part of the County and local sanitary sewer infiltration and inflow removal programs. This work will include performing an inventory and videotaping inspection of sewers to identify problem areas and to develop corrective actions.

Training

At the start of every IDEP field season training is conducted for new Tetra Tech employees, summer interns, and individuals from various other firms and municipalities. The training is typically for an entire day and provides procedural information for individuals that have not previously been involved in IDEP operations, and it serves as a refresher for the regular IDEP field crews. There is both an in-class module and a field demonstration. Through the use of Power Point presentations, IDEP protocol manuals, and hands on training in the field, individuals are given the tools to collect and record the required data under the Phase II Storm Water permit.

Public Notification System for Illicit Discharges

Currently the Illicit Discharges are either associated with illegal dumping or releases associated with illicit connections. The following flow chart illustrates the various paths and responsible parties involved in managing Illicit Discharges:



The number of possible ways that an illegal dumping can occur compounded by the number of agencies involved make centralization of this function extremely difficult and cost prohibitive under the current economic climate. Furthermore, centralization of the function may in-fact reduce response time and clean up efficiency due to having to educate the public about the who they should call.

Therefore, the GCDC will coordinate efforts to develop a tracking form to be used to track illegal dumping as reported by the public, similar in concept to a “chain of custody” from used to track hazardous materials. The form will originate with the agency that receives the call from the public and end with GCDC. This way illegal dumping calls will be responded to as they are received. Prioritizing should not be a concern, because the likelihood of 2 complaints coming into the same community at the same time is highly unlikely. If prioritizing is needed, the illicit connections will be prioritized by the type of suspected release. For example, from the responder’s perspective a suspected oil spill will take precedent over a suspected detergent spills. A benefit to adding a tracking mechanism would make it easier to allow local communities (through the police and fire departments) to levy fines and collect clean-up costs if the responsible party can be identified.

The illicit dumping form will direct the originating agency to notify GCDC within 24 to 48 hours as well as to inform them of any corrective action taken. This way GCDC can track any open notification that still may need to be followed up on as well as determine any apparent patterns that may lead to eliminating re-occurrences in the future.

Effectiveness of IDEP program

The current permit requires that the permittee determine the effectiveness of their illicit discharge elimination activities. These evaluation activities are in addition to inspecting each storm water point source every five years. GCDC will use three evaluation methods, all of which are approved methods in the MDEQ IDEP guidance. The current GCDC IDEP program will continue to compare the number of illicit discharges/connections eliminated versus number found and report these in the annual report. The second evaluation method will have the future illicit discharge form being created for the public reporting system track the number and type of complaints received. Information collected will be reported in the annual report. The last evaluation method to be used is the ambient water quality monitoring results generated yearly from the existing program. Project Green, FRWC's Benthic Monitoring, monitoring conducted for IDEP investigation and any additional hot spot monitoring are updated and analyzed annual.

Coordination of Activities

The Genesee County Drain Commissioner will be coordinating with all municipalities and county agencies to address illicit connections/discharges, local ordinances, and seepage from septic systems and sanitary sewers. This work is proposed to be performed under a PA 342 contract with Genesee County. All work is proposed to be directed by the Drain Commissioner and coordinated with the Road Commission, Health Department, Emergency Management Services, and local officials, as appropriate.

Program Schedule

Activities to be performed within **12 months** include:

1. Continue to evaluate the legal basis to restrict and remove illicit connections and discharges.
2. Continue to priority areas for initial screening and inspections. Initial priorities will be based on starting with the Middle Flint (454 outfalls) proceeding to the Lower Flint (232 outfalls), Shiawassee (123 outfalls), Upper Flint (103 outfalls), and then Cass (31 outfalls).
3. Develop a form and procedures for the public complaint and reporting system.
4. Continue to annually train field staff on procedures for the IDEP compliance requirements
5. Conduct follow up field investigation on suspected illicit discharges and priority areas.
6. Continue to prepare map showing the locations of sanitary sewers relative to storm sewers
7. Continue to require sanitary sewer connections when available.
8. Devise procedures to meet IDEP requirement in new permit.
9. Track activities for Permit Report.

