Storm Water Management Plan

Missouri Department of Transportation

(Revised September 2007)

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INTRODUCTION

The Missouri Department of Transportation (MoDOT) developed its first Storm Water Management Plan (SMP) in July 2006 and has initiated a majority of those action items included in that document. Although a majority of the action items have been initiated many of the measurable goals have not yet been evaluated due to the short time span between Plan implementatation and the present. Most of the measurable goals proposed in the 2006 Plan require various amounts of time for results to evolve. Unless we properly evaluate the plan we have in place we cannot make necessary revisions to an untested Plan. Therefore, minimal revisions will be proposed for our revised SMP for the upcoming five-year period.

The SMP again summarizes MoDOT's intentions to reduce the amount of pollution in storm water runoff from MoDOT's road system by addressing the six categories of concern listed in the permit. These categories are as follows:

1. Public Education and Outreach.
2. Public Involvement and Participation.
3. Illicit Discharge Detection and Elimination.
4. Construction Site Runoff Control.
5. Post-Construction Site Runoff Control.
6. Pollution Prevention/Good House Keeping

As circumstances change, new solutions may be necessary to better control pollution in storm water that flows onto or away from MoDOT's road system. This plan is a continuation in which new and innovative ideas and solutions can be developed in the years to come to protect the water quality of the state's waterways.

MODOT INFORMATION

Name of Responsible Public Entity:	Missouri Department of Transportation
Arial Coverage:	Approximately 280 square miles

Size of System:	Interstate Highways	1,181 miles
	U.S. Routes	3,617 miles
	State Routes	8,226 miles
	Lettered Routes	19,065 miles
Geographical Extent:	All Missouri counties and St Louis City	
Watershed:	All major watersheds in the state	
Potential Impacts:	All Class P and Class C streams in 10 CSR 20-7.031	
Average Rainfall:	34 to 50 inches per year	

PUBLIC EDUCATION AND OUTREACH

Through the planning and design phase of its projects, MoDOT holds hundreds of public meetings and hearings around the state each year. While they are primarily held to solicit public opinion on a specific project, those meetings also serve as an excellent way for MoDOT officials to personally respond, one-on-one, to citizen concerns. Surveys have shown that nearly 80 percent of those who attend are satisfied with how their questions/comments were handled.

MoDOT officials also make numerous public appearances, speaking to civic groups, schools, clubs and appearing at other public events.

MoDOT also makes extensive use of the media to communicate with the public. These contacts include news releases, e-mail, telephone and written correspondence. MoDOT has also made strides toward communicating directly with the public through a bi-monthly electronic newsletter, *ExpressLane*. The distribution list for the newsletter, which debuted in October 2005, has climbed to over 2,300.

MoDOT has also made a commitment to making its Web site – www.modot.mo.gov – an outreach tool and information repository for its customers. Approximately 120,000 persons per month visit the site, with 20 percent of those customers returning more than once. The percentage of repeat visitors has been climbing steadily since MoDOT began tracking the activity in January of 2005 and added interactive features like a statewide work zone and road conditions map.

Action: Through the above mechanisms, MoDOT will educate the public on storm water quality issues as it relates to operation and maintenance of the state's highway system.

Measurable Goals: MoDOT will continue the same level of effort to reach as many persons as in the previous year through all of the above mechanisms, and will use some of these outreach tools to explain storm water quality issues.

Action: MoDOT will continue a program to facilitate the public reporting of illicit discharges, including dumping.

Measurable Goal: Prepare an annual report that summarizes the public comments that have been received during the previous year related to illicit discharges or illegal dumping and take appropriate measures to eliminate these occurrences.

PUBLIC INVOLVEMENT AND PARTICIPATION

MoDOT is committed to involving the public, local officials, transportation stakeholders and other interested parties in the process of evaluating needs, selecting projects and defining the work to be done. The department goes beyond federal guidelines to create a transportation system that is safe, efficient and enjoyable. A transparent planning process helps minimize the impact a project could otherwise have on the natural, social and economic environments.

MoDOT's commitment to involving the public in the transportation decision-making process and to reaching out to its customers about its programs and projects is in keeping with the department's mission: "...to provide a world-class transportation experience that delights our customers and promotes a prosperous Missouri."

Public involvement and outreach also support MoDOT's values that are measured through a series of tangible results that are the key component of *The Tracker*, MoDOT's performance-based system that is documented quarterly. *Tracker* is focused on the customer and measures MoDOT's performance in giving customers what they want, such as "personal, fast, courteous and understandable response to customer requests;" "accurate, timely understandable and proactive transportation information;" and "environmental responsibility," just to name a few.

Some of those values are:

MoDOT will ...

- be flexible because we believe one size does not fit all.
- honor our commitments because we believe in integrity.
- encourage risk and accept failure because we believe in getting better.
- be responsive and courteous because we believe in delighting our customers.
- empower employees because we trust them to make timely and innovative decisions.
- provide the best value for every dollar spent because we're taxpayers too.

