

the permit that has been replaced.

3.7 Requiring a Site-Specific Permit or an Alternative General Permit

3.7.1 *Decision by the department.* The department may require any person authorized by this permit to apply for and/or obtain either a site-specific NPDES permit or an alternative NPDES general permit [10 CSR 20-6.200(6)]. Any interested person may petition the department to require a site-specific permit. Where the department requires the permittee to apply for a site-specific NPDES permit, the department will notify the permittee in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form(s), a statement setting a deadline for the permittee to file the application, and a statement that on the effective date of issuance or denial of the site-specific NPDES permit or the alternative general permit, coverage under this general permit shall automatically terminate in accordance with Section 3.6. The department may grant additional time to submit the application upon request of the applicant. If the permittee fails to submit a site-specific NPDES permit application in a timely manner as required by the department under this paragraph, then the applicability of this permit to the permittee is automatically terminated on the day specified by the department for application submittal.

3.7.2 *Request by permittee.* The permittee may apply for a site-specific permit in lieu of coverage under this general permit. In such cases, the permittee shall submit an application for the alternate permit in accordance with the requirements of 10 CSR 20-6.200, with reasons supporting the request. The request may be granted by issuance of any site-specific permit or an alternative general permit.

4. Storm Water Management Programs and Plans

4.1 Requirements

The permittee shall develop, implement, and enforce a storm water management program and plan (SWMP) designed to reduce the discharge of pollutants from the permittee's regulated small MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Missouri Clean Water Law. The SWMP should include best management practices; control techniques and system, design, and engineering methods; and such other provisions as the permitting authority determines appropriate for the control of such pollutants. The permittee's SWMP document shall include the following information for each of the six minimum control measures described in Section 4.2 of this permit:

4.1.1 A description of the best management practices (BMPs) that the permittee will implement for each of the storm water minimum control measures;

4.1.2 The measurable goals for each of the BMPs including, as appropriate, the months and years in which the permittee will undertake required actions, including interim milestones and the frequency of the action;

4.1.3 The person primarily responsible for the SWMP, and the person(s) responsible for each minimum control measure if different from the primary responsible person; and

Charles Feldman, Director of Development Review has overall responsibility for the SWMP. See Appendix A for the persons responsible for each minimum control measure.

- 4.1.4 The permittee shall implement a program designed to protect water quality in potentially affected waters and ensure that the permitted activities do not cause a violation of the Water Quality Standards:
- 4.1.4.1 Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria; and
- 4.1.4.2 The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
- 4.1.4.2.1 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;
- 4.1.4.2.2 Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
- 4.1.4.2.3 Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
- 4.1.4.2.4 Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
- 4.1.4.2.5 There shall be no significant human health hazard from incidental contact with the water;
- 4.1.4.2.6 There shall be no acute toxicity to livestock or wildlife watering;
- 4.1.4.2.7 Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community; and
- 4.1.4.2.8 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.
- 4.1.5 For facilities under the control of the permittee good housekeeping practices shall be maintained to keep solid waste from entry into waters of the state to the maximum extent practicable;
- 4.1.6 All fueling facilities under the control of the permittee shall adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers, including spill prevention, control and counter measures;
- 4.1.7 Substances regulated by federal law under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that are transported, stored, or used for maintenance, cleaning or repair by the permittee shall be managed according to the provisions of RCRA and CERCLA;
- 4.1.8 All paint, solvents, petroleum products and petroleum waste products (except fuels) under the control of the permittee shall be stored so that these materials are not exposed to storm water. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spills of these pollutants from entering a water of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances

contained and shall also prevent the contamination of groundwater;

- 4.1.9 In addition to the requirements listed above, the permittee shall document the decision process for each minimum control measure and include rationale statements for each BMP and measurable goal defined;-
- 4.1.10 The permittee shall inspect any structures that function to prevent pollution of storm water or to remove pollutants from storm water and the facility in general to ensure that all BMPs are continually implemented and effective, and a monitoring schedule shall be specified in the SWMP document;
- 4.1.11 The SWMP document shall include interim milestones, measurable goals, an implementation schedule and measures for success; and
- 4.1.12 The permittee shall develop and fully implement each minimum control measure within five (5) years of receipt of its first MS4 permit. At each reissuance of this MS4 permit, the permittee shall comply with new or revised standards as soon as practicable, but no later than 5 years from the date of reissuance.

4.2 Minimum Control Measures

The six (6) minimum control measures that shall be included in the permittee's SWMP document are:

4.2.1 Public Education and Outreach on Storm Water Impacts

See Appendix B-1, MCM 1

- 4.2.1.1 Permit requirement. The permittee shall implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and steps the public can take to reduce pollutants in storm water runoff. As part of the SWMP, the public education and outreach program shall include the following information, at a minimum:

St. Charles County Government continues its storm water education program to inform individuals, residents, and households of both the magnitude of the problem as well as corrective actions they can take to prevent non-point source (NPS) pollution. The County has identified the following goals for the 2013-2018-permit period:

- **Increase continuity with municipal programs and materials.**
- **Increase residential and commercial awareness of proper yard waste disposal and encourage behaviors that will reduce yard waste as an erosion source and pollutant in local streams and lakes.**
- **Increase residential and commercial awareness of sediment runoff and encourage behaviors that will reduce sediment pollution in local streams and lakes.**
- **Increase resident recognition of household chemical toxicity and pollutant sources to prompt behavior changes that reduce pollution from household chemicals.**
- **Increase residential awareness of septic tank maintenance and encourage ways to reduce septic sources of storm water pollution.**

- **Increase residential and commercial recognition of litter sources and illegal dumping and encourage behaviors to reduce these sources (or the opportunities for them) as a storm water pollutant.**

St. Charles County's Community Development division of Construction Management oversees large scale construction projects undertaken by and for the county of St. Charles. The education of the adverse effects of improper design, engineering, management and construction activity is paramount to our goal. The Construction Management's goal will be to implement a storm water educational program targeted at the architectural, engineering and construction fields via the department's web site as well as through the county's newsletter.

4.2.1.1.1 The target pollutant sources the permittee's public education program is designed to address;

4.2.1.1.2 Identification of target audiences for the permittee's education program who are likely to have significant storm water impacts (including commercial, industrial and institutional entities);

Based on previous common storm water pollutants (litter, yard and pet waste), the outreach strategies will predominantly be directed to residents. As the majority of the population (75%) is between 5 and 54 years old, emphasis will be placed on targeting parents and their children. Place-based, school-age appropriate programs and take-home materials will address local storm water issues.

The following target pollutant sources have been selected as having significant storm water impacts. These groups have been chosen based on experience from the previous permit cycle, existing Stream Team water quality data, field reconnaissance observations, and storm water complaints received.

- **Construction site builders, contractors, and developers (erosion, litter, and other improper discharges)**
- **Landscaping companies, condo associations, municipal workers (landscaping, park and highway maintenance, etc.), and landowners whose lawn and landscape practices can negatively impact storm water quality (erosion, chemical pollutants)**
- **Do-it-yourselfers that generate household and lawn chemicals**
- **Property owners with septic tanks**
- **Illegal dumpers and property owners near illegal dump sites**
- **Litterbugs and flatbed truck drivers (prone to unknowingly produce flyaway litter).**

4.2.1.1.3 A plan to inform individuals and households about steps they can take to reduce storm water pollution

To reach our target audiences and goals, the public education outreach strategy employs a multi-faceted approach of building partnerships, using mainstream and alternative outreach tools, and distributing educational materials. Partnerships with other governmental entities for developing and distributing unified outreach and educational materials and programs include (at a minimum) the cities of St. Peters, Lake St. Louis, O'Fallon, St. Charles, and Wentzville. Other partnerships with smaller governmental entities will be pursued (such as city of Weldon Spring, city of Cottleville, etc.)

County government collaborates with and provides direct funding assistance to several local non-governmental organizations such as University Extension, Leftovers, etc, and the St. Charles County Soil and Water Conservation District. St. Charles County will continue to seek assistance from these and other local interest groups to perform outreach activities and distribute educational materials. In addition to developing our own materials in partnership with our municipalities, the County will use existing storm water educational resources provided by the Department of Natural Resources, EPA, and/or Soil and Water Conservation District and University Extension. To maximize coverage, the following specific materials/strategies (a.k.a. Best Management Practices) will be used:

- **Distribute Educational Grease Interceptor Brochures to all food establishments**
- **Increase branding through logo on deliverables**
- **Press releases and articles for local media and organizational newsletters**
- **Pollution solution brochures and/or fact sheets for the general public and specific audiences**
- **Recreational guides to educate groups such as golfers, park enthusiasts, pet owners or campers**
- **Storm water activity books for students and scouts**
- **Alternative information sources, such as comics, web sites, bumper stickers, or refrigerator magnets**
- **A web-based library of educational materials for community and school groups**
- **An illustrated manual and/or web page section to train target audiences to recognize illicit discharges and dumping, and faulty/inadequate construction site runoff controls**
- **A public awareness online stormwater survey**
- **A public education task force comprised of volunteer citizens and educators**
- **Educational displays at community festivals and home shows**
- **Environmental and Parks Education Programs include presentations, service learning projects, cleanups, and a kiosk at special events**
- **Storm drain markers with messages "Don't Pollute Drains to River"**
- **Storm water pollution hotline and online reporting system for information and citizen complaints reporting**
- **Utility bill message inserts**
- **Training Workshops for developers and construction industry professionals**
- **Public Education Campaign for TV**

The county's mix of local strategies listed above will address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children. As of 2005, 96% of the county's population speak only English. Therefore, the majority of materials will be produced in English.

Please refer to Appendix B-1 for the county's activities and implementation process.

4.2.1.1.4 A plan to inform individuals and groups on how to become involved in the SWMP (with activities such as local stream and lake restoration activities);

Utilizing the information dissemination vehicles and strategies outlined above, the Division of Environmental Health and Protection will promote specific involvement opportunities

hosted internally as well as those offered by other supporting partner organizations (governmental and citizen volunteer). The County co-sponsors and hosts various education and outreach seminars that serve as a venue for public feedback and involvement in plan development, such as *Operation Clean Stream* and *Earth Day*. Please refer to *Appendix B-1* for other BMPs to garner public involvement.

4.2.1.1.5 The permittee's outreach strategy, including the mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.) to reach target audiences, and how many people expected to be reached over the permit term; and

The public outreach strategy outlined in 4.2.1.1.3 combines effective distribution of materials (previously referenced), media relations, and co-sponsoring and participation in specialty public and technical workshops-seminars and conferences.

The County will continue integration of public outreach with the other storm water program minimum control measures (MCMs 3-6) to create more institutional and community linkages to promote storm water pollution prevention.

More substantive education, in the form of short training courses, live presentations, handbooks, and/or websites with photos of good and bad practices will target those specific groups likely to have significant storm water impacts (commercial, industrial, and institutional entities). If other pollutant sources are found as water quality monitoring efforts continue, strategies and materials will be redirected accordingly.

Please refer to *Appendix B-1* and the Program Timeline for a more detailed account of the outreach strategy milestones and goals.

4.2.1.1.6 A plan to evaluate the success of this minimum control measure.

The Operation Plan Matrix in *Appendix B-1* lists evaluation indicators for individual BMPs and measurable goals. Tools to measure project success are already weaved into existing operating procedures. Benchmark data from methods used in the previous permit cycle helped produce cost estimates and anticipated goals for the 2013-2018 permit period. Quantitatively, employees record the following measurable indicators of success:

- Number of households served through chemical collections
- Geographic area of patrons using the service
- Tons of hazardous material collected
- Tons of illegally-dumped waste collected
- Number of related inquiries and/or complaints
- Website hits
- Number of storm drains marked
- Number of press releases distributed and
- Number of articles published

This data can be correlated to the timing of public service announcements and other marketing strategies to see if the message is being received.

Qualitative progress will be tracked through a variety of casual observations, educator surveys, public conversations, and applied field analyses.

4.2.2 Public Involvement/Participation

See Appendix B-2, MCM 2

4.2.2.1 Permit requirement. The permittee shall implement a public involvement/participation program that complies with State and local public notice requirements, and involve the public in the development and oversight of the SWMP , policies and procedures. As part of the SWMP document, the public involvement/participation program shall include the following information, at a minimum:

The strategy outlined has been selected based on the effectiveness of existing partnerships, successes from the previous permit cycle and available funding. Target audiences listed under 4.2.2.1.2 have been selected based on existing Stream Team water quality data, field reconnaissance observations, storm water complaints received, identified storm water pollutants (litter, sediment, yard and pet waste), and the effectiveness of existing partnerships.

4.2.2.1.1 How the permittee has involved the public in the development and submittal of the application and SWMP document;

County Government continues to obtain public input, participation, and involvement in preparation of this plan and application by engaging and interacting with key dedicated community groups and organizations focused on environmental protection, natural resources preservation, and specific watershed restoration projects. These groups include:

- **St. Charles County Master Steering Plan Committee**
- **Commission on Environmental Quality**
- **Dardenne and Peruque Creek Watershed Alliances**
- **Greenway Network**
- **Those listed under 4.2.1.1.2 through public workshops**
- **Flood Plain Vision Board**

The draft storm water management plan was posted on-line, along with an electronic feedback survey. The results of the survey will be incorporated into this plan.

4.2.2.1.2 The target audiences for the permittee's public involvement program, including a description of the types of ethnic and economic groups engaged. The permittee is encouraged to actively involve all potentially affected stakeholder groups, including commercial and industrial businesses, trade associations, environmental groups, homeowners associations, and educational organizations, among others; and

The County strives to achieve demographic representation and an increased level of community involvement in plan development and implementation. As of 2011, 91.3% of the county's population is white. The county's mix of local strategies listed below (under BMPs) will address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.

