



Annual Stormwater Program Report
April 1, 2022 – March 31, 2023
NPDES Phase II MS4 General Permit
City of Ames, IA: Permit Number 85-03-0-03
Public Works Department



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Part 1. GENERAL INFORMATION

A. Executive Summary and Highlights

The City of Ames was issued its first NPDES Stormwater MS-4 permit from the Iowa Department of Natural Resources in 2003. The permit serves as the stormwater management plan for the City of Ames. This report summarizes actions and activities performed that demonstrate progress towards permit compliance from April 1, 2022 to March 31, 2023, which is in the fourth permit cycle and summarizes actions and activities performed to fulfill the six minimum storm water control measures: 1) Public education and outreach, 2) Public participation, 3) Illicit Discharge Detection and Elimination, 4) Construction Site Storm Water Runoff Control, 5) Post-construction Storm Water Management and 6) Pollution Prevention and Good Housekeeping.

This year many educational events were back in person after the Pandemic. Staff training was both in person and online.

The following are some of the highlights of the reporting period, many of which will be further described within this report:

- Return of the in person EcoFair, the City's annual sustainability event;
- Leadership of and participation in a task force that developed The City of Ames Pollinator-Friendly Community Draft Plan;
- Completion of the construction phase of the Flood Mitigation Project along Ioway Creek;
- Completion of the Ada Hayden Heritage Park Wetlands project to remove silt from filled in wetland;
- Tracy Peterson is the recipient of the Public Sector Impact Award by the Iowa Agriculture Water Alliance.



Impact Award – Public Sector
Tracy Peterson

B. Stormwater Program Staff

Public Works Staff		
John Joiner	Public Works Director	Directs Public Works programs
Tracy Peterson	Municipal Engineer	Oversees implementation of MS4 program; prepares Public Works CIP budgets; provides for vision for and implementation of stormwater programming
Cesar Cintron	Civil Engineer II	Reviews stormwater management plans
Jake Moore	Stormwater Specialist	Reviews SWPPPs, performs site erosion control inspections and prepares reports, administrates city's Construction site Erosion and Sediment Control (COSESCO) permit program, facilitates education, outreach and public participation, responds to illicit discharge reports, inspects capital improvement projects
Liz Calhoun	Stormwater Analyst	Reviews post construction stormwater management plans and as-builts; facilitates education and outreach and public participation activities; inspection and maintenance of post construction BMPs, manages capital improvement projects
Eileen Arevalo (4/22-12/22)	Stormwater Intern	Maintains and inspects city owned bio-cells and water quality practices, participate in education and outreach events, preparew GIS mapping
Rachel Wagner (4/22-12/22)	Urban Conservation Intern	Maintains and enhances city owned bio-cells and native landscape areas, participates in education and outreach events, administrates stormwater rebate program
Justin Clausen	Operations Manager	Manages staff that conduct intake and outfall inspections and maintenance; street sweeping and maintenance; tree inventory; post construction BMP maintenance; facility good housekeeping and pollution prevention, responds to illicit discharge reports
Corey Milles	Fleet Services Director	Oversees Community Center fertilizer and pesticide use
Damion Pregitzer	Traffic Engineer	Oversees Ames Municipal Airport General Permit No. 3 SWPPP implementation
Parks and Recreation Staff		
Joshua Thompson	Parks Superintendent	Oversees park and natural area maintenance, post construction BMP maintenance; park and right-of way fertilizer and pesticide use
Resource Recovery Plant Staff		
Bill Schmitt	Superintendent	Oversees the solid and hazardous waste management program and trash cleanups for the City
Fire Department Staff		
Rich Higgins	Fire Chief	Oversees illicit discharge cleanup and reporting

As a Premiere Member of the Iowa Stormwater Education Partnership, the City has access to resources and training applicable to all the permit measures.

C. Stormwater Program Expenses

Program	Expense
Education and Outreach	
ISWEP Premiere Membership	\$9,125
Bird Friendly Iowa (Sustained Flight status, app.& recert.based on SWM activity)	\$200
Ames on the Go reporting App	\$27,847
Tree Seedlings and Native Plant Giveaways	\$8,687
Staff, Consultant, Training, Materials and Advertising including Smart Watershed & Smart Trash Programs	\$79,646
Public Involvement and Participation	
Staff, consultant, equipment and material costs	\$41,101
Watershed Participation incl. Story County 10-Yr Water Quality Monitoring Program	\$61,806
Resource Recovery: waste from trash/stream/river cleanup events	\$20
Illicit Discharge	
Staff, consultant, equipment, and material costs	\$5,480
Resource Recovery Plant operations	\$4,172,470
Food Waste Diversion program	\$9,000
Public Household Hazardous Material disposal program	\$82,581
Construction Site Program	
Staff, consultant, equipment, and material costs	\$57,541
Post Construction Program	
Staff, consultant, equipment and material costs	\$65,761
Smart Watershed Cost Share Programs	\$10,854
Ioway Creek Flood Mitigation	\$755,699
Bloomington Waterway Restoration (design, outreach, and permitting)	\$48,427
Low Point Drainage: GW Carver/Bloomington Rd Area	\$95,517
Storm Water System Analysis	\$8,893
Clear Creek Stabilization (design)	\$9,976
Low Point Drainage: Airport Road (analysis)	\$11,201
ROW Restoration including standard lawn and native vegetation	\$89,124
Ioway Creek (Brookside) (design, outreach, mussels, archeology, permits)	\$121,422
Pollution Prevention and Good Housekeeping	
Staff, consultant, equipment and material costs	\$27,400
Street, median, and sidewalk sweeping (staff time, equipment, and contractor)	\$318,829
Street Sweeper tailings processed	\$9,070
MS4 system inspections and maintenance	\$27,105
Sanitary Sewer repairs and rehabilitation (found with SSSE to remove I&I)	\$512,214
Landfill erosion control and testing/monitoring	\$2,500
Emergency and maintenance infrastructure repairs	\$209,665
Drainage, storm sewer, and other MS4 infrastructure improvements	\$2,333,908
Municipal Staff Training	\$6,757
Special Conditions	
Geographic Information System (GIS) (storm water portion only)	\$52,546
Total	\$9,272,370

PART 2. PERMIT MEASURES

A. Public Education and Outreach

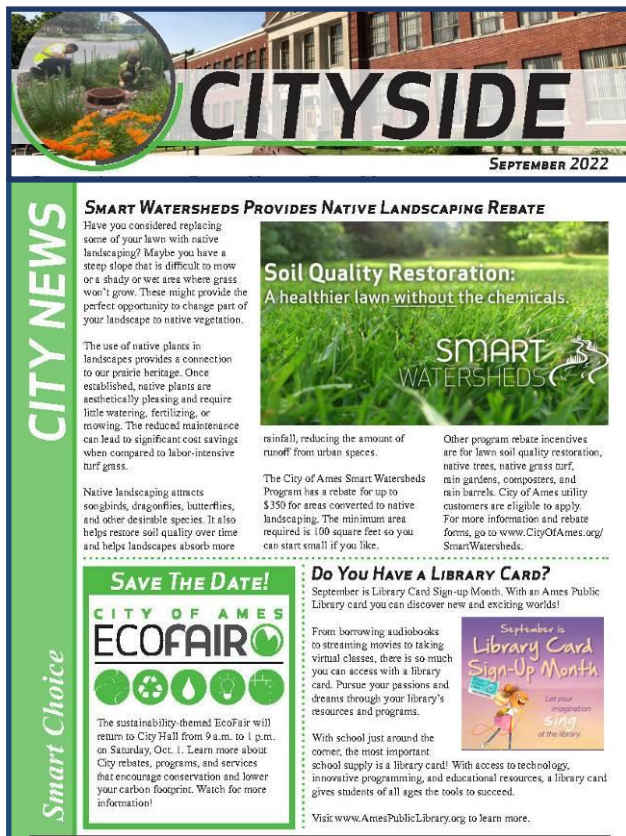
The City’s Education Program takes many forms and as non-structural Best Management Practices (BMP’s), serves to educate the public on ways that the city is taking measures to reduce pollutants and protect and restore waterways and watersheds, and to encourage similar public participation.

A variety of methods used for education including public events, online website information, city publications, social media pages, and brochures. Public outreach fully returned to in person events during the 2022-2023 reporting period.

1. CitySide City Monthly Newsletter

Cityside is the monthly City newsletter distributed with utility bills to approximately **30,000 Ames utility customers**. In addition to contact information for stormwater issues, stream concerns and spill alerts, this publication keeps residents and businesses current with stormwater related issues. Refer to the following table for this year’s articles.

Month	Article Topic
April	<ul style="list-style-type: none"> Cost Share Rebates Improve Water Quality Spring No-Charge Yard Waste Day
May	<ul style="list-style-type: none"> Sustainability-themed EcoChats Continue Monthly Through June
June	<ul style="list-style-type: none"> Native Tree Rebates Offered Climate Action Plan Update
July	<ul style="list-style-type: none"> Storm Drains Features Art Ames Named “Tree City USA”
August	<ul style="list-style-type: none"> Smart Watersheds Offers Native Landscape Rebate Canoe, Kayaks & Paddle Boards Rental
September	<ul style="list-style-type: none"> Smart Watersheds Provides Native Landscaping Rebate
October	<ul style="list-style-type: none"> Eco-Fair Returns to City Hall on Saturday, Oct. 1 Rummage RAMPage has Record Year No Charge Yard Waste Days Scheduled for Fall Rebates Offered for Water Conservation
November	<ul style="list-style-type: none"> Fall No Charge Yard Waste Days Planned New Accessible Launch Installed at Ada Hayden Lake



2. City of Ames Television

Video Summary 2022-23	Views
Introducing Gabbi Edwards, City of Ames Forester	57
EcoFair 2022	19
Iowa Creek Clean Up 2022	20
Ames Plan 2040- Environment	24
Ada Hayden Heritage Park Accessible Kayak Launch	126

Last year the city’s Media Production Services created the videos listed regarding stormwater related topics. In addition, the city website has links to ISWEP public services announcements videos on yard care, storm water, car washing, and oil changes.



