



Annual Stormwater Program Report

April 1, 2020 – March 31, 2021

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



**CITY OF
Ames™**

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Part 1. GENERAL INFORMATION

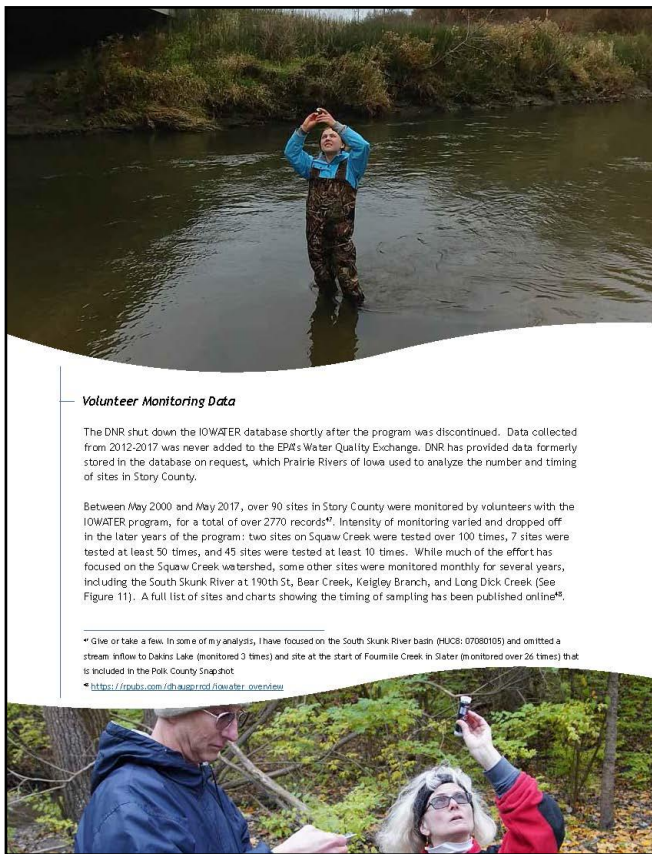
A. Executive Summary and Highlights

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, 2020 to March 31, 2021, 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.

2020 was a much different year due to the Pandemic. Planned in-person events for education and outreach, public participation and staff training methods were canceled, and other tools and methods were employed to continue achievement of these measures.

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

- New staff position, Urban Conservation Intern, hired to maintain and enhance city bio-cells and other stormwater program tasks;
- New Native Tree cost share rebate;
- Yearlong collaboration effort to develop the Story County Water Monitoring and Interpretation Plan. Partners include Prairie Rivers of Iowa, Story County, Iowa State University Leopold Center, the Cities of Gilbert, Huxley and Nevada, Izaak Walton League, Story County Soil and Water Conservation District and the Story County Community Foundation;
- City funded construction of five-acre wetland along S 5th Street in central Ames;
- Collaboration with the newly formed Friends of Brookside Park;
- Ames is designated a Bird Friendly Community, the first urban area in Story County to receive the designation from Bird Friendly Iowa;
- Education went virtual with Virtual EcoFair on community radio and EcoChats via Zoom;
- S. Skunk River Trail officially designated as a water trail by the IDNR;
- Renaming of the Squaw Creek to the loway Creek;
- City of Ames named as the 2021 Iowa River Town of the Year by the Iowa Rivers Revival.



Volunteer Monitoring Data

The DNR shut down the IOWATER database shortly after the program was discontinued. Data collected from 2012-2017 was never added to the EPA's Water Quality Exchange. DNR has provided data formerly stored in the database on request, which Prairie Rivers of Iowa used to analyze the number and timing of sites in Story County.

Between May 2000 and May 2017, over 90 sites in Story County were monitored by volunteers with the IOWATER program, for a total of over 2770 records*. Intensity of monitoring varied and dropped off in the later years of the program: two sites on Squaw Creek were tested over 100 times, 7 sites were tested at least 50 times, and 45 sites were tested at least 10 times. While much of the effort has focused on the Squaw Creek watershed, some other sites were monitored monthly for several years, including the South Skunk River at 190th St, Bear Creek, Keigley Branch, and Long Dick Creek. (See Figure 11). A full list of sites and charts showing the timing of sampling has been published online**.

* Give or take a few. In some of my analysis, I have focused on the South Skunk River basin (HUC8: 07080105) and omitted a stream inflow to Dakins Lake (monitored 3 times) and site at the start of Fourmile Creek in Slater (monitored over 26 times) that is included in the Polk County Snapshot.

** <https://prubs.com/dh/upper-iowa-water-overview>



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; program and Public Works CIP budgets; education and outreach; post construction plan review
Jake Moore	Stormwater Specialist	Construction site erosion and sediment control program; SWPPP review, quarterly inspections, tracking and enforcement; education and outreach; illicit discharge response and follow up
Liz Calhoun	Stormwater Analyst	Post construction stormwater management plan review and ordinance implementation; education and outreach, public participation activities; inspection and maintenance of post construction BMPs
Kahner Cleveland (4/1/20-3/5/20)	Stormwater Intern	Perform site erosion inspections and prepare reports, education and outreach, prepare GIS mapping
Charlie Gile (4/1/20-12/15/20)	Urban Conservation Intern	Maintain and enhance City owned bio-cells and native landscape areas, education and outreach
Nate Willey 4/1/20-7/10/20)	Civil Engineer II	Stormwater management plan review
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
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
Pat Sauer	Consultant	Staff pollution prevention training
Parks and Recreation Staff		
Joshua Thompson	Parks Superintendent	Oversees park and natural area maintenance, post construction BMP maintenance; park fertilizer and pesticide use
Resource Recovery Plant Staff		
Bill Schmidt	Superintendent	Oversees the solid and hazardous waste management program and Trash Cleanups for the City.

C. Stormwater Program Expenses

Program	Expense
Education and Outreach	
ISWEP Membership	\$5,455
Ames Homebuilder Association Membership	\$235
Ames on the Go reporting App	\$16,748
Bird Friendly Community Dues	\$100
Staff, Consultant, Training, Materials and Advertising including Smart Watershed & Smart Trash Programs	\$55,956
Public Involvement and Participation	
Staff, consultant, equipment and material costs	\$26,208
Watershed Participation incl. Story County 10-Yr Water Quality Monitoring Program	\$30,594
Resource Recovery handling and disposal of wastes from stream/river, Stash-the-Trash, and Project Aware cleanup events	\$59
Illicit Discharge	
Staff, consultant, equipment, and material costs	\$3,073
Resource Recovery Plant operations	\$2,660,957
Food Waste Diversion program	\$8,700
Public Household Hazardous Material disposal program	\$80,824
Sanitary sewer hydraulic model update (Inflow/Infiltration (I&I) reduction)	\$5,498
Construction Site Program	
Staff, consultant, equipment, and material costs	\$61,947
Post Construction Program	
Staff, consultant, equipment and material costs	\$54,799
Smart Watershed Cost Share Programs	\$8,698
Soil Quality Restoration of public facilities	
Campustown Public Improvements (Welch Avenue) (incl. Tree Trenches)	\$689,861
Little Bluestem Storm Water Facility Rehabilitation	\$177,966
Bloomington Heights Storm Water Facility Rehabilitation	\$13,960
Homewood Slope Stabilization project	\$209,324
Teagarden Drainage Improvements	\$185,638
S Grand Ave. & S 5 th St (incl. constructed Stormwater Wetland)	\$1,690,648
Flood Mitigation – River Flooding project (design and tree clearing)	\$254,617
Storm Water System Analysis	\$35,040
Pollution Prevention and Good Housekeeping	
Staff, consultant, equipment and material costs	\$40,504
Street, median, and sidewalk sweeping (staff time, equipment, and contractor)	\$302,519
MS4 system inspections and maintenance	\$37,247
Sanitary Sewer repairs and rehabilitation (found with SSSE to remove I&I)	\$2,374,513
Landfill erosion control and testing/monitoring	\$8,800
Emergency and maintenance infrastructure repairs	\$282,375
Drainage, storm sewer, and other MS4 infrastructure improvements	\$341,467
Municipal Staff Training	\$3,585
Special Conditions	
Geographic Information System (GIS) (storm water portion only)	\$57,988
Total	\$9,725,903

