# Principles of Smart Growth and Their Corresponding Rainwater Dos and Dont's

By Paul Crabtree

Smart growth is an urban planning and transportation theory that concentrates growth in the center of an urban area to avoid urban sprawl. It advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices. Smart growth is an alternative to urban sprawl, traffic congestion, disconnected neighborhoods, and urban decay. Its principles challenge old assumptions in urban planning, such as the value of detached houses and automobile use. According to *The Smart Growth Manual,* Smart Growth was first championed by Maryland Governor Parris Glendening, then by the Environmental Protection Agency in 1996, followed by a burgeoning collection of organizations bearing the name.

The Ten Principles of Smart Growth can be found at www.smartgrowth.org, www.epa.gov/dced/pdf/waterresources_with_sg.pdf, and are listed below, along with examples of each principle and its antithesis, as well as examples of the rainwater dos and don'ts that relate to each principle.
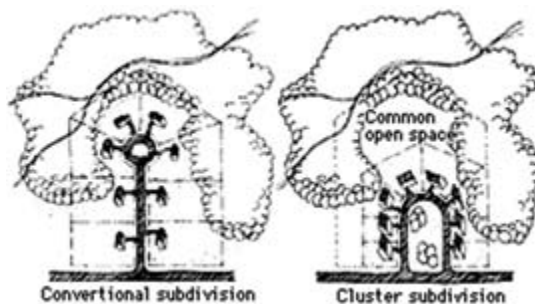
Conventional subdivision   Cluster subdivision
Both the "poor" and the "good" are sprawl patterns.

1. Create a Range of Housing Opportunities and Choices.

An integral component in any smart growth strategy is the provision of quality housing for people of all income levels. Conventional sprawl patterns consisting of large pods of single-use, large lot subdivisions and gated communities do not accomplish this goal.

Rainwater Dos and Don'ts:
Do represent how stormwater best management practices (BMPs) can apply in different types of housing configurations, not just single-family

detached houses.

Don't represent low-impact development (LID) BMPs with examples where both the "do" and the "don't" are sprawl.

2. Create Walkable Neighborhoods.

Walkable communities are desirable places to live, work, learn, worship, and play, and therefore a key component of smart growth. Drive-only suburbia is not walkable; one must drive to get to everything because all of the services are remote and separated, such as school complexes, shopping malls, business parks, and park complexes.

Rainwater Dos and Don'ts:
Do ensure that BMPs within urban streets provide for great walkability and are complete streets that include sidewalks, street trees, narrower vehicle lanes, on-street parking, and attractive and safe frontages.
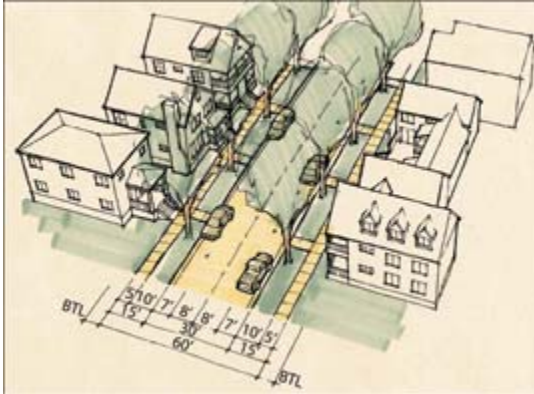
A walkable neighborhood

Credit: Dreiling Terrones Architecture and Crabtree Group
A complete street

Porous street and bioswale

Don't eliminate elements of a complete street in order to achieve rainwater improvements.

3. Encourage Community and Stakeholder Collaboration.

Growth can create great places to live, work, and play—if it responds to a community's own sense of how and where it wants to grow. Developers and their specialist consultants deciding beforehand what a project will consist of and entering into adversarial "negotiations" during a public entitlement process can be very inefficient and counterproductive.
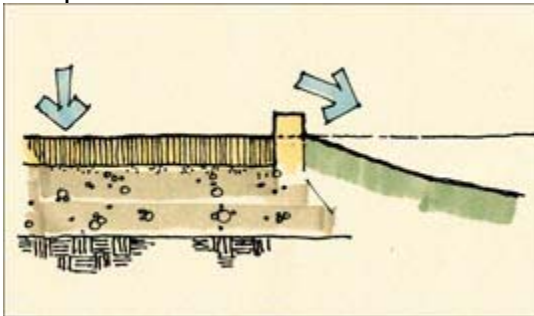
Rainwater Dos and Don'ts:
Do educate the community on rainwater issues and get their feedback on potential solutions. Encourage engineering professionals to work as part of a holistic team to help change the mindset and rules of municipalities, developers, and the professions as a whole.

Don't write regulations and programs without public engagement, and without looking outside the silo of your own profession for holistic solutions.

4. Foster Distinctive, Attractive Communities with a Strong Sense of Place.

Smart growth encourages communities to craft a vision and set standards for development and construction which respond to community values of architectural beauty and distinctiveness, as well as expanded choices in housing and transportation. Conventional land use codes and engineering standards often encourage or mandate sprawl patterns that lack distinctive character.

Public charrette session

Rainwater Dos and Don'ts:
Do: Professional consultants and builders need to design aesthetically to create facilities that people will enjoy and care for. An important part of this effort is designing and building attractive rainwater treatment facilities that fit the context of the site within the community or watershed. For example, see www.lightimprint.org.

Don't design and build BMPs for technical performance only, without responding to community values of beauty and distinctiveness.

