



Annual Stormwater Program Report
April 1, 2018 – March 31, 2019
NPDES Phase II MS4 General Permit
City of Ames, IA: Permit Number 85-03-0-03
Public Works Department



SMART WATERSHEDS
FOR CLEAN RIVERS AND STREAMS



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Executive Summary

The City of Ames was issued its first NPDES Stormwater MS-4 permit from the Iowa Department of Natural Resources in 2003. This report summarizes progress made towards permit compliance during April 1, 2018 through March 31, 2019 during the third permit cycle. As required, the City addresses the following six minimum storm water control measures:

1. Public education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Storm Water Runoff Control
5. Post-construction Storm Water Management
6. Pollution Prevention and Good Housekeeping

STORMWATER PROGRAM EXPENSES

Program	Expense
Education and Outreach	
ISWEP Membership	\$5,400
Staff, Consultant, Training, Materials and Advertising (including Smart Watershed Program)	\$95,584
City's Annual EcoFair (MS4 portion) and School Science Nights	\$11,049
Public Involvement and Participation	
Resource Recovery handling and disposal of wastes from stream/river, Stash-the-Trash, and Project Aware cleanup events	\$144
Public Household Hazardous Material disposal program	\$80,824
Illicit Discharge	
Staff time and Clean-up costs	\$448
Sanitary Sewer Main Break Cleanup (following 2018 floods)	\$104,419
Construction Site Program	
Staff time, Materials and Equipment	\$43,532
Post Construction Program	
Staff and Consultant time	\$85,494
Smart Watershed Cost Share Programs	\$4,226
South Skunk River Basin Watershed Project - Ames City Hall Parking Lot	\$69,313
Storm Water Erosion Control Program (S. Skunk River Stabilization Project)	\$473,276

Pollution Prevention and Good Housekeeping	
Street sweeping (staff time, equipment, and contractor)	\$252,700
Sidewalk sweeping in Downtown and Campustown (staff and equipment)	\$2,730
MS4 system inspections	\$26,000
Sanitary Sewer repairs (found with SSSE to remove I/I)	\$768,465
Emergency/Maintenance Infrastructure Repairs (PW Operations)	\$200,600
Drainage, storm sewer, and other MS4 infrastructure improvements	\$889,597
Staff Training	\$2,586
MS4 Permit Renewal Fee	\$1297
Total	\$3,117,684

PUBLIC EDUCATION AND OUTREACH

Stormwater Educational Literature

The City has used numerous brochures and handouts that address pollution prevention, sustainable lawn care, rain gardens, soil quality restoration, household hazardous waste management and the Smart Watershed Program to educate several target audiences. Literature is available online, at Public Works office and distributed by Public Works, Resource Recovery Plant and Public Relations staff at numerous citizen events. Monthly stormwater tips and household waste management tips are placed in CitySide, which is a city newsletter distributed to approximately **23,000 Ames utility customers (residential, commercial, and industrial) per month**. 400 copies are dropped at the Public Relations Office for internal distribution at City Hall, Ames Public Library, Water Plant, Community Center, and CyRide. The newsletter includes a section that highlights the City contact information for spills and stream concerns.

Stormwater Educational Videotapes & Media

The City's Media Production Services Division ran several EcoFair spotlights that highlighted the Smart Watershed program and the rebates for BMPs. Several commercials were also run that highlighted the EcoFair, which included Smart Watershed displays and information on what residents can do to prevent stormwater pollution. Four videos created by ISWEP were run on the City's cable channel. **The general stormwater awareness, yard care, vehicle oil change and car washing videos were run 67 times each**. They highlight residential pollution prevention including fertilizer use, pet waste, used oil disposal and general pollution prevention.

The City provided video and live Facebook takes on the Community Center soil quality restoration and native turf establishment.

Website

The City's Public Works Department is updating the stormwater portion of the City's website <https://www.cityofames.org/government/departments-divisions-i-z/public-works/stormwater-program>. The Smart Watershed Program portion of the City's website continues to provide highlights of all local watershed projects that the City has been involved with in the past years (<https://www.cityofames.org/government/departments-divisions-i-z/public-works/stormwater-program/smart-watersheds>). It also includes information on the Rain Garden, Rain Barrel, Soil Quality Improvement, and Native Landscaping Cost Share Programs as well as public education information on what residents can do for stormwater pollution prevention. Watershed maps are also available along with links to local watershed groups and public education information. There is a link to the Iowa Storm Water Education Program (ISWEP) website www.iowastormwater.org that is the statewide resource for stormwater information and educational opportunities supported by the City of Ames and other member cities. The Public Works Section of the City's website in 2018 received **49,719 pageviews**, Stormwater section **2927** and of those there were **1278 pageviews** on the Smart Watersheds section.

The site also includes illegal discharge and spill reporting contact information for the City of Ames (24 hours), IDNR, and US EPA. <http://www.cityofames.org/index.aspx?page=910>. Additional information can be found here: <https://www.cityofames.org/government/departments-divisions-i-z/public-works/frequently-asked-questions>

The Public Works Department also includes the Resource Recovery Plant and Smart Trash Program. The following website: <https://www.cityofames.org/government/departments-divisions-i-z/resource-recovery-system> provides information on waste handling and disposal. Brochures are distributed to the public on stormwater management and the Smart Watershed Program during tours.

