

## Taylor the Trout

Students will read an interactive story about Taylor the Trout, a fish who lives in a clean river but encounters various forms of pollution as they travel downstream. As each new part of the story is read, a student will add a "pollutant" to the water (using items like food coloring, cocoa powder, baking soda, etc.). This visual simulation helps students observe the cumulative impact of pollution on water quality and aquatic life.

### MATERIALS

- Map of the Deschutes Basin
- Photos of storm drains
- Aluminum tray or similar container with clean water
- Fish-shaped sponge
- Story cards (12)
- (10) Plastic ramekins with:
  - Soil
  - Soapy water
  - Shredded paper
  - Salt
  - Cocoa powder
  - Green & red food coloring mixed with water
  - Brown sugar
  - Baking soda
  - Vinegar

### Oregon Department of Education Goals

The *Taylor the Trout* activity can help teachers meet Oregon Department of Education common curriculum goals and benchmarks for 3<sup>rd</sup> grade within the following areas:

**Science Inquiry-** Use interrelated processes to pose questions and investigate the physical and living world.

**Earth and Space Science-** Understand physical properties of the Earth and how those properties change.

**Physical Science-** Understand structures and properties of matter and changes that occur in the physical world.

**Social Science-** The study of the social sciences prepares students for responsible citizenship. It enables students to evaluate historical and contemporary issues, understand global relationships, and make connections between the past, present and future.

**Science in Personal and Social Perspectives-** Understand that science provides a basis for understanding and acting on personal and social issues.

### GOALS AND OBJECTIVES

*Students will be able to:*

- Define what stormwater is and describe where it goes.
- Identify at least three types of pollutants that enter rivers through stormwater runoff.
- Explain how pollution affects the environment and organisms within.
- Suggest solutions for reducing stormwater pollution in their communities.

## BACKGROUND

The Deschutes River begins as groundwater at Little Lava Lake in the Central Oregon Cascade mountains. As groundwater, the water that fills Little Lava Lake is very cold and clean. The Deschutes River then flows south out of Little Lava Lake and into Crane Prairie reservoir where the river is impounded by a dam used to store water for irrigation. The water then continues to flow south into Wickiup Reservoir. Wickiup is also used to store water for irrigation purposes. As the water of the Deschutes River is released out of the dam that creates Wickiup, water quality is affected by various factors as the river flows north toward Sunriver, Bend, and eventually into Lake Billy Chinook.

Unnatural high and low flows out of Wickiup Reservoir contribute to water quality challenges. When streamflow is low during the winter, streambanks and the streambed are exposed and fish redds (nests) are dewatered. When increased water is released out of Wickiup in the spring, high stream flows scour the stream banks and erode the loose volcanic soils. This leads to streambank erosion, turbidity, and sedimentation. The unnatural flow conditions also contribute to high stream temperatures that are too warm for native fish like Redband trout and sensitive aquatic macroinvertebrates in the summer months. Therefore, the primary challenges that affect water quality and instream habitat conditions for native fish and other aquatic species in the Deschutes river are turbidity, sedimentation, and temperature.

The following short videos are great resources to learn about stormwater, and can also be shown to students to enhance the activity:

- [Stormwater in Bend](#) (4 minutes)
- [Managing Stormwater Runoff](#) (2 minutes)

## KEY TERMS

**Pollutants** – A substance or energy introduced into the environment that has undesired effects or adversely affects the usefulness of a resource. Something that contaminates, or dirties, the environment.

**Runoff** – The draining away of water from the surface of land, buildings, or structures.

**Sedimentation** – The process where eroded soil and other particles (sediment) carried by water are deposited and accumulate within the watershed's drainage system.

**Stormwater** – Any rainwater or melting snow or ice that does not naturally percolate into the ground or evaporate but flows over the surface of the land to nearby stormwater collection systems, rivers, lakes, or streams.

**Turbidity** – The cloudiness or haziness caused by suspended particles that scatter and absorb light, reducing water clarity.

## PRE-ACTIVITY

*Preparation:* Ensure all ramekins are filled with the correct “pollutant”. The story card numbers should match the numbers on the ramekins. Review the Deschutes Basin watershed map.

*Discussion:* Introduce students to the idea that what happens on land affects the water in rivers and streams. Show students the map of the Deschutes River and explain that everything that happens on the land affects the river. Show photos of storm drains and explain that many storm drains, including here in Bend, lead directly to rivers, streams, or oceans. Everything that ends up in the water in storm drains can have an impact on our watersheds and the organisms within.

Explain to students that today we’re going to follow the journey of a native Redband trout named Taylor. Taylor lives in the Deschutes River. As Taylor swims downstream, we will see what kinds of things end up in the water and how that affects Taylor and other animals that live there.

### *Questions:*

- What happens to rainwater after it hits the ground? Where does it go?
- What is stormwater?
- How can stormwater impact our rivers and streams?

## PROCEDURE (15-20 minutes)

1. Fill an aluminum tray or similar container about halfway full of clean water.
2. Place the sponge fish, Taylor, into the water.
3. Put Taylor the Trout on display so all students can see.
  - *Note: Displaying Taylor under your classroom camera and having it displayed through the projector is a great option for this.*

4. Gather students to read the story of Taylor the Trout to understand the impacts of stormwater pollution.
5. Hand out the story cards (10).
6. Hand out “pollutants” to students (10 ramekins).
  - If there are students without jobs, you can have them pair up, read the intro to the story, or have them create their own source of “pollution” they can add (Bits of plastic, eraser chunks, or other things you can find in your classroom can be used). Get creative!
7. Read the opening part of Taylor’s story aloud.
8. Have the student with story card #1 read their card aloud.
9. The student with pollutant #1 should now dump the contents of their ramekin into Taylor’s water.
10. Continue reading story cards and dumping pollutants into Taylor’s water.
11. Ask students to make observations about what is happening to Taylor and the water Taylor is swimming in.

### Story:

Intro: “Imagine a clean river as it meanders through a protected wilderness area. In this river lives Taylor the Trout. How is Taylor? Taylor has lived on this stretch of the river all their life. But now they are going on an adventure to travel downstream.”

