



# **General Stormwater Awareness Training**

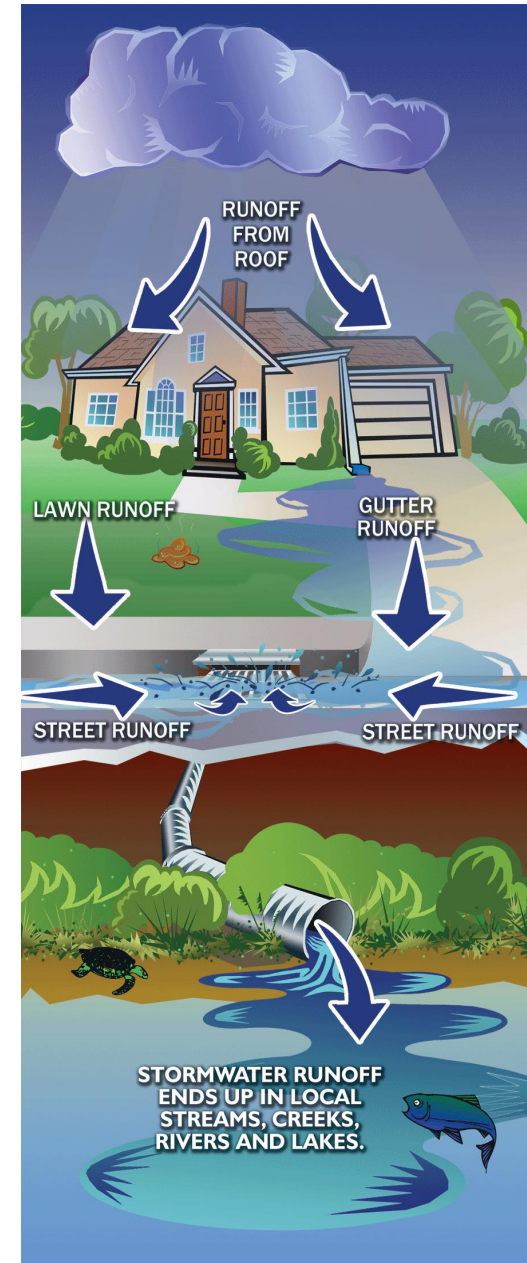
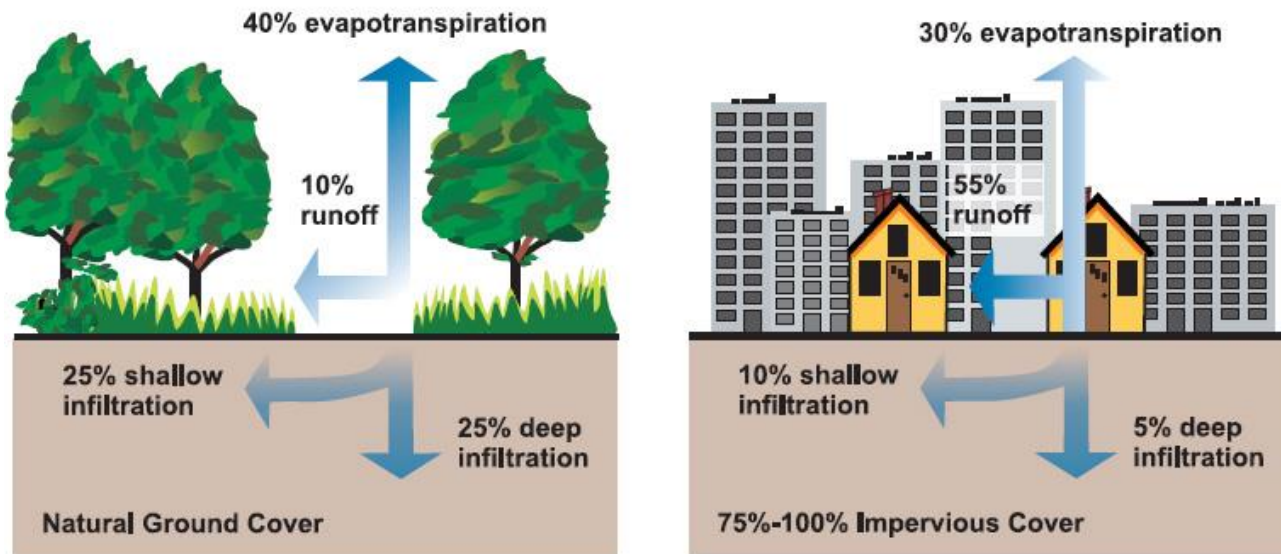
Environmental Health, Safety & Risk Management