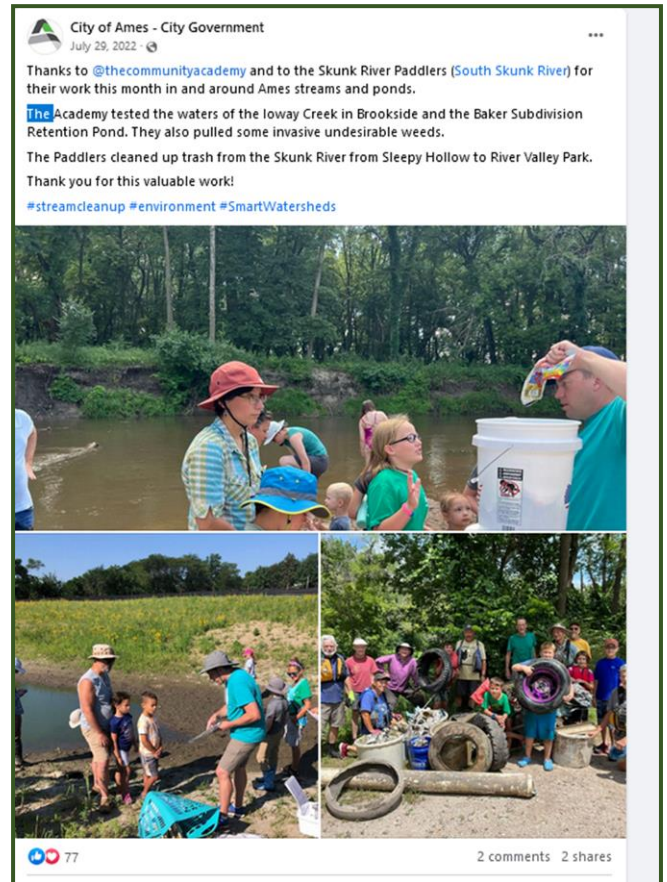
3. Social Media: Facebook

The City uses Facebook to promote many City activities including stormwater education and outreach events. The following are some posts and a table for the last year on the City Government and Public Works pages:

DATE & SUBJECT	# LIKES, SHARES AND COMMENTS
April 7- Sustainability in Ames	7
April 8- Native Landscaping Rebate	48
April 10- Community Cleanup Events	28
April 12- Earth Day on the Airwaves	8
April 24- Dog Waste Pickup	45
April 27- EcoChats	24
May 4- Rain Barrel Rebate	92



DATE & SUBJECT	# LIKES, SHARES AND COMMENTS
May 10- Tree Planting Event	62
May 20-Ames High Ninth Graders-weed, plant biocells and tree trenches	224
May 22- Storm Drain Art	85
May 28- Fire Department Rescues Kayaker	342
May 31- May 21 loway Creek Cleanup	206
May 30- New Storm Drain Art	60
Jun 5-New Storm Drain Art	54
Jun 7- Dog Waste Pickup	34
Jun 27- New Storm Drain Art	28
July 9- Stormwater Interns	87
July 29- The Community Academy Summer Field Day	81
Aug 11- Composter Rebate	11
Aug 25- Pickup Pet Waste	19
Sep 1, 17 & 29- EcoFair	44
Oct 13- ISU SAE Fraternity-Invasives Removal Project	82
Oct 19- Pickup Dog Waste	16
Oct & Nov- No Charge Yard Waste Days	40
Nov 26- Pickup Dog Waste	22
Dec 13- Interns install Cigarette Receptacles on Welch Ave	215
Dec 14-ISU SAE Fraternity Welch Ave Cleanup	237
Dec 30-Cigarette Canister Grant	1
Jan 4- Pickup Dog Waste	24
Jan 11- Maintenance work at Ada Hayden Park	61
Jan 23- Household Hazardous Waste Dropoff	11
Feb 3 Spring No-charge Yard Waste Day	6
Feb 2 & 5- Climate Action Plan Survey	26
Feb 11-National Bird Feeding Month	20
Feb 21-ISU Sustainapoolza Event	20
Mar 23- Smart Watersheds rebates	34
Mar 26- Food Waste Diversion Program	25
Mar 29- Trout to be stocked in Ada Hayden on April 1	69



4. City of Ames Stormwater Website

The city's Public Works Department continues to update and expand the stormwater portion of the City's website: <https://www.cityofames.org/government/departments-divisions-i-z/public-works/stormwater-program/stormwater-permit>. The website has pages that address each of the permit requirements, an illicit discharge and spill reporting page (with video) and Smart Watershed Program portion of the City's website continues to provide highlights of the watershed projects that the City has completed in past years. The Smart Watersheds page contains forms and information for the Cost Share Programs as well as public education information on what residents can do to prevent stormwater pollution. Watershed maps are also available along with links to local watershed groups and public education information. Brochures and information prepared by Iowa Storm Water Education Partnership (ISWEP) is also available on this website. The website is updated regularly through the year to stay current with changes in city programs. Changes to the stormwater webpages during the current report period are:

- NEW Storm Drain Art webpage
- NEW Bird Friendly Community webpage
- NEW 2021-22 City of Ames MS-4 Permit Annual Report
- Update- Stormwater Utility Fee
- Update- Smart Watersheds maps
 - Revise municipal boundary to add new annexed areas
 - Change spelling of Worle Creek to Worrel Creek
- Add West Indian Creek watershed map



STORMWATER UTILITY FEES		
July 2022		
New stormwater utility fees went into effect on July 1, 2022. The new fees that are charged on your monthly utility bill, reflect the ongoing costs of managing stormwater in our community. The fees are used to address aging infrastructure, rehabilitation and maintenance work as well as education/outreach activities and compliance with state and federal stormwater runoff regulations. Capital Improvement Plan projects financed through the fees include improvements and rehabilitation to stormwater infrastructure, installation of practices to improve water quality, address localized drainage issues, and control erosion in various areas within our community. The Public Works Department manages the City's stormwater program and oversees these projects.		
The new fee structure is based on four tiers of rates that consider the square-footage of impervious area on each piece of property. Impervious surfaces include rooftops, driveways, and sidewalks. Residential homes are typically in Tier 1. Following is a list of the tiered utility fee structure:		
Tier	Impervious Area (SF)	Charge per Account starting July 1, 2022
1	150 - 10,000	\$5.20
2	10,000.01 - 30,000	\$10.40
3	30,000.01 - 90,000	\$15.60
4	90,000 and above	\$46.80

The following table summarize the visits on the City's stormwater related webpages during the current reporting period.

Webpage	# Visits
Stormwater Program	2465
Bird Friendly Community	10
Storm Drain Art	140
Stormwater Violations/Illicit Discharge	112
Construction Erosion and Sediment Control	80
Post Construction	135
Smart Watersheds and Rebates	152
Good Housekeeping	21
Stormwater Fees	196
Stormwater Permit	41
Story County Water Monitoring Plan, 2021-2030	22
Ioway Creek Flood Mitigation Project	270
Ioway Creek Restoration at Brookside	501

5. Water Plant Open House

Stormwater staff participated in the Water Plant Open House on April 23, 2022. Over 700 citizens attended and the event included a tour of the plant and educational exhibits. Public Works distributed tree seedlings and promoted the Smart Watersheds program.



6. Cellular Telephone Application

“Ames on the Go” allows residents and visitors of our community to report complaints, violations and concerns, including storm water related concerns. The app is available through iTunes and Google Play stores as well as the city website.

Ames On the Go App	Downloads since Jan 1, 2018	2020-21 Downloads	2021-22 Downloads	2022-23 Downloads
Total Downloads	6,438	1,494	1,510	2143
Storm water intake reports	185	30	38	43
Street sweeping reports	157	28	52	31

7. Community Radio Appearances

Staff members make regular appearance on two community radio stations, KHOI and KASI. These appearances inform and educate the public on current events, projects and activities being performed and to promote opportunities for community engagement in the Smart Watersheds Program and stormwater related projects. Staff from the Public Works Department and the Parks and Recreation Department made at least 50 appearances the current reporting year.

8. Resource Recovery Plant

Proper trash management and disposal can significantly reduce improper disposal of trash in the environment and waterways. The Ames Resource Recovery Plant and Smart Trash Program is progressive at informing and encouraging citizens and businesses to reduce, reuse and recycle unwanted materials. The website <http://www.cityofames.org/smartrash> provides information on waste handling and disposal.

Program information is run on the local cable Channel 12 and Channel 12 You-Tube regularly as well as advertising through Mediacom. Ads are run at least one ad per year for Household Hazardous Materials collection and 2-3 times per year for yard waste collection. Twenty-seven (27) tours of the plant were held in the current reporting period with a total of 678 attendees.

9. Distribution of Deicer Brochure

As winter approached, staff mailed a letter with the ISWEP Salt & Deicer Management for Businesses Guide to forty local snow removal companies. The guide educates them on how to properly apply deicers and provides online links to further educational opportunities.



10.10th City of Ames EcoFair

After a three year in-person hiatus, the Ames EcoFair returned on October 1, 2022. The event was held outside on a beautiful fall day. New features included the ISU Conservation Station, music, food vendors and an exhibit by the Prairie Rivers of Iowa and the Ames Pollinator Task Force focusing on a public survey about pollinators in Ames. Returning exhibits included city departments sharing sustainability expertise, a rain barrel vendor and an electric car show. The event was held at the same time as the Ames Farmer's market, located one block away, resulting in additional attendees that don't typically attend the EcoFair when it is a stand alone event. It was estimated that approximately **500 people attended**.



11. Hybrid EcoChats in 2022

The EcoChats continued into the summer of 2022 as hybrid events. Attendance declined as the events went back in person so it was decided to suspend this outreach event in the upcoming season.

Date	EcoChat Subject	# Attendees
Apr 2022	Bird Friendly Community, Trees	15
May 2022	Resource Recovery, Rummage RAMPage	10
June 2022	Electric	10

12. Iowa State University Sustainapoolza Event



The Office of Sustainability at Iowa State University holds an annual event called Sustainapoolza. On February 21, 2023 stormwater staff joined other city department staff at the event, which had approximately 350 attendees and provided educational information about Ames Smart Watersheds Program and volunteer opportunities.

13. NEW Ames Public Library Display

During March, 2023 in collaboration with the Ames Public Library, a public display was made available to the public in a highly visible location within the library. The display provided books and brochures about native plantings and landscapes, pollinators, birds, trees and other information beneficial to stormwater on private properties. Applications for the city's Watersheds rebates were also available.



14. Iowa Children's Water Festival and Science Night

On May 12, 2022 stormwater staff participated in the Iowa Children's Water Festival in Ankeny. At the educational event for 5th graders around the State, staff used a watershed model and information to teach students how to protect watersheds. Over 2,000 students attended the event.



The first elementary science nights since 2020 returned in February 2023 at Fellows Elementary, where children painted a rain barrel and learned what watershed they live in and what they can do to protect it.

14. Other Outreach Events

Additional outreach events that occurred during the current reporting period are:

- On October 29, 2022 Tracy Peterson staffed a table at the Trick or Trees event held at the Greater Des Moines Botanical Garden teaching about Iowa Rivers.
- During the week of October 10th, 2022, Liz Calhoun attended the Ames High 9th Grade Science classes and assisted groups in development of their special projects related to water quality, runoff and infiltration in the loway Creek Watershed and the areas around the newly constructed school.
- On March 21, 2023 Jake Moore and Liz Calhoun staffed a table at the Green Hills Community Eco-Fair promoting the city's stormwater rebates.
- On March 29, 2023 Tracy Peterson spoke to the Iowa State University's Women's Club-Nature Study Group at Green Hills Retirement Community about the loway Creek Flood Mitigation Project.



B. PUBLIC INVOLVEMENT AND PARTICIPATION

The Public Involvement and Participation Program in Ames engages individuals and groups interested in protecting our waterways and lakes. City staff are available to guide those who want to participate in this program. Public notice for planned public involvement is typically given through print media or social media and meets all state and local public notice requirements. The following are some highlights of the public participation in the current report year.