Advertising and soliciting help from other local organizations will target specific population sectors, including minority and low-income communities; academic institutions;

neighborhood and community groups; watershed alliances; and business and industry. Specifically, the County will focus on the following audiences:

- **Commission on Environmental Quality;**
- **K-12 Educators;**
- **Lindenwood University faculty and students;**
- **Subdivision Associations (unincorporated areas);**
- **Dardenne and Peruque Creek Watershed Alliances;**
- **Construction site builders, contractors, and developers;**
- **Do-it-yourself retail outlets**
- **Pet owners, pet stores, veterinarians, humane societies**
- **Municipal supervisors in Parks, Highways, Community Development, Environmental Health and Protection, etc.;**
- **Gardening clubs;**
- **Asian and Hispanic residents;**
- **Septic tank maintenance companies;**
- **Property owners near illegal dump sites; and/or**
- **Health Department Program (WIC, Family Planning, etc.).**

4.2.2.1.3 The types of public involvement activities included in the permittee's program. Where appropriate, the permittee must consider the following types of public involvement activities:

To generate interest, notify, and recruit the public for plan development and feedback, the following traditional and alternative modes of soliciting input can be utilized to capture all sectors of the community:

- **Advertising on TV, the county website, in neighborhood newsletters, and at civic organization meetings to announce public meetings;**
- **Postings at the health department, pet adoption center, libraries, etc.;**
- **Door-to-door visits for "Pollution Solution" doorknockers;**
- **Citizens on the Commission on Environmental Quality will discuss various viewpoints and provide input concerning appropriate storm water management policies and BMPs;**
- **On-line Reporting allows citizens and community groups to post complaints or track cleanups and water quality monitoring;**
- **Recycling and Chemical Collection Program participant feedback.**
- **Drinking water testing and volunteer stream water quality monitoring gives students and other citizens firsthand knowledge of local water quality and provides a cost-effective means of collecting water quality data;**
- **Environmental Public Health Specialist, and Parks Education Coordinator conducts presentations, service learning programs, cleanups, encourages public participation, and staffs a kiosk at special events;**
- **Wetland Plantings and Riparian Restoration throughout county parks**
- **Storm drain marking by concerned citizens, scouts, and students;**
- **Community clean-ups around storm drains and along local streams and rivers; and**

- **Illegal Dumping Program allows citizen watch groups to aid local enforcement authorities in the identification of dumpsites and polluters.**

All programs will be conducted in English.

St. Charles County will build on the success of partnerships and resident interest from the previous permit cycle. Partnerships with other governmental entities for involving the public include (at a minimum) the Commission on Environmental Quality, and the cities of St. Peters, O'Fallon, St. Charles, Lake St. Louis, and Wentzville.

County government collaborates with and provides direct funding assistance to several local nongovernmental organizations such as University Extension, Leftovers, etc, and the St. Charles County Soil and Water Conservation District. St. Charles County will continue to seek assistance from these and other local interest groups to notify and recruit volunteers for plan development and feedback.

4.2.2.1.3.1 Citizen representatives on a storm water management panel;

Members of the county's environmental advisory board, the Commission on Environmental Quality, are appointed by the Executive and approved by the Council as residents of the County representing demographic and geographic diversity with interest in the subject matter. This Commission meets quarterly to discuss, research, and advise the County on local issues.

4.2.2.1.3.2 Public hearings;

Meetings conducted by groups, organizations, boards, and commissions identified in this plan are, by intent, open to the public. County government regularly publicizes and holds formal and informal public meetings and has the ability to convene more formal hearings as warranted.

4.2.2.1.3.3 Working with citizen volunteers willing to educate others about the program; and

County government supports and interacts regularly with a cross-section of citizen volunteers in various organizations (EarthForce, University Extension Master Gardeners, Subdivision Association Trustees, etc.) that have developed core groups of informed constituents that are energized in promoting our storm water messages.

4.2.2.1.3.4 Volunteer monitoring or stream/lake clean-up activities.

In addition to monitoring and Mission: Clean Stream, St. Charles County Environmental Health and Protection supports Stream Team and Greenway Network, Inc. activities within multiple watersheds within county.

4.2.2.1.4 The permittee's plan to actively involve the public in the development and implementation of their program; and

Future mechanisms of public feedback through education programs and events are incorporated into Appendix B-2 and the Program Timeline.

Public involvement strategies will continue to be integrated with the other storm water program minimum control measures to create more institutional and community linkages to promote storm water pollution prevention.

As part of our Illicit Discharge Detection and Elimination Program, St. Charles County Environmental Health and Protection operates two drop-off recycling centers, removes illegally dumped waste, and conducts household chemical collections from April through October. Residents from certain sections of the county with a higher incidence of illegal dumping may be involved in plan development, feedback, and evaluation. Public meetings in priority watersheds will educate residents about storm water issues and permit requirements, and provide an opportunity for input regarding possible dumping areas and to determine community needs. In this way, the County might better understand who the target audience is for illegal dumping control while implementing a valuable service for the watershed community.

4.2.2.1.5 The method for evaluating success of this minimum control measure.

Tools to measure project success are already weaved into existing operating procedures. Benchmark data from methods used in the previous permit cycle helped produce cost estimates and anticipated goals for the 2013-2018-permit period. Quantitatively, employees record the following measurable indicators of success:

- Number of related inquiries and/or complaints,
- Number of collection days offered,
- Number of households involved/served,
- Geographic area of patrons using the service,
- Tons of hazardous material collected,
- Tons of illegally-dumped waste collected,
- Educator surveys noting changes in awareness or behavior
- Website hits
- Number of volunteers,
- Number of press releases distributed, and
- Number of articles published, etc.

Qualitative progress will be tracked through observations, stakeholder surveys, public conversations, and applied field analyses.

Please refer to Appendix B-2 for individual BMP measurable goals and evaluation indicators.

4.2.3 Illicit Discharge Detection and Elimination

See Appendix B-3, MCM 3.

4.2.3.1 Permit requirement. The *permittee* shall develop, implement and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200) into the permittee's regulated small MS4. As part of the SWMP document, the permittee's illicit discharge detection and elimination program shall include the development and implementation of, at a minimum;

Three divisions have roles in the County's Illicit Discharge Detection and Elimination (IDDE) Program. The Division of Neighborhood Preservation has primary oversight of IDDE and enforcement of Section 412 of the Unified Development Ordinance (UDO). This division serves as a clearinghouse for tracking and directing all complaints and concerns to the appropriate division. St. Charles County's Division of Environmental Health and Protection operates two drop-off recycling centers, removes illegally dumped waste, and conducts free household chemical collections. The Building Code Enforcement Division oversees private sewage disposal regulations and enforcement.

4.2.3.1.1 A storm sewer map showing the location of all outfalls and the names and location of all receiving waters of the state that receive discharges from those outfalls. The permittee shall describe the sources of information used for the map(s), and how the permittee plans to verify the outfall locations with field surveys. If already completed, the permittee shall describe how the map was developed and how the map will be regularly updated. The permittee shall make the map information available to the department upon request;

Over the last six years, staff engineers have developed a detailed map of all storm water structures that are on record with the county. This data has been transferred to a digital map accessed through the GIS Department. The map has been completed. New structures and sewers are added as projects are completed.

A GIS program will be set up to make the map interactive for inspectors and other involved parties. Inspectors will verify outlet locations in field surveys and have access to a GPS unit to double check and document all structures upon inspection. These inspections will take place on a 5 year time frame as a minimum. May be as frequent as yearly at site of previous concern.

4.2.3.1.2 To the extent allowable under State, or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions. The permittee shall identify the mechanism (ordinance or other regulatory mechanism) the permittee will use to effectively prohibit illicit discharges into the MS4. If the permittee needs to develop this mechanism, describe the permittee's plan and implementation schedule. If the permittee's ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with the permittee's program; and

The Division of Neighborhood Preservation administers and enforces Section 412 of the UDO, which describes illicit discharges and the enforcement process.

In addition, UDO Chapter 240, Solid Waste Management Code of St. Charles County addresses illicit discharges related to solid waste. This chapter is enforced by the Division of Environmental Health and Protection.

4.2.3.1.3 A plan and implementation schedule to detect and address non-storm water discharges, including discharges from illegal dumping and spills, to the permittee's system. The permittee's plan shall include dry weather field screening for non-storm water flows and field tests of selected chemical parameters as indicators of discharge sources. The plan shall also address on-site sewage disposal systems that flow into the permittee's storm drainage system. The permittee's description shall address the following, at a minimum:

As stated earlier, the Division of Neighborhood Preservation has primary oversight of IDDE plan. As part of this plan, all storm water-related complaints will be directed to the Division of Neighborhood Preservation, as the clearinghouse for tracking and directing complaints to the appropriate departments. Unless addressed below, the Division of Neighborhood Preservation will address all illicit discharges as part of the illicit discharge/nuisance ordinance number 07-159.

The Division of Environmental Health and Protection operates two drop-off recycling centers, removes illegally dumped waste, and conducts household chemical collections from April through October. These programs provide an outlet for common pollutants such as auto fluids, appliances, and household chemicals. Citizen inquires, concerns, and complaints regarding the proper storage, collection, recycling and disposal of solid waste are addressed and brought to resolution by administering provisions pursuant to Chapter 240, Solid Waste Management Code of St. Charles County. This includes the permitting of waste processing facilities and solid waste haulers operating within unincorporated St. Charles County. Waste transportation and collection vehicles are inspected annually to ensure that waste collected does not leak or spill.

The ongoing demolition permitting process ensures that demolition waste and special waste resulting from the destruction/removal of any institutional, commercial, public, industrial or residential structure is properly handled, transported, and disposed. Proof of disposal is required to minimize illegal dumping or improper disposal.

The Division of Environmental Health and Protections' illegal dumping program removes roadside debris. Solid waste removal activities are documented to determine trends/patterns and areas most prone to this illegal activity. Routine patrols of county roadways are performed on a regular basis to quickly locate and remove materials that are disposed of improperly before patterns are established. The Division's website, www.scchealth.org, provides a convenient way for citizens to file a complaint regarding improper solid waste practices.

In addition, Christmas tree drop off sites have been established through out St. Charles County to prevent improper disposal and illegal dumping of trees. Material is mulched and/or distributed to citizens upon request.

The Building Code Enforcement Division oversees private sewage disposal regulations and enforcement. Building code provisions Section 302 of the International Plumbing Code outlines the materials detrimental to the sewer system. The Building Code Enforcement Division will continue its efforts to inspect and upgrade private sewage disposal systems at the time of sale and transfer of ownership. Over the past two years approximately 240 private sewage disposal systems were installed and repaired to meet compliance. We hope to continue this pace over the next five years.

All subdivisions with 1 acre or smaller lots that have private sewage disposal systems will be located. The Building Code Enforcement Division will attempt to assist property owners to correct the problems within these subdivisions through the use of a Neighborhood Improvement District Program.

The County plans to inform employees, businesses, and the public about the hazards of illegal discharges through a variety of outreach tools.

As part of our Illicit Discharge Detection and Elimination Program, St. Charles County Environmental Health and Protection operates two drop-off recycling centers, removes illegally dumped waste, and conducts free household chemical collections from April through October. Public meetings in priority watersheds will educate residents about storm water issues and permit requirements, and provide an opportunity for input regarding possible dumping areas and to determine community needs. In this way, the County might better understand who the target audience is for illegal dumping control while implementing a valuable service for the watershed community.

Please see also:

- 4.2.2.1.3 Public Involvement Activities
- 4.2.2.1.3.4 Volunteer Monitoring/Stream Cleanups
- 4.2.3.1.3.5 Illicit Discharge—Informing Activities

It is the policy and practice of St. Charles County Department of Parks and Recreation to keep employees and the public aware of any and all circumstances and occurrences in which there has been a discharge of any materials, weather liquid or gas, which may cause injury or illness to any life forms; human, wildlife, or botanical, regardless of how it occurred.

- 4.2.3.1.3.1 Procedures for locating priority areas which include areas with higher likelihood of illicit connections (e.g., areas with older sanitary sewer lines, for example) or ambient sampling to locate impacted reaches;

A physical survey of known problem areas will be undertaken by staff of the Neighborhood Preservation Division. Also, all complaints will be investigated.

- 4.2.3.1.3.2 Procedures for tracing the source of an illicit discharge, including the specific techniques the permittee will use to detect the location of the source;

Staff is being trained in testing techniques to identify type and source of pollutants.

- 4.2.3.1.3.3 Procedures for removing the source of the illicit discharge;

Violators will be cited and taken to court if they do not remedy problem in timely manner.

- 4.2.3.1.3.4 A plan to ensure through appropriate enforcement procedures, including fines, and actions that the permittee's illicit discharge ordinance (or other regulatory mechanism) is implemented;

After consultation with legal staff, engineering staff, environmental personnel, and administrators and review of the EPA model ordinance an illicit discharge ordinance was drafted that would respond to the needs and complaints of citizens in the county. The ordinance will also provide for proactive enforcement.

Enforcement of the illicit discharge ordinance will be the responsibility of the Division of Neighborhood Preservation Division of the Community Development Department and reports monthly on results. Other departments of the County will assist in enforcement on an as needed basis.

4.2.3.1.3.5 A plan to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. The permittee shall describe how this plan will coordinate with their public education minimum measure and the pollution prevention/good housekeeping minimum measure programs; and

The County will continue integration of public outreach with the other storm water program minimum control measures (MCMs 1 & 6) to create more institutional and community linkages to promote storm water pollution prevention. Many departments/divisions such as Environmental Health and Protection, Parks and Recreation, and Highways, are engaged in informing the public about storm water issues. The Highway and Community Development Departments sponsor and participation in specialty public and technical workshops-seminars and conferences for their employees and external target audiences.

More substantive education, in the form of short training courses, live presentations, handbooks, and/or websites with photos of good and bad practices will target those specific groups likely to have significant storm water impacts (commercial, industrial, and institutional entities). If other pollutant sources are found as water quality monitoring efforts continue, strategies and materials will be redirected accordingly.

This has been addressed in section 4.2.3.1.3.

4.2.3.1.3.6 Procedures for program evaluation and assessment of this minimum control measure.

The Illicit Discharge Detection and Elimination (IDDE) program will be evaluated in the following manner over the course of the five-year permit (see Appendix B-1 - B-3, MCM 1, 2, and 3)

- 1. Informal & formal residential surveys will be conducted to assess changes in resident awareness about sources of illicit discharges and methods to reduce non-point source pollution.**
- 2. The Division of Neighborhood Preservation will track trends in the number and nature of violations over the permit cycle.**
- 3. The Division of Development Review Division or other appointed divisions will check water quality data in areas of concern to note any improvements or further degradation.**

The screening plan includes visual field screenings in all major urban, unincorporated creeks for illicit discharges. The County will conduct wet weather visual field screenings once yearly and dry weather visual field screenings once yearly.

Years 1 and 2 incorporate walking from the mouth of the following major creeks back to municipal boundaries: Big, McCoy, Peruque, and Dardenne. These creeks were selected because there is little documented data available on the water quality. These areas are also downstream from all major (incorporated) development within St. Charles County. Femme Osage was not included for the following reasons: 1) it is more rural; and 2) based on existing water quality data, the primary concern is septic sources (which are being addressed through the Neighborhood Improvement Program as mentioned below under Complaints). Impacted areas will be noted for years 3 and 4.

In years 3 and 4, the County will walk the impacted reaches of the creek (unincorporated

areas) identified in years 1 and 2 as well as the pockets of unincorporated areas that fall in between municipal boundaries.

