Laramie Stormwater Drainage Fee Study

Stormwater Focus Group

MEETING NOTES

December 14, 2023

Focus Group Members Attending:	City Staff:
Trent Brome	Brooks Webb, Public Works Director
Martin Curry	Eric Jaap City Engineer
Brad Enzi	**Consultants:**
David Gertsch	Aaron Murray, PE - WSP
Ronald Marrs	Elizabeth Treadway, WSP
Tom Mattimore	
Chris Moody	
Tim Morton	
Jake Schneider	
Chris Bove - Guest	
Donal O'Toole - Guest	
Sarah Gorin - Guest	

Brooks Webb opened the meeting. He thanked members of the Focus Group for participating in the meeting, with thanks echoed by Eric Jaap. Members of the SFG as well as staff and consultants introduced themselves. Aaron Murray began a presentation, attached to these meeting minutes, by setting the stage for the purpose of the project and the overall history of stormwater/drainage management over the years. The key takeaway is that public drainage infrastructure and programs were initiated decades ago to move runoff from rain and snowmelt event from properties throughout the community into public systems for the purpose of protecting property. The faster the water moved through the systems the better. Over time, changes occurred that incorporated the need to reduce the erosive impacts of the flows across land and into receiving streams creating hazards, loss of function, sediment deposit, and decreased water quality along with internal capacity of the drainage infrastructure. Most recently the industry has shifted to utilization of "green" infrastructure that mimics nature's approach to stormwater management. Natural systems depend on

infiltration as the primary means of handling rainfall/snowmelt. Impervious area created as towns and cities were built interrupts those natural functions, creating negative outcomes such as flooding and water quality degradation.

The presentation focused on green infrastructure techniques and practices available to the City to reduce immediate impacts of flow volumes and velocity.

Aaron and Elizabeth emphasized the role of the SFG, to provide feedback as community representatives on needs and priorities resulting from issues and challenges encountered when it rains. In addition, members were asked to think about what the community should expect from City management of the drainage network. These two primary questions were discussed throughout the meeting.

Aaron continued the discussion with a focus on work completed during Phase I of this project. Phase I focused on gathering background information (provided as handouts to SFG members in advance of meeting) on current levels of service and functions of Public Works, primarily in Streets and Engineering. Aaron reviewed the overall focus of those services. (See slide 14) A review of organizational responsibilities was reviewed noting that maintenance of the infrastructure is the primary responsibility of the Streets Division while Engineering staff provides technical oversight in planning, flood plain administration and field inspections.

Aaron reviewed the analysis completed in preparing a communitywide, comprehensive Stormwater Master Plan, resulting in the identification of over $135M in investment needed to improve and sustain the drainage system. Slide 18 summarizes where in the City the investment is needed. A Capital Improvement Project list was created and prioritized. It was pointed out by SFG, that the identified projects need to be stated in terms of cost/benefit and specifically indicate what outcomes will be achieved. In addition, it was noted by members that the 100-year storm may not be enough, with climate change impacts causing increased storm frequency and intensity (increased rainfall amounts per hour). It is important, as commented by SFG members, that the public needs to understand the design storm (inches per hour for example) and that more intense rainfall events will occur, resulting in damage/flooding.

SFG members emphasized the importance of public education throughout this process of evaluating storm drainage management needs. New or increased funding plan must include outreach to help the community understand what the funds are for and how things will change.

Aaron and Elizabeth reviewed the recommendations made by WSP in the Phase I study report (summarized in the handouts provided to members). Primary recommendations focus on the Master Plan implementation, extending the life of existing inground systems through pipe lining, and installation of new systems in underserved areas of the City. To improve water quality, Eric described the function of gutter bins that have been installed in a number of inlets in the downtown area, the purpose of which is to capture debris such as trash and some sediment into a filter bag that is maintained by the Streets Division. Bags are removed and replaced when needed. It was asked if these bags cause backflow of runoff into the street during heavy rainfall events and Eric explained the function of the design which allows for

bypass of the filter bag when flows exceed normal levels. The bypass allows heavy flows to enter into the inlet and release into the collection pipes.

It was noted in the recommendations from Phase I that additional staff are identified and address expanded abilities of Engineering and Streets Divisions to perform additional responsibilities. For example, investment in new capital projects requires the oversight and project management in Engineering that exceed current the staff capacity to delivery major and minor capital construction projects.

SFG members raised a question on water quality, asking if the City is monitoring the pollutants discharged into the drainage system and therefore, discharged into the Laramie River. The SFG and staff discussed the challenge of monitoring rainfall events and the importance of determining pollutants of concern. Sediment is often identified as the means for other pollutants to enter the system, attaching themselves to the particles. It was noted that the City needs to invest in monitoring to set a baseline understanding of the water quality issues in the public system flows/discharges. It was noted that monitoring the River at entry into the City boundary as well as at the point of leave the City is important to understand the impacts of the urban area on the quality of water in the Laramie River. A discussion of the source of sediment focused on property disturbance, unvegetated parcels, velocity of flows and stream/channel bank instability as key contributors. Undersized channels and pipes create an opportunity for flooding to erode and disturb open areas, creating soil erosion as well.

Funding Options Discussion: The presentation focused on the methods used today to provide funds for public drainage system operations. Specific terms were clarified. Special Assessment on benefiting properties is a funding method when a project has a limited number of properties served and benefited, resulting in the cost of the project distributed only to those parcels identified. This approach has limited use and does not fund ongoing operations. Development fees are charged to recover the cost of services specifically provided to approve land development and are intended to recover the cost of technical reviews and approvals. Special Sales Tax has been used by the City (one cent) to provide capital funds for stormwater as well as other capital needs of the City. Stormwater drainage fee is a communitywide fee that is based on the amount of impervious area found on a parcel. All properties are charged, and impervious area is the “meter” to allocate the cost of service.

