Bioretention
Trash Best Management Practices (BMP)
Minimum Specifications

Figure A: CA State University-Sacramento Bioretention BMP

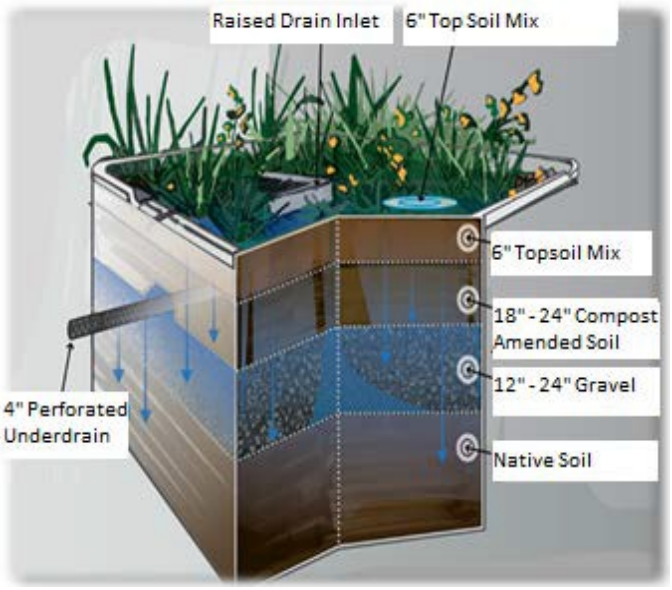

Figure B. American Common Bio-Swale Detail

Description

Bioretention BMPs, including bio-swales, remove pollutants from storm water runoff through physical filtration as storm water passes through media layers. The treatment area consists of: a ponding layer; vegetated, mulched, and engineered soil layer; and supporting bed layer of sand or gravel. Bioretention BMPs can be a variety of shapes and sizes. Storm water entering the treatment area evapotranspires or gradually passes through the mulch/soil/gravel layers where it then infiltrates into native soil or collects in an underdrain that conveys to a discharge point.

Performance and Design

The bioretention BMP must be designed to trap trash particles that are 5 mm or greater and prevent offsite migration, and the design must include:

1. A screen[1] that prohibits the discharge of particles 5 mm or greater at the BMP overflow or bypass outlet;
2. A treatment capacity equal to or greater than the volume collected during the region specific one-year, one-hour storm event from the applicable drainage area; or a capacity to carry at least the same flows of the corresponding storm drain; and
3. Stamped and signed design plans by a registered California licensed professional civil engineer (see Bus. & Prof. Code Section 6700, et seq.).

Maintenance

Regular maintenance is required to maintain adequate trash capture capacity and to ensure that trapped trash does not migrate offsite. The owner should establish a maintenance schedule based on site-specific factors, including the size of the bioretention BMP trench, storm frequency, and characterization of upstream trash and vegetation accumulation. Trash capture and maintenance may be improved by addition of various forms of pretreatment, such as upstream swales or forebays.

[1] Upon approval by the Regional Water Quality Control Board Executive Officer, an external design feature or up-gradient structure designed to bypass flows exceeding the region specific one-year, one-hour, storm event does not require a 5 mm screen.

