

# **Appendix E**

## **Updates to Construction Permit Manual**

### **A. IDEP Enforcement Procedure**

### **B. Tap- In Procedure**



**Purpose**

Environmental contamination that migrates into MDOT's storm sewer system *may* affect MDOT's statewide National Pollution Discharge Elimination System (NPDES) storm water discharge permit, such that MDOT can be cited for violations; even though MDOT is not responsible for causing the contamination. Therefore, the following instructions shall be utilized when MDOT receives information or referrals regarding alleged illicit connections or discharges to MDOT storm sewer systems.

**Authority**

1925 PA 368, Highway Obstructions and Encroachments; Use of Highway by Public Utilities

**General Information**

**Record Keeping**

It is very important to record all information, including dates, times, and parties involved. Accurate field notes should be maintained on all items and information.

**Timeliness**

The complaint or referral must be investigated within a reasonable time frame. Failure to respond within a reasonable time frame can jeopardize future enforcement actions, should they become necessary.

**Scenarios where Illicit Discharges and Connections May Be Encountered**

Illicit discharges/connections will be encountered in three ways. They will be identified based on screening activities pursuant to MDOT's storm water discharge permit. They will be discovered as a result of complaints or referrals from other agencies or the public. They will also be encountered during construction activities. A separate section at the end of this procedure describes how to address those found during construction activities.

**For Illicit Discharges/Connections Not Found During Construction:**

**Field Inspector Responsibility**

The Region Resource Specialist, utilities engineer, or other individual as designated by the Region Engineer shall be responsible for coordinating the investigation to confirm an illicit discharge/connection exists and the source of that connection/discharge. The designated staff shall also prepare "Notice and Order to Remove Encroachment" forms and letters as described later in this procedure, and make recommendations for future actions by using the following procedures and the MDOT

**ILLICIT DISCHARGES INTO MDOT  
STORM WATER DRAINAGE SYSTEMS**

September 4, 2003

Page 2 of 6

IDEP Field Protocol Manual. If MDOT has hired a consultant to conduct investigations and evaluations of illicit connections/discharges, the MDOT staff indicated above should coordinate with the MDOT Storm Water Program Manager to have that consultant conduct necessary investigations. In all cases, if investigation of a discharge appears to be of an emergency nature, MDOT staff will contact the PEAS system to notify DEQ of the emergency. If possible, MDOT staff will also attempt to make direct contact with appropriate DEQ staff to report the emergency.

**Complaint Documentation**

The following information should be documented as applicable:

- Date of complaint/referral
- Principal parties involved
- Description (drain, storm sewer)
- Location
- Address
- Complexity (multiple or single points of discharge)
- Referral name, if any
- Connection location related to ROW

If a municipality is involved, contact shall be made with the appropriate municipal storm water system manager as soon as possible to coordinate complaint investigation.

**Complaint Validity &  
Analysis**

The validity of the complaint shall be determined by the field inspector or MDOT consultant.

Complaint not Justified

If the information or referral is not justified, further action is not warranted. A written response shall be sent to the party making the referral, if any, and all documentation shall be filed at the Region/TSC and copied to MDOT's Storm Water Program Manager for reporting to DEQ. If a consultant conducts the investigation, the consultant shall document its findings to the MDOT staff requesting the investigation. That documentation shall be retained at the Region/TSC and copied to MDOT's Storm Water Program Manager for reporting to DEQ.

Complaint Justified

If, during the initial site investigation, it appears that there may be an illicit connection/discharge into MDOT's storm water system, further investigation is warranted. MDOT staff, or, if the investigation is being done by a consultant, the consultant, shall investigate in

**ILLICIT DISCHARGES INTO MDOT  
STORM WATER DRAINAGE SYSTEMS**

September 4, 2003

Page 3 of 6

accordance with the MDOT IDEP Field Protocol Manual. [Any analysis of the alleged illicit discharge characteristics shall be documented.](#)

If investigation of an illicit connection/discharge requires activities on property outside of the MDOT right of way, MDOT staff will seek appropriate permission from relevant property owners for entry onto those properties to complete the investigation. If permission is granted, the permission will be documented and the investigation work will be completed as above. If permission is not obtained, that refusal will be documented and MDOT staff will notify the appropriate DEQ staff by letter (See attached Example A.) that access was refused and to request DEQ's assistance in gaining access to necessary properties for investigation purposes. The MDOT Storm Water Program Manager is to be copied on all correspondence.