Information about other projects such as roadway projects, which also included water, sanitary and storm sewer repairs are on the City's website. Virtual project meetings continue to be offered for public involvement. They can be found on this website link: <https://www.cityofames.org/government/departments-divisions-i-z/public-works/virtual-project-information-meetings> Staff are featured in videos that describe the upcoming construction projects, so that citizens can view this information on their own schedule. The virtual project meetings are done in addition to open house/presentation style meetings.

Additional Educational Activities

The goal of the City's Stormwater Program is to educate numerous target audiences using various tools. Informational content includes stormwater impact on water quality and measures that can be implemented to reduce water quality degradation of stormwater.

Coordination with the Ames' Resource Recovery System:

- The **Resource Recovery System conducted public tours that included 987** residents, students and visitors. Proper disposal of household hazardous materials was discussed as well as proper waste management. The website provides additional information on waste handling: <http://www.cityofames.org/index.aspx?page=168>.

- **Stash-The-Trash**, a cooperative event with Iowa State University, was held in April with **280 student and resident volunteer participants that collected 1.36 tons of trash**.
- Resource Recovery System advertises in the Ames Tribune, the weekly free paper, Story City Herald, and Nevada Journal. Program information is run on the local cable Channel 12 regularly as well as advertising through Mediacom. Ads are run at least one ad per year for Household Hazardous Materials collection, and 2 or 3 per year for yard waste collection. Household Hazardous Materials collection events are held every Wednesday afternoon throughout the year by appointment at the plant. There were **25,050 pounds of hazardous materials collected** from residents and businesses.
- Resource Recovery staff were involved with 5 school science events reaching more than **1900 students and families and Iowa State University and DMACC Community College events reaching more than 400 students**.
- The City in partnership with the Iowa State University held the annual 3rd Annual Repurpose Event “Rummage RAMPage” on July 29, 2018-August 4, 2018, where 51 tons of materials were kept out of the city waste stream or from being illegally dumped. The event grew from the desire to repurposed items often left at the curb during the annual move out and lease changeovers that occur in the City at the end of July.

A major educational event for the entire community was the **EcoFair was held on April 21, 2018**. The event attracts about **700 attendees** and highlights the City’s Smart Programs that include green rebates and household options for residents. This included the Smart Watershed and Smart Trash Programs. The Public Work’s Smart Watershed Program provided **200 small trees and 200 native prairie plants to attendees at the fair along with stormwater pollution prevention information**. Watershed models were used to educate kids and adults on the street to stream connection. Numerous educational displays such as Smart Watershed, Smart Trash and Smart Water were present that included city departments, community educational and resource groups and vendors that provide green products or services.

The City is a member of the Iowa Storm Water Education Program (ISWEP) and uses numerous educational resources built around various stormwater topics. The following are additional educational activities that occurred during this reporting year:

- Fellows School (STEM) night was held on March 1, 2018: Kids could paint a compost bin or rain barrel at this event and play with a street-to-stream stormwater model and learn about stormwater management and how to prevent pollution. Approximately **400 parents and children** attended these events.

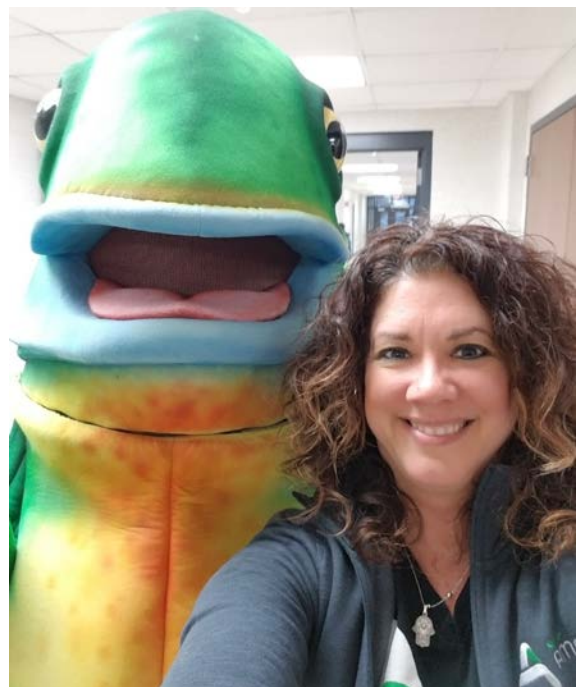




21, 2018. Native plants and trees were handed out, the ISWEP streets to streams plexiglass model was used in the Kids Korner, Smart Watersheds rebate information was provided, to more than **700 participants**.