Questions were raised on whether street improvements could be funded in a similar manner as drainage fees. The legal authorization would need to be evaluated to determine if roadway improvements linked to stormwater projects could be funded as well using the authority currently granted for drainage.

At the end of the meeting the SFG was asked to provide specific guidance on what the community should expect from the City in providing storm drainage services. The following was shared:

- Effectively maintained system.
- Safe travel
- Problem areas resolved (4th St., 22nd St. Pond) (e.g., could a Special Improvement District be established to address 4th Street issues?)
- Health and Safety

- Property Damage Prevention
- New Development – City doing well on requiring stormwater management.- need focus on underserved areas
- City should incentivize green infrastructure
- Drainage Criteria Manual Needed -- Developers not scared by requirements, but don't like uncertainty due to lack of definition in requirements

Other topics were discussed by the group as related topics on stormwater management options.

- Can runoff be diverted into areas or other streets, using water bars?
- How to retrofit previously developed areas? The options need to be considered.
- Outsourcing can be an option rather than hiring additional staff. It was noted that this will be evaluated in the financial model under development in Phase 2 of this study.
- What is done in other small, mountain communities in the Front Range? It was noted that this data is being gather for another community and WSP will check on sharing the data gathered to date with the SFG.
- Emphasis on public outreach and education was reiterated several times in the meeting.

Logistics for SFG meeting:

It was noted that several additional meetings will be held in the late winter and early spring. The SFG was asked if the location of the meetings (City Operations Center) was a good location for members and all agreed that the meeting room worked well.

The SFG was asked if the meeting should be held at a different time (this one started at 6 pm). No specific preference was expressed. City staff indicated that about 1/3 of the members were not present and that a poll of member regarding starting time could be completed to make sure that the start times will provide the best attendance as possible.

The meeting ended at 8:20 pm.

Attachment: Presentation slides

The following was shared by Chris Bove after meeting in regard to the comment about diverting flow off of a street– distributed by email.

"This is what I was talking about at the meeting last night as a tool to break up concentrated flow heading to problem streets and send part of the water to other areas with lower gradient, longer paths. I have seen heavy rubber belts installed permanently in black top (similar to first picture) but I was unable to find an example. "

https://kerrcenter.com/water-bars/

https://www.zoro.com/absorbent-products-ltd-absorbent-qd617-1-quick-dam-flood-barrier-17-qd617-1/i/G903969562/?utm_source=google&utm_medium=surfaces&utm_campaign=shopping%20feed&utm_content=free%20google%20shopping%20clicks&campaignid=19633513665&productid=G903969562&v=&gad_source=1&gclid=EAIaIQobChMIs_-TgPmRgwMVmxitBh1Ipwt0EAkYAyABEgKHSvD_BwE&gclsrc=aw.ds

https://us.garadry.com/products/garadam-garage-door-flood-barrier-seal-2inch?currency=USD&variant=31563398905933&utm_medium=cpc&utm_source=google&utm_campaign=Google%20Shopping&stkn=25b18ebdaa93&utm_campaign=garadry_us_performancemax&utm_source=google&utm_medium=paid_shopping&gad_source=1&gclid=EAIaIQobChMI0PLqrPqRgwMVHRetBh2iXA-DEAQYASABEgIjvfD_BwE

https://www.amazon.com/New-Pig-PM50073-Rain-Diverter/dp/B07DQYVDZ3/ref=asc_df_B07DQYVDZ3/?tag=hyprod-20&linkCode=df0&hvadid=416645294631&hvpos=&hvnetw=g&hvrand=11983512089444893902&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9023176&hvtargid=pla-956528402127&psc=1&mcid=6826f47d6b353961bf07c4072c685cf6&tag=&ref=&adgrpid=95471659338&hvpone=&hvptwo=&hvadid=416645294631&hvpos=&hvnetw=g&hvrand=11983512089444893902&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9023176&hvtargid=pla-956528402127&gclid=EAIaIQobChMIs_-TgPmRgwMVmxitBh1Ipwt0EAkYAiABEgLhtvD_BwE

City of Laramie

Stormwater Focus Group Meeting #1

December 14, 2023

Agenda

Welcome, Overview, and Introductions
- Goal for Meeting #1

Management of Drainage Today
- Challenges in Laramie
- Master Plan – Priorities
- Key Questions for the SFG

