INDIANA DEPARTMENT OF TRANSPORTATION

National Pollutant Discharge Elimination System (NPDES)
Individual Storm Water Discharge Permit
September 24, 2003

INTRODUCTION

The Indiana Department of Transportation (INDOT) is responsible for approximately 11,300 center line miles (28,500 total lane miles) of highways and interstates in Indiana, as well as 5,519 bridges. These highways and bridges are located in all ninety-two (92) counties and all designated Municipal Separate Storm Sewer System (MS4's) in Indiana. To avoid being a co-permittee with hundreds of MS4's, INDOT proposes permit action for an individual storm water discharge permit, in accordance with 327 IAC 5-4-6. INDOT's NPDES Individual Storm Water Discharge Permit will regulate and allow the discharge of storm water runoff from those State Highways, Interstates, and bridges, as well as Operation/Maintenance facilities that are located within the limits of an MS4 or an Urbanized Area (UA), including the Toll Road (I-80/90). An MS4 is defined in *327 IAC 15-13-3 MS4 area designation criteria,* as a Municipal Separate Storm Sewer System with a conveyance serving a municipal population of seven thousand (7,000) or more. An Urbanized Area is also defined in *327 IAC 15-13-3*, as an area with a population density equal to, or greater than five hundred (500) people per square mile, that is located outside an MS4 jurisdictional limit. All demographics are referenced to the 2000 Census data. All INDOT Highways, Interstates, bridges, as well as Operation/Maintenance facilities that are located within an MS4's jurisdiction shall meet the minimum requirement under those MS4's NPDES Storm Water permit; however, the INDOT highways and facilities will not be subject to any unreasonable or inexplicable monetary assessments, taxes, or fees, imposed by the MS4's.

INITIAL CHARACTERIZATION and PRIORITIZATION of RECEIVING WATERS

IDEM has required that INDOT develop an initial characterization of the receiving waters, waters of the State, that INDOT right-of-way or facilities will have potential to impact. Since INDOT highways drain to virtually every stream or river in the State, it will be impossible to develop an initial characterization of every one of the waters of the State. INDOT has initiated a Joint Transportation Research Project (JTRP), with principal investigator Lynn Corson, Ph.D. Director of Indiana Clean Manufacturing Technology and Safe Materials Institute, Purdue University, School of Civil Engineering. The primary goal of the JTRP was to prioritize the more "sensitive waters" that INDOT may impact. IDEM has established four (4) criteria for "sensitive waters":

1. Providing habitat for threatened or endangered species.
2. Usage as a public surface water supply intake.
3. Relevant community value ("full-body contact recreation").
4. Exceptional use classification, outstanding State resource water classification, or "high quality waters".

INDOT Priority System

Indiana Natural Resources Commission, in 1993, promulgated its "Outstanding Rivers List for Indiana". This is a list of Indiana rivers and streams that have particular environmental or aesthetic interest. The INDOT priority system identified four (4) levels of priority and the list of priority 1-3 (2,557) is included in APPENDIX A. The JTRP study identified 18,653 sites where the following INDOT priority 1-4 "sensitive waters" criteria was used:

- INDOT facilities and highways within a Rule 13 designated MS4 area
- INDOT facilities and highways within a Rule 13 designated Urbanized Area
- INDOT facilities not connected to a Public Owned (Operated) Treatment Works (POTW)
- INDOT facilities and highways within a karst area
- INDOT facilities and highways within 3,000 feet of a community public well (well head protection area)
- INDOT facilities and highways within 1,000 feet, 3,000 feet, or one (1) mile of a public surface water intake
- INDOT facilities and highways within one (1) mile of high quality and exceptional use waters
- INDOT facilities and highways within one (1) mile of federal, state, county, municipal or township recreation facility having a lake, pond, river, or stream
- INDOT facilities and highways within 3,000 feet of groundwater that is highly vulnerable to contamination
- INDOT facilities and highways within 3,000 feet of a natural area containing endangered, threatened, or rare species
- INDOT facilities and highways within one (1) mile of the "best remaining example of a natural wetland community," as defined by IDNR

INDOT Initial Characterization

Initial characterization will be developed by testing selected receiving waters, based on priority. Periodic follow-up sampling and testing will be accomplished for annual reporting. A 6920 Sonde multiparameter portable testing probe manufactured and distributed by YSI Environmental was used to test the priority waters for initial characterization. Subsequent laboratory tests will be run to correlate pollutants of concern. The YSI Probe tested the following parameters:

- Conductivity (µS/cm) (micro-mhos/centimeter or micro-Siemens/centimeter)
- Dissolved Oxygen (DO) (mg/L) (milligram/Liter)
- Chloride (mg/L) (milligram/Liter)
- pH (%)
- Oxygen Reduction Potential (ORP) (mV) (millivolts)
- Turbidity (NTU) (nephelometric turbidity units)
- Temperature (°C) (Degree Celsius)

The initial testing of all Priority 1 waters was conducted between July 14th, and August 12th, 2003. The latitude and longitude coordinates, to the nearest 0.001 of a minute, were also obtained at each test site using a portable 12 channel GPS devise called etrex, manufactured by Garmin. The results of the initial testing are included in APPENDIX B.

STORM WATER QUALITY MANAGEMENT PLAN

The Storm Water Quality Management Plan (SWQMP) required by the proposed permit is designed to produce the information necessary to effectively manage a statewide storm water conveyance system on urban highways and meet the requirements of the federal storm water regulations. The proposed permit requires that the applicant reduces pollutants to the maximum extent practicable and completes and implements the SWQMP. The SWQMP includes continued implementation through annual reports. The SWQMP will include the following components:

Public Education and Outreach Program
Public Participation and Involvement Program (Public input into INDOT's SWQMP)
Illicit Discharge Detection and Elimination Program
Construction Site Storm Water Runoff Control (Rule 5, 327 IAC 15-5-1)
Post Construction Storm Water Management
Pollution Prevention at INDOT Operation and Maintenance Facilities located within an MS4 and for Road-Side Maintenance located within an MS4 (Good Housekeeping)

I. PUBLIC EDUCATION AND OUTREACH

A. Benefits of INDOT's Public Education and Outreach Program

An informed and knowledgeable public is critical to the success of a storm water management program. Without public knowledge of water quality problems caused by runoff from highways, it is difficult to obtain public support for statewide storm water quality programs. As with all of the six minimum control measures, the goal of this measure is to improve the chemical, physical and biological quality of the waters of the State by reducing the degradation from highway runoff. In order to achieve this water quality benefit, Public Education programs should be targeted to these outcomes:

- **Improve understanding** of the reasons why storm water quality programs must exist. Public understanding of the statewide impacts to waters of the State are important when INDOT must impose added requirements to permits, fees, or contracts, and when seeking volunteers to help implement some programs.

- **Greater compliance** with the program as the public becomes aware of the personal responsibilities expected of them and others, including the individual actions they can take to protect and improve the quality of waters in their area of the State.

B. Program Requirements

To paraphrase the Rule 13 regulations (327 IAC 15-13-12) into requirements that may be used for an individual NPDES permit for INDOT:

> INDOT shall develop a SWQMP that includes methods and measurable goals that will be used to inform the public, construction site personnel, and INDOT

employees about the impacts polluted storm water runoff can have on water quality and ways they can minimize their impact on storm water quality.
INDOT shall utilize existing programs and outreach materials to meet this measure.
INDOT shall complete and submit a certification form to the Indiana Department of Environmental Management (department) once the program has been developed and implemented, or three hundred sixty-five (365) days from the date of permit issuance, whichever is earlier. At a minimum, every five (5) years the program shall be reviewed for adequacy and accuracy and updated as necessary.
INDOT shall develop measurable goals for this measure.

C. Guidelines for Developing and Implementing This Measure

To satisfy this minimum control measure, INDOT will:

- Implement a public education program to distribute educational materials to the citizens of Indiana, or conduct equivalent outreach activities about the impacts of storm water discharges and the steps that can be taken to reduce storm water pollution.
- Target construction contractors and aggregate suppliers with information materials appropriate to them on the potential storm water impacts of improper waste disposal and illegal discharges from their operations and construction sites.
- Determine the appropriate best management practices (BMP's), in this case informational and educational methods to be used, and measurable goals for this minimum control measure.

There are three (3) main action areas of importance in implementing a successful public education and outreach program.

1. Forming Partnerships

   Currently INDOT sponsors the **"Adopt-A-Highway Program"**, wherein community-based organizations, corporations, schools, clubs, fraternities, sororities, and associations can accept the responsibility of keeping a segment of State Highway clean and neat in return for placing an informational sign stating that their organization is responsible for this endeavor. The trash and debris collected from this activity will be weighed for annual reporting and is, and will continue to be, properly disposed of. This program is quite successful and will be continued and expanded wherever possible.

   Currently INDOT conducts an annual program called **"Trash-Bash"**, wherein INDOT employees (some volunteering outside their everyday tasks), correctional detainees (Department of Correction), and Adopt-A-Highway participants pickup trash on interstate and state routes that are to be mowed. This activity is coordinated every year just before the mowing season begins. The trash and debris collected from this activity will be weighed for annual reporting and is, and will continue to be, properly disposed of.

