

MADISON COUNTY

STORMWATER MANAGEMENT PROGRAM

Annual Report

April 2019 – March 2020

Developed pursuant to:

Madison County's Phase II MS4 Permit # ALR040014
Permit Term: October 1, 2016 – September 30, 2021

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I INTRODUCTION

A. BACKGROUND OF STORMWATER MANAGEMENT PROGRAM

Phase I of the U.S. Environmental Protection Agency’s (EPA) Municipal Stormwater Program relied on the National Pollutant Discharge Elimination System (NPDES) permit coverage to address stormwater runoff from “medium” and “large” municipal separate storm sewer systems (MS4s). The Phase II Program expanded the Phase I Program by requiring additional operators of “small” MS4s to implement programs and practices to control polluted stormwater runoff.

In Alabama, the NPDES permit program is administered by the Alabama Department of Environmental Management (ADEM). The Phase II Rule requires operators of small MS4s located in “urbanized areas”, as delineated by the Bureau of the Census, to apply for NPDES permit coverage. Based on the 2000 Census, part of Madison County was classified as being in an urbanized area. Therefore, the EPA and ADEM designated that area as a regulated small MS4 and required the County to comply with the Phase II Municipal Stormwater Program regulations – obtain coverage under the NPDES General Permit and develop a Stormwater Management Program (SWMP) – to reduce the contamination of stormwater runoff from the MS4 to the maximum extent practicable.

At a minimum, the SWMP must employ control measures to address the following six areas:

- Public Education and Outreach on Stormwater Impacts,
- Public Involvement/Participation,
- Illicit Discharge Detection and Elimination (IDDE),
- Construction Site Stormwater Runoff Control,
- Post-Construction Stormwater Management in New Development and Redevelopment, and
- Pollution Prevention/Good Housekeeping for Municipal Operations.

Madison County’s SWMP is comprised of specific actions that will be taken over the five-year permit period to aid in the efforts to protect water quality and reduce pollutant discharges from the County’s MS4. The SWMP Plan (SWMPP) details the programs and activities, referred to as best management practices (BMPs), chosen to meet the regulatory requirements, as well as their associated measurable goals and implementation schedules. Madison County’s progress in program implementation is documented in annual reports to ADEM.

Copies of the current NPDES General Permit and Madison County’s Stormwater Management Program Plan can be viewed at the Madison County Public Works Department or on the Madison County website.

B. PERMIT STATUS

Madison County is currently in its third permit term. The permit was applied for in October 2015. After an administrative extension, General Permit ALR040014 became effective on October 1, 2016 and will expire on September 30, 2021.

C. PURPOSE OF ANNUAL REPORT

To assess the effectiveness of the program, the permit requires an annual review and report of the Stormwater Management Program. The SWMP must be revised, as necessary, to maintain compliance with the permit requirements and must be implemented on all new areas added to the municipal separate storm sewer system. In the annual report, completed and planned activities must be documented, as well as any proposed changes to the program.

D. ANNUAL REPORT COMPONENTS

The permit requires Madison County to submit annual reports to ADEM by May 31st of each year. **The coverage period for this report is April 2019 through March 2020.**

The report includes:

- Narrative report for each of the six control areas including activities/BMPs completed and in progress, an assessment of the control measures, and any revisions made or proposed;
- Summary table of stormwater controls planned/scheduled for the next reporting cycle; and
- Overall evaluation of the Stormwater Management Program including major accomplishments, determination of the program effectiveness, reasons any goals were not performed, and results/analysis of any information collected.

Please note, the BMPs and activities described in this annual report are based on the latest revision of the Madison County SWMPP, updated in November 2017.

All documentation associated with the Stormwater Management Program and annual reports are maintained at the Madison County Public Works Department. The records are available for public review when requested in writing.

E. CONTACTS AND RESPONSIBLE PARTIES

The Public Works Department is responsible for overall program coordination and/or implementation, as well as documentation and annual reporting.

PROGRAM CONTACTS:

Madison County Public Works Department

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II NARRATIVE REPORT OF CONTROL MEASURES

1. ACTIONS COMPLETED / IN PROGRESS

A. Public Education and Outreach on Stormwater Impacts

Madison County implements a public education and outreach program to inform the community about the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff. The program is designed to reach audiences such as the general public, businesses, and the construction community.

(A1) Stormwater/Pollution Prevention Activity at Annual Drinking Water Festival

The activity “Watershed in a Box” was included in the Madison County Drinking Water Festival. This hands-on activity, along with others, was used to inform attending 4th graders, from all over the County, about stormwater impacts and pollution prevention. Approximately 1,500 students and teachers attended the two-day event in May, representing 17 local schools (five Madison County, four Huntsville City, four Madison City, and four Private/Homeschool).

(A2) Stormwater Education for Local Schools

Representatives of the Madison County Soil and Water Conservation District delivered educational programs to students in Madison County – seven teachers-in-training at one university (April).

(A3) Educational Tips and Facts for Annual Drinking Water Report

Six articles containing tips and facts about stormwater, pollution prevention, nonpoint source pollution, conservation, recycling, etc. were included in the Madison County Drinking Water Report. The report was sent to Water Department customers (approximately 31,000 households/businesses at the time of mail-out) in July.

(A4) Educational Brochures and Fact Sheets for General Public

Educational brochures and fact sheets, relevant to the general public, were displayed in the Madison County Public Works Complex and Water Department Office. The brochures/fact sheets displayed were “Water Quality: How it Works”, “The Care and Maintenance of Your Septic System” and “Get to Know Your H2O”. In addition, an article titled “Clean Water is Everybody’s Business” was posted on the County website under Stormwater Management, Information on How You Can Do Your Part.

(A5) Stormwater Education and Regulation Training for Construction Community

When opportunities arise, Madison County assists other partners with training seminars for local builders, contractors and developers and/or displays brochures advertising such events. Brochures were displayed in the Public Works Building (which houses inspection, subdivision, and engineering departments) and Water Department Building advertising “2019 Clear Water Alabama Seminar and Field Day” presented by Alabama Erosion and Sediment Control Partnership during August through October. The seminar/field day was conducted on October 23-24 in Prattville, AL. Also, the “2020 Clear Water Seminar and Field Day” flyer was displayed in March and will continue to be displayed until the event on September 23-24.

(A6) Educational Outreach Efforts with Local Organizations and Partners

Madison County partners with/helps support local organizations already active in educating the public about stormwater, pollution, and conservation issues. Madison County displayed the brochure titled “Get to Know Your H2O” (developed by the Alabama Rivers and Streams Network) at the Public Works Complex and Water

Department Office. Representatives of the Madison County Soil and Water Conservation District delivered educational programs to participants in Madison County – 75 attendees (September).

Networking contacts continue to be made through the newly established Alabama Stormwater Association. Contact information is being shared to participating MS4s in the State. This information will provide a means for MS4s to pool resources and circulate education/outreach materials, creating a more collaborating environment.

(A7) Educational Brochures and Fact Sheets for Businesses and Construction Community

The County developed brochure, titled “Do You Need a Construction Stormwater Permit?”, was displayed all year in the Madison County Public Works Complex and Water Department Office. The supply was restocked in March. The brochure was also posted on the County website under Stormwater Management and Subdivisions.

B. Public Involvement on Stormwater Impacts

The SWMP includes ongoing activities for public involvement.

(B1) Public Outreach Efforts with Local Organizations and Partners

When opportunities arise, Madison County assists other partners with training seminars for local builders, contractors and developers and/or displays brochures advertising such events. Brochures were displayed in the Public Works Building (which houses inspection, subdivision, and engineering departments) and Water Department Building advertising “2019 Clear Water Alabama Seminar and Field Day” presented by Alabama Erosion and Sediment Control Partnership during August through October. The seminar/field day was conducted on October 23-24 in Prattville, AL. Also, the “2020 Clear Water Seminar and Field Day” flyer was displayed in March and will continue to be displayed until the event on September 23-24.

Networking contacts continue to be made through the newly established Alabama Stormwater Association. Contact information is being shared to participating MS4s in the State. This information will provide a means for MS4s to pool resources and circulate education/outreach materials, creating a more collaborating environment.

(B2) Public Notification of Planned Activities

The following were advertised in the water department’s annual drinking water report: Huntsville’s “Handle with Care Household Hazardous Waste” program, Madison County recycling specifics (curbside and drop-site), and Stormwater Program contact information. The report was delivered to approximately 31,000 households/businesses in July.

District One’s and District Four’s “Handle with Care Collection Day” information was sent out through Madison County’s mass email system, advertised on the County website in the calendar of events, and shared on the local news (April, May, October). The County is partnering with the Solid Waste Disposal Authority to provide another means for County residents to dispose of household hazardous waste without having to take the items into Huntsville.

Update information regarding Madison County’s new recycling program was sent out through Madison County’s mass email system (June) and advertised on Madison County’s website.

In addition, the following were posted on the Madison County website: a copy of the SWMP Plan, County recycling programs details (curbside and tires), information about County large debris collection services, a link

to Huntsville’s “Handle with Care Household Hazardous Waste” program, and Stormwater Program contact information.

(B3) Support of Local Clean-Up Projects

Madison County supports local clean-up projects by supplying bags and pick-up services for projects requesting assistance. One river cleanup was conducted in April by the Flint River Conservation Association.

(B4) Public Notification of “Handle with Care” Program

Huntsville’s Solid Waste Disposal Authority “Handle with Care” program was advertised in the annual drinking water report. Details included in the report were program contact information, collection days/times, center location and items accepted. The report was delivered to approximately 31,000 households/businesses in July.

District One’s and District Four’s “Handle with Care Collection Day” information was sent out through Madison County’s mass email system, advertised on the County website in the calendar of events, and shared on the local news (April, May, October). The County is partnering with the Solid Waste Disposal Authority to provide another means for County residents to dispose of household hazardous waste without having to take the items into Huntsville.

(B5) Public Involvement in the Development and Review of the SWMP

The latest versions of the SWMP plan was available on the County website to provide an opportunity for public review and input. The annual report was not updated on the website during this reporting period due to changes in personnel. The 2018/2019 annual report will be made available in the 2020/2021 reporting period in addition to this annual report. The stormwater contacts, also included on the website, provide the means for the public to comment.

(B6) Publish Stormwater Contact Information in Annual Drinking Water Report/Website and Respond to Public Requests/Concerns

Federal, state, and Madison County stormwater contacts were included in the Madison County annual drinking water report, and on the County website. The report was delivered to approximately 31,000 households/businesses in July. There were four emails and a few miscellaneous calls concerning stormwater quality. These concerns were forwarded to the appropriate county department. One email was regarding an illegal fish dump. The site was cleaned up and a no dumping sign was posted. Also, one email was regarding a vehicle leaking oil into the storm drain. A letter and informational brochure were mailed to the property owner in response.

C. Illicit Discharge Detection and Elimination (IDDE) Program

Madison County implements an ongoing program to detect and eliminate illicit discharges into the MS4 service area, to the maximum extent practicable.

(C1) Illicit Discharge Detection Training for Madison County Public Works Employees

The “Glovebox Guides” created last reporting period for illicit discharge reporting were updated. The guides were laminated and distributed to County employees who frequent Madison County roads during their daily work routines in District One, District Three, District Four, Public Works, and Water Department. Harvest-

Monrovia Water was also provided the guides for their use. The guides will help employees identify illicit discharges/connections and make contact information readily available for them to report any findings.

Refresher training was provided to the water department crew members in February during a water department safety meeting. Topics discussed were non-stormwater discharges, illicit discharges/detection, and reporting any findings to a Stormwater Management Program representative. Dry weather screening, on-site sewage disposal system failures, and likely priority areas were emphasized.

(C2) Publish Stormwater Contact Information in Annual Drinking Water Report/Website and Respond to Public Requests/Concerns

Federal, state, and Madison County stormwater contacts were included in the Madison County annual drinking water report, and on the County website. The report was delivered to approximately 31,000 households/businesses in July. There were four emails and a few miscellaneous calls concerning stormwater quality. These concerns were forwarded to the appropriate county department. One email was regarding an illegal fish dump. The site was cleaned up and a no dumping sign was posted. Also, one email was regarding a vehicle leaking oil into the storm drain. A letter and informational brochure were mailed to the property owner in response.

(C3) Storm Sewer Map

The storm sewer map was updated to include high, medium, and low discharge points. Discharge points are where Madison County maintained roads intersect water bodies. There was a total of 415 discharge points in Madison County's MS4. Discharge points that met the following criteria were excluded from dry weather screening:

- Discharge points that border the MS4 and do not have Madison County's MS4 area contributing upstream;
- Upstream grouped points along the same branch of intermittent streams not to exceed one mile between points;
- Drainage basin area is less than 0.1 square mile.

A total of 214 points were identified to be inspected for dry weather screening. These points were broken down into high, medium, and low priority. High priority points were identified by being located on an impaired 303(d) water body, perennial stream that discharges to an impaired 303(d) water, or proximity to commercial or other sources of likely discharges. Medium priority points were identified as an intermittent stream that discharges to an impaired 303(d) water. Low priority points were identified as being on a perennial or intermittent stream in a rural or residential area. There is a total of 48 high, 36 medium, and 130 low priority discharge points. High priority discharge points will be inspected annually, and medium priority points will be inspected once per the permit cycle. Low priority discharge points will be addressed with training of county employees that frequent county roads to look for illicit discharges. As priority outfalls are identified, they are color-coded appropriately for easier identification.

(C4) Illicit Discharge Detection and Elimination Plan

County personnel conducted dry-weather screening of the priority outfalls (August). No illicit discharges were detected at the five sites.

The Illicit Discharge Detection and Elimination (IDDE) Plan was updated in February with additional information to help employees easily identify non-stormwater discharges. This includes potential land uses and activities that produce discharges and indicators for identifying illicit discharges (i.e. flow, color, odor, turbidity, floatables, vegetation, and deposits or stains). The IDDE Plan was also updated to include the latest storm sewer map described in C3. Reference Appendix A for the updated IDDE Plan and storm sewer maps.