- Letters were sent to local lawn care providers regarding fertilizer application and stormwater pollution prevention on May 5, 2018.
- Letters were sent to carpet cleaners regarding the prevention of illicit discharges of wastewater May 5, 2018.
- Stormwater Open Houses (3) were held on July 2018 and were open to the public to discuss stormwater concerns and the post construction ordinance.
- At the Iowa State Welcome Back Event, August 22, 2018, general information was provided to students on the City of Ames including Smart Watershed information.
- The ISWEP Construction Site Pollution Prevention Field Guide was sent out to **25 local contractors and developers** on September 4, 2018.
- Tours of construction sites were given by city staff to Iowa State students and professors to go over erosion and sediment controls on September 26, 2018
- Nutrient Reduction Strategy Open House was held at the Ames Water Plant. A Smart Watershed booth was present on October 10, 2018 that included resource materials.
- Staff gave a City Hall Parking Lot best management practices presentation for the IDNR SRF Program at DMACC FFA Enrichment Center on November 28, 2018. **There were 70 attendees.**

- At the 2019 Iowa Water Conference March 21, 2019, City of Ames Staff presented on the Community Center Permeable Pavers, Biocells and Native Plants and Turf Project. Approximately **40 people** attended.
- Mel in the morning Radio Show Announcements, (4 times total) were held during the months of March and April 2018. Staff promoted the City of Ames EcoFair and sustainability including stormwater.
- Staff participated in the Trees Forever and Ames Tree Voucher Program, April 28, 2018. The Smart Watershed Program partially funded the tree vouchers. **Presentations** were given on the Smart Watersheds rebates and pollution prevention. There were **100 participants**.
- The City hosted the annual EcoFair on April



- Stormwater staff participated in Edwards Science (STEM) night on November 13, 2018, Gill appeared, kids could paint a compost bin/barrel, play with a street-to-stream stormwater model and learn about stormwater management and how to prevent pollution. Approximately, **300 parents and children** attended these events
- Salt and deicer information created by ISWEP was distributed to downtown businesses. Businesses received a flyer on winter stormwater pollution prevention strategies on December 22, 2018.
- Staff participated in the City of Ames Smart Business Challenge by having a Smart Watershed display and materials to educate local businesses representatives. The event was held January 24, 2019.
- Friends of Brookside Park received information on February 2, 2019 about the City's Adopt-A-Stream and Rebate Programs and coordination began with friends' groups for maintenance of Brookside Park.
- Staff participated in Fellows School Science (STEM) night on February 22, 2019. Gill appeared, kids could paint a compost bin or rain barrel, play with a street-to-stream stormwater model, watch a rainfall simulator and learn about stormwater management and how to prevent pollution. Approximately, **500 parents and children** attended these events.
- Staff participated in the Meeker School (STEM) night, February 28, 2019. Gill appeared, kids could paint a compost bin or rain barrel, play with a street-to-stream stormwater model, watch a rainfall simulator and learn about stormwater management and how to prevent pollution. Approximately, **300 parents and children** attended these events.



PUBLIC INVOLVEMENT AND PARTICIPATION

Stormwater Pollution Hotline

Telephone numbers continue to be available for stormwater inquiries to the City, during office hours (515-239-5160) and after hours (515-239-5150), and a 24-hour number for reporting spills. These numbers, along with contacts for IDNR and US EPA, are published in the educational brochure, Cityside monthly utility mailings, and the City website.

<https://www.cityofames.org/government/departments-divisions-i-z/public-works/stormwater-program/stormwater-violations>

Stormwater Advisory Committee

The Stormwater Advisory Committee is implemented through numerous city public advisory meetings for stormwater improvements throughout the City and involvement with the Squaw Creek Watershed Management Authority and Headwaters of the S. Skunk River Watershed

Management Authority. The public meetings include representatives from neighborhoods and business owners in impacted areas. Public Works staff also meets weekly with developers and their engineers about proposed developments within the community and talk/review/comment about transportation, utilities, pollution prevention, and stormwater management requirements. The following is a list of meetings that were held:

The City of Ames City Council was presented with the 5-year Capital Improvements Plan (CIP) during a workshop on January 15, 2019. During this workshop, infrastructure projects including storm water projects were discussed. This was televised on Cable Channel 12 and is available for continued viewing by the public. Public input was received about the CIP during the January 22 and February 12, 2019 City Council meetings.

City of Ames staff met with residents within neighborhoods where infrastructure public improvements were being planned and constructed during the permit period. These include, but are not limited to: Meadowlane Avenue, Pierce/Tyler Streets, Dawes Drive, 13th Street, S. Grand Avenue and 5th Street Extensions, Hickory Drive, Welch Avenue (Campustown Public Improvements), Somerset Subdivision, Kinyon-Clarke Subdivision, Teagarden Area, Ridgetop Road, and 321 State Avenue infrastructure project area.

The Squaw Creek Watershed Management Authority Board is comprised of cities, counties, and soil and water conservation districts from the watershed and is formed under a 28E agreement. This group works on improving and protecting water quality in the watershed by merging their resources and individual interests to achieve a common goal. The Squaw Creek Watershed Management Authority adopted the Watershed Management Plan in December 2014 following numerous public meetings within the watershed.

Participants and interested parties involved during public meetings were from Story, Boone, Webster, and Hamilton Counties. Membership of the Squaw Creek Watershed Management Authority Representatives include: City of Ames Council person Bronwyn Beatty-Hansen, City of Stanhope Harold Hove, City of Gilbert Sonia Dodd, Story County Supervisor Rick Sanders (now Linda Murken), Story County SWCD Selden Spencer, Boone County Supervisor Tanner Scheuermann, Boone County



SWCD Steve Carlson, and Hamilton County SWCD Jean Eells. Meetings have continued to be held with the representatives to work through implementation of the watershed plan, including applying for funding/grants. Prairie Rivers of Iowa has been implementing the watershed plan since 2015 with a heavy emphasis on education and conservation practice implementation in the agricultural areas, as well as collaboratively increasing the best management practices in the urban areas of the watershed.