If sufficient information has been gathered from investigations already performed to form a basis as to the likely source of the illicit discharge, letters will be sent to that party as indicated in the compliance section of this procedure seeking removal of the discharge/connection. If information gathered from the investigation is insufficient to determine the source of the illicit discharge/connection or DEQ is unable to assist in gaining access to necessary off ROW properties to allow the investigation to be completed, MDOT staff will document these facts and will refer the matter by letter (see attached Example B.) to the DEQ and any appropriate local agencies for further investigation and correction. A copy will be provided to the MDOT Storm Water Program Manager for reporting to DEQ.

**Illicit Connection/Discharge  
is Confirmed**

When an illicit connection/discharge is confirmed, the following procedures shall be followed to eliminate the illicit connection/discharge:

1.

**Notice and Order to Remove Encroachment**

If the investigation confirms that an illicit connection/discharge does exist and the probable source of the discharge is identified, then the owner of the discharging facility shall be sent a letter by certified mail, return receipt requested (See attached Example C.) along with

**ILLICIT DISCHARGES INTO MDOT  
STORM WATER DRAINAGE SYSTEMS**

September 4, 2003

Page 4 of 6

a completed "Notice and Order to Remove Encroachment" form (Form 2217, attached). If the investigation does not confirm the probable source of the discharge, Example letter C shall be sent to the owner of that portion of the storm water conveyance that connects to MDOT's storm water system and appears to be conveying the illicit discharge to MDOT's storm water system. The letter and form should be signed by the TSC Manager or Region Engineer. The notice shall describe the violation, provide specific response dates, compliance dates and provide a penalty section.

If the owner responds in a timely fashion to the notice, indicating a desire to comply with the conditions indicated in the notice, the "Compliance Section" of this procedure shall be used as a guide to provide specific removal and closure information to the owner.

If the owner responds indicating that some other party is the owner of the storm water conveyance in question, a letter as indicated above will be sent to that party as outlined herein.

If the owner does not respond to the notice, or indicates an intent not to comply with the conditions indicated in the notice, a second letter and notice should be sent, certified mail, return receipt requested. (See attached Example D.) If there is no response to the second notice or the respondent indicates it will not comply, the "Enforcement Section" of this procedure should be used as a guide.

**Compliance**

Use this section after an illicit discharge/connection is confirmed, or when the property owner voluntarily indicates an illicit discharge exists and desires to correct or eliminate the situation.

1. If the property owner desires to correct the violation, by eliminating the discharge, they should be asked to provide a timetable by which they will eliminate the connection or discharge that is causing the violation in a manner that will prevent it's reconnection or resumption. If the illicit discharge/connection can be resolved by issuance of an encroachment permit, MDOT staff will explain how the permit can be obtained and process any submitted permit application. If no timely permit application is submitted, removal of the illicit discharge/connection must be pursued as described herein.
2. Once correction of the illicit discharge/connection is completed the

**ILLICIT DISCHARGES INTO MDOT  
STORM WATER DRAINAGE SYSTEMS**

September 4, 2003

Page 5 of 6

property owner must submit written documentation describing the correction. If such correction requires excavation or other work within MDOT's right of way, a permit must first be obtained from MDOT through the normal utility permit process before such work may commence.

3. Documentation of all actions taken to resolve these connections must be maintained by the Region/TSC, the Region Storm Water Coordinator (if different) and information documenting the notice and removal of the connection or cessation of the discharge provided to MDOT's Storm Water Program Manager for reporting to DEQ as part of annual NPDES permit reporting.

**Enforcement**

Use this section when there is no response to the second certified letter and Notice and Order to Remove Encroachment, or the owner indicates no voluntary compliance actions will be taken, or if the owner fails to submit a timely utility permit application if that compliance option was made available.

1. If the illicit connection/discharge point is within MDOT's right of way, all documentation of discovery, investigation and remediation efforts and responses, if any, from the owner of the discharge/connection shall be forwarded with a memo from the Region Engineer to the MDOT Storm Water Program Manager requesting the matter to be referred for enforcement. The MDOT Storm Water Program Manager will coordinate the referral with the Assistant Attorney General in Charge, Transportation Division, requesting that they file an action under the Encroachment Act or other legal authority as appropriate to enforce removal of the encroachment. If the Assistant Attorney General in Charge of the Transportation Division determines that a referral is not appropriate for their office to file litigation, this will be documented and the matter referred to the appropriate local government and DEQ for enforcement as indicated below.
2. If the illicit discharge/connection point is located outside of state trunkline ROW, a third letter will be prepared to refer the matter to the appropriate local government, the local health department and the appropriate DEQ Water Division District Supervisor for enforcement. The owner/owners of the discharge/connection in question will be copied on this letter. (See Example B.)