1. First, Taylor swims into farm country. Taylor passes a freshly plowed riverbank. It begins to rain, and some soil erodes into the river. **(Dump soil into the water).**
2. Taylor swims beside a large parking lot. Some cars parked on it are leaking oil. The rain is washing the oil into the river below. **(Pour soapy water into the water).**
3. Taylor swims past the city park. Some picnickers didn't throw their trash into the garbage can. The wind is blowing it into the river. **(Sprinkle paper into the water).** How is Taylor?
4. During a recent cold spell, ice formed on a bridge. County trucks spread salt on the road to prevent accidents. The rain is now washing salty slush into the river. **(Put salt into the water).**
5. Taylor hears barking while swimming by a dog park. Some owners did not pick up their dog’s waste. The rain is now washing some of the poop into the river. **(Put cocoa powder into the water).**
6. As spring begins, some homeowners spread fertilizer on their lawns so their grass will grow faster. This is now getting washed into the river. **(Drop green food coloring into the water).** How is Taylor?
7. Taylor is starting to have a hard time breathing. The fertilizer in the river made algae grow fast. Eventually, some layers of algae stop getting sunlight and die. As it decays, it uses up the oxygen in the river. **(Put brown sugar into the water).**

8. A family cleans out their garage and finds a bucket with a skull and crossbones on it. They don't know what it is and decide to dump the hazardous waste down the storm drain. **(Drop red food coloring into the water).**
9. Another family just finished washing their cars in their driveway. Soapy water mixed with cleaning chemicals runs into storm drains, which lead directly to the river. These detergents can change the river's chemistry and harm aquatic plants and animals. **(Add baking soda to the water).**
10. Taylor swims past a factory that produces chemicals. There was an accidental spill, and some acidic waste leaked into the river. **(Pour vinegar into the water).**

“Taylor’s journey has shown us how human activities impact rivers and the creatures that live in them. Taylor started out in a clean and healthy river, but as Taylor traveled downstream, they encountered soil erosion, fertilizers, oil, trash, chemicals, and other pollutants. Each of these added stresses to the environment, making it harder for Taylor to survive.”

“Looking at Taylor now, how does the water compare to how it looked when we started? Would you want to live in this water? Taylor’s story reminds us of the importance of protecting rivers by making responsible choices, such as keeping litter out of waterways, limiting chemical use, and following pollution regulations. What can we do to help Taylor and rivers like his stay clean and healthy? Let’s brainstorm some ideas together!”

## DISCUSSION

The discussion for this activity can go in several directions, depending on your focus.

Questions to consider:

- How has the water quality changed because of the stormwater runoff?
- Is there anything our community can do to help Taylor and other aquatic wildlife?
- What are three ideas of ways that Taylor’s water could have been protected from stormwater pollutants?
- What stormwater tools can be used to protect Taylor and our groundwater supplies from stormwater pollutants?
- Did each person who added pollution mean to hurt Taylor?
- What happens when lots of small actions add up?
- Do you think pollution upstream can affect people or animals far away?

Other debrief activities include:

- Conduct a **“Think-Pair-Share”** on what actions students can take at home or at school to prevent pollution.

- **“Agree or Disagree”:** Divide the classroom into two sides. One side is “Agree”, the other side is “Disagree”. Read off statements and ask students to walk to the side of the classroom that reflects their opinion. Statement options include:
  - *Pollution always comes from people who don’t care.*
  - *One person can make a big difference in keeping rivers clean.*
  - *Trash in a parking lot can end up in a river.*
  - *Pollution only comes from people who live right next to the river.*
  - *The river always looks clean, so it must be healthy.*
  - *We all live in a watershed.*
  - *I can help protect our watershed.*
  - *Water moves from high places to low places.*
  - *If I were Taylor the Trout, I’d feel scared in the dirty water.*
  - *Taylor would be fine if just one family dumped soap down the storm drain.*
  - *Everyone should be taught how to protect water.*
  - *The government should do more to stop water pollution.*
  - *Kids can be water protectors too.*

## EXTENSION IDEAS

1. Ask students to write about or draw creative solutions to help Taylor.
  - What are some ideas they have to keep our stormwater clean?
2. Do a storm drain walk near the school. Take students outside and follow the path where stormwater around the school flows.
  - What are some things they see that can pollute stormwater? Is there trash in the parking lot? Oil? Pesticides?

Imagine a clean river as it meanders through a protected wilderness area. In this river lives Taylor the trout.

How is Taylor? Taylor has lived in this stretch of the river all their life. But now Taylor is going on an adventure to travel downstream.



2. Taylor swims beside a large parking lot. Some cars parked on it are leaking oil. The rain is washing the oil into the river below.

**(Pour soapy water into the water)**

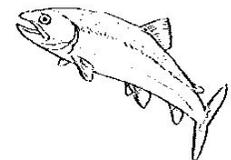
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**(Dump soil into the water)**

3. Taylor swims past the city park. Some picnickers didn't throw their trash into the garbage can. The wind is blowing it into the river.

**(Sprinkle paper into the water)**

How is Taylor?

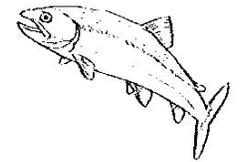


4. During a recent cold spell, ice formed on a bridge. County trucks spread salt on the road to prevent accidents. The rain is now washing salty slush into the river.

**(Put salt into the water)**

6. As spring begins, some homeowners spread fertilizer on their lawns so their grass will grow faster. This is now getting washed into the river.

**(Drop green food coloring into the water)**



How is Taylor?

5. Taylor hears barking while swimming by a dog park. Some owners did not pick up their dog's waste. The rain is now washing some of the poop into the river.

**(Put cocoa powder into the water)**

7. Taylor is starting to have a hard time breathing. The fertilizer in the river made algae grow really fast. Eventually, some layers of algae stop getting sunlight and die. As it decays, it uses up the oxygen in the river.

**(Put brown sugar into the water)**

8. A family cleans out their garage and finds a bucket with a skull and crossbones on it. They don't know what it is, and decide to dump the hazardous waste down the storm drain.

**(Drop red food coloring into the water)**

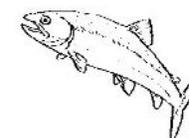
9. Another family just finished washing their cars in their driveway. Soapy water mixed with cleaning chemicals runs into storm drains, which lead directly to the river. These detergents can change the river's chemistry and harm aquatic plants and animals.

**(Add baking soda to the water)**

10. Taylor swims past a factory that produces chemicals. There was an accidental spill, and some acidic waste leaked into the river.

**(Pour vinegar into the water)**

How is Taylor?



Taylor's journey has shown us how human activities impact rivers and the creatures that live in them. Taylor started out in a clean and healthy river, but as Taylor traveled downstream, they encountered soil erosion, fertilizers, oil, trash, chemicals, and other pollutants. Each of these added stress to the environment, making it harder for Taylor to survive.

Looking at Taylor now, how does the water compare to how it looked when he started? Would you want to live in this water? Taylor's story reminds us of the importance of protecting rivers by making responsible choices, such as keeping litter out of waterways, limiting chemical use, and following pollution regulations.

