



Stormwater 101 Training

Protecting waterways as a municipal employee

Keep it Clean Partnership

Protect, promote, and improve watershed health in the Boulder St. Vrain basin through sharing resources, building community awareness, and collecting and using data.

Education & Outreach

Promote positive watershed behaviors

Stormwater

Improve collaboration of stormwater management across partners

Watershed

Integrate planning and analysis to highlight watershed issues and improvements



Agenda

- Stormwater
 - Challenges
 - Pollutants
- Municipal Separate Storm Sewer System (MS4)
 - What is an MS4?
 - Stormwater Programs
 - History of MS4
- MS4 Phase II Permit Requirements
- Pollution Prevention for Municipal Staff

Learning Objectives

- Explain what stormwater is, how stormwater pollution occurs, and how it impacts our watershed.
- Understand which municipal operations can have stormwater impacts.
- Identify and explain to others basic pollution prevention tactics for common daily tasks.
- Describe why your community has a stormwater program.
- Know where to find information and contacts for your stormwater program.

Protecting our Watershed

- Protect water quality for safe drinking water and recreational opportunities
- Keep water clean for those who live downstream from us
- Preserving environmental health of streams and water bodies for future generations

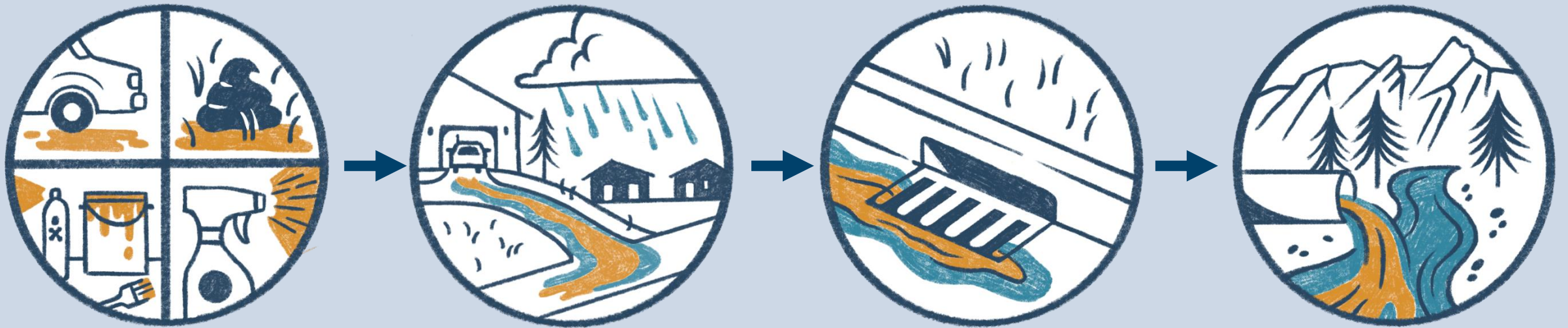




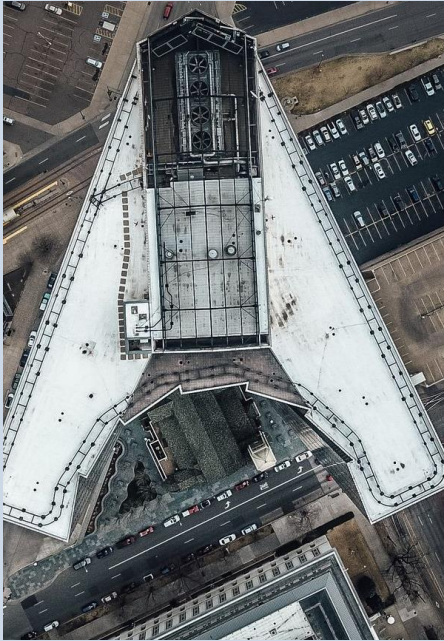
Stormwater

What is Stormwater?

Rain and melting snow flow over our roofs, lawns, sidewalks, and streets and enters storm drains, which lead directly to local creeks. Stormwater is not treated!



Stormwater Challenges



Urbanization

Removal of green space
Increased Imperviousness
Decreased infiltration
Increased stormwater runoff



Increased Flooding

Channelization
Property damage
Loss of life
Nuisance flooding



Channel Instability and Erosion

Water Quality
Sedimentation



Heat Island Effect

Increased energy consumption
Increased air pollution
Decreased human health



Water Quality Impacts

Algal Blooms
E.coli
Trash



Stormwater Pollutants

- Trash
- Oil
- Dirt
- Sediment
- Pet waste
- Human and urban wildlife waste
- Pesticides & fertilizers
- Leaves & grass clippings
- Anything that can be carried through storm drains and harm water quality and aquatic life in our streams



