Prevent runoff
Slow the migration of rainwater from the catchment by retaining rainfall within property boundaries
- Use permeable surfaces
- Use non kerbed roads and carparks
- Plant trees with large canopies over sealed surfaces such as roads and carparks

Make use of seasonal wetlands
Avoid summer algal blooms and midge problems and maintain nature’s water balance
- Retain seasonal wetlands and vegetation
- No direct drainage to a wetland or its buffer

Maximise local infiltration
Recharge local bores and reduce water quality and flooding problems
- Use vegetated swales
- Use slotted or perforated pipes and minimise use of piped drainage systems
- Create vegetated buffer and filter strips

Make the most of nature’s drainage
Cost effective, safe and attractive alternative to pipes & drains
- Retain natural channels and incorporate into Public Open Space and Multiple Use Corridors
- Retain and restore riparian vegetation to improve water quality through biofiltration
- Create riffles and pools to improve water quality and provide refuge for local flora and fauna

Convert drains into natural streams
Benefit from natural storage of flood water and lower flow velocities
- Create streams with channel size suitable for maximum annual rainfall events
- Accommodate large and infrequent storm events within the stream’s floodplain
Maximise local infiltration
The traditional practice of conveyancing of stormwater in piped systems means that the water is not available for wetlands, the bushland and groundwater for domestic and utility bore users. In some established urban areas piped systems are unavoidable due to the nature of the developments, however, slotted or perforated pipes can be installed so that the water leaks back into the groundwater. In new developments the use of piped drainage systems should be minimised. Planting high water use native trees with deep roots can increase the take up of water from the soil and allow more water to infiltrate.

Make the most of nature’s drainage
Building and maintaining piped systems is expensive. A viable, cost effective and safe alternative is to direct any water that has not been infiltrated on property boundaries into existing natural streams and waterways. New developments are required to provide attractive areas of public open space and these are typically achieved through Multiple Use Corridors where people can recreate and enjoy natural bushland and parklands. Waterways can carry the maximum annual rainfall events in the channel and any large and infrequent storm events are easily retained within a waterway floodplain and natural seasonal wetlands. Where natural streams have been turned into trapezoidal drains, they can be restored with riparian vegetation, pools and riffles. Natural streams can improve water quality and provide refuge for local flora and fauna. Wetlands on the Swan Coastal Plain are typically ephemeral meaning they dry out over summer. The native plants and animals have adapted to this seasonal water table so it is important not to directly pipe water into these wetlands or its surrounding buffers. Too much water over summer can mean loss of native flora and fauna and invasion of weedy and nuisance species.

Changing our behaviour
There are many changes we can make to ensure that we can minimise the risk of stormwater picking up nutrients and other contaminants as it flows through the urban environment. When building new infrastructure and housing on site practices should ensure that rain cannot wash soil and litter from a site. Householders can use less fertiliser on gardens and ensure that they wash their cars on grass areas not sealed driveways. Developers and local governments can ensure that the best practice water sensitive urban design principles are in place for new and existing communities. These are all small and easy steps to ensure better water quality and a have more attractive and healthy urban environment.

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BE A LEADER IN URBAN STORMWATER MANAGEMENT

Provide attractive and livable communities, reduce construction costs and maximise returns

Contemporary Stormwater Management aims to build on the traditional objective of local flood protection, by having multiple outcomes including improved water quality management, valuing stormwater as a resource, protecting ecosystems and providing livable and attractive communities.

The sandy soils of the Swan Coastal Plain, Western Australia offer a distinct advantage compared to most urban areas in Australia. Rain that falls on our urban environment can be infiltrated into the ground extremely easily due to high permeability of the soils. Perth has yet to realise the full potential of maximising infiltration and retaining stormwater on site.

The most cost efficient and sustainable approach of urban stormwater management in WA is to ensure that rain that falls on our urban environment is infiltrated into the ground as close to where it falls as possible. This means the water does not even get the opportunity to pick up pollutants from the urban environment and the water quality is more likely to remain good. Flood risk is also reduced, as the movement of groundwater through the sandy sediments of the superficial aquifer ranges from about 50 to 150 m/year, while on the highly sealed surfaces of the urban areas, water can reach a stream in a matter of hours.

There are several ways that urban designers, planners, developers and the community can do to help improve stormwater management.

Prevent runoff
The proportion of impervious surfaces, such as roads, roofs and paving can range between 25% to 50% in a standard residential catchment. Fast moving and high volumes of stormwater runoff can cause problems of flooding and also erosion of our traditional open drains and waterway banks. Using permeable surfaces such as grass areas and porous paving can increase the permeability of the urban environment and reduce the amount of water running over the surface. Where the residential area has a lot of sealed areas, water collection systems such as rainwater tanks can store the water and prevent it leaving the property as quickly. Non kerbed roads and carparks allow water to runoff the road and seep into vegetated verges and swales.