**ILLICIT DISCHARGES INTO MDOT  
STORM WATER DRAINAGE SYSTEMS**

September 4, 2003

Page 6 of 6

**Illicit Discharges/Connections Found During Construction**

When an illicit discharge/or connection is found during construction activities the contractor should notify the engineer or other MDOT staff on site of the discovery, as described on the standard plan note. MDOT staff will determine if there appears to be an illicit discharge/connection present and if it poses a potential emergency situation or not. If the discharge appears to be of an emergency nature, MDOT staff will contact the PEAS system to notify DEQ of the emergency. If possible, MDOT staff will also attempt to make direct contact with appropriate DEQ staff to report the emergency.

If no emergency situation exists and an illicit discharge/connection appears to exist, MDOT staff will make an attempt to identify the party responsible for the illicit connection/discharge and seek removal of the illicit discharge/connection through direct contact with that party. If MDOT staff can not determine if an illicit discharge/connection exists or can not identify the party responsible in a period of time sufficiently brief as to not unduly delay necessary construction activities, the location of the connection/discharge will be noted, reported to the Region Stormwater Coordinator for follow up in accordance with the previous sections of this procedure, and construction will continue.

[EXAMPLE A]



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
LANSING

GLORIA J. JEFF  
DIRECTOR

September 23, 2003

Water Division District Supervisor  
Department of Environmental Quality

Dear :

The Michigan Department of Transportation (MDOT) is currently investigating its storm sewer system within **{enter name of jurisdiction}**. Information gathered during the course of this investigation indicates that an illicit discharge/connection is originating from property adjacent to MDOT's right of way and entering into MDOT's storm sewer system. MDOT lacks legal authority to enter onto properties outside of MDOT's right of way and has been unable to obtain voluntary permission from adjacent property owners for MDOT to conduct investigations on these properties. As a result MDOT is unable to investigate this possible illicit discharge/connection as required under our NPDES Storm Water Discharge Permit.

This letter is to request your assistance in obtaining legal access for MDOT to complete the investigation described above. Attached to this letter is information describing the properties to which access is needed and the potential scope of investigatory activities MDOT or its consultant may need to undertake under such access. If DEQ is unable to obtain access to enable MDOT to conduct these investigations, MDOT will refer all further follow up actions for this potential illicit discharge or connection to the DEQ or appropriate local jurisdiction.

Please contact me at **{insert phone/e-mail}** to inform me of the status of this request or if you have any questions.

Sincerely,

Region Storm Water Coordinator

Attachments

Cc: local health department  
Local municipality  
TSC Manager/Region Engineer  
MDOT MS4 consultant  
MDOT Storm Water Program Manager

[EXAMPLE B]



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
LANSING

GLORIA J. JEFF  
DIRECTOR

September 23, 2003

**CERTIFIED LETTER**  
**RETURN RECEIPT REQUESTED**

To DEQ Water Division District Supervisor and/or local jurisdiction as appropriate

Dear :

As part of the Michigan Department of Transportation's (MDOT) on going efforts to investigate its storm sewer system within **{enter name of jurisdiction}**, we identified potentially illicit connections/discharges to our storm sewer system. *{Pick one of the following as appropriate:*

**We have been unable to obtain voluntary access to properties not within MDOT's right of way that are necessary in order to investigate the potential illicit discharge/connection. Upon MDOT's request DEQ has been unable to provide MDOT with access to these properties. As a result, MDOT is unable to complete investigation of this potential illicit discharge/connection and determine if one exists, who is responsible for it or take appropriate actions to have it eliminated.**

*or*

**Attached to this letter are copies of two certified letters and Orders to Remove Encroachment that were sent to the property owners that we identified as potentially responsible for these connections/discharges. To date this party has {not responded/failed to remedy the illicit connection or discharge}}**

MDOT is required by its National Pollutant Discharge Elimination System permit for the discharge of its storm water to take enforcement actions to eliminate all illicit discharges/connections to its storm sewer system. The purpose of this letter is to inform you that because the illicit connection or discharge exists outside of MDOT's right of way, **{insert if appropriate – and MDOT has been unable to obtain access to off the right of way properties over which MDOT lacks jurisdiction to enable proper**

**investigation}** MDOT lacks the legal authority to take enforcement action against the offending party to remedy this matter. Therefore, by this letter, we are referring this matter to your agency and requesting that you use legal authority available to you to eliminate the identified illicit discharge/connection to MDOT's storm water system.

