

**Downspout Disconnection: Step-by-Step Instructions** (*Detailed Information for Website*) Downspout Disconnection Flyer information will precede this info on website.

**1. Site Observation and Assessment**

Determine where the water from your downspouts flows. This includes runoff from your house, garage and other covered surfaces. Determine whether it is draining onto your lawn or if the downspouts are connected to the sewer system or a drywell. Those that are connected to standpipes may drain into the sewer system. If they drain into soakage trenches, or drywells, on your property and are in good working order, you shouldn't need to disconnect them.

**A. Mapping and Calculation**

Sketch a site plan of your home and lot, marking the locations of your roofline and downspouts. Estimate the square footage of your roof area. Map out areas in your yard that are downslope of the structures with downspouts to be disconnected.

**B. Legal/Safety Concerns**

Homeowners need to ensure any work complies with municipal regulations and safety guidelines. Be sure to consider the following before beginning your project:

- **Slope:** Add or remove soil to ensure that the slope of the ground allows water to flow away from structures; however, do not disconnect downspouts on slopes over 10%.
- **Drainage Area:** Avoid disconnecting downspouts in areas too small for good drainage. In order to allow roof-generated stormwater to soak safely into the ground, the landscaped area must be at least 10% of the roof space that drains to the disconnected downspout.
  - ✓ *Simple Formula:*  $Roof\ Area \times Sizing\ Factor = Landscape\ Area$
  - ✓ *Example:* To drain 500 square feet of rooftop, there should be at least 50 square feet of landscape.  $500 \times .10 = 50\ ft. \times 10\ ft. \text{ or } 50\ sq.\ ft.$
- **Distance from Structures:** Downspout extensions should **NOT** be within six feet of a basement wall or two feet of a porch, crawl space, concrete slab or at-grade foundation. Additionally, drainage points should not be within three feet of a public sidewalk and at least 10 feet away from a retaining wall. Downspouts and surrounding landscape surfaces must drain water **away** from all structures.
- **Access Areas:** Avoid disconnecting downspouts or adding extensions where obstacles may hinder access or act as a potential tripping hazard (e.g., in front of a gate or across a walkway, patio or driveway).
- **Additional Hazards:** Do not disconnect directly over a septic tank, drain field or underground oil tank.

**2. Planning and Preparation**

**A. Disconnection Site Plan**

Mark all downspouts to be disconnected and identify proposed locations for the following changes: pitched gutters; relocation of downspouts; and removal of impervious surfaces.

**B. Design Selection**

You may have more than one option available for redirecting each downspout. Consider all possibilities, including the following:

- Relocate downspouts along gutters to divert water to a safe drainage location.
- Create a permeable (or porous) surface for disconnection by removing hard, impermeable areas such as concrete pathways, patios or unused driveways space. To allow for infiltration, replace pavement or concrete with pavers or gravel where appropriate.
- Extend downspouts under a deck or raised patio to get runoff to a landscaped area.
- Use plastic or concrete splash blocks, rocks, flagstone or boulders at the end of downspouts to control erosion, help direct runoff and add visual interest.
- Incorporate other stormwater management systems into your downspout disconnections, such as a rain barrel, rain garden, soakage trench or rainwater harvesting system.

### C. Materials

Make a list of the equipment and supplies needed for your specific project before beginning the disconnection process.

#### ▪ Tools:

- ✓ Screwdriver (or nut driver)
- ✓ Hacksaw
- ✓ Hand drill
- ✓ Needle-nose pliers (or crimpers)
- ✓ Tape measure
- ✓ Marker (to mark downspout and extension)

#### ▪ Additional Supplies:

- ✓ Downspout elbows and extensions

*\*These are available in standard shapes, sizes, colors and materials to fit gutters. Be sure to use durable, gutter-grade materials such as aluminum, steel, copper, vinyl and plastic. (Black ABS SCH 40 plastic is a durable option found in most hardware stores and home centers. Do **NOT** use corrugated black plastic (ADS), roll-out-hose, PVC pipe, dryer hose, swivel or open-trough materials because of their limited durability.)*

- ✓ Sheet metal screws
- ✓ Rubber cap
- ✓ Hose clamp or wing-nut test plug

*\*Sewer standpipes must be sealed with a rubber cap and secured with a hose clamp or wing-nut test plug. Most standpipes are 3-5 inches wide, but you will need to measure the inside diameter of yours before shopping.*

- ✓ Bracket or strap (if needed)

*\*Some downspouts are attached only to the gutter and sewer standpipe. If this is the case, you may need to secure the downspout to your house with a bracket or strap to keep it in place during disconnection.*

- ✓ Splash block (optional)

**Note:** If you are seeking assistance with your project, contractors who are licensed contractors should be able to provide the labor and materials to disconnect your downspouts for a reasonable cost.

## 3. Disconnection Instructions

Once you have performed an assessment, created a plan and are prepared with the necessary materials, you are ready to begin the hands-on portion of the project. Follow the steps below for proper disconnection:

- A. Measure the existing downspout from the top of the standpipe and mark it at approximately 9 inches above the standpipe. You may need to cut the downspout higher depending upon the length of your extension.
- B. Cut the existing downspout at the mark with a hacksaw and remove the cut piece.
- C. Plug or cap the standpipe using an in-pipe test plug or an over-the-pipe cap secured by a hose clamp. Do NOT use concrete to seal your standpipe.
- D. Attach the elbow **over** the downspout. Do **NOT** insert the elbow **into** the downspout to avoid leakage. If the elbow doesn't fit properly over the downspout, use crimpers or needle-nose pliers to crimp the end of the downspout so it slides **inside** the elbow.
- E. Measure, mark and cut the downspout extension to the desired length.
- F. Attach the extension to the elbow by slipping the extension **over** the end of the elbow. The length of the extension will depend on site conditions and where you want the downspout to drain.
- G. Pre-drill holes and secure all pieces with sheet metal screws at each joint where the downspout, elbow and extension connect.
- H. Using a splash block at the end of the extension is optional, but it will help to convey water away from the foundation, prevent soil erosion and is usually aesthetically appealing as well.

#### 4. Maintenance

Proper maintenance of your gutters, downspouts and landscaping can reduce problems.

##### A. Gutters:

- Clean at least twice a year, and more often if there are overhanging trees (due to fallen leaves).
- Pitch gutters to direct water to downspouts.
- Caulk all leaks and holes.
- Make sure roof flashing directs water into gutters.
- Look for low spots or sagging areas along the gutter line and repair with spikes or place new hangers as needed.

##### B. Downspouts:

- Check and clear elbows or bends in downspouts to prevent clogging.
- Check that each elbow or section of the downspout funnels into the one below it.
- Make sure all parts are securely fastened together with sheet metal screws.

##### C. Landscaping:

- Check that the ground slopes away from all structures.
- Do not build up soil, bark dust or wood piles against your home's siding.
- Avoid draining water onto impermeable plastic weed block or cloth.