Currently INDOT has a Partnering Program with contractors that perform construction on INDOT projects. INDOT has developed a ***Partnering Handbook*** for these construction projects. The first step in a formalized partnering process is an all day partnering workshop in which team members:

- establish a common mission statement, team objectives, and guidelines;
- define issue resolution and problem escalation processes specific to that team; and
- create an evaluation process to ensure continuous improvement.

The development of a Team Charter during the workshop enables all parties to focus on cooperation, communication, and commitment. The Charter is a listing of mutually agreeable goals of all stakeholders. While the contract itself defines the responsibilities of each party, the Charter provides a document in which all parties can share their goals for the contract. The Charter is not a legal document. Rather, it is a personal commitment of the participants that they will work for the success of the project. A storm water quality management component can be easily incorporated into the workshop. This continuous Partnering Program will be an asset to keeping construction sites clean and preventing excess, sediment laden, runoff from entering streams, through a cooperative effort among all stakeholders at the site.

Currently INDOT conducts pre-construction conferences for all of its projects. These conferences are an in-depth discussion of the contract requirements between INDOT and the Contractor, including any sub-contractors. A storm water quality management component can be easily incorporated into a pre-construction conference.

Currently INDOT collects the carcasses of animals that are killed on highways. These small and large animals are reported on a form and the disposition depends on the location, INDOT treats the animal carcass in one of the following five (5) ways:

① Processed for meat or pet food
② Contract pick-up
③ Composted at INDOT facility
④ Incinerated at INDOT facility
⑤ Buried on-site or off-site

INDOT will strive to enter into partnerships with other governmental agencies and entities to fulfill the requirements of this minimum control measure. The Indiana Department of Natural Resources has programs like "Riverwatch" and Project "Wet" and "Indiana Storm Drain Stenciling Project" that INDOT can partner with and support in local areas where highways will have greater impact to waters of the State.

2. Using Educational Materials and Strategies

Brochures and other forms of literature on Highway Storm Drainage will be developed to inform the public how INDOT is taking steps to improve the water quality of the storm water runoff from highways. This information will also include education of how people can contribute to the efforts of improving the storm water quality. Brochures and fact sheets will be distributed annually at the State Fair, possibly with vehicle registration and driver license receipts at the Bureau of Motor Vehicles (BMV), and at the Interstate Rest Areas and Welcome Centers. An informational and educational message will be printed on the State Highway Map that INDOT annually updates and distributes statewide.

INDOT website will be used to broadcast the brochure and any storm water quality information to internet users.

Roadway and Rest Area signage will be increased to inform the traveling public of environmentally sensitive areas and areas where storm water runoff is being improved. Rest Areas will have signs that say: *No RV Waste Dumping, No Dumping of Vehicle Fluids, Spill Reporting Phone Number*…(both INDOT and IDEM), and *Pet Area* (at least 150 feet from stream). Roadway signs will say; *No Spray Zone*, *Low Salt Zone*, *Spill Reporting Phone Number*…(both INDOT and IDEM), *Environmentally Sensitive Area Any Spills In Area Are Potentially Hazardous.* Storm drain marking at inlets to sensitive waters can be installed as a part of INDOT construction projects.

3. Reaching a Broad and Diverse Audience

As tax monies become available, radio, television, and billboard advertisements may be incorporated into INDOT's Public Outreach program. Multilingual printed posters and brochures will be used to reach audiences less likely to read standard materials. INDOT materials will also be targeted toward the motoring public with information that will encourage people to keep their vehicles well maintained so as not to leak or drip oil and gas onto the highways, where these materials will be washed into the streams as pollutants.

D. Measurable Goals

INDOT will conduct a survey at the State Fair in all five (5) years of the permit to ascertain how many people have gained knowledge about storm water runoff from highways over the years from INDOT’s public education program.

The following are the measurable goals for INDOT's Public Education and Outreach Program for the initial five (5) year permit period.

Target Date	Activity
Year 1 November 1, 2003 to October 31, 2004	• Conduct initial survey at State Fair, August 2004. • Create information on INDOT website relative to storm water runoff from highways by July 2004. • Develop brochures to be placed at Rest Areas and distribute at the State Fair, August 2004. • Develop message for the State Map to be published June, 2004, distribute maps at State Fair August 2004 • Develop spill clean-up materials (kits) and information to be installed in Year 2 at Rest Areas, Weigh Stations, and Welcome Centers.
Year 2 November 1, 2004 to October 31, 2005	• Distribute brochures at Rest Areas and Welcome Centers by August 2005. • Conduct follow-up survey at State Fair, August 2005. • Distribute brochures and maps at State Fair, August 2005. • Develop signs for Rest Areas and Roadways by October 31, 2005. • Deploy spill clean-up kits and information at Rest Areas, Weigh Stations and Welcome Centers by August 2005.
Year 3 November 1, 2005 to October 31, 2006	• Develop target audience-based programs with construction contractors and aggregate suppliers to introduce at Purdue Road School in March 2007. • Develop a partnership with IDNR Programs, Riverwatch, Project WET, and Stenciling Program by October 31, 2006. • Conduct follow-up survey at State Fair, August 2006. • Maintain spill clean-up kits and information. • Begin installing signs at Rest Areas and on Roadways, April 2006.
Year 4 November 1, 2006 to October 31, 2007	• Revise brochure in multiple languages to be distributed at select Rest Areas in Year 5. • Conduct follow-up survey at State Fair, August 2007. • Maintain spill clean-up kits and information. • Continue installing signs at Rest Areas and on Roadways throughout 2007. • Continue developing and expanding the partnership with IDNR Programs in 2007.
Year 5 November 1, 2007 to October 31, 2008	• Continue and expand partnership with IDNR Programs in 2008. • Conduct follow-up survey at State Fair, August 2008. • Distribute revised brochure in multiple languages at State Fair, August 2008. • Conduct target audience-based training program with construction contractors and aggregate suppliers February 2008. • Maintain spill clean-up kits and information.

II. PUBLIC PARTICIPATION AND INVOLVEMENT

A. Benefits of INDOT's Public Participation and Involvement Program

The Public can provide valuable input and assistance to INDOT's storm water management program. Since it is the activities of the public within the State that produce pointless personal pollution, and the public that pays taxes to fund the INDOT functions, it is imperative that the public be empowered to play an active role in both the development and implementation of the program. An active and involved community is critical to the success of a storm water management program to allow for:

- **Broader public support,** since citizens who participate in the development and decision making process are partially responsible for the program and are more likely to take an active role in its implementation;

- **A broader base of expertise and economic benefits,** since the citizens of the State can be a valuable, free, intellectual resource; and

- **A conduit to other programs,** as citizens involved in the storm water program development process provide important cross-connection and relationships with other municipal and government agency programs. This benefit is particularly valuable when trying to implement a storm water program integrated on a watershed basis.

B. Program Requirements

To paraphrase the Rule 13 regulations (327 IAC 15-13-13) into requirements that may be used for an individual NPDES permit for INDOT:

> INDOT shall develop an SWQMP that includes provisions to allow opportunities for the public to participate in the storm water management program development and implementation.
> INDOT shall comply with applicable public notice requirements.
> INDOT shall complete and submit a certification form to the department once the program has been developed and implemented, or three hundred sixty-five (365) days from the date of permit issuance, whichever is earlier. At a minimum, every five (5) years the program shall be reviewed for adequacy and accuracy and updated as necessary.
> INDOT shall develop measurable goals for this measure.

C. Guidelines for Developing and Implementing This Measure

To satisfy this minimum control measure, INDOT will:

- Comply with applicable State (Indiana Code, IC 4-22-3, Open Public Hearings) and local public notice requirements using an effective mechanism for reaching the public;

- Determine the appropriate BMP's and measurable goals for this minimum control measure. Possible implementation approaches, BMP's (i.e., the program actions and activities), and measurable goals are described below.

INDOT will, to the greatest extent possible, include the public in developing, implementing, and reviewing each minimum measure of their storm water management programs. The public participation process will make every effort to reach out and engage all economic and ethnic issues. INDOT recognizes that there are challenges associated with public involvement. Nevertheless, INDOT strongly believes that these challenges can be addressed through an aggressive and inclusive program. Challenges and example practices that can help ensure successful participation are discussed below.

Currently INDOT involves the public in the planning process for transportation projects funded with Federal Highway Administration (FHWA) dollars. Annually, INDOT meets with citizens across the State to discuss transportation issues, programmed projects and to provide time for public involvement in development of their transportation programs. In August every year, six meetings are held across the State to provide this information and collect input on the draft Indiana Statewide Transportation Improvement Program (INSTIP).

Current INDOT holds numerous public hearings on individual projects through out the State. These public hearings are in accordance with the National Environmental Policy Act of 1969 (NEPA) and the opportunity for open public comment is in accordance with Indiana Code, IC 4-22-3, Open Public Hearings. These hearings are required on all federally funded highway projects that require environmental review and appropriate environmental documents.