1. Storm Water Management Team

Civic engagement is extremely important to the City of Ames organization as we serve the customers of Ames. Information about capital infrastructure projects such as roadway, water system improvements, sanitary sewer rehabilitation, drainage, stream stabilization, storm water facility rehabilitation, and flood mitigation projects are on the City’s website under Construction Updates. Virtual or Open House project informational meetings are held during the design phase to gather public input prior to finalizing the construction documents. During the past year, project information meetings were held in person using the open house format for the loway Creek at Brookside and Bloomington Waterway stream improvement projects.

2. Trash Cleanup Efforts Continue with Multiple Events

In addition to the annual community cleanup event called Stash the Trash, other trash cleanup events were held. The following table above summarizes the organized events.

Event/Group	Date	# Participants
Stash the Trash	April 30	Informal
loway Creek Cleanup	May 21	20
Outdoor Alliance	July 27	13
SAE Fraternity Welch Avenue Tree Trenches	Dec 12	6



3. Watershed Projects and Assessment Program

The City has developed a watershed assessment program and action plan that is used as an on-going tool for the South Skunk River and its sub-watersheds (Ioway Creek, Onion Creek, Clear Creek, Worrell Creek, South Skunk River, West Indian Creek and Ada Hayden Lake). The program utilizes GIS mapping tools to evaluate areas and determine strategies for improvement. The City has had a comprehensive land use plan in place since 1997. A major revision called the Ames Plan 2040 was adopted on December 14, 2021. It includes a land use/watershed action plan and contains the permit required measures as well as specific watershed goals and action items.

4. Watershed Management Authorities

The City of Ames is one of the founding members of two watershed authorities: Ioway Creek Watershed Management Authority and Headwaters of the S. Skunk River Watershed. These WMAs were formed through 28E agreements. The Ioway Creek Watershed Management Authority has a watershed management plan that includes the City of Ames. An Ames City Council member is appointed to the boards. The Ioway Creek Watershed WMA Board met quarterly during the current reporting period.

5. Service on Stormwater Board of Directors

Tracy Peterson serves as Chair of the Board of Directors of Iowa Stormwater Education Partnership and as Vice-Chair on the Iowa Rivers Revival Board. Her involvement strengthens these organizations and the stormwater community.

6. Story County Water Monitoring and Interpretation Plan 2021-2030

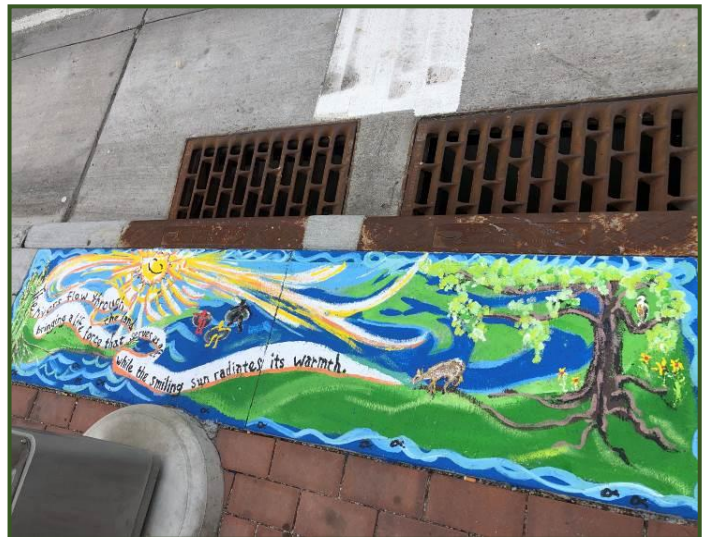
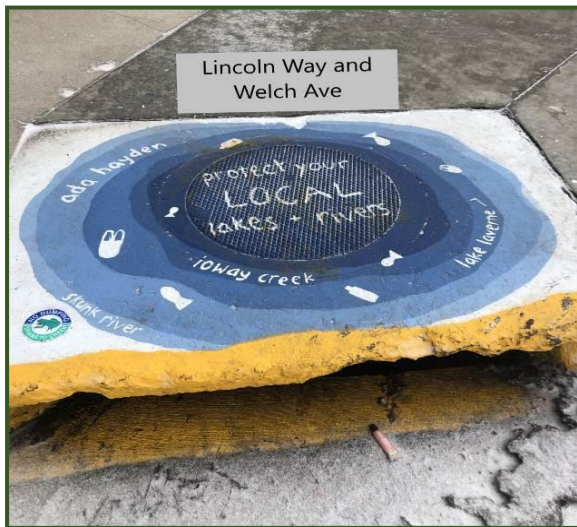
2022 was the second year of full implementation of the ten year Story County Water Monitoring and Interpretation Plan. The team of ten organizations, led by Prairie Rivers of Iowa, has sub-committees with specific strategies and tasks. Sampling and testing are being completed by staff and volunteers. The 2022 annual report can be found at <https://www.prrcd.org/story-county-water-monitoring/>. Volunteer training was held virtually in March, 2022 for the upcoming testing season. This year in anticipation of the Ioway Creek at Brookside Stream Stabilization



Project, mussels were relocated outside the project area. This effort was completed by a consultant with the help of local volunteers including Ames High students.

7. New Storm Drain Art Program

At the request of Ames City Council the Public Arts Commission commissioned artists to design and install art pieces at 10 locations in Downtown and Campustown. The art educates the public on keeping our rivers and streams clean and protecting the environment. The following are some of the designs:



8. Resource Recovery Plant Food Waste Diversion Program

Citizens can continue to take household food waste to the Resource Recovery Plant, thereby diverting this organic waste from the solid waste stream and turning it into compost. This program was developed because of the wet nature of food as solid waste and its ineffectiveness as a fuel within the total waste stream. Waste is either burned in the City Power Plant or sent to a landfill, if the plant is under maintenance.

During this reporting period **86,900 pounds** of food waste was collected and diverted.

9. Smart Watersheds Cost Share Rebate Program

The table below summarizes the Smart Watersheds rebates for the current year compared to previous reporting years. An increase in rebate applications occurred this year, in particular for rain barrels.

Rebate Program	2019-2020	2020-2021	2021-2022	2022-2023
# Applications				
Rain Barrel	16	27	18	47
Composter	47	22	15	11
Soil Quality Restoration	3	12	6	11
Native Landscaping	1	6	6	7
Rain Garden	2	1	0	0
Tree Voucher- Partnership with Ames Trees Forever	100	0	0	0
Native Tree Rebate	N/A	35 applications, 58 trees	59 applications, 84 trees	47 applications, 67 trees
Total Rebate Applications	69	103	104	123



10. Ames High 9th Grade Plants Natives in Bio-Cells and Tree Trenches

Ames High School science teachers have a history of collaborating with the City on native landscaping in the city's public landscapes. This year over 300 9th grade students planted 1,000 native plants in the nine bio-cells within the 24th Street right-of-way and in four tree trenches at Welch Avenue. They were taught weeding and planting skills as they enhanced the practices.



The 24th Street bio-cells were constructed in 2015. Some of the initial plantings did not survive and the result was that there was a lack of diversity and interest. This street is an arterial in the City

with good visibility and a shared use path adjoining the bio-cells. The increased plant diversity in the bio-cells enhance both the function of the practice and the appeal to the public.



C. ILLICIT DISCHARGE DETECTION AND ELIMINATION

1. Illicit Discharge Prohibition Ordinance

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

This reporting year staff from the Public Works Engineering and Operation Divisions met to review illicit discharge reporting and coordination procedures.

2. Storm Water Pollution Notifications

The City continues to have multiple ways to report and inquire storm water issues:

- Telephone during office hours (515-239-5160) and after hours (515-239-5150) 24-hour number for reporting spills.
- City's newsletter, CitySide, which is sent to 30,000 households through utility bills
- City website. <https://www.cityofames.org/government/departments-divisions-i-z/public-works/stormwater-program/stormwater-violations-illicit-discharge>
- Cellular telephone app, Ames on the Go.

3. Illicit Discharge Detection and Elimination Program

The City of Ames Public Works Department – Operations Division is 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 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 posted 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.

The following table lists the incidents reported by the Ames Fire, Police, and Public Works Departments in the current reporting period, demonstrating the city's commitment to respond and cleanup potential threats of illicit discharges to the storm sewer system and streams.

Date	Staff/Unit Responder	DNR Notified?	Location/Description
4/12/2022	Station 3	No	Kum and Go on Isaac Newton- Hazardous Materials
<p>Station 3 received a call from Kum and Go on Isaac Newton stating they had spilled approximately 5 gallons of gasoline while filling underground tanks. They had spread some oil dry but were concerned about the spill entering the storm drain. R3 responded non-emergent. R3 arrived on scene with Command. Oil dry was placed and the storm drain protected. R3 turned the scene back over to Kum and Go.</p>			
5/20/2022	E-1	No	Kum & Go on Dayton-Gasoline Spill
<p>E-1 was called to a gas spill at the pumps at Kum & Go on Dayton. The staff had applied oil dry by the time we arrived. No other issues were found. E-1 returned to quarters.</p>			
6/12/2022	Rescue 2	No	Dotson & Lincoln way: Chemical Spill with odor
<p>Rescue 2 was dispatched for a chemical spill with odor. Prior to the dispatch, there was a PBX to station 2 to notify the station of the incident. R2 arrived on scene to the initial dispatch of Dotson and Lincoln Way but found no incident. APD dispatch corrected the address to Dotson and Baughman. R2 arrived on scene and was met by APD Parking Enforcement. The officer stated that a customer found a gas can tipped over on the side of the road. The gas can was approximately a 3 gallon gas can and was half empty. There was approximately 1.5-2 gallons of gas spilled approximately 10 feet by 6 inches wide. R2 applied oil dry the gas on the road which was located on the north east corner of the intersection near the curb. The officer was disposing of the container. R2 was made complete and available.</p>			
7/06/2022	Station 3	No	Casey's Service Station- Gasoline Spill
<p>Station 3 received a call from Casey's convenience store reporting a gasoline spill. Tower 1 was dispatched. Arrived and met with employee who stated automatic nozzle did not shut off. Employees had applied some absorbant material to spill. Tower 1 crew applied more absorbant material to spill and swept around material to soak up gasoline. Crew used 2, 25lb. bags and 2, 5 gallon containers of absorbant material.</p>			
July 2022	PW Operations, PW Engineering, AFD	No	411 Franklin-sanitary sewer discharge
<p>Sewer water was being discharged to street from basement backup via garden hose. Resident stopped discharge once notified. No evidence of issues downstream. No other action taken other than resident education.</p>			