Potential Funding Solutions

Expectations and Process

Discussion, Feedback, and Wrap Up

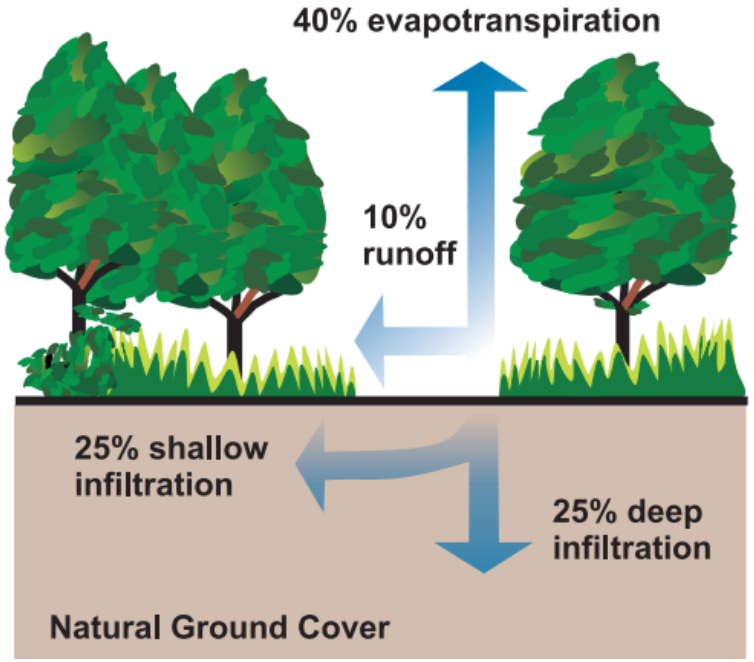
Management of Drainage Today

Pre 1980 – get the runoff into the streams as fast and efficiently as possible

1980-1995 – detain and slow down the rate of movement

1995 – 2005 – reduce the pollution carried by the runoff

2005 – mimic nature and use “green solutions”



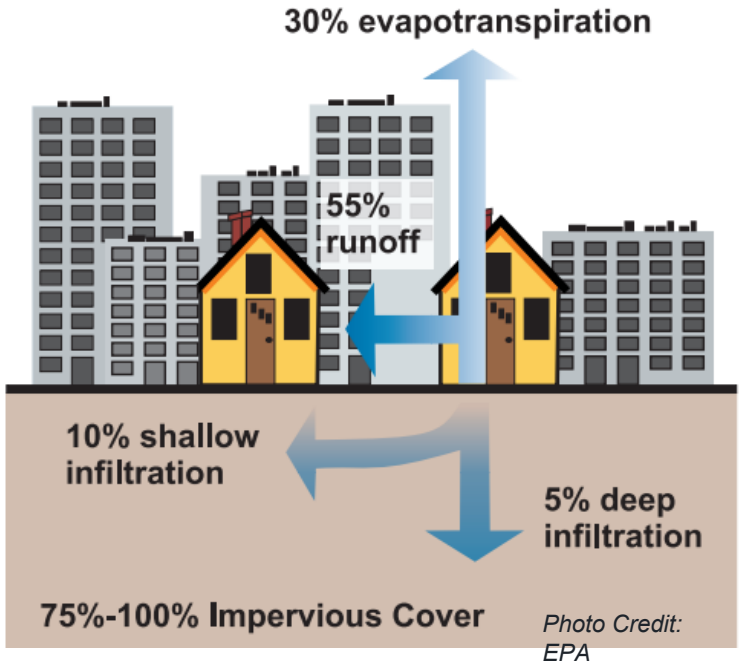


Photo Credit: EPA

HISTORY OF STORMWATER MANAGEMENT STRATEGIES

Pre-1980 (Local Drainage Control)

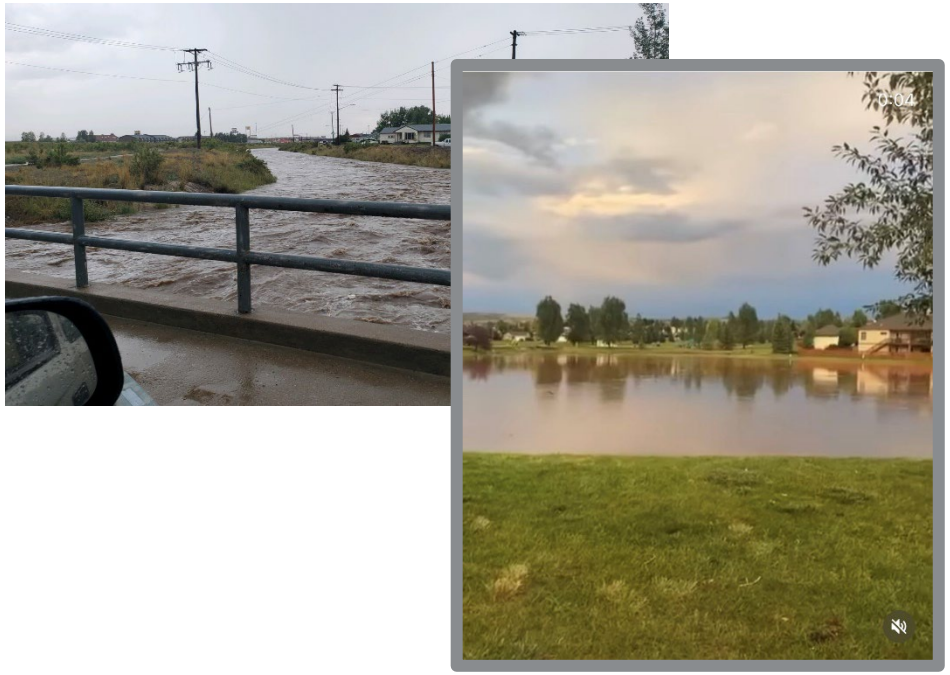
Why? Flooded streets and property

How? Get runoff away from streets and buildings as fast as possible

What? Curb & gutter, inlets, pipes, ditches, culverts, & outfalls

1980-1995 (Local Flood Control)

- **Why?** Flooding from overwhelmed streams and public systems
- **How?** Store runoff then release it at the pre-development rate
- **What?** Detention ponds



Dry Detention Basin

HISTORY OF STORMWATER MANAGEMENT STRATEGIES

Water Quality Control

Why? Polluted streams, lakes, etc.