Storm Water Quality Management Plan Public Hearings/Meetings will be held at six sites across the State to provide Highway Storm Water Runoff information and collect input for the Plan. The opportunity for open public comment will be in accordance with Indiana Code, IC 4-22-3. Informational materials relative to these hearings will be published in different languages appropriate for the area of the State in which they are being held.

Currently INDOT often relies on advertising in local newspapers to announce the above mentioned planning meetings and public hearings. INDOT also lists the scheduled hearings on the internet as part of the on-line calendar. Since there may be large sectors of the population who do not read the local press or use the internet, the audience reached can be limited. Therefore, alternative advertising methods will be used whenever possible, including radio or television spots (public service announcements), postings at bus or light rail stops (Mass Transit Terminals), announcements in neighborhood newspapers/newsletters, announcements at civic organization meetings, school functions, distribution of flyers, all including multilingual announcements where appropriate.

D. Measurable Goals

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. At a minimum, the measurable goal for this program is to provide adequate public notice of all public hearings and planning

meetings, published in a community publication or newspaper of general circulation, when implementing the storm water management programs required under the permit.

The following are the measurable goals for INDOT's Public Participation and Involvement Program for the initial five (5) year permit period.

Target Date	Activity
Year 1 November 1, 2003 to October 31, 2004	• Develop and conduct six State-wide Public Hearing/Meetings by November 30, 2003 • Notices will be published in several print media and bilingual flyers, including internet postings, in accordance with Indiana Code, IC 4-22-3 • Final recommendations as a result of the public comments will be published by March 1, 2004.
Year 2 November 1, 2004 to October 31, 2005	• Programs will also be posted on the internet "List Service" by March 1, 2004.
Year 3 November 1, 2005 to October 31, 2006	• Nothing required, as the Storm Water Quality Management Plan has been adopted and implemented.
Year 4 November 1, 2006 to October 31, 2007	• Nothing required, as the Storm Water Quality Management Plan has been adopted and implemented.
Year 5 November 1, 2007 to October 31, 2008	• Prepare for renewal of NPDES Permit by conducting six State-wide Public Hearing/Meetings before October 1, 2008 • Notices will be published in several print media and bilingual flyers, including internet postings, in accordance with Indiana Code, IC 4-22-3 • Final recommendations as a result of the public comments will be published by November 1, 2008.

III. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

An illicit discharge is defined as any discharge to INDOT right-of-way that has not been authorized by INDOT licensure. Illicit discharges enter the system through direct means of outlet pipes either mistakenly or deliberately discharged onto INDOT right-of-way or connected to an INDOT storm drainage system. Illicit discharges can also enter the system indirectly/inadvertently from cracked sanitary systems, spills on the highway, or spills collected by drain outlets and conveyed to INDOT right-of-way.

Illicit discharges may be continuous or intermittent. Intermittent discharges usually occur when carried by a storm event, while continuous illicit discharges will often flow during dry weather.

A. Benefits of INDOT's Illicit Discharge Detection and Elimination Program

Illicit discharges can result in untreated discharges that contribute high levels of pollutants, including heavy metals, toxins, oil and grease, solvents, nutrients, viruses, and bacteria, to receiving waterbodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic life, wildlife, and human health. Reduction of illicit discharges helps to maintain the integrity of the highway drainage system and minimizes the amount of pollutants that are discharged to waters of the State.

B. Program Requirements

To paraphrase the Rule 13 regulations (327 IAC 15-13-14) into requirements that may be used for an individual NPDES permit for INDOT:

> INDOT shall develop an SWQMP that includes a commitment to develop and implement a strategy to detect and eliminate illicit discharges to INDOT right-of-way.
> INDOT shall locate and identify the outfalls in INDOT's priority system that are discharging to sensitive waters of the State.
> INDOT shall develop a regulatory mechanism that will prohibit illicit discharges onto right-of-way, and establish appropriate enforcement procedures and actions.
> INDOT shall complete and submit a certification form to the department once the regulatory mechanism has been developed and implemented, or three hundred sixty-five (365) days from the date of permit issuance, whichever is earlier. At a minimum, every five (5) years the program shall be reviewed for adequacy and accuracy and updated as necessary.
> INDOT shall educate public employees, businesses, and the general public about the hazards associated with illicit discharges and improper disposal of waste.
> INDOT shall develop measurable goals for this measure.

C. Guidelines for Developing and Implementing This Measure

This section identifies those provisions that are required under the regulations. Although the extent of the efforts INDOT can dedicate to a storm water management program are dependent on available resources, staff, and degree and character of the illicit discharges, the following three (3) minimum requirements must be satisfied:

- Development of an Illicit Discharge Detection and Reporting System
- Development of a Storm Water Control Policy (*Discharge to ROW License*)
- Storm Water Drainage Maps

1. Illicit Discharge Detection and Reporting System

   INDOT shall train Operations and Maintenance workers to recognize and report all illicit discharges to the right-of-way that are detected during routine maintenance operations. The procedures for reporting detected illicit discharges will be referred to as INDOT's **Enforcement Response Plan for Illicit Discharges** to the right-of-way. INDOT does not have a mechanism to take

enforcement action against violators who discharge illicitly onto the right-of-way. INDOT will report illicit discharge violators to the proper authority, to IDEM or to the County Health Department. A tagging/marking system shall be developed to readily (physically) identify those discharge points that are authorized by INDOT, all others will be considered illicit or illegal.

2. Storm Water Control Policy

In the past INDOT has agreed to allow adjacent developments to discharge storm water onto the right-of-way if the pre-development quantity of runoff was not exceeded after construction was completed. The NPDES rule requires that the quality of runoff be characterized. INDOT will develop a **Discharge to Right-of-way License** for developers and property owners that wish to discharge their storm water to INDOT right-of-way. This will be a five (5) year renewable license; thus, allowing INDOT the opportunity to review the licensee's compliance with the conditions placed on the license. The most important condition that will be placed on the license is that the licensee will submit data annually to INDOT to verify that the discharge has not polluted. Another condition of the license will require the property owner to install structural measures to keep floatable materials and other pollutants from entering INDOT right-of-way. If the property is sold, it will be the responsibility of the seller to inform the buyer that they are required to transfer the license to their name. If the owner ceases to operate or otherwise losses control of the property, it is their responsibility as licensee to inform INDOT of the change in land-use, operation, or control. INDOT will then investigate the disposition of the property and the discharge to the right-of-way, and take appropriate action.

INDOT will develop a program to systematically re-evaluate those existing discharges that were allowed onto the right-of-way in the past, and require the development or developer or property owner to apply for a **Discharge to Right-of-way License** and provide storm water quality data to verify that the discharge does not contain pollutants. Also the property owner may be required to install structural measures to keep floatable materials and other pollutants from entering INDOT right-of-way.

3. Storm Water Drainage Maps

IDEM's NPDES Rule for storm water runoff in MS4 areas requires that, *a storm sewer system map showing the location of all outfalls and …conveyances,* be developed. INDOT has all of the drainage systems, outfalls, bridges, and conveyances on project plans and as-built drawings in various formats, hard copy or electronic, for every highway under their jurisdiction. It would be redundant and costly to re-map the INDOT highway drainage system just for this permit. However, INDOT is currently in the process of developing a Geographic Information System (GIS) for all of the highways under its jurisdiction, a GIS layer will be developed on which the drainage systems, outfalls, bridges, and conveyances shall be located. Therefore, it is INDOT's position that this mapping requirement has been fulfilled. However, outfalls will be located with Global

Positioning Satellite (GPS) and labeled (mapping) during sampling and testing according to the INDOT priority system of sensitive waters.

D. Measurable Goals

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. At a minimum, the measurable goal for this program would be to provide an Illicit Discharge Detection and Reporting System and a Storm Water Control Policy.

The following are the measurable goals for INDOT's Illicit Discharge Detection and Elimination Program for the initial five (5) year permit period.

Target Date	Activity
Year 1 November 1, 2003 to October 31, 2004	• Develop written procedures for reporting illicit discharges by July 2004. • Develop a training program for INDOT field employees to identify illicit discharges by September 2004.
Year 2 November 1, 2004 to October 31, 2005	• Conduct training for INDOT field employees to identify illicit discharges and to know the documentation and reporting procedures September 2005. • INDOT will begin developing a Discharge to Right-of-way License, it may require legislative action. • Develop GIS system for mapping INDOT infrastructure, including drainage conveyances and discharge points, 25% complete by October 31, 2005.
Year 3 November 1, 2005 to October 31, 2006	• Conduct training for INDOT field employees to identify illicit discharges and to know the documentation and reporting procedures September 2006. • Continue to develop the Discharge to Right-of-way License. • Continue developing GIS system for mapping INDOT infrastructure, including drainage conveyances and discharge points, 50% complete by October 31, 2006.
Year 4 November 1, 2006 to October 31, 2007	• Conduct training for INDOT field employees to identify illicit discharges and to know the documentation and reporting procedures September 2006. • Evaluation of the field employees training and illicit discharge detection and reporting procedures will be performed, January 2007. • Continue to develop the Discharge to Right-of-way License. • Continue developing GIS system for mapping INDOT infrastructure, including drainage conveyances and discharge points, 75% complete by October 31, 2007.
Year 5 November 1, 2007 to October 31, 2008	• Finalize the Discharge to Right-of-way License, 03/08. • Begin issuance of Discharge to Right-of-way Licenses by October 1, 2008.