In addition to these visual field screenings, the Division of Neighborhood Preservation will have primary oversight of the illicit discharge ordinance and will investigate public complaints as mentioned above.

Priority areas will be based on pollutants and quantity found, land use/urbanization, designated uses and related water quality standards, Total Maximum Daily Loads (TMDLs/303d/305b) impaired listing status, and any other available resources for the water body.

Priority areas will be selected based on the age of the systems, the amount of public concern (complaints), the probability of illegal connections, and areas of known discharges or impaired waters.

If a concern is raised during the field screenings listed above, an inspector may elect to screen further up the suspected tributary as needed to detect the possible pollutant source. The County will seek permission and access private property to the extent allowable by law.

Chemical tests performed in the areas of concern will be used to pinpoint pollutant type/quantity. Tests performed will be based on the situation; i.e. in industrial areas, conductivity, oil, etc. tests will be used; in more rural areas with septics, *E. coli* or *Fecal coliform* will be used; in other urban areas chloride, dissolved oxygen, and/or turbidity may be used.

Once the illicit discharge is reported a detailed field survey with testing will take place working upstream until the source is located.

The County will work with the source of the illicit discharge to remedy the situation. The discharge shall be removed by the party responsible for the violation at the violator's expense. The violator will submit the proposed removal process to the County for approval. The process will be monitored by the County for proper methodology. Should the source of the illicit discharge refuse to cooperate, penalty provisions are included in the illicit discharge ordinance. The County will seek permission and access private property to the extent allowable by law.

As in the last five year permit, the Waste Water Systems Inspector of the Building Code Enforcement Division will handle septic-related complaints following Section 500.080 of the St. Charles County Code. These ordinances require that private sewage disposal systems be inspected at the time of sale for existing homes; inspectors will be licensed and bonded by the division. If systems do not meet current code, the seller is required to bring it up to code.

Environmental Health and Protections' illegal dumping program removes roadside debris using one employee and lightening loader truck. Routine patrols of county roadways are performed on a regular basis to quickly locate and remove materials that are disposed of improperly before patterns are established.

Should the source of a violation not be identified, the County will remediate and curtail the violation taking into account cost and manpower requirements.

Success can be judged through the following types of positive behavior or physical changes over the five-year period:

- 1. An increase in resident awareness about potential sources of illicit discharges and methods to reduce their introduction into the rivers, streams, and lakes.**
- 2. An increase in public/internal complaints or concerns after outreach programs or strategies were conducted.**
- 3. A decrease in the number of violations over the five year permit cycle.**
- 4. An improvement to the water quality of areas of concern.**
- 5. Track number of illegal dumping complaints received/resolved.**

4.2.3.1.4

Address the following categories of non-storm water discharges or flows (i.e., illicit discharges) only if the permittee identifies them as significant contributors of pollutants to the permittee's regulated small MS4: landscape irrigation, rising ground waters, uncontaminated ground water infiltration (as defined in 10 CSR 20-6.200), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and street wash water (discharges or flows from emergency fire fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are significant sources of pollutants to waters of the state).

The listed non-storm water discharges are not significant contributors of pollutants.

An ordinance has been approved by the St. Charles County Council for this mechanism. Fines and remediation recovery are included in the ordinance. Response procedures to the illicit discharge are included as well. This is in place at the start of the 2013-2018 permit cycle.

Chapter 422 of the St. Charles County Code prohibits illicit discharges into unincorporated municipal separate storm sewer (MS4). This ordinance was chosen based on model ordinance language available and for municipal continuity. Regulatory language includes fines and remediation recovery. Please refer to Appendix D for relevant sections of this ordinance.

Chapter 240 of the St. Charles County Code is the legal authority for solid waste management and illegal dumping activities in unincorporated St. Charles County and in municipalities that contract with the County to enforce the code. Chapter 240 is available at www.scchealth.org under "Solid Waste Regulations."

As in the last five year permit, the Waste Water Systems Inspector of the Building Code Enforcement Division will handle septic-related complaints following Section 500.080 of the St. Charles County Code. These ordinances require that private sewage disposal systems be inspected at the time of sale for existing homes; inspectors will be licensed and bonded by the division. If systems do not meet current code, the seller is required to bring it up to code.

4.2.3.1.5

The permittee may also develop a list of other similar occasional incidental non-storm water discharges (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit

discharges. These non-storm water discharges shall not be reasonably expected (based on information available to the permittees) to be significant sources of pollutants to the MS4, because of either the nature of the discharges or conditions the permittee has established for allowing these discharges to the permittee's MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to sensitive waterbodies, BMPs on the wash water, etc.). The permittee shall document in their SWMP any local controls or conditions placed on the discharges. The permittee shall include a provision prohibiting any individual non-storm water discharge that is determined to be contributing significant amounts of pollutants to the permittee's MS4.

The listed non-storm water discharges are not significant contributors of pollutants.

4.2.3.1.6 The permittee should inventory, inspect and have enforcement authority for industries and commercial enterprises within their boundary that may contribute pollutants via storm water to the MS4.

4.2.4 Construction Site Storm Water Runoff Control

See Appendix B-4, MCM 4

4.2.4.1 Permit requirement. The permittee shall develop, implement, and enforce a program to reduce pollutants in any storm water runoff to their regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre shall be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. As part of the SWMP, the permittee's construction site storm water runoff control program shall include the development and implementation of, at a minimum:

St. Charles County Government currently regulates land disturbance activities affecting 5,000 sq. ft. or more for development sites under Chapter 412 of the Unified Development Ordinance (UDO) and under Section 60 of the St. Charles County Design Criteria for the Preparation of Improvement Plans (Design Criteria). The program requires plan submittal, review, and approval, performance guaranty submittal, pre-construction meetings, permit issuance, site inspection and reporting, enforcement mechanisms, final site stabilization, and a procedure for performance guaranty release and permit closure.

4.2.4.1.1 An ordinance or other regulatory mechanism:

Chapter 412 of the Unified Development Ordinance and Section 60 of the St. Charles County Design Criteria for the Preparation of Improvement Plans are the current regulatory mechanisms for this program.

4.2.4.1.1.1 To require operators to implement erosion and sediment control BMPs at construction sites;

Operators must follow the procedures and regulations required in Sections 412.010 – 412.145 for implementation of erosion sediment control plans. Contractors are required to follow approved Storm Water Pollution Protection Plan's (SWPPPs) that have been reviewed by the Development Review staff. All involved parties are required to attend a pre-construction meeting at which the BMPs are reviewed and to inspect and report the status of their erosion and sediment controls. This procedure will continue as prescribed.

4.2.4.1.1.2 To include sanctions to ensure compliance, to the extent allowable under State or local law; and

Performance standards under UDO Article IV are currently being revised to meet the revised minimum standards required by MDNR permits MO-RA and MO-R100. UDO Sections 412.080 – 412.145 regulate sanctions and compliance with the ordinance.

4.2.4.1.1.3 If the permittee needs to develop this mechanism, the permittee shall describe the plan and scheduled implementation. If the permittee's ordinance or regulatory mechanism is already developed, the permittee shall include a copy of the relevant sections with the permittee's SWMP.

UDO Sections 412.050.A, 412.120.A, 412.160, 412.190.A, and 412.190.B are currently being revised to meet the revised minimum standards required by MDNR permits MO-RA and MO-R100. Implementation of these ordinance changes is expected by June, 2013. Copies of the current ordinance and the proposed ordinance revisions are enclosed.

4.2.4.1.2 Requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste;

Standard construction notes addressing these issues are required on the plans and reviewed during the plan approval process. During pre-construction meetings, hazardous materials are reviewed and storage facilities are discussed. Wash-out areas, porta-potties, litter disposal, and discarded building materials sites will be required and reviewed by the Erosion and Sediment Control Inspector. These items are part of the pre-construction meeting agenda and inspection checklist. The county will review the need to draft additional ordinance requirements during its comprehensive review of the UDO and Design Criteria in 2013-2014.

4.2.4.1.3 Procedures for the permittee to consider and review all pre-construction site plans for potential water quality impacts.

All Erosion Sediment Control plans/SWPPPs must be designed and are reviewed by Development Review Staff per the requirements of UDO Section 412.060 and Section 60 of the Design Criteria. Checklists and procedures are in place for such plan review. This review includes the review of the erosion and sediment controls recommended for the site, the impact of storm water on the site, as well as its impact off of the construction site.

4.2.4.1.4 Procedures for the permittee to receive and consider information submitted by the public, including coordination with the permittee's public education program;

Public hearings are required for re-zonings, conditional uses, and subdividing properties. Public comment is allowed during these hearings. Public comment is accepted and considered during the plan review process. Public complaints are received by the Erosion Control Inspector. The complaints are inspected as they are received. Determinations of violations are made and then the contractor is given a notice to correct, if necessary. The site is reinspected to ensure compliance. This procedure will continue as prescribed.

4.2.4.1.5 Procedures for the permittee to inspect sites and enforce control measures, including prioritization of site inspections;

UDO Sections 412.110 – 412.140 regulate procedures for inspection and enforcement. These include requirements of an operator before construction startup (including a preconstruction conference), procedures for plan modifications during construction, procedures for inspections and reporting by both the operator and the county, and procedures for addressing violations, corrections, and enforcement. Inspections are performed on every permitted site within St. Charles County by both county inspectors and the site operator. County personnel inspect sites periodically, after a substantial rain event, after any notice to correct, and to address citizen complaints. Sites are prioritized for county inspection by their proximity to a natural watercourse or sensitive environmental feature, the size of the project, the topography of the land, and the past performance of the operator. Operators are currently required to inspect their sites once per week and no later than two days after a substantial rain event and to report this documentation to the county. The weekly review of the operator's self-inspections will help to ensure code compliance. The county makes additional inspections as necessary to ensure the validity of the operators' filed reports and to confirm the correction of any reported deficiencies.

Responsible parties are required to post a Performance Guarantee with the County to ensure that all BMPs are working, that the site is protected against sediment runoff, and that the site is permanently stabilized upon completion of development. Procedures for enforcement are set out in UDO Section 412.140 and include notices to correct, notices of violation, stop work orders, fines, forfeiture of performance guarantees, and injunctive relief. An ordinance also was established that allows the county to write municipal tickets for certain violations of this section of the UDO.

4.2.4.1.6 A plan to ensure compliance with the permittee's erosion and sediment control regulatory mechanism, including the sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain sanctions will be used. Possible sanctions include non-monetary penalties (such as stop work orders), fines, bonding requirements, and/or permit denials for non-compliance; and

The Development Review Division measures for compliance include inspections, notice to correct, notice of violation, stop work orders, issuance of municipal tickets, fines, injunctive relief, and use of and forfeiture of the performance guarantee. Inspections performed by the Erosion and Sediment Control Inspector provide enforcement of the BMPs employed on each site. If the BMPs are not being followed or the BMPs are not working, a notice to correct is issued. This Notice to Correct requires a 7 day compliance period. If compliance is not met within the allocated time, a Stop Work Order and a notice of violation are issued. At this point, a municipal ticket or a notice of fines can be issued to the violator. If a ticket is written, the matter is resolved in municipal court. If the violation is adjudicated, fines not to exceed one thousand dollars (\$1000.00) per violation per day could be levied by the courts and injunctive relief can be obtained for those found guilty of a misdemeanor. If the violation is not resolved within a reasonable time the monies provided by the performance guarantee can be utilized to correct the violation and return the site to compliance. Prior to resumption of work, the operator must post a new performance guaranty to cover the costs of the remaining sediment and erosion control BMPs.

Public concerns will be addressed by the Erosion and Sediment Control Inspector. These concerns will be investigated as they arise by the inspector. After the investigation is performed, the parties involved will be notified of any violations, and a notice to correct will be issued. The individual that raised the concerns will be notified of the results of the

inspection.

4.2.4.1.7 A description of how the permittee will evaluate the success of this minimum control measure.

All inspections are a measurable goal. Identification of deficiencies, correction of deficiencies, and the protection of the site can be tracked by reviewing all inspections performed. Tracking of public concerns will facilitate code compliance of the site. The goals are to make sure that the water quality does not vary during construction activities and meet the minimum standards set forth by the county and the state, contractors are learning the best use of BMPs approved by St. Charles County, and to keep public concerns to a minimum. The number of inspections, number of notices to correct, number of violations, and number of construction site inspections due to complaints will be reported annually.

A sampling program is being established and will be conducted throughout the permit period to determine total settleable solids and turbidity in construction site effluent and receiving streams before, during, and after construction. The analysis will be used to determine the effectiveness of current BMP design criteria.

All seminars conducted by the county for industry professionals, the development community, and other stakeholders shall be documented. The Development Review Division will continually look for other opportunities to partner with organizations and industry professionals to create educational opportunities beyond the annual seminar.

The status of all revisions proposed to the current ordinance, such as meeting new MO-RA & MO-R100 permit requirements, drafting additional construction waste & good housekeeping standards, and further penalties for stop-work orders will be reported through the date of adoption.

4.2.5 Post-Construction Storm Water Management in New Development and Redevelopment

See Appendix B-5, MCM 5.

4.2.5.1 Permit requirement. The permittee shall develop, implement, and enforce a program to address the quality of long-term storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the permittee's regulated small MS4. The permittee's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts by reasonably mimicking pre-construction runoff conditions on all affected new development projects and by effectively utilizing water quality strategies and technologies on all affected redevelopment projects, to the maximum extent practicable. The permittee shall assess site characteristics at the beginning of the construction design phase to ensure adequate planning for storm water program compliance. The purpose for this approach is to arrive at designs and practices that provide for most effective water quality treatment through infiltration, flow rates and similar site-design opportunities. As part of the SWMP document, the post-construction runoff control program shall include the following information, at a minimum:

- **The County has and will continue to use the *Unified Development Ordinance (UDO)* to regulate and enforce post-construction runoff programs.**
 - **Chapter 405, Zoning Regulations, regulates the protection of natural**

watercourses/riparian buffers, wastewater disposal (regulating the discharge of package treatment plants using MBR technology or equal), Floodway Fringe and Floodway Overlay Districts, parking and commercial site development, zoning requirements to reduce impervious area, preserve open space, and disconnect impervious areas within Planned Unit Developments and the High Tech District, and a Cluster Development ordinance that permits flexibility in lot requirements and dwelling types allowing for low impact development.

