

Introduction to Storm Drains

Stormwater runoff, or water left on impermeable surfaces after a rain event, washes soil, trash, oil, leaves, grass clippings, pet waste, and fertilizers into storm drains. The storm drain system is a network of underground pipes designed to control flooding by transporting stormwater from paved ground to a waterbody. Material flowing into a storm drain does not get treated before emptying into streams, rivers, and lakes. Simply put, untreated stormwater can pollute waterways. Although individual storm drains may contribute small amounts of pollutants, the combination of many storm drains can cause a negative impact on water quality.



Nonpoint source pollution is pollution that originates from many diffuse and difficult to identify sources rather than a single, traceable source such as a pipe.

EVERYONE CONTRIBUTES TO NONPOINT SOURCE POLLUTION!

Storm Drain Marking

Storm drain marking is labeling a storm drain inlet to say “No Dumping – Drains to Lake” or a similar written message that specifies the type of waterbody to which the storm drain inlet leads. There are a variety of methods used to mark storm drains, including paint stencils, vinyl and pre-glued curb markers, thermoplastic pavement markers, and pre-cast inlets. The City of Orlando uses aluminum curb markers, which are attractive, quick to apply, last several years, and require little to no maintenance.



Why Should We Mark Storm Drains?

- Storm drain marking informs others about the *street-to-lake* connection.
- Many people may not realize that water flowing into storm drains is not cleaned before it empties into a lake, stream, river, or the ocean.
- Polluted runoff can harm Orlando’s waterbodies - where we fish and swim, and groundwater - where we obtain our drinking water.
- Storm drain marking can be an effective service learning or civic learning project for schools, scout groups, homeowner associations, or any organization wanting to make a positive impact on their community.
- The Environmental Protection Agency (EPA) recommends storm drain marking for municipalities, like the City of Orlando, to address the Clean Water Act’s Storm Water Phase II Rule. For more information on this rule, visit the EPA’s website at www.epa.gov.

After the Event

- 1. Notify the media**
 - If the media was not able to attend, notify your City contact if you are interested in submitting an article and pictures from the event to the local newspaper.
- 2. Thank your sponsors, if applicable.**
 - Write a letter or send a card to your sponsors and anyone who helped make the day a success. You may wish to also include a picture.
- 3. Evaluate**
 - Identify parts of the process that were successful, parts that could be improved, and what could be done differently to ensure your next marking event is an even bigger success. Provide this feedback to your City contact.

Take Action At Home!

- 1. Sweep instead of hosing off the driveway, street, or sidewalk.** Water runoff from driveways or sidewalks carries contaminants, such as dirt, motor oil, fertilizers, and animal waste, through storm drains and into waterways.
- 2. Lawn and garden chemicals.** Use pesticides and fertilizers sparingly and follow the directions recommended by the manufacturer. Do not apply fertilizers or pesticides directly before or after a rain event.
- 3. Safely dispose of household cleaners and motor oil.** Many automotive and cleaning products found in homes or garages are too dangerous to be disposed of in the trash or down the drain. Products should be recycled or taken to a community hazardous waste center.
- 4. Compost or mulch yard waste.** Sweep (do not wash) leaves or grass clippings that accumulate on your driveway, sidewalk, or in the street.
- 5. Clean up after your pet.** Pick up pet wastes. Dispose of pet wastes properly, such as placing in a trash receptacle or flushing down the toilet.
- 6. Do not wash your car in the driveway.** Use a commercial car wash or wash your car on the lawn or other unpaved surface to minimize the amount of dirty, soapy water flowing through a storm drain and into waterways.
- 7. Act locally.** Organize a lake cleanup or storm drain marking project with the City of Orlando.

Reference

Indiana Department of Natural Resources. “Storm Drain Marking Manual.” [www.in.gov/dnr/stormdrain/pdf/Stormdrain_Manual_web.pdf] Accessed March, 2008.



CITY OF ORLANDO

STORM DRAIN MARKING PROJECT PLANNING GUIDE



CITY OF ORLANDO



STORMWATER UTILITY

To initiate a project, please provide the City of Orlando Stormwater Division (407-246-2125 ext. 17) the following information:

- Name of your organization
- Name and contact information of the project coordinator
- Date of event and an alternative rain date
- Number of volunteers and ages
- List of street(s) or area(s) your group would like to mark

Funding

Storm drain marking materials are funded entirely by the City of Orlando.