Date	Staff/Unit Responder	DNR Notified?	Location/Description
9/9/2022	Engine 1	No	2801 Grand- Gasoline spill
<p>Engine 1 was dispatched to 2801 Grand Ave for a hazardous materials leak. Rescue 1 was added, to the call after completing a medical call. Engine 1 and rescue 1 arrived at 2801 Grand Ave and located a black Ram 4x4 truck that was leaking materials from the bed of the truck. After investigating the vehicle, Ames Fire personnel opened the tailgate and found a 5 gallon gas can that had tipped over. Ames Fire personnel placed the can upright and closed the tailgate. Ames Fire personnel used oil dry to clean up the spilled gas from the ground. Engine 1 and rescue 1 complete and available from 2801 Grand Ave.</p>			
9/14/2022	Fire Station 1	No	Casey's-CO2 leak
<p>Fire Station 1 received a PBX from Caseys assistant manager about a CO2 leak coming from the soda pop mixer in the back room. Tower 1 responded non emergent. We arrived on scene to find a leak coming from the Diet Coke mixing manifold. Tower 1 disconnected the CO2 tank, unplugged the two air compressors associated with the pop mixers in the back room and shut off a quarter turn valve in the line that feeds the manifold. The leak stopped. Elaine Burke, the night manager, was advised that the fountain pop machine was out of service until a tech could fix the leak. Tower 1 returned to station 3.</p>			
11/20/2022	PD	No	Unknown-fluids leaking from car
<p>Dispatched for a PD request to evaluate leaking fluids from a previous incident involving a car into a tree with no known occupant. We arrived and met with PD who advised this had happened an unknown time earlier and they were attempting to find the owner. The vehicle had struck a tree head on at what appeared to be a high rate of speed. The vehicle was leaking fluids into the road. We determined that the leaking fluid was coolant and we applied absorbant material to the roadway. PD then released us from the scene and we returned to service.</p>			
12/25/2022	Tower 1	No	Kum & Go-fuel spill
<p>Tower 1 was dispatched to Kum & go for a report of a fuel spill due to hose being pulled off pump. T1 arrived to find the area barricaded from public with approx 1-2 gallons of gasoline on the ground. The store employee stated that they were out of supply of absorbant. T1 crew applied 1 bag of absorbant to the area and the employee got a broom to spread it around. No other actions required of AFD.</p>			

Date	Staff/Unit Responder	DNR Notified?	Location/Description
1/16/2023	E2	No	Service Station-combustable liquid spill
<p>E2 was dispatched for a gasoline spill. Dispatch advised that the spill was believed to be five or six gallons. E2 arrived on scene and was met by staff. They showed us to the spill and it looked to be maybe one or two gallons. E2 crew put oil dry on the spill. There were no other hazards. The scene was turned over to staff. E2 complete.</p>			
1/17/2023	T1	No	North Loop Dr-oil spill
<p>T1 responded for a vehicle that hit a piece of metal in the roadway and punctured the car's oil pan. Arrived to find the vehicle Northbound on North Loop Dr. A pool of motor oil was under and around the vehicle. T1 crew spread absorbent on the oil. T1 waited on scene until a tow truck arrived. No further assistance was needed. T1 was available.</p>			
1/22/2023	E1	No	No location noted-H2S (hydrogen sulfide)
<p>E 1 arrived on scene and established command. E 1 investigated the restrooms next to the basketball court finding the highest concentrations of HT2 within the restrooms. The highest findings were 23 ppm of H2S. E 1 crew poured water down the floor drains and found 1 drain that was not working. Maintenance was notified. After venting the rooms staff on scene were going to remain on scene and call back if needed. E 1 terminated command and returned to Station #1.</p>			
2/25/2023	Ames Fire	Yes	Residence-Mercury leak
<p>Ames Fire was first notified on Saturday, February 25th by Joshua Drake that he had a large thermometer containing mercury break in his home. He described the thermometer as a two-foot-long glass tube that contained about a "nickel" sized amount of mercury. He estimated that three drops of the liquid mercury fell from waist height to the carpeted floor. With consultation from poison control, Iowa DNR, the EPA, and the National Response Center, he attempted to clean up as much of the mercury as possible. He used an eye dropper to suck up all visible beads from the carpet, and sealed the mercury in a small plastic food storage container. He sealed the ends of the glass tube with duct tape. Mr. Drake then sealed the HVAC ducts into the basement office where the mercury was spilled, set up a space heater aimed at the area and turned on two fans to blow air out the egress window to aid ventilation. He sealed the door with painters' tape and kept all people from the room during the rest of the weekend. Mr. Drake transported the sealed mercury and associated items to Ames Fire Station No. 1 on the advice of "Ames PD."</p> <p>The Iowa Department of Natural Resources reached out to Fire Station No. 1, Acting Commander Eric Facio on Sunday, February 26th, to advise that they were notified of the spill</p>			

by the EPA. They informed us that the nearest Lumex mercury detector was located at Mason City Fire Department, and they would need to be contacted directly to request its use

Monday, February 27th, Fire Department administration learned of the incident and began outreach regarding the status of clean up and for further information. At nearly the same time, the Iowa DNR called Fire Station No. 1 to check on the status of the incident. I spoke to Mr. Drake, who informed me he had not entered the room, and that the family was staying out of the home as much as possible, trying to let the ventilation work. I then spoke to Des Moines Hazmat/Special Operations Lieutenant, Tanner Stoner who had been in contact with the DNR and EPA. We discussed and determined the need for further monitoring to clear any areas of potential contamination to ensure the safety of the home. Lt. Stoner contacted Mason City Fire for a response with the Lumex, while I contacted Mr. Drake to have him meet us at the home. I also informed Adam Broughton at IDNR and Melissa Spencer, Story County Emergency Management, of our plans. Upon meeting at Mr. Drake's home, we confirmed the information we had received so far and clarified the mechanism of the spill. It had appeared to have broken inside the case at some point in the past year unbeknownst to Mr. Drake. The droplets of mercury were noted when Mr. Drake attempted to open the case. They fell from approximately four foot above ground, directly onto the carpet. We also clarified where else he may have gone to narrow any potential contamination zones. We identified Mr. Drake's shoes and his car as potential contamination points for monitoring.

When Mason City Fire, Gary Akin, arrived with the Lumex monitor. After warm-up, the monitor read 0 ng/m³ outside. Readings increased to 30 ng/m³ near Mr. Drake's shoes, and 320 ng/m³ over the passenger seat where the mercury was transported. Next, we monitored the exhaust air at the egress window with the Lumex showing 0 ng/m³. Upon entering the front door on the ground level, the monitor increased again to 400 ng/m³. Proceeding to the basement and the hallway outside the office, the monitor hovered near 490 ng/m³ with a peak reading of 526 ng/m³.

On entering the office room where the spill occurred, the monitor jumped to 2200 ng/m³ with a peak reading of 2522 ng/m³ near one of the fans in the room.

With further contact with the EPA, they believed there could be micro beads of mercury still on the floor of the room and they suggested removing the carpet. On Mr. Drake's request, we assisted carefully cutting the carpet to include all areas of potential contamination, rolling and bagging the flooring. We removed it through the egress window. After carpet removal, the Lumex monitor dropped to 1200 ng/m³. We determined we should let ventilation continue for

a while and re-measure in approximately 30 minutes. With measurements dropping and no further concern for contamination, Lt. Stoner, DMFD was released from the scene.

Ames Fire and Mason City Fire proceeded to Ames Fire Station No. 1 and monitored the area to make sure the mercury was not an ongoing hazard. Lumex readings at the station were 0 ng/m³, except directly over the mercury container where they reached a max reading of 40 ng/m³.

Returning to the home, Lumex readings were consistently near 850 throughout the basement, including the room of origin. With levels below any remediation recommendations by the EPA, we released the home back to Mr. Drake. He was going to continue to ventilate and dispose of the carpet through normal procedures. Mason City Fire was released from the scene, and Ames Fire closed the incident.

4. Resource Recovery Plant

Keeping hazardous waste and trash from being illegally dumped in waterways is an ongoing challenge. The City of Ames Resource Recovery Plant provides multiple options so that illegal dumping is minimized. The Plant continues to accept household hazardous materials every Wednesday and during special collection events. During **2022, 24,846 pounds** of household hazardous material was dropped off at the plant by **479** customers.

5. 6th Annual Rummage RAMPAGE

The fifth annual Rummage RAMPAGE, a community sale during peak rental move-in/move-out designed to keep reusable items out of the waste stream, was once again a record-setting event. The City of Ames and ISU's Office of Sustainability held the sale July 29-August 6 at the Ames Intermodal Facility

- This event was recognized by the Iowa Society of Solid Waste Operations as the winner of the first ever Outstanding Waste Diversion Program and Video Award.
- Nine days spanning two weekends for donations and sales
- More than 143,838 pounds of furniture and housewares found a new home and remained out of the waste stream.
- More than \$49,000 raised.
- 41 local nonprofit groups benefited from funds raised.

The logo for Rummage RAMPAGE features the word "RUMMAGE" in large, bold, black capital letters. Below it, the word "RAMPAGE" is written in a smaller, bold, green font with a white outline. The letters are slightly tilted and overlap, creating a dynamic, energetic look.

D. CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

1. 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.

2. Construction Site Review and Inspection Program

One full-time staff person, Jake Moore, 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. Staff regularly correspond with local builders and developers.

The City of Ames has several capital improvement projects active every year. Regular inspections are completed with fully documented reports being written after each inspection. The large projects completed this year have are E. 13th Street, North Dakota Avenue, and Ioway Creek Flood Mitigation. This project which reconnects Ioway Creek to the floodplain and lowers flood levels by two feet in the S. Duff Avenue flooded area.



The following table summarizes the City's construction site runoff control program activities with a comparison to last two year's activities.

SWPPP Reviews/Approvals	2020-2021	2021-2022	2022-2023
Single Family Homes	84	60	54
Commercial Reviews	10	12	6
Preliminary Plats	4	6	2
Plat additions with Public Improvements	2	2	3
City Project SWPPP Reviews	5	2	5
NOIs Filed for GP#2			
Total Projects	14	9	25
City Projects	4	1	5
Iowa State University Projects	2	1	6
Story County Projects	0	0	0
School District Projects	0	0	0
Private Projects (Gas Stations, Subdivision, Apartments, Hotels, Building Additions, Commercial Businesses)	8	7	14
Weekly (City Project) & Quarterly Inspections (Private Sites)			
Total Conducted	563	544	571
City Projects	418	299	325
Private Projects (Commercial)	88	121	126
Single Family Inspections (Home Lots)	57	124	120
Enforcement Actions			
Number of Compliance Issues (Private Projects)	60	70	95



Construction Site Runoff Control Program Tracking

Types of Issues and Enforcement Actions (Notice sent by email to site contact to have BMP's installed)	
1. Apply Temporary stabilization when site is inactive	
2. Sediment controls required to be installed or require maintenance	
4. Install, maintain stabilized drive	
5. Concrete Washout, Install, clean up and repair	
6. Restore vegetation on neighboring lots, add sediment controls to neighboring lots	
7. Seed, mulch stockpile	
8. Secure porta potty with stakes	
9. Pick up trash	
10. Store chemicals in covered areas or secure containment	
11. Install rock check in channel	
12. Protect intakes	
13. Standpipe at basin outlet required, install control to withdraw water from the surface per GP#2	
14. Move dirt piles away from street	
15. Install sediment controls around stockpile	
16. Expired Permit- renew	
17. Clean out storm sewer/manhole	
18. Not enough controls, add additional. Try to catch this during the SWPPP design	
19. Water site to prevent dust from blowing	
Topsoil Requirements	
Number of Sites Where Decompaction Occurred and Topsoil Placed (final occupancy including single family and commercial lots)	Approximately 72
Describe Methods Used and Amount of Topsoil - Scrape/stockpile/backfill with onsite topsoil (amended soil only used on one City Project - Had settlement problems) Some sites hauled in soil on commercial lots.	
8" of topsoil is typically placed on all sites. Decompaction methods used include: Chisel Plow, Box Blade Teeth, Tiller, Farm Disc, Land Leveler/Planer teeth	

3. Topsoil 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.



E. POST-CONSTRUCTION STORM WATER MANAGEMENT

1. Post-Construction Runoff Control Policy Ordinance

A comprehensive post construction ordinance (Chapter 5B) was approved by City Council on April 22, 2014 with revisions to the ordinance in 2019. A link to the ordinance is <https://www.cityofames.org/home/showdocument?id=17750>.