	• Continue developing GIS system for mapping INDOT infrastructure, including drainage conveyances and discharge points, 100% complete by October 31, 2008.

IV. CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

(See RULE 5, 327 IAC 15-5-1), one (1) acre or more of disturbed soil

A. Benefits of INDOT's Construction Site Program

Storm water runoff from highway construction sites ultimately discharges into local ditches, creeks, streams, lakes, and rivers. Sediment is usually the main pollutant of concern. During a short period of time, construction sites can contribute more sediment to streams than would be deposited naturally over several decades. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to waters of the State. Excess sediment can quickly fill ditches and lakes and require dredging and destroy aquatic habitats.

Additional pollutants are also often present in storm water runoff from highway construction sites and may result in degradation of receiving water. Nutrients (nitrogen and phosphorous) are of specific concern and can cause significant impairment. In addition solid and sanitary wastes, pesticides, oil and grease, concrete truck washout, construction chemicals, construction debris and metals may be discharged and cause an impact to the waters of the State.

Erosion Control Plans, Standard Specifications, and Standard Drawings of erosion control measures are components of INDOT's Construction Site Storm Water Runoff Control Program. With the development of an Inspection Program and Enforcement Program INDOT will be able to further minimize the amount of sediments that are discharged to waters of the State during highway construction.

B. Program Requirements

To paraphrase the Rule 13 regulations (327 IAC 15-13-15) into requirements that may be used for an individual NPDES permit for INDOT:

> INDOT shall comply with **Rule 5**, 327 IAC 15-5
> INDOT shall complete and submit a state-issued certification form to the department once the regulatory mechanism for inspection and enforcement has been developed and implemented, or three hundred sixty-five (365) days from the date of permit issuance, whichever is earlier. At a minimum, every five (5) years the program shall be reviewed for adequacy and accuracy and updated as necessary.

C. Guidelines for Developing and Implementing This Measure

1. Minimum Design Criteria
   INDOT Standard Specification, Section 205, and

current Supplemental Specifications
INDOT Standard Drawings, Section 205

a. **Best Management Practices (BMP's)**

i. *Preventive Measures*; minimize disturbance area of excavation, preserve natural vegetation, good housekeeping.
ii. *Erosion Controls*; mulch, seed mix, stockpile covers.
iii. *Sediment Controls*; perimeter silt fence, inlet protection, check dams, stabilized construction entrances, sediment basins.
iv. *Drainage Conveyance Controls*; check dams, diversion channels, temporary crossings.
v. *Non-Sediment Controls*; cover chemical storage, spill containment and procedures, waste containment. The contractor performing the actual operations must comply with Section 311 of the Federal Clean Water Act and with 327 IAC 2-6 concerning spills of oil and hazardous materials.

b. **Stabilization**

i. *Temporary Stabilization*; maximum bare soil exposure time limit if the excavation operation has been inactive for 14 days, or more
ii. *Seasonal Stabilization*; if construction ceases for a season, i.e. over the winter
iii. *Final Stabilization*; permanent seeding, sodding or other stabilization measures.

c. **Materials Handling**

The contractor will be required to take steps to control waste, discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste from leaving the work site or staging area and being washed into waters of the State.

2. Control Mechanism

New contract provisions will be developed to strengthen existing Standard Specifications and to require the contractor to routinely **document** inspects of the erosion control BMP's. The BMP's must be inspected weekly and after a rain event at the site, per the current Supplemental to INDOT Standard Specifications, Section *205.04 Maintenance*. Any damage to the BMP will be repaired.

Contractors will be required to submit a Quality Control Plan before beginning construction. An outline of the **Quality Control Plan** is as follows:

REFERENCES.

a. Rule 5, 327 IAC 15-5
b. Indiana Handbook for Erosion Control in Developing Areas

-Indiana Department of Natural Resources, Division of Soil Conservation

c. Indiana Drainage Handbook
-Indiana Department of Natural Resources, Division of Water

Quality Control Technician Training

Contractor must have at least one qualified person on-site to inspect and supervise the maintenance of the erosion control measures (BMP's). This person will have completed the training provided by the Indiana Department of Natural Resources (IDNR), or approved equal, and pass an INDOT exam (biannually) proving they have acquired the skills and abilities in erosion control measures installation, inspection, and maintenance.

Quality Control Inspection

a. Quality Control Inspection Points
b. Quality Control Inspection Frequency
c. Documentation of Quality Control Inspections
d. Corrective Action on deficiencies within five (5) working days

Work Sequence Schedule (include Borrow or Disposal Area, Haul Roads, etc.) on INDOT Right-of-way or Property as outlined in the Contract

Pollution Control Plan (Staging Area)

a. Containment Procedures
b. Waste Disposal Plan
c. Spill Prevention and Protection Plan
d. Spill Clean-up Plan
e. Materials Stockpiles and Materials Storage Management
f. Entrance and Exit treatment to prevent tracking of mud off site
g. Concrete truck washing area management

3. Storm Water Runoff Control Site Plans (Erosion Control Plan)

a. Procedures for reviewing and approving storm water control site plans (erosion control plan): Currently IDNR intends to review INDOT erosion control plans. The Notice Of Intent letter (NOI) is to be submitted to IDEM, with copies to IDNR and local Soil Water Conservation District (SWCD).

b. System to track the effectiveness of the storm water control site plan (erosion control plan): An audit program to periodically inspect construction projects for BMP effectiveness shall be conducted by the Division of Environment, Planning, and Engineering, Environmental Services Section. INDOT shall provide adequate project oversight to prevent inadequate storm water control plans from being implemented, thus allowing degradation of waters of the State.

4. Inspections and Enforcement

a. **Inspection Program**

i. *Routine and Scheduled Self Inspections by the Contractor*.
INDOT contractors will be required to perform and **document** self inspections. Self inspections will be performed weekly, preferably on Monday morning when crews are returning to work from a week end off. Self inspections will be conducted after a rain event at the site, within the first work day after the rain event. INDOT shall develop and provide the contractor with standardized inspection forms.

ii. *Compliance Inspections*.
IDNR personnel may conduct unscheduled (surprise) inspections to assess the over-all site and erosion control plan and BMP's for compliance. INDOT Project Engineers or Project Supervisors will periodically inspect portions of the BMP's to assure that the contractor is performing the necessary maintenance properly.

iii. *Complaint Response Inspections.*
If a complaint is lodged by the public or another agency (IDNR or Soil and Water Conservation District) stating that the erosion control measures at the construction site are not adequate, a INDOT representative will meet with the contractor's representative to address the issues. If the contractor does not take steps to correct the issues in a set period of time (determined at the meeting), then INDOT will proceed with enforcement action. IDNR may be involved throughout this process, if they so desire.

b. **Enforcement Procedures**

INDOT Standard Specification 108.06.

i. Failure to Install BMP's Correctly.
   ① The INDOT Project Engineer/Supervisor shall inform the contractor that an erosion control measure is not installed properly.
   ② If not corrected in a timely manner, a Notice of Violation (NOV) letter will be issued by the Project Engineer, by the third (3^{rd}) calendar day after the contractor was informed.
   ③ If not corrected within five (5) calendar days, a fine of $1,000 per day that the problem persists will be levied, retroactive to the first notification date. Therefore a $5,000 fine will be assessed at the end of the fifth calendar day, and $1,000 per day there after.

ii. Failure to Maintain BMP's.
   ① The INDOT Project Engineer/Supervisor shall inform the contractor that an erosion control measure is not being maintained properly.
   ② If not corrected in a timely manner, a Notice of Violation (NOV) letter will be issued by the Project Engineer, by the third (3^{rd}) calendar day after the contractor was informed.

③ If not corrected within five (5) calendar days, a fine of $1,000 per day that the problem persists will be levied, double-retroactive to the first notification date. Therefore a $10,000 fine will be assessed at the end of the fifth calendar day, and $1,000 per day there after.

iii. Failure to Perform Routine and Documented Inspections.

① The INDOT Project Engineer/Supervisor shall inform the contractor that documented inspection have not been performed.

② If five (5) calendar days pass without a documented inspection, a fine of $5,000 will be levied, and a fine of $1,000 per day that the problem persists will be levied beginning the sixth day.

5. Training and Education for Construction Site Supervisors, Project Engineers, inspectors, designers, and technicians.

IDNR has indicated that they are revising the *Indiana Handbook for Erosion Control in Developing Areas* for the NPDES Phase II Rules. IDNR is developing a program to train erosion control inspectors and technicians. INDOT Project Engineers, Project Supervisors, design engineers, and technicians shall be trained for erosion control inspection by IDNR.