Please contact **{fill in name and phone}** if you have any questions or need additional information.

Sincerely,

TSC Manager or Region Engineer

Attachments

Cc:: property owner(s) in question  
local health department  
Local municipality  
DEQ Water Division District Supervisor (if not addressee)  
MDOT MS4 consultant  
MDOT Storm Water Program Manager  
Region Storm Water Coordinator

[EXAMPLE C]



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
LANSING

GLORIA J. JEFF  
DIRECTOR

September 23, 2003

**CERTIFIED LETTER**  
**RETURN RECEIPT REQUESTED**

Address

Dear Property Owner:

The Michigan Department of Transportation (MDOT) is currently investigating its storm sewer system within **{enter name of jurisdiction}**. Information gathered during the course of this investigation indicates that an illicit discharge/connection is originating from your property and entering into MDOT's storm sewer system. Attached to this letter is a Notice and Order to Remove Encroachment and additional information describing the illicit discharge/connection.

The Federal Clean Water Act and Part 31, Water Resources Protection of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended and regulations promulgated pursuant to these statutes mandate that only clean storm water or potable water can be discharged to a system that discharges to the waters of the State. Your property could be discharging pollutants to MDOT's storm sewer system in violation of these laws and in violation of the Highways Obstructions and Encroachments Act, 1925 PA 368.

The attached Notice and Order directs that you remove this encroachment within 30 days after receipt of this letter. By **{insert date}** you must provide documentation to this office describing what actions you have taken to resolve this matter. If you are unable to remove this encroachment within that time, you must provide information to this office by **{insert date}**, describing the specific steps and schedule by which you will remove this encroachment. By copy of this letter we are notifying the Michigan Department of Environmental Quality and **{insert name of municipal jurisdiction and local health department if appropriate}** of this information.

Please contact **{fill in name and phone}** if you have any questions.

Sincerely,

TSC Manager or Region Engineer

Attachments

Cc: local health department  
Local municipality  
DEQ Water Division District Supervisor (if not addressee)  
MDOT MS4 consultant  
MDOT Storm Water Program Manager  
Region Storm Water Coordinator

[EXAMPLE D]



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
LANSING

GLORIA J. JEFF  
DIRECTOR

September 23, 2003

**CERTIFIED LETTER**  
**RETURN RECEIPT REQUESTED**

Address

Dear Property Owner:

On {date} I sent you a letter indicating that the Michigan Department of Transportation (MDOT) is currently investigating its storm sewer system within **{enter name of jurisdiction}**. That letter also informed you that information gathered during the course of this investigation indicates that an illicit discharge/connection is originating from your property and entering into MDOT's storm sewer system. Attached to that letter was a Notice and Order to Remove Encroachment and additional information describing the illicit discharge/connection. My {date} letter required that you either remove the illicit discharge/connection by {date} or respond by {date} describing what actions you were going to take to eliminate this discharge/connection. To date we have not received a response from you to that letter **(or response indicated that you would not take actions to adequately resolve this matter)**.

MDOT is required by its National Pollutant Discharge Elimination System permit for the discharge of its storm water to take enforcement actions to eliminate all illicit discharges/connections to its storm sewer system. The purpose of this letter is to inform you that if you do not remove the discharge/connection described in my {date} letter by **{insert date}**, MDOT will refer this matter for appropriate enforcement actions to eliminate this illicit connection/discharge to MDOT's storm sewer system.

By **{insert date}** you must provide documentation to this office describing what actions you have taken to resolve this matter. **{if within MDOT ROW insert the following: If you do not resolve this matter by this date, we will refer this matter to the Department of Attorney General to initiate appropriate enforcement actions to remove this illicit connection/discharge.}** By copy of this letter we are notifying the Michigan Department of Environmental Quality and **{insert name of municipal jurisdiction and local health department if appropriate}** of this information.