- Chapter 410, Subdivision Regulations, regulates tree preservation, residential lot design and subdivision improvement standards, and storm water management (conveyance, water quality, and detention).
- Section 420.020 regulates inspections for the construction, maintenance, and repair of detention basins and storm water management facilities and provides for enforcement actions.
- The county's Master Plan, "Envision 2020" is used as a guide for development and proposes appropriate densities and land uses throughout the unincorporated county including the consideration of sensitive environmental areas of the county.
- Section 50 of St. Charles County's "Design Criteria for the Preparation of Improvement Plans" (Design Criteria) is used to regulate design standards for storm water runoff for all development and redevelopment regulated by St. Charles County.
- The county's GIS map contains jurisdictional boundaries, storm sewer facilities, inlet, pipe, and outfall locations, flood plain and floodway boundaries, wetland inventories, and other zoning, environmental, and engineering related data used for storm water management.
- All new standards are regularly monitored and evaluated based on selected measurable goals to determine their effectiveness and the standards and BMPs may be adjusted accordingly to achieve the program goals.

4.2.5.1.1

A strategy to minimize water quality impacts, by reasonably mimicking pre-construction runoff conditions in affected new development and incorporating water quality protection in affected redevelopment projects to the maximum extent practicable, and include a combination of structural and/or non-structural BMPs appropriate for the permittee's community;

- **Natural Watercourse Riparian Buffer (UDO Sections 405.5021-405.5028) – Inspected 86 of 92 segments of watercourses and buffers preserved in the county since passage of the ordinance in 2002. Currently analyzing inspection results. Review current ordinance to determine whether revisions are needed to address any concerns arising from inspection analysis. Review whether to add design requirements for the modification of watercourse channels and banks allowed by the ordinance. All future preserved watercourses and buffers will be initially inspected prior to development of any site and they will be re-inspected within two years after development of the site. All other existing vegetative buffers preserved under the current ordinance will be re-inspected on a five to ten year frequency. *Responsibility for this lies with Planning & Zoning and Development Review Divisions.***
- **Tree Preservation Ordinance (UDO Section 410.145) – Use current ordinance (requires preservation based on a percentage of existing trees in residential developments). *Responsibility for this lies with Planning & Zoning Division.***
- **Parking/Driveway Requirements Commercial Sites (UDO Sections 405.440-405.465) – New setback created in 2006 increasing parking/driveway setbacks and reducing**

impervious area. Island, median, and landscaping requirements have been added to parking regulations for commercial sites. Review parking requirements and study the use of porous pavement or pavers for overflow parking in excess of county requirements. *Responsibility for this lies with Planning & Zoning and Development Review Divisions.*

- **Floodplain/Floodway Overlay District (UDO Sections 405.345-405.390)** – Use current ordinance (restricts land use in flood plain/floodway). *Responsibility for this lies with Flood Plain Manager of the Planning & Zoning Division.*
- **Wastewater Disposal Regulations (UDO Section 405.500)** – Use current ordinance (requires the use of package treatment plants using MBR technology or equal for developments that have no connection to large regional wastewater treatment plants). *Responsibility for this lies with Building and Planning & Zoning Divisions.*
- **Cluster Development Ordinance (UDO Section 405.090.I)** – Use current ordinance adopted in 2009, which allows for flexibility in lot requirements and dwelling types, encourages creative and flexible site design that is sensitive to natural features, protects environmentally sensitive areas and preserves open space and natural features, promotes cost savings through the reduction of needed infrastructure, and protects health, safety, and welfare through a reduction of non-point source runoff pollution, air quality contamination, and urban heat islands. *Responsibility for this lies with Planning & Zoning Division.*
- **Other Zoning & Development Regulations (Sections 405 & 410 of the *Unified Development Ordinance*)** – UDO Section 405.165 requires the integration of common open space and restricts the amount of impervious surface allowed within the High Tech zoning district. UDO Section 405.200 for Planned Unit Developments requires preservation of a percentage of open space, prohibits development on natural, steep slopes, and offers incentives to create additional open space, park & recreational areas, and landscaping. Article XII Wellhead Protection Overlay District was added to the UDO in April of 2011 to protect the quality of groundwater serving public alluvial wells by regulating and restricting land uses within boundary perimeters surrounding wellheads of such wells. UDO Chapter 410, Article IV contains regulations for subdivision & residential design standards and improvements. These sections in 405 and 410 will be reviewed this permit period to consider allowing more flexibility in design standards to further facilitate low impact design. *Responsibility for this lies with Planning & Zoning and Development Review Divisions.*
- **Water Quality Regulations & Design Standards** – UDO Section 410.410 is currently being revised to include regulations requiring storm water quality evaluation and design to treat the “first flush” (1.14”) of storm water runoff for development & redevelopment sites. We expect to have a completed draft by April, 2013 and adoption of an ordinance by July, 2013. The ordinance will allow the use of approved design criteria from other agencies until specific design criteria are established during this permit period. The county’s “Design Criteria for the Preparation of Improvement Plans” regulates standards for the design and construction of storm water facilities. A section is being proposed relating to water quality standards and other portions of the “Design Criteria” may be reviewed for modification to allow for new methods of storm water treatment. The criteria will be flexible and will still allow the use of approved BMPs/designs from other approved agencies as well as encouraging innovative designs that incorporate the use of the natural resources of the site. Any new BMPs may be periodically monitored to determine their

effectiveness and the standards modified as necessary. *Responsibility for this lies with Development Review Division.*

- **Channel Protection & Flood Control Storm Water Detention (UDO Section 410.410 and Design Criteria Section 50.80) –** Currently require storm water detention for the 2 yr., 24 hour event (Channel Protection) and the 10 yr., 24 hour event (Flood Control). One or two year, 24 hour extended detention will be reviewed as alternatives to the current channel protection standard. Results from our inspections of preserved natural watercourses are being used to help determine the conditions of our stream channels and adequacy of our channel erosion detention standard. UDO Section 410.410 is currently being revised to require that the post-construction runoff from these design storms mimic the pre-construction hydrology. Section 50 of the Design Criteria will be reviewed and revised to eliminate the use of concrete swales in dry basins and to incorporate other revisions that would allow for more infiltration and better storm water management. The Development Review Division has been in discussion with the US Army Corps of Engineers regarding the creation and adoption of post-developed runoff standards for the Dardenne Creek watershed using a comprehensive watershed study completed by the Army Corps of Engineers in January, 2007. We will continue to explore this opportunity during this permit period. The Development Review Division may also review the possibility of partnering with the Corps, USGS, and other municipalities to study other major watersheds in the county during this permit period. *Responsibility for this lies with Development Review Division.*
- **Detention Facility & Water Quality BMP Inspection (UDO Section 420.020) –** Section 420.020 of the *Unified Development Ordinance* regulates and requires inspection and enforcement for maintenance or repair of detention facilities in the unincorporated county on a 1 – 5 year basis. The ordinance also allows the Development Review Division the ability to inspect and enforce the maintenance and repair of other storm water management facilities (WQ BMPs). The Development Review Division will develop and institute standards for water quality BMP inspection during this permit period. *Responsibility for this lies with Development Review Division.*
- **Parks & Recreation –** The County is still purchasing property for its Parks program. This provides the unique opportunity for the preservation of open space, storm water management, and recreation. The Community Development Department shall continue to coordinate the exploration and installation of regional storm water detention and storm water quality management facilities within county parks with the Parks Department during the planning and design phases of development. *Responsibility for this lies with Parks & Recreation Department and Development Review Division.*
- **Partner with Private/Public Groups –** Grants, tax receipts, donations, and organizations are available to support clean water initiatives, preserve open space, create greenways, linear parks, and trailways through private and volunteer efforts. The County will continue to advance our partnerships with municipalities and/or non-profits such as: Greenway Network, St. Charles Soil and Water Conservation District, Great Rivers Greenway District, etc. *Responsibility for this lies with Development Review.*

4.2.5.1.2 An ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, or local law. If the permittee needs to develop a mechanism, the permittee shall describe the plan and a schedule for implementation. If the permittee's ordinance or regulatory mechanism is already developed, the

permittee shall include a copy of the relevant sections with the SWMP document;

Ordinances regulating development standards discussed in 4.2.5.1.1 are found in *Unified Development Ordinance* Chapters 405, 410, and 420. Design guidelines for structural BMPs are regulated under St. Charles County's "Design Criteria for the Preparation of Improvement Plans." The specific sections of these documents are identified in 4.2.5.1.1. Due to size these documents are available upon request, and are available on the county's website (www.sccmo.org).

4.2.5.1.3 A plan to ensure adequate long-term operation and maintenance of selected BMPs, including types of agreements between the permittee and other parties such as the post-development landowners or regional authorities;

- **All infrastructure and structural BMPs are inspected by either the Community Development Department or the Highway Department as they are being constructed. Construction is regulated by St. Charles County's "Standard Specifications for Highway Construction" and Metropolitan St. Louis Sewer District's (MSD's) "Standard Construction Specifications for Sewers and Drainage Facilities" as required in the *Unified Development Ordinance*. Performance guarantees are required to be established with the County for the cost of the proposed construction. The Highway Department maintains all storm sewers dedicated to public use and all drainage ditches, storm sewer culverts and bridges located in public rights-of-way/easements. The Highway Department has a program to provide routine inspection of its storm water facilities.**
- **Section 420.020 of the *Unified Development Ordinance* was created in 2006 and requires the inspection of all storm water detention facilities within the unincorporated county on a one to five year interval. This section also allows for county inspection and enforcement for maintenance/repair of water quality BMPs as well.**
- **An ordinance was established in 2011 that created a maintenance agreement document for private property owners that preserves storm water maintenance facilities, specifies maintenance requirements and schedules for such facilities by owner, and allows for county inspection of such facilities. By policy, the county has been requiring these agreements to be executed and recorded where storm water management facilities have been incorporated into commercial or private site development. For subdivision development, the county has been requiring similar language to be written into the subdivision trust indentures and restrictions, and platting easements that preserve the facilities and allow access for maintenance by the homeowners and inspection by the county. During this permit period, the county will revise the UDO to require these maintenance agreements, easements, and deed restrictions for all newly proposed storm water management facilities.**
- **The County has inspected and inventoried our natural watercourse vegetated buffers that have been preserved since the ordinance was created in 2002 and will re-inspect these on five to ten year intervals. The county will inspect all newly protected watercourses and their buffers one to two years after development of the site to ensure the proper preservation or establishment. Enforcement measures are also in place to ensure the preservation, maintenance, and replacement of natural watercourse areas and tree preservation areas.**

4.2.5.1.4 Specific priority areas for this program; and

In order of priority:

- **Revise UDO Section 410.410 to include regulations requiring storm water quality evaluation and design to treat the “first flush” (1.14”) of storm water runoff for development & redevelopment sites and to require that the post-construction runoff from these design storms mimic the pre-construction hydrology. We expect to have a completed draft by April, 2013 and adoption of an ordinance by July, 2013. *Responsibility for this lies with Development Review Division.***
- **Revise UDO Sections 405.525 and Chapter 410 to require maintenance agreements to be executed and recorded where storm water management facilities have been incorporated into commercial or private site development and to require similar language to be written into the subdivision trust indentures and restrictions, and require the platting of easements that preserve the facilities and allow access for maintenance by the homeowners and inspection by the county for subdivisions. *Responsibility for this lies with Development Review Division.***
- **Currently analyzing inspection results of 86 of 92 segments of watercourses and buffers preserved in the county since passage of the ordinance in 2002. Determine whether revisions are needed to the ordinance to address any concerns arising from the inspection analysis. Review whether to add design requirements for the modification of watercourse channels and banks allowed by the ordinance. *Responsibility for this lies with Development Review Division.***
- **Began establishing procedures and a sampling inspection program to evaluate the effectiveness of storm water management facilities in 2012. Conduct sampling of local watercourses and outfalls before and after development of sites to determine the effectiveness of water quality BMPs. Use as base for future ongoing maintenance inspections to determine the effectiveness of water quality BMPs over time, and to recommend any needed changes to the design criteria. *Responsibility for this lies with Development Review.***
- **Review and revise Design Criteria Section 50.80 to eliminate the use of concrete swales in dry basins and to incorporate other revisions that would allow for more infiltration and better storm water management. *Responsibility for this lies with Development Review Division.***
- **Revise UDO Chapters 405 and 410 to include standards for storm water quality and detention required for redevelopment projects.**
- **Review the current Channel Protection standard in Design Criteria Section 50. Consider extended detention for the current 2 yr., 24 hr. design requirement and consider 1 yr., 24 hr. extended detention in place of the current standard. *Responsibility for this lies with Development Review Division.***
- **Complete a comprehensive review of UDO Sections 405 and 410, zoning and development regulations, and the “Design Criteria” manual to search for additional opportunities to reduce and disconnect impervious area and provide for better storm water management. *Responsibility for this lies with Development Review and Planning & Zoning Divisions.***
- **Update the Design Criteria to complete the creation and implementation of water quality BMP design standards *Responsibility for this lies with Development Review Division.***
- **Encourage the use of Cluster Development zoning.**

- **Conduct inspections of newly preserved natural watercourses and vegetated buffers within 1-2 years of site development. Conduct inspections of all preserved watercourses and buffers on a 5-10 year cycle.**
- **Have protected natural watercourses and their vegetated buffers placed onto the county's GIS map.**
- **Continue to work with industry professionals, county development projects, and developers to try to encourage the use of porous type pavements on projects. Develop design standards. Conduct seminars and continue to provide education on use of innovative technologies effecting water quality. *Responsibility for this lies with Development Review Division, Parks, Construction Management, and Facilities Management.***
- **Continue to coordinate and develop partnerships with public/private organizations, municipalities, and funding sources that are available to support clean water initiatives, preserve open space, and create greenways, linear parks, and trailways through public, private, and volunteer efforts, 2008-2013. *Responsibility for this lies with Development Review Division.***
- **Continue to discuss a methodology with the US Army Corps of Engineers to establish appropriate post-development runoff standards for the Dardenne Creek watershed using the January, 2007 comprehensive watershed study completed by the Army Corps of Engineers. Review the possibility of partnering with the Corps, USGS, and other municipalities to study other major watersheds in the county, 2008-2013 to establish hydrologic and water quality standards on watershed basis. *Responsibility for this lies with Development Review Division.***

4.2.5.1.5 Any non-structural BMPs in the permittee's program, including, as appropriate:

4.2.5.1.5.1 Policies and ordinances that provide requirements and standards to direct growth to identified areas, protect sensitive areas such as wetlands and riparian areas, maintain and/or increase open space (including a dedicated funding source for open space acquisition), provide buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation;