The “Glovebox Guides” for illicit discharge reporting were updated. The guides were laminated and distributed to County employees who frequent Madison County roads during their daily work routines in District One, District Three, District Four, Public Works, and Water Department. Harvest-Monrovia Water was also provided the guides for their use. The guides will help employees identify illicit discharges/connections and make contact information readily available for them to report any findings.

D. Construction Site Stormwater Runoff Control

Madison County implements a program to reduce, to the maximum extent practicable, pollutants in any stormwater runoff to the MS4 from construction activities that result in a total land disturbance of one or more acres and activities that disturb less than one acre but are part of a larger common plan of development or sale that would disturb one or more acres.

Madison County relies on ADEM to establish minimum standards for construction site erosion and sediment control practices through ADEM’s State-wide NPDES construction stormwater regulatory program with construction sites being subject to ADEM’s permits and regulations. The County uses its limited capability for enforcement of such standards to address non-compliant construction sites. However, the County refers to ADEM (through the eComplaint System) those non-compliant sites that do not adhere to the enforcement actions set forth by the County; thus, necessitating further support/assistance from ADEM.

(D1) Stormwater Education and Regulation Training for Construction Community

When opportunities arise, Madison County assists other partners with training seminars for local builders, contractors and developers and/or displays brochures advertising such events. Brochures were displayed in the Public Works Building (which houses inspection, subdivision, and engineering departments) and Water Department Building advertising “2019 Clear Water Alabama Seminar and Field Day” presented by Alabama Erosion and Sediment Control Partnership during August through October. The seminar/field day was conducted on October 23-24 in Prattville, AL. Also, the “2020 Clear Water Seminar and Field Day” flyer was displayed in March and will continue to be displayed until the event on September 23-24.

(D2) Stormwater Program Fact Sheets for Construction Sites

The County developed brochure, titled “Do You Need a Construction Stormwater Permit?”, was displayed all year in the Madison County Public Works Complex which houses inspection, subdivision, and engineering departments. The brochure was also displayed in the Water Department Complex. The supply was restocked in March. The brochure was also posted on the County website under Stormwater Management and Subdivisions.

(D3) Publish Stormwater Contact Information in Annual Drinking Water Report/Website and Respond to Public Requests/Concerns

Federal, state, and Madison County stormwater contacts were included in the Madison County annual drinking water report, and on the County website. The report was delivered to approximately 31,000 households/businesses in July. There were four emails and a few miscellaneous calls concerning stormwater quality. These concerns were forwarded to the appropriate county department. One email was regarding an

illegal fish dump. The site was cleaned up and a no dumping sign was posted. Also, one email was regarding a vehicle leaking oil into the storm drain. A letter and informational brochure were mailed to the property owner in response.

(D4) Inspection of Qualifying Construction Sites

Madison County continued following the Standard Operating Procedure (SOP) for inspecting qualifying, priority construction sites within the MS4. County employed Qualified Credentialed Inspectors (QCIs) conducted monthly inspections at 29 sites. A total of 17 warning letters were issued to the developers/owners at seven of the sites, requesting them to correct deficiencies in their erosion and sediment control practices. See Appendix B for more details concerning inspections and trained personnel.

(D5) Commercial/Subdivision Construction Site Plan Review and Approval

Madison County continued the current process for approving construction site plans as stated in the Commercial Site Plan Application Procedures and the *Madison County Subdivision Regulations*. The subdivision regulations specify detailed review, approval, and re-approval processes for project initiation and completion. Procedures, such as requiring qualifying construction sites to show proof of stormwater permit application before issuing permit to develop and confirming control practices are present on plans and consistent with the *Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas*, were utilized. The entire Subdivision Regulations and Commercial Site Plan Application Procedures can be viewed on the Madison County website (<http://www.madisoncountyal.gov/departments/public-works/subdivisions>).

Madison County is currently reviewing and revising the subdivision regulations to provide better guidelines and enforcement. Updated regulations are expected to be issued in late 2020 or early 2021.

(D6) Stormwater Permit Requirement Notification for Qualifying Residential Construction Sites

A checkbox is included on the building permit application form to aid with notifying owners/developers of when a stormwater permit is necessary.

E. Post-Construction Stormwater Management in New Development and Redevelopment

With the application of Madison County's Subdivision Regulations, Madison County implements a post-construction stormwater management plan to address stormwater runoff, to the maximum extent practicable, from subdivision new development and redevelopment projects that disturb greater than one acre and projects less than one acre that are a part of a larger common plan of development or sale.

(E1) Subdivision Development Site Plan Review and Approval

Madison County's subdivision regulations specify detailed review, approval, and re-approval processes for project initiation and completion: before approval of a Proposed Plat, applicants must submit Construction Plans that include a Storm Drainage Plan; detention and/or retention structures must be designed to accommodate a 10 year, 24-hour storm event with post development flows not significantly exceeding predevelopment flows; any Final Plat submitted one year following Proposed Plat approval will not be considered until another Proposed Plat is submitted for re-approval; plus many more requirements. The entire Subdivision Regulations can be viewed on the Madison County website (<http://www.madisoncountyal.gov/departments/public-works/subdivisions>).

Madison County is currently reviewing and revising the subdivision regulations to provide better guidelines and enforcement. Updated regulations are expected to be issued in late 2020 or early 2021.

(E2) Inspection and Completion of Post-Construction Control Measure Installation

Madison County's subdivision regulations have sufficient procedures for inspecting subdivision development/redevelopment sites and enforceable procedures to either adequately bring any noncompliant projects into compliance or compensate the County for the noncompliance: prior to the final acceptance of the development, the County Engineer or his designee shall conduct a final inspection to verify post-construction BMPs have been installed per design specifications; if any of the required improvements have not been constructed in accordance with the County's specifications, the applicant is responsible for completing the improvements; wherever the cost of the improvements is covered by a surety, the applicant and the surety may be severally or jointly liable for completing the improvements; the remaining portion of the improvement guarantee will not be released until the satisfactory completion of all required improvements; plus more requirements. The entire Subdivision Regulations can be viewed on the Madison County website (<http://www.madisoncountyal.gov/departments/public-works/subdivisions>).

Madison County is currently reviewing and revising the subdivision regulations to provide better guidelines and enforcement. Updated regulations are expected to be issued in late 2020 or early 2021.

(E3) Long-Term Operation and Maintenance of Post-Construction Control Measures

Madison County assumes responsibility for the operation and maintenance of improvements within County easements (including any stormwater structures) after the conclusion of a two-year maintenance period during which the developer/owner maintains the public improvements. Details are included in the latest revision of the *Madison County Subdivision Regulations*. The regulations can be viewed on the Madison County website (<http://www.madisoncountyal.gov/departments/public-works/subdivisions>).

In most cases, stormwater basins are maintained by a homeowner's association or by the landowner(s). Coordination/planning efforts will continue in order to come up with an efficient process to document exceptions – stormwater structures within County easements and, therefore, the County's responsibility.

(E4) Inspection and Maintenance of Post-Construction Control Measures

Structural BMPs in Madison County's MS4 were identified in Subdivisions filed since 2013. Madison County does not take responsibility for maintenance of structural BMPs located in common areas or utility and drainage easements not shown on the recorded plat. There were 13 subdivisions with Structural BMPs. However, 10 were located within a common area, two were not shown on the recorded plats, and one is the responsibility of the property owners. Therefore, Madison County does not maintain any structural BMPs inside residential developments.

In 2019, one detention pond was installed as part of the Jordan Road Extension. This is the only structural BMP that will require inspection in the future and maintenance by Madison County.

(E5) Ensure Policies and Specifications Support Green Infrastructure and Low-Impact Development

No revisions/changes were made to Madison County's subdivision regulations during the reporting period. Madison County is currently reviewing and revising the subdivision regulations to provide better guidelines and enforcement. Updated regulations are expected to be issued in late 2020 or early 2021.

F. Pollution Prevention/Good Housekeeping for Municipal Operations

Madison County implements a pollution prevention/good housekeeping program to prevent or reduce the discharge of pollutants in stormwater runoff from municipal operations to the maximum extent practicable.

(F1) Inventory of County Facilities

There were no changes to the inventory list of County Facilities.

(F2) Standard Operating Procedures for Good Housekeeping Practices

The County researched several resources to create new SOPs for applicable practices to Madison County's municipal facilities and operations. SOPs were created for the following: Construction Erosion Prevention and Sediment Control, Material Handling and Storage, Parking Lots/Vehicle and Equipment Storage, Right-of-Way Maintenance, Spill Control and Cleanup, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance & Repair, Vehicle and Equipment Washing, and Waste Management. Reference Appendix A.

After final review of the created SOPs, the County plans to provide training to employees on the new SOPs and conduct inspections of County facilities.

(F3) Stormwater Training for Madison County Public Works Employees

An MS4 overview and update training was given to the County Engineer, Assistant County Engineer, and new Stormwater Program Manager in August. The training covered permit requirements, goals of the MS4 Program, Madison County BMPs outlined in the SWMP, monitoring requirements, and items to be completed this year.

Refresher training was provided to the water department crew members in February during a water department safety meeting. Topics discussed were non-stormwater discharges, illicit discharges/detection, and reporting any findings to a Stormwater Management Program representative. Dry weather screening, on-site sewage disposal system failures, and likely priority areas were emphasized.

After final review of the created SOPs for good housekeeping practices (BMP F2), training material will be updated and delivered to appropriate public works employees.

(F4) Litter Pollution Reduction from County Roadsides

The Health Department provides temporary signs to the rural, County district offices to be placed in the right-of-way at litter prone areas that they are aware of and/or citizens have complained about. The County sign department makes permanent signs to be placed at illegal dump sites.

The districts and sign personnel were reminded to report any dump site clean-ups and/or sign installations (April). One illegal dump site was cleaned up in District One and five in District Three. Five "no dumping" signs in District One, nine in District Three, and two in District 4 were installed during the reporting period. District 4 also installed hidden cameras at three locations to catch perpetrators. Car tag numbers are reported to the Health Department.

County forces and inmates collected litter along roadsides on 3 occasions during the reporting period. Approximately 3 truckloads of waste were collected. There was a significant decrease in roadside cleanups due to not enough trustee inmates and reallocation of inmates to weed eat at signs, bridges, and intersections.

(F5) Herbicide Reduction for County Roadside Maintenance

Madison County continued low herbicide use in Districts One, Three, and Four. County roads in Districts One and Three were maintained with a mixture of one to two herbicide applications and mowing the rest of the season. District Four had three applications of herbicide due to above average rainfall.

(F6) Curbside Recycling for Residents of Rural Madison County

The curbside recycling program for Madison County changed in August of 2019 to a new automated system with a new service provider. The new program expanded the service area to include all single-family households within the Madison County boundary, adding program eligibility to approximately 20,000 additional residents who were previously serviced via drop sites only. The new program accepts #1 and #2 narrow neck plastic bottles, aluminum and steel cans, mixed paper, and cardboard. This is identical to the previous program with the exception of motor oil, household batteries and aerosol cans, were removed from the new curbside program. These items can now be recycled at the Household Hazardous Waste (HHW) Facility, operated by the Solid Waste Disposal Authority, which is opened Monday through Friday from 7:00 a.m. to 5:00 p.m. Additionally, the HHW program moves off location into various areas of the County to provide on-site Community Collection Events of HHW. The HHW facility also collects or recycles paint, batteries, electronics, as well as other hazardous household waste. The total tons of curbside recyclables collected from April 2019 through March 2020 was 2745.35 tons. HHW collected from Madison County (including City of Huntsville) 7823 gallons of waste oil and 15,680 pounds of batteries.

(F7) Drop-Site Recycling for Residents of Rural Madison County

Four recycling drop-sites were supplied at centralized locations in rural Madison County until July 31, 2020 (with the exception of the Hazel Green drop-site, which was removed in June of 2020 due to illegal dumping). The sites were located in Hazel Green, New Hope, New Market and Owens Cross Roads. In July of 2020, all of the drop-sites were removed by the previous curbside recycling contractor. As all single-family households are now included in the curbside service area, the drop-sites were not replaced.

Items collected at the drop-sites included plastic, aluminum, steel, paper, newspapers, magazines, and cardboard. The drop-site totals are included in the total tons collected which was 2745.35 tons from April 2019 through July 2019.

(F8) Recycling Programs and Large Debris Collection Services for Residents of Rural Madison County

Monthly, large debris collection services were provided to residents in Districts One, Three, and Four. A tire recycling program allowed residents to dispose of 235.13 tons of tires at the district offices/landfills.

Madison County has also begun a “Handle with Care Collection Day” program for residents of the rural districts. The County is partnering with the Solid Waste Disposal Authority to provide other means for County residents to dispose of household hazardous waste without having to take the items in to Huntsville. District Four had two collection days – one in April and the other in October. In April 205 cars participated, and 185 cars participated in October. Also, District One had one collection day in May. Two trailers (8 feet wide by 32 feet long) were filled with materials dropped off.

(F9) Employee Attendance at Stormwater/Pollution Prevention Workshops and Seminars

Madison County employees attended the following: three (3) employees attended the “Homebuilders Association of Alabama QCI Initial Training” in April; two (2) employees attended the Alabama Stormwater Association (ASA) seminar “Post-Construction Stormwater Management: Getting Started & Sustaining Success” in August; one (1) employee attended the Southeastern Stormwater Association (SESWA) webinar “Litter Quitters”; one (1) employee attended the American Society of Civil Engineers (ASCE) webinar “Preparing and Implementing Construction Stormwater Pollution Prevention Plans”; and one (1) employee attended the “2020 Nonpoint Source Management Conference in January. One employee was registered to attend the ASA seminar “Identifying & Monitoring the ‘Right’ Receiving Waters” in March, but the event was cancelled.

(F10) Inspections of County Facilities and Pollution Prevention BMP Implementation

As SOPs for good housekeeping practices (BMP F2) are finalized, trained public works employees and/or consulting agencies will conduct inspections of County operation facilities.

G. Monitoring of Impaired Waterbodies

Quarterly samples were collected at the five locations described in the Monitoring Plan. See Appendix C for the results. Training was provided to the new Stormwater Program Manager in September.

2. ASSESMENT OF CONTROLS

A. Public Education/Outreach and Public Involvement

With the use of the annual drinking water festival and annual drinking water report, Madison County was able to reach out to approximately 1,500 local students and approximately 90,000 County residents. Even though the quantitative results are hard to measure, Madison County feels these educational and notification efforts are making a positive impact on overall public awareness and involvement.