Please contact **{fill in name and phone}** if you have any questions.

Sincerely,

TSC Manager or Region Engineer

Attachments

Cc: local health department  
Local municipality  
DEQ Water Division District Supervisor (if not addressee)  
MDOT MS4 consultant  
MDOT Storm Water Program Manager  
Region Storm Water Coordinator



STATE OF MICHIGAN

DEPARTMENT OF TRANSPORTATION

LANSING

JENNIFER M. GRANHOLM  
GOVERNOR

GLORIA J. JEFF  
DIRECTOR

2217 (01/03)

PREVIOUSLY 445A

## NOTICE AND ORDER TO REMOVE ENCROACHMENT

*This information required by Act 368, PA. of 1925, in order to  
remove all encroachments upon Michigan State Trunkline Highways.*

NOTICE TO (NAME): \_\_\_\_\_

ADDRESS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

YOU ARE HEREBY NOTIFIED as the owner of \_\_\_\_\_  
\_\_\_\_\_

which is (are) located partly on or adjacent to the following described property: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

that you cannot legally erect and/or maintain a certain \_\_\_\_\_  
\_\_\_\_\_

on said premises, which encroaches upon Michigan State Trunkline Highway \_\_\_\_\_  
\_\_\_\_\_.

This encroachment is located in section \_\_\_\_\_, township \_\_\_\_\_, range \_\_\_\_\_,  
county \_\_\_\_\_.

YOU ARE HEREBY ORDERED TO REMOVE THE SAID ENCROACHMENT WITHIN 30 DAYS AFTER  
RECEIPT OF A COPY OF THIS ORDER.

YOU ARE FURTHER NOTIFIED that the Michigan Department of Transportation shall proceed  
to remove such encroachment at your expense if you do not comply with this Order.

THAT ORDER SHALL BE FINAL 30 days after receipt of a copy unless proper action, as provided  
by law, is taken.

\_\_\_\_\_  
TSC MANAGER (SIGNATURE)

\_\_\_\_\_  
DATE

\_\_\_\_\_  
**MICHIGAN DEPARTMENT  
OF TRANSPORTATION  
REGION OFFICE ADDRESS**  
\_\_\_\_\_

**Purpose**

This procedure should help MDOT staff insure that an applicant's/owner's engineer has adequately performed hydrologic and hydraulic analyses in order to thoroughly evaluate potential impacts to MDOT's individual storm water conveyance systems. Although MDOT is not responsible for sizing retention/detention systems (basins, infiltration systems, underground storage, etc.) on private property adjacent to state trunkline right of way (ROW), MDOT does regulate the storm water flow rate and velocity from such systems. Furthermore, MDOT does evaluate the potential impacts from the applicant's property on the water quality of MDOT's storm water conveyance system.

**Legal Basis and Considerations**

The *quantity* of storm water MDOT is legally obligated to accept is addressed in the Administrative Rules Regulating Driveways, Banners and Parades on or Over Highways, Public Act 200 of 1969, and previous court decisions. Furthermore, recent Federal Regulations, on the *quality* of storm water runoff created under the Clean Water Act, dictate the need to address this issue during the permit process. The Department's legal authority to control drainage to its ROW is based on two sources:

Act 200 of 1969

According to Act 200 of 1969 and the applicable administrative rules (247.224, Rule 24f):

"Altered natural drainage shall not be permitted to flow onto the highway right-of-way unless special provisions are approved by the Department."

Rules 247.223 and 247.261 are also directly applicable.

Michigan Case Law

Michigan Case Law with respect to the Disposal of Surface Waters indicates:

1. The owner of a lower or servient estate is obligated to receive surface water from the upper or dominant estate in its natural flow.
2. The owner of the lower or servient estate may not fill his lands in such a way as to retard natural flow of surface water or cause it to impound upon the upper owner's land.
3. The owner of the dominant estate has no right to divert, concentrate, or increase the velocity of the natural surface water. Public authorities do not have the right to divert surface water, which would in the natural state be dispersed over a large area; and to cast such in a concentrated form upon the lands of the abutting owner, while causing damage, without paying compensation. For additional information see Chapter 2 of the MDOT Drainage Manual.