How? Federal and State regulations

What? National Pollutant Discharge Elimination System (NPDES) Permits

1980's - Industrial dischargers

1990's - Large municipalities and counties > 100,000 population (MS4 permits)

2000's – Small municipalities > 50,000 population (MS4 permits)

HISTORY OF STORMWATER MANAGEMENT STRATEGIES

1995 – 2005 (Reduce Pollution from Stormwater)

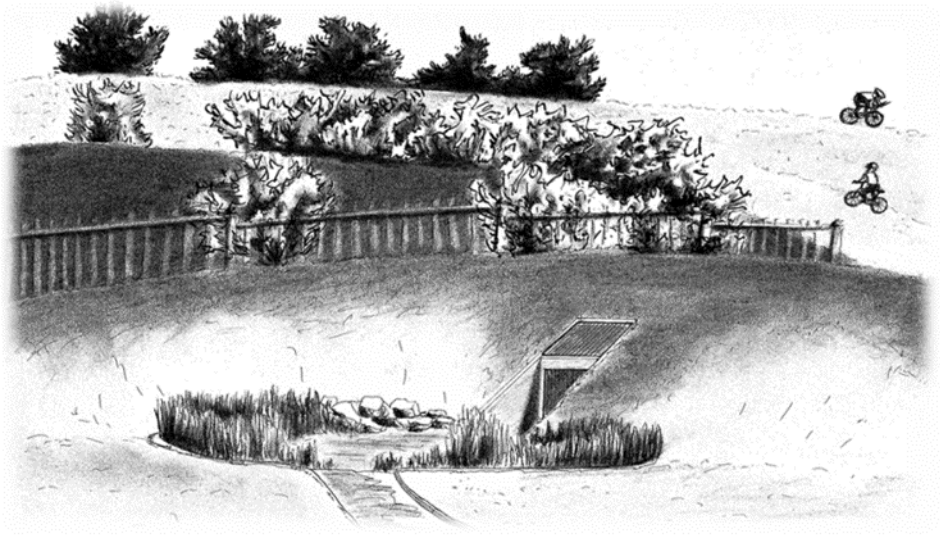
Capture “First Flush”

Store and Slowly Release (typically over 40 hours)

Allow sediment (and other pollutants) to settle out

Original EPA requirements

80% TSS Removal BMPs



Water Quality Pond, Graphic from Mile High Flood District

SINCE 2005: LOW IMPACT DEVELOPMENT AND GREEN INFRASTRUCTURE

Gray approach:

- Use basins, pipes & ditches to remove pollutants from stormwater before discharge

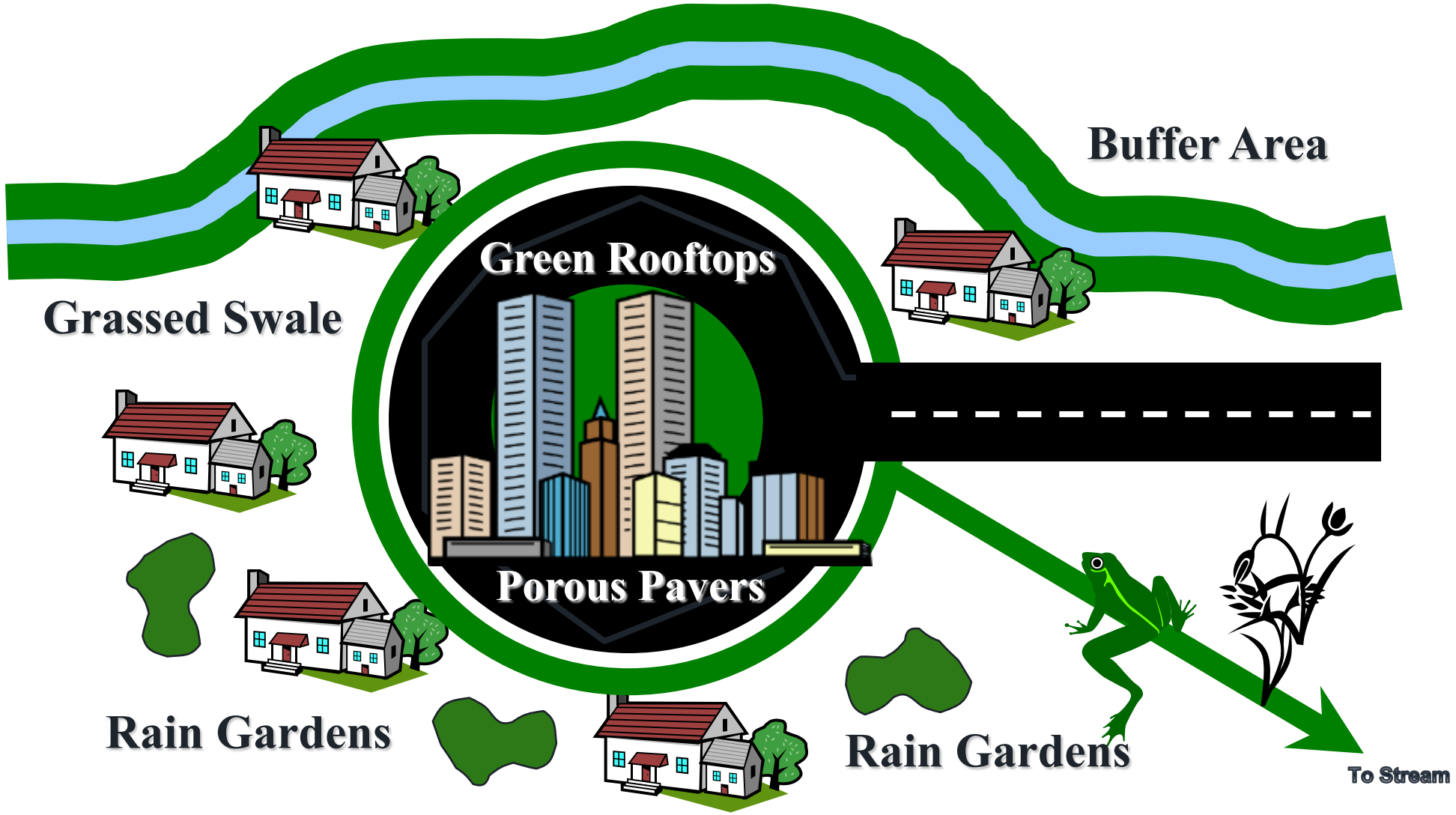
Green approach:

- Use soil & vegetation to manage rainwater close to where it falls, matching pre-development discharge volume

Source: Tompkins County NY (Bioswale)

Green Infrastructure Option for Laramie

Green Stormwater Infrastructure – Addresses Quantity and Quality



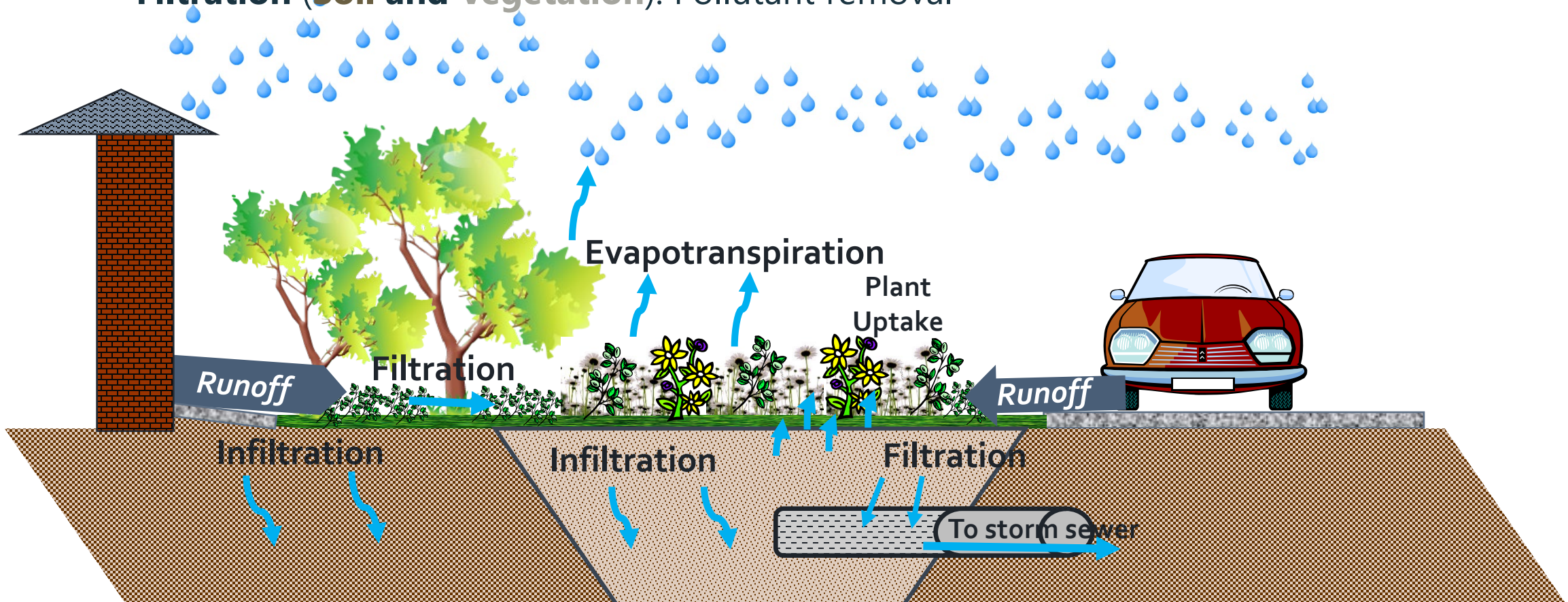
Green Infrastructure Mechanisms

Infiltration (Soil): Volume reduction & pollutant removal

Evapotranspiration (Vegetation): Volume reduction

Plant Uptake (Vegetation): Volume reduction and pollutant removal

Filtration (Soil and Vegetation): Pollutant removal



Green Infrastructure Examples

Green Infrastructure Examples

Photo Credit: Georgia SWM

Key Questions for the Focus Group

Think about these topics as we discuss program assessment in Phase 1.

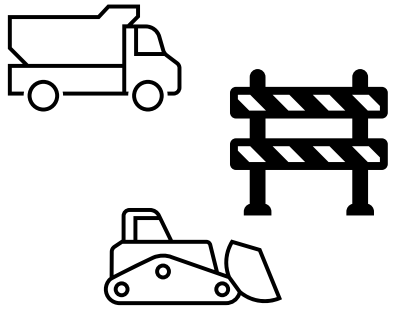
1. What concerns, issues, challenges do you encounter when it rains?
2. What are the expectations of the community for City management of the drainage system?
    a) 1. Key targets and goals for public infrastructure?
    b) 2. Developer responsibilities?
    c) 3. Flood reduction or mitigation?
    d) 4. Water quality improvements and protection?