Activities to be performed within 24 months include:

1. Revise the IDEP Plan (anticipated to be within 2 years but will be specified in COC)
2. Visually inspect mapped storm sewer outfalls for dry weather flow for all identified outfalls in the permit application.
3. Adopt ordinance changes, if needed, to restrict and remove illicit connections.
4. Locate potential sites of septic tank system.

5. Fully implement the public complaint and reporting system.
6. Implement procedures to meet IDEP requirement in new permit.
7. Prepare Permit Report.

Activities to be performed within **60 months** include:

1. TBD – Dependent upon New Permit requirements.

IDEP Forms

DRAINAGE SYSTEM INVENTORY

GENERAL

ID

Date _____ Time _____
 Crew Initials _____ Chk By: _____
 Photographs: Roll # _____ Picture #'s _____

STRUCTURE TYPE

- PSD
 - Manhole
 - Catch Basin
 - Culvert Outlet
 - Point in Open Channel
 - Abandoned
 - Unknown
- PSD Status**
- PSD
 - Not a PSD
 - PSD Not in Permit (New)
 - PSD Not Permittable
 - Structure within Drainage Network

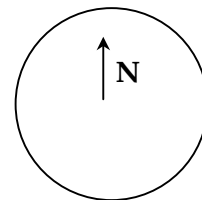
LOCATION (see back side for location sketch)

Latitude _____
 Longitude _____
 Invert Elevation _____
 Offset Description: _____

Receiving Waterbody: _____

CONDUIT INFORMATION

Pipe ID						
Direction from MH						
Shape						
Diameter (in)						
Width (in) (Open Channel)						
Depth (in)						
Measure Down (ft) (Manhole)						
Invert Elevation (ft) (Pipes)						
Conduit Material						
US/DS End						



Comments _____

LOCATION SKETCH

LOCATION SKETCH CHECK LIST

- Label Street Names
- Indicate North
- Locate manholes by dimensions from property lines, back of curb, or edge of pavement
- Sketch catch basins and connections (no measurements necessary).
- Indicate (if possible) distance to upstream and downstream manholes
- Landmarks/nearest address, if any
- Flow direction
- Sample point
- Special access/traffic control notes
- Between mile markers ____ & ____ or ____ tenths past mile marker ____
- Velocity/depth measure location



DRAINAGE SYSTEM SCREENING

GENERAL

Date _____ Time _____ ID
 Air Temp _____
 Rain Yes No Clear/Sunny
 Crew Initials _____ Chk By: _____ Partly Cloudy
 Photographs: Roll # _____ Picture # _____ Overcast

DRY WEATHER FLOW PRESENT

DRAINAGE SYSTEM SCREENING

GENERAL

Date _____ Time _____ ID
 Air Temp _____
 Rain Yes No Clear/Sunny
 Crew Initials _____ Chk By: _____ Partly Cloudy
 Photographs: Roll # _____ Picture # _____ Overcast

DRY WEATHER FLOW PRESENT

- Yes, Dry Weather Flow Present
- Trace, Insufficient
- No Dry Weather Flow Present
- Standing Water
- Submerge
- Inundated
- N/A

FLOW MEASUREMENTS

Pipe Sampled: Size (in) _____ Direction _____

Method: <input type="checkbox"/> Tt Method	General Data	Travel Time Trials
<input type="checkbox"/> Area * Velocity	Depth, (in) _____	
<input type="checkbox"/> Bucket	Dist Traveled, (ft) _____	#1 (sec) _____
<input type="checkbox"/> Manning's	Bucket Vol, (l) _____	#2 (sec) _____
	Channel Slope (%) _____	#3 (sec) _____
	Channel Material _____	Avg (sec) _____
	Channel, n _____	Vel (fps) _____

Flow: _____

- Intermittent Not Checked
 Flow Check Left Sand Bag in Channel
 Removed Sand Bag, intermittent DWF present Yes No

if possible describe frequency, duration, time of day of flow slugs - put in comments section

OBSERVATIONS (if "other" checked fill in description at bottom of page)