Accepting Additional Drainage  
From Local Agencies

**MDOT is not legally responsible for accepting drainage from an abutting property to the trunkline right of way that historically drained elsewhere.** However, past policy and practice has allowed for accepting additional water from local agencies if the highway drainage system will not be adversely affected. Such acceptance must be outlined in an agreement between MDOT and the local agency that has jurisdiction over the drainage outside MDOT right of way. If an agreement exists, a copy of the agreement shall be submitted with the permit application.

Drainage Agreements

The Design Support Area's Governmental Coordination Engineer and Drainage Coordinator should be contacted to develop and coordinate drainage agreements. If the agreement stipulates MDOT will accept new storm water, and the storm water is transferred into another watershed not within the jurisdiction of the local agency, this scenario shall not be permitted. Additional information on agreements with local agencies may be found in Chapter 2 of MDOT's Drainage Manual.

**General Information**

MDOT does not have the authority to regulate land use changes outside of the state trunkline right of way. Nevertheless, land use changes *may* change the local area drainage characteristics, and it is important for MDOT to regulate any potential increase in the rate of flow, velocity, and water quality impacts that may occur when properties adjacent to trunkline highways are developed.

Flow Volume

MDOT requires the identification of flow rate, so as not to overburden its existing storm water conveyance systems. MDOT's storm water conveyance systems are constructed with public monies and are not required to provide for the development of private lands, although they can be sized to address future development of lands under Federal Aid Policy Guides. Nevertheless, *the flow rate should be restricted to existing flow rates*. Any increase in the flow rate may impact the highway or adjacent properties outside of State trunkline right of way.

Land Use Changes

Local agencies approve all changes in land use. Sometimes the planned development of parcels adjacent to MDOT ROW indicates additional drainage area is proposed for MDOT's storm water conveyance system. When a change in the topography results in additional flow to the ROW, it is inherent that the developer receives approval from the local municipalities and/or the County Drain Commissioners when the parcel is located within an established county drainage district. MDOT is not encumbered to receive this additional flow. That is why MDOT restricts the allowable flow, via our permit process, to the existing established flow rate.

Water Transfer Authority

MDOT does not have the authority to assist an applicant to transfer storm water from one watershed or drainage district to another via MDOT's storm water conveyance systems. Potential alterations of an established county drainage district boundary, or a consolidation of two or more established county drainage districts may be accomplished with a petition to the County Drainage Commissioner. This process falls under Section 433 of the Drain Code and involves the developer and the County Drain Commissioner. See chapter 2 of the MDOT Drainage Manual for additional comments regarding MDOT's legal responsibility.

Ditch Closures

Burying a culvert may be permitted in order to close a ditch. However, any longitudinally placed culvert system of sufficient length that requires a manhole is defined as a longitudinal sewer system.

Michigan Department of Transportation Real Estate Support Area Utility Coordination and Permits Section Construction Permit Manual	<div style="text-align: right;">14.01</div> <div style="text-align: center;"><b>DRAINAGE DESIGN FOR ACCESSING STATE TRUNKLINES</b></div> <div style="display: flex; justify-content: space-between;"> <span>April 22, 2003</span> <span>Page 4 of 8</span> </div>
---	---

Longitudinal Sewer Systems

Permits for longitudinal sewer construction within MDOT right of way shall only be issued to drain commissioners, drainage boards, and other governmental agencies upon approval by the MDOT Drainage Coordinator. In all cases, the local governmental agency should attempt to secure its own right of way or easements for its systems.

Construction by individuals or companies *may* be considered when the permit application is accompanied by a governmental resolution whereby the sewer, when constructed, will be the responsibility of, and be maintained by that governmental agency. Absent any governmental agency involvement, a longitudinal sewer constructed by a private party shall require an airspace agreement.

Sewer Taps

Permits for sewer taps and crossings *may* be issued to private individuals and companies as well as to governmental agencies.

Shared Conveyance System

Where a governmental agency has a prior written agreement with MDOT for use of a portion of the capacity in a department storm water conveyance system, other parties *may* be allowed to utilize a portion of that capacity. Such use shall require a department permit be issued for the connection into the storm water conveyance system. The permit conditions shall stipulate that the capacity utilized is attributed to the governmental agency. Such connection is subject to the restrictions outlined in the agreement with the local agency and is subject to local agency approval.