Stormwater Management Current Services

Key Program Activities

- System design and construction oversight
- Engineering - System Inspection
- Master planning and future needs assessment
- Disaster recovery and incident management
- General operation and maintenance of the drainage network
- Long-range planning
- Customer service
- Administration and finance

Organizational Roles



Public Works - Streets Division

Streets personnel provides routine maintenance such as:

- Street Sweeping
- Cleaning and inspection of inlets
- Cleaning of lateral and main lines
- Flushing system components on problem areas
- Gutter bin installation and maintenance

Parks

Maintenance and operation of stormwater systems in the Parks

Engineering Division

Technical support in planning, design, and implementation of studies and projects

Floodplain administration

Field inspection of reported issues/failures

Courtesy: Ronald Sniffin

Downpour dumps nearly 2.75 inches of rain on city – August 2022

Stormwater Challenges

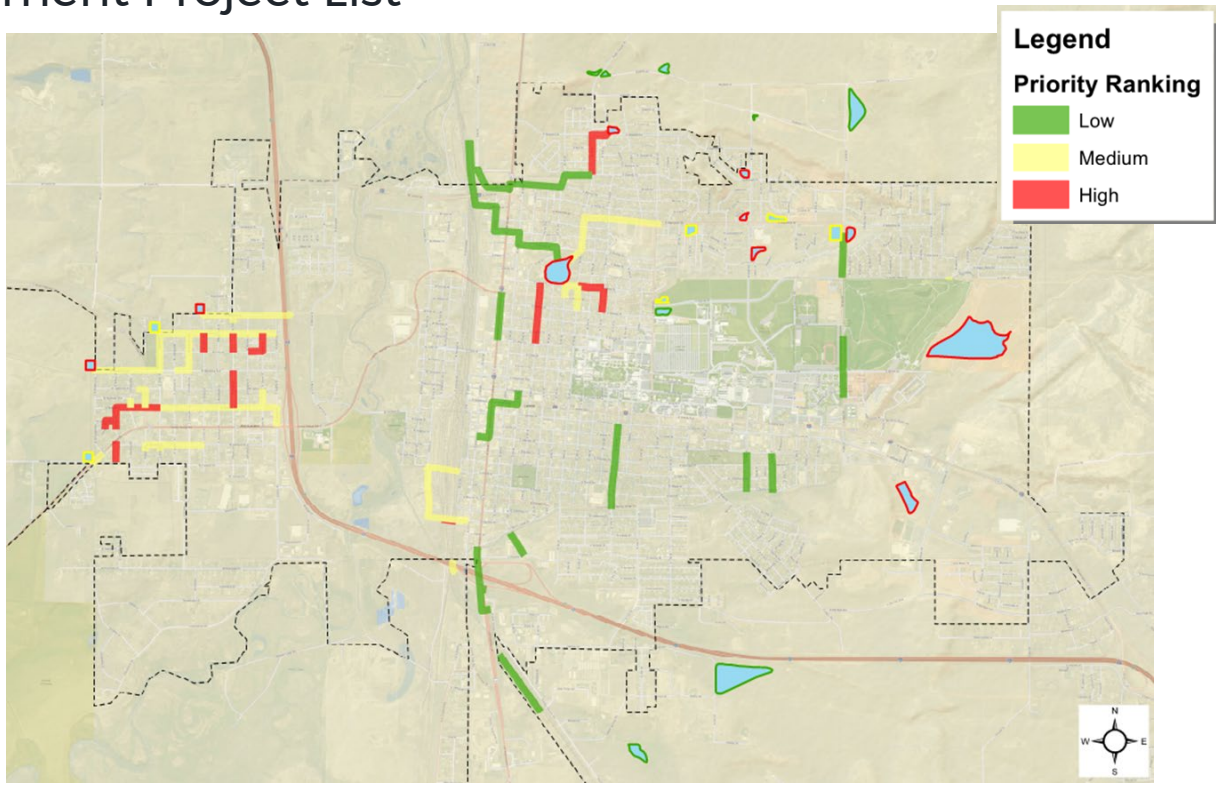
Flooding and Stormwater Issues

- Water Quantity - Increased Flooding
  - Rainfall Volumes & Frequency
  - Urbanization
  - Older Developments
  - Unpaved Streets
- Water Quality - Increased Pollutant Discharges
  - Cleaner Streams and Rivers
  - Impairment of streams may trigger mandates on Laramie (i.e. Town of Jackson)

Citywide Master Plan

1) Combined Three Previous Master Plans (West, North, South) into Single Document
2) Created City-Wide Map of Stormwater System
3) Created City-Wide Model of Stormwater System
4) Developed Prioritized Capital Improvement Project List

Master Plan	Year Completed	Study Area (acres)	Total Cost of Proposed Projects (Adjusted to 2022 dollars)
West Laramie	2010	903	$18.9M
North Laramie	2013	2,560	$48.3M
South Laramie	2017	39,000	$68.3M
Total			**$135.5M**