Storm Water Capture and Use

Trash Best Management Practices (BMP) Minimum Specifications

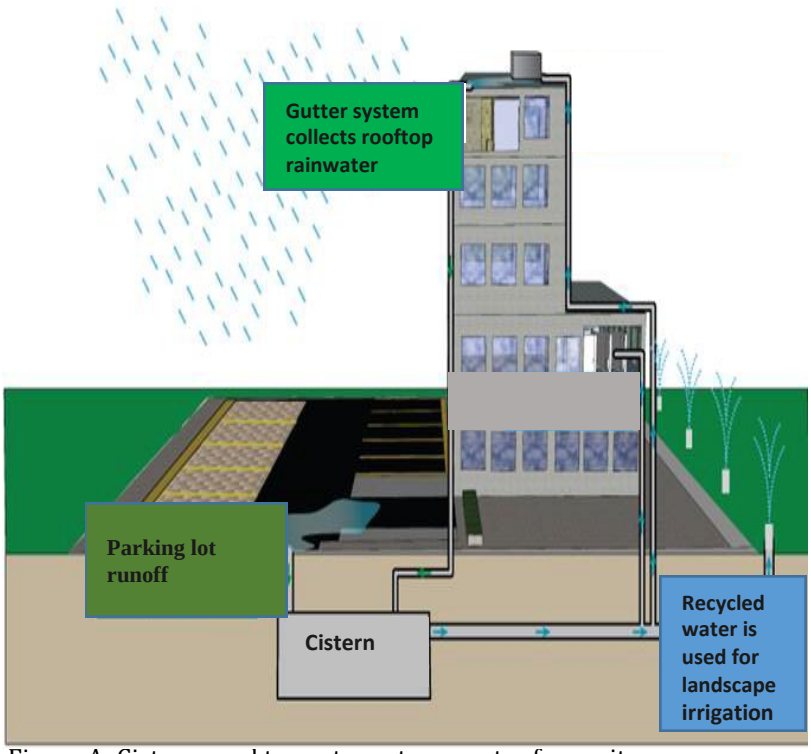

Figure A: Cistern used to capture storm water for onsite use
San Diego County LID Handbook Photo

Figure B: Large Scale Capture and Use Tank

Description

Storm Water Capture and Use BMPs capture and store runoff for use in a variety of applications including irrigation, toilet flushing, and other non-potable uses. There are numerous methods of capturing storm water for use including some of the other certified Multi-Benefit Treatment Systems.

Performance and Design

The Storm Water Capture and Use BMP design must include:

1. A screen[1] that prohibits the discharge of particles 5 mm or greater at the BMP overflow or bypass outlet;
2. A treatment capacity equal to or greater than the volume collected during the region specific one-year, one-hour storm event from the applicable drainage area; or a capacity to carry at least the same flows of the corresponding storm drain; and
3. Stamped and signed design plans by a registered California licensed professional civil engineer (see Bus. & Prof. Code Section 6700, et seq.).

Maintenance

Regular maintenance is required to maintain adequate trash capture capacity for the generated runoff of the anticipated storm. The owner should establish a maintenance schedule based on site-specific factors, including the size of the Storm Water Capture BMP, storm frequency, and characterization of upstream trash and vegetation accumulation.

[1] Upon approval by the Regional Water Quality Control Board Executive Officer, an external design feature or up-gradient structure designed to bypass flows exceeding the region specific one-year, one-hour, storm event does not require a 5 mm screen.