- **The County's Master Plan, "Envision 2020" is used as a guide for development and proposes appropriate densities and land uses throughout the unincorporated county including the consideration of sensitive environmental areas of the county. *Responsibility for this lies with Planning & Zoning Division.***
- **Cluster Development Zoning (UDO Section 405.090.I) – The current ordinance, adopted in 2009, allows for flexibility in lot requirements and dwelling types, encourages creative and flexible site design that is sensitive to natural features, protects environmentally sensitive areas and preserves open space and natural features, promotes cost savings through the reduction of needed infrastructure, and protects health, safety, and welfare through a reduction of non-point source runoff pollution, air quality contamination, and urban heat islands.**
- **The regulations under Section 405 of the *Unified Development Ordinance*, for Planned Unit Development, require the preservation of a percentage of open space, prohibit development on natural, steep slopes, and offer incentives to create additional open space, park & recreational areas, and landscaping. *Responsibility for this lies with Planning & Zoning Division.***

- The “Regulations for the Protection of Natural Watercourses” and “Tree Preservation” sections of the *Unified Development Ordinance* require buffer/preservation areas for natural watercourses and tree preservation in residential development. These ordinances preserve open space, protect sensitive riparian areas, reduce impervious area, and increase evapotranspiration, infiltration, and filtration of storm water runoff. *Responsibility for this lies with Planning & Zoning and Development Review Divisions.*
- The Floodplain/Floodway Overlay District of the *Unified Development Ordinance* regulates and restricts land use in flood plain/floodway areas. *Responsibility for this lies with Planning & Zoning Division.*
- UDO Chapter 405 further regulates zoning, commercial site development, and parking and loading. UDO Chapter 410 further regulates residential development including street and storm water improvements.
- Under sections 410 and 412 of the *Unified Development Ordinance*, developers are required to abide by and obtain permits from other jurisdictional authorities such as Corps of Engineers (wetland/404 issues), MDNR (water quality 401/land disturbance), local Flood Plain Development Permit (including “no-rise” certification), etc. before county approval of plans, permits, and construction. *Responsibility for this lies with Development Review and Planning & Zoning Divisions.*
- The Parks Department and other county entities and affiliates work to acquire land and maintain open space. Tax funds have been provided to the Parks Department and region wide for development of parks/linear parks/trails/open spaces including the “Dardenne Creek Greenway Conceptual Plan.” *Responsibility for this lies with Development Review and Environmental Services Divisions and Parks & Recreation Department.*
- The county has and will continue to coordinate and develop partnerships with public/private organizations, municipalities, and funding sources that are available to support clean water initiatives, preserve open space, and create greenways, linear parks, and trailways through public, private, and volunteer efforts. *Responsibility for this lies with Development Review and Environmental Services Divisions.*

4.2.5.1.5.2 Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure, and redevelopment of Brownfield sites or grayfields which may include abandoned malls or similar properties;

For the most part, the county is still growing from its rural beginnings and infill development and redevelopment are a very small percentage of the type of development that is occurring in the unincorporated county. This type of development is much more common in the incorporated portions of the county. The County does not have any ordinances precluding infill development in higher density urban areas and areas with storm sewer infrastructure. Current ordinances regulating development seem effective in regulating redevelopment. Storm water management and detention regulations allow for flexible storm water management options for sites with smaller differential runoff conditions. The county will consider establishing alternatives for storm water treatment on infill and redevelopment sites during its review of UDO Section 410.410 as stated in 4.2.5.1.4 above.

4.2.5.1.5.3 Education programs for developers and the public about project designs that minimize water quality impacts; and

- The County has been conducting and will continue to conduct seminars for developers, engineers, intra-county agencies and departments, and the home-building community using our staff and industry professionals. The County has been holding annual seminars to discuss county ordinances, permits, procedures, and program revisions. The County also holds special sessions concerning specific aspects of water quality, such as the seminar on porous pavement technology using industry professionals. The County meets with subdivision associations and subdivision trustees to speak and distribute educational material on water quality, erosion, dumping, stream side maintenance, and detention facility maintenance. The County expects to hold annual and special seminars to help educate our citizens and the development community.
- The County participates and partners with other organizations, such as St. Charles Soil and Water Conservation District, NRCS, and University Extension regarding education programs and seminars for developers, contractors, engineers, inspectors, and the general public regarding water quality issues, including field trips to construction sites and participation in annual student environmental competitions.
- The county hosts an annual Earth Day program that allows the opportunity to learn about county environmental programs as well as programs from other regional organizations and agencies.

4.2.5.1.5.4

Other measures such as minimization of the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, site designs that provide for integration of a variety of infiltration practices and source control measures often thought of as good housekeeping, preventive maintenance and spill prevention.

- UDO Section 405.090.I, adopted in 2009, allows for flexibility in lot requirements and dwelling types, encourages creative and flexible site design that is sensitive to natural features, protects environmentally sensitive areas and preserves open space and natural features, promotes cost savings through the reduction of needed infrastructure, and protects health, safety, and welfare through a reduction of non-point source runoff pollution, air quality contamination, and urban heat islands.
- The county is currently reviewing ordinances for house drain connections (sump pumps, roof drains, etc.) regarding their discharge directly to a street, storm sewer, or adjacent property. The county is considering setbacks to these discharges so they cannot be directly discharged onto adjacent properties, public streets, or storm sewers.
- Revisions to zoning requirements have been made to Section 405 of the *Unified Development Ordinance* that have increased setbacks for parking and driveways and added island/median and landscaping requirements on commercial sites. Further review of parking requirements and the use of porous pavements could be integrated into this ordinance. *Responsibility for this lies with Planning & Zoning and Development Review Divisions.*
- Revisions have been made to the *Unified Development Ordinance* to reduce right-of-way requirements and allow for steeper street grades to help create the need to grade/disturb less of the site and to allow for the preservation of natural, open space. Sections 405 and 410, Zoning & Development Regulations, of the *Unified Development Ordinance* and "Design Criteria" may be reviewed for possible changes that create more flexibility in design standards to allow for more low impact development.

Responsibility for this lies with Development Review, Planning & Zoning, Building Code Enforcement Divisions and Highway Department.

- Section 405 of the *Unified Development Ordinance* mandates maximum impervious areas in High Tech Corridor district. *Responsibility for this lies with Planning & Zoning Division.*
- Spill prevention control and countermeasure plans are required for certain developments and the use and storage of non-sediment pollutants is regulated under Section 412.110 in the *Unified Development Ordinance*. *Responsibility for this lies with Development Review Division and Division of Environmental Health.*
- Source control measures are regulated in the flood plain in UDO Section 405.350 including flood-proofing of structures, securing & storage of material and equipment, elevation of sanitary facilities, etc. *Responsibility for this lies with Planning & Zoning Division.*
- The Highway Department maintains all publicly dedicated storm sewers. They conduct an annual inspection of all their storm sewer systems. Storm sewer systems are inventoried on the County GIS map. *Responsibility for this lies with Highway Department.*

4.2.5.1.6 Any structural BMPs in the permittee's program, including, as appropriate:

4.2.5.1.6.1 Practices that provide infiltration, evapotranspiration or re-use such as grassed swales, bioretention cells, cisterns and green roofs; and

- Over 30 rain gardens, bio-swales, bio-retention facilities, engineered wetlands, sand filters, etc. have been either been designed, constructed, or preserved for development during the last permit period. The county currently uses standards from the Georgia Stormwater Manual, St. Louis MSD, or any other standard applicable to the geologic and hydrologic conditions of our region as approved by the county. *Responsibility for this lies with Development Review Division.*
- The Design Criteria, Section 50 will be revised to eliminate the use of concrete swales in dry basins and to incorporate other revisions that would allow for more infiltration and better storm water retention. *Responsibility for this lies with Development Review Division.*
- BMP design standards will be incorporated into the Design Criteria; however, the county still plans on being flexible in allowing the use of other acceptable design standards and site specific, innovative design that incorporates the materials and natural resources of the proposed development.

4.2.5.1.6.2 Redevelopment practices such as planter boxes, street retrofits, parking-lot infiltration and green roofs.

For the most part, the county is still growing from its rural beginnings and infill development and redevelopment are a very small percentage of the type of development that is occurring in the unincorporated county. This type of development is much more common in the incorporated portions of the county. Current ordinances regulating development seem effective in regulating redevelopment. Storm water management and detention regulations allow for flexible storm water management options for sites with smaller differential runoff conditions. The county will consider establishing alternatives for storm water treatment on redevelopment sites during its review of UDO Section

410.410 as stated in 4.2.5.1.4 above.

The Development Review Division continues to work with industry professionals to develop projects and design standards for porous pavements. The Development Review Division continues to work with developers to try to encourage the use of porous type pavements on projects. *Responsibility for this lies with Development Review Division.*

4.2.5.1.7 How the permittee will evaluate the success of this minimum measure.

See Evaluation Indicator on Operating Plan Matrix MCM 5.

- **Natural Watercourse Riparian Buffer** – objectives are to retard erosion to natural watercourses, provide filtration for storm water runoff, and protect natural habitat. Implemented in 2002. Inventoried and inspected all buffer areas preserved under ordinance during 2011-2012. Early results of inspections showed that 86% of protected buffers were 100% preserved and 93.7% of protected buffers were at least 75% preserved. Continue to make qualitative and quantitative inspections of buffers to determine the extent of preservation and the effect of the preserved buffer on stream erosion. Conduct inspections of newly preserved natural watercourses and vegetated buffers within 1-2 years of site development. Conduct inspections of all preserved watercourses and buffers on a 5-10 year cycle. Our goals are to establish the long term preservation of at least 75% of the original required buffer areas, to identify new erosion problems in less than 25% of the preserved buffer areas, and to document the state of the riparian habitat.
- **Water Quality Structural BMPs** – objectives are to filter pollutants from “first flush” of storm water runoff and to recharge the ground water and reduce runoff volume through infiltration and an increased time of concentration. Began development of a BMP inspection program in 2012. Make quantitative and qualitative inspection of BMPs and sample local outfalls before and after development of a site throughout permit period. Our goals are to establish the long term preservation and maintenance of at least 75% of water quality BMPs and to maintain or improve the quality of runoff from at least 75% the BMP outfalls and in local watercourses as determined through sampling and biological monitoring. Other goals are to complete a commercial site project using porous pavement technology in 2013-2014, three to five projects by 2017, and considered as a standard method by 2018.
- **Storm Water Detention & Water Quality Facilities** – objectives are to help reduce polluted runoff from entering our streams, help increase groundwater recharge, help reduce erosion of our natural channels, help reduce flooding, and to create a post-developed hydrology as similar as possible to the pre-developed hydrology; thereby, retarding erosion and flooding of our watercourses and to use these facilities as a dual purpose to help filter pollutants from the runoff. Currently making qualitative inspections of basins every 1–5 years to assure long-term maintenance and providing maintenance education to subdivision trustees and private basin owners. Our goals are to see a 33% reduction in the number of maintenance violations after the initial inspections and to see an increase in the number of wet filtration basins or basins that incorporate additional water quality features beyond traditional storm water detention (forebays, riparian wetland, etc.). The county will begin to inspect other storm water quality facilities this permit period with similar measurable goals to detention facility inspection.

- **Revisions to Zoning & Development Regulations – objectives are to preserve open space, reduce impervious area, require or allow for the disconnection of impervious areas, encourage and allow for low impact development, and to limit development in environmentally sensitive areas. Ordinance changes have been ongoing to address these issues and may continue to occur throughout the permit period. Sample commercial impervious areas before and after new regulations throughout permit period with a goal of reducing impervious areas by 5%. Document the amount of subdivisions being developed using clustering or as a low impact development with the goal of a 5% reduction in impervious area and infrastructure over traditional development. Track information such as length of streets, impervious area, length of structural storm sewer & number of inlets, and length or amount of open drainage and compare to traditional developments.**
- **Encourage use of Cluster Development Zoning – objectives are to encourage and permit low impact development to preserve open space, reduce impervious area, reduce the need for infrastructure, and limit development in environmentally sensitive areas with goals of approving one cluster development by 2014, two additional cluster developments by 2016, and establishing 10% of total development as cluster development by 2018. We will track reductions to impervious area and infrastructure over traditional development as mentioned directly above.**
- **Partner with Parks and Recreation, and Private/Public Groups – objectives are to preserve open space, create regional storm water detention/management to help reduce flooding, preserve and enhance riparian buffers, and obtain funding and create projects that may both enhance water quality and provide recreational opportunities. Document the number and type of storm water BMPs incorporated into such projects.**
- **A tracking mechanism for storm water complaints/violations has been initiated. An inventory of the locations of the complaints are to be established and a comparison tracked regarding the amount of storm water complaints in areas developed prior to water quality regulations versus those developed with water quality BMPs.**
- **Conduct Training & Informational Seminars – objectives are to provide education regarding new federal, state, and local regulations and methods, practices, and technologies relating to storm water & construction management with a goal to have one to two seminars per year.**

4.2.6 Pollution Prevention/Good Housekeeping for Municipal Operations

See Appendix B-6, MCM 6.

4.2.6.1 Permit requirement. The permittee shall develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. As part of the SWMP, the pollution prevention/good housekeeping program shall include the following information, at a minimum:

The county Facilities Department may develop and implement an Operations and Maintenance Program to prevent or reduce pollutant runoff from its municipal operations. The program may include but not necessarily be restricted to the following general categories:

- **Building Maintenance**
- **Garden and Landscaping Operations**

- **Park / Open Space Maintenance**
- **Harbor Maintenance**
- **Storm Water System Maintenance**
- **Licensed Vehicle Maintenance and Operation**
- **Off-Road Equipment Maintenance and Operation**
- **Fuel Storage and Fuel Dispensing Facilities**
- **Outdoor Bulk Material Storage**
- **Land Disturbance**
- **Soil Stabilization**
- **Illicit Discharge Detection**
- **Roadway Maintenance**
- **Waste Disposal**

The following county departments are to be responsible for compliance with the county's Operations and Maintenance Program such that storm water pollutants are minimized:

- **Airport - Smartt Field**
- **Flood Plain Property Management**
- **Humane Division of the Community Health and the Environment Department**
- **Highway Department**
- **Facility Maintenance Department**
- **Parks and Recreation Department**
- **Family Arena**

The county Highway Department employee training programs have been developed to prevent and reduce storm water pollution from their operations. The training program consists of new staff orientation and retainer/refresher components and emphasizes the following elements:

- **Basic awareness of environmental issues, policies, and BMPs**
- **Application to specific operations**
- **Water Quality management including wastewater/storm water control**
- **Ground water protection including impact potential from contaminant sources**
- **Solid waste management focusing on handling/disposal protocol for MSW and special wastes including petrol-contaminated soil/media and hazardous debris**
- **SPCC plans**
- **SWM/PP plans**

The training shall be held on a regular basis. The training is to be held at each facility at least once every six months and shall cover the above topics and be site specific for each facility. Every fourth year, subject matter experts will be used on topics relating to our operations for county wide training.