Watershed coordination meetings have been held quarterly between City of Ames Public Works Engineering, Water & Pollution Control, Story County Conservation, and Prairie Rivers of Iowa (staff of the Squaw Creek Watershed Management Authority). During these meetings, current and upcoming projects are discussed and coordinated. At that time, staff also coordinates upcoming grant/funding opportunities and collaboration efforts.

City of Ames staff, Iowa DNR staff, Squaw Creek Watershed Management Authority Board members, and Prairie Rivers of Iowa staff all met twice with a volunteer group called Squaw Creek Watershed Coalition members to discuss water quality improvement opportunities within the watershed and City of Ames.

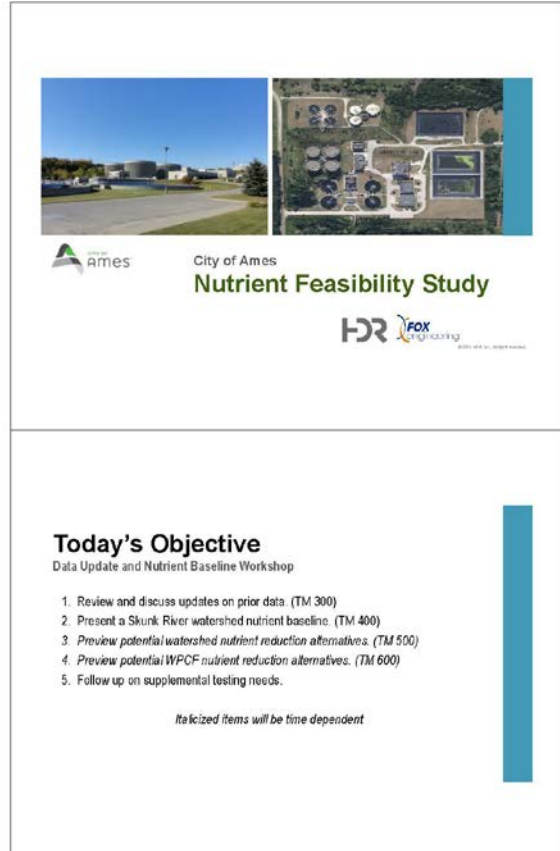
Ames Public Works Engineering staff have continued to work on the Flood Mitigation – River Flooding project, including holding meetings with adjacent/impacted property owners. The alternative for lowering flood water elevations two feet at the South Duff Avenue area was selected by City Council members. In January 2018, staff submitted a FEMA grant application through Iowa Homeland Security and Emergency Management for national FEMA consideration.

The Ames Water & Pollution Control staff hosted open houses about the Nutrient Reduction Strategy to discuss improvements at the wastewater treatment plant and/or within the upstream watershed.

Ames Planning Department staff, in collaboration with Story County, Iowa DNR and FEMA staff hosted open meetings including an open house about the updating of the FEMA Flood Insurance maps.

Public Works Engineering staff, in partnership with an engineering consultant, ISU faculty specialists, Ames Parks and Recreation staff hosted two public meetings related to sanitary sewer infrastructure improvements to be made along Clear Creek in the Emma McCarthy Lee Park and Munn Woods area. During these meetings, dozens of residents came to learn about the project, improvements to be made, and to ask questions. Residents voices were loudly heard during the July 2018 public meeting. Additional experts and independent ISU faculty were then consulted in the field. In November 2018, a follow-up public meeting was held where additional information was presented and overall, the residents were much more supportive of the project which will seal-up the sanitary sewer system to prevent I/I inflow.

Public Works Engineering staff met with the public during open houses and City Council meetings to gather input to the Post-Construction Stormwater Management Ordinance. A public, online survey was hosted by the City in summer 2018. The meetings were held on April 17, June 26, July 16 (2 open houses), July 19, November 20, 2018 and February 12, February 26, 2019.



The image shows a presentation slide for the City of Ames Nutrient Feasibility Study. The top section features two photographs: on the left, a view of a modern building with a large glass facade; on the right, an aerial view of a residential or commercial development with various structures and green spaces. Below the photos are the logos for the City of Ames, HDR, and FOX Engineering. The main title is "City of Ames Nutrient Feasibility Study". The bottom section is titled "Today's Objective" and lists five items for a "Data Update and Nutrient Baseline Workshop":

1. Review and discuss updates on prior data. (TM 300)
2. Present a Skunk River watershed nutrient baseline. (TM 400)
3. Preview potential watershed nutrient reduction alternatives. (TM 500)
4. Preview potential WPCF nutrient reduction alternatives. (TM 600)
5. Follow up on supplemental testing needs.

Below the list, it states: *Italicized items will be time dependent*. A vertical blue bar is on the right side of the slide.