What can we do to help Taylor and rivers like his stay clean and healthy? Let's brainstorm some ideas together!

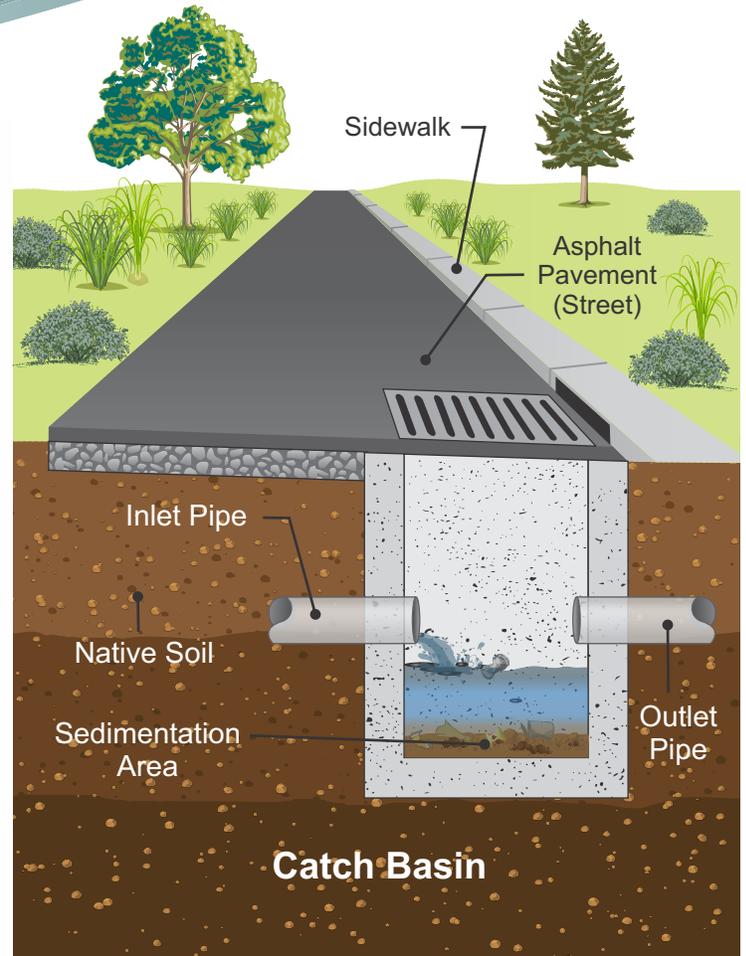
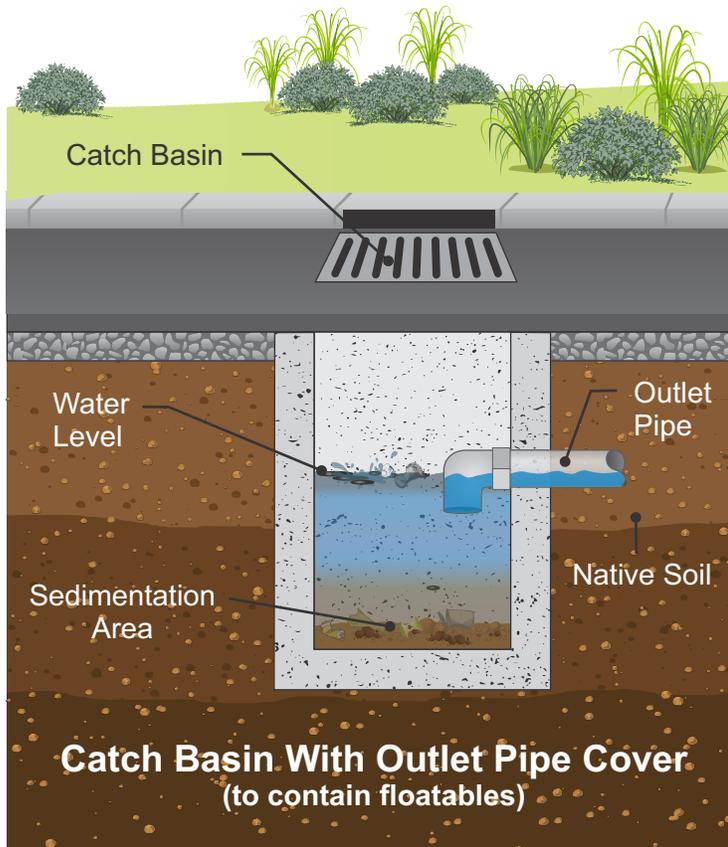


# CATCH BASIN

## Maintenance Guideline



UTILITY DEPARTMENT



### What does your Catch Basin do? Why is it important?

Catch basins are designed to trap sediment, debris, and potentially oil/floatables in the case of catch basins with outlet pipe covers, before discharging stormwater to a disposal point. The catch basin(s) on your property makes a significant positive impact on water quality by being the first line of defense in preventing pollutants from entering our beloved Deschutes River and underground drinking water supplies. If maintained correctly, they also help prevent clogging of our stormwater facilities and thus prevent localized flooding.