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 was very different during 2020-2021 due to the COVID-19 pandemic. In person educational events were canceled and replaced with virtual events or other on-line tools. The following methods were used for education and outreach.

1. CitySide City Monthly Newsletter



Cityside is a monthly City newsletter distributed to approximately **30,000 Ames utility customers**. In addition to contact information for stormwater issues, stream concerns and spill alerts, this publication residents and businesses current with stormwater related issues.



Month	Article Topics
April	<ul style="list-style-type: none"> Flood Mitigation Grant for Squaw Creek Project Stash the Trash Event
June	<ul style="list-style-type: none"> Ames Honored with "Tree City" Award Native Tree Rebate
August	<ul style="list-style-type: none"> Welch Avenue Reconstruction: Tree Trenches South Grand Avenue Water Quality BMPs: wetlands and natives Native Plant rebates
October	<ul style="list-style-type: none"> Ames named a "Bird Friendly Community" Watershed Awareness Month No Charge Yard Waste Days
November	<ul style="list-style-type: none"> No Charge Yard Waste Day Conservationist Dr. Erv Klaas Honored with Ada Hayden Stone
December	<ul style="list-style-type: none"> Tree Planting Program Encourages More Trees!
March	<ul style="list-style-type: none"> North River Valley Low Head Dam Project Nearly Complete

2. Neighborhood News

A quarterly newsletter, Neighborhood News, is distributed to approximately 2,000 residents in twenty-seven homeowner’s associations or neighborhood groups encouraging strong neighborhoods and participation in city programs.

Last year two issues included SmartWatersheds articles:

Issue	Article Topic
Spring	○ Talk a Walk, Pick Up Your Neighborhood
Summer	○ Crawford Community Plants Trees, Gets Rebate



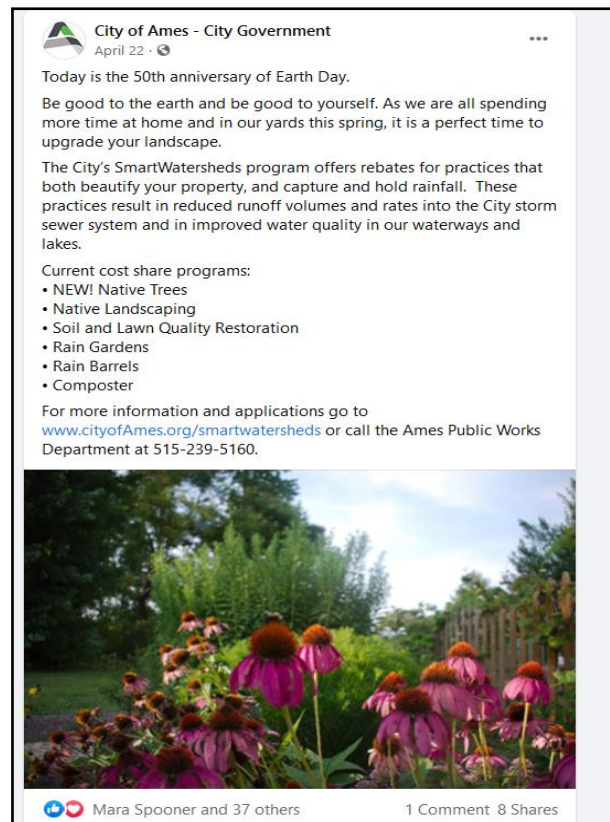
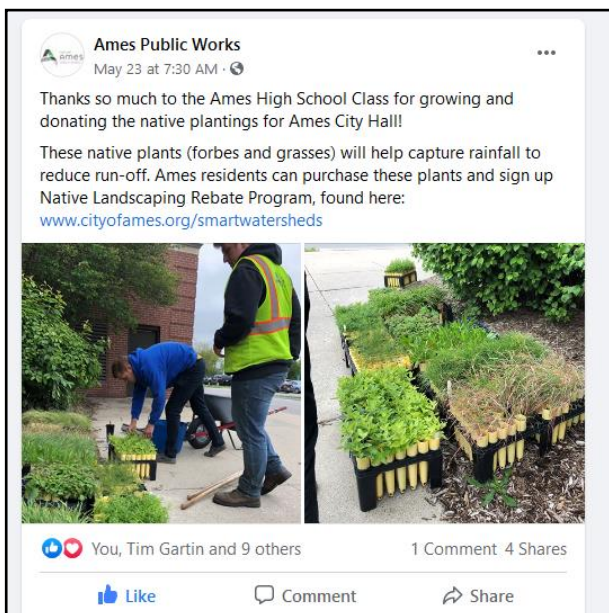
3. City of Ames Cable TV Network

The City’s Media Production Services runs videos that spotlight the Smart Watershed program and related issues. Public Service announcements were run throughout the year, as shown in the table below. In addition to the Ames videos the website has links to ISWEP public services announcements videos on Yard Care, Storm Water, Car Wash, and Oil Changes.