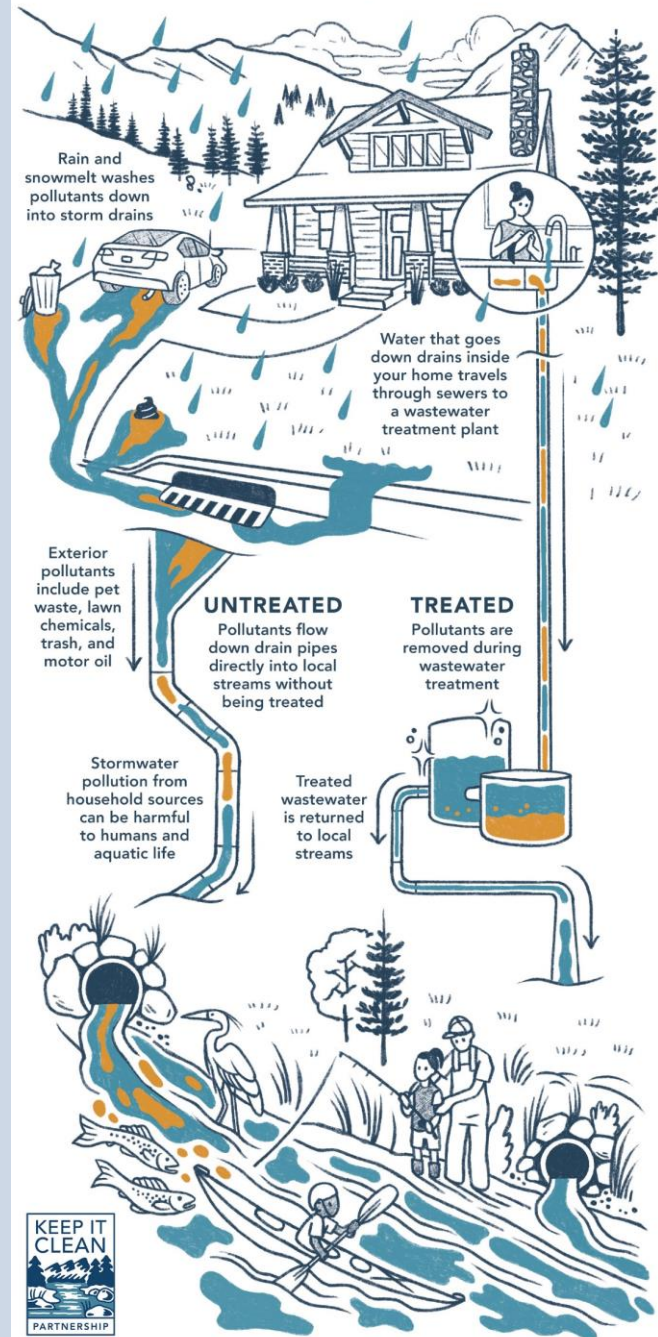
Municipal Separate Storm Sewer System (MS4)

What is an MS4?

An MS4 is a publicly owned or operated stormwater drainage system – this can include streets, pipes, and waterways in the community.

Each regulated MS4 community is required to have a stormwater quality protection program.

Where Does My Water Go?



Stormwater Programs

Stormwater Quality Programs are responsible for protecting the rivers and creeks that flow through our community by maintaining its Municipal Separate Storm Sewer System (MS4).



History of MS4

1972 Federal Clean Water Act

- Makes it illegal to discharge pollutants from a point source to waters of the US, except with a permit
- Created the NPDES

National Pollutant Discharge Elimination System (NPDES)

NPDES is a permitting program which requires authorization to discharge pollutants from a point source into waters of the United States.

MS4 members of KICP have a NPDES permit often referred to as an "MS4 Permit"



MS4 Permit Requirements

Types of MS4 Permits

- There are 3 different types of MS4 permits that apply to communities of different sizes and certain large entities like universities or school districts
 - Phase I MS4 Permit, Phase II MS4 Permit, Non-Standard MS4 Permit
- Our community has a Phase II MS4 permit
- Non-standards are entities like CU Boulder and the Boulder Valley School District

Phase II MS4 Requirements



1) Public Education and Outreach on Stormwater Impacts



2) Public Involvement and Participation



3) Illicit Discharge Detection and Elimination



4) Construction Sites Runoff Control



5) Post-Construction Stormwater Management in New Development and Redevelopment



6) Pollution Prevention/Good Housekeeping for Permittee's Operations



Pollution Prevention for Municipal Staff

What daily on-the-job activities could be potential sources of pollution?

Parks and Open Space

Public Works

Maintenance

Landscapers

Construction staff

Municipal Sources of Pollution



All municipal staff should know how to report stormwater pollution in their community.

Pollution Prevention Good Housekeeping



Outdoor Cleaning



Secure trash, recycling, and compost bin lids



Use dry cleanup methods such as sweeping, vacuuming, and using absorbents on spills

Outdoor Cleaning

Wash water may be disposed of into a sanitary sewer drain



Contain wash water and use equipment to protect storm drains

Landscaping Activities



Avoid sprinkler
overwatering



Keep storm drains clear of
grass clippings and
fallen leaves

Landscaping Activities

Follow procedures for fertilizer and pesticide application.

In general,

- Only certified pesticide applicators should apply chemicals
- Don't apply on a windy day or before a precipitation event
- Don't apply near water bodies
- Keep spill kits on hand



Safe Material Storage

Materials should be clearly labeled and safely stored in covered areas and/or have secondary containment.



Deicing Operations



Store and handle salts securely, prevent them from washing away



Do not apply if rain is expected prior to the snow



Limit use of deicers as much as possible without compromising safety

Vehicle, Equipment Maintenance & Washing



Use wash bays or commercial vehicle washing stations connected to sanitary sewers



Check vehicle parking areas for spills

Vehicle, Equipment Maintenance & Washing



Always carry a spill kit



Repair vehicles and equipment promptly



Contain and clean spills immediately, no matter the size

Spill Procedures and Reporting

Ask about your department's spill procedures for outdoor activities

Know where your spill response kit is and how to use it



Spill Procedures and Reporting

Each community has a way to report spills – know who and how to report stormwater pollution.

Report Stormwater Pollution

Fill out this form in as much detail as you can and we'll make sure the right staff are notified to respond to this incident. Using this form is preferred and will likely reduce response times, but if you would prefer to contact someone directly you can view a list of contacts at the bottom of this page.

I would like to report anonymously

Name

First

Last

Phone

Email

Jurisdiction *

Location description *

Always Protect Storm Drains

- When working outdoors, locate storm drains and assess whether activities could impact them
- Prevent anything except clean rainwater from going into the drains



Training Material Sources

Colorado Stormwater Council MS4 Permit Training, 2021

City of Longmont Training Materials, 2021-2022