Commercial Developments  
Zoned Residential

Sometimes a commercial enterprise is undertaken on property zoned residential. Applications received from commercial and residential applicants, and where a change in the drainage character affects **less than (2) two acres**, *may* forego an engineered drainage design. If the permit applicant chooses to forego a formal engineering design, the use of form 2484 is not required.

Retention/detention basins are required and should be designed according to the following specifications. 8000 cubic feet should be retained for each acre of drainage area changed. The height dimension for open basins should not exceed 2 feet. No freeboard is required. A 4-inch pipe outlet should be installed with a positive grade into MDOT ROW, and with energy dissipation installed according MDOT's standard plans. Alternatively, applicants are entitled to employ a professional engineer and submit a certified design with the permit application.

**Permit Requirements**

Form 2205	Permit applications shall be made with form 2205 and shall include plans and specifications covering the proposed work.
Form 2484	This information shall be certified by completing the <u>Drainage Design Checklist for Accessing State Trunklines, Form 2484</u> . Form 2484 shall be filled in completely, and a professional engineering seal and signature shall be provided in the space provided.
Certification	<p>It is <u>not</u> the responsibility of MDOT to determine the storage volume required on an applicant's property. Rather, the applicant's engineer shall certify to MDOT that the storm water detention system has the capacity to function over the range of design flow rates, and that the storage volume needed <u>is contained on the applicant's property</u> for the full range of flows. The applicant's engineer shall certify the following information by completing form 2484:</p>
	<ol style="list-style-type: none"> <li>1. The proposed outlet control from the proposed drainage system is discharged at a flow rate equal to or less than the existing flow rate conditions into the MDOT storm water conveyance system;</li> <li>2. The velocity of the discharge is properly dissipated;</li> <li>3. There exists sufficient storage on the permit applicant's property for all the range of flows required to be analyzed, so that <u>no</u> harmful interference to MDOT ROW or adjacent properties will be caused as a result of utilizing the proposed storm water conveyance system.</li> </ol>
Permits Requiring Public Detention Systems	Public drainage easements are provided to public entities by private property owners to allow for the operation and maintenance of public storm water conveyance and detention systems. If the proposed detention system is to be located in a public easement area, the applicant shall provide evidence that such an easement exists for the proposed drainage system.
As Built Plans	Once constructed, the applicant shall provide either; as-built plans signed by a registered Professional Engineer in Michigan prior to the permit being closed; or a letter indicating <u>no</u> significant changes from the plans were made in the field.

**Design Parameters**

The following design parameters summarize MDOT’s design fundamentals for MDOT storm water conveyance systems. Details on hydrologic and hydraulic methods can be found in the MDOT Drainage Manual.

A hydraulic study, drainage design, and calculations shall be prepared by a Michigan registered professional engineer to determine any adverse effect on the existing upstream and downstream drainage systems. The possibility that other adjacent property owners may request similar uses of the same storm water conveyance system should be considered. The existing storm water runoff, proposed storm water runoff, and required detention volume shall be determined and submitted with the permit application.

Flow Restricted to  
Existing Conditions

MDOT storm water conveyance systems are designed for the state highways they serve. Allowances are made during design to accommodate the surface drainage sloping naturally towards the roadway in the existing condition of imperviousness experienced at the time of design.

When an abutting property which historically drained to the state highway system undergoes a change in imperviousness (land use), any increased flow shall be restricted to the rate that existed at the time the MDOT drainage system was constructed. The proposed design shall not cause a harmful interference to the state trunkline or adjacent properties. “Harmful interference” is defined in the MDOT Drainage Manual as:

“Causing an unnaturally high stage or unnatural direction of flow on a river or stream that causes, or may cause, damage to property, a threat to life, a threat of personal injury, or a threat to water resources.”

To show that the applicant is not causing harmful interference to MDOT ROW or other adjacent property, a map of the proposed contours for the applicant’s property must be provided with the permit application. The limits of flooding for the 1% (100-year) flood frequency must be delineated on this contour map.

Hydrologic Analyses

Accepted methods for estimating peak flows are provided in Chapter 3 of the MDOT Drainage Manual. At a minimum, flow estimates shall be provided for the 10%, 2%, and 1% (10-year, 50-year, and 100-year) flood frequencies.

Detention Requirements

The applicant *may* be required to provide a retention/detention system. The outlet control structure of this system shall control the flow to the existing flow rate condition for the full range of flows. The range of flow rates from the detention system's outlet control structure must be based on appropriate hydraulic equations for the range of head and flow conditions. The outlet control structure *may* be either an outlet pipe, a weir, a pump, or a combination of these types of control structures. An elevation (head) vs. discharge table or curve must be provided for the detention system.