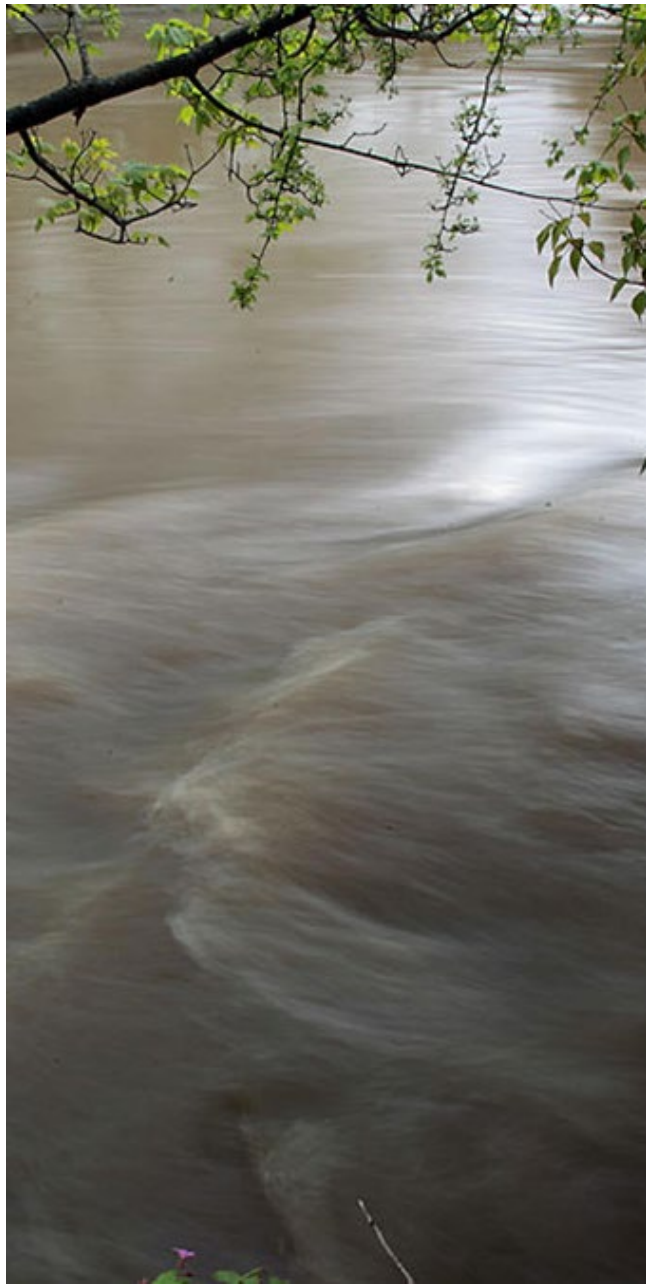
Future Services

Development of Levels of Service (LOS) Options 3 Strategies

Each level provides a variable option and selected LOS can vary across the service areas.

Assumptions are documented for each option within each service.

Services	Basic	Medium	High
Asset Management	X		
Planning and Engineering		X	
Operations and Maintenance			X
Capital Improvements		X	
Administration	X		



Level of Service (LOS) Analysis – 3 Options

Basic

- Increase maintenance capacity
  - Two PW Street Workers
  - New Vac equipment
  - Transferred CCTV from utilities
- Target system cleaning and repair
- Maintain capital investment to address Master Plan over initial 5-to-10-year period
- Utilize engineering contracts for CIP

Median

- Increase maintenance capacity
  - Four PW Street Workers
  - PW Crew Leader
  - Equipment
- Increase engineering capacity
  - Engr. Tech
- Dedicate part-time support for financial management
- Increase CIP investments over 5-to-10-year period and evaluate progress on the Master Plan implementation

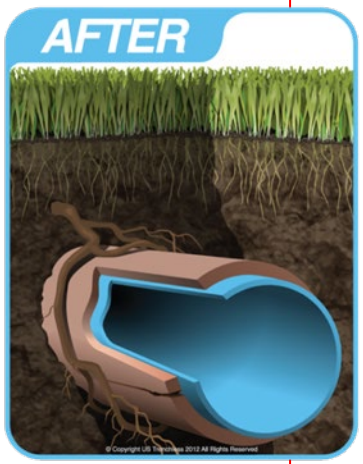
High

- Increase maintenance capacity
  - Six PW Street Workers
  - PW Crew Leader
- Increase engineering capacity
  - SW Engineer
  - SW Engr. Tech
- Dedicate part-time support for financial management
- Increase CIP investments over 5-to-10-year period and evaluate progress on the Master Plan implementation

LOS Summary – Cost Projection

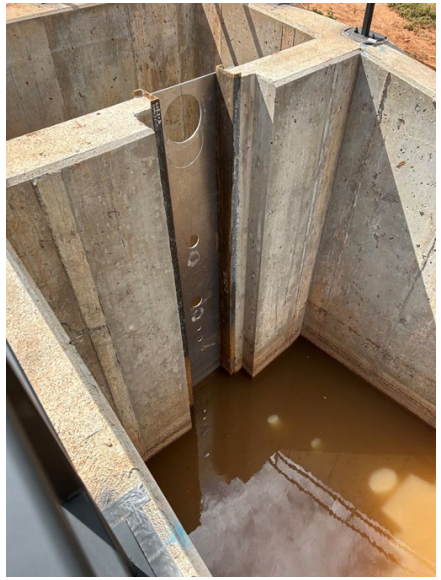
Level of Service	FY22 Baseline	Future Cost Projection
Basic	$915,754	$2,536,329
Medium	$915,754	$6,692,029
High	$915,754	$12,924,469

Phase I – Recommended Improvements



- Implementation of Master Plan capital projects
- Pipe rehabilitation – continued effort through lining pipes
- New system installation for underserved areas of the City
- Improve water quality of runoff – reduce sediment loading into the system
- Expand use of Gutter Bins
- Add staff resources in engineering and maintenance

Gutter Bins, Photos from Frog Creek Partners and City of Laramie

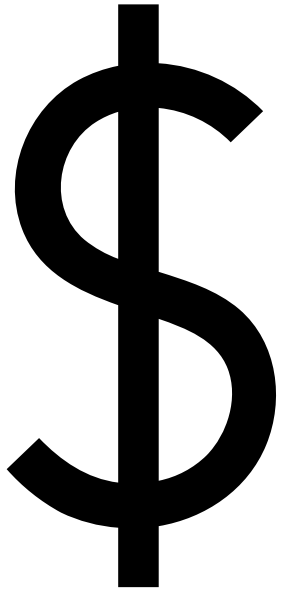


22nd & Nighthawk Pond Retro-fit for Extended Dry Detention

Funding Options

How can drainage services be funded?