County customers, developers and contractors are interested in environmental education material as suggested by the disappearance of displayed brochures. The distribution of these brochures and fact sheets, along with the several partnerships Madison County maintains with other local organizations active in public education/involvement programs, will yield more outreach opportunities.

Since the inclusion of stormwater program contacts in the annual drinking water report and on the County website, several emails and phone calls were received concerning stormwater issues. Although most concerns were about stormwater quantity, it is evident having the contacts available has provided an avenue for more public involvement.

Public notification was instrumental to the success of the County’s new “Handle with Care Collection Day”. This new program has had great success as suggested by the number of residents participating.

Networking contact information is being shared between members of the newly established Alabama Stormwater Association. This information will provide a means for MS4s to pool resources and circulate education/outreach materials, creating a more collaborating environment.

B. IDDE Program

Based on recommendations/guidelines from ADEM during the audit and through networking opportunities made possible through the newly established Alabama Stormwater association, progress has been made toward implementing a more practical IDDE Program. Through more functional inspections, updated employee training, and publishing of stormwater program contacts, more improvements in illicit discharge detection and elimination are expected. Assessments of changes will follow implementation.

C. Construction Site Stormwater Runoff Control

Madison County has very limited regulatory, monitoring and enforcement authority concerning stormwater matters (due to state and local laws). Consequently, the County relies on ADEM to establish minimum standards for construction site erosion and sediment control practices and to take enforcement actions against non-compliant construction sites after the County has unsuccessfully exhausted its available enforcement authority.

Madison County will continue to review subdivision/commercial developments site plans to confirm control practices are present and consistent with the *Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas*, as outlined in the requirements set forth in the Madison County Subdivision Regulations; supplement with public education/notification of state permit requirement; and practice monthly inspections of qualifying construction sites within the MS4. This process should lessen construction sites' adverse impacts on water quality prior to non-compliance and ADEM involvement.

D. Post-Construction Stormwater Management

Madison County's Subdivision Regulations provide requirements for post-construction stormwater management for subdivision developments and redevelopments. The subdivision regulations specify detailed review, approval and re-approval processes for project initiation and completion; have sufficient procedures for inspecting subdivision development/redevelopment sites and enforceable procedures to either adequately bring any noncompliant projects into compliance or compensate the County for the noncompliance; and require the development operators to enter in to a two-year maintenance period after the improvements are accepted by the Madison County Commission (after which the County, landowner, or association assumes responsibility of the improvements). These provisions support permanent stormwater management over the life of the properties.

Madison County reviewed subdivisions dating back to 2013 and determined that the County does not currently maintain any structural BMPs installed in subdivisions. However, there is one post-construction BMP that was accepted into Madison County's program in 2019. This is currently the only structural BMP maintained by the County.

E. Pollution Prevention/Good Housekeeping for Municipal Operations

Madison County provides multiple pollution prevention/reduction programs for County residents. The large number of participants indicates the programs are beneficial.

Madison County's current good housekeeping practices, along with others that will be phased-in over the permit cycle (SOP development, training updates, and facility inspections), will aid municipal operations in preventing and/or reducing the discharge of pollutants in stormwater runoff. Assessment of these practices will be conducted after implementation.

F. Monitoring of Impaired Waterbodies

The Monitoring Plan, and subsequent results, will be used to help determine if the MS4 is contributing to any impairments, identify potential sources of pollution, and assess the effectiveness of BMPs. The Monitoring Plan will be re-evaluated annually and updated when necessary, or if directed to do so by ADEM.

According to guidance received during the 2017 audit, the quarterly monitoring program can be assessed after two years of monitoring. Then, depending upon the results, permission to drop to twice a year may be granted.

Total suspended solids (TSS) on Indian Creek and Chase Creek and turbidity on the Flint River were measured for the remainder of 2019 and the first quarter of 2020. Due to no flow during the time of collection, samples were not collected on Chase Creek and the downstream point on Indian Creek in Quarter 2 and Quarter 3 of 2019. In 2019 and 2020, TSS along Indian Creek overall showed a lower TSS measurements downstream than upstream and TSS was only detected on Chase Creek in Quarter 1 of 2020. In 2019, the turbidity results on the Flint River showed a decrease during the wet seasons (Quarter 1 and 4) and a slight increase during the dry seasons (Quarter 2 and 3). In Quarter 1 of 2020, there was a turbidity increase of 2 NTU.

From the results of 2019 and the first quarter of 2020 (see Appendix C), data shows that the MS4 did not contribute to any TSS impairments and had a small contribution to turbidity. Data collected in the next reporting period will help identify trends in turbidity and TSS.

3. REVISIONS TO PROGRAM / PLAN

The table below outlines the revisions made.

BMP #	REVISION/COMMENT	SWMPP Section
	Public Education and Outreach on Stormwater Impacts	
A1-A7	None	
	Public Involvement on Stormwater Impacts	
B1-B5	None	
	Illicit Discharge Detection and Elimination (IDDE)	
C1-C4	None	
	Construction Site Stormwater Runoff Control	
D1-D6	None	
	Post-Construction Stormwater Management in New Development and Redevelopment	
E1-E5	None	
	Pollution Prevention/Good Housekeeping for Municipal Operations	
F1-F6	None	
F7	Recycling drop-sites BMP was removed from the stormwater program in July 2019 when the new recycling program was established. Deletion of this BMP will be reflected in the next permit cycle.	3.6.7
	Appendices	
	Stormwater Management Program Contacts: Revised county contact information	Appendix A
	County Attorney's Legal Opinion Letter on Stormwater Issues: None	Appendix B
	Storm Sewer Map Development Details, Urbanized Area Map of Huntsville, and ALDOT MS4 Areas within Madison County MS4: Updated Storm Sewer Map Development Details	Appendix C
	Subdivision Regulations Applicable to SWMP: None	Appendix D
	Monitoring Plan and Results: Added results for rest of 2019 and Quarter 1 of 2020	Appendix E
	Annual Reports for Current Permit Cycle: Added 2018/2019 Annual Report	Appendix F
	Definitions and Acronyms: None	Appendix G
	References: None	Appendix H
	Illicit Discharge Detection and Elimination Plan: Updated IDDE Plan and Stormwater Maps	Appendix I
	Standard Operating Procedures and Corresponding Forms: Created standard operating procedures for municipal operations and updated IDDE inspection form	Appendix J
	Inventory of County Facilities within MS4: None	Appendix K

4. ACTIVITIES PLANNED FOR THE NEXT REPORTING CYCLE

BMP #	PLANNED/PROPOSED FOR 2020-2021
	Public Education and Outreach on Stormwater Impacts
A1	Include stormwater/pollution prevention activity in annual drinking water festival
A2	Deliver stormwater education to local schools (when opportunities arise)
A3	Include articles on stormwater, pollution, recycling, etc. in annual drinking water report
A4	Display educational brochures for general public at county locations and on county website Update material if needed
A5	Assist other partners with training seminars for local builders, contractors and developers (when opportunities arise)
A6	Participate in, or help sponsor, existing stormwater and water quality outreach programs (when opportunities arise)
A7	Display educational brochures for businesses/construction community at county locations and on county website
	Public Involvement on Stormwater Impacts
B1	Participate in, or help sponsor, watershed/stream clean-ups and workshops (when opportunities arise)
B2	Notify the public of planned activities and ways the public can participate (when events warrant)
B3	Support local community, roadside, school, etc. clean-up projects (when opportunities arise)
B4	Notify public of "Handle with Care" Program in drinking water report and on website
B5	Provide copies of plan/reports to members of local advisory committees and on website
B6	Publish stormwater program contact information in drinking water report & on website Respond to any public requests/concerns (when needed)
	Illicit Discharge Detection and Elimination (IDDE) Program
C1	Update training material as needed Train appropriate public works employees
C2	Publish stormwater program contact information in drinking water report & on website Respond to any public requests/concerns (when needed)
C3	Continue analyzing drainage areas to identify major outfalls and update discharge points on map accordingly Add any new structural BMPs/outfalls to map
C4	Update major/priority outfalls list as outlined in IDDE Plan and SWMPP Inspect outfalls as outlined in the IDDE Plan/SOP Investigate any reported problems
	Construction Site Stormwater Runoff Control
D1	Assist other partners with training seminars for local builders, contractors and developers (when opportunities arise)
D2	Supply fact sheets, relevant to construction sites, to developers/owners (when requested or warranted) Display fact sheets at relevant county offices and on website Update material if needed
D3	Publish stormwater program contact information in drinking water report and on the website Respond to any public requests/concerns (when needed)
D4	Make sure all construction site inspectors have QCI certifications Continue priority construction site inspections according to SOP Notify ADEM of any non-compliant sites Update SOP if needed
D5	Continue current process for approving construction site plans Require qualifying construction sites to show proof of stormwater permit application
D6	Provide checkbox on building permit form to notify when a stormwater permit is needed Continue following SOP guidelines Update SOP if needed

Post-Construction Stormwater Management in New Development and Redevelopment	
E1	Continue current process of reviewing and approving development site plans
E2	Continue current procedures for inspecting and enforcing BMP installations
E3	Ensure developers/owners under 2-yr maintenance period take care of improvements Assume responsibility of improvements (within county easements) after 2-yr maintenance period ends Coordinate/plan a more efficient process for documenting the structures maintained by the county Correct any operational problems when needed
E4	Continue developing inventory list of known structural BMPs within MS4 area Coordinate/begin inspecting structural BMPs Correct any deficiencies noted during inspections Add new structural BMPs to inventory as the county assumes responsibility Update SOP if needed
E5	Make efforts to ensure regulations/codes do not limit green infrastructure/LID techniques (if needed) Update policies/specifications (if needed)
Pollution Prevention/Good Housekeeping for Municipal Operations	
F1	Update list of county operation facilities (if needed)
F2	Finalize good housekeeping SOPs for county facilities and county operations Begin implementing developed SOPs
F3	Begin updating guidance manual/training material to include developed SOPs Train appropriate employees on completed SOPs as they are developed
F4	Use county forces and inmates to pick up litter/dump sites along county roadsides (when forces are available)
F5	Continue low herbicide use for county roadside maintenance
F6	Continue curbside recycling program for rural county residents
F7	None – Drop-sites are no longer available
F8	Apply for recycling grants Implement recycling programs when granted Provide large debris collection services to residents in rural districts
F9	Attend workshops and seminars on stormwater/pollution prevention topics (when opportunities arise)
F10	Begin inspecting facilities and operations (after finalizing SOPs and training) Implement necessary BMPs to address pollution/runoff problems (when needed)
Monitoring Program	
	Continue quarterly monitoring as outlined in Monitoring Plan

III EVALUATION OF PROGRAM

1. MAJOR ACCOMPLISHMENTS

A. Quarterly Monitoring of Impaired Waterbodies

Monitoring was conducted all four quarters. The new stormwater program manager was trained on collecting samples.

B. District 4 “Handle with Care Collection Day”

The County continues to partner with the Solid Waste Disposal Authority to provide another means for county residents to dispose of household hazardous waste without having to take the items into Huntsville. Two “Handle with Care” Collection Days were conducted by District Four and one day was conducted by District One. The new drive-through Handle with Care Collection Center also changed their hours of operation and is open Monday through Friday from 7:00 a.m. to 5:00 p.m. as of July 2019. Extended hours provide residents more opportunities to drop-off hazardous waste.

C. Storm Sewer Map Updates

Madison County completed a “desktop analysis” and updated the Stormwater Maps to show priority discharge points. Moving forward, the County has developed a strategy for inspecting discharge points over the permit cycle.

D. IDDE Program

The “Glovebox Guides” for illicit discharge reporting were updated. The guides were laminated and distributed to County employees who frequent Madison County roads during their daily work routines in District One, District Three, District Four, Public Works, and Water Department. Harvest-Monrovia Water was also provided the guides for their use. The guides will help employees identify illicit discharges/connections and make contact information readily available for them to report any findings.

Refresher training was provided to the water department crew members in February during a water department safety meeting. Topics discussed were non-stormwater discharges, illicit discharges/detection, and reporting any findings to a Stormwater Management Program representative. Dry weather screening, on-site sewage disposal system failures, and likely priority areas were emphasized.

2. GOALS NOT PERFORMED AND WHY

Intended actions were performed according to the SWMPP implementation schedules with only marginal deviations:

- **Goal:** Provide copies of SWMPP and annual report to members of local advisory committee (BMP B5)

Reason: There were only two meeting held in 2019 and Madison County did not receive notification of the meetings. Also, the frequency of meetings is declining as the committee is wrapping up watershed projects and partnerships. The SWPP plan was still made available on the County website for public review and comment.

- **Goal:** Begin inspecting County facilities and operations based on the developed SOPs (BMPs F2 and F10)

Reason: SOPs for Madison County facilities and operations were developed, but not implemented. The SOPs need to be reviewed and finalized prior to training employees. Once an inspection checklist is developed and training has occurred, inspection can begin.

As noted in the SWMPP and this annual report, some BMPs are not fully functional. The development and/or implementation of these controls will be phased-in over the permit cycle.

3. OVERALL PROGRAM STRENGTHS/WEAKNESSES

A. Strengths

Madison County considers its public education/outreach efforts, local partnerships, subdivision regulations implementation, and litter reduction/recycling practices to be the program's greatest strengths.

- Through the annual Drinking Water Report and the annual Drinking Water Festival, education/outreach endeavors have the potential to reach a sizeable audience more efficiently;
- By combining forces with other partners, better programs can be developed and more residents can be reached;
- Through Madison County's subdivision regulations, the following are specified: review/approval processes for project initiation and completion, procedures for inspecting subdivision development sites, and practices for long-term operation/maintenance of post-construction controls;
- With the application of litter reduction/recycling programs, rural residents have a means to recycle and dispose of large debris, helping to decrease the occurrences of illegal dumping and burning in the County.

B. Weaknesses

Madison County is organized in to separate districts with multiple departments and various programs. Coordinating stormwater efforts from a central location, coupled with limited resources, can cause activity execution, information gathering, and record keeping to be challenging and difficult to standardize. Consequently, even though the County can satisfy SWMPP conditions, at times implementation of control measures must be phased-in over the permit life cycle.