D. Measurable Goals

These measurable goals reflect the needs and characteristics of INDOT as it serves the people of Indiana and the traveling public. The following are the measurable goals for INDOT's Construction Site Storm Water Runoff Control Program for the initial five (5) year permit period.

Target Date	Activity
Year 1 November 1, 2003 to October 31, 2004	• Pre-construction Conference with Contractor shall include an item to discuss the importance of erosion control maintenance, by March 2004. • INDOT Design manual shall be changed to require the designer to develop erosion control plans for projects that disturb at least one (1) acre of ground, by June 2004. • Develop standardized inspection forms by June 30, 2004.
Year 2 November 1, 2004 to October 31, 2005	• INDOT Project Engineers, Project Supervisors, design engineers, and technicians shall be trained for erosion control inspection by IDNR, as time permits, beginning November 2004. • Begin developing Quality Control Plan required by contractor for erosion control, November 2004. • Implement standardized inspection forms by December 31, 2004, to be used on-site by trained inspectors.
Year 3 November 1, 2005 to	• INDOT Project Engineers, Project Supervisors, design engineers, and technicians shall continue to be trained

October 31, 2006	for erosion control inspection by IDNR, as time permits. • Develop Enforcement Procedure for contractor non-compliance of erosion control maintenance, November 2005. • Implement standardized inspection forms to be used by the contractor as of August 2006 contracts. • Continue developing Quality Control Plan required by contractor for erosion control.
Year 4 November 1, 2006 to October 31, 2007	• INDOT Project Engineers, Project Supervisors, design engineers, and technicians shall continue to be trained for erosion control inspection by IDNR, as time permits. • Implement Enforcement Procedure for contractor non-compliance of erosion control maintenance, March 2007. • Implement Quality Control Plan for erosion control, required by contractor as of November 2006 contracts. • Develop an audit program to periodically inspect construction projects for BMP effectiveness, December 2006.
Year 5 November 1, 2007 to October 31, 2008	• Implement an audit program to periodically inspect construction projects for BMP effectiveness, April 2008. • Audit 25% of the construction projects for erosion control compliance, 2008 construction season.

V. POST CONSTRUCTION STORM WATER MANAGEMENT

A. Benefits of INDOT's Post Construction Storm Water Management Program

Post-construction storm water management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving water bodies. Many studies indicate that prior planning and designing for the minimization of pollutants in post-construction storm water discharges is the most cost-effective approach to storm water quality management.

There are three (3) forms of impact from post-construction runoff:

(1) Increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters.

(2) Increase in the quantity of water delivered to the water body during storms. Increased impervious surfaces impede the gradual infiltration of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The results include stream bank scouring and downstream flooding, lending to a loss of aquatic life and damage to property.

(3) Increase in the temperature of water delivered to the water body during storms. Increased impervious surfaces such as asphalt and concrete have higher temperatures and do not allow for the natural infiltration through vegetation and soil that would keep the runoff at an ambient temperature. Therefore large volumes of runoff with higher temperatures quickly flow to the nearest receiving water and in-turn elevate the stream temperature. Thermal impact to streams and rivers causes less oxygen dissolution and other degradation of conditions conducive to support aquatic life.

B. Program Requirements

To paraphrase the Rule 13 regulations (327 IAC 15-13-16) into requirements that may be used for an individual NPDES permit for INDOT:

> INDOT shall develop an SWQMP that includes a commitment to develop, implement, manage, and enforce a program to address discharges of post-construction storm water run-off from new development and redevelopment areas which disturb one (1), or more, acre of land.
> INDOT shall promote the use of:
> (1) Buffer strip and riparian zone preservation.
> (2) Filter strip creation.
> (3) Minimization of land disturbance and surface imperviousness.
> (4) Minimization of directly connected impervious areas.
> (5) Maximization of open space.
> INDOT shall use any combination of storage, infiltration, filtering, or vegetative practices to reduce the impact of pollutants in storm water run-off on receiving waters. In addition to the combination of practices, the following requirements shall be utilized:
> (1) Infiltration practices will not be allowed in wellhead protection areas.
> (2) Discharges from the highway right-of-way will not be allowed directly into sinkholes or fractured bedrock, without treatment that results in the discharge meeting Indiana ground water quality standards as referenced in 327 IAC 2-11.
> (3) Any storm water practice that is a Class V injection well must ensure that the discharge from such practices meets Indiana ground water quality standards as referenced in327 IAC 2-11
> (4) As site conditions allow, a vegetated filter strip of appropriate width shall be maintained along unvegetated swales and ditches.
> (5) As site conditions allow, the rate at which water flows through the highway conveyance shall be regulated to reduce outfall scouring and stream bank erosion.
> (6) For new retail gasoline outlets and refueling areas that replace their existing tank systems, (for Toll Road Facilities only); these facilities shall be required by contractual means to design and install appropriate practices to reduce lead, copper, zinc, and polyaromatic hydrocarbons in storm water run-off.
> INDOT personnel responsible for plan review, inspection, and enforcement of post-construction BMPs shall attend, at a minimum, an annual training session addressing appropriate control measures that have been approved of by the department and the department of natural resources, division of soil conservation.

INDOT shall complete and submit a state-issued certification form to the department once the plan has been developed and implemented, or seven hundred thirty (730) days from the date of permit issuance, whichever is earlier. At a minimum, every five (5) years the program shall be reviewed for adequacy and accuracy and updated as necessary.
INDOT shall develop measurable goals for this measure

C. Guidelines for Developing and Implementing This Measure

INDOT will encourage designers to incorporate BMP's into the design of highways to address:

- Buffer strip and riparian zone preservation (along ditches, creeks, streams, rivers, wetlands, and lakes).
- Filter strip creation (highway side slopes).
- Minimization of land disturbance and impervious surface, wherever practicable.
- Minimization of impervious areas directly connected to waters of the State.

Storage or detention BMP's control storm water by providing a wet pond, dry basin, or multi-chambered catch basin to collect and slowly release runoff to receiving waters. These practices control storm water volume, settle out particulates, and reduce thermal impacts to receiving waters.

Infiltration practices are designed to facilitate the percolation of runoff through the soil to groundwater, thereby reducing both storm water quantity and mobilization of pollutants. These BMP's incorporate pervious mediums into the design to filter the water.

Vegetative practices are landscaping features that, with optimal design and good soil conditions, enhance pollutant removal, maintain/improve natural site hydrology, promote healthier habitats, and increase aesthetic appeal. Vegetative BMP's include filter strips or buffer strips, grassy swales, and artificial (constructed) wetlands.

Currently INDOT, in accordance with a Memorandum of Understanding (MOU) with IDEM, has a BMP design for storm water discharge from an INDOT highway right-of-way into sink holes in the karst topography regions of Indiana. There have been a number of these BMP's installed along SR 37 in Lawrence County.

D. Measurable Goals

These measurable goals reflect the needs and characteristics of INDOT as it serves the people of Indiana and the traveling public. The following are the measurable goals for INDOT's Post Construction Storm Water Management Program for the initial five (5) year permit period.

Target Date	Activity
Year 1 November 1, 2003 to October 31, 2004	• Develop Design Criteria for Post Construction BMP's, current JTRP Project, begin November 1, 2003. • Develop Standard Operating Procedures for the maintenance of Storm Water BMP's, begin October 1, 2004.
Year 2 November 1, 2004 to October 31, 2005	• Continue to develop Design Criteria for Post Construction BMP's, current JTRP Project. • Continue to develop Standard Operating Procedures for the maintenance of Storm Water BMP's.
Year 3 November 1, 2005 to October 31, 2006	• Implement new design criteria for BMP's, October 1, 2006.
Year 4 November 1, 2006 to October 31, 2007	• Continue to implement new design criteria for BMP's. • Implement the new Standard Operating Procedures for the maintenance of Storm Water BMP's, begin October 1, 2007.
Year 5 November 1, 2007 to October 31, 2008	• Evaluate the new design criteria for BMP's for effectiveness and cost, proposed JTRP Project, begin October 1, 2008. • Evaluate the new Standard Operating Procedures for the maintenance of Storm Water BMP's for man hour allocation, effectiveness, common problems, and cost, proposed JTRP Project, begin October 1, 2008.

VI. POLLUTION PREVENTION AT INDOT OPERATION AND MAINTENANCE FACILITIES and for ROAD SIDE MAINTENANCE/ GOOD HOUSEKEEPING

A. Benefits of INDOT's Good Housekeeping Program

The Pollution Prevention/Good Housekeeping Program for INDOT is a key element of the Storm Water Quality Management Plan. This measure requires INDOT to examine and subsequently alter it's activities to help ensure a reduction in the amount and type of pollution that; (1) collects on highways, parking lots at rest areas and operation and maintenance facilities, open spaces, stored aggregate materials, and vehicle maintenance areas and is discharged into waters of the State; and (2) results from activities such as highway maintenance, and poor maintenance of storm sewer systems. While this measure is meant primarily to improve or protect receiving water quality by altering INDOT activities, facility operations and property maintenance, INDOT can realize cost savings from such things as spill prevention (thus reducing clean-up costs), inventory control, and re-use/recycling of materials.