- Real Property Tax based on property value
- Special Sales Tax
- Stormwater Drainage Fee
- Special Assessment on benefiting properties
- Grants
- Development fees



Drainage Fees

What is a drainage fee?

- Both a fee and program for services, much in the same way that one pays for water or sewer service.
- Fees are placed in an enterprise fund and can only be used for stormwater purposes.
- Based on demand for a public drainage system, measured by impervious surface.

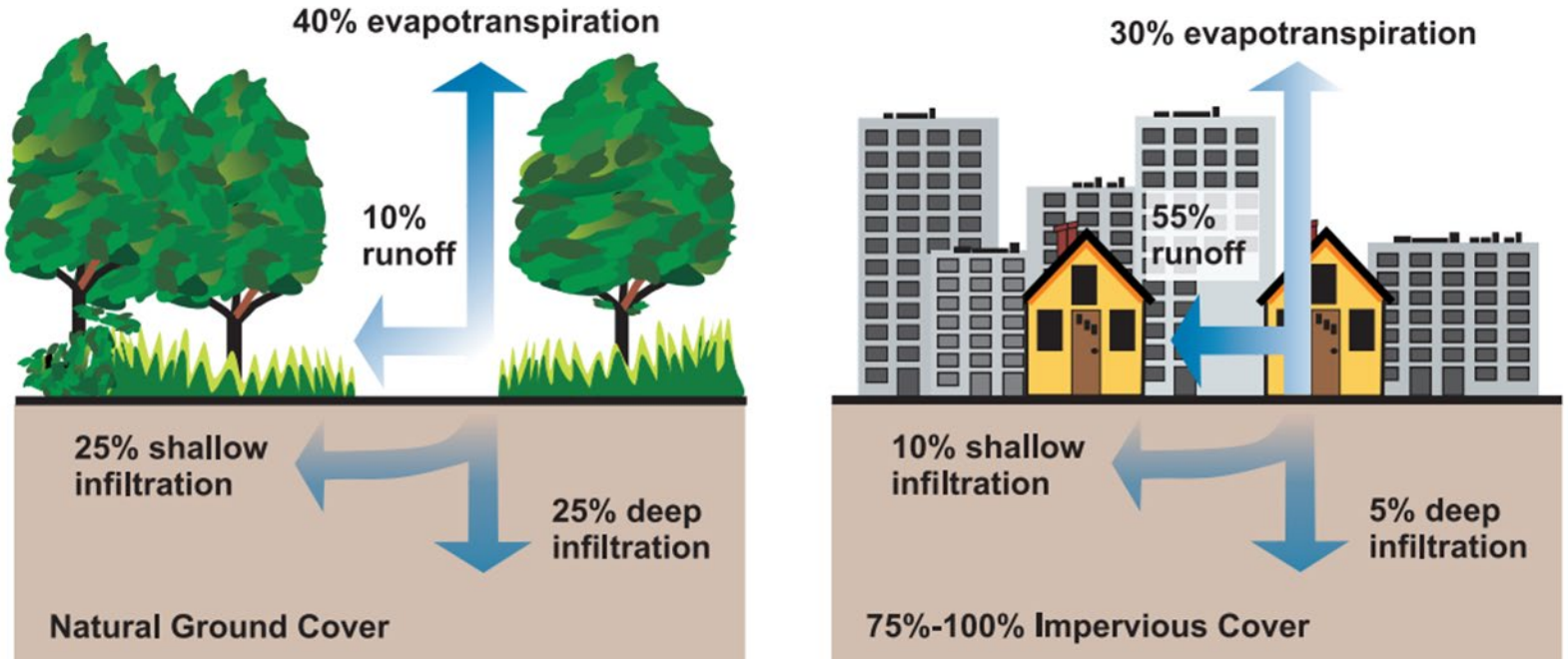
Wyoming legislation authorizes drainage fees for stormwater management in Title 15.

Cody adopted in 2022.

Jackson evaluating in 2023/24

Laramie – Phase I completed in 2022

Impervious Area is the Standard Meter in Stormwater User Fees



Impervious area, such as buildings, sidewalks, driveways, parking, and travel ways, increases the demand for a publicly owned, operated and maintained drainage system. Protects property, life, safe travel, and the natural environment – benefiting all within the community.

Steps for Generation of Revenue

Establish local authority to distribute costs to property owners

Integrate a charge per property as a drainage fee

Track revenue and adjust charges

Communicate progress/achievements

Stormwater Focus Group Expectations and Engagement Process

Role of the Focus Group

Provide advice on the direction of the City's drainage program and potential funding options – including a drainage fee.

Review background developed by the consultant and provide feedback.

Represent a diverse range of interests.

Provide a critical link back to the community.

Accomplishing Your Mission

- Speak your mind and participate actively.
- Listen carefully and be willing to be persuaded.
- Spend the time needed to provide constructive input.
- Consensus is great, but disagreement is fine if we do it agreeably. All points of view will be captured.
- Consider the City's overall needs as well as the needs of the group you represent.

Behind the Scenes – Next Steps

Staff Interviews

- Confirm Phase I information

Analysis of Geographic Information System (GIS)

- Evaluate new data to support drainage fee based on impervious surface area

Analysis of Potential Billing Systems

Finalize program, costs, drainage fee operations

Develop ordinance to adopt fee structure

Discussion and Feedback

1. What concerns, issues, challenges do you encounter when it rains?
2. What are the expectations of the community for City management of the drainage system?
3. What are your suggestions about the Focus Group process?

Thank you

wsp.com