Each applicable county department may create and implement a training program tailored for their operations including the categories cited in 4.2.6.1. Employee awareness and

continuing education is to be one of the best management practices utilized to reduce storm water pollutants from the municipal operations of St. Charles County Government. See Appendix B-6 for BMP and training schedules.

The Highway Department training is presented to staff in groups and individual settings/sessions by live interactive talks. These presentations are site specific for each location. The sessions that are set up with subject matter specialists may make use of support materials generated for public outreach and information thereby integrating the internal/external audiences for maximum message impacts and effectiveness.

As stated above, the training may be held at a more frequent interval and on a regular basis. The training may be held at each facility at least once every quarter and shall cover the above topics and be site specific for each facility. Every other year subject matter experts may be brought in to conduct county-wide training.

Each applicable county department may continuously assess their municipal operations for their impact on storm water. The assessment may identify additional sources of pollutant as well as the reduction of existing sources of pollutant. The following decision process may be utilized to change existing municipal operations to reduce pollutant runoff.

1. Identification of current issues and alternative concepts
2. Feasibility and comparison of operational changes
3. Estimate of associated costs to implement desired changes
4. Departmental decision to proceed after Benefit / Cost Analysis
5. Implement changes if the department's budget is sufficient
6. Request additional funds if required
7. Financial Appropriation if required

SWM/PPP's have been developed for application to specific operating facilities and sites. The plans may be updated as required by the permit. The County may develop new plans as new property is developed to address the growing county's maintenance needs.

4.2.6.1.1

A list of all municipal operations that are impacted by this operation and maintenance program. The permittee shall also include a list of industrial facilities the permittee owns or operates that are subject to NPDES permits for discharges of storm water associated with industrial activity that ultimately discharge to the permittee's MS4. The permittee shall include the permit number or a copy of the industrial application form for each facility;

County Government (municipal) operations addressed by the operations and maintenance program coincide with the department activities cited in the preceding section above. Individual facility locations currently covered by site-specific NPDES general permits for storm water discharges are listed as follows and the corresponding documents are presented for reference:

- Highway Department district maintenance facilities

The Operations and Maintenance Program may contain but not necessarily be restricted to the following municipal operations and categories:

Building Maintenance

- Identification and marking of all Storm Sewer entry points
- Rooftop HVAC Equipment
- Exterior grade level HVAC Equipment
- Material storage and control
- Proper use and application of materials

Garden and Landscaping Operations

- Proper operation of irrigation systems
- Material storage and control
- Proper use and application of materials

Parking Lots and Storm Water System Maintenance

- Periodic Inspection of curbing and grating
- Assessment of storm water drainage
- Inspection and cleaning of storm water systems

Park / Open Space Maintenance

- Use of native and low maintenance plant and tree species
- Material storage and control
- Proper use and application of materials

Harbor Maintenance

- Dredging conducted within Corps of Engineer guidelines
- Disposal of dredged materials

Licensed Vehicle Maintenance

- Performed by a competent vendor
- Weekly operator inspections before use
- Applicable vehicles cleaned within two days after a storm event

Off-Road Equipment Maintenance

- Maintenance performed within a protected facility
- Weekly operator inspections before use
- Remove equipment from service when fluid leaks are significant

Fuel Storage and Dispensing Facilities

- Compliance with Federal and State regulations
- Emergency spill containment
- Emergency generator installations

Outdoor Bulk Material Storage

- Covered material storage areas
- Short term uncovered storage areas

Land Disturbance

- Plan / Design projects for minimum disturbance
- Procedures for self-performed construction activities

Soil Stabilization

- Continuous assessment of county operated sites
- Projects to improve soil stability

Illicit Discharge Detection

- Periodic inspection of county sites for illicit discharges
- Awareness of illicit discharges when traveling within the county

Waste Disposal

- All wastes disposed per federal, state, and local regulations
- Recycling alternatives to reduce conventional waste disposal

4.2.6.1.2 Maintenance BMPs, maintenance schedules, and long-term inspection procedures for controls to reduce floatables and other pollutants to the permittee's regulated small MS4;

Maintenance schedules, inspection procedures and controls are delineated in the SWMPPP documents previously cited for the maintenance facilities. The procedures to accomplish the reduction of floatables and other pollutants from the maintenance activities are as follows:

The County has implemented a program to inspect our storm sewer systems every other year. The next five year plan calls for inspecting our sewer systems on a yearly basis with the addition of more manpower and equipment.

The County plans on implementing a program to sweep all the residential streets that maintain on a yearly basis and sweep all the residential & rebuilt arterial streets at least twice a year by the end of the new permit period.

4.2.6.1.3 Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas the permittee operates;

Controls, practices, operations and structures designed for pollution reduction/containment from highway operations maintenance/storage yards, material pile sites and other locations are described and detailed in the afore-cited SWMPPP documents.

The County may be reducing the amount of weed killer to control weeds around guard rails.

The County may implement a new plan to wash all residual salt from our vehicles within two (2) days from the end of a snow/ice storm event. This should reduce the amount of salt that would drop off on our county roads after the snow event ends.

The County may consider the implementation of an Adopt-A-Road program on the newly built arterial roads that the County maintains. These roads have a larger right-of-way which is safer for the public to monitor for trash pickup. The County would anticipate that all arterial roads that have been rebuilt since 1992 would be eligible for this program.

4.2.6.1.4 Controls described in Sections 4.1.5 through 4.1.8 of this permit;

All results for controls are reviewed on a monthly basis.

4.2.6.1.5 Procedures for the proper disposal of waste removed from the permittee's MS4 and area of jurisdiction, including dredged material, accumulated sediments, floatables, and other debris;

Guidance on handling/transport and disposal/recycling procedures, contractors, regulatory requirements and facility options for removed waste materials, including sediment, trash and other debris is provided by consultation of front-line department (i.e., highway maintenance/facilities operations) with Division of Environmental Health and Protection staff on a case-by-case basis.

4.2.6.1.6 Procedures to ensure that new flood management projects are assessed for impacts on water

quality and existing projects are assessed for incorporation of additional water quality protection devices or practices;

All flood management projects that require a floodplain development permit from the Planning & Zoning Division are to be given to the Development Review Division to assess the water quality impacts and recommend the necessary water quality protection device(s) or practice(s).

4.2.6.1.7 A government employee training program to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. The permittee shall describe any existing, available materials the permittee plans to use such as those available from EPA, State or other organizations. The permittee shall describe how this training program will be coordinated with the outreach programs developed for the public information minimum measure and the illicit discharge minimum measure; and

The following positions or their successors are responsible for their Department's compliance with the county's Operations and Maintenance Program:

- **Airport Director - Smartt Field Airport**
- **Division Director of Humane Services of the Community Health and the Environment Department**
- **Assistant Director of Facility Maintenance Department**
- **Family Arena Director**
- **Manager of the Flood Plain Property Management Department**
- **Assistant County Engineer of the Highway Department**
- **Assistant Director of the Parks and Recreation Department**

4.2.6.1.8 How the permittee will evaluate the success of this minimum control measure.

Success of this MCM may be evaluated by compliance of the annual report forms to MDNR-WPCP per monitoring of any internal and external feedback received.

4.3 Sharing Responsibility

Implementation of one or more of the minimum measures may be shared with another entity, or another entity assume responsibility for the measure if:

4.3.1 The other entity, in fact, implements the control measure;

4.3.2 The particular control measure, or component of that measure, is at least as stringent as the corresponding permit requirement; and

4.3.3 The other entity agrees to implement the control measure on permittee's behalf. Written acceptance of this obligation is required. This obligation shall be maintained as part of the documented description of the permittee's storm water management program. If the other entity agrees to report on the minimum measure, the permittee shall supply the other entity with the reporting requirements contained in Section 5.3 of this permit. If the other entity fails to implement the control measure on the permittee's behalf, then the permittee remains liable for

any discharges due to that failure to implement.

4.4 Reviewing and Updating Storm Water Management Programs and Plans

4.4.1 *Storm Water Management Program and Written Plan (SWMP) Review:* The permittee shall do an annual review of the permittee's SWMP in conjunction with preparation of the annual report required under Section 5.3; and

4.4.2 *SWMP Update:* The permittee may change the SWMP during the life of the permit in accordance with the following procedures:

4.4.2.1 Changes adding (but not subtracting or replacing) components, controls, or requirements to the SWMP may be made at any time upon written notification to the department; and

4.4.2.2 Changes replacing an ineffective or unfeasible BMP specifically identified in the SWMP with an alternate BMP may be requested at any time. Unless denied by the department, changes proposed in accordance with the criteria below shall be deemed approved and may be implemented 60 days from submittal of the request. If request is denied, the department will send the permittee a written response giving a reason for the decision. The permittee's modification requests shall include the following:

4.4.2.2.1 An analysis of why the BMP is ineffective or infeasible (including cost prohibitive);

4.4.2.2.2 Expectations on the effectiveness of the replacement BMP; and

4.4.2.2.3 An analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced.

4.4.2.3 Change requests or notifications must be made in writing and signed in accordance with Section 6.

4.4.3 *SWMP Updates Required by the Department:* Changes requested by the department must be made in writing, set forth the time schedule for the permittee to develop the changes, and offer the permittee the opportunity to propose alternative program changes to meet the objective of the requested modification. All changes required by the department will be made in accordance with 10 CSR 20-6.200. The department may require changes to the SWMP as needed to:

4.4.3.1 Address impacts on receiving water quality caused or affected by discharges from the Municipal Separate Storm Sewer System;

4.4.12 Include more stringent requirements necessary to comply with new federal or state statutory or regulatory requirements; or

4.4.3.3 Include such other conditions deemed necessary by the department to comply with the goals and requirements of the Missouri Clean Water Law.

4.4.4 *Transfer of Ownership, Continuing Authority, or Responsibility for SWMP Implementation:* The permittee shall implement the SWMP on all new areas added to the permittee's portion of the municipal separate storm sewer system (or for which the permittee becomes responsible for implementation of storm water quality controls) as expeditiously as practicable, but not later than

one year from addition of the new areas. Implementation may be accomplished in a phased manner to allow additional time for controls that cannot be implemented immediately.

4.4.4.1 Within 90 days of a transfer of ownership, continuing authority, or responsibility for SWMP implementation, the permittee shall submit a revised plan, if necessary, for implementing the revised SWMP on all affected areas. The plan shall include revised schedules for implementation. Information on all new annexed areas and any resulting updates required to the SWMP shall be included in the annual report.

4.4.4.2 Only those portions of the SWMP specifically required as permit conditions shall be subject to the modification requirements of 10 CSR 20-6.200. Addition of components, controls, or requirements by the permittee(s) and replacement of an ineffective or infeasible BMP implementing a required component of the SWMP with an alternate BMP expected to achieve the goals of the original BMP shall be considered minor changes to the SWMP and not modifications to the permit.

5. Monitoring, Recordkeeping, and Reporting

5.1 Monitoring

5.1.1 The permittee shall evaluate program compliance, the appropriateness of identified best management practices, and progress toward achieving identified measurable goals. If the permittee discharges to a water for which a TMDL has been approved, the permittee will likely have additional monitoring requirements under Section 3.1.3.6.

5.1.2 When the permittee conducts monitoring at the permittee's regulated small MS4, the permittee is required to comply with the following:

5.1.2.1 *Representative monitoring.* Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity;

5.1.2.2 *Test Procedures.* Monitoring shall be conducted according to test procedures approved under 10 CSR 20-7.015(9)(A).

5.1.3 Records of monitoring information shall include:

5.1.3.1 The date, exact place, and time of sampling or measurements;

5.1.3.2 The names(s) of the individual(s) who performed the sampling or measurements;

5.1.3.3 The date(s) analyses were performed;

5.1.3.4 The names of the individuals who performed the analyses;

5.1.3.5 The analytical techniques or methods used; and The results of such analyses.

5.1.3.6 *Discharge Monitoring Report.* TMDL monitoring results shall be reported to the department on a

5.1.4 Discharge Monitoring Report form (D1VfR). Monitoring results collected as part of the routine illicit discharge detection and elimination program shall be documented, retained on site and

made available upon request by EPA, DNR and the public.

5.2 Recordkeeping

5.2.1 The permittee shall retain records of all activities requiring recordkeeping by the SWMP and monitoring information, including, all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, copies of Discharge Monitoring Reports (DMRs), a copy of the NPDES permit, a copy of all ordinances, policies and formal procedures for all six minimum control measures and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application, or for the term of this permit, whichever is longer; and

5.2.2 The permittee shall submit the permittee's records to the department only when specifically asked to do so. The permittee shall retain a written description of the SWMP required by this permit (including a copy of the permit language) at a location accessible to the department. The permittee shall make the permittee's records, including the application and the description of the SWMP, available to the public if requested to do so in writing.

5.3 Reporting

The permittee shall submit annual reports, using the annual report form provided by the department, to the Director by July 28 of each year of the permit term. The report shall include:

5.3.1 The status of the permittee's compliance with permit conditions, an assessment of the appropriateness of the identified best management practices, progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP, and the measurable goals for each of the minimum control measures;

5.3.2 Results of information collected and analyzed, if any, during the reporting period, including monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP;

5.3.3 A summary of the storm water activities the permittee plans to undertake during the next reporting cycle (including an implementation schedule);

5.3.4 Proposed changes to the permittee's SWMP, including changes to any BMPs or any identified measurable goals that apply to the program elements; and

5.3.5 Notice that the permittee is relying on another government entity to satisfy some of the permittee's permit obligations (if applicable).

6. Standard Permit Conditions

This permit includes Standard Permit Conditions attached as Part 1 to this permit.

7. Definitions

All definitions contained in 10 CSR 20-6.200 shall apply to this permit and are incorporated herein by reference. For convenience, simplified explanations of some regulatory/statutory

definitions have been provided, but in the event of a conflict, the definition found in the regulation takes precedence.

Director refers to the Director of Staff, Water Protection Program, Department of Natural Resources. *Discharge* when used without a qualifier, refers to "discharge of a pollutant" as defined at 40 CFR 122.2.

Illicit Connection means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge refers to any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from emergency fire fighting activities.

Maximum Extent Practicable refers to the technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in storm water discharges that was established by CWA §402(p). A discussion of how it applies to regulated small MS4s is found at 40 CFR 122.34.

MS4 is an acronym for "Municipal Separate Storm Sewer System" and is used to refer to either a Large, Medium, or Small Municipal Separate Storm Sewer System (e.g. "the Springfield MS4").

Permittee, as used in this permit refers to the holder of this general permit.

Site-specific permit, also means individual permit.

Storm Water, means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Management Program and Plan (SWMP) refers to a comprehensive documented program and plan to manage the quality of storm water discharged from the municipal separate storm sewer system.