Other Activities

Highlights of some of the major outreach events included:

- **Ames EcoFair** highlighted the City's Smart Programs including the Smart Watershed Program was hosted on April 20, 2018. Numerous vendors that included local environmental groups were present. There are approximately **700 residents** that attended the event along with **40 vendors and 50 volunteers**, mostly city staff.
- The City of Ames is a partner with Iowa State University on their **Stash-the-Trash** Program that was also held on April 7, 2018. The City promoted the 2018 event in the **CitySide newsletter** that is distributed to **30,000 utility customers**.
- **11 residents** purchased and installed rain barrels and utilized the city Rain Barrel Rebate Program. 19 residents purchased and installed composters and utilized the city composter rebate. **Soil quality restoration was used on 1 lawn and native landscaping was added to one yard** through the Smart Watershed Cost Share Program. **One** residential rain garden was installed using the cost share program. **Approximately 50** rebates for trees were provided to residents through the Smart Watershed and Smart Energy Programs in partnership with Trees Forever.
- One event was organized by the Parks and Recreation Department for volunteers to remove invasive species in the green belt along College Creek. Prior to the work, volunteers were given a presentation on preventing stormwater pollution and protecting local streams. There were about **35 participants**. **Additional restoration assistance was provided in Ada Hayden Park by a local volunteer group**.



Local Partnerships

The City continues to be involved as a partner in a 28E agreement with the **Squaw Creek Watershed Management Authority**. Ames Council person Bronwyn Beatty-Hansen and Ames Municipal Engineer Tracy Warner have represented the City at meetings and the Ames Municipal Engineer. The Watershed Authority has completed a watershed assessment and plan.

The City also partners with **Iowa State University's Office of Sustainability** by participating in the annual College Creek Cleanup, held in June. College Creek is a tributary of the Squaw Creek and runs through the Iowa State University Campus. During the 2018 cleanup approximately 35 volunteers removed trash from the Creek and stream banks within the Campus.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Illicit Discharge Prohibition Ordinance Left

The Illicit Discharge Ordinance was presented to the Ames City Council and became part of the Municipal Code (Ord. 3819) on February 22, 2005.

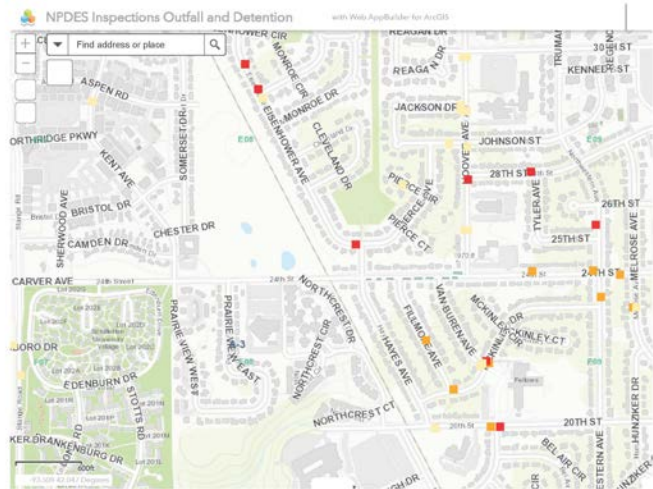
Illicit Discharge Detection and Elimination Program

The City of Ames Public Works Department – Operations Division has been responsible for implementing this program. Program schedule, checklist, and mapping have been developed with the procedures that are documented in a manual. Records are kept for all program activities. Violations were reported during this period and are summarized below. IDNR is notified when necessary and discharges were eliminated.

Annual dry weather flow inspections of outfalls which discharge to non-intermittent waterways or water bodies have been conducted. The program also includes dry weather flow inspections of approximately 20% of all outfalls that discharge to Waters of the State that are intermittent waterways or water bodies with all of these outfalls being inspected during the duration of the permit.

- Spill kits at the Operations Facility and Fleet Facility were inspected and restocked when necessary.
- Spill response plans are reposted on bulletin boards each year at major City facilities such as Operations and Fleet, Parks and Recreation and the airport.
- During street projects a vac-tron is used to vacuum concrete cutting slurry before it reaches intakes and is then land applied in City yard to dry out. An absorbent gel was provided to staff to experiment with as well.

Following are a list of activities that were completed:



- **105 outfalls** were inspected that discharge to non-intermittent waterways and intermittent waterways. Obstructions occurred in 15 and were cleaned out.
- **465 intakes** were inspected and cleaned in district "J", **17.2 tons** of debris and sediment removed. Intakes were rebuilt and repaired when needed.
- **39 detention and retention facilities** were inspected twice each during this period, no repairs were made.

The City has numbers listed on their website for reporting illegal dumping and spills as well as a notice in Cityside, the City newsletter.

<http://www.cityofames.org/index.aspx?page=477>

The City of Ames has implemented a new app called “Ames on the Go”. It allows the public to report issues to the City and receive immediate response. Currently there is a category called “Storm Drain” and it is anticipated that this app will be further developed to expand its use providing another way for the public to report illicit discharges and other stormwater related issues.