### Why is it important to maintain your Catch Basin(s)?

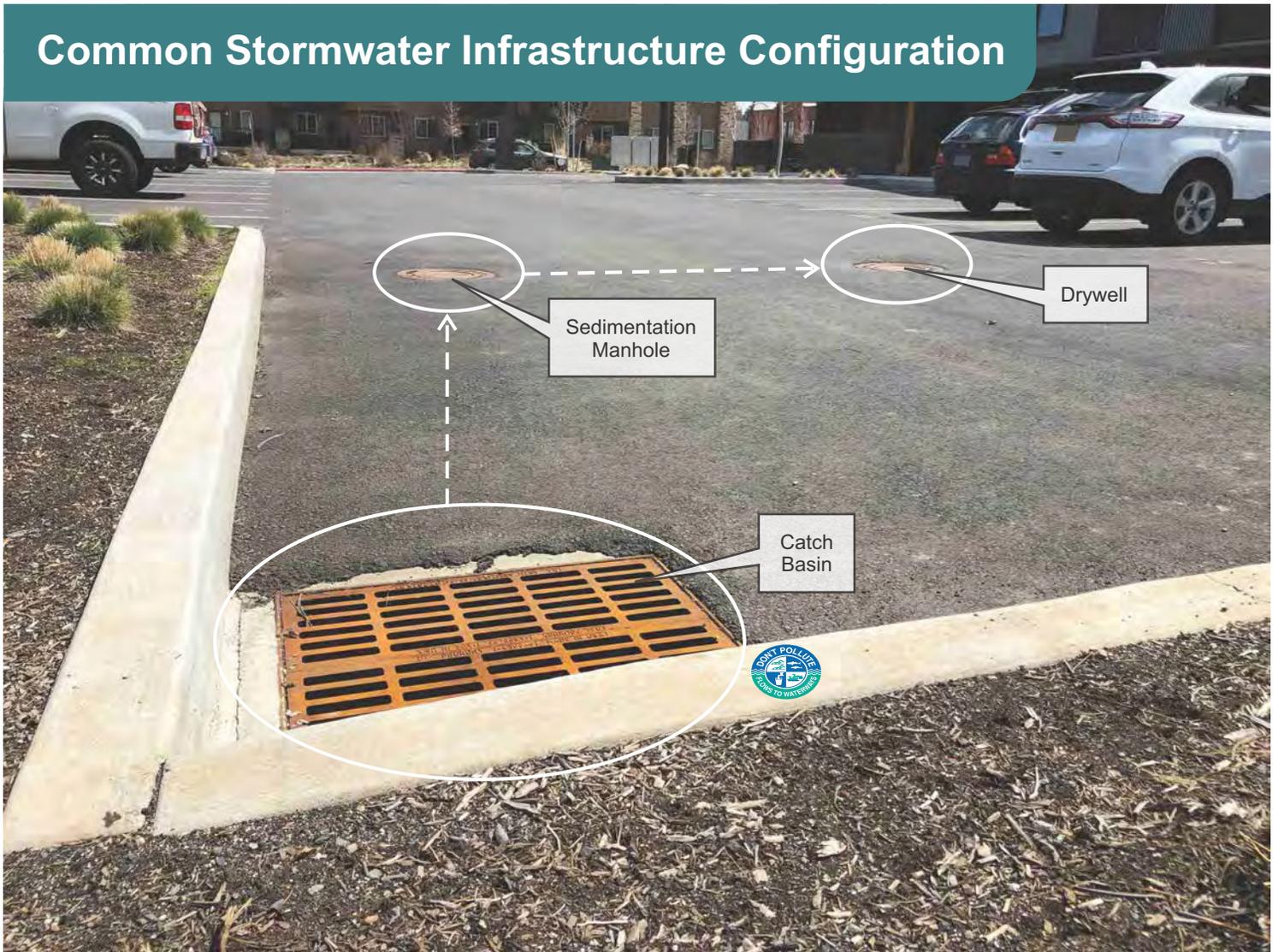
Without proper maintenance, catch basins will fail to trap sediments and pollutants which could result in facility clogging and localized flooding. It is important to ensure that catch basins do not become too full of sediments or floatables. In Bend, our stormwater facilities serve an important function and property owners are required to keep and maintain them per Bend Code Title 16. Just remember, a few things will go a long way in the effort to keep our waters clean and to prevent localized flooding. Start by inspecting your catch basins in the spring and fall each year, and adjust to more often if site conditions warrant.

### What tools do you need?

Maintenance schedules for catch basins vary depending on flow volumes and sediment loading. Routine maintenance requires the use of a vacuum designed to suck up the water and sediment. In most places, there are local contractors that provide this service for a fee. Regularly inspecting your facility to monitor sediment and floatable levels is critical. Carrying the attached checklist, pen, a copy of your site plan, lid puller, steel toe boots, flashlight and a rigid sediment measuring device is a good way to ensure a safe and complete inspection can be performed.



# Common Stormwater Infrastructure Configuration



## Bad Example



Inspect sediment level in catch basin to determine if maintenance is needed.

Debris and sediment in drainage area should be swept up to prevent clogging and flooding.

## Good Example



During construction prefabricated filter inserts should be used to protect catch basins from sediment and debris. These inserts need to be maintained per manufacturer recommendations and removed once permanent vegetation is established as the project is completed.

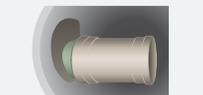
# Catch Basin Inspection and Maintenance Checklist

Property Address \_\_\_\_\_ Property Owner \_\_\_\_\_

FacilityName/Designator \_\_\_\_\_ Date of Inspection \_\_\_\_\_

Type of Inspection:  Pre-rainy Season  Monthly  Quarterly  Annual  Re-inspection<sup>1</sup>

