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The environmental impacts of stormwater in relation to carparking areas.

An assessment of the impacts of stormwater on carparking areas and the structural and legal controls.

A thesis presented in partial fulfillment of the requirements for the

Masters of Resource and Environmental Planning

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ABSTRACT

The aim of this thesis is to define and expand on what the environmental impacts of stormwater in relation to parking areas are. Also to describe how these impacts are controlled structurally and legally and who is able to compensate for their impacts.

The results of the case studies in this thesis supported the findings of the literature reviewed. There is a better way to design and manage the construction of carparking areas (either impervious or semi-pervious surfaces) in the future urban development environment.

The (long-term ideal) goal is to reduce the environmental impacts from the construction of impervious areas. These adverse impacts are:

- contaminants entering waterways, where they adversely impact aquatic life, and
- flooding from increased runoff rates that causes scouring of stream beds and impact residential and commercial property

These case studies have shown that current practice can and should be modified to have a lower impact on the environment. There is also the possibility of retrofitting existing carparks to mitigate the present effects.

The findings, in seeking to mitigate the adverse effects of carparks on the environment can be broken down into five key areas:

- Any constructed surface or development, whether it be for carparking purposes or roofing should, wherever practicable, have built into its design a treatment and detention facility to mitigate the effects of stormwater on the environment.
- The impacts of any particular project should be looked at in terms of their cumulative long-term impacts.

- Rates relief should be an option for those prepared to upgrade their site to mitigate effects on catchments.
- District plans should provide performance standards with incentives to reduce off-site impacts of stormwater.
- Local authorities should target catchment assessment and design to protect the environment and meet the regional bodies requirements.

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