- be open and honest because we must be trustworthy.
- listen and seek to understand because we value everyone's opinion.
- seek out and welcome any idea that increases our options because we don't have all the answers.

To reach out to the public, and to be responsive to its needs, MoDOT uses many tools and techniques. Each of these is implemented on statewide and local levels through the department's community relations offices at the Central Office in Jefferson City and the department's 10 district offices. A customer service center is also maintained at each location.

MoDOT tracks the number of customers who contact MoDOT via email, telephone or letter.

Action: Through the above mechanisms, MoDOT will collect public comments on water quality issues related to storm water management as it relates to expansion or operation and maintenance of the state's highway system.

Measurable Goals: MoDOT will prepare an annual report that summarizes the public comments related to storm water quality and identifies areas for improvement that will be targeted in future years.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Nearly every MoDOT highway includes one or two drainage ditches that carry runoff water to the nearest down gradient water body at the location of a crossroad culvert or bridge. In some cases the parallel MoDOT ditch may discharge to a drainage swale that simply flows away from the right of way in the direction of a nearby water body. If a typical one-mile section of a MoDOT highway involves three hydrologic conveyance structures (pipe or bridge), then the average number of "storm water outfalls" (points where storm water is flowing from a parallel road ditch into a pipe or water feature that flows under a bridge) would be approximately 12 per mile. Thus MoDOT's Municipal Separate Storm Sewer System (MS4) would include approximately 400,000 outfalls. While MS4s are usually required to identify and map "storm water outfalls," such a task would be impossible or of questionable value.

For new construction all project plans show the location of these outfalls. Persons who are interested in the locations of these storm water outfalls may request individual project plans from the appropriate district office or from MoDOT's Central office in Jefferson City. "As-constructed" plans for existing facilities, many of which may be on microfilm, may also be obtained from district offices or the MoDOT Central office.

MoDOT currently has a program in place to monitor illicit discharges but does not possess the legal authority under state law to prevent illicit discharges and improper disposal of waste or wastewater. Case law has, in fact, established precedent in this area. Unpermitted discharges are referred to the appropriate regulatory authority for follow-up. MoDOT will perform a preliminary investigation of any illicit discharges, to the extent allowed by MoDOT's authority, prior to notifying the existing regulatory authority.

Public reporting of the presence of illicit discharges or water quality impacts associated with storm water discharges is possible by contacting any of MoDOT's Customer Service Centers, Central Office, or MoDOT's website.

MoDOT has an Adopt-A-Highway program, where volunteer groups periodically pick up the trash and debris along the sides of state highways. Safety information is provided to the volunteers. MoDOT has a program to educate MoDOT employees regarding proper management and disposal of toxic materials discovered on the right of way.

The impact to MoDOT drainage facilities from sanitary sewer seepage or septic tank drainage ranges from isolated vegetation growth in rural road ditches (i.e. cattails) to standing treated or untreated wastewater. MoDOT typically contacts the local departments of health when the presence of wastewater from single-family residences appears to be a health or water quality concern deserving regulatory intervention.

Action: MoDOT will educate and cross-train field staff to assist with identification of illicit discharges that discharge into MoDOT drainage system on MoDOT right of way.

Measurable Goal: The issue of illicit discharge identification will be discussed with MoDOT's Environmental Compliance Group at various times throughout the year.

Measurable Goal: Develop a guidance document for maintenance personnel that will facilitate reporting of illicit discharges that enter MoDOT's drainage system to appropriate regulatory agencies by January 1, 2008.

Action: Identify those illicit discharges (non-storm water) that flow into MoDOT right a way that are not under the jurisdiction of another regulated MS4.

Measurable Goal: By July 1, 2008, institute a viable program to identify and control illicit discharges (non-storm water) that can be controlled by existing MoDOT authorities.

Measurable Goal: Prepare a statewide map that shows the locations of illicit discharges that can be controlled through existing MoDOT authorities by January 1, 2009.

Action: Hazardous material spills will be reported within 24 hours upon discovery. Reporting will be made to the Missouri Department of Natural Resources (MDNR) Environmental Emergency Response (EER) – 573-634-2436 – in accordance with MoDOT procedures and Missouri RSMo 260.500 through 260.555.

Measurable Goal: Develop an annual report that identifies the hazardous material spills that occurred on MoDOT right of way during the previous year.

CONSTRUCTION SITE RUNOFF CONTROL

Storm water Permits

coordinate w/ local

Provisions of the federal Clean Water Act and related state rules and regulations require storm water permits where construction activities disturb greater than one acre over the life of a project as part of a common plan or sale. MoDOT has a general permit, obtained from the Missouri Department of Natural Resources (MDNR), which allows road construction activities and the associated land disturbance. The permit stipulates that MoDOT will follow certain erosion control guidelines and install temporary erosion control measures. Locally sponsored federal aid projects that are performed on MoDOT right of way and are using MoDOT's land disturbance permit are required to comply with MoDOT Standard Specifications, and therefore, must follow the Storm Water Pollution Prevention Plan (SWPPP). Cities, counties and other government entities may already possess their own National Pollutant Discharge Elimination System (NPDES) permit and, in that case, must comply with their own SWPPP.