Inspector(s) \_\_\_\_\_

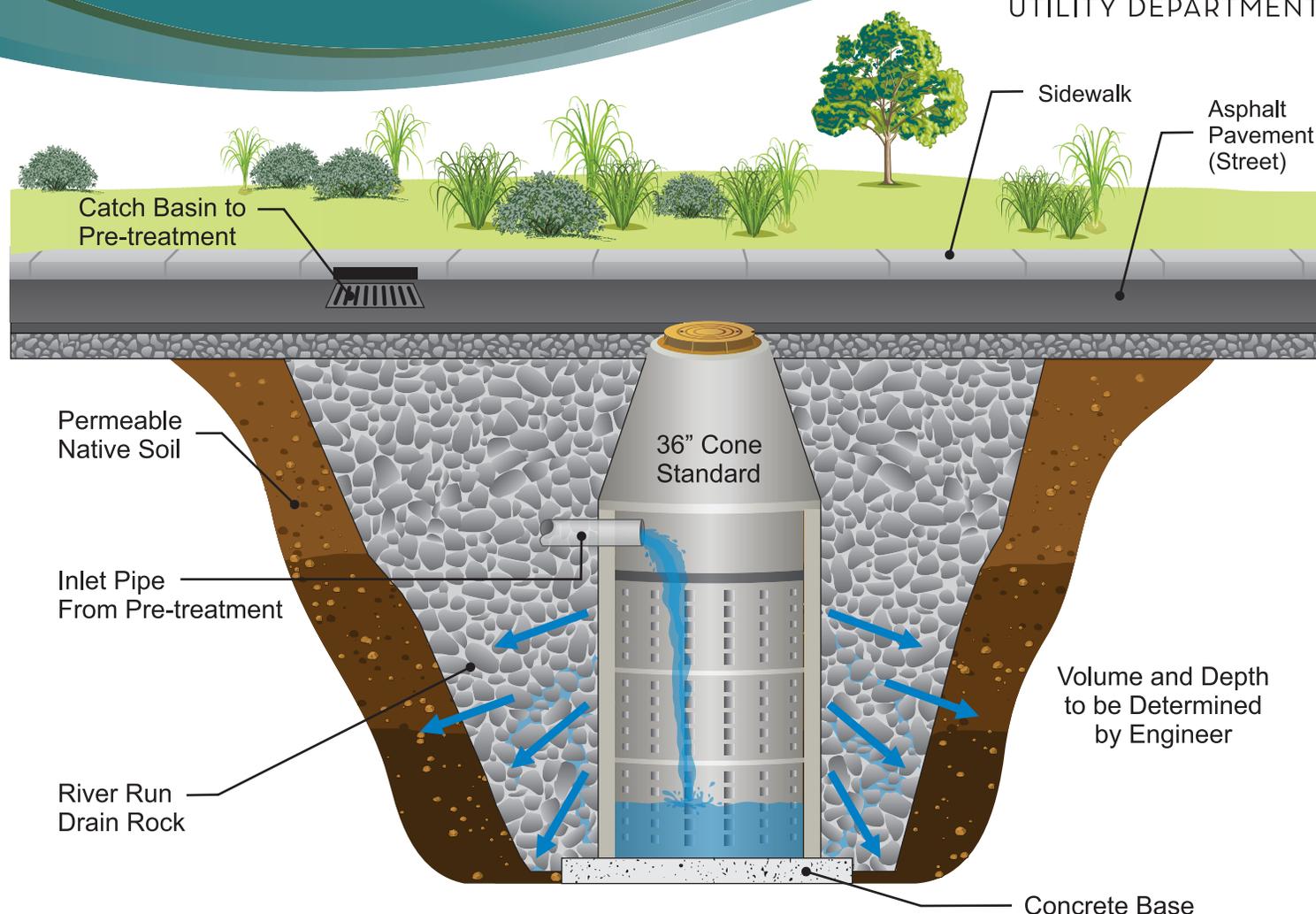
Defect	Conditions When Maintenance Is Needed	Maintenance Needed? Yes / No	Comments Describe maintenance completed; and if any needed maintenance was not conducted, note what is needed and when it will be done	Results Expected When Maintenance Is Performed
 <p><b>Debris and Sediment</b></p>	<ul style="list-style-type: none"> <li>Accumulated debris or sediment depth exceeds 12 inches or impedes flow from inlet or outlet pipes</li> </ul>			<ul style="list-style-type: none"> <li>All sediment and debris removed from storage area</li> <li>Runoff freely flows into and out of basin</li> </ul>
 <p><b>Damaged Pipes</b></p>	<ul style="list-style-type: none"> <li>Inlet or outlet piping damaged or broken and in need of repair</li> </ul>			<ul style="list-style-type: none"> <li>Pipe repaired and/or replaced</li> </ul>
 <p><b>Joints Between Basin/Pipe Section</b></p>	<ul style="list-style-type: none"> <li>Any openings or voids allowing material to be transported into facility</li> </ul>			<ul style="list-style-type: none"> <li>All joints between basin/pipe sections are sealed</li> </ul>
 <p><b>Structure</b></p>	<ul style="list-style-type: none"> <li>Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determines that the vault is not structurally sound</li> </ul>			<ul style="list-style-type: none"> <li>Vault replaced or repaired to design specifications and is structurally sound</li> <li>No cracks more than 1/2-inch wide at the joint of the inlet/outlet pipe</li> </ul>
 <p><b>Contaminants and Pollution</b></p>	<ul style="list-style-type: none"> <li>Any evidence of oil, gasoline, contaminants, or pollutants</li> </ul>			<ul style="list-style-type: none"> <li>Oil and contaminants removed and properly disposed</li> <li>No contaminants or pollutants present</li> </ul>
 <p><b>Cover</b></p>	<ul style="list-style-type: none"> <li>Cover is missing or only partially in place</li> <li>Cover is difficult to remove with normal lifting pressure</li> </ul>			<ul style="list-style-type: none"> <li>Repair or replace cover</li> <li>Manhole is closed and can be removed and reinstalled by one person to facilitate maintenance access</li> </ul>
 <p><b>Ladder</b></p>	<ul style="list-style-type: none"> <li>Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks</li> </ul>			<ul style="list-style-type: none"> <li>Ladder meets design standards</li> <li>Allows safe maintenance access</li> </ul>
 <p><b>Mosquito Vector Breeding</b></p>	<ul style="list-style-type: none"> <li>Suitable habitats exist for mosquito production (e.g., standing water in areas accessible to mosquitoes)</li> </ul>			<ul style="list-style-type: none"> <li>Standing water no longer exists or is inaccessible to mosquitoes</li> </ul>

<sup>1</sup> Re-inspection of a previously-noted maintenance issue.

# DRYWELL Maintenance Guideline



UTILITY DEPARTMENT



## What does your Drywell do? Why is it important?

Drywells are solely designed to infiltrate water into the ground. The drywell(s) on your property makes a significant positive impact on our environment by handling runoff closer to where it is created and thus better mimicking natural conditions, reducing pollutants to our beloved Deschutes River, and recharging our underground drinking water supplies.

