

Sediment Traps

Sediment removal poses a considerable challenge in the maintenance of GI sites. To prevent sediment entry, sites in areas of high flow must be armored with rock or gravel, though this makes removal of sediment that does accumulate even more difficult.

Function

- Sediment traps capture and collect sediment at the entrance of bioretention areas, facilitating periodic sediment removal and extending the functional life of these features.

Site Selection

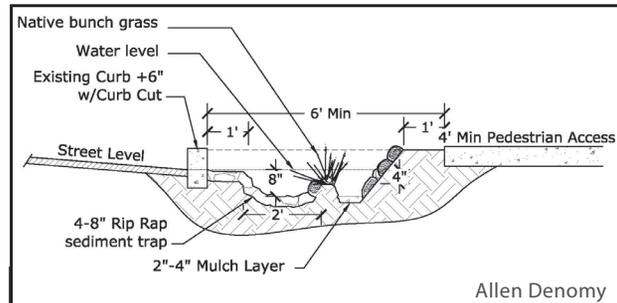
- Use sediment traps in areas where stormwater carries a lot of sediment.
- Traps can be used at the inflow of any GI feature -- the below diagram shows an example with a curb cut and rock-lined basin

Design and Construction

- Excavate an 8" depression 1' from the inside of the curb cut, approximately 2'x2'.
- Create a 3"-4" high earthen berm separating this area from the rest of the basin.
- Plant berm with native bunchgrasses to stabilize berm and filter stormwater pollutants.

Materials

- Line curb cut apron, bottom of sediment trap, and slope of berm with a single well-placed course of 4"-8" rock.
- Tie 4"-8" rock (above) into rock edges of larger basin (see plan view).

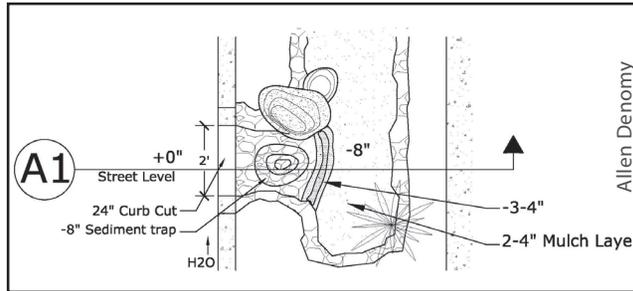


Maintenance

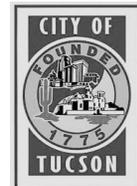
- Ensure stormwater inlet does not become blocked (before and after rainy seasons).
- Remove sediment from bottom of trap (frequency will depend on sedimentation rates).
- Check apron, slopes, edges etc. for erosion and repair/reinforce as needed (annually).

Adapting the practice to your site

- The key concept is to create a place where water will pool momentarily to allow coarse sediments to drop out of stormwater before it spills over into the rest of the bioretention feature.
- Always ensure that the top of the retention berm is a minimum of 4" below the bottom of the stormwater inlet (or flush curb).




Watershed Management Group
 PO Box 65953
 Tucson, AZ 85728
 520.396.3266
www.watershedmg.org


CITY OF TUCSON
 City of Tucson, Department of Transportation
 201 North Stone Ave, 4th Floor
 520.791.5100
dot.tucsonaz.gov



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GI-2

Green Infrastructure for Public Right-of-ways

Curb Cuts & Sediment

Traps

Purpose: To allow stormwater from the street (or any adjacent impervious surface, like a parking lot) to flow into a depressed infiltration and planting area.




Watershed Management Group

A green infrastructure practice developed by Watershed Management Group in coordination with City of Tucson Department of Transportation.

Curb Cuts

Function

- An **easy retrofit** for existing neighborhoods. Curb cuts are a way to use green infrastructure practices without major reconstruction.
- **Costs much less** than working to collect stormwater via in-street practices.
- Since curb cut openings are perpendicular to the flow of stormwater on the street, they usually **collect only a portion of the water** flowing along the gutter. Placing multiple curb cuts at intervals along the street more substantially reduces stormwater flows.

Site selection

- Use curb cuts in crested streets - those that are highest in the middle and carry stormwater along the curb.
- Observe the site during a rainfall event to determine how much stormwater flows along the curb where a cut is planned. Even on a crested street, one side may be higher than the other or flows may be altered by upstream factors. Also, small divots or cracks in the pavement may direct runoff from small rainfall events away from the curb.
- Avoid streets with slopes greater than 5% or areas where the curb is routinely submerged in water.
- A permit and/or licensed contractor is required for curb cuts along the right of way (see handout GI-9). Check with City of Tucson Transportation Department for permit information, as well as required setbacks and location guidelines. Curb cuts must be 5' away from driveway aprons and 20' back from intersections.

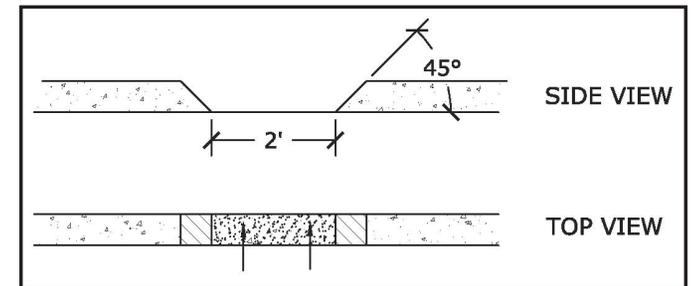
- The width of earthen area between the curb and sidewalk or path must be at least 6' wide in areas with on-street parking and 5' in areas without parking.

Design and construction

- Locate curb cut and inlet on uphill side of basin.
- The bottom of any style curb cut should slope slightly toward basin area (away from street).
- Construct a rock "apron" where water flow crosses the cut curb into the right of way area to prevent soil erosion and undercutting of the road surface. Lay rock (4"-8") in a single well-fitted course around the entrance. The top of the rock surface should be 1-2" below the level of the bottom.

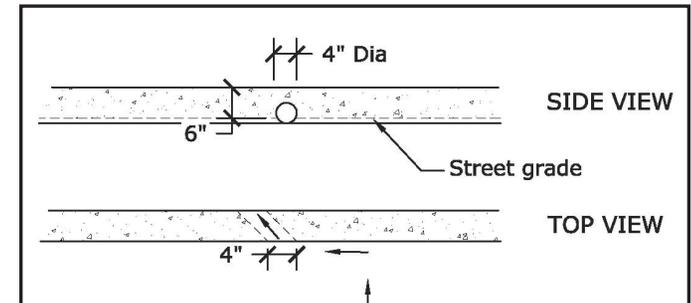
18"-24" Standard Curb Cut

- Make curb cuts 18"-24" across with 45° sloped sides.
- Slope bottom cut down towards the basin.
- Patch asphalt as necessary.



4" Diameter Angled Curb Core

- Existing asphalt is chipped away in the immediate vicinity of the proposed opening.
- The bottom of the 4" curb core should start about 1/2" below top of asphalt grade. Be sure at least 2" of concrete curb is left undisturbed above the core to protect the integrity of the curb. The core bit is angled at a 45° angle and slightly down when drilling through the curb.
- Patch asphalt where disturbed. Be sure asphalt patch is applied to facilitate flow into curb opening.



Maintenance

- Regularly clear curb cuts of any debris that may prevent the free flow of stormwater into basins (3-4 times per year).
- Check the rock apron for signs of erosion and repair/reinforce as needed (annually).