1. OVERALL PROGRAM EFFECTIVENESS

The control measures performed during the reporting period appear to be effective in meeting the stormwater program goals. The implementation schedules were followed with minor deviations, and overall compliance with the General Permit was met. The Permit requirements Madison County cannot satisfy are those the County are prohibited to fulfill by State and local laws, as noted in the SWMPP.

Because more measures are scheduled to be phased-in over the permit period, a better assessment of the program's effectiveness will be available once these controls/plans are fully implemented and analyzed.

2. FUTURE DIRECTION OF THE PROGRAM

Madison County will continue to follow the SWMPP, conducting activities as previously done. Also, as noted in the SWMPP and detailed in the implementation schedules, some of the BMPs are being phased-in over the current permit's life cycle.

Because significant personnel changes have occurred in the County (new Assistant County Engineer and new Stormwater Management Program Manager) several job duties have been reassigned and some have yet to be determined. The use of outside help was considered (met with Goodwyn Mills Cawood in April) to better implement the more challenging aspects of the stormwater program, but Madison County will continue to manage the program in house for now.

IV CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Charles "Chuck" Faulkner, PE
Madison County Engineer
Madison County, AL



Date

APPENDIX A

NEW/REVISED DOCUMENTS

(created this reporting period)

Illicit Discharge Detection & Elimination (IDDE) Plan [revised]

Storm Sewer Map Development Details [updated]

Stormwater System Map [updated]

“Glove-Box” Guides [revised]

Municipal Operations – Stormwater Quality Standard Operating Procedure [new]



Madison County Illicit Discharge Detection and Elimination (IDDE) Plan

for

National Pollutant Discharge Elimination System
Municipal Separate Storm Sewer System
Permit # ALR040014



Prepared by:
Madison County, Alabama
Department of Public Works
February 2020

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SECTION 1: INTRODUCTION

1.1 MS4 Program

Alabama Department of Environmental Management (ADEM) designated urbanized areas of Madison County as a regulated small Municipal Separate Stormwater System (MS4) and requires Madison County to comply with the Phase II Municipal Stormwater Program regulations. Madison County obtained coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit and develop a Stormwater Management Program (SWMP). Under the NPDES permit, Madison County must satisfy minimum control measures relating to illicit discharges to the MS4. This Illicit Discharge Detection and Elimination (IDDE) Plan was designed to meet these requirements. The purpose of an IDDE plan is to outline the procedures to detect and eliminate illicit discharges, and improper disposal, into the MS4 service area, to the extent allowable under State and local law and to the maximum extent practicable, within the County's jurisdiction. The information and activities described in this plan are intended to protect water quality in Madison County.

1.2 Illicit Discharges

An illicit discharge is defined as any discharge to a drainage system that is not composed entirely of stormwater, except discharges pursuant to a NPDES Permit. Authorized discharges under Madison County's MS4 permit are discussed under Section 1.3. Potential illicit discharges can be identified by several indicators including the presence of flow during dry weather, dumped materials, unusual or strong odors, discolored water, excess sediment or trash, and oil sheens. Sometimes there are signs of previous illicit discharges such as staining or dead/excess vegetation. Appendix A contains a list of example sites that could potentially produce discharges.

1.3 Authorized Non-Stormwater Discharges

Authorized non-stormwater discharges are those not likely to cause pollution of stormwater. NPDES Permit ALR040014 authorizes the following non-stormwater discharges:

- Water line flushing
- Landscape irrigation (not consisting of treated or untreated wastewater unless authorized by ADEM)
- Diverted stream flows
- Uncontaminated ground water infiltration
- Uncontaminated pumped groundwater
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensate
- Irrigation water (not consisting of treated or untreated wastewater unless authorized by ADEM)
- Rising ground water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering runoff
- Individual residential car washing, to include charitable car washes
- Residual street wash water
- Discharge or flows from firefighting activities (including fire hydrant flushing)
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges

1.4 MS4 Coverage Area

Areas under the County's jurisdiction for the purpose of this plan include County right-of-way (ROW) and County-owned facilities within the Huntsville, Alabama Urbanized Area that is in: (1) the unincorporated Madison County areas, (2) the Meridianville area, (3) the Moores Mill area, (4) the Hazel Green area and (5) the Harvest area minus the Alabama Department of Transportation's (ALDOT) MS4 area along all state highways. See Stormwater Management Program Plan, Section 2.1, for more details.

SECTION 2: STORM SEWER MAP

For the purpose of the Madison County Stormwater Management Program, a storm sewer map was created to show the locations of outfalls and the names/locations of waters of the State that receive discharges from those outfalls. The map is reviewed annually and updated, when necessary, to reflect any new discharge points and changes. More details concerning the map can be found in the Stormwater Management Program Plan.

SECTION 3: ILLICIT DISCHARGE DETECTION PROCEDURES

Illicit discharges and improper disposal are identified through citizen reporting, interdepartmental referral, or other routine MS4 inspection activities. The County relies on local citizens, field staff, and inspections to detect potential problem areas quickly so they can be addressed before significant water quality degradation occurs. Inspections include checking flow, color, odor, appearance, and floatables, vegetation, and deposits or stains.

3.1 Flow

Flow can be associated with a variety of land uses and activities (reference Appendix A) and can be helpful for narrowing down potential sources. While flow may be observed during dry weather conditions, it does not necessarily indicate an illicit discharge. Flow should be used with other visual and biological indicators to determine if the discharge is illicit.

3.2 Color

Color can be used to determine if a discharge is contaminated, but not all illicit discharges have color. Some colors may also be naturally occurring and are not considered illicit discharges. Table 3-1 contains example discharge sources by color. It is common for contaminated stormwater to exhibit similar color to the polluting material or chemical.

Table 3-1 Color Indicators of Discharges and Likely Sources

Color	Likely Sources / General Causes	
Tan to Brown	<ul style="list-style-type: none"> • Construction site runoff • Sediment from soil erosion (sometimes naturally occurring) 	<ul style="list-style-type: none"> • Decaying organic matter from soil or leaves (naturally occurring)
Brown to Reddish Brown	<ul style="list-style-type: none"> • Decomposing food or meat products • Grain mill products • Paint • Rusting metal 	<ul style="list-style-type: none"> • Stone, clay, glass, and concrete product manufacturing • Decaying organic matter from soil or leaves (naturally occurring)
Brown to Black	<ul style="list-style-type: none"> • Automotive dealers, garden or building product suppliers • Bakery products, fats and oils • Decomposing food or leaking dumpster • Metals, rubber, wood chemicals, and plastics 	<ul style="list-style-type: none"> • Paint • Printing or publishing industry waste • Septic wastewater • Sulfuric acid • Turnover of oxygen depleted water
Gray / White	<ul style="list-style-type: none"> • Concrete washwater • Dairy products • Drywall compound • Grease • Lime • Paint 	<ul style="list-style-type: none"> • Phosphate fertilizer manufacturing • Washwater from commercial/industrial or domestic sources
Orange / Red	<ul style="list-style-type: none"> • Iron deposits • Paint 	<ul style="list-style-type: none"> • Tracing dye • Iron bacteria (naturally occurring)
Dark Red / Purple	<ul style="list-style-type: none"> • Blood from meat processing facilities • Diesel fuel or hydraulic fluid • Fabric dye 	<ul style="list-style-type: none"> • Heating oil • Paint • Paper ink
Blue Green / Brown Green	<ul style="list-style-type: none"> • Algae blooms (sometimes naturally occurring) • Fertilizer runoff • Paint 	<ul style="list-style-type: none"> • Portable toilet waste • Sewage • Tracing dye • Vehicle wash water
Yellow to Bright Green	<ul style="list-style-type: none"> • Algae blooms (sometimes naturally occurring) • Chlorine chemical manufacturing 	<ul style="list-style-type: none"> • Paint • Radiator fluid (anti-freeze) • Tracing dye

Source: Modified from Illicit Connection and Illicit Discharge Field Screening and Source Tracing Guidance Manual, Herrera Environmental Consultants, Inc., May 2013, p. 73-76.

3.3 Odor

Odor can be helpful in identifying if stormwater has been contaminated by an illicit discharge. Clean stormwater does not typically have an odor. Not all illicit discharges have an odor. Sometimes polluted stormwater will exhibit similar odors to the illicit discharge material or chemical. Table 3-2 contains different odors and likely sources associated with each odor.

Table 3-2 Odor Indicators of Discharges and Likely Sources

Odor	Likely Sources / General Causes
Musty	<ul style="list-style-type: none"> • Partially treated sewage • Livestock waste • Algae (sometimes naturally occurring)
Sewage	<ul style="list-style-type: none"> • Sharp foul, rotten, or fecal odor
Acrid / Pungent	<ul style="list-style-type: none"> • Chemicals • Pesticides • Antifreeze • Solvents • Paper or associated products manufacturing
Chlorine	<ul style="list-style-type: none"> • Rubber and plastics manufacturing • Broken drinking water line • Swimming pool flushing • Wastewater treatment plan or industrial discharge
Sulfide (Rotten Eggs)	<ul style="list-style-type: none"> • Raw Sewage • Sulfuric acid • Anaerobic stagnant water (sometimes naturally occurring)
Petroleum (Gas)	<ul style="list-style-type: none"> • Petroleum refining • Construction site •
Rancid / Sour	<ul style="list-style-type: none"> • Restaurant food waste • Leaking dumpster
Sweet or Fruity	<ul style="list-style-type: none"> • Commercial or home laundry wash water • Cleaning or other chemical products

Source: Modified from Illicit Connection and Illicit Discharge Field Screening and Source Tracing Guidance Manual, Herrera Environmental Consultants, Inc., May 2013, p. 79.

3.4 Turbidity

Turbidity is the measure of how transparent or clear water is based on the amount of suspended solids. High amounts of suspended solids will cause water to appear cloudy and in severe cases opaque. Examples of sources causing cloudy or opaque water quality are shown in Table 3-3.

Table 3-3 Turbidity Indicators of Discharges and Likely Sources

Turbidity	Likely Sources / General Causes
Cloudy	<ul style="list-style-type: none"> • Sanitary wastewater • Concrete or stone operations • Fertilizer facilities • Automotive dealers
Opaque	<ul style="list-style-type: none"> • Food processors • Lumber mills • Metal operations • Pigment plants

Source:

3.5 Floatables

Sewage, oil sheen, and foam are all examples of floatable indicators. Trash and debris can also be considered floatables but are not necessarily an illicit discharge. Table 3-3 provides guidance for identifying sources of common types of floatables.

Table 3-3 Floatable Indicators of Discharges and Likely Sources

Floatable	Likely Sources / General Causes
Oil Sheen	<ul style="list-style-type: none"> • Petroleum refineries or storage facilities • Vehicle service facilities
Litter	<ul style="list-style-type: none"> • Illegal dumping
Algae	<ul style="list-style-type: none"> • Excessive nutrients
Sewage	<ul style="list-style-type: none"> • Sanitary wastewater
Suds/Foams	<ul style="list-style-type: none"> • Sanitary wastewater

Source: Modified from Illicit Discharge Detection and Elimination Procedures, Yakima County and the Cities of Yakima, Union Gap, and Sunnyside, April 2009, p. 21-22.

3.6 Vegetation

Excessive vegetation or dead vegetation near an outfall can indicate an illicit discharge.

Table B-2 Vegetation Indicators of Discharge and Likely Sources

Excessive Growth	<ul style="list-style-type: none"> • Food product facilities
Inhibited Growth	<ul style="list-style-type: none"> • High stormwater flows • Beverage facilities • Printing plants • Metal product facilities • Drug manufacturing • Petroleum facilities • Vehicle service facilities • Automobile dealers

Source: Modified from Illicit Discharge Detection and Elimination Procedures, Yakima County and the Cities of Yakima, Union Gap, and Sunnyside, April 2009, p. 21-22.

3.7 Deposits or Stains

Deposits and staining are coatings that remain on the streambank or on the outfall structure after a non-stormwater discharge has ceased.

Table B-2 Deposits or Stains Indicators of Discharge and Likely Sources

Sediment	<ul style="list-style-type: none"> • Construction site erosion
Oils	<ul style="list-style-type: none"> • Petroleum refineries • Storage facilities • Vehicle service facilities
Bacteria	<ul style="list-style-type: none"> • Sanitary wastewater • Food processors

Source: Modified from Illicit Discharge Detection and Elimination Procedures, Yakima County and the Cities of Yakima, Union Gap, and Sunnyside, April 2009, p. 21-22.

3.8 Selection of Priority Outfalls

Priority outfalls are selected based on:

- likelihood of illicit discharges – land uses associated with business/industrial activities; areas where complaints have been registered in the past; areas with storage of large quantities of material that could result in spills; areas susceptible to illegal dumping; and areas with older sanitary sewer lines;
- likelihood of illicit discharges to impaired waterbodies;
- size of outfall pipe; and
- size of MS4 area draining to one point.

Priority outfalls, identified in the County's MS4 service area, are shown on the Stormwater Maps contained in Appendix B.

3.9 Inspections of Priority Outfalls

Trained county employees will visually inspect priority outfalls each year. These inspections will be conducted during dry weather (at least 48 hours with no precipitation or three to four days of a dry period after long periods of heavy rain) and when vegetation is low (leaf off). The inspectors will fill out an Inspection Report and take any necessary pictures of the conditions.

3.10 Field Assessments of Non-Priority Outfalls

County employees, who frequent Madison County roads during their daily work routines such as water department employees and road/bridge maintenance crews, provide effective opportunities to document and identify potential problems. Appropriate employees will be trained to watch for suspicious discharges, failing on-site sewage disposal system and illegal dump sites.

Employees will be instructed to report any unknown discharges, suspicious connections and dump sites, as a result of inspections or discovered during daily routines, to a Public Works Stormwater Management Program representative. The stormwater representative will then complete an Incident Report for the site. If further investigation of the situation is necessary or a follow-up inspection is needed, a trained inspector will perform a site inspection and complete an Inspection Report.

During field inspections, crews should also note whether outfalls have maintenance issues, such as damaged infrastructure, trash accumulation, or vegetation overgrowth.