## Why is it important to maintain your Drywell(s)?

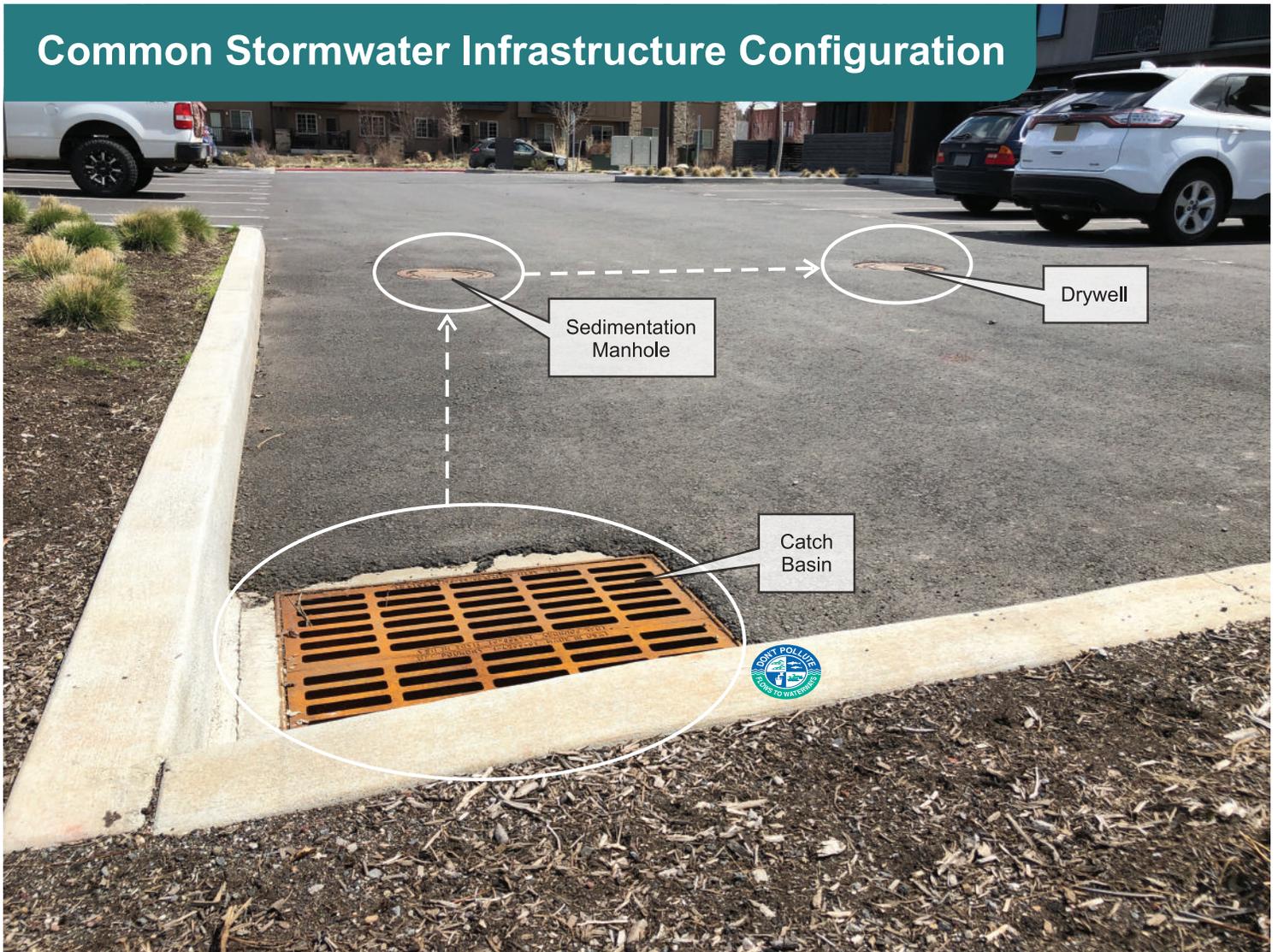
Without proper maintenance, drywells can fail, leading to drainage and flooding issues. Ensuring that sediments and other pollutants stay out of drywells is important to prevent clogging or injecting pollutants underground. In Bend, our stormwater facilities serve an important function and property owners are required to keep and maintain them per Bend Code Title 16. Just remember, a few things will go a long way in the effort to keep our waters clean and to prevent localized flooding.

## What tools do you need?

Maintenance schedules for drywells vary depending on flow volumes and sediment loading. Routine maintenance requires the use of a vacuum designed to suck up the water and sediment. In most places, there are local contractors that provide this service for a fee. Regularly inspecting your facility to monitor sediment and floatable levels is critical. Carrying the attached checklist, pen, a copy of your site plan, lid puller, steel toe boots, flashlight and a rigid sediment measuring device is a good way to ensure a safe and complete inspection can be performed.



# Common Stormwater Infrastructure Configuration



## Bad Example



Perpetual stagnant water indicates that drywell has failed and needs to be thoroughly clean or replaced.

## Good Example



Bottom of drywell has little to no water.

Drywell skirt fabric is in good condition; ideally should be secured at each section break and at bottom for ease of cleaning.

# Drywell Inspection and Maintenance Checklist

Property Address \_\_\_\_\_ Property Owner \_\_\_\_\_

FacilityName/Designator \_\_\_\_\_ Date of Inspection \_\_\_\_\_

Type of Inspection:  Pre-rainy Season  Monthly  Quarterly  Annual  Re-inspection<sup>1</sup>

Inspector(s) \_\_\_\_\_

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? Yes / No	Comments Describe maintenance completed; and if any needed maintenance was not conducted, note what is needed and when it will be done	Results Expected When Maintenance Is Performed
 <p><b>Debris and Sediment</b></p>	<ul style="list-style-type: none"> <li>Accumulated debris or sediment depth exceeds 2 feet or impedes flow from inlet pipes</li> </ul>			<ul style="list-style-type: none"> <li>All sediment and debris removed from storage area</li> <li>Runoff freely flows into and out of basin</li> </ul>
 <p><b>Damaged Pipes</b></p>	<ul style="list-style-type: none"> <li>Inlet piping damaged or broken and in need of repair</li> </ul>			<ul style="list-style-type: none"> <li>Pipe repaired and/or replaced</li> </ul>
 <p><b>Structure</b></p>	<ul style="list-style-type: none"> <li>Cracks wider than 1/2-inch or maintenance/inspection personnel determine that the vault is not structurally sound</li> </ul>			<ul style="list-style-type: none"> <li>Vault replaced or repaired to design specifications and is structurally sound</li> <li>No cracks more than 1/2-inch wide</li> </ul>
 <p><b>Contaminants and Pollution</b></p>	<ul style="list-style-type: none"> <li>Any evidence of oil, gasoline, contaminants or other pollutants</li> </ul>			<ul style="list-style-type: none"> <li>Oil and contaminants removed and properly disposed; no contaminants or pollutants present</li> </ul>
 <p><b>Drainage</b></p>	<ul style="list-style-type: none"> <li>Facility does not drain within 72 hours</li> </ul>			<ul style="list-style-type: none"> <li>Evaluate infiltration capacity of the drywell and surrounding soil/rock layers</li> <li>May require decommissioning and replacement of drywell</li> </ul>
 <p><b>Vegetation</b></p>	<ul style="list-style-type: none"> <li>Root systems entering drywell</li> </ul>			<ul style="list-style-type: none"> <li>Remove large root systems and remove (if needed) nearby vegetation to prevent root systems from damaging structural components or blocking outflow</li> </ul>
 <p><b>Cover</b></p>	<ul style="list-style-type: none"> <li>Cover is missing or only partially in place</li> <li>Cover is difficult to remove with normal lifting pressure</li> </ul>			<ul style="list-style-type: none"> <li>Repair or replace cover</li> <li>Manhole is closed and can be removed and reinstalled by one person to facilitate maintenance access</li> </ul>
 <p><b>Mosquito Vector Breeding</b></p>	<ul style="list-style-type: none"> <li>Suitable habitats exist for mosquito production (e.g., standing water in areas accessible to mosquitoes)</li> </ul>			<ul style="list-style-type: none"> <li>Standing water no longer exists or is inaccessible to mosquitoes</li> </ul>