Design Considerations

MoDOT has provided a few guidelines for the development of erosion control plans. First the designer is responsible for the plans and therefore should develop the plan during the design phase. The designer shall also study and inspect the future construction site and plans to determine what areas have potential erosion hazards. Once this information has been reviewed and all necessary data is obtained, the following recommended guidelines should be followed:

- Determine limits of clearing and grading.
- Divide the site into drainage areas.
- Divert clean runoff around the construction area.

- Erosion and sediment control shall be used whenever possible to reduce erosion at the site and prevent offsite damage.

As part of the storm water control measures, the contractor shall take certain management measures into consideration when preparing a work schedule. Such contractor measures include, but are not limited to:

- Install appropriate perimeter erosion control measures prior to grading.
- Sequence and stage construction so that no area remains exposed for unnecessarily long periods of time, and disturbed areas should be stabilized before other areas are disturbed.
- Stabilization Best Management Practices (BMPs) should be implemented immediately after grading.
- Develop and carry out a regular maintenance schedule for erosion and sediment control practices.
- Utilize spill prevention and containment measures at storage sites.
- Develop and follow a plan for regular collection and disposal of waste material as well as designate a site for disposal.
- Designate the responsibility for implementing and maintaining the erosion control measures to one person.

Erosion, sediment and pollution control and storm water management will be a priority discussion point at all appropriate project pre-construction conferences. Monitoring and inspection of the features of the erosion control plans will be carried out and documented by the resident engineer and contractor for the construction project. Any items of concern regarding BMPs should be brought to the attention of the contractor for immediate correction.

Construction Requirements

The engineer will limit the surface area of erodible earth material exposed by clearing and grubbing, or excavation, borrow and fill operations, and may direct the contractor to provide immediate permanent or temporary erosion control measures to prevent contamination of adjacent streams or other watercourses, wetlands, lakes, ponds and other water impoundments.

The contractor shall be required to incorporate all permanent erosion control measures into the project at the earliest practicable time. Temporary erosion control measures shall be used to correct conditions that develop during construction which were not foreseen during the design stage. Temporary erosion control shall also be used when needed prior to installation of permanent erosion control measures or when needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control measures on the project.

Clearing and grubbing operations shall be scheduled and performed so that grading operations and temporary and permanent erosion control measures will

follow immediately thereafter. The surface area of erodible earth material exposed at one time by clearing and grubbing, by excavating, by fill or by borrow, shall be minimized to prevent runoff. The engineer may limit the total acreage of erodible earth material to be exposed at one time as determined by an analysis of project conditions. In such cases the engineer will identify specific BMPs and controls that have been, or will be installed in order to exceed the specified maximum disturbed acreage threshold.

Unless otherwise approved, construction operations in rivers, streams, wetlands and impoundments shall be restricted to those areas which must be entered for the construction of temporary or permanent structures. Rivers, streams, wetlands and impoundments shall be promptly cleared of all false work, piling, debris or other obstructions placed therein or caused by the construction operations. Frequent fording of live streams or wetlands with construction equipment is not permitted.

Site-specific erosion controls above and beyond MoDOT standard specifications shall be discussed with the contractor at a preconstruction conference. Special conditions may be developed which can include limitations on the amount of surface area that can remain unprotected at one time or special water quality or stream protection requirements.

In the event of a conflict between these requirements and pollution control laws, rules, or regulations of other federal, state or local agencies, the more restrictive laws, rules or regulations shall apply.

Control Measures (SWPPP)

MoDOT has prepared a Storm Water Pollution Prevention Plan (SWPPP) that has been provided to all construction offices as part of each construction contract. The SWPPP describes several BMPs that may be used to control runoff from land disturbance activities of one acre or more. The following BMPs may be used together or separately in order to ensure that contaminants do not leave MoDOT right of way.

Temporary Controls

Temporary water pollution control measures are required on all contracts awarded by MoDOT. The contractor shall exercise best management practices throughout the project to ensure that contaminants do no leave MoDOT right a way. Construction of permanent drainage facilities and other activities, which may contribute to the control of siltation, shall be accomplished at the earliest practicable time. This work shall consist of furnishing, installing, maintaining and removing temporary control measures as shown on erosion control plans or as ordered by the engineer. The control of water pollutants will be accomplished through the use of berms, slope drains, ditch checks, sediment basins, seeding

and mulching, straw bales, silt fences and other erosion control devices or methods. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage or other harmful materials shall not be discharged from the project. No work shall be started until the erosion control timetable and methods of operation have been approved.