2. Site Plan or Grading Permit Review Procedures

Site plan review procedures are conducted and implemented by the City through the Development Review Committee process. This committee consists of representatives from Public Works, Planning and City Administration Departments. Stormwater management calculations are required and are reviewed for approval by the Engineering Division of the Public Works Department.

Post construction controls are required to meet the Iowa Storm Water Management Manual Unified Sizing Criteria based on hydrologic soil group B soils in meadow condition. An as-built plan is prepared and submitted to the City to ensure that the sites are built as designed.

The Post Construction Ordinance, City Code Section 5B, applies to new development sites that plan to disturb one acre of more or create more than 10,000 square feet of impervious area. On April 1, 2019 a second category was added for redeveloped sites. The minimum threshold for redeveloped sites is one acre of proposed disturbed impervious area. This has resulted in fewer stormwater management plans to review and implement.

Type of Development	2020-2021		2021-2022		2022-2023	
	# Plans Reviewed	# Projects Approved	# Plans Reviewed	# Projects Approved	# Plans Reviewed	# Projects Approved
New Development	11	8	7	1	6	6
Redevelopment	4	4	4	4	0	0
Total	15	12	11	5	6	6

In addition, approximately 25 site plans and subdivisions were reviewed and determined that they were part of a regional watershed that considered the proposed conditions or the proposed development was below ordinance thresholds for stormwater management.

Best Management Practices and Water Quality Volume Benefit of Approved Plans

Type of Practice	Number of Practices
Wet Retention Basins	11
Infiltration Trench	1
Grass Swale	1
Total	13
Water Quality Benefits	
New Water Quality Volume Managed	89,053 cubic feet

3. City Funded Watershed and Construction Projects

Civic engagement is extremely important to the City of Ames organization as we serve the customers of Ames. Information about capital infrastructure projects such as roadway, water system improvements, sanitary sewer rehabilitation, drainage, stream stabilization, storm water facility rehabilitation, and flood mitigation projects are on the City's website under Construction Updates. Virtual or Open House project informational meetings are held during the design phase to gather public input prior to finalizing the construction documents. During the past year, project information meetings were held in person. Construction updates are also often made through the Ames Media You-tube Channel.

Several large capital improvement projects finished the construction phase and entered into the establishment phase for establishment of the natives.

- South 5th Street Wetlands (2nd growing season)
- loway Creek Flood Mitigation Project (1st growing season)
- Baker Subdivision Retention and Fishing Pond (2nd growing season)
- Little Bluestem Bio-Cells Rehabilitation (2nd growing season)
- North River Valley Park Low Head Dam (2nd growing season)
- Homewood Slope along South Skunk River (2nd growing season)
- S. Grand Avenue Extension Water quality swales and wetland (1st growing season)
- Moore Memorial Park Land Retirement (will be planted in 2023).



Ada Hayden Heritage Park Lake is protected by a wetland complex. The first wetland in the series from the west, Wetland Cell 1, was entirely silted in with eroded sediment. Due to the increased siltation and sedimentation, the effective water holding capacity, retention time, and nutrient reduction properties were diminished reducing the effectiveness of the wetlands. The project restored the wetland to the original design elevations with excavation of approximately 4,500 cubic yards of silt.



Upcoming watershed projects that are in various stages of analysis and design are:

- loway Creek Restoration -Brookside Park (6th Street to 13th Street)
- Bluffs at Dankbar-loway Creek wetlands
- S. Skunk River Restoration (E. Lincoln Way to SE 16th Street)
- Clear Creek stabilization (near Utah Drive and British Columbia Avenue)
- City-wide Storm Sewer System Analysis including modeling and BMP planning
- Hyde Avenue/Bloomington Townhomes Waterway Restoration
- 24th Street Improvements Bio-Cells and Swales (west of UPRR tracks)
- Low Point Drainage Improvements- addressing localized flooding

4. Inspection Program 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 facilities are on private property, the landowner signs an agreement with the City that details the requirements and responsibilities in maintaining these facilities. Letters were sent in the fall to property owners to remind them to conduct inspections and maintenance of their permanent stormwater practices. In 2022 **63** owners returned an inspection and maintenance report. This year the inspection form included a question about what maintenance and repair work, if any, was performed as a result of the previous year's inspection.

The Public Works Operations Division conducts the site inspections and maintains all city owned green infrastructure practices and storm sewers. An Urban Conservation Intern, who is assisted by the Stormwater Intern is responsible for monthly inspection, maintenance and enhancement of the city's bio-cells and smaller native landscaping areas. Enhancement of each of the bio-cells is on-going and is resulting in increased function of these practices.

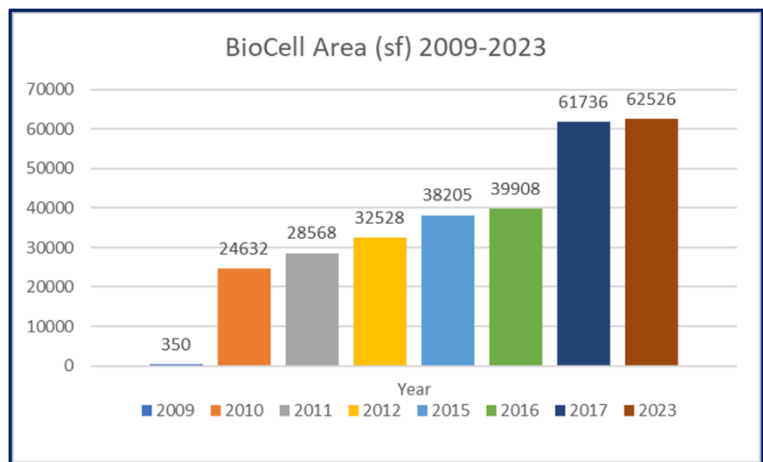
The following table summarizes inspection and maintenance activities for the City's post construction and storm sewer infrastructure for the previous and current reporting years.

Post Construction Municipal Inspections and Maintenance

Outfalls	Previous Year	Current Year
Dry weather inspections of outfalls	230	314
Issues: Soil erosion, trees around outlets, pipe dislocation		
Outfall repairs	10	42
Intakes		
Inspections	537	1285
Region inspected	Sections G & H	Sections E, F, G & H
Maintenance performed: Inspect, clean, repair as needed		
Detention and Retention Basins		
Inspections	75	81



Green Infrastructure Inspection and Maintenance Areas	# BMP
Welch Avenue Tree Trenches	9
Bio-cells: inspected and maintained monthly from April to November by Urban Conservation Intern	27
Rain Garden	1
Prairie filter strip	1
Native Prairie and turf areas	5
Porous paver areas and pervious concrete	4



5. Tree Program

City has a comprehensive tree program administrated by the City Forester. After approximately 300 trees were lost on city property during the 2020 Derecho, hazardous trees continue to be identified and trimmed or removed for public safety. In addition removal of ash trees continues on city properties, resulting in a need for tree replacement.

The following summarizes approximately how many trees were planted in the city during the current reporting period. This is in addition to trees planted independently by citizens and businesses.

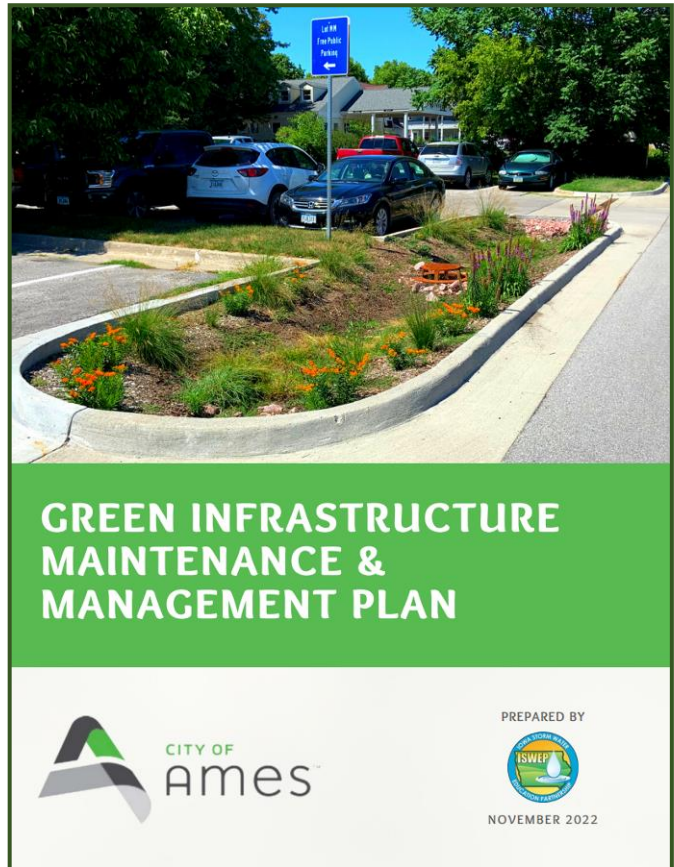
Location	Current Year
City Properties/Right-of-Ways	177 trees planted
City Projects (Baker Subdivision)	51 trees planted
New Private Developments	90 trees planted
Existing Residences	500 native seedlings planted -city giveaway
Smart Watershed Rebate Program	67 trees

6. Green Infrastructure Maintenance and Management Plan

As an ISWEP premiere member, the City of Ames receives an additional benefit. For this year ISWEP prepared for the city a Green Infrastructure Maintenance and Maignement Plan with these sections:

- Introduction to Stormwater BMPs
- Inventory of BMPs
- BMP Maintenance Checklist
- Burn Schedule
- Inventory of Existing Equipment
- Estimate Annual Labor Hours

The upcoming year will be the first year of implementation of this plan, which will enable the City to better plan, inspect and maintain the City’s Green Infrastructure. It will also be used as needed for budgeting purposes.