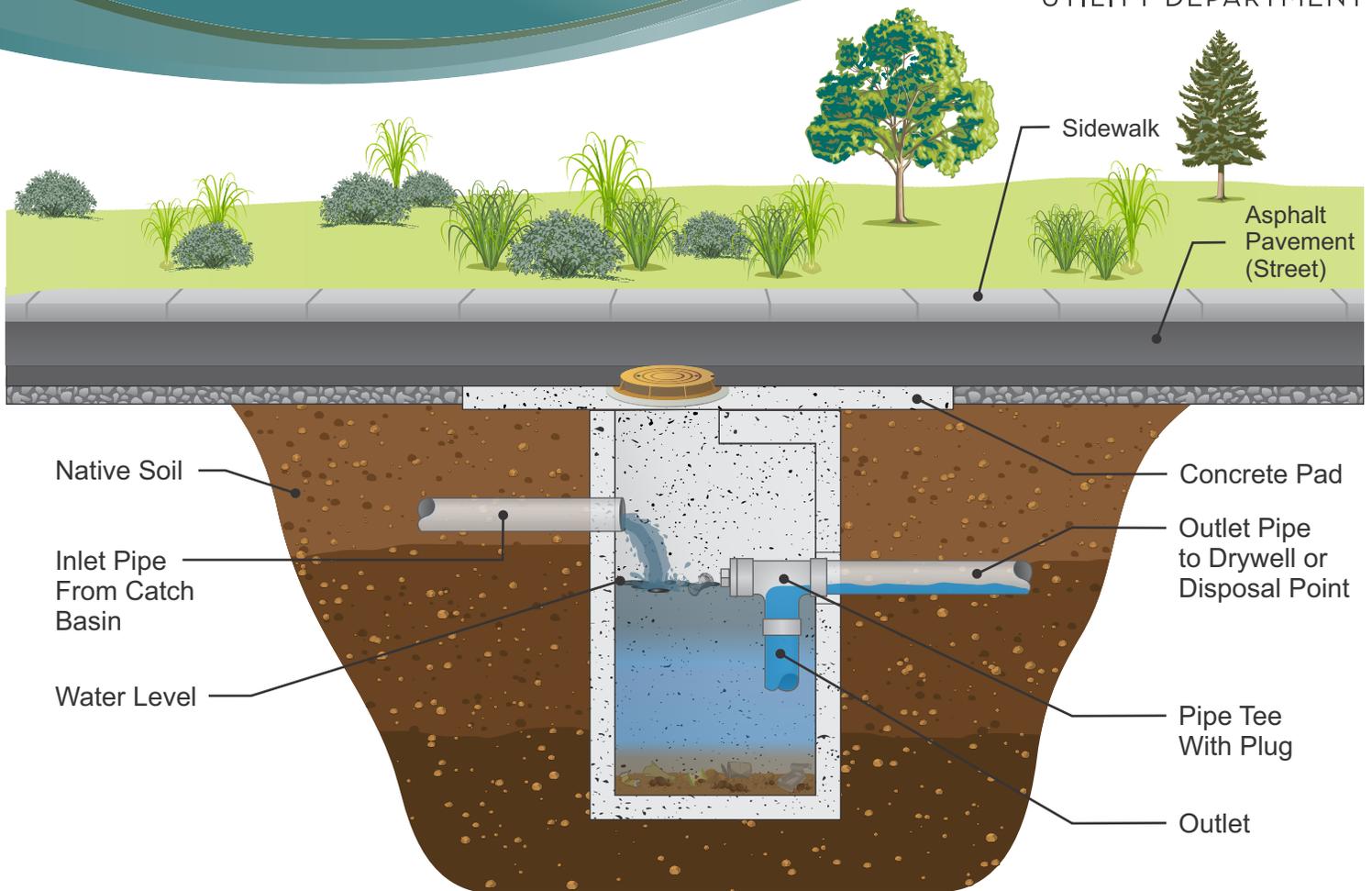
<sup>1</sup> Re-inspection of a previously-noted maintenance issue.

# SEDIMENTATION MANHOLE

## Maintenance Guideline



UTILITY DEPARTMENT



### What does a Sedimentation Manhole do? Why is it important?

Sedimentation manholes, also known as water quality manholes are designed to trap sediment, oil, other spills, and debris before discharging stormwater to a disposal point. The sedimentation manhole on your property makes a significant positive impact on water quality by preventing pollutants from entering our beloved Deschutes River and underground drinking water supplies.

### Why is it important to maintain your Sedimentation Manhole(s)?

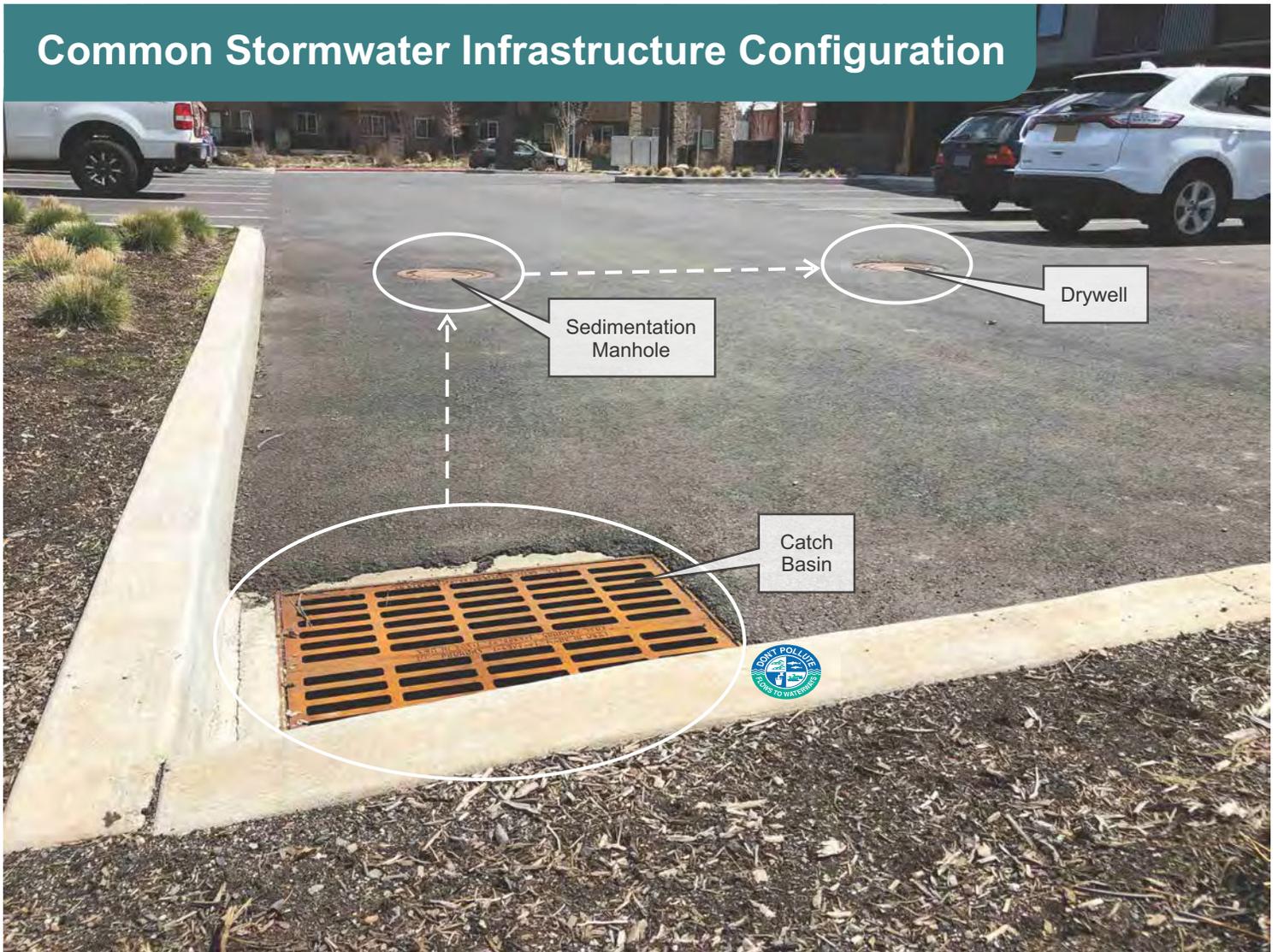
Without proper maintenance, sedimentation manholes will fail to remove pollutants. It is important to ensure that the sedimentation manhole doesn't become too full of sediment, debris, or floatables. In Bend, our stormwater facilities serve an important function and property owners are required to keep and maintain them per Bend Code Title 16. Just remember, a few things will go a long way in the effort to keep our waters clean and to prevent localized flooding. Start by inspecting your sedimentation manhole in the fall each year, and adjust to more often if site conditions warrant.

