



# GREEN INFRASTRUCTURE in New Jersey



## PRACTICES

### GREEN INFRASTRUCTURE PRACTICE: STREET TREE TRENCH

A street tree trench is a linear stormwater management feature, typically placed near sidewalks, that combines trees with an underground stormwater management system. On the surface, they look like regular trees with a drain, but an underground stormwater system manages and reduces runoff to provide additional stormwater management.

#### HOW IT WORKS:

A street tree trench is a combination of tree pits and a subsurface stormwater management system designed to treat runoff entering the tree pit. Most tree trenches incorporate several standard stormwater management BMPs into their design: filtration through a soil media such as in a bioretention basin, subsurface detention, or subsurface infiltration. Stormwater runoff is diverted to the trench by a curb cut, storm drain or permeable concrete sidewalk pavers. The soils typically provide treatment for the runoff before it enters a storage area, where the water is available to the tree roots for uptake. This system reduces pressure on the remainder of the stormwater infrastructure by capturing, filtering and reducing runoff from adjacent impervious areas in underground storage before releasing it or infiltrating it into the soils, if local soils are suitable. If necessary, larger storms can bypass the tree trench.

Aside from capturing stormwater runoff, tree trenches help large canopy trees thrive, which improves air quality, provides additional green space, and helps to mitigate the “urban heat island” effect, which causes cities to be warmer than their surrounding areas.

Information regarding bioretention basin, detention basin and infiltration basin design criteria are available at [www.njstormwater.org/bmp\\_manual2.htm](http://www.njstormwater.org/bmp_manual2.htm).

#### CONSIDERATIONS:

Street tree trenches should be considered when sidewalks are being replaced or repaired. Sidewalk load bearing requirements must be taken into account during the design process. Sidewalk width should also be considered to ensure that the trench does not encroach on pedestrian traffic. Tree trenches are also an appropriate stormwater management feature for parking lots.