Temporary erosion control measures shall be coordinated with permanent erosion control measures to assure economical, effective and continuous erosion control. Temporary erosion controls shall be kept in place and maintained until revegetation has occurred to an extent sufficient to prohibit the formation of gullies by runoff. The engineer shall routinely inspect the condition of erosion controls and shall notify the contractor immediately if any controls are found to be in disrepair or are not functioning at the desired level of effectiveness. Inspection records and directives to the contractor shall be noted in the inspector's Erosion Control Inspection Records, which shall be available for review by Missouri Department of Natural Resources (MDNR) upon request. Temporary Measures include:

Temporary Berms (Type A, Type B, Type C)
Temporary Slope Drains
Ditch Checks (Type 1, Type 2)
Rock Dams
Temporary Seeding
Temporary Mulching
Straw Bales
Silt Fence
Surface Roughening
Mulching and Crimping
Brush Piles

Permanent Controls

The contractor shall be required to incorporate all permanent erosion control measures into the project at the earliest practicable time. Permanent Measures include:

Sediment Basins
Rock Dams
Permanent Seed and Mulch
Type C Berms
Rock Blanket
Rock Ditch Checks

Erosion and Sediment Containment Inspections

Erosion Control Inspection Record and an inspection report log are required for projects with one acre or more of total land disturbance. At all disturbed areas and installed Best Management Practice items (BMPs) are inspected for proper location, installation, operation and maintenance. Points of storm water egress are inspected for evidence of erosion or sedimentation.

Reports are required within seven calendar days of a previous inspection or within 72 hours of any reportable precipitation event (1/2" over 24 hours).

The report is to be signed by the MoDOT representative who performed the inspection. Information required on the form includes:

1) Contract/Job identification number;
2) County and Route location;
3) Name of contractor and authorized representative;
4) Name of MoDOT inspector completing report;
5) Date of inspection;
6) Areas requiring installation of new BMPs;
7) Existing BMPs requiring corrective action;
8) Corrective actions taken on previously listed deficiencies;
9) Total area of authorized erodible area;
10) Area of erodible area on project
11) Areas no longer considered erodible.

The inspection report is signed by the resident engineer or by the person performing the inspection if authorized to do so. The contractor's Erosion Control Supervisor receives a copy of each week's report for prompt corrective action, if necessary.

Audits and Training

MoDOT has assigned one employee the responsibility of performing statewide audits of construction sites to ensure that SWPPPs are being followed to the extent that off-site contamination does not occur. The individual usually will visit every construction site at least twice per year and meet with MoDOT resident engineers, inspectors or contractors to evaluate the land disturbance elements of the project.

deficient one for all?

MoDOT shall continue to require training for construction inspectors, resident engineers and other personnel. It is anticipated that such training shall continue through the annual Environmental Compliance class, currently held routinely at each of the ten MoDOT districts. The Environmental Compliance class has also been delivered and is available to contractors and other private or public organizations as requested. Training may also occur on a less formal basis as deemed necessary by MoDOT.

says one on each site.

Contractor Compliance

MoDOT has the authority to stop work on any construction job when the contractor does not perform work in compliance with contract provisions. In cases where the contractor is causing water quality problems, or creates conditions with the potential to contaminate waters of the state, the engineer will take appropriate disciplinary action to assure proper control measures are in place. Actions possible include: written compliance directives, suspension of contractor pay estimates or suspension of work on the project.

Contractors are evaluated on project performance each year. One of the elements of the Performance Rating system involves erosion control compliance. Low ratings may cause disciplinary action to be taken against poorly performing contractors. Disciplinary actions range from being placed in a probationary status to disqualification from bidding on MoDOT construction contracts for a period of three years.

Protection of Streams, Lakes, Ponds, and Reservoirs

In compliance with the Missouri Clean Water Law (Section 644.051), neither MoDOT nor MoDOT's contractors shall pollute any waters of the state, or place, cause, or permit to be placed any water contaminant in a location where it is reasonably certain to cause pollution of any waters of the state. Also, they shall not discharge water contaminants into any waters of the state, which reduce the quality of these waters below the state's water quality standards. These water quality standards include the following (MO10 CSR 20-7):

> (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
>
> (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
>
> (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
>
> (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
>
> (e) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
>
> (f) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of

such materials is specifically permitted pursuant to section 260.200–260.247.

MoDOT personnel or contractors performing work for MoDOT shall comply with these and any other federal, state and local laws and regulations that serve to control pollution of the environment. To ensure that these general criteria are met, the following guidelines will be observed:

1) Machinery shall be kept out of the waterway as much as possible.

2) Fuel, lubricants, debris and other water contaminants shall not be stored in areas that are subject to flooding or contact with water (such as adjacent to stream banks) or where contaminated runoff from the storage areas can enter waters of the state.

3) Refueling and maintenance (e.g., oil changing) of machinery shall not take place in, or directly alongside, any water body.

4) Clearing of vegetation/trees shall be kept to the minimum required to accomplish the activity.

5) Riparian areas and banks shall be restored to a stable condition through recontouring and revegetation of the area, as necessary, as soon as possible (normally within three working days of final contouring).

6) Work shall be conducted during periods of low flow whenever possible.

7) Wetland areas shall be avoided to the greatest extent practical.

8) Work shall conform to all conditions that are part of the United States Army Corps of Engineers (USACOE) Section 404 permit and the ancillary MDNR Section 401 Water Quality Certification.