Video Summary	Views
Watershed Awareness -The South Skunk Watershed	37
Watershed Awareness Month-2020	48
No Charge Yard Waste Day	13
Derecho Storm Damage	1,096
Grand Avenue Extension Wetlands	75
EcoChats-How to Create a Healthy and Sustainable Lawn-Native Turf	85

4. Social Media: Facebook

The City uses Facebook to promote many City activities including stormwater education and outreach events. A new Ames Public Works page was started in May 2020 to increase social media presence of Public Works projects and programs. Here is a sample of a few of the posts on the City Government and Public Works pages:

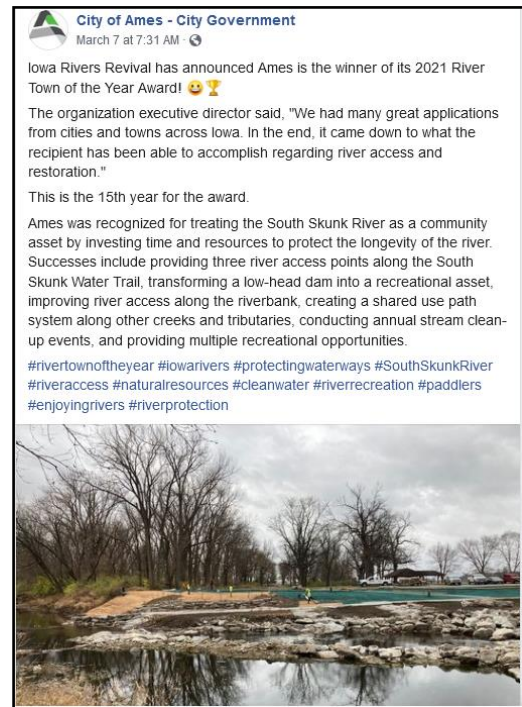
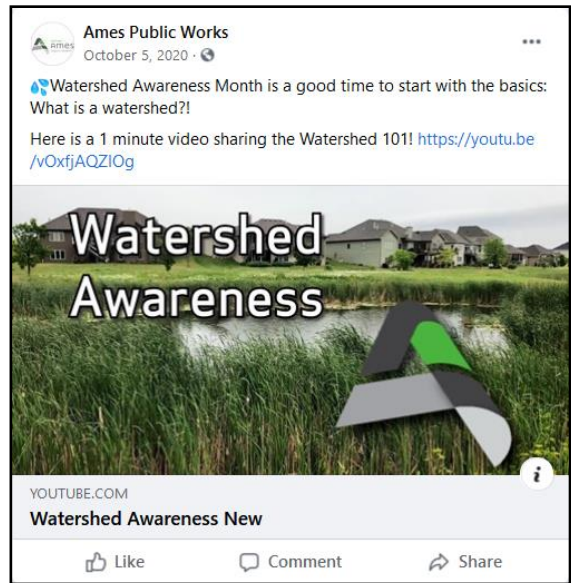


The following table is a summary of pertinent Facebook announcements and responses.

DATE & SUBJECT	# LIKES, SHARES AND COMMENTS
April 1- EcoChats	4
April 8- Tree City USA	16
April 16- Tree Rebate Announcement	4
April 18- Fishing at Ada Hayden	75
April 18-EcoFair Scavenger Hunt	23
April 21-EcoFair on KHOI Radio	4
April 22- Earth Day & Smart Watershed Rebate Program	47
April 22- New Native Tree Rebate	69
April 22- Happy Earth Day!	204
April 24- EcoFair on KHOI Radio	5
April 25- Virtual EcoFair- Door Prizes	12
April 25-EcoFair on KHOI Radio	22
May 2- 55 City Trees Planted	272
May 3- Trees Planted in West Ames	87
May 4- Native Tree Rebate	32
May 19- North River Valley Park-Skunk River Improvements	41
May 23- Interns Planting Native	50
May 27- High Water Sign at Grand Ave	88
May 28- Grass Clippings	9
May 29- Grass Clippings cleanup	14
May 29- Dog waste pickup	53
May 31-Dog waste pickup	37
June 6- Dog waste pickup	23
June 7- Charge Yard Waste Day	15
June 20-Crawford Tree Planting	7
June 22- Native Landscaping Rebate	19
June 24- Skunk River Water Trail Dedication	36
June 28-Moore Memorial Park video	41
July 12-Daley Park Birdhouse	35
July 17 Ada Hayden Park Prairie	54
Aug 12 Storm Damage Video	3447
Aug 18 Tree Damage Notification	94
Aug 20 Curbside Tree Removal	29
Aug 22 Erv Klaas Stone unveiling @ Ada Hayden Park	87



DATE & SUBJECT	# LIKES, SHARES AND COMMENTS
Aug 26 Storm Tree Drop-off Site	285
Aug 28 Storm Tree Drop-off Site	24
Aug 31 Erv Klaas Stone Dedication @ Ada Hayden Park	31
Sep 4 No Charge Yard Waste Days	23
Sep 5 Ames is Bird Friendly Community	115
Sep 9 Skunk River Low Head Dam Project	12
Sep 14 Tree Rebate	148
Oct 1 Watershed Awareness Month Proclamation	5
Oct 5 Watershed Awareness Month	0
Oct 12 Watershed Awareness Facts	10
Oct 30 Composting Rebate	0
Oct 30 Rain Barrel Rebate	4
Oct 30 SQR Rebate	3
Oct 30 Native Tree Rebate	1
Oct 31 Rain Garden Rebate	0
Oct 31 Stormwater Staff	7
Mar 1 Gardening EcoChat	13
Mar 7 Ames named IRR River Town of the Year	107
TOTAL	5843



5. 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 SmartWatersheds 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.

NEW information added to the website in current report period:

- Bird Friendly Community Resources
- Native Tree Rebate Forms and Resources
- 2019-20 City of Ames MS-4 Permit Annual Report
- Fillable form for Inspection and Maintenance Practices of non-city owned stormwater practice
- Pest Waste cleanup photo and offering of complimentary bags
- 2021 Iowa Rain Garden Design and Installation Manual (3rd Edition)
- Residential Guide to Living Near a Stream
- Changing references of the Squaw Creek to the loway Creek

Website Page	# Page Views during Current Reporting Period
Public Works	4282
Smart Watersheds	1675
Stormwater Program	471
Stormwater Fees	162
Post Construction	94
Illicit Discharge	75
Good Housekeeping	23



6. Cellular Telephone Application

The City of Ames App called “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
Total Downloads from the iTunes App store	2785	1494
Storm water intake reports	103	30
Street sweeping reports	69	28
Registered users	679	



7. Community Radio Appearances

During the current reporting year two stormwater staff members made **seventeen** broadcast appearances on two community radio stations. These appearances inform and educate the public on current events, projects and activities being performed by the Public Works Engineering Division and to promote opportunities for community engagement in the SmartWatersheds Program.

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/smarttrash> provides information on waste handling and disposal.

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 2-3 times per year for yard waste collection. No tours were held at the plant due to the pandemic.

9. EcoFair Becomes a Virtual EcoFair Due to Pandemic

The 10-year Anniversary of the EcoFair was scheduled for **April 24, 2020**, however due to the Pandemic, it was canceled. In place of it a day long "Virtual EcoFair" was aired live on KHOI, a local community radio station. The expertise of the station producers combined with a variety of local experts provided an enjoyable and informative day to citizens who hunkered down during the early days of the pandemic.

Four city staff were guest hosts and it is estimated that **1,000 attendees** listed to the broadcast both live and from the archives of the Station. Highlights from the event are numerous and include a presentation about the Ames sustainable infrastructure, collaborations with Iowa State University, SmartWatersheds cost share program options for residents, how to create sustainable areas for wildlife, birds and monarch butterflies.