# What is Stormwater?

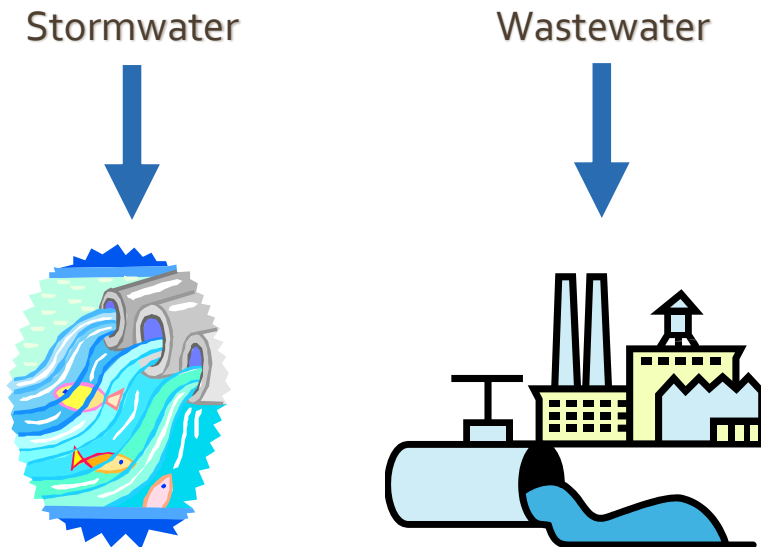
- Stormwater is precipitation (rainwater) that originates during a storm event.
- Rainwater that does not soak into the soil and grass is called **stormwater surface runoff**. This stormwater runs off impervious covers such as roofs, streets, parking lots, concrete, etc.

More impervious cover = more runoff *Not good*



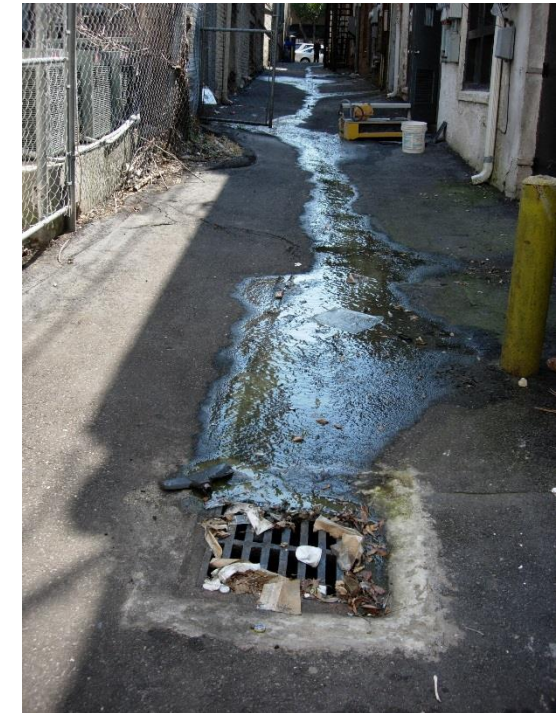
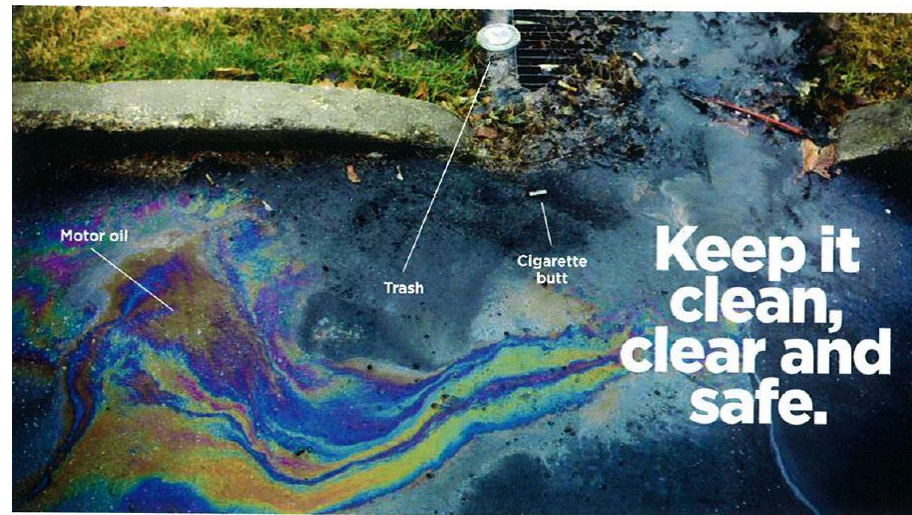
# Where Does it Go?