APPENDIX A

Minimum Control Measure Individual Responsibility

APPENDIX B

B-1 MCM 1 Public Education and Outreach on Storm Water Impacts

B-2 MCM 2 Public Involvement / Participation

B-3 MCM 3 Illicit Discharge Detection And Elimination

B-4 MCM 4 Construction Site Storm Water Runoff Control

B-5 MCM 5 Post-Construction Storm Water Management In New Development And
Redevelopment

B-6 MCM 6 Pollution Prevention / Good Housekeeping For Municipal Operations

**APPENDIX A
MINIMUM CONTROL MEASURE (MCM)
INDIVIDUAL RESPONSIBILITY**

MCM (Minimum Control Measure)	Department /Division Staff *Individual responsible
MCM 1 Public Education and Outreach on Storm Water Impacts	*Frankie Coleman, St. Charles County Soil and Water Conservation District Theresa Dunlap, St. Charles County Soil and Water Conservation District Charlie Perkins, St. Charles County Soil and Water Conservation District Ryan Tilley, Community Health & the Environment Doug Bolnick, Community Health & the Environment Deborah Christensen, Community Health & the Environment Jim Kent, Parks & Recreation Ben Grossman, Parks & Recreation
MCM 2 Public Involvement / Participation	*Deborah Christensen, Community Health & the Environment Ryan Tilley, Community Health & the Environment Doug Bolnick, Community Health & the Environment Frankie Coleman, St. Charles County Soil and Water Conservation District Theresa Dunlap, St. Charles County Soil and Water Conservation District Charlie Perkins, St. Charles County Soil and Water Conservation District Jim Kent, Parks & Recreation Ben Grossman, Parks & Recreation
MCM 3 Illicit Discharge Detection and Elimination	*Deborah Christensen, Community Health & the Environment Ryan Tilley, Community Health & the Environment Art Genasci, Community Development/Neighborhood Preservation Division
MCM 4 Construction Site Storm Water Runoff Control	*Rich Gnecco, Community Development/Development Review Division Jan Whipple, Community Development/Planning & Zoning Division Rocky Morgan, Community Development/Building Division Jim Kent, Parks & Recreation Ben Grossman, Parks & Recreation Charlie Perkins, St. Charles County Soil and Water Conservation District Jeff Spalding, Highway
MCM 5 Post-Construction Storm Water Management in New Development and Redevelopment	*Kirby Dieterman, Community Development/Development Review Division Jeff Spalding, Highway Frankie Coleman, St. Charles County Soil and Water Conservation District Theresa Dunlap, St. Charles County Soil and Water Conservation District Charlie Perkins, St. Charles County Soil and Water Conservation District Jim Kent, Parks & Recreation Ben Grossman, Parks & Recreation
MCM 6 Pollution Prevention / Good Housekeeping for Municipal Operations	*Jeff Spalding, Highway Jim Kent, Parks & Recreation Jim Irlander, Facilities

**APPENDIX B-1
2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 1 Public Education and Outreach on Storm Water Impacts				
Goal: Promote Stormwater Messages				
Objective: Increase continuity with municipal programs; Increase awareness of target pollutants; Encourage behaviors to reduce target pollutant sources*.				
<small>*Key: M=Municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste</small>				
Activity/Product	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT				
Presentations and outreach (stormwater, soil erosion, water quality) (E,L,Y)	Number of contacts, goal 10 presentations	2013-2018	St. Charles SWCD Staff	
Outreach Publications (storm water, native plants, point and non point source pollution, septic systems, etc.) (E,L,S,Y)	Goal - 2 annually Distribute in libraries	2013-2018	Theresa Dunlap	
Needs Assessment Survey to evaluate number of landowners needing assistance with conservation practices (E)	Completed annually	2013-2018 Completed Annually	Charlie Perkins, Frankie Coleman	
Conservation Education Library (E,L,S,Y)	Available to the public	On-going	St. Charles SWCD Staff	On-going
St. Charles County SWCD website (E,L,S,Y)	Website hits	On-going	Theresa Dunlap	On-going
Landowner Erosion Control Site Visits (E)	Goal - 10 annually	2013-2018	Charlie Perkins	
Brief Technical Assistance - office/phone (E,S,L,Y)	Goal - 10 annually	2013-2018	St. Charles SWCD Staff	
SWCD Newsletter, the Reporter (E,S,L,Y)	Goal - 4 issues annually	2013-2018	Theresa Dunlap St. Charles SWCD staff	
Workshops (topic will vary) (E,S,L,Y)	Goal - 1 annually	2013-2018	St. Charles SWCD Staff	
Press Releases (stormwater concerns) (E,S,L,Y)	Goal - 2 annually	2013-2018	Theresa Dunlap	
Event Display (Race for the Rivers) (M)	Number of attendees	2013-2018	Theresa Dunlap	
Poster Contest and Display (4th, 5th & 6th grade students) - topic is "Where Does Your Water Shed?" (M,E)	Annual contest, number of participants	2013-2018	Theresa Dunlap	
Displays available for partners/municipalities to utilize at events (M)	Numbers of requests for displays	2013-2018	St. Charles SWCD Staff	
COMMUNITY HEALTH & THE ENVIRONMENT DEPARTMENT				
Distribute storm water related educational materials to residents (M,E,H,L,S,Y)	Educational materials distributed to 2,500 residents annually	2013-2018	Deborah Christensen, Ryan Tilley, Doug Bolnick	
Increase motor oil recycling by distributing free oil funnels with Recycling Center website and phone number (M,H,L)	Track amount of motor oil collected for the duration of distributed logo branded free funnels for Recycle Works	2013-2014	Deborah Christensen, Nick Olson, Martin Reddick	
Logo branding	The majority of print & web materials produced internally will display logo	2013-2018	Deborah Christensen, Doug Bolnick	
Provide alternative sources for information (M,E,H,L,S,Y)	Website library of educational material	2013-2018	Doug Bolnick	
HHW Guides-Household chemical solutions & alternatives (M,H,L)	Purchase and distribute 300 annually	2013-2018	Nick Olson, Deborah Christensen	
Press Releases addressing pollutants and solutions (M,E,H,L,S,Y)	3 annually	2013-2018	Doug Bolnick	
Health E-News Articles addressing pollutants and solutions (M,E,H,L,S,Y)	4 annually	2013-2018	Doug Bolnick	
Social Media addressing pollution solutions (Example-twitter & facebook)	4 annually	2013-2018	Doug Bolnick	
Stormwater Management Video	Develop and broadcast (update as necessary)	2013-2014	Ryan Tilley, Jack Gamble	
Public Awareness Survey	Stormwater online survey	2013-2018	Deborah Christensen, Doug Bolnick	
Provide Grease Interceptor Brochures to restaurants to educate the effects of grease clogging storm drains	Mail 1,100 Grease Interceptor Brochures annually to restaurants	2013-2018	RyanTilley	

**APPENDIX B-1
2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 1 Public Education and Outreach on Storm Water Impacts				
Goal: Promote Stormwater Messages				
Objective: Increase continuity with municipal programs; Increase awareness of target pollutants; Encourage behaviors to reduce target pollutant sources*.				
*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste				
Activity/Product	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
Stormdrain Marking (M,E,H,L,S,Y)	150 stormdrains marked annually, and educational brochures delivered to each resident on stormwater pollution prevention as stormdrains are marked	2014-2018	Deborah Christensen	
Event display (M,E,H,L,S,Y)	1 community event per year	2013-2018	Deborah Christensen, Ryan Tilley	
Environmental Programs and Tours of the Recycling Centers	Provide educational presentations or recycling tours	2013-2018	Deborah Christensen	
PARKS AND RECREATION DEPARTMENT				
Park Education and Enhancement Projects (E,L,Y)	1 Master Naturalist Training Event	2013-2018	Ben Grossman	
	1 Riparian Planting Restoration Project	2013-2018	Ben Grossman	
	1 Middle School Field Day per year	2013-2018	Ben Grossman	
	3 Park Education programs per year	2013-2018	Ben Grossman	
BUILDING CODE ENFORCEMENT DIVISION				
Annual training program on the proper installation of septic systems and new technology.	Qualified installer of septic systems that are tested and licensed through the State of Missouri.	2013-2018	Sandy May	

APPENDIX B-2
2013-2018 NPDES Permit
St. Charles County Government

Operating Plan Matrix MCM 2 Public Involvement / Participation

Goal: Increase community involvement to 30,000 residents by 2013.

Objective: Public involvement and participation in NPDES plan development and implementation

*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste

Activity/Product	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
COMMUNITY HEALTH & THE ENVIRONMENT DEPARTMENT				
Environmental education programs (M,E,H,L,S,Y)	Presentations made	2013-2018	St. Charles SWCD Staff, Deborah Christensen	
Recycle Works drop-off centers (H)	Annual tonnage diverted from waste stream	2013-2018	Martin Reddick, Nick Olson	
Household Hazardous Waste (HHW) Collections (M)	Number of residents served	2013-2018	Nick Olson	
Commission on Environmental Quality Meetings (M)	4 meetings per year	2013-2018	Ryan Tilley	
Earth Day (M,E,H,L,S,Y)	One event per year (target audience—residents & employees)	2013-2018	Deborah Christensen	
Stormdrain Marking (M,E,H,L,S,Y)	Stormdrains marked (pending budget constraints) and educational brochures delivered to each resident on stormwater pollution prevention as stormdrains are marked	2014-2018	Ryan Tilley, Deborah Christensen	
Mission: Clean Stream (L)	Annual cleanup. Partner with cities and non-profits.	2013-2018	Deborah Christensen	
Illegal dumping Program (L)	Allow citizens to aid local enforcement authorities in the identification of polluters. Tons of illegally-dumped waste collected. Complaints logged.	2013-2018	Deborah Christensen	
Tire Roundup Program (L)	Residents can recycle unwanted tires that will provide an outlet for tires and minimize illegal dumping. Number of tires removed from waste stream will be recorded.	2014	Deborah Christensen, Martin Reddick	
ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT				
Environmental Education Program - Regional Envirothon (M,E,H,L,S,Y)	Numbers of teams participating	2013-2018	St. Charles SWCD staff/partners	
Mission: Clean Stream (L)	Number of participants	2013-2018	St. Charles SWCD staff	
PARKS AND RECREATION DEPARTMENT				
Park Education and Enhancement Projects (E,H,L,Y)	1 Master Naturalist Training Event	2013-2018	Ben Grossman	
	1 Riparian Planting Restoration Project	2013-2018	Ben Grossman	
	1 Middle School Field Day per year	2013-2018	Ben Grossman	
	3 Park Education programs per year	2013-2018	Ben Grossman	

**2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 3 Illicit Discharge Detection and Elimination				
Goal: Reduce Roadside Dumping/Littering by 60%				
Objective: Introduce New Programs, Acquire New Equipment, Revise Solid Waste Code Regulations (Chapter 240)				
<small>*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste</small>				
Activity/Product	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
COMMUNITY HEALTH & THE ENVIRONMENT DEPARTMENT				
Surveillance Camera Program similar to MODNR (L)	Reduced number of roadside dumping events. Through media exposure and prosecution of violators	2017-2018	Ryan Tilley, Deborah Christensen	
Expand Recycle Works <u>West</u> operations to include Household Hazardous Waste Collection. (H)	Additional outlet for household hazardous waste. Minimizing improper disposal	2015	Ryan Tilley	
Recycle Works drop-off centers (H,L)	Track tonnage for recycled items that are commonly dumped wastes, such as motor oil, antifreeze, and pesticides	2013-2018	Martin Reddick, Nick Olson	
BUILDING CODE ENFORCEMENT DIVISION				
Identify and clean up failed septic systems throughout St. Charles County (S)	Prevent containments from infiltrating streams and rivers	2013-2018	Sandy May	
NEIGHBORHOOD PRESERVATION DIVISION				
Track and address illicit discharge complaints handled by Neighborhood Preservation in unincorporated St Charles County (H,L,Y)	Utilize existing software system to track incidents and complaints involving illicit discharges in unincorporated St Charles County and methods and/or action taken to resolve.	2013-2018	Art Genasci	
Visual creek screenings in unincorporated St Charles County. Twice yearly during low water flow and high water flow. (M,H,L,Y)	Physical inspection completed.	2013-2018	Art Genasci	
Inventory, inspect, and have enforcement authority for industries and commercial enterprises in unincorporated St Charles County (H,L)	Utilize existing GIS mapping system and current ordinances	2013-2018	Art Genasci	

**APPENDIX B-4
2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 4 Construction Site Storm Water Runoff Control

Goal: To reduce pollution of county watercourses from construction site runoff to the maximum extent practicable.

Objective: Establish and manage a program of plan review, inspection, enforcement, and education for construction site runoff control.

*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste

Activity/Product	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
DEVELOPMENT REVIEW DIVISION				
Monitoring of Construction Site Run Off (Inspections) (E)	Number of Regular Inspections of all Permitted Sites, Number of Notices To Correct, Number of Violations, & Number of Inspections due to Complaints will be reported annually	2013-2018	Dev Review Erosion Control Inspectors	Ongoing throughout permit period
Evaluating Water Quality at Construction Sites (E,H,L,S,Y)	Total Settleable Solids (TSS) and Turbidity to be Determined in Receiving Streams & BMP Outfalls Before Construction Begins, Throughout Construction, and after Completion of the Project to Analyze Effectiveness of Current Design Standards	2013-2018	Dev Review Erosion Control Inspectors	Finalizing procedures for inspection program
BMP Seminars (M)	Hold an Annual Seminar for Industry Professionals and the Development Community that explains the proper use of BMP's and expectations that are set forth by the County	2013-2018	Kirby Dieterman	Ongoing throughout permit period
Ordinance Modifications: Modify UDO Chapter 412 to meet revised MDNR standards	Bring the ordinance into compliance with current MNDR MO-RA & MO-R100 permit requirements	Draft 2-2013 Ord. Adopt 6-2013	Rich Gnecco, Counselor's Office	Draft has been submitted to admin. for review. Expect ordinance adoption by June, 2013.
Construction Wastes (Y)	Create specific Ordinance requirements in UDO Chapter 412 regulating the storage of Hazardous Construction Materials; Disposal of Construction Waste; Litter on Site; Sanitary Waste on Site; Enforcement and Penalties will need to be included in Ordinance Addendum	2013-2014	Kirby Dieterman, Rich Gnecco, Counselor's Office, Environmental Division	Will review during comprehensive review of UDO and Design Criteria - see also MCM #5
Stop Work Order Fine	Consider establishing a Fine for any Stop Work Order issued for Land Disturbance	2013-2014	Kirby Dieterman, Counselor's Office	Will review during comprehensive review of UDO and Design Criteria - see also MCM #5
PARKS AND RECREATION DEPARTMENT				
Erosion Controls (E)	Visual and measured by grade	On-going during the project	Park's Site Manager	
Re-Forestation (E)	Stem Counts	On-going during the project	Parks Natural Resources Crew	
Native plant introduction (E)	Stem counts and density	On-going during the project	Parks Natural Resources Crew	
Turf management practices (E)	Visual quality of turf	On-going during the project	Park's Site Manager	
Equipment service management (H,L)	Lack of observable impact factors such as oil and fuel spills or waste	On-going during the project	Park's Site Manager	
ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT				
Subdivision Plat Reviews (M)	Reduced stormwater runoff from subdivisions	2013-2018, as requested	Charlie Perkins	

**2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 5 Post-Construction Storm Water Management in New Development and Redevelopment

Goal: Address the quality of long-term storm water runoff from new development and redevelopment projects.