Publicity

Notify your City of Orlando Stormwater Division contact (City contact) if you would like to invite a local newspaper, radio, or television station to your event and enlist their support to publicize it. This may result in greater community support for the project and may help with volunteer recruitment.

Site Selection

Work with your City contact to develop a site map of storm drains in the area. Divide the area into smaller work sections to which you can assign a group of volunteers.

Safety

Safety is the most important issue to consider when organizing your event.

- Volunteers should wear a safety vest.
- At least one adult should watch and divert traffic away from workers.
- The safest areas to mark are residential and low traffic areas.
- To protect volunteers' hands, use gloves.
- Never mark storm drains alone!

It will be necessary to obtain liability waivers for all volunteers. The City of Orlando Event (Temporary) Volunteer Application and Media Release forms will be provided by your City contact.

Education

Before the Event: Inform participating volunteers about nonpoint source pollution and its effect on water quality. Educated participants will have a better understanding of the reasons for a storm drain marking project.

During the Event: Educate while you work by talking to local residents, businesses, and others. Share ideas about nonpoint source pollution and what citizens can do to prevent or reduce pollution that enters Orlando's waterways through storm drains.

After the Event: Storm drain marking results in a visual reminder of the storm drain-to-lake connection. Citizens will gain a better understanding of the fate of urban runoff and its effect on water quality. Hopefully, they will think again before dumping anything into a storm drain.

Public education and outreach is enhanced through the distribution of printed material, including flyers and brochures provided by the City of Orlando. **Remember: Mailboxes are only to be used for mail bearing postage. It is illegal to put anything in the mailbox that has not been delivered by the U.S. Postal Service. Do not place any of your educational materials in a mailbox!**

Day of the Event

- 1. Check the weather.**
 - If unsuitable weather conditions exist, consider using an alternative rain date.
 - Pavement should be dry.
 - Temperatures should range between 50 and 80 degrees Fahrenheit.
- 2. Collect all liability waivers and photo releases.**
- 3. Review all safety procedures.**
- 4. Divide volunteers into work groups.**

The ideal work group will consist of three to five volunteers. When using youth volunteers:

 - One adult should be assigned to supervise each group
 - One or two volunteers to distribute educational materials
 - One or two volunteers to apply the markers
- 5. Distribute supplies to each work group.**

Curb Marking Supplies for Each Group (Provided by the City of Orlando)

 - Adhesive glue
 - City of Orlando letter of permission (if City contact is not present)
 - Storm Drain Markers
 - First aid kit
 - Garbage bag
 - Gloves
 - Liability waivers and photo releases for volunteers
 - Map of area storm drains to be marked
 - Safety vests
 - Brush or broom
 - Camera (optional)
 - Educational flyers
 - Goggles (optional)
- 6. Assign work sections to each group.**
 - A map should be given to each work group.
- 7. Mark**
 - Detailed curb marking instructions to follow.
- 8. Check for missed storm drains.**
 - Have one volunteer in each work group check that all storm drains in the group's area have been marked.
- 9. Clean up**
 - After the marking is completed, make sure nothing is left behind.
- 10. Celebrate**
 - Thank and congratulate your volunteers for a job well done!



Instructions for Storm Drain Signs

- Markers should be placed on the sidewalk above the storm drain inlet or on the curb **facing the street**.
- Make sure the markers are consistently placed relative to one another.
- Avoid placing the curb markers directly on the street or on the edge of a manhole cover.
- Keep a record on your site map of the storm drains you have marked.

Just Remember 3 Easy Steps for Installing Storm Drain Markers: CLEAN, GLUE, PRESS

1. Clean

- Make sure the surface where the marker will be placed is flat, dry, and free of any loose debris.
- Use a brush or broom to lightly scrub the surface where the marker will be placed.
- Sweep any loose debris away from the storm drain.
- Place debris and any other litter into a garbage bag.



2. Glue

- Apply adhesive to the back of the marker starting with 1/8 of an inch from the outside edge circling toward the center. Dashed line below = adhesive.



3. Press

- Position the marker at the top and center of the inlet, a few inches from the curb edge.
- Press the marker firmly on a flat surface, twisting slightly back and forth to spread the adhesive.
- The adhesive should be almost visible around the entire edge of the marker to ensure adhesion.
- Before leaving, make sure the marker is aligned with the curb edge and professional-looking.