7. Water and Pollution Control Department Watershed Progress

The following summarizes progress to remove nutrients using watershed-based improvements.

Background

The Water Pollution Control (WPC) Facility is being converted to a nutrient removal treatment technology over a period of 20 years. Separate from the work that will occur inside the treatment plant, watershed-based improvements performed by the City can be “banked” as credit toward any future, more stringent nutrient reduction requirements imposed on the WPC Facility. On February 24, 2021, staff executed a Memorandum of Understanding (MOU) with the Iowa Department of Natural Resources to allow these off-site nutrient reductions to be banked with the Iowa Nutrient Reduction Exchange (NRE). In accordance with Section 7.C of the MOU, the City shall provide annual progress reports to the DNR detailing its progress in the watershed, the BMPs and/or other nutrient reduction efforts implemented, verification of ongoing practices, and the nutrient load reductions obtained. Please see the summary below of the current watershed projects associated with the Ames Water & Pollution Control Department.

Soil & Water Outcomes Fund



In anticipation of the MOU being executed, the City partnered with AgOutcomes in 2020 to reduce nutrient runoff in the watershed north of Ames. AgOutcomes has recruited private landowners to install Best Management Practices (BMPs) on corn and soybean fields upstream from Ames located within the South Skunk Watershed. The BMPs utilized are no-till tillage and the planting of cover crops. AgOutcomes has tracked the fields where cover crops are planted, documented the planting times, collected photographs and provided all other data required to register the nutrient savings outcomes in units of annual pounds in the NRE located on the United States Army Corps of Engineers (USACE) Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS) program.

Staff has negotiated an agreement with AgOutcomes for the City to purchase the nutrient credits and the obligation of AgOutcomes to register them with the Iowa Nutrient Reduction Exchange. Below are the 2020/2021 reductions resulting from the conservation practices implemented as part of this project. AgOutcomes is currently working towards data entry associated with the NRE.

2020 Nitrogen (N)

Acres: 2,086

Total N Reduction: 60,448 lbs.

2020 Phosphorus (P)

Acres: 2,086

Total P Reduction: 3,887 bs.

2021 Nitrogen (N)

Acres: 2,086

Total N Reduction: 66,540 lbs.

2021 Phosphorus (P)

Acres: 2,086

Total P Reduction: 3,015 lbs

Moore Memorial Park Land Retirement

The Water & Pollution Control Department contracted with ISG in 2021 to develop a Land Retirement Plan for City owned land west of Moore Memorial Park and adjacent to Iowa Creek. The approximately 40-acre property has previously been row cropped by Iowa State University. Goals for the land retirement plan included improvements to water quality and stormwater management, habitat creation, and recreation opportunities. **The City will be transitioning the land to native perennial vegetation with seeding planned for Spring 2023.**



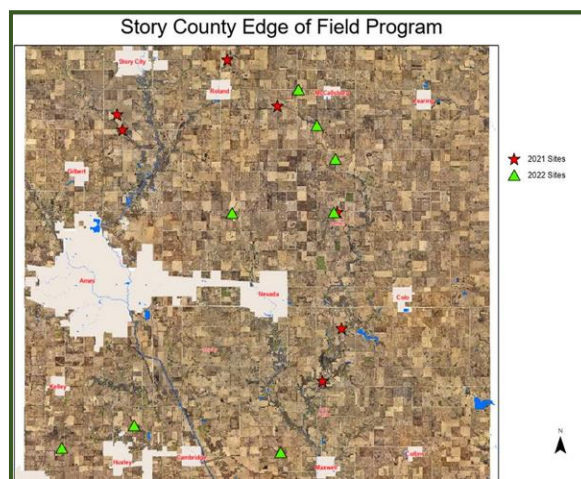
ISG utilized farm management data from Iowa State University and the proposed perennial vegetation management practices to determine potential nutrient credits for the site. The Tool (NTT) outputs showed an annual improvement of 5.0 pounds/acre and 0.1 pounds/acre for Nitrogen and Phosphorous losses, respectively. Future improvements to the site may include protection of the actively eroding streambank and will likely include coordination with the City's Public Works and Parks & Recreation Departments.

Story County Edge-Of-Field Project

Throughout 2021, staff developed a partnership with Polk County, Story County, IDALS, and many other entities to bundle together edge-of-field (EOF) practices that can be bid as a single bid package. This project resulted in construction of 5 Bioreactors and 5 Saturated Buffers in Story County.

These practices treat a total of 23 tile outlets.

Several landowners in Story County have been identified and have agreed to participate in the second year of this project. Initial property owner meetings have been completed and final landowner meetings are anticipated to take place in April/May following final Design. Each landowner receives an easement payment per field tile treated and will be required to sign a 10-year maintenance agreement.



Following installation of each practice, the City intends to model each practice utilizing NTT and enter the practices into the NRE. The current project schedule includes final design completed in March/April, final landowner meetings in April/May, project bid/award in June, and construction in Fall 2023.

This project has been a collaborative effort between many entities including Story County, Story County Conservation, JEO Consulting Group, Heartland Co-op, Natural Resource Conservation Service, Iowa Department of Agriculture & Land Stewardship, Story County Soil & Water Conservation District and Iowa State University. This model of a central fiscal agent has shown to be an effective approach in Polk County and has many benefits including no financial burden to the landowner, limited to no needed maintenance, and no impact to cropland.

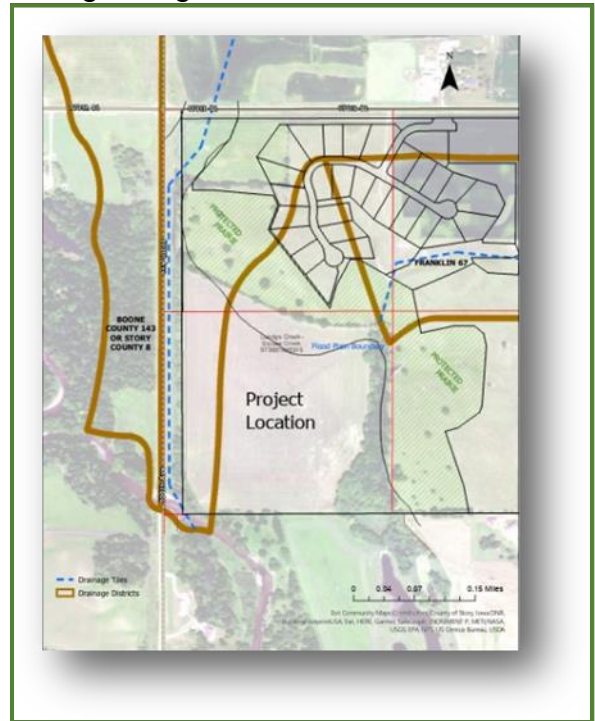
Prairie Valley Wetland

In partnership with the Water Quality Initiative, Ducks Unlimited, and Story County Conservation, a 20.9 acre constructed wetland is being designed northwest of Ames. The wetland will be located at the outlet of a large county drainage district that currently discharges directly into loway Creek. The wetland will ultimately treat subsurface drainage from over 2,200 acres of farmed land.

Due to elevation restrictions, a pumping-style wetland will be required.

Based on preliminary sizing calculations provided by Dr. William Crumpton at Iowa State University, the modeled nitrogen mass removal rate of the wetland will be approximately 22,000 pounds per year. The nitrogen removal calculation is determined from a maximum pumping rate of 2 cubic feet per second.

Completion of wetland design and meetings with drainage districts took place in late 2022. Required maintenance and repair to drainage district infrastructure is needed prior to wetland construction. A report detailing those needs is currently being developed. Construction of the wetland is planned for 2023.



F. POLLUTION PREVENTION/GOOD HOUSEKEEPING

1. 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 compared to the previous reporting year, showing an increase in sediment swept from city streets and a slight decrease in sediment from removed from intakes.

Good Housekeeping and Pollution Prevention Activity	Previous Year	Current Year	Amount of Sediment and Debris Collected	
			Previous Year	Current Year
Street sweeping	6864 miles	5984 miles	2420 tons	2094 tons
Intake maintenance	699 intakes	1285 intakes	17 tons	48 tons
Bio-cell Pretreatment maintenance	0	10	0	112 lbs

2. City Facility Inspections

On-going inspection of city facilities is performed by each Department: During the current reporting period inspections at the following locations were conducted:

- Power Plant Ash Pond (monthly inspections)
- Municipal Airport (yearly)
- Public Works Operations (yearly)

MS-4 Pollution Prevention Good Housekeeping Program		
2022 Annual Stormwater Site Inspection Form: Department: <u>PUBLIC WORKS OPERATIONS</u>		
Name of Facility: <u>AWEDMAN SWIFT YARD</u> Date: <u>1/11/23</u> Time: <u>2:40 PM</u> Inspector Name: <u>JUSTIN CLAWSON</u> Signature: <u>[Signature]</u>		
Weather Conditions: <u>Overcast, Mid 30's °F</u> Please check one of the following: <input checked="" type="checkbox"/> Dry Weather Inspection <input type="checkbox"/> Wet Weather Inspection		
Area/Equipment/BMP Inspected	Observations	Actions Taken
BIO SWALE - WHITNEY	VEGETATION NEEDS CUT BACK. TRASH NEEDS PICKED UP.	SCHEDULED FOR NEXT AVAILABLE DAY WITH STAFF
BIO SWALE - EDITH	VEGETATION NEEDS CUT BACK. TRASH NEEDS PICKED UP.	SCHEDULED FOR NEXT AVAILABLE DAY WITH STAFF
SALT DOME	NO LUNGER SPACES SALT. PLAN TO RE-SHAPE NEXT YEAR.	IN CIP FOR FUNDING
RAIN TANKS	SECONDARY CONTAINMENT AND TANKS OK. PLAN TO PAVE IN NEXT YEAR.	IN CIP FOR FUNDING
SALT STORAGE HOOP BLDG	NEW IN 2022. NEED PARKING AT ENTRANCE WITH MUD SHOES.	PLAN TO PAVE IF FUNDING IS AVAILABLE
SHOP AREA	MUD CLEAN UP DONE. PAVED FROM CURB FORWARD. ADDRESSING APRIL USER.	N/A
EXTERIOR OF SHOP	NO SOURCES OF POTENTIAL POLLUTION	N/A
TROUGH GATE	OK	N/A
YARD AREAS	GLASS BOTTLES CHANGED TO MET. HAVE LUNGER REMOVED THROUGH IT.	N/A
BIOD TANK	DOUBLE WASH WITH LARGE AREAS OK.	N/A
COLD STORAGE HOOP BLDG	NO VISIBLE SOURCES OF POLLUTION	N/A

MS-4 Pollution Prevention Good Housekeeping Program		
2022 Annual Stormwater Site Inspection Form: Department: <u>WPC</u>		
Name of Facility: <u>WPC</u> Date: <u>2/7/2023</u> Time: <u>2:00PM</u> Inspector Name: <u>Tyler Ver Meer</u> Signature: <u>[Signature]</u>		
Weather Conditions: <u>36 degrees, Sunny, NW Winds, Snow Melt</u> Please check one of the following: <input type="checkbox"/> Dry Weather Inspection <input type="checkbox"/> Wet Weather Inspection		
Area/Equipment/BMP Inspected	Observations	Actions Taken
Outfalls 1,2,3,4,5, and intakes	Outfall 3 plugged. All other outfalls and intakes ok.	Work order to unplug outfall 3.
Sludge/Biosolids Storage and Handling	All Ok, no signs of leaks or spills	
Diesel Fuel	No signs of spills or leaks	
Unleaded Fuel	No signs of spills, leaks, or damage	
Transformers	No signs of damage or leaks	
Used Oil Container	No signs of leaks or spills	
MG Oil Drums	No leaks or spills	
Grit Storage	All contained within grit pad, drain unobstructed to head of plant	
Trash/Screenings Dumpsters	Oil dry needs scooped up from under. All contained from small drip.	Work order to clean up.
Vehicle Wash Area	All contained within wash bay, drains to head of plant.	