- Stormwater runoff flows toward storm drains and into a system of underground piping
- Stormwater runoff flows directly into our creeks and rivers, **untreated and unfiltered**



# Stormwater Runoff: The Dirty Truth

- Stormwater runoff contributes to problems in water quantity (flooding) and water quality (pollution)
- Unfiltered stormwater can have contaminants and bacteria such as:
  - Oil and gasoline
  - Fertilizers
  - Pesticides
  - Soil
  - Soap
  - Grass clippings
  - Litter
  - Pet waste
  - Cigarette butts



**The only thing that should go down storm drains is clean rainwater!**

# San Marcos River

The San Marcos River is our treasured water for recreation...



# San Marcos River

...and home to several threatened and endangered species.



Texas Blind Salamander (Endangered)



Texas Wild Rice (Endangered)



San Marcos Salamander (Threatened)

Please be respectful of this sensitive and unique environment. It's not just a fun place to tube, kayak or fish. The river is their home.

## What's Wrong With This Picture?



Due to contaminants in the water, the oxygen amount is low, and this fish cannot breathe. These can be sediment particles, litter, fertilizers, pesticides, herbicides, or any other physical or chemical contaminate that should not be in stormwater runoff.

# What's Wrong With This Picture?



Leaves/yard waste that is not disposed of properly (bagged up and/or composted) can end up in storm drains and result in plugging of the storm drain system and pollution of the river.

# What's Wrong With This Picture?



Bulky waste left on the side of the road can contribute to stormwater pollution.

# What's Wrong With This Picture?

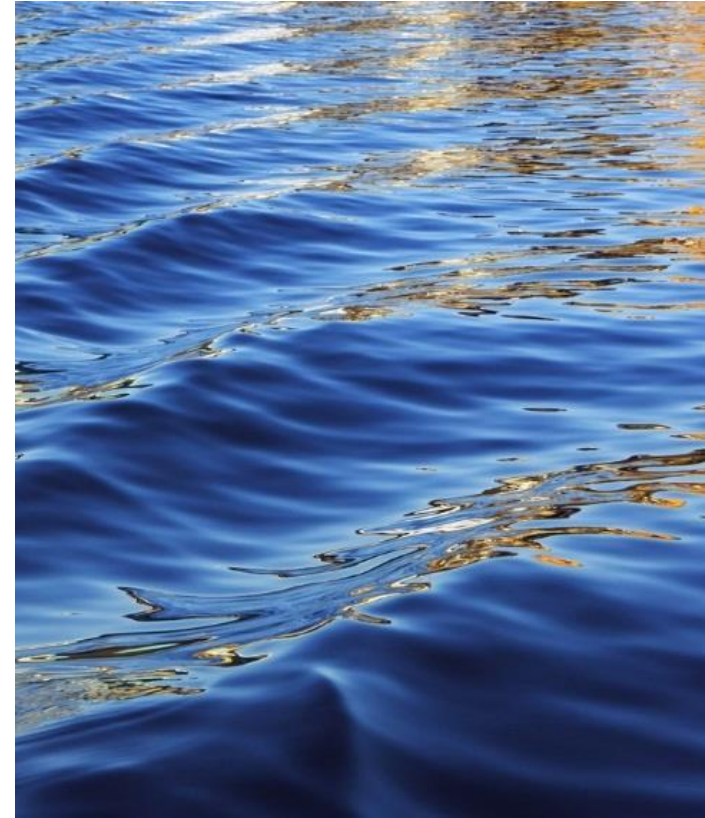


Unstabilized soil at this site lead to sediment in the stormwater runoff.



# **Stormwater Runoff Pollution Prevention**

A Joint Effort



# MS<sub>4</sub> Permit

- San Marcos was designated as an urbanized area as of 2010
  - Population measured at 50,000 by census
  - More people = more urbanization = more potentially polluted stormwater runoff
- Municipal Separate Storm Sewer System (MS<sub>4</sub>) Permit
  - Mandated by the Texas Commission on Environmental Quality (TCEQ)
  - Requires Texas State to take extra measures to protect our natural resources
  - Texas State permit issued 11-12-2014 has several requirements, one of them is training

# Texas State: What We Do to Prevent Stormwater Pollution

## Sediment and erosion controls at construction sites



### Proper use of silt fencing

- Designed to capture sediment so it does not exit the site during rainfall
- In good condition
- No holes, not falling over



### Proper use of curb inlet protection

- Designed to prevent sediment/ other contaminants from entering the storm drain system
- In good condition
- No holes, not pulled back

# Texas State: What We Do to Prevent Stormwater Pollution

## Post-Construction Best Management Practices



Rain Garden/Retention Pond

- Designed to hold water and filter it before exiting

Porous Paver Parking Lot

- Acts like a field of grass, designed to filter water before exiting
- Virtually no runoff



Rainwater Cistern

- Collects and filters water from roof, used for vegetation watering

There is more we can do...

