

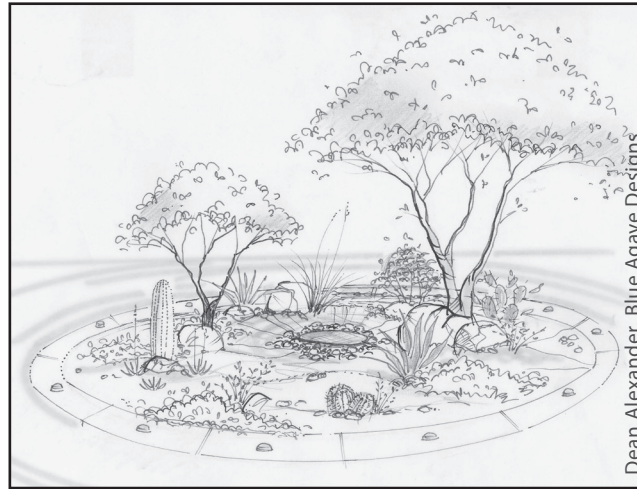
around the circle. A tree canopy may extend over a travel lane at a minimum height of 14' (refer to local codes).

Materials

- In areas of higher flow (concentrated flow with depths >1"-2"), line entire soil surface with 4"-8" rock to prevent scouring of soil.
- Areas that experience lesser flows can use 1"-3" rock.
- Place 6" ceramic disks along the top of header curb to discourage entry by automobiles.
- Place larger boulders within the traffic circle to increase visibility and prevent cars from driving over the circle.

Maintenance

- It is the neighborhood's responsibility and liability to maintain the right-of-way.
- Check slopes, edges, etc. for signs of erosion and repair/reinforce as needed (before each rainy season).
- Observe bioretention feature during rain events to evaluate function and make necessary adjustments.
- Prune vegetation to preserve visibility and prevent obstruction of travel lanes.
- Remove undesirable and invasive plants (weeds) on a regular basis.
- Remove accumulated sediment from bottom of basin to retain designed depth.



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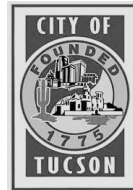
Adapting the practice to your site

- If traffic circles are used in crested intersections (where the highest point is the middle of the street), use a uniformly raised curb and a depressed planting area to capture and infiltrate stormwater that falls on the traffic circle itself.
- In areas with higher sediment flows, consider using sediment traps (see handout GI-2) to facilitate maintenance.



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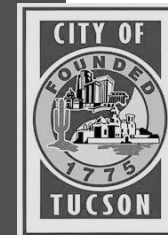
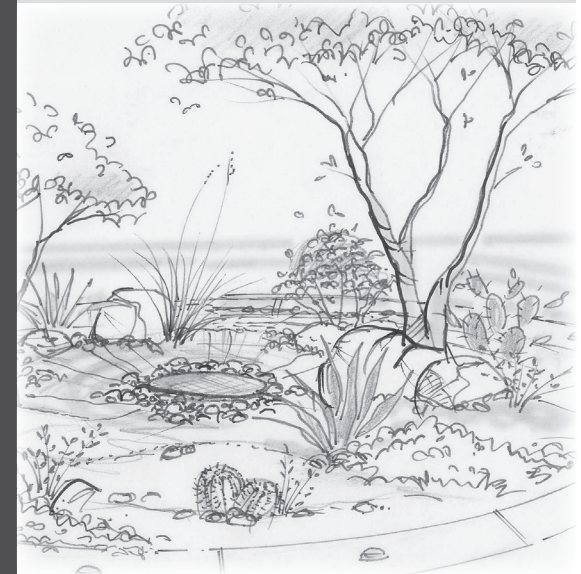
Funds for this project were provided by the Urban and Community Forestry Financial Assistance Program administered through the State of Arizona Forestry Division - Urban & Community Forestry, and the USDA Forest Service.



Green Infrastructure for Public Right-of-ways

An in-street practice: Traffic Circle with Bioretention Basins

Purpose: To collect and infiltrate stormwater flowing through intersections, slow traffic, reduce impervious area, and beautify a neighborhood.



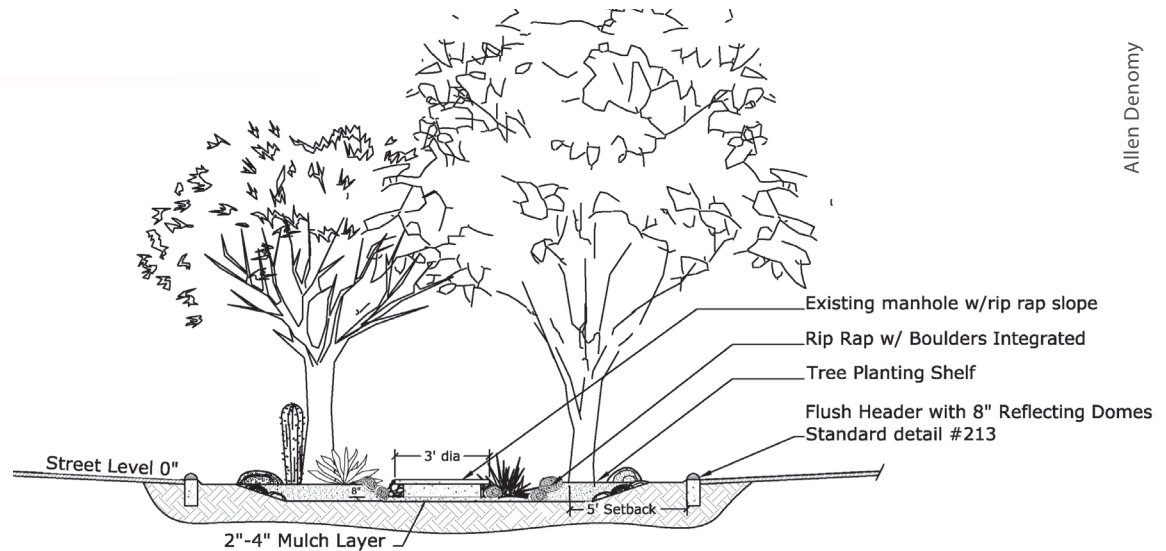
A green infrastructure practice developed by Watershed Management Group in coordination with City of Tucson Department of Transportation.