3. City of Ames Pollinator-Friendly Community Plan

Staff from Public Works, Water and Pollution Control and Parks & Recreation Departments collaborated with community experts in the field of pollinators and ecosystems to develop a draft plan with the following vision:

“Our vision is to be a leading pollinator community in the United States and enrich the quality of life for the people of Ames by enhancing pollinator habitat.”

Representatives from the following community groups participated in the plan development:

Prairie Rivers of Iowa RC&D, Iowa State University, Friends of Brookside Park, Friends of Ada Hayden Heritage Park, Century 21, WHKS & Co., Bolton & Menk, Inc., HDR, Inc., Mary Greeley Medical Center, Iowa Young Birders and Iowa DNR, Iowa Storm Water Education Partnership.



The goals of the plan are to:

- Create and enhance pollinator habitat on private and public properties in each watershed of the City of Ames.
- Continuously monitor pollinator abundance and diversity within the City of Ames and urban fringe area over the next 10 years.
- Ensure a healthy environment for pollinators
- Deliver marketing to amplify community awareness of the Ames Pollinator-Friendly Community Plan

Adoption and implementation of the plan will start in the upcoming year.

4. Pesticide and Fertilizer Management Program

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.

Here are some highlights of the program:

- Departments are taking steps to minimize chemical use and are exploring Integrated Pest Management BMPs.
- Phosphorus-free fertilizers are used at most public facilities.
- Tracking sheets 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.

- Mosquito control applications are used throughout the city during mosquito breeding periods. Amounts required vary from year to year because spraying is only done when needed based on the weather conditions each year.

The following parks and city facilities are the locations where fertilizer, herbicides and pesticides were applied during the current reporting year:

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

Homewood Golf Course Products Used

Name of Product	Amount	Name of Product	Amount
Acelepryn,oz	24	Primo,oz	12
Aneuw, lbs	12.2	Prodiamine ,lbs	25
AT45, gal	9.4	Propistar,oz	312
Chloratholonil, gal	5	Secure Action,oz	21
Dac Action,oz	1800	Speedzone, gal	7
Floratine Fertilizer,application	9	Spotrete, oz	201.5
Green Activator, gal	8.5	Teb,gal	3.9
Iron, gal	10	Thiram, gal	2.7
Mencozeb, lbs	18	Vivax, gal	2.8
Pervade,oz	172	Zoxy,oz	96
PK Fight,gal	10		

Other Facilities: Operations on Edison, Municipal Cemetery, Airport, Community Center, Fire Houses, Electric Services

Mosquito Spraying

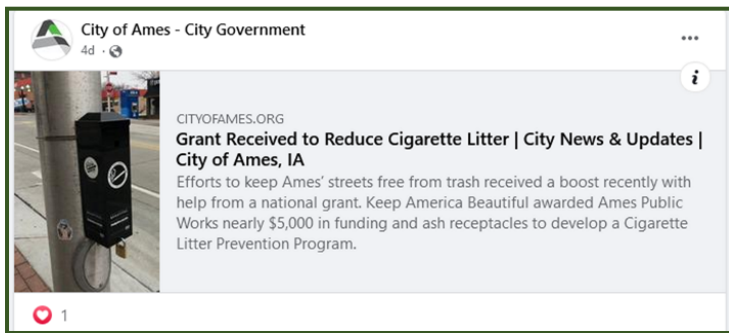
	2019	2020	2021	2022
Gallons Sprayed	73.64	17.2	3.72	270.25

Products Used on City Properties

	R-O-W & Fire Stations	Parks	Cemetery
Herbicides and Pesticides, unit	Amount	Amount	Amount
Aneuw,lbs		6	
Speedzone,gal		25.2	2
Tetrino, gal		1	
Threesome,gal	1.8	70.1	10
Prodiamine,lb	9.5	45.1	7.2
Esplanade,oz	210		
Glyphosate,gal	8.8	1.23	
Quinclorac , lb			0.5
Fertilizer,Mesa 25-0-5,lbs		3200	

5. Stormwater Pollution Prevention training for Staff:

The annual Pollution Prevention training for Public Works Department (Operations, Utility Maintenance) and the Parks Department, was conducted on March 23, 2023 and March 29, 2023 using the video called "Rain Check", a resource provided by ISWEP. **Twenty-nine staff** participated in the training.



6. City Receives Grant for Cigarette Receptacles and Education Program

In an effort to reduce the number of cigarette waste entering the waterways, Ames applied for and received a grant to install 20 receptacles in Downtown and Campustown and provide education campaign about cigarette litter.

7. Ames Municipal Airport Annual Site Inspection

On January 23, 2023 city staff performed the annual site inspection of the Airport facilities. The photos are excerpted from the report.



8. Tracy Peterson recognized with the Public Sector Impact Award at the Iowa Water Conference in Dubuque, IA

Excerpt from award presentation:

“Peterson oversees a five-year, \$6.3 million flood mitigation program that focuses on a section of the South Skunk River that used to flood frequently. That’s changing because of the project that includes strategies such as wetlands which help to clean Iowa’s water.

“Practices that improve water quality can also have major, positive impacts in other ways, including reducing flood risk, improving wildlife habitat, and creating or enhancing recreational opportunities. We are grateful to local leaders like Tracy who are making a difference for families and communities by protecting their source water and reducing flood risk ,” said Sean McMahon, IAWA Executive Director.



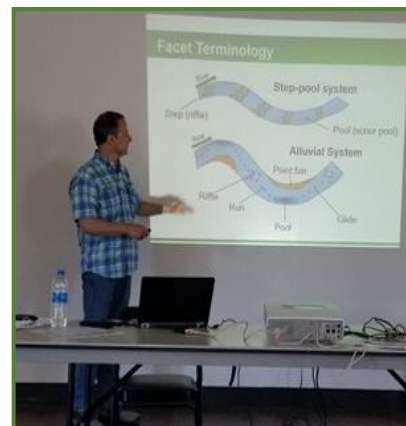
The IAWA Iowa Watershed Awards program was developed by IAWA in partnership with Iowa State University Extension and Outreach, Conservation Districts of Iowa, The Iowa Department of Agriculture, and the Iowa Department of Natural Resources.”

9. Continuing Education Program for Staff:

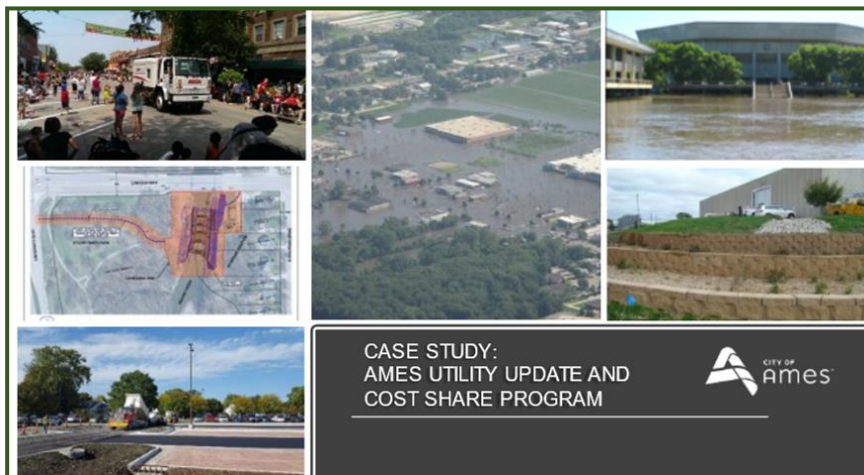
City Stormwater and Public Works staff continue to attend seminars and conferences (this year held virtually by webinars) to continue their education and current with the latest stormwater practices and techniques. Stormwater staff participated in following continuing education:

Stormwater Staff Continuing Education

Event	Number Attending
IRR River Restoration Toolbox, Level 1, May 16-19, 2022	3
APWA PWX Conference Oct 5-7	2
ISWEP Urban Ecosystem Restoration, May 10-11, 2022	2
ISWEP Stormwater Webinar Series	2-4
ISWEP Native Plants ID Webinar Series	3
ISWEP Urban Ecosystem Restoration Webinar May 10-11, 2022	1
ISWEP I-Storm Conference, Sep 15 & 16, 2022	4
ISWEP Contractor Training for Stream Restoration	1
3 ISWEP Quarterly meetings	2
Iowa Water Conference Sep 28 & 29, 2022	4
ISWEP Stormwater Utility Webinar Feb 1-2, 2023	3
International Erosion Control Assoc. Feb 7, 2023	1
ISWEP Bio-Cell Design, Installation & Main. Webinar Feb 15-16, 2023	3



10. Staff Presents at Continuing Education Events and Leads Tours



In addition to attending events staff presented stormwater related topics during this reporting period.

On April 28, 2022 Tracy Peterson and Jake Moore gave the Ames High Environmental Science Class a tour and presentation of the Iowa Creek Flood Mitigation project.



On August 5, 2022 Jake Moore gave Iowa State University Geomorphology students tours of several capital improvement projects in the city.

On November 9, 2022 Tracy Peterson spoke with Dr. Peter Moore's Iowa State University Geomorphology class about the analysis of soil transport from an INHF property that contributes sediment into the Ada Hayden wetlands.

Lastly, Tracy Peterson and Liz Calhoun presented at two ISWEP events in January and February, 2023 and Tracy also presented at the Iowa Water Conference in September, 2022.

PART 3: 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 are also completed.

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

PART 4: MONITORING DATA

A. Water and Pollution Control Stream E. Coli Monitoring

The City of Ames continued water quality monitoring for fecal coliform bacteria during the current monitoring period. It is conducted by the laboratory staff of the city’s Water and Pollution Control Department and included tributaries of S. Skunk River. The following table illustrates the on-going results. If obvious signs of pollution are discovered, or if significant degradation is observed, city staff will conduct more detailed water quality investigations. The June, 2022 testing was performed immediately after a 2.2” storm event in the watershed resulting in increased measurements. No other obvious patterns or causes are discernable.