# What Can You Do?

- Respect and protect our river
  - Don't litter, pick up trash others leave behind
  - Recycle your cans & water bottles
  - Encourage others to do the same
- Good Neighbor Practices
  - Bring back whatever you take to the river (cans, bottles, etc.)
  - Consider use of reusable containers
  - Mesh bags for single-use containers



# What Can You Do?

- Report Illegal Dumping
  - Don't throw items or dump chemicals down storm drains
- If you see someone doing it, report it immediately
  - Call the local stormwater manager
  - Be aware of your surroundings (address, street names)
  - Try to get a picture if possible
  - Do not pick up materials; they could be hazardous
- Report any illegal activity to either of the contacts below
  - City of San Marcos: (512) 393-8036
  - Texas State University, EHSRM: (512) 245-3616
  - We will be administering a hotline number this year, stay tuned!



# What Can You Do?

- Dispose of materials properly
  - Household Hazardous Waste Drop-Off & Bulky Waste Pick-Up
    - Call City of San Marcos 512-393-8026
    - Service is for residents only
  - On-campus Recycling
    - EHSRM Office – 512-245-3616
    - Batteries
    - Ink Jet Cartridges
    - Electronics
    - Cell phones
    - Pack it Up and Pass it On
- Pick up after your Pooch
  - Pet waste not disposed of properly can end up in the river
  - Bacteria in waste can make swimmers sick



# What Can You Do?

- Volunteer!
  - Great Texas River Clean Up
  - Electronics Recycling Event
  - Keep San Marcos Beautiful Adopt-a-Spot
  - Storm Drain Marker Program
  - Community Relations Volunteer Newsletter

In San Marcos, we keep  
our river clean!



Be on the lookout for Sally the Salamander!



# Winning Manhole Cover Art



San Marcos and Texas State hosted a manhole cover art contest in the Fall of 2013. The winning art (shown left) was chosen to differentiate storm drains from other manhole covers around town and on campus.

# Stormwater Quiz

You will now take a short quiz to test your knowledge on stormwater.

## Question 1

Which of the following are permitted to go down a storm drain?

- Leaves
- Biodegradable soap like Simple Green
- Cigarette butts
- Only rainwater

# Answer

Which of the following are permitted to go down a storm drain?

- Only rainwater

## Question 2

Why do we have to protect the rivers and creeks around San Marcos?

- It's a popular place for swimming, kayaking and tubing & we should protect the river users
- There are several threatened and endangered species and we should respect their habitat
- Texas State is responsible for managing its stormwater through the MS4 permit
- All of the above

# Answer

Why do we have to protect the rivers and creeks around San Marcos?

- All of the above

## Question 3

If you're a resident of San Marcos, who can you call to remove bulky waste from your yard (couches, beds, etc.)?

- The EHSRM office at Texas State
- The City of San Marcos
- Don't call anyone, leave it there & someone will eventually come by and pick it up

# Answer

If you're a resident of San Marcos, who can you call to remove bulky waste from your yard (couches, beds, etc.)?

- [The City of San Marcos](#)

## Question 4

It's raining and you see a can floating down the street and into a storm drain. Where will it go?

- The nearest waterway, a river or creek, untreated and unfiltered
- To the wastewater treatment plant
- It will be treated and filtered then discharged into the nearest waterway

# Answer

It's raining and you see a can floating down the street and into a storm drain. Where will it go?

- The nearest waterway, a river or creek, untreated and unfiltered

## Question 5

What do you do if you see someone dumping a container of unknown material down a storm drain?

- It's ok, this practice is not prohibited; call no one
- Call the EHSRM office at Texas State or the campus hotline number
- Try to take a picture and know your location so you can properly report
- B and C only

# Answer

What do you do if you see someone dumping a container of unknown material down a storm drain?

- B and C only

# Questions?

## **Contact Information:**

Environmental Health, Safety and Risk  
Management Office

512-245-3616