Become a Member/Donor

Play KHOI FM

Emergency Disaster Relief

BUSINESS & SERVICE OWNERS SUPPORT KHOI

PACIFICA NETWORK

Story County Community Foundation
Grow the Future

Ames
COMMUNITY FOUNDATION FOR THE ARTS

Ames EcoFair

City of Ames 2020 Virtual Earth Day Gathering

On April 25th, 2020, on the 10th anniversary of Earth day, the City of Ames held its 10th annual ecofair virtually on KHOI. The program featured a wide variety of guests, and it aired from 9 AM to 6 PM. The customary, in-person gathering was not possible due to the COVID-19 crisis. You can find all of the features from the program below organized by what time they aired in the sections below.

Hosts: Liz Calhoun, Don Korn, Merry Rankin, and Pat Schlarbaum

9 AM to 11 AM: ISU, Students, City of Ames Collaborate for Sustainability & Looking Ahead
Host: Merry Rankin, Director of Sustainability for Ames and Iowa State University
Topics of discussion: Student activity and cooperation between Ames and ISU

Segment time: **9:05 - 9:10 AM**
Guest: John Halla, Mayor of Ames
Mayor Halla gives an opening welcome and a vision for carbon reduction in Ames.

Segment time: **9:10 - 9:15 AM**
Guest: Merry Rankin
Merry gives an introduction.

Segment time: **9:15 - 9:20 AM**
Guests: Merry Rankin with Sunny Camacho, and Scott Nemeck (ISU student)
Merry, Sunny, and Scott Nemeck have a virtual scavenger hunt.

Segment time: **9:20 AM - 9:40 AM**
Guests: Merry Rankin (host), RJ Green (Grad student and Live Green member), Stan Rabe (ACTORS), Lydia (Student sustainability group)
A live Runwayz Runway hosted via video sharing.

Segment time: **9:40 AM - 9:55 AM**
Guests: Merry Rankin (host), RJ Green (Grad student and Live Green member), Stan Rabe (ACTORS), Lydia (Student sustainability group)
Paige and Kristina discuss UN Sustainable development goals and ISU students that support sustainability.

Segment time: **9:55 AM - 10:25 AM**
Guests: Anyedjel Okwena (Iowa State Recycling and Events Coordinator)
Anyedjel discusses cardboard recovery and other recycling methods.

Segment time: **10:30 AM - 10:55 AM**
Guests: Wile Couper (PhD Student at UC Riverside and ISU Alum)
Wile discusses the consequences of improper waste disposal, especially in ditches and waterways.

11 AM to 1 PM: Our Yards, Gardens, Monarchs, & Water
Host: Liz Calhoun (Ames Smart Resource Analyst and Coordinator of Rabate Watershed Program)
Topics of discussion: Yards, gardens, resources, and local ecosystems

Segment time: **11:00 - 11:05 AM**
Guest: Liz Calhoun
Liz gives an introduction.

Segment time: **11:05 AM - 11:20 AM**
Guests: Liz Calhoun
Liz discusses Smartwater shed rebate programs.

Segment time: **11:20 AM - 11:35 AM**
Guests: Lonna Raschigal and Ursula Reudenberg
Lonna discusses gardening tips for natives in an interview given with KHOI General manager Ursula Reudenberg.

Segment time: **11:35 AM - 11:55 AM**
Guests: Mike Maritz
Prairie farmer Mike Maritz talks about the development of native Iowa environments and the elements necessary to maintain them.

10. EcoChats Go Virtual in 2021

What started as live EcoChats in early 2020 were canceled for the remainder of the 2020. In 2021 the EcoChats are back and are being done virtually starting in March. The first 2021 EcoChat topic was Gardening and included a video presentation about an urban residential lot being transformed from yard to a low mow landscape with native plantings. **Forty-one** people participated in the live event and the recording is posted online for citizens to watch at their convenience. Future EcoChat topics planned the remainder of the year focus on Trees, Reduce/Reuse/Recycle, Water, Watersheds, and Electric.

11. Iowa State University Sustainapoolza Event

The Office of Sustainability at Iowa State University holds an annual event called Sustainapoolza. On March 3, 2021 two stormwater staff attended the event, which had approximately 350 attendees and provided educational information about Ames Smart Watersheds Program and volunteer opportunities.



12. Distribution of Deicer Brochure to Downtown and Campustown Business

In anticipation of winter, city interns distributed the ISWEP Salt & Deicer Management for Businesses Guide in December 2020. One hundred fifty guides were hand delivered to Downtown and Campustown shops to educate them on the impact of salts and on how to apply deicers to minimize usage.

Adequate vs. Excessive Salt Applications

References

Deicing Resources

1. EPA. Stormwater Fact Sheet: Minimizing Effects from Highway Deicing. September 1999. EPA 832-P-99-006.
2. © 2017 Dane County Winter Application Rates. Anti-Icing (Before the Storm) Application Rate Guidelines. WWise Partnership, 2017.
3. © 2017 Dane County Winter Application Rates. Deicing Application Rate Guidelines. WWise Partnership, 2017.
4. Winter Parking Lot and Sidewalk Maintenance Manual. 3rd Edition 2015. Minnesota Pollution Control Agency. www.pca.state.mn.us/programs/roadbook.html

Stormwater Information

Remember: Streets to Streams No Treatment in Between!
 Created for ISWEP member cities and educational organizations to improve water quality through awareness, sustainability, and education.

December 2018
 IowaStormwater.Org

Salt & Deicer Management for Businesses
 Winter Stormwater Pollution Prevention Strategies
 Protect our Local Streams and Lakes

How Deicers Work

A deicer melts or prevents the formation of ice. It does this by lowering the freezing point of water to prevent a bond from forming between ice and paved surfaces. It is important to have safe streets and sidewalks during the winter months. However, be aware that salt and deicing products and the application methods used can have an impact on water quality in local streams, lakes and ponds.

Concern with Chlorides: The salt that is applied to sidewalks, parking lots, and streets contains a water pollutant called chlorides. Once chlorides get into soil and water ecosystems they don't go away. When snow and ice melt they enter the storm sewer system that drains to local water bodies. Research studies conducted in Minnesota and Wisconsin indicate that elevated chloride levels are occurring in local lakes and streams and shallow groundwater.

Impacts of Salts:

- High amounts of chlorides are toxic to fish and other aquatic life.
- Excess salt discharges onto soils near paved surfaces can cause soils to lose their ability to retain water and make them less permeable.
- Salts that percolate through the soil can contaminate groundwater which many cities and residents rely on as a source of drinking water.
- Salts can be harmful to pets and wildlife such as birds.
- Corrosion of concrete surfaces, metal infrastructure such as bridges and vehicles is caused by salts.

Table 7. The most commonly used products and their lowest practical melting temperatures. Range of pavement temperatures, amount of ice melted by 1 pound sodium chloride (NaCl) and the melting time range. (MPCA, Winter Parking Lot and Sidewalk Maintenance).

Pavement Temp. °F	1 pound salt (NaCl) Melts	Melting Time
30°	46.3 pounds of ice	5 min.
20°	14.4 pounds of ice	10 min.
20°	8.6 pounds of ice	20 min.
15°	6.3 pounds of ice	40 min.
10°	4.9 pounds of ice	Salt is ineffective and will blow away before it melts anything.