Odor	<input type="checkbox"/> None	<input type="checkbox"/> Musty	<input type="checkbox"/> Sewage	<input type="checkbox"/> Rotten Egg	<input type="checkbox"/> Gas	<input type="checkbox"/> Oil	<input type="checkbox"/> Other
Floatables	<input type="checkbox"/> None	<input type="checkbox"/> Trash	<input type="checkbox"/> Sewage	<input type="checkbox"/> Green Scum	<input type="checkbox"/> Oil Sheen	<input type="checkbox"/> Suds	<input type="checkbox"/> Other
Deposits/ Stains	<input type="checkbox"/> None	<input type="checkbox"/> Mineral	<input type="checkbox"/> Sediment	<input type="checkbox"/> Oily	<input type="checkbox"/> Grease	<input type="checkbox"/> Suds	<input type="checkbox"/> Other
Vegetation	<input type="checkbox"/> None	<input type="checkbox"/> Normal	<input type="checkbox"/> Excessive	<input type="checkbox"/> Algae			<input type="checkbox"/> Other
Structural	<input type="checkbox"/> Normal	<input type="checkbox"/> Cracking	<input type="checkbox"/> Spalling	<input type="checkbox"/> Corrosion	<input type="checkbox"/> Settlement		<input type="checkbox"/> Other
Color	_____	Enter #					
Turbidity	_____	Enter #					

DRAINAGE SYSTEM SCREENING (Continued)

ID

CHEMICAL ANALYSIS

FIELD ANALYSIS

LAB SAMPLE COLLECTED ID _____

Surfactants	_____ mg/L	Temperature	_____
Ammonia	_____ mg/L	pH	_____
Boron	_____ mg/L	Specific Cond.	_____
Potassium	_____ mg/L		
E. Coli	_____ per 100ml		

RESULTS

- Illicit Connection Ruled Out
- Illicit Connection
- Pending
- Notify City
- Not a PSD