B. Program Requirements

To paraphrase the Rule 13 regulations (327 IAC 15-13-17) into requirements that may be used for an individual NPDES permit for INDOT:

INDOT shall develop a SWQMP that includes a commitment to develop and implement a program to prevent or reduce pollutant run-off from operations.

INDOT shall complete and submit a certification form to the department once the program has been developed and implemented, or three hundred sixty-five (365) days from the date of NOI letter submittal, whichever is earlier. At a minimum, every five (5) years the program shall be reviewed for adequacy and accuracy and updated as necessary.

INDOT shall develop written documentation of maintenance activities, maintenance schedules, and long term inspection procedures for BMPs to reduce floatables and other pollutants discharged from separate storm sewers. Maintenance activities shall include, as appropriate, the following:

(A) Periodic litter pick up
(B) Periodic BMP structure cleaning
(C) Periodic pavement sweeping
(D) Roadside shoulder and ditch stabilization.
(E) Planting and proper care of roadside vegetation.
(F) Remediation of outfall scouring conditions

INDOT shall develop controls for reducing or eliminating the discharge of pollutants from operational areas, including roads, parking lots, maintenance and storage yards. Appropriate controls shall include the following:

1) Covering or otherwise reducing the potential for polluted storm water run-off, from deicing salt or sand storage piles.
2) Establishing designated snow disposal areas that have minimal potential for pollutant run-off impact on receiving waters.
3) Providing facilities for containment of any accidental losses of concentrated solutions, acids, alkalies, salts, oils, or other polluting materials
4) Standard operating procedures for spill prevention and clean up during fueling operations; spill prevention, controls and countermeasures plan (SPCC plan) per **40 CFR Part 112**
5) BMPs for vehicular maintenance areas.
6) Prohibition of equipment or vehicle wash waters and concrete or asphalt hydro demolition waste waters into storm water run-off, except under allowance of an appropriate NPDES wastewater permit
7) Promotion of recycling (to reduce litter).
8) Minimization of pesticide, herbicide and fertilizer use. Pesticides shall be used, applied, handled, stored, mixed, loaded, transported, and disposed of via office of the Indiana State Chemist's guidance requirements.
9) Proper disposal of animal waste and road-kill. Canine parks shall be sited at least one hundred fifty (150) feet away from surface water body.

INDOT shall develop written procedures for the proper disposal of waste removed from separate storm sewer systems and operational areas. All materials removed from separate storm sewer systems and operational areas, including dredge spoil, accumulated sediments, floatables, and debris, must be:

1) Reused or recycled; or
2) Disposed of in accordance with applicable solid waste disposal regulations.

INDOT shall develop written documentation that appropriate employees have been properly trained, with periodic refresher sessions, on topics such as proper disposal of hazardous wastes, vegetative waste handling, fertilizer, herbicide and pesticide application, and the function of implemented BMPs

INDOT shall develop measurable goals for this measure.

C. Guidelines for Developing and Implementing This Measure

The intent of this control measure is to ensure that existing and future highway and facility operations and maintenance are performed in ways that will minimize contamination of storm water runoff. This measure is divided into two areas under INDOT control:

- Highway and roadside maintenance
- Facilities operation and maintenance

Under each of these categories the following pollution prevention measures are addressed:

- Waste management (recycling)
- Ground surface stabilization (erosion control)
- Structural runoff controls (materials storage cover and runoff containment)
- Snow removal and de-icing

1. Highway and Roadside Maintenance

INDOT uses a ***Field Operations Handbook*** to guide maintenance workers in their tasks of maintaining the pavement, shoulders, side slopes, ditches, and rest areas. Those operations from the Handbook that are pertinent to storm water quality for Highway and Roadside Maintenance are:

Clipping Shoulders - Major clipping of overgrown shoulders to remove excess material and to restore proper slope for adequate drainage. Includes clipping of overgrown shoulders adjacent to the driving surface and sod adjacent to paved or aggregate shoulder. Also includes related cleaning and reshaping of the adjacent roadside ditches as required.

Machine Mowing - Machine mowing of roadside vegetation within the designated mowing limits of the right-of-way using tractor mowers and hand trimming as required, to maintain an attractive roadside and to control erosion and drainage. This activity **does not** include the hand mowing and trimming at rest areas, roadside parks and picnic areas.

Brush Cutting - Cutting, trimming and removing brush, small trees, tree branches and limbs within the right-of-way using power or hand tools to restore sight distance, eliminate traffic hazards and remove encroaching vegetation.

Herbicide Treatment - Application of chemicals to roadside vegetation and soil along shoulders, guardrail sections, around sign posts, delineators, mail boxes, bridge ends and other areas to eliminate or control undesirable vegetation.

Seed and/or Fertilizing - Seeding, reseeding, and fertilizing of shoulders, front and back slopes, medians and other designated areas to restore vegetation for erosion control and beautification.

Topping Trimming or Removal of Trees - Topping, trimming or removal of large trees within the right-of-way requiring the use of equipment such as a bucket truck and a boom truck. Includes stump removal when performed as a part of the tree operation.

Stump Removal - Removal of stumps within the right-of-way to eliminate traffic hazards or improve efficiency of other maintenance activities. (Stump cutting performed in conjunction with tree removal should be reported to Activity 2250)

Spot Mowing and Hand Trimming - Spot or hand mowing to control Johnson grass, Canadian thistle and other noxious weeds, and hand trimming or mowing needed in addition to that performed during Machine Mowing (Activity 2210). This activity **does not** include hand mowing or trimming at rest areas, roadside parks, districts, Subdistrict or unit location.

Clean and Reshape Ditches - Machine cleaning of roadside ditches with excavating equipment to restore original grade and maintain adequate drainage. Includes the loading, hauling, and disposal of excess material, reshaping front and back slopes, and shoulder restoration as related to ditching. May also include pipe replacement in the ditch line and under driveways.

Motor Patrol Ditching - Machine cleaning of roadside ditches with motor patrol to restore original grade and maintain adequate drainage. Includes the loading, hauling, and disposal of excess material, reshaping front and back slopes, pipe culvert replacement and shoulder restoration as related to ditching.

Cleaning Minor Drainage Structures - Manual or machine cleaning and removal of debris from box culverts, pipe culverts, catch basins, inlets and paved ditches to maintain adequate drainage.

Clean Underdrains - Clean inside and outside of underdrains pipes to restore adequate drainage flow. Mark locations of outlets.

Other Drainage Maintenance -Other routine drainage maintenance activities that are not specifically identified as separate activities.

Hand Cleaning Bridges - Cleaning of bridge deck surfaces, expansion joints, drains holes, bridge seats and sidewalks by hand shoveling, sweeping and air blasting to remove accumulation of sand, chemicals and debris.

Flushing Bridge - Cleaning of bridge seats, drain holes, expansion joints, gutter lines and truss members by flushing to remove accumulation of sand, chemicals, and debris.

Snow and Ice Removal - This activity includes all operations during and after a storm required to remove snow and ice from the roadway. Includes loading operations required to support snow and ice removal operations, removal of snow from ditches, removal of ice caused by flooding and opening of frozen drains.

Other Winter Maintenance - Other routine winter maintenance activities that are not specifically identified as separate activities.

Rest Area and Lift Bridge Attendant - The care and cleaning of rest areas and enforcement of INDOT policies for rest areas and enforcement of INDOT policies for rest area usage and operation of lift bridges on the State Highway system by full time attendants.

Roadside Park, Rest Area and Weigh Station Maintenance - Maintenance of building, grounds and parking lots of state maintained rest areas, roadside parks and weigh stations. This activity is performed on interstate only. All other such work is reported to Facilities Activities (2830+Subactivity)

Work for Department of Natural Resources - All maintenance activities performed on the designated roadways and parking areas of the Indiana Department of Natural Resources.

Work for State Institutions - All maintenance activities performed on the designated roadways of the State of Indiana institutions.

Full Width Litter Pickup - Full width cleaning of continuous sections of the right-of-way area including pickup, loading, hauling and disposing of accumulated litter to remove unsightly or hazardous objects and obstructions to drainage.

Currently INDOT has a program called ***Trash Bash***. This program involves picking up trash along the right-of-way each Spring before mowing begins. Department of Correction labor is also utilized for the trash pickup.

Spot Litter Pickup - Cleaning isolated sections of the right-of-way including pickup, loading and disposing of litter and debris to remove unsightly or dangerous objects.

Roadway Cleaning - Mechanical or manual sweeping of roadway, including intersections, curbs and gutters, to remove excess loose sand, chemicals, and debris. Manual cleaning of bridges should be reported as Activity 2410, Hand Cleaning Bridge Decks.

Material Handling and Storage - Handling and storage materials for routine maintenance activities excluding snow and ice control materials. Includes the loading, hauling, unloading, mixing, stockpiling, and storage of material. See also SALT AND DE-ICER MATERIALS HANDLING in Section 2. below.