Reports of 2 **illicit discharges** were made to city staff during this permit reporting period. Highlights include:

- The City was notified by a citizen that the Hickory Park parking lot had grease or another substance on it. After a site visit it was determined that an empty barrel of soap/detergent had been washed out. City Staff required the staff/owner to hire a contractor to clean a storm sewer intake and adjacent pipe with a vac-tron. No soap appeared to discharge down grade into a vegetated ditch 5-22-2018.
- 4415 Lincoln Way at the NE corner of Lincoln Way and North Dakota had a rusty colored substance which had discharged into the detention basin. The building owner was notified. The owner hired Fox Engineering to test the discharge with a VOC meter Which detected no chemicals. City Staff also notified Iowa DNR Field Office 5 who mentioned that they might make a site visit.

Resource Recovery Plant

The City of Ames Resource Recovery Plant continues to accept household hazardous materials every Wednesday and during special collection events. During 2018/19 household hazardous materials were collected from residents during several collection events. Department staff gave presentations to schools and other groups and provided tours of their facilities in an effort to build awareness of proper disposal of household hazardous and solid wastes. An itemization of wastes collected is provided under the Public Education and Outreach section of this report.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Construction Site Runoff Control Ordinance

The Construction Site Erosion and Sediment Control Ordinance was presented to the Ames City Council and passed on (Ord. 3875) February 14, 2006.

Construction Site Review and Inspection Program

A full-time staff person (Stormwater Specialist) is designated for Storm Water Pollution Prevention Plan (SWPPP) review, inspection and enforcement activities for this program which includes residential, commercial and industrial developments as well as the city’s construction projects.

A City Construction Site Erosion and Sediment Control (COSESCO) permit is issued with evidence of an NOI General Permit Number 2 and after the SWPPP has been reviewed and approved. Inspections are conducted quarterly or as needed for compliance. A database is used to track the status of each project.

April 1, 2018 through March 31, 2019:

- SWPPPs were reviewed for all NPDES General Permit #2 projects and individual building sites disturbing 1 acre or greater or part of a larger project. There were **140 plans reviewed and 131 plans approved, 113 single family home lots and 18 for preliminary plats and commercial lots. Several lots remain in the review process.**
- Inspections of all active GP# 2 sites were conducted resulting in **479 total inspections. 225 were performed on City projects.** Private Projects (**Subdivisions and Commercial lots**) had **79 Inspections** performed by City staff with estimated additional 25-30 more inspections by the end of March. **175 Home lots** were inspected.
- **39% (non-City) Inspections (scheduled and drive through)** resulted in the identification of compliance issues that required the contractor to install additional controls. The required controls ranged from repairing silt fence and cleaning streets to cleaning out sediment basins, seeding and mulching. The City works with permittees in bringing sites into compliance. Notice-of-Violations are used if sites are not brought into compliance in a timely manner and can result in a \$500 first offense fine.
- There were **190 NPDES GP#2 compliance issues** including single family home lots involving local builders, contractors, and developers on non-city projects. The majority (80%) were contacted by email. The remaining 20% were contacted by phone or notified on site. Sites were brought into compliance.
- The Iowa DNR issued **30 NPDES GP #2 Notice-of-Intent**s from April 2018 through March, 2019 in the Ames area. **Two** projects are outside of City limits. Iowa State University acquired **7** permits involving their MS4 Permit. The City of Ames acquired **5** permits for City projects. Iowa DOT acquired **no** permits. Story County acquired **1** permit. The remaining 15 projects were on private sites disturbing over 1 acre of soil. They were monitored accordingly.

Top Soil Requirements in GP#2:

The City of Ames code references SUDAS in chapter 5A of our Construction Site Erosion and Sediment Control Ordinance. Therefore, any site which has a COSESCO permit which includes all NPDES GP#2 sites are required to meet SUDAS standard specifications of section 2010. SUDAS calls out 8" of topsoil in section 2010-3.02. If topsoil does not appear to be of high quality, then it is required to be tested at a lab to verify a minimum 3% organic matter. It takes 1-2 weeks to get test results.

POST-CONSTRUCTION STORMWATER MANAGEMENT

Post-Construction Runoff Control Policy Ordinance

A comprehensive post construction ordinance was approved by City Council on April 22, 2014, Earth Day. Following is a direct link to the ordinance in Chapter 5B:
<http://www.cityofames.org/modules/showdocument.aspx?documentid=17750>

Site Plan Review Procedures

Construction is not allowed until stormwater plans are reviewed and approved. Site plan review procedures are conducted by and implemented by the City through the Development Review Committee process and will be updated and upon approval of the post construction ordinance. This committee consists of representatives from public works, housing and city administration departments. Stormwater management calculations are required and are reviewed for approval by the Public Work Engineering Division.

- There were 28 plans reviewed and 26 plans approved for development projects. This included for home lots and for preliminary plats and commercial lots. All but one of these plans were for private developments on non-city owned property. Development requiring post construction practices for Stormwater management on lots meeting City Municipal Code Section 5B. These requirements affect developments disturbing one acre or more and creating greater than 10,000 square feet of impervious area. Of these plans reviewed 14 were approved using existing regional detention and retention systems that were designed in anticipation of future development within the subwatersheds.
- On the sites that did not already have existing regional systems, thirty-one new practices were installed and include detention and retention ponds, below grade detention systems with water quality components, and native landscaping, and stream buffers based on stream category. Post construction controls are often designed with multi-stage outlets to meet Iowa Storm Water Management Manual Unified Sizing Criteria based on hydrologic soil group B soils in meadow condition. Sites require follow up after construction is completed to have the site engineer verify the controls are installed per plan design. The following table lists the practices installed during 2018.