### What tools do you need?

Maintenance schedules for sedimentation manholes vary depending on flow volumes and sediment loading. Routine maintenance requires the use of a vacuum designed to suck up the water and sediment. In most places, there are local contractors that provide this service for a fee. Regularly inspecting your facility to monitor sediment and floatable levels is critical. Carrying the attached checklist, pen, a copy of your site plan, lid puller, steel toe boots, flashlight and a rigid sediment measuring device is a good way to ensure a safe and complete inspection can be performed.



# Common Stormwater Infrastructure Configuration



## Bad Example



Oily sheen on water surface. Maintenance needed per manufacturer's recommendation.

Trash and debris on water surface. Maintenance needed per manufacturer's recommendation.

## Good Example



Rim not damaged, pavement in good condition.

A rigid sediment measuring device needed for inspection.

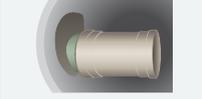
# Sedimentation Manhole Inspection and Maintenance Checklist

Property Address \_\_\_\_\_ Property Owner \_\_\_\_\_

FacilityName/Designator \_\_\_\_\_ Date of Inspection \_\_\_\_\_

Type of Inspection:  Pre-rainy Season  Monthly  Quarterly  Annual  Re-inspection<sup>1</sup>

Inspector(s) \_\_\_\_\_

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? Yes / No	Comments Describe maintenance completed; and if any needed maintenance was not conducted, note what is needed and when it will be done	Results Expected When Maintenance Is Performed
 <p><b>Debris and Sediment</b></p>	<ul style="list-style-type: none"> <li>Accumulated debris or sediment depth exceeds 12 inches or impedes flow from inlet or outlet pipes</li> </ul>			<ul style="list-style-type: none"> <li>All sediment and debris removed from storage area</li> <li>Runoff freely flows into and out of basin</li> </ul>
 <p><b>Damaged Pipes</b></p>	<ul style="list-style-type: none"> <li>Inlet or outlet piping damaged or broken and in need of repair</li> </ul>			<ul style="list-style-type: none"> <li>Pipe repaired and/or replaced</li> </ul>
 <p><b>Joints Between Basin/Pipe Section</b></p>	<ul style="list-style-type: none"> <li>Any openings or voids allowing material to be transported into facility</li> </ul>			<ul style="list-style-type: none"> <li>All joints between basin/pipe sections are sealed</li> </ul>
 <p><b>Structure</b></p>	<ul style="list-style-type: none"> <li>Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determines that the vault is not structurally sound</li> </ul>			<ul style="list-style-type: none"> <li>Vault replaced or repaired to design specifications and is structurally sound</li> <li>No cracks more than 1/2-inch wide at the joint of the inlet/outlet pipe</li> </ul>
 <p><b>Contaminants and Pollution</b></p>	<ul style="list-style-type: none"> <li>Any evidence of oil, gasoline, contaminants, or pollutants</li> </ul>			<ul style="list-style-type: none"> <li>Oil and contaminants removed and properly disposed</li> <li>No contaminants or pollutants present</li> </ul>
 <p><b>Cover</b></p>	<ul style="list-style-type: none"> <li>Cover is missing or only partially in place</li> <li>Cover is difficult to remove with normal lifting pressure</li> </ul>			<ul style="list-style-type: none"> <li>Repair or replace cover</li> <li>Manhole is closed and can be removed and reinstalled by one person to facilitate maintenance access</li> </ul>
 <p><b>Ladder</b></p>	<ul style="list-style-type: none"> <li>Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks</li> </ul>			<ul style="list-style-type: none"> <li>Ladder meets design standards</li> <li>Allows safe maintenance access</li> </ul>
 <p><b>Mosquito Vector Breeding</b></p>	<ul style="list-style-type: none"> <li>Suitable habitats exist for mosquito production (e.g., standing water in areas accessible to mosquitoes)</li> </ul>			<ul style="list-style-type: none"> <li>Standing water no longer exists or is inaccessible to mosquitoes</li> </ul>

<sup>1</sup> Re-inspection of a previously-noted maintenance issue.

## Additional Resources

Central Oregon Stormwater Manual

IDDE Manual

*Available at the website below.*



### UTILITY DEPARTMENT

62975 Boyd Acres Road  
Bend, Oregon, 97701

**541-317-3000 option 2**  
**FAX: 541-317-3046**

[www.bendoregon.gov/cleanwaterworks](http://www.bendoregon.gov/cleanwaterworks)



#### **Accommodation Information for People with Disabilities.**

To obtain this information in an alternate format such as Braille, large print, or electronic, please contact 541-317-3000 ext. 2 or email [utilities@bendoregon.gov](mailto:utilities@bendoregon.gov).