3.11 Response to Public Complaints/Concerns

Stormwater Program contact information has been posted on the Madison County website and in the Madison County Annual Drinking Water Report. Also, glove box guides have been provided to District 1, District 3, District 4, Madison County Public Works, Madison County Water Department and Harvest-Monrovia Water District to put in work vehicles. The glove box guides provide several good housekeeping best management practices (BMPs) and contact information for report illicit discharges/dumping sites.

These methods provide a mechanism for the public to report any stormwater/discharge concerns. When concerns are reported, a Public Works Stormwater Management Program representative will complete an Incident Report. If further investigation of the situation is necessary or a follow-up inspection is needed, a trained inspector will perform a site inspection and complete an Inspection Report.

SECTION 4: ILLICIT DISCHARGE INVESTIGATION PROCEDURES

When a discharge is found in the MS4 coverage area, additional efforts are necessary to determine the possible source of the discharge. When necessary, a Stormwater Management Program representative will conduct a closer visual inspection of the discharge to classify the physical appearance. If there are no apparent physical traits (i.e. discoloration, oil, suds, etc.) to help determine the source, coordination with the local water systems will be initiated to see if the source is potable water indicating a water line leak. If potable water is ruled out, the discharge will be examined to see if the source can be classified as any other exempt discharge listed in Section 1.3.

At any time the source is suspected to be illicit (including any entering from adjacent MS4s) or further examination of the source is restricted due to ROW constraints, a Stormwater Management Program representative will report the discharge to ADEM through the eComplaint System, with the exception of suspected leaking septic tanks/sewage and illegal dump sites. Discovered wastewater and dump sites will be reported to the Madison County Health Department by email and/or phone.

Due to State and local laws, Madison County has very limited enforcement authority and cannot inspect private property. Likewise, Madison County cannot prohibit, through ordinance or other regulatory mechanism, non-stormwater discharges into the MS4 and cannot implement appropriate enforcement procedures and actions to correct illicit discharge problems.

SECTION 5: DOCUMENTATION

Inspection and incident reports will be used to document field assessment activities, such as the number of outfalls inspected, any complaints received, and steps taken to locate discharge sources.

Discharges/problems reported to ADEM or other agencies will be documented on the appropriate form. Recorded information will include outfall identification, discharge characteristics, and time/date of notification.

SECTION 6: TRAINING

Appropriate county employees will be trained on stormwater issues, to detect illicit discharges and connections, and to report any findings to a Public Works Stormwater Management Program representative. Employees who frequent county roads during their normal work routines, such as water department employees and road/bridge maintenance crews, and who will be utilized for field assessments of non-priority areas will be targeted for the training. Refresher courses will be provided as needed to address changes in coverage area, procedures, techniques or staffing.

Employees conducting outfall/site inspections will be trained on appropriate inspection procedures, investigation steps and reporting methods.

SECTION 7: PLAN EVALUATION

Annually, the components and practices of the Stormwater Management Program Plan is evaluated for effectiveness and compliance. Since the Illicit Discharge Detection and Elimination Plan is part of the overall Stormwater Management Program, it, too, will be evaluated yearly. During the annual review:

- Determine if there are any changes to the MS4 coverage area, and consequently the outfalls;
- If there are new outfalls, determine if any need to be added to the priority list based on criteria set forth in this plan;
- If the MS4 drainage area or impaired waterbodies have changed, update priority list as needed;

- Review Incident Reports to decide if any areas/outfalls need to be added to priority list for more frequent inspections; and
- Assess the current process for inspecting non-priority outfalls based on training/reporting feedback.

Any program changes and/or plan modifications needed, as a result of the annual review, will be documented in the annual reports.

SECTION 8: COORDINATION WITH ADJACENT MS4s

Madison County will actively participate in meetings between the MS4s in the Huntsville/Madison County area. These meetings will allow MS4s to coordinate on education/outreach programs, share relevant information that would benefit the other MS4s, and communicate more efficiently. This coordination will be especially useful if a suspect discharge is discovered entering/exiting an adjacent MS4 area.

SECTION 9: APPENDICES

CONTENT

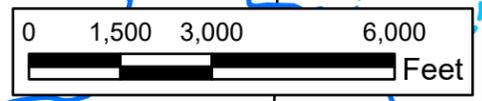
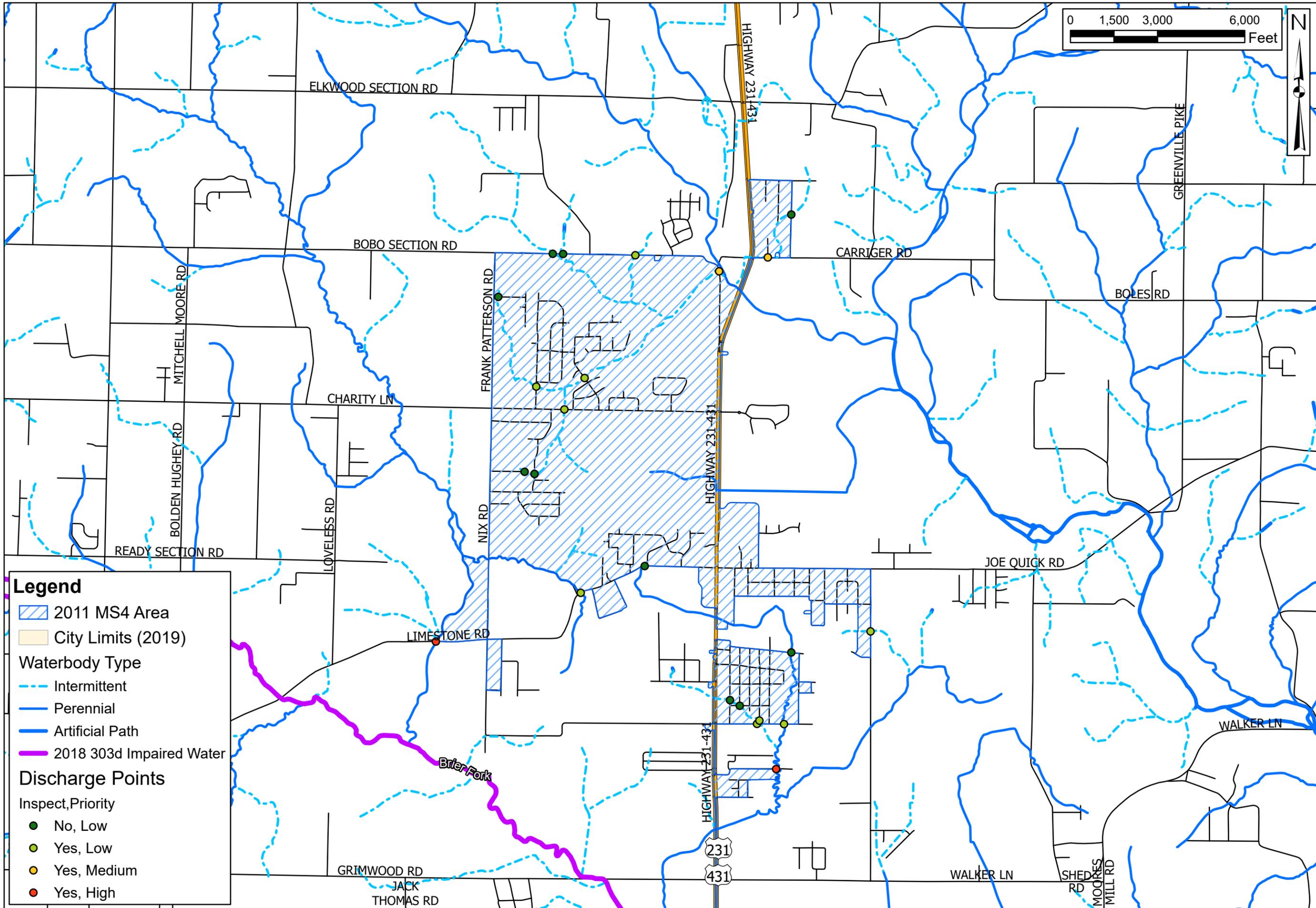
APPENDIX A	Land Uses, Generating Sites and Activities That Produce Indirect Discharges	A-1
APPENDIX B	Stormwater Maps	A-2
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APPENDIX A Land Uses, Generating Sites and Activities That Produce Indirect Discharges

Land Use	Generating Site	Activity that Produces Discharge
Residential	<ul style="list-style-type: none"> • Apartments • Multi-Family • Single Family Detached 	<ul style="list-style-type: none"> • Car Washing • Driveway Cleaning • Dumping/Spills (e.g., Leaf Litter and RV / Boat Holding Tank Effluent) • Equipment Washdowns • Lawn/Landscape Watering • Septic System Maintenance • Swimming Pool Discharges
Commercial	<ul style="list-style-type: none"> • Campgrounds/RV parks • Car Dealers/Rental Car Companies • Car Washes • Commercial Laundry/Dry Cleaning • Gas Stations/Auto Repair Shops • Marinas • Nurseries and Garden Centers • Oil Change Shops • Restaurants • Swimming Pools 	<ul style="list-style-type: none"> • Building Maintenance (Power Washing) • Dumping/Spills • Landscaping/Grounds Care (Irrigation) • Outdoor Fluid Storage • Parking Lot Maintenance (Power Washing) • Vehicle Fueling • Vehicle Maintenance/Repair • Vehicle Washing • Washdown of Greasy Equipment and Grease Traps
Industrial	<ul style="list-style-type: none"> • Auto recyclers • Beverages and brewing • Construction vehicle washouts • Distribution centers • Food processing • Garbage truck washouts • Marinas, boat building and repair • Metal plating operations • Paper and wood products • Petroleum storage and refining • Printing 	<ul style="list-style-type: none"> • All Commercial Activities • Industrial Process Water or Rinse Water • Loading and Un-loading Area Washdowns • Outdoor Material Storage (Fluids)
Institutional	<ul style="list-style-type: none"> • Cemeteries • Churches • Corporate Campuses • Hospitals • Schools and Universities 	<ul style="list-style-type: none"> • Building Maintenance (e.g., Power Washing) • Dumping/Spills • Landscaping/Grounds Care (Irrigation) • Parking Lot Maintenance (Power Washing) • Vehicle Washing
Municipal	<ul style="list-style-type: none"> • Airports • Landfills • Maintenance Depots • Municipal Fleet Storage Areas • Ports • Public Works Yards • Streets and Highways 	<ul style="list-style-type: none"> • Building Maintenance (Power Washing) • Dumping/Spills • Landscaping/Grounds Care (Irrigation) • Outdoor Fluid Storage • Parking Lot Maintenance (Power Washing) • Road Maintenance • Spill Prevention/Response • Vehicle Fueling • Vehicle Maintenance/Repair • Vehicle Washing

Source: Modified from Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, 2004, p. 12, Table 2.

APPENDIX B Stormwater Maps



Legend

- 2011 MS4 Area
- City Limits (2019)