Objective: Establish measurable criteria to determine impact to long-term storm water runoff strategies.

*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste

Activity/Product	Objective	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
DEVELOPMENT REVIEW DIVISION					
Complete adoption of ordinance for Water Quality Volume & mimicking pre-development hydrology (Revise UDO 410.410) (M,E)	To filter pollutants from "first flush" of storm water runoff, reduce runoff volume, & recharge ground water table.	Ordinance adopted	1st Draft: March, 2013 Ordinance Adopted: July, 2013	Rich Gnecco, Dev Rev Staff	Currently drafting ordinance revisions.
Revise UDO to require instrument that preserves, requires maintenance & repair, and allows for inspection of storm water management facilities. (E,L,Y)	To assure long-term preservation & maintenance of structural BMPs.	Ordinance adopted	1st Draft: March, 2013 Ordinance Adopted: July, 2013	Rich Gnecco, Dev Rev Staff	Maintenance Agreement Form approved by Co. Council 2011. Currently drafting ordinance revisions.
Inspection & Evaluation of Natural Watercourse Vegetative Buffers (E,L,Y)	To determine preservation compliance & condition of watercourse.	Establish long-term preservation of 75% of original established buffer areas.	2012	Rich Gnecco, Soil & Water Conservation District, Dev Rev Staff	Completed inspection of 86 out of 92 inventoried stream segments in 2011-2012. 86% buffers had 100% preservation and 93.7% had at least 75% preservation. Currently analyzing inspection results.
	Analyze inspection results and review ordinance for possible revisions to any concerns.	Ordinance Revisions Adopted (if needed)	2014	Rich Gnecco, Dev Rev Staff	Awaiting analysis of inspection results
	Create inventory of preserved buffer areas on GIS map	Map completed & updated	2013-2014	Rich Gnecco, Dev Rev Staff, IS	Preliminary discussions with IS Dept. Plan on further meetings in 2013.
	Review need to create design standards for improvements allowed within the watercourse & buffers.	Design Criteria adopted	2013-2014	Rich Gnecco, Dev Rev Staff	Awaiting analysis of inspection results
	Re-inspection of watercourses and buffers on a 5-10 year basis.	Establish long-term preservation of 75% of original established buffer areas & observe <25% new erosion in protected watercourses/buffers.	2018	Rich Gnecco, Soil & Water Conservation District, Dev Rev Staff	Will begin re-inspections in 2018
Inspect Storm Water Management Facilities (Water Quality BMP's) (E,S)	To ensure the long-term function, maintenance, and effectiveness of WQ BMP's. WQ BMP's filter pollutants from "first flush" of storm water runoff, reduce runoff volume, & recharge ground water table.	Establish long-term preservation & maintenance of 75% of WQ BMP's.	2013-2014	Kirby Dieterman, Keith Wheeler, Rich Gnecco	Inventoried all WQ BMPs designed or constructed (45). Currently establishing inspection standards & program.
	Observe time to infiltrate ponded water to ensure functionality	Drainage within 48 hours for 75% of WQ BMP's.	2013-2014	Kirby Dieterman, Keith Wheeler	See above
	Sample WQ BMP inlets & outfalls before & after development - maintain or improve water quality of local outfalls	Establish less pollutants in outflow than in inflow in 75% of WQ BMPs	2013-2015	Kirby Dieterman, Keith Wheeler	Budgeting funds for additional sampling equipment and testing materials.
	Review need to revise Water Quality Standards	Ordinance/Design Criteria Revisions Adopted (if needed)	2015	Rich Gnecco, Kirby Dieterman, Keith Wheeler	Awaiting analysis of inspection results

**2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 5 Post-Construction Storm Water Management in New Development and Redevelopment

Goal: Address the quality of long-term storm water runoff from new development and redevelopment projects.

Objective: Establish measurable criteria to determine impact to long-term storm water runoff strategies.

*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste

Activity/Product	Objective	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
Review Design Criteria 50.80 (Storm Water Detention) to eliminate concrete swale standard & incorporate other revisions that would enhance WQ & infiltration	To enhance water quality and infiltration and allow detention facilities to provide additional WQ benefits.	Design Criteria Adopted	2013-2014	Rich Gnecco, Dev Rev Staff	Awaiting Review
	Review current Channel Protection Detention Standard for possible change to 1 or 2 yr extended detention	Design Criteria Adopted	2013-2014	Rich Gnecco, Dev Rev Staff	Awaiting analysis of watercourse inspection results.
Review need to revise UDO to provide separate standards for requiring storm water quality treatment and detention in redevelopment projects	To allow flexibility and to assure runoff is being managed to the MEP within redevelopment projects.	Ordinance Adopted	2013-2015	Rich Gnecco, Dev Rev Staff	Awaiting Review
Comprehensive review of UDO and Design Criteria	To provide additional opportunities to reduce impervious area and infrastructure and to update standards to allow for better stormwater management.	Ordinance/Design Criteria Revisions Adopted	Draft 2013-2014 Adoption 2014-2015	Rich Gnecco, Dev Rev Staff, P&Z Staff, Hwy. Dept. Staff	Awaiting Review
	Peer & stakeholder review & input	Endorsements received	2014	Peer/Stakeholder panel	Awaiting Review
	See also Cluster Development	5% reduction in commercial site impervious areas.	2018	Rich Gnecco, Jan Whipple (P&Z)	Awaiting analysis
	See also Cluster Development	5% of streets (by length) in new development or redevelopment with open drainage design (no curb & gutter). 5% reduction of storm sewer, inlets, & street length.	2018	Rich Gnecco, Jan Whipple (P&Z)	Awaiting analysis
Establish WQ BMP standards and details and incorporate into Design Criteria	To provide design standards that are appropriate for local soils, geology, & hydrology but that still encourage alternative design and use/re-use of site specific resources & materials.	Design Criteria Adopted	Draft 2016 Adoption 2017	Rich Gnecco, Keith Wheeler, Dev Rev Staff	Awaiting Review
	Peer/Stakeholder Review	Endorsements received	2016	Peer/Stakeholder panel	Awaiting Review
Encourage use of Cluster Development Zoning	Encourage and permit low impact development to preserve open space, reduce impervious area, allow for the disconnection of impervious areas, and to limit development in environmentally sensitive areas.	One low impact/cluster development is established.	2014	Rich Gnecco, Jan Whipple (P&Z)	No cluster development to date
		2 additional low impact/cluster developments.	2016	Rich Gnecco, Jan Whipple (P&Z)	No cluster development to date
		Establish 10% of total development as low impact/cluster development.	2018	Rich Gnecco, Jan Whipple (P&Z)	No cluster development to date
Standardize Use of Porous Pavement	Use porous pavement as a standard for commercial development & find uses in residential development.	One porous pavement project	2014	Charlie Feldman, Rich Gnecco, Review Staff, Rocky Morgan (Construct Mgr), Mike Buford (Facilities), Parks Dept.	No project to date

**2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 5 Post-Construction Storm Water Management in New Development and Redevelopment

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Activity/Product	Objective	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
		3-5 porous pavement projects	2017	Charlie Feldman, Rich Gnecco, Review Staff, Rocky Morgan (Construct Mgr), Mike Buford (Facilities), Parks Dept.	No project to date
		Draft and adopt standards for porous pavement use	2018	Rich Gnecco, Jan Whipple (P&Z)	Awaiting
Inspection & Maintenance Enforcement of Storm Water Detention & Management Facilities	Assure long-term maintenance & function of detention facilities and to provide maintenance & watershed education to subdivision trustees and private basin owners.	Inspect 20% of detention basins per year. Achieve a 33% reduction in number of maintenance violations after initial inspections.	2013-2018	Rich Gnecco, Charles Brewster	Currently performing 2013 inspections
	Assure long-term maintenance & function of SWMFs and to provide maintenance & watershed education to subdivision trustees and private SWMF owners.	Achieve a 33% reduction in number of maintenance violations after initial inspections.	2013-2018	Kirby Dieterman, Keith Wheeler, Rich Gnecco	Awaiting
Track Storm Water Complaints	To determine if problem areas exist regarding storm water management and to compare the impact of new storm water regulations on new development versus old development.	Document number and geographic locations of complaints on annual basis.	2013-2018	Kirby Dieterman, Keith Wheeler, Rich Gnecco	Ongoing - Complaint information stored in MUNIS database.
Conduct Training & Informational Seminars	To update development community concerning new regulation, alternative methods, products, & technologies available for development.	Hold one to two training sessions annually.	2013-2018	Kirby Dieterman, Rich Gnecco	Planning for spring seminar tentatively scheduled for May.
Develop standards for post-developed runoff based on watershed modeling	Discuss and develop methodology and standards for post-developed runoff in Dardenne Creek watershed using 2007 model by USACE to establish watershed based approach to storm water management.	Ordinance & Design Criteria adopted	2013-2014	Rich Gnecco	Discussing methodology for standards with USACE.
	Review possibility of partnering with other agencies to develop models for other major watersheds to establish watershed based approach to storm water management.	Executed agreements with watershed partners - only if economically feasible.	2018	Charles Feldman, Rich Gnecco	Awaiting
Partner with Parks & Recreation and Other Private/Public Linear Park & Stream Organizations. Evaluate regional detention opportunities. (E)	Preserve open space through acquisition of property for parks, create opportunities for regional storm water detention/management, preserve and enhance riparian buffers, and provide for projects that will enhance water quality and provide recreational opportunity.	Document SWMFs installed in county parks & any other public recreational facilities developed by other agencies.	2013-2018	Rich Gnecco, Bettie Yahn-Kramer (Parks), Rich Halsey (Parks)	Ongoing - storm water management has been made a regular part of the planning & review process for public parks. Looking for porous pavement project in a future park.
PARKS AND RECREATION DEPARTMENT					

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Operating Plan Matrix MCM 5 Post-Construction Storm Water Management in New Development and Redevelopment

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Activity/Product	Objective	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
Partner with Parks & Recreation and Other Private/Public Linear Park & Stream Organizations. Evaluate regional detention opportunities. (E)	Preserve open space through acquisition of property for parks, create opportunities for regional storm water detention/management, preserve and enhance riparian buffers, and obtain funding available for projects that will enhance water quality and provide recreational opportunity.	Make storm water management a regular part of the planning process for public parks. Evaluation completed and planning goals established.	As possible	Parks Maintenance Supervisor	
Soil Enhancements to promote vegetative growth (E)		Soil Chemistry for nutrients and pH	Immediately after project completion	Parks Maintenance Supervisor	
Re-Forestation (E)		Stem Counts	On-going during the project	Parks Natural Resources Crew	
Native plant introduction (E)		Stem counts and density	On-going during the project	Parks Natural Resources Crew	
Turf management practices (E)		Visual quality of turf	On-going during the project	Park Crews	
HIGHWAY DEPARTMENT					
Continue Storm Sewer Facilities Inspection & Maintenance Program (E,L,Y)	Assure that storm sewers are not in disrepair, are free from debris and pollutants, and that pipe outfalls are non-erosive.	Have 100% of publicly maintained storm sewers & storm water facilities inspected annually.	On-going	Jeff Spalding, Highway	

**2013-2018 NPDES Permit
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Operating Plan Matrix MCM 5 Post-Construction Storm Water Management in New Development and Redevelopment

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*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste

Activity/Product	Objective	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
ST. CHARLES COUNTY SOIL AND WATER CONSERVATION DISTRICT					
Provide technical assistance for erosion control and water quality (E)	Reduce soil erosion and improve water quality	Landowners installing practices to reduce erosion and improve water quality	2013-2018	Charlie Perkins Frankie Coleman	
Environmental Quality Incentive Program, program administered by USDA NRCS (E)	Reduce soil erosion and improve water quality	Landowners installing practices to reduce erosion and improve water quality	2013-2018	St. Charles SWCD Staff/NRCS Staff	
Rain Garden Installation (E)	Assist a municipality with the installation of a rain garden	Rain garden installed within 5 year reporting period	2013-2018	St. Charles SWCD Staff	
Conservation Security Program - program administered by USDA NRCS to improve/maintain existing conservation systems (E)	Improve or maintain existing conservation systems to improve natural resources	Improvements made to existing practices or maintaining existing practices	2013-2018	St. Charles SWCD Staff/NRCS Staff	

**APPENDIX B-6
2013-2018 NPDES Permit
St. Charles County Government**

Operating Plan Matrix MCM 6 Pollution Prevention / Good Housekeeping for Municipal Operations				
Goal: Continue with the Monitoring of Construction Site Run-Off Improve Monitoring of Water Conditions Adjacent to Site				
Objective: Establish Water Quality Baseline at Construction Sites and Enforce BMP's for Compliance				
*Key: M=municipal continuity; E=Erosion/sedimentation; H=Hazardous chemicals; L=Litter/Illegal Dumping; S=Septic; Y=Yard Waste				
Activity/Product	Evaluation Indicator	Time Frame/ Due Date	Responsible Party	Comments
PARKS AND RECREATION DEPARTMENT				
Store equipment under cover (H)	Establishment of equipment storage facilities	2013	Supt of Parks	
HIGHWAY DEPARTMENT				
Storm sewer inspections (E,L,Y)	Annual inspections	On-going	Highway, Jeff Spalding	
Residential street sweeping (H,L)	Sweeping twice a year by the end of permit period	2015	Highway, Jeff Spalding	
Herbicide application (H)	Remain at or below 50% of 2009 usage of herbicide Install mulch around guardrails to keep herbicide usage down	On-going 2016	Highway, Jeff Spalding	
Truck washing (H)	wash within two days of ice/snow storm ending	On-going	Highway, Jeff Spalding	
Adopt-A-Road Program on arterial roads (H,L)	As request come in for an adoption	On-going	Highway, Jeff Spalding	
FACILITIES DEPARTMENT				
Annual Training of Facilities Dept. employees	40 employees	On-going	Jim Irlander	