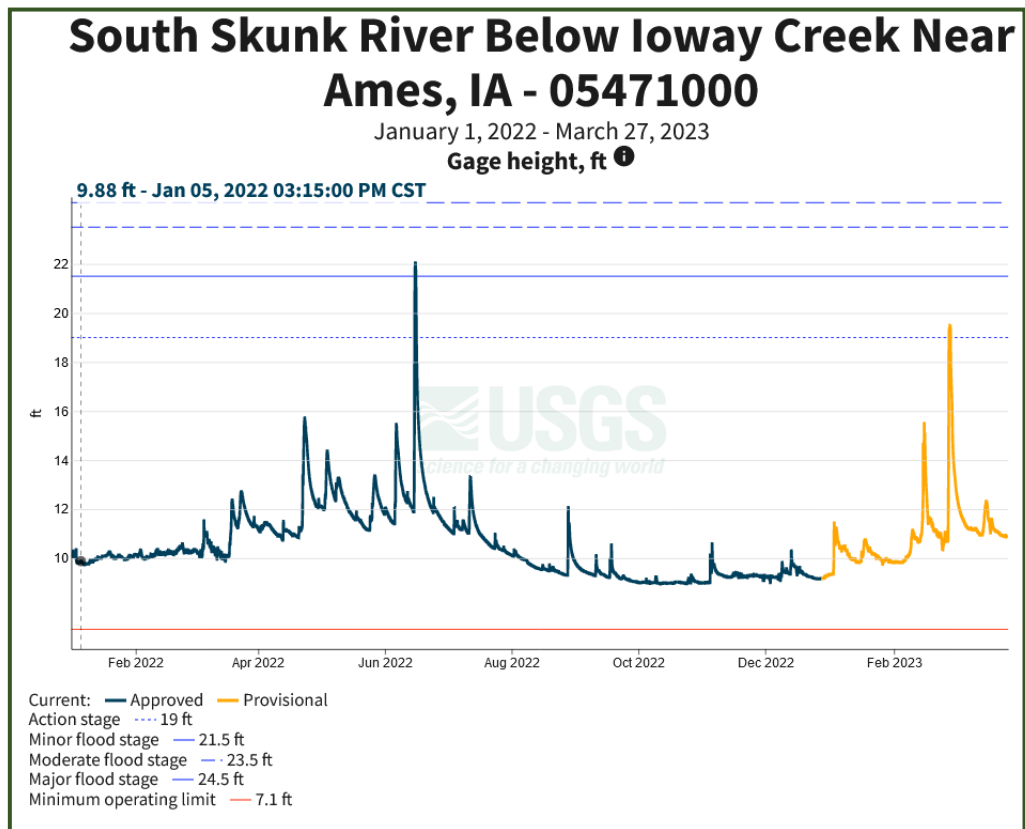
**E. Coli monitoring conducted by City of Ames Water Pollution Control
 (measured in CFU- Colony Forming Units)**

SAMPLE DATE	SKUNK RIVER	IOWAY CREEK	CLEAR CREEK	COLLEGE CREEK	WORLE CREEK
2019					
4/9/2019	122	158	85	2909	448
5/16/2019	63	231	189	265	384
6/11/2019	173	374	414	583	594
7/16/2019	839	5172	24196	>24,196	2098
8/6/2019	122	2909	6867	8664	3448
9/24/2019	1764	1446	320	904	1024
10/11/2019	558	758	268	1024	378
2020					
4/7/2020	82	150	62	1,640	---
5/19/2020	1,100	750	218	370	700
6/16/2020	718	1,040	960	2,518	1,466
7/14/2020	126	374	746	654	---
8/18/2020	146	268	---	432	---
9/15/2020	189	364	384	5,475	---
10/21/2020	40	394	---	---	1,596
11/18/2020	85	173	---	3,076	---
12/16/2020	---	82	---	---	---
2021-2022					
4/21/2021	31	33	--	908	51
5/21/2021	121	455	110	1,396	187
6/16/2021	805	904	--	--	--
7/21/2021	98	441	--	--	--
8/18/2021	20	--	--	--	--
9/15/2021	41	--	--	--	--
10/20/2021	146	--	--	--	--
11/17/2021	620	52	84	--	--

**E. Coli monitoring conducted by City of Ames Water Pollution Control
 (measured in CFU- Colony Forming Units)**

SAMPLE DATE	SKUNK RIVER	IOWAY CREEK	CLEAR CREEK	COLLEGE CREEK	WORLE CREEK
12/17/2021	10	185	96	3130	--
3/18/2022	41	52	--	410	20
2022-2023					
4/26/2022	10	41	63	1,860	52
5/18/2022	109	345	2,143	9,280	7,270
6/15/2022	8,704	10,334	15,402	9,222	22,398
7/27/2022	258	422	561	--	--
8/24/2022	120	246	--	--	--
9/20/2022	246	1,722	--	--	--
10/18/2022	--	288	--	--	--
11/16/2022	2,187	9,804	--	3,609	--
1/19/2023	--	--	249	1,782	--

Except for May through June and January -February, 2023 water levels on the South Skunk and tributaries were again very low. The noteworthy storm events for the year were a 2.2 inch storm event on June 15, 2022 and a 1.4 inch rain event on February 27, 2023. The winter event occurred when the ground was frozen resulting in 100% runoff.



B. Watershed Coalition Snapshot Stream Monitoring

Snapshot stream testing in Ames and Story County was facilitated by Prairie Rivers of Iowa during the current reporting period. Because of drought conditions in the fall, only the spring snapshot was held on May 17, 2022. The results are shown on the table on the right.

Volunteer	Snapshot site	Date	Srt time	Water temperature (degrees C)	Dissolved oxygen (mg/L)	Dissolved oxygen (ppm)	pH units	Chloride (mg/L)	Orthophosphate (µg/L)	Nitrate-N (mg/L)	Transparency (cm)	Comments
Ed Engle	SC31 College Creek @ Stuart Smith Park (Ames)	5/17/2022	19:45	14	8	76	7	117	0.1	2	60	
Ed Engle	SC18 Ioway Creek @ Moore Park (Ames)	5/17/2022	20:15	15	8	80	8	30	0.1	5	60	
Liz Calhoun	SC33 Ioway Creek @ S Fourth St (Ames)	5/17/2022	10:30	15	8	80	8	33	0	5	60	
Ed Engle	SC28 Ioway Creek @ Brookside Park (Ames)	5/17/2022	19:00	15	8	80	7	36	0	5	60	
Dan Haug	SC49 College Creek @ ISU Arboretum (Ames)	5/17/2022	16:55	14	12	110	8	71	0.1	5	60	Nitrate 4.6 mg/L with Delatares app. 0 nitrite. sampled at the bridge for bike path that goes from Bruner Drive to south of high school
Bob Hartzler	SC23 AHS Tributary of Ioway Creek (Ames)	5/17/2022	13:30	13	10	93		86	0	5	60	
Dan Barr	SC02 Ioway Creek @ 390th Street	5/17/2022	16:30	14	6	50	8	0	0	10	60	
Dan Barr	SC46 Crooked Creek S Branch @ Inkpaduta Ave	5/17/2022	16:00	13	6	50	7	0	0.1	10	60	
Dan Barr	SC01 Ioway Creek @ Hwy 175	5/17/2022	15:00	13	8	70	8	0	0	10	60	
Bob Hartzler	SC24 Ioway Creek @ 13th St	5/17/2022	14:00	16	10	100		36	0.1	10	60	sampled about 100 yds southeast of 13 th St bridge
Bob Hartzler	SC50 Ioway Creek @ Stange Rd	5/17/2022	13:45	16	12	118	8	36	0.1	10	60	sampled under the east side of bridge
												Nitrate 14 mg/L with Delatares app. 0 nitrite. Steep bank, poison ivy, and mud make this site difficult to access. Heard barred owl. Lots of brownish green filamentous algae on streambed.
Dan Haug	SC22 Onlon Creek @ Reactor Woods (Ames)	5/17/2022	16:55	15	10	100	8	39	0	10	60	
Dan Haug	SC25 Clear Creek @ 220th St	5/17/2022	12:30	11	12	110	8	39	0	10	60	Just below culvert with drop that oxygenates water.
Jaime Chambers and Ben Rearick	SC35 College Creek @ Wilder Blvd (Ames)	5/17/2022	16:08	12	8	73		39	0	10	60	Missing pH strips. Nitrite 0 mg/L
Jaime Chambers and Ben Rearick	SC48 Clear Creek @ Hyland Ave (Ames)	5/17/2022	16:51	15	8	80		39	0	10	60	Missing pH strips. Nitrite 0.05 mg/L
Dan Barr	SC45 Crooked Creek @ 370th St	5/17/2022	15:30	13	8	70	8	45	0	10	60	
Susan Fritzell	SC41 S Worrell Creek @ Creekside Dr (Ames)	5/17/2022	18:20	15	8	70	8	46	0.1	10	60	No pH strips
Susan Fritzell	SC40 Worrell Creek @ S 16th St	5/17/2022	18:00	16	8	80		46	0.1	10	60	No pH strips
Jeremy Johansen and Taylor O'Bryan	SC13 Prairie Creek @ V Ave	5/17/2022	10:34	14	12	110	8	<32	0	10	60	Nitrite 0.15 mg/L
Margaret Jaynes and Dan Jaynes	SC14 Ioway Creek @ 170th St	5/17/2022	12:50	14	12	112	8	<32	0	10	60	Nitrite 0 mg/L. Lots of swallows. Site is wooded
Margaret Jaynes and Dan Jaynes	SC10 Ioway Creek @ 150th St	5/17/2022	12:10	15	12	116	8	<32	0	10	60	Nitrite 0 mg/L. Site has grassy banks lined with trees
Tom Gust	SC04 Glacial Creek @ U Ave	5/17/2022	11:15	12	10	90	7	<32	0	10	60	
Taylor Jorgensen	SC15 Gilbert Creek @ 190th St	5/17/2022	10:40	14	8	77	8	30	0.1	20	50	
Taylor Jorgensen	SC16 Ioway Creek @ 190th St	5/17/2022	10:45	12	10	90	8	30	0.1	20	50	
Liz Calhoun	SC39 Ioway Creek @ Duff Ave (Ames)	5/17/2022	9:55	15	8	80	8	33	0	20	60	
Jeremy Johansen and Taylor O'Bryan	SC11 Montgomery Creek @ V Ave	5/17/2022	9:50	12	8	73	8	<32	0	20	60	0.3 mg/L nitrite
Margaret Jaynes and Dan Jaynes	SC09 Bluestem Creek @ 150th St	5/17/2022	11:40	13	12	108	8	<32	0	20	60	Nitrite 0 mg/L. Site is pasture with upland in row crops.
Tom Gust	SC07 Ioway Creek @ E18	5/17/2022	10:20	14	10	95	7	<32	0.1	20	60	Fast current, clean water, several loads, blue heron, eagle, heard geese, eagle, deer and raccoon tracks on sandbar