Action: Continue to comply with provisions of NPDES "land disturbance" permit.

Action: Continue training of construction inspectors through an annual Environmental Compliance class.

Measurable Goal: Conduct at least ten classes and train at least 200 MoDOT employees that deal with construction erosion.

Action: Perform statewide audits of construction sites to insure that specifications and SWPPP are being followed.

Measurable Goal: Evaluate erosion control elements of 90% of all land disturbance sites that involve 1 acre or more of land disturbance.

Environmental Assistance Visits conducted by MDNR will be accepted as an evaluation.

Action: Continue Performance Rating.

Measurable Goal: Utilize the existing system to notify contractors when erosion control elements of the project are less than desirable as determined by elements of the SWPPP. Prepare an annual report that ranks contractors according to erosion control performance.

POST-CONSTRUCTION SITE RUNOFF CONTROL

MoDOT does not possess the statutory authority to require environmental compliance on adjacent, private or public property. However, MoDOT does have the ability to approve or disapprove requests for "break in access" where new developments wish to gain access to the MoDOT highway system. When new developments contact MoDOT and request access they are informed that their land disturbance activities may require a land disturbance permit from MDNR.

Developers are informed that MoDOT is the holder of a National Pollutant Discharge Elimination System (NPDES) permit for work that is performed on MoDOT right of way by MoDOT or its contractors; however MoDOT's NPDES permit does not authorize work by private developers or other public or private entities that perform limited work on MoDOT right of way as part of a private or commercial development project.

Developers are further informed that if their project will involve disturbance of one acre or more of ground surface, then they will most likely require an NPDES permit from MDNR. Before MoDOT issues an entry or access permit to perform work on MoDOT right of way, the developer must provide proof that they have obtained the appropriate permit from MDNR, or some type of proof that the activity is exempt from MDNR's NPDES requirements.

need more coordination w/adjacent projects.

MoDOT will consider additional New Development and Redevelopment Program requirements as MoDOT projects are initiated at the same time as adjacent private development. The evaluation shall consider comprehensive planning procedures and controls to reduce the discharge of pollutants after construction is complete, from areas of new highway development and significant redevelopment and associated drainages. The program will consider non-highway facilities that would prevent or minimize water quality impacts. This program does not apply to maintenance activities that do not change storm water impacts to state waters.

Pre-site design conflicts.

MoDOT shall continue to implement a program that ensures that new highway projects and significant highway modifications are reviewed for the need to include permanent storm water BMPs, and the results from that review implemented. As part of the program, MoDOT will define as "significant," highway modifications that disturb greater than or equal to one acre of existing vegetation.

MoDOT shall select and implement BMPs whenever applicable for those projects that have the potential to discharge storm water conveying pollutants of concern into sensitive waters. "Sensitive waters" primarily include those waters that are listed on MDNR's most recent 303(d) list or a total maximum daily load (TMDL) has been developed that limits the amount of the specified pollutant that is likely to be present in discharges from MoDOT.

MoDOT does not have a formal program for incorporation of water quality elements into developments or significant redevelopments. No statewide policy exists regarding permanent water quality structural and source controls. Water quality facilities associated with new highway development and redevelopment are incorporated into the design upon request of the resource agencies and MoDOT.

There are no policies, procedures or regulations that address water quality impacts from operating highways. Compliance with any physically connected city's New Development criteria will be done on a courtesy basis if possible considering budget, timing, and statutory constraints.

MoDOT has no water quality policies for addressing impacts from new residential developments that discharge into a MoDOT storm sewer system. MoDOT does review quantity-related issues. If a new development or redevelopment project connected to MoDOT's system is not under the authority of a regulated MS4, and there are present or potential impacts to water quality, MoDOT has the option of petitioning the MDNR to cover the project under a separate MS4 permit.

MoDOT will evaluate existing mechanisms that ensure long-term maintenance and operation of permanent BMPs and determine whether a need exists to improve the current mechanisms. If it is determined that changes are needed to MoDOT's existing policies that ensure long-term maintenance and operation of permanent BMPs, MoDOT will identify and consider alternatives for improving the existing practices and/or developing additional mechanisms. If necessary, MoDOT will select and implement the preferred alternative mechanism to ensure the long-term maintenance and operation of permanent water quality BMPs.

Action: Track and summarize the locations where permitted work (private or public activities on MoDOT right of way) involves land disturbance on right of way of .75 acre or more.

Measurable Goal: Prepare an annual report detailing the locations of all such land disturbances.

Action: Review and evaluate exisiting MoDOT policies that address the removal of BMPs following road construction.

Measurable Goal: Periodic review will be conducted to identify the obstacles that prevent the long-term operation and maintenance of BMPs on MoDOT right of way.