1. Too much salt was applied to this sidewalk. The excess washed off the surface in the spring thaw.

2. Vegetation was killed and the soil structure disturbed due to high salt use on sidewalks.

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 those who cannot attend the meeting, staff reached out to them in person or on the phone.

2. 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 sub-watersheds: loway Creek, Onion Creek, Clear Creek, Worle Creek, South Skunk River and Ada Hayden. 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, which is reviewed and updated as needed. A land use/watershed action plan has been developed and is being implemented which includes the permit required measures as well as specific watershed goals and action items.

3. Watershed Management Authorities

The City of Ames is one of the founding members of two watershed authorities: Squaw Creek Watershed Management Authority and Headwaters of the S. Skunk River Watershed. These WMAs were formed through 28E agreements. The Squaw 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 Squaw Creek Watershed WMA Board met virtually on line on July 16, 2020, October 15, 2020 and January 21, 2021.

4. Stash the Trash Annual Cleanup including Stream Cleanup

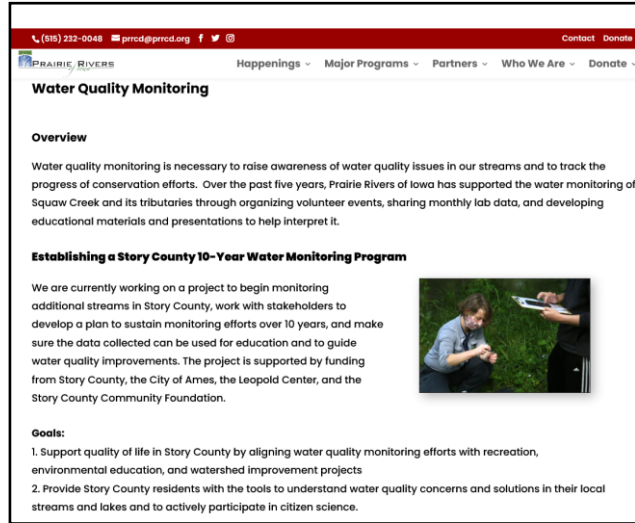
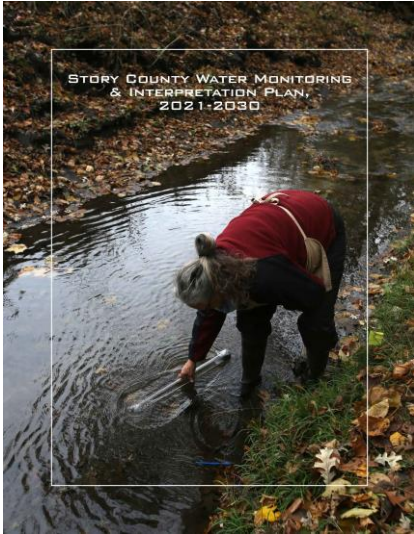
An annual community cleanup event called Stash-The-Trash is held in April. It is a cooperative event with Iowa State University was held on April 3 and 4, 2020 with seventy-three volunteers participating in the event by collecting trash and transporting it to Reiman Gardens or to the Resource Recovery Plant. An informal event this year because of the Pandemic trash was picked up at various locations throughout the community including along the loway (formerly Squaw) Creek in Brookside Park.

5. Resource Recovery Plant Household Hazardous Waste Collection

Citizens can continue to take household hazardous waste every Wednesday afternoon to the Resource Recovery Plant. During this reporting period **26,420 pounds** were collected.

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

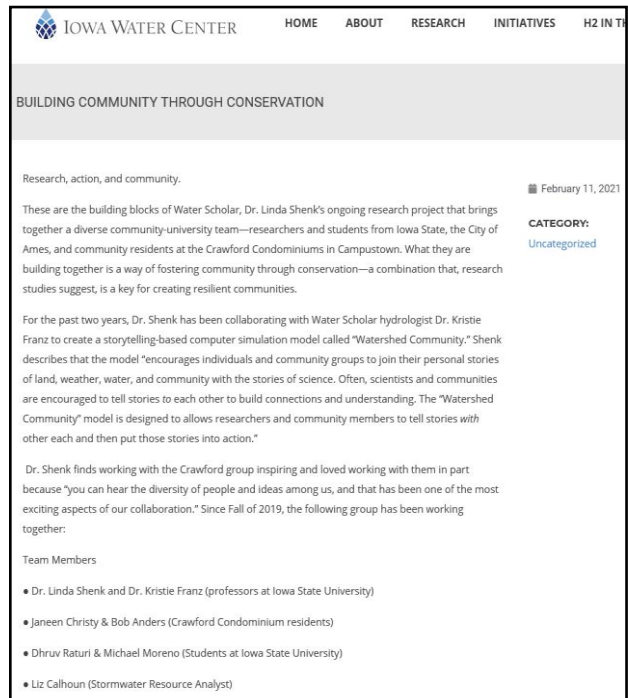
During 2020 the City of Ames participated in collaborative team of ten organizations, led by



Prairie Rivers of Iowa, to develop and begin implementation of a 10-year Story County Water Monitoring and Interpretation plan. Sampling and testing are being completed by staff and volunteers. Details can be found: <https://www.prrcd.org/water-quality-monitoring>.

7. Building Community through Conservation

In collaboration with the City stormwater staff, ISU Professors Dr. Linda Shenk and Dr. Kristie Franz, and Iowa State Students, the Crawford Condominium Community continued with plans despite the pandemic and held two tree planting events and a virtual worm composting educational event. Shenk and Franz have



developed a tool for groups to use to show how conservation efforts can make a measurable difference in erosion and runoff and plan to continue to use this tool with other groups in Ames. City stormwater staff will continue to assist in the collaboration.



8. SmartWatersheds Cost Share Rebate Program

In May 2020 the City Stormwater staff organized and assisted in a Soil Quality Restoration event, with seven residential property owners. Using the Polk County deep tine aerator, Stormwater staff aerated 54,000 square feet of lawn including seven residential lawns and two city owned properties. Compost was delivered and homeowners and volunteers spread the compost to build a healthier lawn that will better absorb moisture and reduce runoff to the storm sewer.



A new cost share program for Native Trees was introduced in the spring. Property owners can apply for reimbursement of up to \$75.00 for up to two trees per year from an approved native tree list.

The following table summarizes the SmartWatersheds rebates for the current year compared to the previous reporting year.