Detention Basin
Trash BMP Minimum Specifications

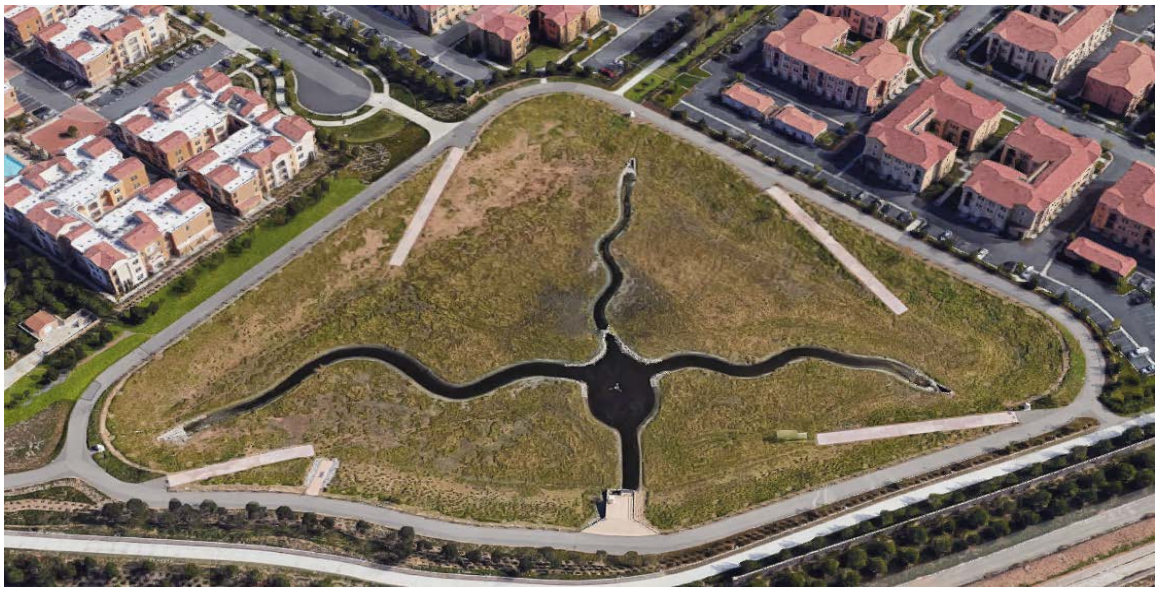

Figure A: Detention Basin BMP

Description

A detention basin BMP, or retarding basin, is a local topographic depression designed to reduce potential for flooding by reducing peak flow rates. These basins are also called "dry ponds," "holding ponds," or "dry detention basins," and are distinguishable from *retention basins* that are commonly known as "wet ponds" and designed to contain some water all-year-round. Detention basins may also be located underground in an array of pipe, chambers, concrete vaults, or other void structures.

Performance and Design

The detention basin BMP must be designed to trap trash that are 5 mm or greater and prevent offsite migration, and include:

1. A screen[1] that prohibits the discharge of particles 5 mm or greater at the BMP overflow or bypass outlet;
2. A capacity equal to or greater than the volume collected during the region specific one-year, one-hour storm event from the applicable drainage area; or the capacity to contain at least the same flows of the corresponding storm drain; and
3. Stamp and signed design plans by a registered California licensed professional civil engineer (see Bus. & Prof. Code Section 6700, et seq.).

Maintenance

Regular maintenance is required to maintain adequate trash capture capacity and ensure that trapped trash does not migrate offsite. The owner should establish a maintenance schedule based on site-specific factors, including the size of the detention basin BMP, storm frequency, and characterization of upstream trash and vegetation accumulation. Trash capture and maintenance may be improved by the addition of various forms of pretreatment, such as upstream swales or forebays.

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Infiltration Trench or Basin

Trash Best Management Practices (BMP) Minimum Specifications

Figure A: Urban Infiltration Trench BMP

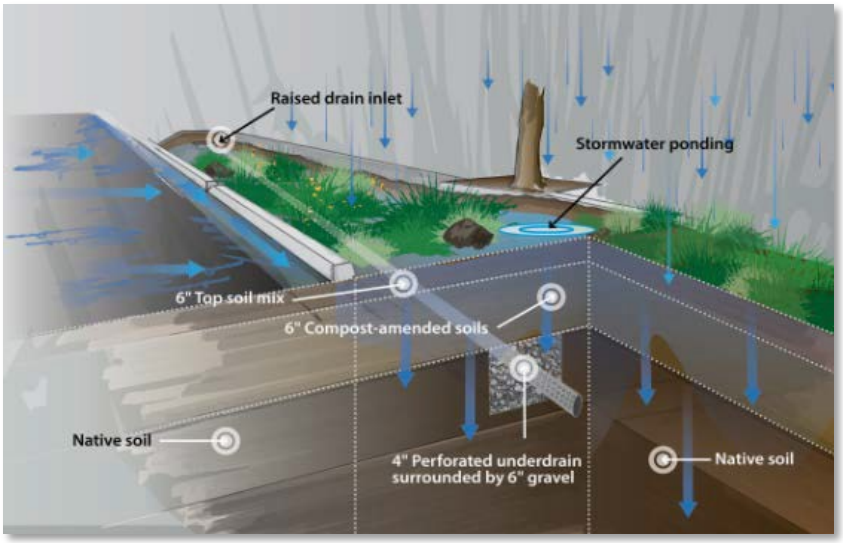

Figure B: CA State University-Sacramento Generic Urban Infiltration Trench BMP Detail

Description

An infiltration trench or basin BMP captures and infiltrates storm water runoff into native soils. Infiltration trench or basin BMPs come in a variety of shapes and sizes and the final appearance may vary substantially. Infiltration trenches may be backfilled with porous media such as gravel, sand, Cornell Soil, or various locally earthed rocks known not to generate pollutants of concern to the downstream waters. Subsurface designs may be comprised of perforated pipe, chambers, open bottom concrete galleries or other high voids structures. These trenches and basins store the design water quality volume for infiltration to underlying soils.

