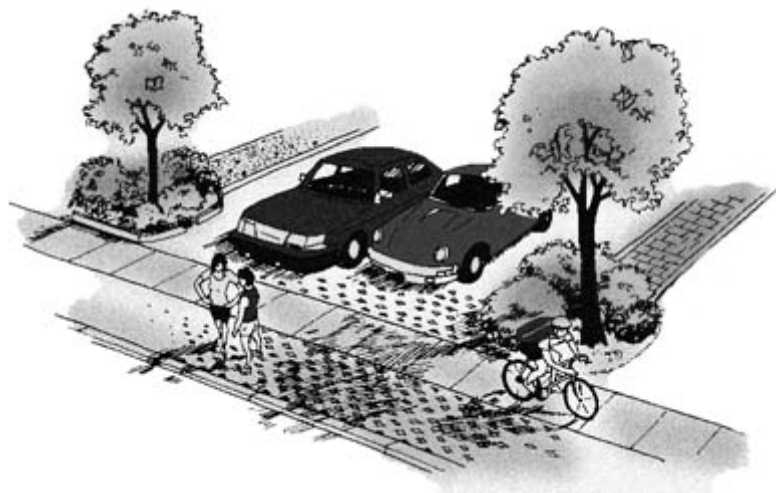


## Pervious Surfaces

Urban runoff from paved surfaces carries with it pollutants such as fuel, oil, paint, heavy metals, pesticides, human and animal wastes, and trash. By reducing surface car parking areas, increasing the permeability of surfaces not used for car movement, and integrating natural landscaping into car parking areas, urban runoff can be naturally treated, groundwater supplies replenished and pollution entering waterbodies reduced.

Most of the 'paving over' in developed areas is due to common roads and parking lots, which play a major role in transporting increased stormwater runoff and contaminant loads to receiving waters. Alternative paving materials can be used to locally infiltrate rainwater and reduce the runoff leaving a site. This can help to decrease downstream flooding, the frequency of combined sewer overflow (CSO) events, and the thermal pollution of sensitive waters. Use of these materials can also eliminate problems with standing water, provide for groundwater recharge, control erosion of streambeds and riverbanks, facilitate pollutant removal, and provide for a more aesthetically pleasing site. The effective imperviousness of any given project is reduced while land use is maximized. Alternative pavers can even eliminate the requirement for underground sewer pipes and conventional stormwater retention / detention systems. The drainage of paved areas and traffic surfaces by means of permeable systems is an important building block within an overall Low Impact Development scheme that seeks to achieve a stormwater management system close to natural conditions.

The area and type of paved surfaces can signal their use by cars, parking or pedestrians. Wherever traffic requirements allow it, install surfaces that encourage non-automobile traffic, and allow stormwater infiltration. Use impervious pavement (concrete and asphalt) only where regular car, bus or truck traffic is expected. Match the surface to the need:



- Porous asphalt, paver blocks or large aggregate concrete for parking and highly used bicycle and pedestrian areas
- Lattice blocks that permit grass growth for fire lanes and overflow parking
- Crushed stone or brick for lightly used pedestrian paths
- Recycled asphalt and recycled concrete where impervious surfaces are required

Provide “curb cuts” and slope hard landscaping features to allow water to flow to permeable surfaces and oil/water separators.

Integrate trees with a high, dense canopy into “parking groves”. These provide shade for parked vehicles, and are more attractive when cars are absent. Ensure parking groves do not provide hiding places, with landscaping that does not block sight lines.

Explore the feasibility of a common driveway or entrance with adjacent facilities.

### **Cautions**

- Safe and visible circulation is critical. Do not compromise fire rescue access.
- “Parking groves” require careful planning for space efficiency and security.
- Ensure that pedestrian path's paving are accessible for disabled people.