Waterbody Type

- Intermittent
- Perennial
- Artificial Path
- 2018 303d Impaired Water

Discharge Points

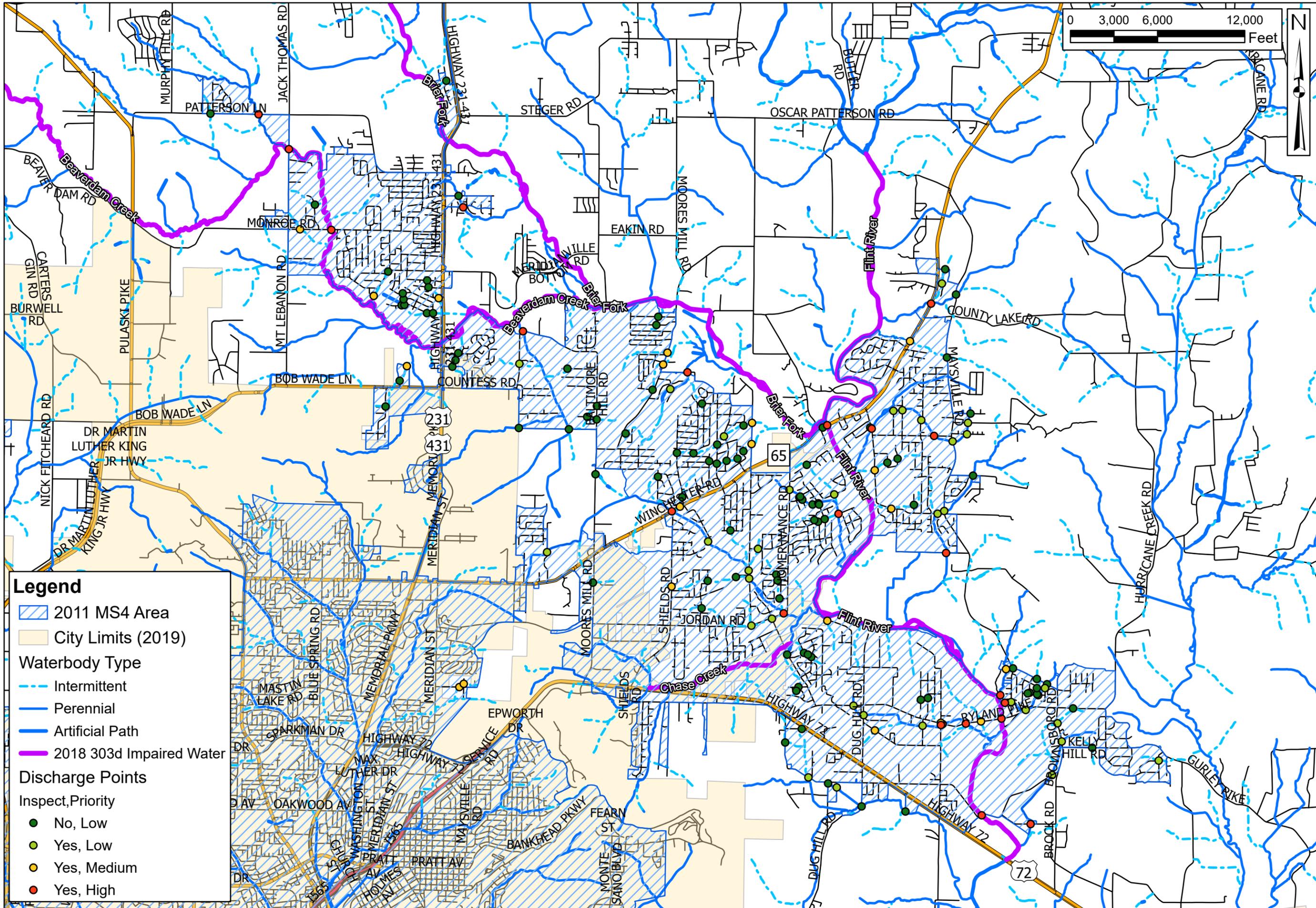
Inspect, Priority

- No, Low
- Yes, Low
- Yes, Medium
- Yes, High

MADISON COUNTY MS4 DISCHARGE POINTS

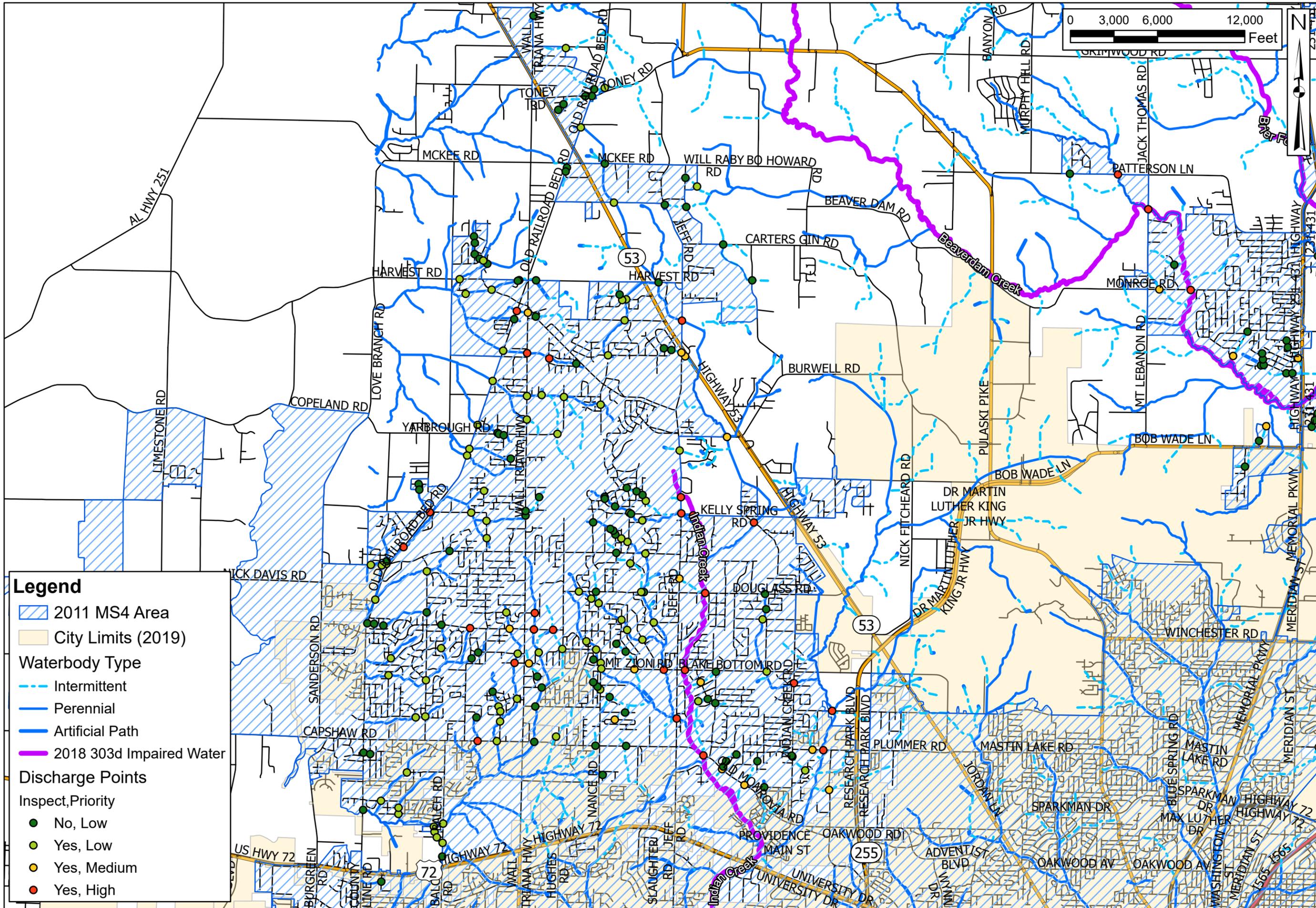
HAZEL GREEN, ALABAMA
 MADISON COUNTY DEPARTMENT OF PUBLIC WORKS





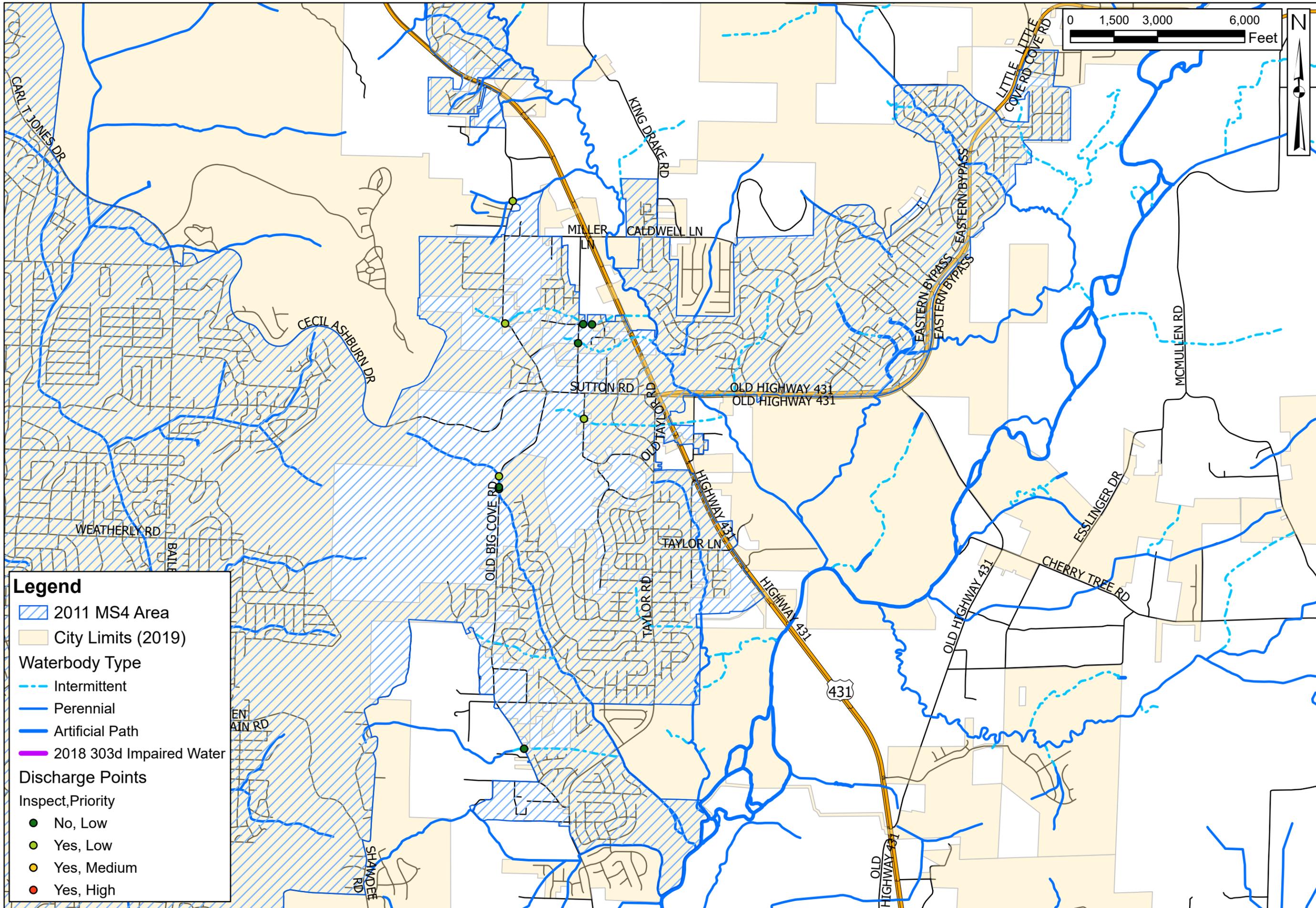
MADISON COUNTY MS4 DISCHARGE POINTS
 NORTHEAST HUNTSVILLE & MERIDIANVILLE, ALABAMA
 MADISON COUNTY DEPARTMENT OF PUBLIC WORKS





MADISON COUNTY MS4 DISCHARGE POINTS
 NORTHWEST HUNTSVILLE & HARVEST, ALABAMA
 MADISON COUNTY DEPARTMENT OF PUBLIC WORKS





Legend

- 2011 MS4 Area
- City Limits (2019)

Waterbody Type

- Intermittent
- Perennial
- Artificial Path
- 2018 303d Impaired Water

Discharge Points

Inspect, Priority

- No, Low
- Yes, Low
- Yes, Medium
- Yes, High



MADISON COUNTY MS4 DISCHARGE POINTS
 SOUTHEAST HUNTSVILLE & BIG COVE, ALABAMA
 MADISON COUNTY DEPARTMENT OF PUBLIC WORKS



APPENDIX C Standard Operating Procedures

MS4 OUTFALL INSPECTIONS

DRY WEATHER SCREENING & REPORTED ILLICIT DISCHARGES

Standard Operating Procedure (SOP)

SECTION 1: Priority Outfalls

- Identify priority outfalls based on likelihood of illicit discharges, proximity to impaired waterbodies, and size of drainage area
- Maintain a priority outfalls list
- Review list annually and update as needed

SECTION 2: Priority Outfalls Inspections

- Visually inspect priority outfalls each year
- Conduct inspections during dry weather – at least 48 hours with no precipitation or 3-4 days of a dry period after long periods of heavy rain
- Fill out an IDDE Inspection Report for each outfall
- When a discharge is discovered, make efforts to determine the possible source
- If source is determined to be potable water, note on the Inspection Report and report leak to the water department
- If source is determined to be any other exempt discharge (listed in IDDE Plan), note on the Inspection Report
- If source is suspected to be wastewater, note on the Inspection Report and report site to the Madison County Health Department
- Report all other known or suspected illicit discharges, and cases where further examination is restricted due to ROW constraints, to ADEM through the eComplaint System and note on the Inspection Report

SECTION 3: Reported/Discovered Illicit Discharges

- Utilize field personnel to conduct field assessments of non-priority areas/outfalls during normal work routines
- If needed, visually inspect discharges/sites when reported/discovered by field personnel or public
- Fill out IDDE Incident Report for each incident
- If site is not discharging at time of inspection, note on the Incident Report and plan a follow up inspection
- Make efforts to determine the possible source of any discharges
- If source is determined to be potable water, note on the Incident Report and turn leak in to the water department
- If source is determined to be any other exempt discharge (listed in IDDE Plan), note on the Incident Report
- If source is suspected to be wastewater or the site is an illegal dump site, note on the Incident Report and notify the Madison County Health Department
- Report all other known or suspected illicit discharges, and cases where further examination is restricted due to ROW constraints, to ADEM through the eComplaint System and note on the Incident Report
- If an area is reported an additional time, add to priority outfalls list to be inspected more frequently

APPENDIX D References

Alabama Department of Environmental Management

National Pollutant Discharge Elimination System General Permit

<http://www.adem.state.al.us/programs/water/permits/ALR040000StormwaterDischarges.pdf>

Center for Watershed Protection and Robert Pitt, University of Alabama

Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments

October 2004

City of Bainbridge Island, Washington

Illicit Discharge Detection and Elimination Program Manual

April 2010

City of Daphne, Alabama

Stormwater Management Program Plan

May 2017

City of Glasgow, Kentucky

Illicit Discharge Detection and Elimination Plan

2011

City of Mercer Island, Washington

Illicit Discharge Detection and Elimination Program

June 2009

Environmental Protection Agency

Illicit Detection and Elimination: A Guidance Manual

Madison County, Alabama

Stormwater Management Program Plan

July 2011; Revised-November 2017

Washington County, Minnesota

Illicit Discharge Detection and Elimination Plan

December 2006; Revised-April 2007

Yakima County and the Cities of Yakima, Union Gap, and Sunny Side

Illicit Discharge Detection and Elimination Procedures

April 2009, p. 21-22

Center for Watershed Protection

Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments

2004, p. 12, Table 2.

Herrera Environmental Consultants, Inc.

Illicit Connection and Illicit Discharge Field Screening and Source Tracing Guidance Manual

May 2013, p. 79.

Storm Sewer Map Development Details

The Stormwater Maps for the urbanized areas located in the unincorporated areas of Madison County were developed using GIS software. The following steps were taken to create the maps:

1. Obtain the 2000 Urbanized area shapefile for Madison County, AL from the US Census Bureau website and add to GIS map.
2. Add shapefile showing all incorporated areas of Madison County to GIS map.
3. Overlay county-wide road centerline files on digital USGS 1:24,000 quad sheets and incorporated areas.
4. Identify and isolate urbanized areas that fall outside existing incorporated areas in Madison County.
5. Identify areas where the road centerline intersected USGS blue line streams on the quad sheets.
6. Create a point shapefile at each roadway/blue line stream intersection. These are the stormwater discharge points.
7. After identifying all of the discharge points, the GIS was utilized to determine the Latitude and Longitude of each point.
8. Added labels to each discharge point and created a chart showing the Latitude and Longitude with its corresponding label to the map.

NOTES:

In January 2013, the Storm Sewer Map was updated to reflect new MS4 boundary areas and discharge points. This update was initiated by the newly published Huntsville, AL Urbanized Area Reference Map from the 2010 Census. To complete the update, the 2010 Urbanized Area shapefile was installed into the GIS software, and new discharge points resulting from the boundary changes were identified/added.