Routing

The inflow hydrographs from the proposed land use change area are to be routed through the proposed detention system. Proper routing must be done to determine the required storage volume that will be constructed on the applicant's property. Recognized routing methods and computer applications include, but are not limited to: NRCS TR55; TR20; HEC-1; Storage Indication; and the Rational Method (using Triangular Hydrograph). An elevation vs. storage table or curve must be provided for the hydrologic route.

Energy Dissipation

The applicant may concentrate the flow from their property before it enters MDOT ROW, as long as proper adequate dissipation is provided. The maximum allowable velocity is 12 feet per second for an enclosed storm sewer and 6 feet per second for an open channel.

Water Quality

If development (change in land use) on a property has the potential to cause a hazardous material spillage or otherwise not meet established water quality standards, the proposed structure regulating flow to MDOT right of way shall be designed to ensure that the flow can be controlled if necessary. Commercial or industrial facilities include, but are not limited to:

- Car Washes
- Gas Stations
- Industrial sites with exposure to hazardous materials.

Where applicable, the applicant shall provide a copy of the application to the Michigan Department of Environmental Quality (DEQ) for a NPDES Industrial Storm Water permit.

Local Agency  
Requirements

MDOT recognizes that an applicant *may* be required to size a detention/retention basin based on local ordinances or requirements. A copy of the local ordinance or requirement, and calculations shall be included in the engineer's design calculations and sent to MDOT for comparison purposes. MDOT shall check the outflow characteristics of the control structure under various design flows, and the applicant's engineer shall provide the appropriate routing of these flows. The applicant's design must meet both the MDOT and local agency requirements.

The diameter of the outlet pipe shall remain constant across the right of way line according to the permitted pipe size. A manhole and orifice shall be permitted within state trunkline right of way -only if a local agency rule or ordinance requires a minimum pipe size greater than MDOT's permitted pipe size.

**References**

Administrative Rules Regulating Driveways, Banners and Parades On and Over Highways, Effective June 30, 1970, Michigan Department of Transportation, Second Reprint, February, 1990.

Drainage Manual, Michigan Department of Transportation, Design Support Area.

This manual can be found at the following address:

<http://www.mdot.state.mi.us/stormwater>

Click on Drainage Manual

**Purpose**

This guide should help MDOT Utility Permit Engineers review proposals and help each applicant's engineer submit drainage design information. MDOT's Road Design Manual, Chapter 4 on Drainage, should be used as the primary reference for hydrologic and hydraulic calculations.

**Required Information**

- Plans of proposed storm water conveyance system
- Outlet control details
- Energy dissipation for water quality purposes
- Connection details to MDOT system
- Outlet shut off details for water quality purposes
- Hydrologic and hydraulic design calculations
- Certification signed by a Michigan Registered Professional Engineer

**Flood Routing Method**

Select one:

- NRCS TR55 Graphical
- NRCS TR55 Tabular
- TR20
- Rational Method (Triangular Hydrograph)
- HEC-1
- Other (specify)

Please provide input and output printouts for all range of flows when computer applications are used.

**Local Agency Storm Water Ordinance Requirements**

Since many local agency requirements for either flow or storage volume can be more restrictive than MDOT's requirements, please include local agency requirements in the design calculations.

**Data Summary**

Q = Discharge, V = Velocity, and Vol. = Runoff Volume

Required storage volume is the difference between proposed and existing conditions.

	Existing			Proposed			Proposed Outflow		Required Storage Vol.
	Q	V	Vol.	Q.	V.	Vol.	Q	V	
10-year									
50-year									
100-year									
Drainage Area									
Design Storage Volume									

**Certification**

I \_\_\_\_\_, P.E., have prepared the attached plans and specifications for the proposed drainage system. The proposed outlet control from this drainage system is discharged at a flow rate equal to or less than the existing flow rate conditions into the MDOT storm water conveyance system, the velocity discharged is properly dissipated, and the designed storage volume is adequate for the appropriate frequency listed above. The design is based on the attached hydrologic and hydraulic calculations which are summarized above.

\_\_\_\_\_, P.E.

Michigan Professional Engineer License Number \_\_\_\_\_