Performance and Design

The infiltration trench BMPs must be designed to trap trash particles that are 5 mm or greater and prevent offsite migration, and the design must include:

1. A screen[1] that prohibits the discharge of particles 5 mm or greater at the BMP overflow or bypass outlet;
2. A treatment capacity equal to or greater than the volume collected during the region specific one-year, one-hour storm event from the applicable drainage area, or a capacity to carry at least the same flows of the corresponding storm drain; and
3. Stamp and signed design plans by a registered California licensed professional civil engineer (see Bus. & Prof. Code Section 6700, et seq.).

Maintenance

Regular maintenance is required to maintain adequate trash capture capacity and to ensure that captured trash does not migrate offsite. The owner should establish a maintenance schedule based on site-specific factors, including the size of the infiltration trench BMP, storm frequency, and characterization of upstream trash and vegetation accumulation. Trash capture and maintenance may be improved by addition of various forms of pretreatment, such as upstream swales, forebays, or manufactured treatment systems.

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Media Filter
Trash Best Management Practices (BMP)
Minimum Specifications

Figure A: Media Filter BMP Image
County of San Diego LID Handbook BMP Image

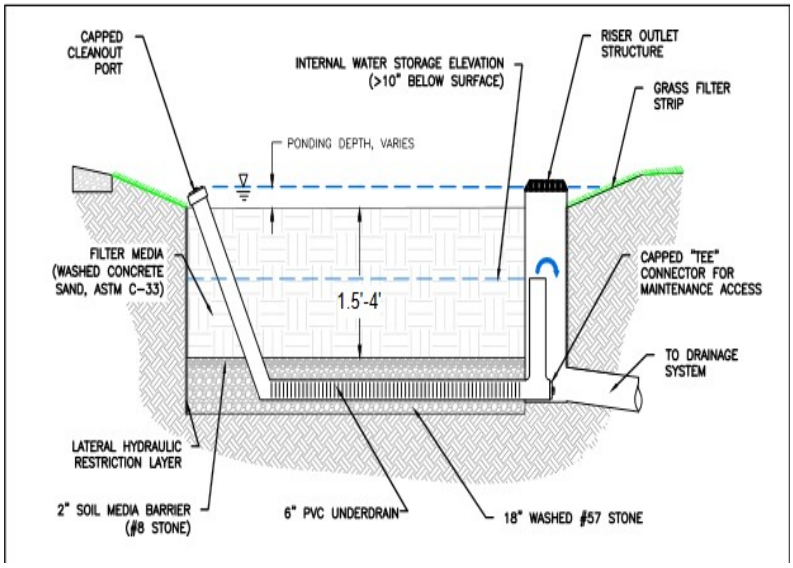

Figure B: Generic Media Filter BMP Detail
County of San Diego LID Handbook BMP Image

Description
A media filter BMP uses a bed of sand, peat, zeolite, anionic and/or cationic media, granite or other fine grained materials or fabrics to physically separate sediment and sediment-bound pollutants and/or electro-chemically remove dissolved constituents from storm water.

Performance and Design
The media filter BMP must be designed to trap trash particles 5 mm or greater and prevent offsite migration, and the design must include:

1. A screen[1] that prohibits the discharge of particles 5 mm or greater at the BMP overflow or bypass outlet;
2. A treatment capacity equal to or greater than the volume collected during a one-year, one-hour storm event from the applicable drainage area; or a capacity to carry at least the same flows as the corresponding storm drain; and
3. Stamped and signed design plans by a registered California licensed professional civil engineer (see Bus. & Prof. Code Section 6700, et seq.).

Maintenance
Regular maintenance is required to maintain adequate trash capture capacity and to ensure that captured trash does not migrate offsite. The owner should establish a maintenance schedule based on site-specific factors including the size of the media filter BMP, storm frequency, and characterization of upstream trash and vegetation accumulation. Trash capture and maintenance may be improved by addition of various forms of pretreatment, such as upstream swales or forebays.

[1] Upon approval by the Regional Water Quality Control Board Executive Officer, an external design feature or up-gradient structure designed to bypass flows exceeding the region specific one-year, one-hour, storm event does not require a 5 mm screen.