In 2017, outfall definition/discharge point development will be re-evaluated. Coordination with ALDOT will be used in order to correctly identify discharge points in ALDOT's MS4 area, ultimately removing those points from Madison County's responsibility. The Storm Sewer Map will then be updated to reflect any changes. The map update will be phased-in and should be completed by the end of 2019.

2017 update based on Audit (August): ADEM gave pointers on how to re-evaluate outfall points to determine "priority outfalls" based on drainage areas. Madison County will re-evaluate the outfall points based on this advice, and update the Storm Sewer Map accordingly. Consequently, the map update should be completed sooner than the original projection of by the end of 2019.

In February 2020, outfalls were reevaluated and priority was assigned to discharge points. Discharge points that met the following criteria were excluded from dry weather screening:

- Discharge points that border the MS4 and do not have Madison County's MS4 area contributing upstream;
- Upstream grouped points along the same branch of intermittent streams not to exceed one mile between points;
- Drainage basin area is less than 0.1 square mile.

Discharge points were classified as “High”, “Medium”, or “Low”. Low priority outfalls will be addressed with County field personnel who frequent county roads. Medium priority points will be inspected once during the 5-year permit cycle, and High priority points will be inspected yearly. Priority is defined by the following:

- High Priority: located on an impaired 303(d) water body, perennial stream that discharges to an impaired 303(d) water, or proximity to commercial or other sources of likely discharges.
- Medium Priority: an intermittent stream that discharges to an impaired 303(d) water.
- Low Priority: a perennial or intermittent stream in a rural or residential area.



Today, we can make a real difference in preventing impacts to our streams by joining together to stop pollutants from entering them. Keep this *Glove Box Guide* handy, and be part of the solution at work!

- Make sure workplaces have adequate trash & recycling facilities.
- Keep our construction areas clean and free of litter.
- Store and dispose all workplace chemicals properly.
- Prevent sediment from leaving our building sites and flowing into our streams.
- Follow all directions when using herbicides & fertilizers.
- Clean up any leaked fluids upon discovery, and promptly repair the cause of the leak.
- Report any suspicious discharges & dump sites discovered in the field (see back of card for contacts).

REMEMBER...When it rains, it drains!



Today, we can make a real difference in preventing impacts to our streams by joining together to stop pollutants from entering them. Keep this *Glove Box Guide* handy, and be part of the solution at work!

- Make sure workplaces have adequate trash & recycling facilities.
- Keep our construction areas clean and free of litter.
- Store and dispose all workplace chemicals properly.
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- Follow all directions when using herbicides & fertilizers.
- Clean up any leaked fluids upon discovery, and promptly repair the cause of the leak.
- Report any suspicious discharges & dump sites discovered in the field (see back of card for contacts).

REMEMBER...When it rains, it drains!

During your daily routine (especially during dry weather conditions), please keep an eye on the ditches along the county roads and the waterbodies the county roads intersect. Report any unknown/non-stormwater discharges, suspicious connections, and dump sites. If you see issues with sewage, trash, oil/gas, or other items that concern you, please notify the appropriate agency listed below.

Who to call...

Issue Seen	Contact
Hazardous spills and other chemical spills entering any waterway	911 National Response Center (800) 424-8802 Madison County Public Works — Stormwater Management Rep. Alex Wynboom (256) 746-2900
Pollutants entering stream or ditches: dirt, oil, fuel, chemical drums/containers, trash, commercial wash waters with detergents, industrial process water, etc.	Madison County Public Works — Stormwater Management Rep. Alex Wynboom (256) 746-2900
Illegal dump sites	Corresponding District Office: District 1 (256) 828-0726 District 1 East (256) 379-2205 District 3 (256) 723-4247 District 3 East (256) 776-2475 District 4 (256) 852-8351
Sewage / Gray water	Harvest-Monrovia Water & Sewer Authority Service Area (256) 837-1132 Madison County Health Department — Environmental Services (all areas outside of Harvest-Monrovia) (256) 533-8726

If the source of a discharge is believed to be a water line leak, please notify either the Madison County Water Dept. (256) 746-2888 or Harvest-Monrovia Water & Sewer Authority (256) 837-1132, depending on the service area.

During your daily routine (especially during dry weather conditions), please keep an eye on the ditches along the county roads and the waterbodies the county roads intersect. Report any unknown/non-stormwater discharges, suspicious connections, and dump sites. If you see issues with sewage, trash, oil/gas, or other items that concern you, please notify the appropriate agency listed below.

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Illegal dump sites	Corresponding District Office: District 1 (256) 828-0726 District 1 East (256) 379-2205 District 3 (256) 723-4247 District 3 East (256) 776-2475 District 4 (256) 852-8351
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If the source of a discharge is believed to be a water line leak, please notify either the Madison County Water Dept. (256) 746-2888 or Harvest-Monrovia Water & Sewer Authority (256) 837-1132, depending on the service area.



Construction Erosion Prevention and Sediment Control

Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Sediment
- Nutrients
- Trash
- Oil & Grease

Applicable Best Management Practices:

- Block and Gravel Inlet Protection
- Buffer Zone
- Construction Barriers
- Construction Exit Pad
- Grading Practices
- Groundskeeping
- Land Clearing
- Seeding
- Outdoor Storage of Raw Materials

Inspecting and Record Keeping:

- Inspect erosion and sediment control devices monthly and immediately after qualifying rain events (0.75 inches or more in 24 hours).
- Document inspections.

Other Related SOPs:

- Vehicle and Equipment Fueling
- Vehicle and Equipment Maintenance
- Waste Management

Description of Activity: Construction requires disturbing land, storage of materials, and use of heavy equipment on a job site. During rain events, stormwater runoff collects sediment, debris, and chemicals from loose soil, various materials, and equipment operations contaminating nearby waterbodies.

Purpose: To prevent contamination of stormwater runoff with sediment and trash from construction activities.

Always:

- Reference the *Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Site* for installation procedures.
- Install sediment control devices prior to land disturbance and maintain until vegetation is established.
- Clean out sediment traps and barriers regularly to reduce clogging.
- Use regular light watering for dust control.
- Stage construction to minimize exposed soil and disturbed areas.
- Neatly stockpile excavated material. If stockpiles must remain overnight, install sediment barriers and provide proper covering.
- Remove excess excavated materials are not to be used as backfill, remove from the site as soon as possible.
- When dewatering, provide appropriate sediment control at the point of discharge.
- Remove waste materials (such as trash a) from the site and dispose of them properly.

Whenever Possible:

- Maintain existing vegetation on site for as long as possible.
- Provide a 25-foot natural vegetated buffer along streams.
- Avoid excessive soil compaction with heavy machinery.
- Perform construction activities during periods of dry weather and lower runoff rates.
- Maximize opportunities for infiltration.
- Divert stormwater away from barren and steep slopes.

Never:

- NEVER begin construction without an Alabama Department of Environmental Management (ADEM) Stormwater Permit if the disturbed area is greater than one acre. *Contact the Stormwater Representative for more information.*
- NEVER divert runoff into a sensitive area.
- NEVER remove erosion and sediment control devices before construction is complete.



Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Sediment
- Nutrients
- Trash
- Metals
- Bacteria
- Oil and Grease
- Organics
- Pesticides
- Toxic Materials

Applicable Best Management Practices:

- Hazardous Materials Storage
- Materials Inventory
- Materials Management
- Outdoor Container Storage
- Outdoor Storage of Raw Materials

Inspecting and Record Keeping:

- Inspect storage areas regularly for leaks or spills.
- Inspect containers for external corrosion or damage regularly.
- Keep an up-to-date inventory of materials on site.

Other Related SOPs:

- Spill Response and Prevention

Description of Activity: Many daily County operations require the use of hazardous or chemical materials and wastes. Examples of hazardous materials include oil, batteries, anti-freeze, spray paint cans, pesticides, solvents and contaminated rags or spill recovery materials.

Purpose: To outline the requirements for handling, storage, and disposal of chemical or hazardous materials to minimize spills, leaks, and potential stormwater contamination.

Always:

- Store materials on-site in a neat and orderly manner and keep work areas clean and well organized to reduce chances of accidental spills.
- Ensure that storage meets all local, state, and federal regulations regarding secondary containment and in compliance with hazard waste codes.
- Dispose of chemical products and hazardous materials in accordance to manufacturer's recommendation (if applicable) and state laws.
- Hold onto Safety Data Sheets (SDS) and original labels until the product is no longer being used.
- Maintain oil and grease absorbing material and berms to contain and cleanup fuel or chemicals spills/leaks.
- Tightly seal products in the original container with the manufacturer's label.
- Place containers in a designated area that is paved, free of cracks and gaps, and impervious in order to contain leaks and spills. The area should also be covered.

Whenever Possible:

- Completely use a product before disposing of the container and manufacturer's label.
- Keep hazardous products in the original storage container unless they are not resealable. Properly mark and label the new container if a product is transferred.
- Store hazardous or toxic compounds outside in a dry, covered area.
- Store materials under a roof or other enclosure.

Never:

- NEVER dispose of hazardous materials including fuels, oils, lubricants, and solvents on a construction site or in solid waste dumpsters.
- NEVER mix products together.



Parking Lots/Vehicle and Equipment Storage

Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Sediment
- Nutrients
- Trash
- Metals
- Bacteria
- Oil & Grease
- Organics

Applicable Best Management Practices:

- Groundskeeping
- Outdoor Equipment Storage

Inspecting and Record Keeping:

- Inspect parking facilities and stormwater conveyance systems on a regular basis.

Other Related SOPs:

- General Facility Housekeeping
- Vehicle and Equipment Maintenance
- Spill Response and Prevention

Description of Activity: Employees park vehicles in parking lots daily and vehicles or equipment can be stored short-term or long term. There are various pollutants that contaminate stormwater if leaks are not repaired or accumulated dirt and trash cleaned up.

Purpose: To reduce stormwater pollution from leaking vehicle/equipment storage and daily parking lot use.

Always:

- Keep parking areas clean and organized; remove debris routinely.
- Inspect parking areas for stains and leaks regularly.
- Maintain vehicles to avoid leaks.
- Inspect vehicles before and after storage/use.
- Post "No Littering" signs around parking areas and provide trash containers to discourage littering.
- Sweep all parking lots at least once before the start of the wet weather season.
- If water is used for cleaning, wash water should be collected and properly disposed of; do not allow water to runoff into ditches or drains.
- Use oil absorbent materials when cleaning up leaks.

Whenever Possible:

- Allow stormwater runoff to flow into vegetated areas.
- Store vehicles inside or under covered areas.
- Store vehicles on paved surfaces and regularly clean areas to remove drips, leaks, or debris.
- Avoid clutter to minimize accident opportunities.

Never:

- NEVER store leaking vehicles and equipment over storm drains; utilize a drip pan to collect leaking fluids.
- NEVER hose down areas with stains from leaking equipment; use dry method clean up.



Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease

Applicable Best Management Practices:

-

Inspecting and Record Keeping:

- Inspect new ROW areas monthly until vegetation is established.

Other Related SOPs:

- Landscape Chemical Application

Description of Activity: Right-of-Way (ROW) areas includes the roadway, median areas, and ditches. ROW maintenance activities include roadway paving and repairs, mowing, and fertilizer application.

Purpose: To control stormwater pollutants caused by routine maintenance caused by roadway maintenance, mowing and debris control, and weed control along County ROW.

Always:

- Inspect new ROW areas on a monthly basis until ditches and greenspace are properly established; then conduct maintenance per schedule.
- Conduct routine ROW maintenance per schedule or as needed identified during an inspection.
- Report damage to ROW areas such as deteriorating pavement or bare areas void of vegetation; complete repairs upon discovery.
- Remove debris and trash from the ROW. Rake leaves and dispose of properly prior to mowing.
- After mowing and trimming, collect grass clippings and dispose of properly.
- Pave during dry weather only.
- Look for illicit discharges during dry conditions. Report to the Stormwater Management Representative upon discovery.

Whenever Possible:

- Avoid applying landscaping chemicals in areas where residue could enter the stormwater system during a rain event.
- Use porous asphalt for pothole repairs and shoulder work.

Never:

- NEVER clean or perform maintenance on equipment/vehicles on or near ROW areas and near stormwater conveyance systems including drains and ditches.
- NEVER leave grass clipping in the ROW; collect and properly dispose of.
- NEVER apply landscaping chemicals before a heavy rain event; check the forecast prior to applying chemicals.



Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Nutrients
- Metals
- Oil & Grease
- Organics

Applicable Best Management Practices:

- Hazardous Materials Storage
- Materials Storage
- Materials Management
- Outdoor Container Storage
- Outdoor Storage of Raw Materials

Inspecting and Record Keeping:

- Inspect secondary containment areas monthly.
- Inspect containers for leaks or spills and replace as needed.
- Record and document spills, leaks, and other discharges.

Other Related SOPs:

- Hazardous Material Handling and Storage
- Vehicle and Equipment Fueling
- Vehicle and Equipment Maintenance

Description of Activity: Spills and leaks can occur from several different County Facility operations. If not properly controlled, it can adversely impact the environment.

Purpose: To protect stormwater from spills by educating employees on proper spill cleanup procedures, state reporting requirements, and preventative measures.

Always:

- Contact the appropriate agencies to report hazardous spills:
 - 911
 - National Response Center (800) 424-8802
- Cover spills with absorbent materials such as kitty litter, sawdust, rags, or absorbent pads; properly dispose of contaminated materials.
- Develop and maintain a Spill Prevention, Control, and Countermeasures (SPCC) Plan if the facility stores more than 1,320-gallons of petroleum or its derivatives.
- Keep spill kits or spill recovery materials in areas where hazardous materials are stored.
- Position mats to contain drips from equipment or vehicles until they can be repaired.
- Keep all materials properly stored in closed, labeled containment systems.
- Berm storage areas so that if a spill or leak occurs, the material is contained.

Whenever Possible:

- Keep material handling indoors, under a cover storage area, and away from storm drains.
- Cover outside storage areas with a permanent structure or temporary measure such as a tarp.
- Avoid using water to cleanup spills; if necessary, minimize water usage.
- Use secondary containment for petroleum and chemical storage containers if necessary.
- Inspect secondary containment areas and/or containers for leaks, and floor drains for indications of spills.