Practice	Number
Detention basin	9
Retention basin	14
Below grade detention with water quality components	4
Bioretention cells	1

- These practices listed above provide water quality including nutrient reduction. The ordinance required a water quality volume that resulted in 264,548 cubic feet (6.1 ac-ft) to be controlled as a result of the new development. Many of the designs provided excess volume for water quality, resulting in 670,601 cubic feet (15.4 ac-ft), with much of the excess volume in the retention basins.

Inspection of Runoff Control Devices

A program that meets the required schedule has been developed along with a checklist and GIS mapping. In areas where these devices are on private property, the landowner signs an agreement with the City that details the requirements and responsibilities in maintaining these facilities. The Public Works Operations Division has been conducting the site inspections. Letters are sent to these owners each year to remind them to conduct inspections of their permanent stormwater practices and maintain them as well. Staff inspect and maintain all

green infrastructure practices on City properties. Staff that are conducting these inspections are certified under the ISWEP program: Iowa Certified Inspection and Maintenance Program for Stormwater Practices.

Street sweeping is conducted every month except January and February due to weather conditions and **1590 tons** of debris were collected and **4,540 miles were swept**.

465 intakes were inspected, and debris and sediment were removed from storm sewer street intake.

All City owned post construction infiltration-based BMPs were inspected. There were 21 inspections performed that included maintenance at: Community Center enhanced rain gardens and native gardens, Ridgewood Avenue biocells, 24th St. biocells, pervious concrete alleys and Blackwood St., porous asphalt sidewalk near Billy Sunday Rd., Calhoun Park biocell, Ada Hayden native filter strip, and Furman pool biocells, and Operations Facility biocells. The College Creek Greenway was inspected, and several volunteer groups trimmed out invasive trees. Sediment was removed from forebay areas, vegetation was trimmed and replaced when needed and pervious concrete areas were vacuumed. **Approximately 495 pounds of sediment** was removed from the sump that discharges to the bioretention cell on Whitney as the Operations Facility and biocells on 24th Street. All pervious concrete areas were vacuumed twice during this period, spring and fall.

39 detention and retention basins were inspected.

105 Outfalls were inspected.

Watershed Projects and Assessment Program

The City has developed a watershed assessment program and action plan that is used for the following South Skunk River subwatersheds: Squaw Creek, Onion Creek, Clear Creek, Worle, Creek, South Skunk River and Ada Hayden. The program is utilizing GIS mapping tools to evaluate areas and determine strategies for improvement. The City has had a comprehensive land use plan in place since 1997, which is reviewed and updated as needed.

A land use/watershed action plan has been developed and is being implemented and includes all of the permit required items in addition to specific watershed goals and action items.

The Squaw Creek Watershed Authority has a watershed management plan for the entire watershed that includes the City of Ames. The Ames Mayor and Assistant City Manager participate as representatives of the City on the Squaw Creek Watershed Authority. Details can be found: <http://www.prrcd.org/tag/squaw-creek/>

Watershed Projects:

Projects and Assessment Activities:

- Several Watershed Projects were performed by the City during 2018. The most significant project was the S. Skunk River Erosion Control Project. This project was constructed to stabilize the river banks and adjoining slope and to protect a

sanitary sewer trunk main along the west side of the river. The following permanent measures were installed as part of this project:



- 1400 feet of streambank stabilization
- East bank: 950 feet of turf reinforcement matting
- West bank :750 feet of turf reinforcement matting
- Bank paving shoreline stabilization
- 5 bendway weirs
- 9 living dikes
- 2 sediment traps in the west floodplain
- 3 stone revetment areas at the end of waterways adjacent to the river
- 40,000 square feet of slope stabilization
- The Community Center project that was began in 2017 was completed in 2018. Soil quality restoration was performed on the lawn areas around the building and native turf and native landscaping was installed.
- Two other stormwater projects involved City owned properties and they include construction of extended detention basins. The first was a regional basin located at the City Airport. The basin manages up to eighteen acre-feet of stormwater and includes a forebay. This drainage area to this basin is 719 acres of and classified as an Order #1 stream. Construction of this basin provides water quality and flood control measures for S. Duff Avenue and the Teagarden neighborhood downstream east of the basin.
- The second project is the construction of a stormwater basin for a City Low Income Housing Development. This site is in the College Creek Watershed and stormwater discharges into a pipe which outlets into the creek within the Iowa State University Arboretum and Cross-Country Course. The detention basin provides both water quality and flood control for the proposed homes and streets as well as for the properties and creek downstream
- **11 residents** purchased and installed rain barrels and utilized the city Rain Barrel Rebate Program. 19 residents purchased and installed composters and utilized the city composter rebate program. **Soil quality restoration was used on 1 lawn and native landscaping was added to one yard** through the Smart Watershed Cost Share Program. **One** residential rain gardens was installed using the cost share program. **Approximately 50** rebates for trees were provided to residents through the Smart Watershed and Smart Energy Programs in partnership with Trees Forever.