Rebate Program	Previous Reporting Period	Current Reporting Period
Rain Barrels	16	27
Composters	47	22
Soil Quality Restoration	3	12
Native Landscaping (3 active)	1	6
Rain Gardens	2	1
Tree Voucher Event-Partnership with Ames Trees Forever (not held in 2020)	100	0
NEW! Native Tree Rebate- new cost share program started in April, 2020	N/A	35 applications, 58 trees

9. Friends of Parks Groups

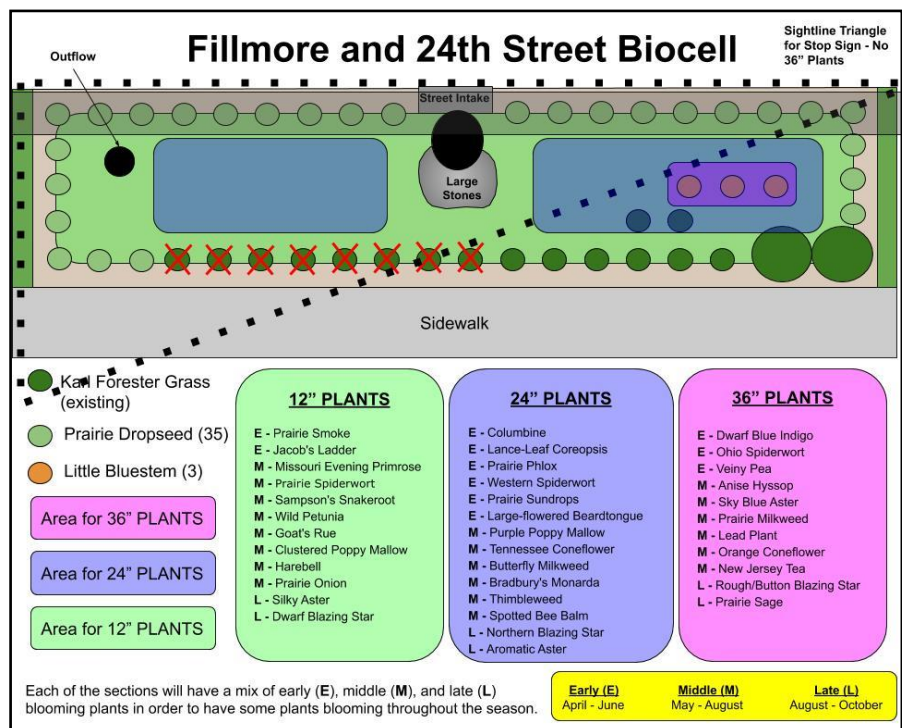
The Friends Groups in Ames continue to be strong and assist the City in maintaining public parks and lands throughout the City. **The Friends of Ada Hayden Heritage Park** was busy in 2020 with many projects during the year including:

- Radio interviews on community radio KHOI
- Placement of the 10th “Face in the Stone” recognizing Erv Klaas, environmentalist, wildlife researcher and park founder.
- Preparation and distribution of a neighborhood brochure, sent out to 325 homes in the lake watershed, introducing the group and inviting citizens to participate and help to keep the park wild.
- Assisting Parks staff in clearing and moving branches off the trails after the August 10 derecho.
- Wolf Osterreich performs a daily bike reconnaissance of the park, noting wild species and posting them to the group’s blog. Ada Hayden park is an anchor park in Ames and public usage during the pandemic was record breaking, with the parking lot being full on many days. Wolf spent time each day picking up trash on his rounds and, in addition to the collection in the many existing trash cans in the park, he collected dozen/hundreds of bags of trash throughout the year.
- Stephanie Fox continues to survey butterfly species and has identified 35 species to date.
- Invasive species control: Over 400 musk thistle plants were removed during the year and several areas of invasive burdock were sprayed or manually removed. Volunteers worked with the Parks department in several areas to cut burdock in a savanna and parsnip in the prairie along Highway 69.

10. Community Academy Assists in 24th Street Bio-Cell Enhancement and Storm Drain Labeling

The Community Academy, led by Ames High science teacher Mike Todd, uses project-based education to teach primary and secondary education students. This reporting year they collaborated with the city on two projects, enhancement of a bio-cell at 24th Street and the labeling of storm drains. In the current reporting the Academy and stormwater intern staff inspected, repaired and replaced over 400 storm drain labels.

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 academy designed and planted a variety of forbs that will help to draw attention to the bio-cells throughout the growing season.

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.

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 reporting of **seven** illicit discharges occurred during the current reporting period are summarized in the following table:

ILLICIT DISCHARGE REPORT

Date	Staff Responder	DNR Notified ?	Location	Impacted water/ Pollutants/ Response, clean up
May 20, 2020	Kris Evans, Water and Pollution Control	No	Intersection of Grand Ave and Duff Ave	See report on next line
	<p>Wulfekuhle [Contractor] is under contract with the Water and Pollution Control Department to remove lime solids from the water treatment plant. The lime solids are stored in lime ponds located on 13th Street. About 5:30pm, a Wulfekuhle side dump truck carrying lime solids from the City's lime ponds was headed north on Grand Avenue near the intersection of Duff Avenue. A car pulled out in front of the contractor's truck causing the truck driver to brake quickly. The lime solids are somewhat liquid and the quick break caused lime solids to spill out of the truck.</p> <p>As seen in the picture, Police were on site to help with traffic control. The Contractor was able to obtain a skid loader to remove the lime from the road. He approximated about 1 ton of material spilled and was able to clean up nearly all the material and place it back in the truck for proper disposal.</p>			
July 28, 2020	Jake Moore	Yes	Ioway Creek at Brookside Park	See report on next line
		<p>DNR received a call of homeless camp and trash. Jake Moore removed trash from stream, collected into two shopping carts. Parks Department picked up and properly disposed collected trash.</p>		
Aug 26, 2020	Jake Moore	No	Stone Brooke development east drainage to Ada Hayden	Cloudy Water in drainage channel. Investigation concluded it was probably concrete dust from a pavement being cut in a driveway upstream. No sign of cloudy water in Ada Hayden Lake downstream. Contractor informed to clean up saw cutting. No violation issued.
Aug 8, 2020	James Rendell Cyride	Yes	Intersection of Grand Ave. and Wheeler Ave	10 gallons of spilled antifreeze. Cleaned up what they could with floor dry and disposed of at Resource Recovery, Some drained to intake with heavy flow. No sign of it in Ada Hayden Lake.

ILLICIT DISCHARGE REPORT

Date	Staff Responder	DNR Notified ?	Location	Impacted water/ Pollutants/ Response, clean up
Sep 1, 2020	Dale Weber, Utility Maintenance	Yes	125 Marshall Avenue	Illicit Sewer Connection into storm sewer system. City notified owner and required them to connect sewer to sanitary sewer, remove connection to storm sewer, and clean storm sewer.
Sep 22, 2020	Curtis Spence, Power Plant Manager	Yes	2207 Edison Street @ Powerplant	Fuel Oil, Pipe connection leaking at elbow onto ground. 24 tons of soil removed and disposed of at Boone Landfill.
Dec 8, 2020	Jake Moore, contacted by ISU Environ. Health & Safety	No	1325 S 4th Street at loway Creek (formerly Squaw Creek)	Report of "green water in creek", NW well Company was acidifying a well a few days prior. When checked by City, creek was clear.

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 **2020**, **13.2** tons of household hazardous materials was collected at the plant.

Because of the pandemic no tours or "Rummage Rampage" were held during 2020. Both events are planned for 2021 when schools and other groups and will tour the plant to build awareness of proper disposal of household hazardous and solid wastes and to reduce illegal dumping.