ADOPT-A-HIGHWAY

Currently INDOT has a program called ***Adopt-A-Highway*** that involves community groups taking responsibility for designated sections of a highway to clean, maintain, and beautify with landscaping, if desired. In turn INDOT places a standard ***Adopt-A-Highway*** sign acknowledging the community organization responsible for the beautification of the highway. These segments of highway are in municipalities or near urbanized areas in which the organization is located.

2. Facilities Operation and Maintenance

Those operations from the ***Field Operations Handbook*** that are pertinent to storm water quality for Operations and Maintenance Facilities are:

Stockpiling Winter Material - The stockpiling, mixing and processing of abrasives and chemicals performed before and during the winter season.

Equipment Servicing - The routine service and maintenance of the Department's equipment fleet.

Buildings & Grounds Maintenance - The general maintenance and care-taking of the buildings and grounds at District, Subdistrict, and other maintenance unit locations.

Scraping and Painting of Equipment - Manual scraping of loose paint to remove from equipment. Rust should also be removed. Painting equipment to improve appearance and to increase life span of equipment. *Note: When Unit Foreman or crew leaders are working as a part of a crew (not supervising other crews) their time is to be reported to the activity they are performing.*

SALT AND DE-ICER MATERIALS HANDLING

INDOT has created a ***Winter Operations Team*** that meets on a regular basis and has produced a manual for winter storm management, ***Total Storm Management Manual, 2/2/02.*** Chapter three (3) of this manual is titled, *Environmental Issues,* and covers topics such as, *Environmental Consideration, Pollution Control, Administration and Supervision, Site Analysis, Drainage, Design of Brine Storage / Evaporation Facilities, and Guidelines.*

INDOT currently has two Standard Operating Procedures, for field operations and maintenance personnel, that deal specifically with snow and ice removal.

Procedure No. 2, ***SNOW AND ICE CONTROL***, revised January/March 2001, provides for a uniform understanding and establishes guidelines for achieving the Department's goals and objectives for snow and ice control. This procedure classifies the different state highways based on their level of service so priorities may be set in the snow and ice removal schedules. Procedure No. 2 covers, *Responsibilities, Preparation for Winter, Operations, and Post Winter Operations,* with detailed guidance on *Equipment Inspection, Spreader Calibration, Materials Stockpiling, Training, Material Applications, and Equipment Cleanup.* **Procedure No. 22**, ***SNOW AND ICE CHEMICALS - POLLUTION CONTROL GUIDELINES***, revised July 1998, provides …*that we take appropriate action at each and every location to create a clean environment.* This procedure further states, …*it is imperative that we take every reasonable precaution to insure that we have established a course of responsible salt management and instilled a level of conscious awareness within the work force that "an ounce of prevention is worth a pound of cure".* Procedure No. 22 covers, *Priority, Site Analysis, Drainage, Design of Brine Storage/Evaporation Facilities, Mixing/Handling of Deicing Chemicals, Sensible Salting,* and *Cleanup if Existing Facilities.*

INDOT *Salt Housekeeping Guidelines for Personnel Involved in Snow Removal,* was issued by Memorandum from the Office of Chief Engineer/Highway Operations, dated October 2, 1998. These guidelines provide detailed instructions to operations personnel to eliminate excess salt releases to the environment. The guidelines cover salt delivery, Fall preparation, liquid chemical handling, salt operations during the storm, salt operations after the storm, post season concerns, and spill procedures.

All INDOT salt storage is currently under roof. INDOT has initiated a program to construct salt/sand mixing buildings that are connected to the covered salt piles (salt domes). Incorporated into these multi-structure salt mixing facilities is the capture, retention, and use (or disposal) of all water runoff. The runoff is stored in a tank for use as brine, a salt/water solution.

Brine is used as a pre-wetting agent, and sometimes in lieu of salt when the temperature is optimum. Using brine minimizes the amount of salt needed and speeds the process of salt melting ice and snow.

INDOT has developed a ***Liquid Chemical Application Policy*** specific for the Greenfield District. The *Goals and Mission Statement* for the Greenfield District Liquid Chemical Application Policy are:

INDOT's goal is to provide continuous service to roadways to remove snow and ice from the pavement surface (Operating Procedure 2, Jan. 2001). For interstate routes and other roads with an annual daily traffic (ADT) count greater than 5,000, the coverage is 6 routes per (12 hr.) shift.

Liquid chemicals are used to aid in obtaining the high level of service and as a measure to conserve salt usage. There are four basic uses for liquid deicing chemicals: anti-icing, deicing, frost-prevention, and pre-wetting.

The District goal of anti-icing is to pre-treat 100% of roadways as equipment availability allows and as conditions require. This will be accomplished on a per storm basis as directed by call out of personnel. Continuity of service shall be the common aim of all units.

Similar policies can be written for other INDOT Districts.

INDOT has written a ***Spill Prevention, Control, and Countermeasures Plan*** that describes how facilities are to respond to unintended releases of the liquid petroleum products and liquid deicing storage to meet the needs of each location. INDOT is moving toward zero underground storage tanks. Currently INDOT has only a few waste oil tanks that are underground and no fuel is stored underground at any facility. Liquid deicer is stored in above-ground tanks with secondary containment.

RECYCLING

INDOT has focused on creating source reduction and recycling infrastructure throughout its 250 State owned facilities. The Department has established recycling programs in all Districts and Divisions, developed programs specifically tailored to meet INDOT needs, and promoted information to employees to help reach goals set forth for the organization.

INDOT has long taken a proactive approach to Greening the Government activities associated with its performance in construction projects as well as internal facility applications. With the passing of Executive Order 99-07 (Greening the Government) in April of 1999, INDOT has made substantial progress toward reaching goals related to the Greening Plan and establishing the department as an environmental leader in the state.

I. Project Description Summary:

A. Coordination: Coordination of INDOT Greening Activities is accomplished through a system of appointed recycling coordinators and dedicated INDOT employees. The structure is set up in the following hierarchy: INDOT Recycling Coordinator, Division and District Recycling Coordinators, INDOT Facility Contacts and INDOT Employees. Meetings to discuss current program status, current projects and upcoming projects occur on a quarterly basis with the District and Division Recycling Coordinators. This information is utilized to expand source reduction and recycling opportunities throughout INDOT.

B. Education: Education of INDOT personnel is accomplished in several fashions. Education methods include the following tools as a means to promote Greening activities:
District and Division Recycling Presentations, New Employee Orientation on Source Reduction and Recycling, Monthly Articles pertaining to Greening the Government Activities that are published in a monthly INDOT newsletter (Crossroads), an INDOT Website that covers issues related to Greening the Government, Energy Conservation and Recycling specifically related to the Indiana

Department of Transportation. Furthermore, education is also accomplished through Greening the Government Updates that are provided by Indiana Department of Administration and distributed throughout the INDOT Recycling Infrastructure.

C. Programs: INDOT has developed several programs related to the promotion of Greening the Government Activities. These programs include the Most Outstanding Recycler Award, which is a monthly recognition program at INDOT promoted through Crossroads. A "Clean Your Files Day" Program specifically tailored to INDOT. The INDOT Recycling Trivia Question game promoted through the Crossroads. INDOT District and Division Recycling Programs, the INDOT Conservation Program and the INDOT waste diversion contracts. The waste diversion contracts involve all materials outside of traditional municipal solid waste (MSW). These materials include tires, shop waste, light bulbs, household and automotive batteries, PCB and Non-PCB containing ballasts and all mercury containing devices.

D. Promotional Activities: INDOT Recycling Mascot- Roady Recycler was created as the spokesperson for the INDOT Greening the Government Program. Roady has been utilized to promote INDOT Greening the Government Activities. INDOT also rewards individuals with Recycled content prizes to help promote awareness of Greening the Government programs as well as internal INDOT Programs. All promotional prizes that are awarded to INDOT staff are constructed of recycled content materials. The promotional prizes are awarded during District and Division Recycling presentations, New Employee Orientation presentations, submitting the correct answer to the INDOT Recycling Trivia Game and as a prize for being awarded as INDOT's Most Outstanding Recycler.

II. Innovation Summary:

The INDOT Greening the Government program is inclusive of all areas to provide effective education and promotion of all programs and opportunities available to INDOT personnel. Employees, both current and new are provided information on a monthly basis regarding source reduction and recycling opportunities. INDOT personnel have the opportunity to participate in recycling programs at INDOT facilities as well as participate in annual source reduction and recycling opportunities provided by INDOT and other state agencies.

INDOT recycling programs include materials such as office paper, newspaper, aluminum and steel, glass bottles, plastics #1 and #2, cardboard, magazines, paperboard, automotive and household batteries, CD's, computer discs, motor oil, transmission fluid, hydraulic fluid, power steering fluid, antifreeze, oil filters, mineral spirits, oil absorbents, paint, light bulbs, PCB and Non-PCB containing ballasts, mercury containing devices, toner cartridges, concrete and asphalt.

INDOT awards individuals for their efforts related to recycling through the Most Outstanding Recycler award program on a monthly basis. Awards are given to individuals that show outstanding effort related to source reduction and recycling. Single and/or multiple award recipients are recognized each month for their efforts.