POLLUTION PREVENTION/GOOD HOUSE KEEPING

Structure Maintenance

MODOT drainage facilities such as detention ponds, storm drains, inlets and catch basins are inspected on an as-needed basis. In all areas a close inspection of problematic storm drain inlets (selected inlets known to flood) occurs during rainstorms or if complaints are received to ensure proper operation. Documentation pertaining to the inspections is limited and may normally contain only the date and time of the inspection. Each district currently inspects water drainage facilities (retention ponds and other structures) on an as-needed basis to ensure that the facility operates as designed. The frequency of inspection can vary depending on the design of the structures.

Currently, MODOT has not located all of its structural controls. Location of major structural controls (primarily large detention basins) will be stored in a database and may be identified in a GIS system as part of the implementation of the permit.

The District Maintenance Engineer (or his designee) or the State Bridge Maintenance Engineer approves improvements to channels, and any addition of riprap immediately adjacent to the roadway or structure. All work to improve channels that requires additional environmental clearance must be cleared with the Design Division Environmental Unit and the proper permits obtained.

Ditches

All open ditches are to be maintained to preserve their full depth and cross section. Surplus material from ditch cleaning is used in other tasks such as widening shoulders and fills, repairing erosion and filling wash outs. Where appropriate or necessary, maintenance occurs on ditches and waterways as needed.

Mowing Operations

Mechanical and chemical vegetation management is done to maintain sight distance, improve aesthetics and control undesirable vegetation. At a minimum, mowing occurs to a distance of at least one mower width from the edge of the traveled way per the guidance contained in the Roadside Vegetation Manual. With the exception of updating the structural controls database, modifications to the program will not be necessary.

Public Street Maintenance Program

Roadway maintenance activities conducted by district maintenance forces that impact storm water quality include: snow and ice control on state and interstate highways, roadway surface maintenance, roadside facility maintenance, roadway appearance, miscellaneous MoDOT facilities, and tunnel maintenance.

Cities and counties perform the maintenance work on some state roadways for MoDOT. This is accomplished through a formal maintenance agreement signed by the Missouri Highways and Transportation Commission and the city or county. The maintenance agreements contain standard requirements that the city or county maintain the facilities in accordance with Commission-approved standards.

The following manuals are to be used for maintenance of roadway facilities:

1. Maintenance Division Policy Manual
2. Roadside Vegetation Management Manual
3. Herbicide Manual
4. Maintenance Function Planning Guidelines
5. Preventive Maintenance Guidelines for Bridges
6. Operator's Guide for Anti-Icing
7. Missouri Standard Specifications for Highway Construction

Street Sweeping

Mechanical sweeping of sand, dirt and debris from paved surfaces, shoulders, curbs and gutters and median barriers is performed to assure roadway drainage. Sweeping maintains the environmental and aesthetic quality of the roadway, and is accomplished for safety concerns. Sweeping is MoDOT's responsibility on Interstate Highways, National Highway System Routes and Commission-owned roadways within the state highway system unless covered by a maintenance agreement.

Snow and Ice Control

One of MoDOT's high priorities is the removal of snow from state highways. Anti-icing operations to prevent the formation or development of packed and bonded snow or bonded ice to the pavement surface is the first priority on continuous treatment routes during a winter weather event. De-icing activities will begin when weather conditions render anti-icing activities ineffective. Snow and ice control operations should begin as soon as weather conditions warrant and continue on a 24-hour-per-day basis until all major highways and all minor highways are returned to a wet or dry condition and all minor highways are open to two-way traffic. The removal of snow and ice from the roadway and the application of abrasives or de-icing products take precedence over all other

maintenance work. MoDOT's Operator's Guide For Anti-icing and the snow-and-ice section of the Maintenance Policy Manual are both used to clarify the department's official procedure.

All abrasives and de-icers are to be applied in accordance with the Operator's Guide For Anti-icing and the snow-and-ice section of the Maintenance Policy Manual. These directives include the following:

- Chemicals and stockpiles of treated abrasives are to be stored in a manner to prevent loss of material and minimize damage to state or private property.
- All bulk salt shall be stored inside covered storage structures.
- Asphalt pads are being installed under and in front of storage facilities.
- Mixed materials shall be covered when not in use and between storm events.

Maintenance practices required which have a side benefit to water quality include:

- Application of only the amount of salt or salt/abrasive mix material necessary to provide safe driving.
- Use of clean snow and ice control abrasives (sand or 3/8 crushed aggregate) that contain only 0-10 percent passing a No. 10 sieve.
- Use of snow and ice control chips only when needed to provide traction.
- Sweeping or flushing of the bridges as soon as possible after a storm event.

MoDOT uses a database to track information on how much winter abrasives, calcium chloride, or sodium chloride was applied in the different maintenance areas during a snowfall event. This information is contained in the Winter Events Database Report.

Roadside Management

MoDOT's roadside management program keeps the roadsides safe and attractive. The program establishes and maintains appropriate vegetation to control erosion and limits undesirable vegetation. Specific guidance is provided in the Roadside Vegetation Management Manual. This includes herbicides, fertilization, mowing, brush control and litter removal. If it is believed that environmental clearance from the Design Division's Environmental Section is needed before performing standard roadside maintenance activities that clearance will be obtained prior to beginning work.