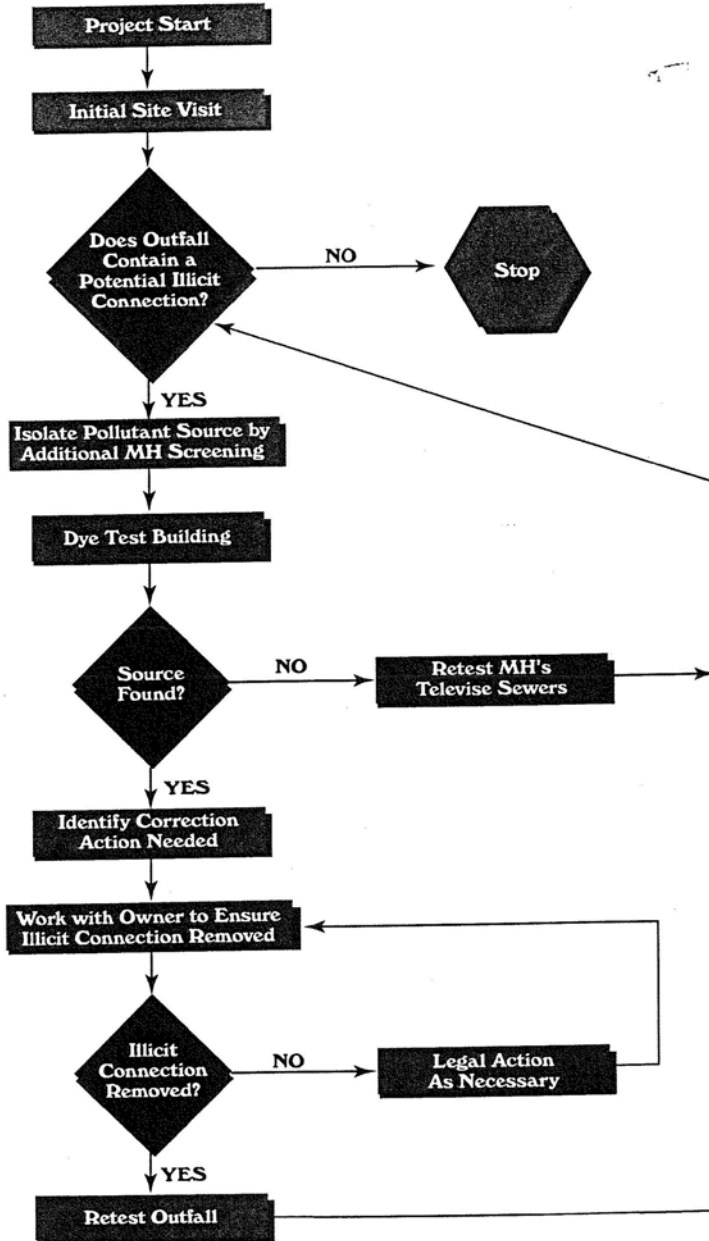
ACTION

- None Required
- Illicit Removed
- Waiting on Lab Results
- Dye Test
- Televis
- Investigate Further
- Illicit Connection

Comments _____



Illicit Discharge Elimination Program Work Plan Flow Chart



Michigan Drain Code eff. 1956

280.423 Discharge of certain sewage or waste matter into drains prohibited; construction to purify flow; petitions; order of determination; findings; construction of drain; plans and specifications; contracts; costs; review; acquisition of land; application and fee for sewer connections; connections; powers of drain commissioner or drain board; failure to comply with section; violation as misdemeanor; fine; "person" defined.

Sec. 423. (1) A person shall not continue to discharge or permit to be discharged into any county drain or intercounty drain of the state any sewage or waste matter capable of producing in the drain detrimental deposits, objectionable odor nuisance, injury to drainage conduits or structures, or capable of producing such pollution of the waters of the state receiving the flow from the drains as to injure livestock, destroy fish life, or be injurious to public health. This section does not prohibit the conveyance of sewage or other waste through drains or sewers that will not produce these injuries and that comply with section 3112 of part 31 (water resources protection) of the natural resources and environmental protection act, Act No. 451 of the Public Acts of 1994, being section 324.3112 of the Michigan Compiled Laws.

(2) Disposal plants, filtration beds, and other mechanical devices to properly purify the flow of any drain may be constructed as a part of any established drain, and the cost of construction shall be paid for in the same manner as provided for in this act for other drainage costs. Plants, beds, or devices may be described in the petition for the location, establishment and construction of drains or in the petition for the cleaning, widening, deepening, straightening, or extending of drains, or in the application for the laying out of a drainage district. Petitions for the construction of plants, beds, and devices for use on any established drain may be filed by the same persons and shall be received and all proceedings on the petitions in the same manner as other petitions for any drainage construction under this act.

(3) If the department of environmental quality determines that sewage or wastes carried by any county or intercounty drain constitutes unlawful discharge as prescribed by section 3109 or 3112 of part 31 of **Ad** No. 451 of the Public **Acts** of 1994, being sections 324.3109 and 324.3112 of the Michigan Compiled Laws, that 1 or more users of the drain are responsible for the discharge of sewage or other wastes into the drain, and that the cleaning out of the 'drain or the construction of disposal plants, filtration beds, or other mechanical devices to purify the **flow** of the drain is necessary, the department of environmental quality may issue to the drain commissioner an order of determination identifying such users and pollutants, under section 3112 of **Act** No. 451 of the Public Acts of 1994, being section 324.3112 of the Michigan Compiled Laws. The order of determination constitutes a petition calling for the construction of disposal facilities or other appropriate measures by which the unlawful discharge may be abated or purified. **The** order of determination serving as a petition is in lieu of the determination of necessity by a drainage board pursuant to chapter 20 or 21 or section 122 or 192 or a determination of necessity by a board of determination pursuant to section 72 or 191, whichever is applicable. A copy of the findings of the department shall be attached to the order of determination which shall require no other signature than that of the director of the department of environmental quality. Upon receipt of the order of determination, the drain commissioner or the drainage board shall proceed as provided in this act to locate, establish, and construct a drain. If the responsible users of the drain are determined to be public corporations in the drainage district, the drain commissioner or the drainage board shall proceed as provided in chapters 20 and 21, as may be appropriate, using the order of determination as the final order of determination of the drainage board. If the responsible users are determined to be private Persons, the drain commissioner shall proceed as provided in chapters 8 and 9, using the order of determination as the first order of determination.

