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# Using Smart Growth Techniques as Stormwater Best Management Practices

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## Smart Growth Techniques as Best Management Practices

What do states and localities need to do to qualify smart growth policies as stormwater BMPs under stormwater permitting programs? Permitting authorities around the country are already introducing smart growth concepts into their guidance documents and permits. Some of the general concepts include:

- Coupling smart growth planning with site design criteria to further improve the watershed-wide benefits of the growth and redevelopment plans.
- Implementing watershed-wide or regional policies to consider simultaneously areas for growth and those for conservation.
- Better designs for reducing the impervious surfaces associated with development, such as compact street designs and lower parking requirements.

Notable examples include the following:

New Jersey has developed a successful strategy for considering both smart growth and stormwater in its state water quality and growth plans. In seeking to meet the dual goals of reducing runoff and replenishing aquifers, the state has developed policies to

encourage growth in targeted areas while protecting environmentally sensitive areas and open space. The state's regulations are divided into requirements for runoff control and requirements for infiltration. Redevelopment and infill in designated urban areas are exempt from the stormwater infiltration rules. The reasons supporting the policy are: (1) recharge regulations can pose a regulatory barrier to redevelopment, (2) the regulations can be impractical in highly urbanized areas and (3) recharge is not always desirable in areas with environmentally compromised soils.

In California, the Santa Clara Valley Urban Runoff Pollution Prevention Program's (SCVURPPP's) 2001 Phase I permit renewal recognized that there could be cost-effective opportunities to implement stormwater control during the land use approval process. In particular, SCVURPPP noted several smart growth options, including neo-traditional street design standards and more effective use of existing parking spaces. The permit goes further, noting that certain development projects, such as transit villages, are likely to be exempt from several requirements because they are typically built in areas already covered with impervious surfaces.<sup>3</sup>

The SCVURPPP permit lists numerous criteria for onsite stormwater control requirements, but also include flexibility by allowing its permittees to document where standard criteria would be impractical, where compensatory mitigation would be allowed, and where localities could use alternative strategies to better match stormwater control techniques to the local condition.

Supplying workforce housing closer to job and activity centers often helps relieve development pressure to build more affordable housing further out.



Photo: EPA

## North Central Texas Council of Governments Guidance

### Minimize Impervious Surfaces

Impervious surfaces are roads, parking lots, driveways, and rooftops that do not allow infiltration of stormwater into the ground. The increase in stormwater runoff, along with the pollutants the runoff picks up from impervious surfaces, cause major problems for our waterways. Narrower streets and smaller parking lots benefit the environment and can make a development more attractive as well.

- Develop residential street standards for the minimum required pavement width needed to support travel lanes, on-street parking, and emergency vehicle access. *Street Specifications, Subdivision Ordinance*
- Consider limiting on-street parking to one side of the street. *Street Specifications, Subdivision Ordinance*
- Incorporate sunken landscaped islands in the middle of cul-de-sac turnarounds. *Street Specifications, Drainage Manual*
- Minimize street length by concentrating development in the least sensitive areas of site. *Zoning Ordinance*
- Reduce parking lot size by lowering the number of parking spaces (minimum and maximum ratios) and by sharing parking among adjacent businesses. *Zoning Ordinance, Development/Engineering Standards*
- Reduce parking requirements for developments in proximity to public transportation. *Zoning Ordinance*
- Provide incentives or opportunities for structured parking rather than surface parking. *Zoning Ordinance*
- Use pavers or porous pavement in parking overflow areas. *Development/Engineering Standards*
- Reduce frontage requirements in residential areas to reduce road length. *Zoning Ordinance*
- Reduce the rooftop area of buildings by constructing multiple level structures where feasible. *Zoning Ordinance*<sup>4</sup>

where impervious surfaces, such as parking lots or driveways, are located. (See box.)

The NCTCOG examples show that many of the most promising techniques for effectively managing runoff are often included in existing regulations and guidance traditionally associated with land development and transportation regulations, not stormwater control. In addition, the examples show that flexibility is needed, since not all regulations work equally well in all contexts. The North Carolina Smart Growth Alliance has pointed this out as well. In comments to the North Carolina Division of Water Quality on proposed stormwater rules, the Alliance notes that language in the

state's 2003 proposal to establish impervious surface limitations on a site-by-site basis would have the effect of making sprawl-type developments easier to build, while making it more difficult to develop compact, walkable communities.<sup>5</sup> Blanket regulations that appear to make sense at the individual lot level can often have the unintended outcome of promoting development in areas of watersheds unable to handle new growth.

So, how do stormwater managers and their planning counterparts choose strategies and BMPs that serve the interrelated goals of watershed protection and successful growth and development? Matching the BMP (or



**Table 2: Best Management Practices and Development Context**

BMP Strategies	Urban/High Density Settings	Suburban/ Urbanizing Areas	Rural and Conservation Areas
Strategies for individual buildings and building sites	Bio-infiltration cells, rooftop rain capture and storage, green roofs, downspout disconnection in older residential neighborhoods, programs to reduce lawn compaction, stormwater inlet improvements	Disconnecting downspouts, green roofs, programs to reduce lawn compaction, bio-infiltration cells, rooftop rain capture and storage	Green roofs, housing and site designs that minimize soil disruption
Low impact development (LID) or better site design strategies	Ultra-urban LID strategies: high-performing landscape areas, retrofitting urban parks for stormwater management, micro-detention areas, urban forestry and tree canopy, green retrofits for streets	Swales, infiltration trenches, micro-detention for infill projects, some conservation design, retrofitting of parking lots for stormwater control or infill, tree canopy, green retrofits for streets. Depending on location, larger scale infiltration.	Large scale LID: forest protection, source water protection, water protection overlay zoning, conservation, aquifer protection, stormwater wetlands
Infrastructure	Better use of gray infrastructure: repair and expansion of existing pipes, installation of stormwater treatment, fix it first policies, improve street and facilities maintenance	Priority funding areas to direct development, better street design, infrastructure planning to incentivize smart growth development, improve street and facilities maintenance	Smart growth planning for rural communities using onsite systems
Structural BMPs	Commercially available stormwater control devices, urban drainage basins, repair of traditional gray infrastructure	Rain barrels, bio-infiltration techniques, constructed wetlands	
Design strategies	Transit districts, parking reduction, infill, improved use of curbside parking and rights of way, brownfields, urban stream clean-up and buffers, receiving areas for transfer of development rights	Infill, greyfields redevelopment, parking reduction, policies to foster a connected street system, open space and conservation design and rural planning, some impervious surface restrictions, stream restoration and buffers, targeted receiving areas for transfer of development, planned unit developments	Regional planning, use of anti-degradation provision of Clean Water Act, sending areas for transfer of development, watershed wide impervious surface limits, water protection overlay zoning districts
Watershed-wide or regional strategies	Transfer of development rights, waterfront restoration, participation in regional stormwater management planning/infrastructure	Regional park and open space planning, linking new transit investments to regional system, participation in regional stormwater management planning/infrastructure	Regional planning, use of anti-degradation provision of Clean Water Act, sending areas for transfer of development, watershed wide impervious surface limits, water protection overlay zoning districts, water supply planning and land acquisition