Roadside Facilities

Drainage facilities within the rights of way owned by MoDOT include cattle passes, collection ditches, shoulder drains, side ditches, under drains, outlet

ditches, contour ditches and culverts (includes structures that span 20 feet or less). These facilities are maintained to be able to handle runoff from rainfall events. Maintenance includes removing trash, debris and sediment that has collected in the facility. All drainage facilities statewide are inspected periodically; minor defects are repaired as necessary; and major defects are reported to the Maintenance Superintendent responsible for that geographic area. Natural watercourses and streams that pass within the right of way are kept clean so water can flow freely.

Any slope associated with roadside facilities is maintained to keep erosion to a minimum. The only required modification to this program is the review of the Federal Highway Administration's document dealing with bridge runoff, for potential additions to MoDOT's Preventive Maintenance Guidelines for Bridges.

Herbicide Program

MoDOT uses a variety of techniques to manage roadside vegetation. Herbicides provide effective and efficient vegetation control. Specific guidance for herbicide use is provided in MoDOT's Herbicide Manual. Operators and their supervisors are required to read and follow the label. Only non-restricted herbicides are used. Employees are encouraged to obtain and maintain a public operators license certified by the Missouri Department of Agriculture. Detailed recordkeeping is required. Spray equipment is clean, in good operating order and properly maintained. Operators are instructed to not apply herbicides to standing, running or open water. Only approved aquatic herbicides are used to control undesirable vegetation in or near water. Care is taken to avoid drift, run-off, leaching and spills

Procedures to Prevent, Contain and Respond to Spills

Procedures to prevent, contain and respond to spills are found in MoDOT's Guide to Hazardous Material Spill Response on State Highways. All vehicles carrying hazardous materials must be identified by the distinct diamond shaped symbol. The following are guidelines taken from MoDOT's Guide to Hazardous Material Spill Response on State Highways:

- Avoid contact with and breathing vapors of the spilled material.
- No smoking allowed in the spill area.
- If a state waterway is involved in the spill the Missouri Department of Natural Resources must be contacted along with the MoDOT District Hazardous Materials Spill Coordinator.
- Obtain facts and information on the spill for the emergency team and maintenance supervisor.
- Call the Missouri State Highway Patrol for help and notify the maintenance supervisor.
- Coordinate with emergency response personnel.

- An "Incident Commander" should coordinate with other agencies and handle direct reporting of the spill.
- Use appropriate traffic control to isolate the spill area from public contact.
- Wait for instructions and do not clean up the spill or contaminated area.
- If private property or waterways are threatened, containment of spill should be coordinated with Missouri Department of Natural Resources, Missouri State Highway Patrol and the appropriate maintenance supervisor.

Spill Prevention and Response Procedures at Maintenance Facilities

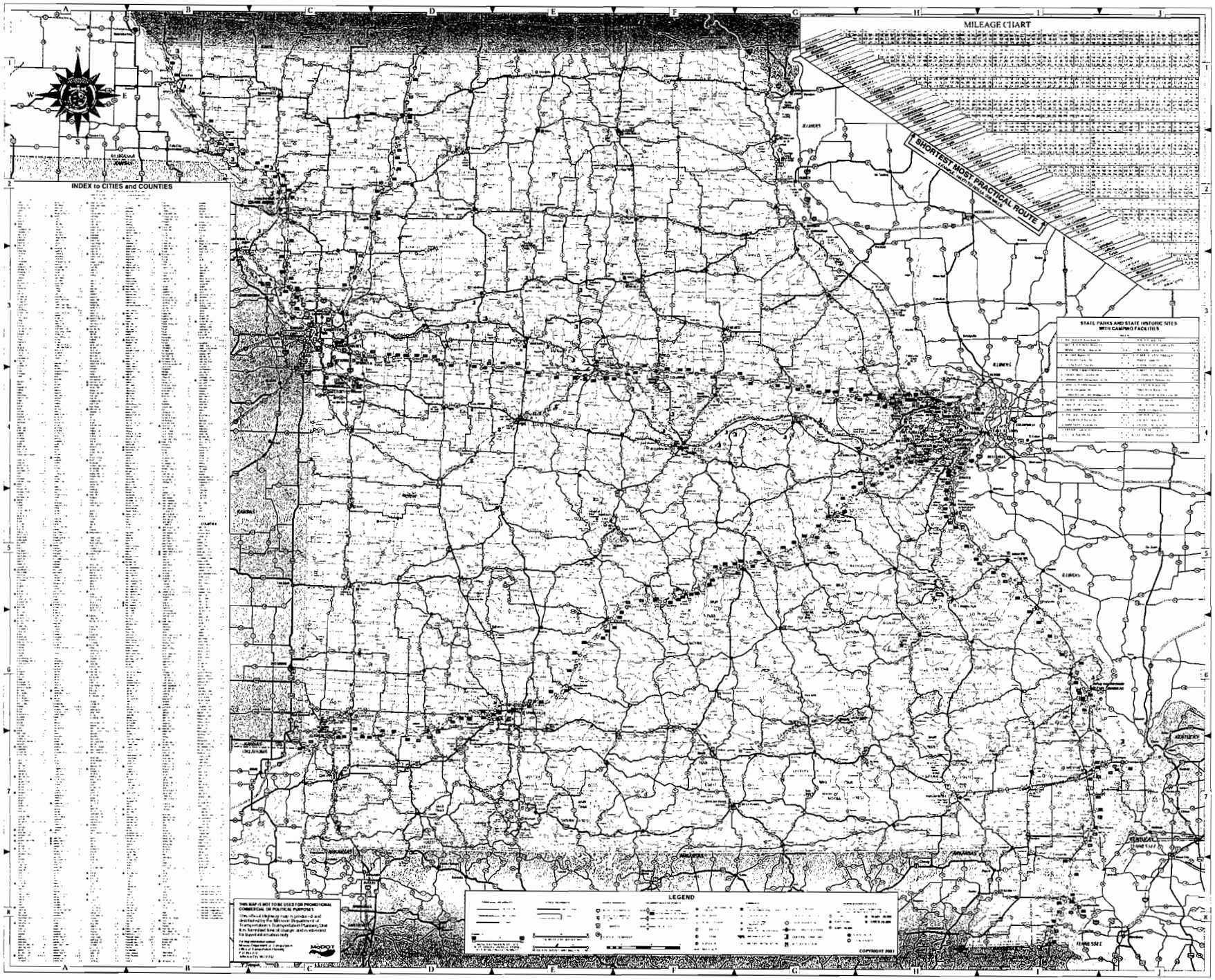
MoDOT has implemented Spill Prevention Control and Countermeasure (SPCC) plans at maintenance facilities to prevent petroleum or hazardous material spills from occurring, and to perform safe, efficient and timely response in the event of a spill or leak. In accordance with United States Environmental Protection Agency (EPA) petroleum or hazardous material pollution prevention regulations (40 CFR 112), MoDOT must prepare and implement an SPCC plan for facilities that could reasonably be expected to discharge petroleum or hazardous material into or upon navigable waters or adjoining shorelines; that meet one of the following conditions:

- Above-ground petroleum or hazardous material storage capacity exceeds 1,320 gallons; or
- Underground petroleum or hazardous material storage capacity exceeds 42,000 gallons, unless the underground tanks are subject to all of the technical requirements of 40 CFR 280 or a state program approved under 40 CFR 281. (Missouri's approved program is Department of Natural Resources, 10 CSR 20 - 10 Rules for Underground Storage Facilities.)

As defined by 40 CFR Part 112, petroleum or hazardous material includes all grades of motor oil, hydraulic oil, lube oil, fuel oil, gasoline and diesel, automatic transmission fluid (ATF), used oil and transformer mineral oil. The definition of petroleum or hazardous material also includes non-petroleum oils such as animal or vegetable oils and synthetic oils.

Action: Evaluate the effectiveness of house keeping activities and identify those processes and/or procedures that are impacting waters of the state.

Measurable Goal: Continue dialogue with the Environmental Compliance Group to evaluate the effectiveness of housekeeping processes and procedures. Develop and test new housekeeping processes and procedures to add to current available resources and techniques. Prepare a summary report each year that identifies the accomplishment of the Environmental Compliance Group as it relates to improved water quality.



Missouri State Highways and Transportation Commission

Bill McKenna — Cape Girardeau
Marge Schramm — Kirkwood
James B. Anderson — Springfield
Duane A. Michael — Hayti
Michael E. Kelley — Jefferson City
David A. Fischer — St. Joseph

Missouri Department of Transportation

Pete K. Rahn, Director

Helpful Numbers:

Missouri State Highway Patrol Emergency
800-525-5555 or 573-526-6101 (cellular phone)

Road Conditions Hotline
800-222-6400

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Missouri Department of Transportation
1320 ADAMS STREET
JEFFERSON CITY, MO 65101
www.modot.org

Missouri is known as the Show-Me State, and we are [illegible] hard to show you our state's natural [illegible] parks, heritage sites, and historic attractions. [illegible] all the fun on our beautiful, traffic-friendly highways [illegible] to really appreciate the Missouri experience.

While traveling, you'll see [illegible] signs along the highways. Stop by any of our welcome centers [illegible] to learn about Missouri's [illegible] and other [illegible] experiences [illegible].

And while you are traveling, we have a [illegible] Missouri's roads [illegible] 24 hours a day, seven days a week. [illegible] Missouri [illegible] to a traffic [illegible] and [illegible] 800-222-6400 [illegible] 573-526-6101 [illegible] cellular phone. [illegible] Missouri [illegible] and [illegible] traffic [illegible] and [illegible] with the [illegible] to slight [illegible] towards [illegible] path [illegible] [illegible] half [illegible] or sports [illegible].

We hope you find [illegible] in Missouri [illegible] and [illegible] state's scenic. Please [illegible] up [illegible] safely and [illegible] you ride!

Matt Blunt
Governor