(4) Plans and specifications for the construction as part of a drain of any disposal plant, filtration bed, or other mechanical device to properly purify the flow of the drain shall be prepared by the drain commissioner or the drainage board. Contracts for construction shall be let in the manner provided in this act. To meet the cost of any preliminary engineering studies for the construction of abatement or purification facilities, the drain commissioner or the drainage board shall apportion the cost among the

several parcels of land, highways, and municipalities benefited thereby in the same manner as provided in chapter 7 or against the public corporations affected by the order of determination in the same manner as provided in chapters 20 and 21. The costs and charges for maintenance shall be apportioned and assessed each year. If the apportionment is the same as the last recorded apportionment, a day of review' or a hearing on apportionments is not necessary, but if tire apportionment is changed, notice of a day of review or a hearing on apportionment shall be given to each person whose percentage is raised.

(5) Land may be acquired as a site for the construction of such plants, beds, and devices, and releases of land may be obtained in the same manner as provided in this act for other lands acquired for right of way.

(6) A person shall not connect sewage or other waste to a county or intercounty drain except with the written approval of the appropriate commissioner or the drainage board indorsed upon a written application for such service and the payment of a service fee of not to exceed \$50.00 for each connection to a covered drain. The application shall include information showing that all other local, state, and federal approvals related to the sewage or waste have been obtained.

(7) The fee provided for in subsection (6) shall be set and collected by the drain commissioner, as approved by the county board of commissioners or the drainage board, and deposited with the county treasurer, to be credited to the drain fund set up for the maintenance or construction of the drain. The commissioner or the drainage board shall keep a record of applications made and the action on the applications. The commissioner or the drainage board may reject applications for or require such modification in requested applications for sewer connections to county drains as necessary to attain the objectives set forth in this section.

(8) Subject to the review and approval of the department of environmental quality, the drain commissioner or drainage board may study the requirements of persons for flood control or drainage projects including sewage disposal systems, storm sewers, sanitary sewers, combined sanitary and storm sewers, sewage treatment plants, and all other plants, works, instrumentalities, and properties useful in connection with the collection, treatment, and disposal of sewage and industrial wastes or agricultural wastes or run-off, to abate pollution or decrease the danger of flooding. The objective of such studies shall be that sewers, drains, and sewage disposal facilities are made available to persons situated within the territorial limits of any drainage district or proposed drainage district as necessary for the protection of public health and the promotion of the general welfare.

(9) The drainage board or drain commissioner may cooperate, negotiate, and enter into contracts with other governmental units and agencies or with any public or private corporation including the United States of America, and to take such steps and perform **such** acts and execute such documents as may be necessary to take advantage of any act of the congress of the United States which may make available funds for any of the purposes described in this section.

(10) Failure to comply with any of the provisions of this section subjects the offender to the penalties described in section 602. However, for each offense, a person who violates subsection (6) is guilty of a misdemeanor punishable by a fine of not more than \$25,000.00 or imprisonment for not more than 90 days, or both. In addition, the person may be required to pay the costs of prosecution and the costs of any emergency abatement measures taken to protect public health or the environment. Payment of a fine or costs under this subsection does not relieve a person of liability for damage to natural resources or for response activity costs under the natural resources and environmental protection act, Act No. 451 of the Public Acts of 1994, being sections 324.101 to 324.98106 of the Michigan Compiled Laws.

11) As used in this section, "person" means an individual, partnership, public or private corporation, association, governmental entity, or other legal entity.

History: 1956, Act 40, Imd. Eff. **Mar. 28, 1956** ;--Am. 1972, **Act 298**, Imd. Eff. Dec. 14, 1972;--**b. 1996**, Act 60, Imd. Eff. Feb. 26, 1996 ;--Am. 1996, **Act 552**, Eff. Mar. 31, 1997.