Their names and description as to why they received the award are printed in the monthly Crossroads newsletter.

INDOT focuses on the use of special waste materials for INDOT applications in construction projects. They include but are not limited to tire scraps, crushed glass bottles, fly ash and foundry sand. Projects utilizing waste tire scraps have been completed in the INDOT LaPorte District and projects utilizing crushed glass bottles have been completed in the INDOT Vincennes District. Studies of the current projects are currently underway. Fly Ash and Foundry Sand projects are currently under development and are projected to occur in the southern portion of Indiana.

INDOT has also focused efforts on pollution prevention through several programs that are very innovative to the state. They include the Alternative Work Schedule (AWS) where INDOT employees are allowed to work fewer days during the pay period, which in turn reduces vehicle pollution, congestion and potential traffic accidents.

INDOT utilizes teleconferencing technology as another means to reduce the amount of potential pollution from State vehicles. Through teleconferencing as well as three-way calling INDOT has helped eliminate the need to travel to a specific location and in turn reduce the amount of potential pollution created through vehicle emissions. This technology has also helped INDOT become much more efficient in normal daily operations and employee efficiency.

Furthermore, INDOT has adopted the Federal Policy of purchasing Flexible Fueled Vehicles (both cars and light trucks) which allows vehicles to operate on both regular gasoline and ethanol. Through the use of the corn based Ethanol fuels, INDOT will help eliminate potential smog forming emissions that are created through consumption of regular gasoline.

As a final effort to reduce pollution INDOT promotes the efficient use of the INDOT motor pool by carpooling to meetings when possible. This helps eliminate emissions from vehicles as well as saves on wear and tear of the State Vehicles and reduces fuel consumption.

III. Measurable Results Summary:

Results related to INDOT's comprehensive program have been very positive in all Greening the Government/Source Reduction and Recycling Programs. The most positive measurable result has been the education of INDOT employees related to the monthly INDOT Crossroads article and the INDOT source reduction and recycling web site.

The INDOT Crossroads Article and associated material has helped provide a great deal of information to INDOT employees on INDOT source reduction and recycling programs as well as other Government agency programs on various subjects. The INDOT web site has provided information on contacts within INDOT's Central

Office and in all INDOT Districts to help with the development of INDOT statewide programs associated with source reduction and recycling.

Enthusiasm of INDOT employees has also increased related to the source reduction and recycling activities. This being in response to the various programs and opportunities INDOT have provided to its employees. This in turn has significantly increased the amount of participation in the various INDOT recycling programs/opportunities.

Other measurable results have come from the number of different and distinct materials that INDOT has targeted for its source reduction and recycling programs. More and more programs are developed within INDOT each year and since the number of programs have increased as well as the number of materials collected for recycling the amount of materials recycled at INDOT has increased significantly.

Because INDOT is a large state agency tracking of specific materials cannot be accomplished through the programs unless additional equipment, manpower as well as money are increased to help with the record keeping purposes in approximately 200 state owned facilities. For 2001, INDOT recycled the following quantities of materials (2001 figures have yet to be completely compiled, certain materials could not be included):

- Waste Oil and Associated Material: 50,000+ gallons
- Over 5,000 bulbs: fluorescent, traffic, headlight, high-pressure sodium, etc.
- Approximately 150 lbs. of PCB and Non-PCB containing ballasts
- Over 1,000 lbs. of household batteries
- Over 1,000 combined tons of office paper, newspaper, aluminum and steel, glass bottles, plastics #1 and #2, cardboard, magazines and paperboard (This includes all materials recovered in the Marion County program as well as INDOT facilities located throughout the state).
- Approximately 2,500 gallons of waste antifreeze.
- 120 pounds of PCB and Non-PCB containing ballasts.
- 145 55-gallon barrels of used oil filters.
- Approximately 10,000 INDOT and abandoned waste tires as well as over 200 tons of scrap tires recovered from INDOT roadways.
- 1,200 gallons of mineral spirits.
- Approximately 1 million tons of milled asphalt and crushed concrete.

IV. Comprehensiveness:

INDOT's Greening Program is very comprehensive in relation to education. Education has become the main focus of the INDOT Greening hierarchy and is accomplished through several methods. The most significant is the chain of INDOT Recycling Coordinators throughout the INDOT Divisions and Districts as well as the INDOT facilities. The Recycling Coordinators are the main link to information sources, program development as well as communication with the INDOT employees.

The educational system established in the INDOT Greening program is that of a reward-based system. Rewarding employees for both their knowledge as well as their efforts. This includes rewarding employees with recycled content prizes related to the INDOT Crossroads recycling trivia game, the Most Outstanding Recycler award and recycled content prizes given out at INDOT District and Division recycling presentations.

The educational material conveyed through the INDOT presentations, Crossroads articles, the INDOT website and electronic communication allow INDOT employees to become aware of Greening activities throughout the department. As well as learn about recycled content products and companies that produce the recycled content products.

Presentations, whether Division, District or New Employee Orientation are very extensive covering all aspects of programs specific to a particular area. The monthly Crossroads article covers information relevant to INDOT Greening the Government Programs such as household battery recycling as well as special INDOT Greening Projects such as the use of shredded tires as road base or crushed glass bottles utilized as a B-Borrow substitute in an INDOT pipe backfill project.

INDOT's Intranet Home Page is another significant source of information regarding Greening Activities. The website, which is located at

http://is-100141.indot.state.in.us:8080/testsite/

contains very valuable information that is accessible to all INDOT employees that have Internet access on their computer. Relevant Greening the Government/INDOT Conservation Effort's information can be found under Employee Information on the Home Page. Specific information covered on the web site includes the INDOT Energy Conservation Policy, INDOT Division and District Recycling Coordinators, INDOT's Clean Your Files Day Program (CYFD), INDOT's Most Outstanding Recycler List, INDOT Crossroads Article, INDOT Recycling Trivia Question Information, INDOT's Recycling Trivia Question Winner List and specific information related to INDOT waste diversion quantities.

INDOT's internal recycling program is leading in the number of separate waste streams targeted for reuse and recycling. Approximately 25 separate and unique materials are collected through the current programs operating throughout INDOT. Collection, transportation and processing of the various materials are completed internally by INDOT personnel and equipment or commercially by vendors contracting with INDOT or through local county solid waste management districts. Review of the separate types of materials collected in the program and associated quantities can be viewed in the Section III of the Nomination Questions above.

INDOT's Pollution Prevention efforts are also paramount in relation to Greening the Government. Review of Section II, Innovation Summary, provides a great deal of information regarding Pollution Prevention efforts at INDOT specifically related to Transportation.

Other areas where INDOT has focused on Pollution Prevention is through the reuse of more than 1 million tons of milled concrete and asphalt in new road construction projects annually. INDOT has also introduced a Filtered Part Washing System into the INDOT maintenance shop environment to help eliminate the production of spent mineral spirits. And finally, INDOT has participated in the closed loop re-refined oil purchasing and recycling program since the inception of the program in 1999. In 2001, this program helped INDOT recycle over 50,000 gallons of waste oil and related products.

D. Measurable Goals

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. At a minimum, the measurable goal for this program would be to provide pollution prevention at INDOT operation and maintenance facilities and for road side maintenance/ good housekeeping.

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The following are the measurable goals for INDOT's pollution prevention at INDOT operation and maintenance facilities and for road side maintenance/ good housekeeping program for the initial five (5) year permit period.

Target Date	Activity
Year 1 November 1, 2003 to October 31, 2004	• Form a Field Maintenance and Operations Task Force to meet regularly and develop an Environmental Management System (EMS), tying all the standard operating procedures into one system with measurable results, begin by October 1, 2004. • Evaluate whether added environmental measures are required for existing maintenance and operation procedures, begin by October 1, 2004. See APPENDIX C
Year 2 November 1, 2004 to October 31, 2005	• Field Maintenance and Operations Task Force will review all existing field maintenance and operations procedures and evaluate these procedures for compliance with storm water regulations and pollution reduction, on-going through 2005. • Task Force will determine if INDOT Maintenance and Operations Facilities will become ISO 14001 certified.
Year 3 November 1, 2005 to October 31, 2006	• Field Maintenance and Operations Task Force to meet regularly and develop an Environmental Management System, on-going through 2006. • Develop an annual training program for INDOT field employees to provide added environmental awareness and measures to field operations activities, begin by October 1, 2006.
Year 4 November 1, 2006 to October 31, 2007	• Field Maintenance and Operations Task Force to meet regularly and develop an Environmental Management System, on-going through 2007.

	• Implement annual training of INDOT field employees to provide added environmental awareness and measures to field operations activities, begin training October 1, 2007.
Year 5 November 1, 2007 to October 31, 2008	• Field Maintenance and Operations Task Force to meet regularly and develop an Environmental Management System, on-going through 2008. • Evaluate the field employees training for effectiveness, by October 1, 2008. • INDOT Environmental Management System (EMS) for Maintenance and Operations in place by October 1, 2008.