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 assisted by Stormwater Intern, Kahner Cleveland, are 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 following table summarizes the City's construction site runoff control program activities with a comparison to last year's activities.

Construction Site Runoff Control Program Tracking

SWPPP Reviews/Approvals	Previous Period	Current Period
Single Family Homes	59	84
Commercial Reviews	13	10
Preliminary Plats	1	4
Plat additions with Public Improvements	2	2
City Project SWPPP Reviews	10	5
NOIs Filed for GP #2		
Total Projects	24	14
City Projects	5	4
Iowa State University Projects	6	2
Story County Projects	1	0
School District Projects	1	0
Private Projects (Gas Stations, Subdivision, Apartments, Hotels, Building Additions, Commercial Businesses)	11	8
Weekly (City Project) & Quarterly Inspections (Private Sites)		
Total Conducted	471	563
City Projects	248	418
Private Projects (Commercial)	161	88
Single Family Inspections (Home Lots)	62	57
Enforcement Actions		
Number of Compliance Issues (Private Projects)	165	60

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 80
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 was approved by City Council on April 22, 2014 Earth Day. In 2019, Ames City Council adopted revisions to the post-construction ordinance. Find the ordinance, Chapter 5B at <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, which have a minimum threshold of one acre of impervious cover, resulting in fewer Stormwater Management applications.

The following tables list the plan reviews and BMP's installed during the current reporting year.

Post Construction Program Plan Review and Approval

Type of Development	Previous Reporting Year		Current Reporting Year	
	# Plans Reviewed	# Plans Approved	# Plans Reviewed	# Projects Approved
New Development	5	5	11	8
Redevelopment	0	0	4	4

Best Management Practices Installations and Water Quality Volume Benefit

BMP	Number of BMP
Extended Detention Basins	1
Retention Basins	7
Forebays	5
Bio-Cells	3
Infiltration Swale	1
Underground detention with water quality controls	1
# Practices Approved	18
Water Quality Benefits	
New Water Quality Volume Managed	387,900 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 virtually using with project videos. For those who cannot attend the meeting, staff reached out to them in person or on the phone.

Construction updates are often made through the Ames Media Channel. This photo was taken from a video of the S. Grand Avenue Extension Project over the loway (formerly Squaw) Creek, which can be watched here: <https://www.youtube.com/watch?v=DDe6XSHIF28>

The following city funded projects that improve watersheds were under construction during the current reporting period:

- **South 5th Street Wetland:** Construction of an approximately five-acre wetland draining 92 acres of previously uncontrolled watershed, providing water quality prior to discharge in into the loway Creek.



- **Welch Avenue Water Quality Tree Trenches and Permeable Pavement.** The 100 block of Welch Avenue, immediately adjacent to the Iowa State University Campus was completely rebuilt during 2020. This project included the construction of permeable pavement sidewalk and twelve tree trenches (using IDALS WQI and city funding) to capture and treat the water quality storm volume. In an otherwise primarily untreated watershed these tree trenches will provide enhanced water quality prior to discharge into the College Creek as it enters Lake Laverne. Tree planting is planned for Spring 2021.



- **Ioway Creek Flood Mitigation:** Federally funded project designed to lower the 100-year flood elevation by two feet. The project is in southeastern Ames on the Ioway Creek approximately 2,000 feet each direction from the S. Duff Avenue bridge. The project began in March 2021 with approximately 22 acres of tree removal.
- **Completion of the Teagarden Neighborhood Drainage Improvements** project with the planting of native grasses and forbes along channel improvements including a 750' turf channel.
- **Enhancement of Ash Avenue Bio-Cell.** City Stormwater and Urban Conservation Interns planted approximately 300 plugs to further supplement and establish this 1300' long bio-cell along the western side of Ash Avenue.
- **Enhancement of City Hall/Community Center landscape** beds with the planting of 700 native plants to provide a more diverse and interesting landscape.
- **Baker Subdivision.** City owned low-income single family and multi-family subdivision, construction of new street and retention pond designed for fishing with anticipated stocking in Fall 2021.

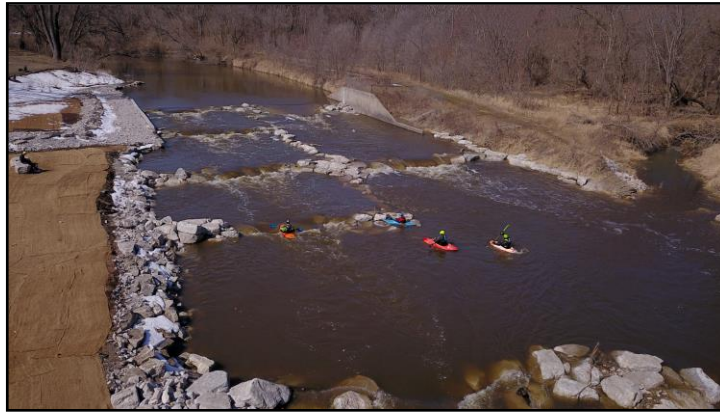
- **Little Bluestem Bio-Cells Rehabilitation:** A three bio-cell system was an innovative design when it was built in the 1970's. Approximately 650 feet in length, it captures and controls a ten-acre watershed containing apartments and townhomes. The lack of maintenance of this facility in the early decades resulted in vegetative overgrowth with more than one hundred invasive trees, a predominance of invasive honeysuckle shrubs, sedimentation in the channel, and outlet failure and system malfunction from its original design. The project involved clearing vegetation, removing sediment and grading the bottom channel, installing new outlet structures and pre-treatment structures at the inlets to the bio-cells. Grading of the side slopes was limited so that the soil remained uncompacted. Temporary seeding was placed in fall 2020 with permanent



seeding and a few trees along a shared use path planned for 2021.

- The City has a comprehensive **Tree Planting Program** overseen by the City Forester. Approximately 300 trees were lost on city property during the 2020 Derecho. During the current reporting period there were 240 trees planted in public areas by the Parks Department or a tree contractor, estimated fifty trees planted by Public Works and Water and Pollution Control Department projects and an estimated 250 planted by developers on private property.
- **S. Skunk River Slope Stabilization** An initial attempt at establishing the west slope of the S. Skunk below Homewood, the City's golf course revealed underground seepage that made stabilization challenging. A second project was bid and constructed during winter 2020, when the slope was further cut back to a flatter slope. Drain tile will also be placed to catch seepage from the hillside.
- **North River Valley Park Low Head Dam** Completion of the removal of a low head dam in North River Valley Park. Removal of the dam and construction of rock-arch rapids removes dangerous recirculation effects while improving

recreational features of the dam such as bank access, fishing access, and whitewater features. The revised concept was a rock arch rapids design that has been successful in other locations. This design will withstand high water events better, and functions as a “fish ladder,” allowing fish and other aquatic life to migrate upstream past the dam.



Other watershed projects that are in the analysis and design stage are:

- loway Creek Slope Stabilization and River Restoration-Brookside Park
- S. Skunk River Restoration between E. Lincoln Way and SE 16th Street
- Spring Valley Subdivision Ponding Mitigation
- City-wide Storm Sewer System Analysis and Modeling

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.