Traffic Circle, an in-street practice

All in-street practices need to have designs approved by a Dept. of Transportation Engineer.

Site selection

- Traffic circles function best to collect stormwater at intersections where water flows through the intersection along a center-line. This usually occurs where the streets are concave, or lowest in the middle. The design shown is for a traffic circle in which the circle is at the lowest point in the intersection.
- Traffic circles constrict the intersection. To preserve access for emergency vehicles, codes typically require that the distance from the traffic circle header to the nearest corner of the intersection must be at least 20'.
- Ensure the boundaries of the bioretention area (vegetated basin) are well marked and visible to traffic, bicyclists, and pedestrians.



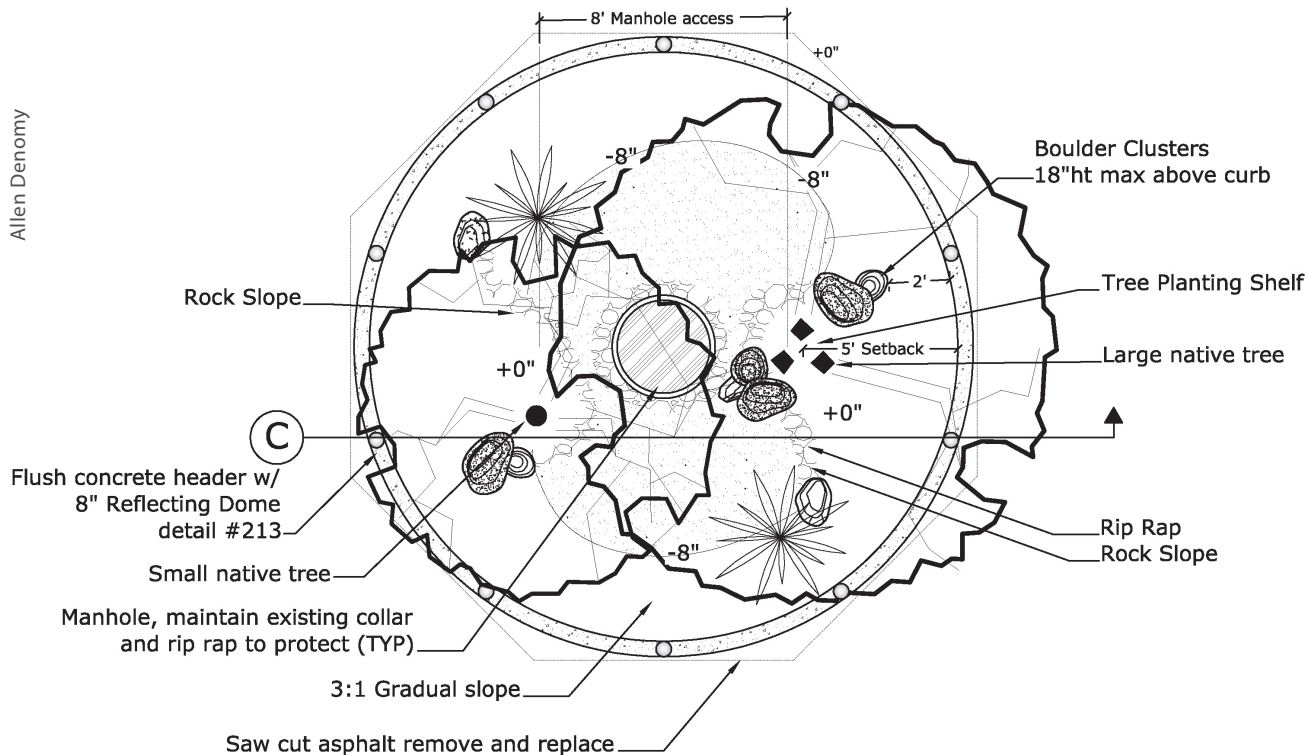
Allen Denomy

Design and Construction

- Size traffic circles to be as large as possible within allowable constraints to increase stormwater mitigation and traffic calming effects.
- To reduce construction costs a diameter of 20' or greater allows a cleaner cut of the asphalt along the circle edge without specialized equipment. This reduces the time and material required to patch between the cut asphalt edge and the new concrete header.
- Excavate the inside of the traffic circle to a final depth of 8" (e.g. if covering soil with 4"-8" rock, excavate 4"-8" deeper to bring the final depth to 8").
- Maximize the area of level bottom of the traffic circle by using steep (up to 50%) side slopes armored with rock.
- Use flush header curbs 18" deep to protect the adjacent asphalt surface from standing water.
- Create raised planting areas for trees and shrubs that do not tolerate inundation.
- To preserve visibility, do not plant trees or shrubs that will encroach into travel lanes or block sight lines

Continued on back

Allen Denomy



Green infrastructure is a constructed feature that uses natural processes to provide environmental services.