- Approximately **351 trees were by planted** by the City throughout the City. Tree canopies are effective in capturing rainwater and evapotranspiring a portion of the water back to the atmosphere.
- Water Quality monitoring data-bacteria continues to be collected by the City of Ames Water & Pollution Control Department from all major streams.
- IDNR continues to collect monitoring data above and below the city as part of their urban water monitoring study.

POLLUTION PREVENTION/GOOD HOUSEKEEPING

Operation and Maintenance Program for MS4

The Public Works Operations Division has been inspecting the MS4 components in accordance with the implementation schedule. A street sweeping program is in place that meets the requirements noted in the permit. A program, and corresponding mapping, has been developed to assure inspection and maintenance of all storm sewer facilities on a ten-year schedule. Following are specific activities that were completed this permit year:

- **Street sweeping collected 1590 tons** of sediment, debris, leaves and grass. Sweeping is done more frequently in new developments, after spring thaw, and following special events.
- **465 intakes** were inspected and **17.2 tons of debris and sediment** were removed from storm sewer street intakes.

New BMPs:

- Wet saw cuttings are being vacuumed up and intake protection is used.

Pesticide and Fertilizer Management Program

A program has been developed by the Public Works Department. The Public Works and Parks & Recreation Departments and their subcontractors have developed individual application records, site logs, summary logs for tracking pesticide and fertilizer use. These have been distributed to all City Departments that engage in this activity along with a discussion of the permit requirements. Departments are taking steps to minimize chemical use and are exploring Integrated Pest Management BMPs. Phosphorus-free fertilizers are used at most public facilities. Spreadsheets are used to track fertilizer and pesticide use at City facilities. Following are tracking sheets that list chemical use, application rates, applicator and type of IDALS certification and certification number. Best management practices include the use of Phosphorus-free fertilizers and acceptable cultural practices for the use of fertilizers with Nitrogen Mosquito control is also used throughout the city during mosquito breeding periods. The airport and operations facilities do not use fertilizers and spot spray weeds using pesticides.

Following is a list of the City Department and facilities that track annual fertilizer and pesticide use:

Parks Department Parks: Northridge Heights, Carr, Teagarden, Country Gables, Lloyd Kuertz, O'Neil, Franklin, Oakland, Hutchinson, Little Moore, Green Briar, Stuart Smith, Duff, Parkview, Roosevelt, Gateway, Gartner, Bandshell, Ada Hayden, Brookside, Calhoun, Christopherson, Daly, Dog Park Emma McCarthy, Furman Pool, Homewood Gulf, Inis, Moore, Patio Homes, River Valley,

Additional Facilities: Operations on Edison, Municipal Cemetery, Airport, Community Center, Fire Departments, Electric Services

Training Program for Municipal Employees

City staff persons have been attending related seminars and conferences sponsored by sources such as IAMU, ISWEP, Forester, and APWA. They attend ISWEP meetings. Public works staff also attended several webinars. Staff will attend future continuing education programs as opportunities arise. Listed below are more specific training events that staff have attended. **Stormwater Pollution Prevention training** for Operations and other Maintenance staff was conducted in the summer of 2018. Approximately **22 staff** attended the training.

CITY OF AMES STAFF TRAINING APRIL 2018-MARCH 2019

Highlights of training that staff participated in include the following:

- Iowa Water Conference, March 2018: 3 staff participated
- ISWEP Stormwater Design Webinar Series: Once per month June-November, 1-5 staff participated
- Airport Staff Trained viewed Excal Visual SWPPP Training video, February 2019
- Parks and Recreation and Public Works Staff (10 people) Storm Water Pollution Prevention Training, January 2019
- APWA Annual Conference: staff participated
- Three ISWEP meetings held in February, June and December, 2 staff participated
- Stormwater Summit, 3 staff members participated

SPECIAL CONDITIONS

A construction site inspection program has been developed and implemented for construction projects, owned or operated by the City, that include areas of soil disturbance for which NPDES permits are required. The inspection program ensures that contractors are correctly implementing BMPs that have been approved in the pollution prevention plan and any additional necessary measures. The program requires inspections by the City at least every 7 days and ensures compliance by contractors with the storm water General Permit Number 2. Construction site inspection checklists and logs have also been created.

A complete map of the MS4, including outfalls, has been created and integrated with the City-wide GIS mapping. The Public Works Engineering Division continues to maintain this system map.

All salt and brine used by the Public Works Operations Division during winter street maintenance and clearing is kept in fully enclosed, permanent storage structures.

MONITORING DATA

The City of Ames Water and Pollution Control Department conducts bacteriological monitoring of all tributaries of Squaw Creek and the Skunk River during April-October. Following is a plot of 2018 fecal coliform bacteriological monitoring data. If obvious signs of pollution are discovered, or if significant degradation is observed, City staff will conduct more detailed water quality investigations.

SAMPLE DATE	SKUNK RIVER	SQUAW CREEK	CLEAR CREEK	COLLEGE CREEK	WORLE CREEK
October 16, 2018	187	187	171	298	282
September 18, 2018	479	105	50	261	---
August 14, 2018	275	529	1439	2098	---
July 19, 2018	320	13000	1040	2000	1600
June 19, 2018	2600	35000	6400	9400	111000
May 15, 2018	90	155	180	540	80
April 17, 2018	65	370	50	590	70