The Public Works Operations Division conducts the site inspections and maintains all city owned green infrastructure practices and city storm owned storm sewers. Staff that are conducting these inspections are certified under the ISWEP program, Iowa Certified Inspection and Maintenance Program for Stormwater Practices.

2020 was the first year for the City Urban Conservation Intern. The intern was responsible for monthly inspection, maintenance and enhancement of the city’s bio-cells and smaller native landscaping areas and results in an increased level of care and function of these practices.

Following is a summary of inspection and maintenance activities for the City's post construction and storm sewer infrastructure and outfalls for the current reporting year.

Post Construction Municipal Inspections and Maintenance

Outfalls		Issues Reported
Dry weather inspections of outfalls	197	26
Issues: sediment, debris, and brush removal needed		
Outfall repairs	1	
Intakes		
Inspections	699	
Region inspected: "H" and "I"		
Maintenance performed: Remove debris and repair	699	
Amount of debris removed	26 tons	
Detention and Retention Basins		
Inspections 2x/year	137	
Public Works Green Infrastructure	# Inspections	Issues Reported
Inspected annually and maintained at least annually		
Rain gardens	1	
Bio-cells: inspected and maintained monthly from April to November by Urban Conservation Intern	13	
Porous paver areas	1	
Pervious concrete alleys	2	
Native Turf	1	
Parks Green Infrastructure	# Inspections	Issues Reported
Inspected annually and maintained at least annually		
Bio-cells: inspected and maintained monthly from April to November by Urban Conservation Intern	4	
Prairie filter strip	1	
Native Prairie areas	10	
Woodland areas	6	
Stream greenbelt corridors	2	

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	7163 miles	8343 miles	2507 tons	2920 tons
Intake maintenance	740 intakes	699 intakes	27 tons	26 tons



2. 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.
- The airport and operations facilities do not use fertilizers and spot spray weeds using pesticides.

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

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

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

The tables below and on the following page outline show the tracked quantities of fertilizer, herbicide and pesticide used during the current reporting year.

Homewood Golf Course Products Used

Fertilizer	Amount	Fertilizer	Amount
Mesa 25-0-0, bags	6	Mesa 25-0-5, bags	30
Herbicides and Pesticides			
Astron, gal	1	Penecal,oz	210
AT140, gal	3	PowerK, gal	5
AT44, gal	2.5	PowerN, oz	88
Banner, oz	104	Propcanzaol, oz	106
CLT750, gal	5	Protesyn, gal	1
Crosscheck, oz	112	Primo, oz	92
Dac Action, oz	2272	Sevin, oz	214
Embark, gal	3	Spectator, oz	224
Glycofuze, gal	1	Spotrete, gal	90
Heritage, lb	2	Stonewall Prodiamine, lb	26
Iprodione, oz	322	Teb, oz	113
Iron 12-0-0, gal	2.5	Threesome, gal	5.5
Maxilple, gal	1.5	Tricolor, oz	70
Mencozeb, lb	12	Thiram	1.5
Merit, oz	40	TMI, gal	4.5
Moxie, gal	0.5		

Products Used on City Properties

	R-O-W & Fire Stations	Parks	Cemetery	Community Center	Electric Services
Products Used, unit	Amount	Amount	Amount	Amount	Amount
Bucaneer, gal	6.6	1.6			
Speedzone, gal	0.5				
Stonewall, lb	9.5	67.4			
Threesome	20.6	55.3			
Tomahawk	4.22	111.9			
Triclopyr, gal			0.16		
Mesa, bags		58			
Mesa 25-0-5, bags		105			
17-0-4 .15% DIM 25% XCU,lbs				250	
17-0-4 .15% DIM 25% XCU,lbs				250	
15-0-0 MERIT,lbs				250	
32-0-8 40% UFLEXX,lbs				250	
44-0-0 UREA HUMICCOATED,lbs				250	
Cornbelt Locktite (Surfactant), oz					8
Esplanade,oz	0.25				.25
Vessel, lb	248				248
Vessel, gal	724				5.6
Milestone, oz	10				10
Plateau, oz	129				129
Ranger Pro by Monsanto (Glyphosate), oz	36				.28
Tribune by Syngenta (Herbicide), oz	0.09				.09
24-0-8 30% XCU (fertilizer)					2411
Pro 19-0-0 (0.164% Dimension)					642
Mosquito Spraying, gal		17.2			

3. 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 of Staff Attending
APWA Iowa Ch Virtual Fall Conference – Nov. 2020	2-5
ISWEP Stormwater Webinar Series	2-5
ISWEP Native Plants ID Webinar Series	4
ISWEP I-Storm Virtual Conference-November 2020	4
ISWEP Raingarden Webinar- February, 2021	1
3 ISWEP meetings	1-2
ASP Enterprises: Pavedrain Permeable Paving Systems Webinar	1
ASP Enterprises: Evolution of Stormwater Management Webinar: “From Grey to Green to Smart”	1

4. Stormwater Pollution Prevention training for Staff:

The annual Pollution Prevention training for Public Works Department (Operations, Utility Maintenance) and the Parks Department, was conducted in the February 2021. **Twenty-two** staff members attended the training, which was held using a pre-recorded video prepared by Pat Sauer of ISWEP.



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 drafted and integrated with the City-wide GIS mapping. The Public Works Engineering Division continues to maintain this system map.

Winter Snow and Ice Control Program

The Winter of 2020-2021 had the 5th highest amount of recorded snowfall in the City of Ames.



City Operations crews were busy clearing public streets and keeping the roads open and safe. A carefully managed use of brine and salt and the removal of snow from the higher density urban areas of the City results in benefits for stormwater runoff resulting from melting snow. 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. In areas of downtown snow is piled along the roadway immediately after the storm and then in the following days scooped up and trucked to vacant lot next to the power plant and the operation yard, where it is melts and recharges into the ground prior to discharge into a storm sewer. This method of snow removal that disposes it in a location away from storm sewers reduces the amount of salt, sediment and debris, which is contained within the snow, from immediate discharge to the river.

PART 4: MONITORING DATA

A. WPC Stream E Coli Monitoring

In 2020 the City of Ames Water and Pollution Control Department conducts bacteriological monitoring of all tributaries of S. South River from April to December. The following table illustrates the 2019-2020 E. Coli bacteriological monitoring data collected by Water and Pollution Control laboratory staff. If obvious signs of pollution are discovered, or if significant degradation is observed, City staff will conduct more detailed water quality investigations. Monitoring trends observed from 2019 to 2020 suggest that the number of CFU (Colony-Forming Units) observed are trending downward.

**D. 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	---	---	---

B. IDNR Monitoring

The Iowa DNR has been monitoring the water quality at Ada Hayden Heritage Park over the past 16 years. The lake is a back-up drinking water supply for the city of Ames. Highlights of the report follow. A detailed report of studies conducted 2017-2019 by Water and Pollution Control was provided in the City's 2018-19 annual report.