Never:

- NEVER use straw to cover a spill.
- NEVER wash a spill into a storm drain, ditch, or waterbody.
- NEVER leave a spill without cleaning it up.



Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Trash
- Metals
- Oil & Grease
- Organics

Applicable Best Management Practices:

- Hazardous Materials Storage
- Materials Inventory
- Materials Management
- Outdoor Container Storage

Inspecting and Record Keeping:

- Inspect fueling areas regularly for leaks or spills.
- Inspect storage tanks and foundations quarterly for corrosion, leaks, cracks, scratches, etc.

Other Related SOPs:

- Hazardous Materials Storage
- Spill Response & Prevention

Description of Activity: Spills and leaks that occur during fueling operations and above ground storage tanks at County Facilities can contribute to accumulation material on surface that can be carried away by rainfall.

Purpose: To minimize fuel related pollution caused by spills and leaks caused by fueling storage and activities.

Always:

- Be familiar with clean up materials and procedures; use dry methods and oil absorbent materials to clean up small spills.
- Have clean up kits or materials available and easily accessible at fueling areas.
- Inspect fueling equipment for leaks, spills, damage, or other problems, and report discovered problems to the appropriate supervisor immediately.
- Inspect storage area canopy or roof structure for leaks; repair any damage to minimize stormwater contact with fueling areas.
- Only fill equipment or vehicle until the automatic shutoff; post signs to remind employees not to top off fuel tanks.
- Follow instructional signs at fueling pumps.
- Turn off the engine while fueling and fuel carefully to minimize drips.
- Properly label fueling tanks and keep Safety Data Sheets (SDSs) on-site; replace worn labels as necessary.
- Keep an up-to-date inventory of materials delivered and stored on-site.

Whenever Possible:

- Maintain and be familiar with the County's Spill Prevention, Controls, and Countermeasure (SPCC) plan for information at the specific facility.
- Label drains to indicate if the drain flows to an oil/water separator, directly to the sewer, or to storm sewer.

Never:

- NEVER leave the equipment or vehicle unattended while fueling.
- NEVER top-off fuel to minimize the chances of a spill; post signs at fueling areas to remind employees.
- NEVER hose down or bury a fuel spill; use dry methods such as rags and absorbents to clean up spills and leaks and properly dispose of contaminated clean up materials.
- NEVER change engine oil or other fluids at the fueling operation location.



Vehicle and Equipment Maintenance & Repair

Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Metals
- Oil & Grease
- Organics

Applicable Best Management Practices:

- Hazardous Materials Storage
- Materials Inventory
- Materials Management
- Outdoor Container Storage
- Outdoor Equipment Maintenance

Inspecting and Record Keeping:

- Regularly inspect vehicles and equipment for leaks and repair immediately.
- Inspect maintenance areas monthly to ensure proper material storage and disposal.

Other Related SOPs:

- Spill Response & Prevention

Description of Activity: Common vehicle and equipment maintenance activities include parts cleaning, vehicle fluid replacement, and equipment replacement/repair. Fluid spills and improper disposal of materials can result in contaminating stormwater.

Purpose: To prevent stormwater contamination from regular vehicle and equipment maintenance or repairs by properly storing automotive fluids and parts.

Always:

- Conduct maintenance/repair work indoors or in covered areas; if work must be performed outside, guard against spills using berms or other measures and perform work during dry periods.
- Clean up spilled materials immediately; see Spill Response and Prevention SOP.
- Keep maintenance areas clean, neat, and well organized; sweep up trash and debris daily.
- Properly dispose of used fluids and materials.
- Promptly transfer used fluids to recycling drums or hazardous waste containers.
- Store cracked batteries in leakproof secondary containers.
- Keep accurate, up-to-date inventory of materials on site.
- Keep chemicals in the original containers and labeled; store chemicals indoor or under a roof and off the ground.

Whenever Possible:

- Avoid clutter to minimize accident opportunities.
- Keep the number of solvents used to a minimum.
- Use non-hazardous cleaners or non-toxic chemicals whenever possible.
- Choose cleaning agents that can be recycled and recycle used motor oil, diesel oil, and other fluids and parts whenever possible.
- Do liquid cleaning a centralized location to keep solvents and residues in one area.
- Steam or pressure wash parts instead of using solvents.
- Avoid hosing down your work areas; use dry sweeping and cleaning instead.

Never:

- NEVER leave leaking vehicles and equipment unattended; use a drip pan temporarily and drain fluids if not being repaired immediately.
- NEVER pour fluids down drains or outdoors.



Vehicle and Equipment Washing

Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Sediment
- Nutrients
- Trash
- Metals
- Oil & Grease
- Organics

Applicable Best Management Practices:

- Groundskeeping

Inspecting and Record Keeping:

- Inspect washing areas regularly.

Other Related SOPs:

- General Facility Housekeeping

Description of Activity: Wash water from vehicle and equipment cleaning performed outdoors or at County Facilities can carry sediment and other contaminants in runoff to storm drains and ditches or can contaminate groundwater by infiltration.

Purpose: To reduce potential pollutants from washing vehicles and equipment by using proper techniques, locations, and disposal methods of wash water.

Always:

- Wash vehicles and equipment in designated areas if available.
- Post signs clearly marking wash areas and state that only washing is allowed in the designated area.
- Use a sock filter around drains and install berms to collect wash water.
- Provide trash containers in wash areas.
- Sweep up wash areas after washing to collect debris and trash and prevent them from washing away or entering a drain.
- Keep vehicles and equipment clean; do not allow buildup of oil or grease; inspect daily to determine if washing is needed.

Whenever Possible:

- Use a biodegradable, phosphate-free soap.
- Minimize the amount of water and soap used while washing and rinsing.
- Avoid using soap when washing vehicles outside.
- Wash cars on gravel, grass, or other permeable surfaces when outside; this can filter wash water before it enters groundwater or storm drains.
- Maintain vehicles and equipment to minimize leaks and/or drips that can enter wash water.

Never:

- NEVER perform engine washing outside or over a storm drain.
- NEVER wash vehicles over a storm drain or near drinking water sources; wash water should not drain to a storm drain or ditch.
- NEVER hose down wash areas to dispose of accumulated sediment; use dry methods to collect sediment and properly dispose.



Standard Operating Procedures for Stormwater Quality Protection

Madison County Facilities and Operations

Potential Pollutants:

- Sediment
- Nutrients
- Trash
- Metals
- Bacteria
- Oil & Grease
- Organics
- Pesticides
- Toxic Materials

Applicable Best Management Practices:

- Groundskeeping
- Illegal Dumping Control
- Outdoor Container Storage

Inspecting and Record Keeping:

- Inspect waste areas weekly for leaks, improperly disposed waste, and overflowing trash.
- Report illegal dumping sites.

Other Related SOPs:

- General Facility Housekeeping
- Spill Response and Prevention

Description of Activity: Waste management is the activities and actions to manage wastes from inception to final disposal including collection, transportation, processing, and disposal. Waste materials can be in the form of solid, liquid, or gas. Common sources of pollution at municipal facilities are a result of littering, improper storage and collection, and improper disposal.

Purpose: To ensure proper dispose of non-hazardous and hazardous waste materials to minimize pollution of nearby waterbodies.

Always:

- Provide an adequate number of dumpsters and garbage bins to prevent overflowing containers.
- Cover garbage bins with leak proof lids to keep rubbish and leachate contained and keep rain and wind out. If waste is not stored in containers, cover waste piles with a plastic tarp.
- Keep trash bins free of improperly disposed trash.
- Properly label garbage and recycle bins and encourage recycling to reduce the amount of garbage disposed.
- Sweep and clean waste storage areas regularly. Do not hose down the area to a storm drain.
- Post "No Littering" signs in areas prone to litter.
- Use all the product before disposing in a trash container.

Whenever Possible:

- Store garbage containers inside or beneath covered areas to prevent contact with rain.
- Install berms, curbing or vegetation strips around storage areas to control water leaving.
- Dumpsters should be placed on a flat, concrete surface that does not drain directly to a storm drain.
- Place dumpsters and trash cans in convenient, easily observable areas.

Never:

- NEVER dispose of hazardous waste or materials including fuels, oils, lubricants, and solvents on a construction site or in solid waste dumpsters.
- NEVER dump trash in ditches or outside of a designated trash container. Report illegal dumping to the corresponding district office.

APPENDIX B

Construction Site Stormwater Runoff Control

Additional Documentation

Qualified Certified Inspectors

Raymond Scott Medley *(part of year)*

Christopher Capshaw *(part of year)*

Kyle Macomber

Jason Turner

Will Gross

Qualified Certified Professionals

Charles "Chuck" Faulkner, PE

Bailee Robinson, PE *(part of year)*

Vince Moody, PE *(part of year)*

Construction Sites Details within MS4 (April 2019-March 2020)

SITE NAME	No. of Inspections	No. of Warning Letters	No. of Complaints	Referred to ADEM
Allen Acres	6	0	0	N
Cedar Brook Phase 2	9	3	0	Y
Clearview Phase 1	4	0	0	N
Clift Farms Phase 1	12	0	0	N
Clift Farms Phase 2	6	0	0	N
Clift Farms Phase 3	5	0	0	N
Henry House Apartments	9	0	0	N
Inspiration Pointe Phase 4	12	1	0	N
Kendallwood	10	0	0	N
Lakeshore Meadows Phase 3	12	0	0	N
Monroe Manor	10	0	0	N
Oak Forest	10	0	0	N
Pennington	10	0	0	N
Pike Place Phase 1	3	0	0	N
Pike Place Phase 2	1	0	0	N
Pine Brook Phase 1	7	0	0	N
Publix at Clift Farms	7	0	0	N
Riverbend Phase 8	11	7	0	Y
Riverside Landing Phase 4	11	0	0	N
Shellborne Parke Phase 2	10	0	0	N
Shellborne Parke Phase 3	2	0	0	N
Sherman Oaks	10	1	0	N
The Oaks at Indian Creek	10	0	0	N
The Station at Clift Farms	3	1	0	N
Townsend Place	5	1	0	N
Trotwood Phase 5	10	0	0	N
Turner Farms Phase 5	10	0	0	N
U-Haul	11	0	0	N
Worley Acres	9	3	0	N

APPENDIX C

Monitoring Results

2019 QUARTERLY STORMWATER MONITORING

	ID	WATERBODY	LOCATION/DESCRIPTION	DATE	ANALYSIS	RESULT	UNIT	LAB *
1st Qtr	SW1	Chase Creek	Jordan Rd	3/19/2019	TSS	ND	mg/l	Pace
	SW2	Flint River	Winchester Rd - Upstream	3/19/2019	Turbidity	2.94	ntu	MFWTP
	SW3	Flint River	Brownsboro Rd - Downstream	3/19/2019	Turbidity	2.47	ntu	MFWTP
	SW4	Indian Creek	Kelly Spring Rd - Upstream	3/19/2019	TSS	3.70	mg/l	Pace
	SW5	Indian Creek	Old Monrovia Rd - Downstream	3/19/2019	TSS	ND	mg/l	Pace
2nd Qtr	SW1	Chase Creek	Jordan Rd	6/26/2019	TSS	**	mg/l	Pace
	SW2	Flint River	Winchester Rd - Upstream	6/26/2019	Turbidity	1.14	ntu	MFWTP
	SW3	Flint River	Brownsboro Rd - Downstream	6/26/2019	Turbidity	1.7	ntu	MFWTP
	SW4	Indian Creek	Kelly Spring Rd - Upstream	6/26/2019	TSS	**	mg/l	Pace
	SW5	Indian Creek	Old Monrovia Rd - Downstream	6/26/2019	TSS	7.3	mg/l	Pace
3rd Qtr	SW1	Chase Creek	Jordan Rd	9/10/2019	TSS	**	mg/l	Pace
	SW2	Flint River	Winchester Rd - Upstream	9/10/2019	Turbidity	1.57	ntu	MFWTP
	SW3	Flint River	Brownsboro Rd - Downstream	9/10/2019	Turbidity	1.93	ntu	MFWTP
	SW4	Indian Creek	Kelly Spring Rd - Upstream	9/10/2019	TSS	**	mg/l	Pace
	SW5	Indian Creek	Old Monrovia Rd - Downstream	9/10/2019	TSS	3.5	mg/l	Pace
4th Qtr	SW1	Chase Creek	Jordan Rd	12/12/2019	TSS	2.5	mg/l	Pace
	SW2	Flint River	Winchester Rd - Upstream	12/12/2019	Turbidity	4.55	ntu	MFWTP
	SW3	Flint River	Brownsboro Rd - Downstream	12/12/2019	Turbidity	3.70	ntu	MFWTP
	SW4	Indian Creek	Kelly Spring Rd - Upstream	12/12/2019	TSS	ND	mg/l	Pace
	SW5	Indian Creek	Old Monrovia Rd - Downstream	12/12/2019	TSS	ND	mg/l	Pace

* Pace Analytical (Pace) - 2220 Beltline Rd, Decatur, AL 35601
 Mountain Fork Water Treatment Plant (MFWTP) - 845 Mountain Fork Rd, New Market, AL 35761

** no flow -- no sample taken

2020 QUARTERLY STORMWATER MONITORING

	ID	WATERBODY	LOCATION/DESCRIPTION	DATE	ANALYSIS	RESULT	UNIT	LAB *
1st Qtr	SW1	Chase Creek	Jordan Rd	3/29/2020	TSS	ND	mg/l	Pace
	SW2	Flint River	Winchester Rd - Upstream	3/29/2020	Turbidity	8.82	ntu	MFWTP
	SW3	Flint River	Brownsboro Rd - Downstream	3/29/2020	Turbidity	10.8	ntu	MFWTP
	SW4	Indian Creek	Kelly Spring Rd - Upstream	3/29/2020	TSS	7.50	mg/l	Pace
	SW5	Indian Creek	Old Monrovia Rd - Downstream	3/29/2020	TSS	4.00	mg/l	Pace

* Pace Analytical (Pace) - 2220 Beltline Rd, Decatur, AL 35601
 Mountain Fork Water Treatment Plant (MFWTP) - 845 Mountain Fork Rd, New Market, AL 35761

** no flow -- no sample taken