5. Make Development Decisions Predictable, Fair, and Cost Effective.

For a community to be successful in implementing smart growth, it must be embraced by the private sector. Development regulations and processes that are onerous, confusing, expensive, and adversarial will be despised by the public.

Rainwater Dos and Don'ts:
Do make BMPs and regulations clear, simple, and economical, and encourage intrinsic green tools such as source control and natural drainage solutions.

Don't issue ambiguous regulations that ignore economic factors, such as enforcing gold-plated devices or high tech as the only compliance alternatives.

6. Mix Land Uses.

Smart growth supports the integration of mixed land uses into communities as a critical component of achieving better places to live. Multiuse facilities that are still separated pods—such as a power center that is adjacent to an apartment complex, which is adjacent to a business park, which is near a hospital campus, all of which have huge parking lots—do not achieve the integration of mixed uses that can reduce vehicle miles traveled.

Light imprint detention pond

Rainwater Dos and Don'ts:
Do encourage compact mixed uses that can reduce parking spaces through shared-parking scenarios and reduced driving, not drive-only sprawl.

Don't display as exemplars BMPs located in separated-pod, single-use developments that result in drive-only access and create wide streets, large expanses of parking lots, and sprawling one-story building programs.

7. Preserve Open Space, Farmland, Natural Beauty, and Critical Environmental Areas.

Open space preservation supports smart growth goals by bolstering local economies, preserving critical environmental areas, improving our communities quality of life, and guiding new growth into existing communities. Avoid the tendency to spread out to develop cheaper agricultural or natural lands, which is only possible because the automobile allows lack of discipline in urban planning.

Photo: Light Imprint Handbook, Tom Low
Attractive porous courtyard

Rainwater Dos and Don'ts:
Do encourage the improvement of existing sites by incentivizing infill and redevelopment. Significant watershed gains can be made by retrofitting existing areas and avoiding the development of greenfields.

Don't make the rainwater regulations for retrofitting of infill and redevelopment sites the same as for greenfield sites.

8. Provide a Variety of Transportation Choices.

Providing people with more choices in housing, shopping, communities, and transportation is a key aim of smart growth. Planning and building communities with the assumption that in America everyone owns and drives a car is harmful to the environment and ignores the large number of non-drivers such as the young and elderly.

Rainwater Dos and Don'ts:
Do integrate rainwater solutions into all types of streets and highways and recognize the multimodal needs for varying thoroughfare types.

Don't design green streets without integrating the rainwater needs with the needs of transportation, pedestrian, bicycle, and vehicles. An example would be a bioswale on a street with wide paving and no sidewalks.
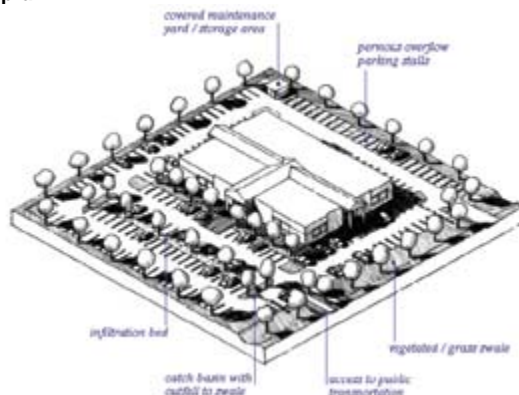
9. Strengthen and Direct Development Toward Existing Communities.

Photo: Sandy Sorlien
Multiuse developments are not mixed-use when they are composed of separated pods of retail, office, and apartment complexes.

Compact mixed uses are more efficient than drive-only sprawl.

This poor "exemplar" from a BMP handbook depicts LID BMPs for a sprawl commercial development.

Smart growth directs development toward existing communities already served by infrastructure, seeking to utilize the resources that existing neighborhoods offer and to conserve open space and irreplaceable natural resources on the urban fringe. Overextending infrastructure into the hinterlands is an often misguided effort to encourage the real estate growth machine.

Rainwater Dos and Don'ts:
Do study the regional watershed and locate ways to fix problems within the existing community. Encourage regulations that are scaled toward the neighborhood and community and that address BMPs based on the site's contextual basis along the rural-to-urban transect. See www.transect.org.

Don't create regulations or programs that make it easier to comply in new developments than in existing communities. Don't write or adopt land use codes or stormwater regulations that are one-size-fits-all—ignoring the context of the development site. Main Street blocks need to be treated differently than detached single-family blocks.

10. Take Advantage of Compact Building Design.

Smart growth provides a means for communities to incorporate more compact building design as an alternative to conventional, land-consumptive development. Regulations that severely limit density, building heights, floor-area ratios, or mixed-use buildings should be considered potentially harmful to the environment.

Rainwater Dos and Don'ts:
Do consider "density as a BMP" on the basis of impacts on a per capita basis rather than a per-acre basis only.

Don't portray the effects of percent impervious area without also addressing the per capita impacts and acknowledging that there is a basic sustainable human footprint that needs to be accounted for.

Conclusion
Make your rainwater regulations and practices smarter, and avoid unintended negative consequences, by expanding your expertise through learning and applying the Ten Principles of Smart Growth.

- – – – Riparian buffer/natural area boundary

Colocated construction-phase sediment basin and post-construction BMP.

Post-construction bioretention/infiltration area — Soil must be protected during construction. Do *not* use for construction-phase BMPs *unless specific conditions are met (Table 1.3)*.

– – – Limits of Disturbance (LOD) for construction-phase SWPPP — Must protect riparian buffer and post-construction infiltration area. Fencing recommended.
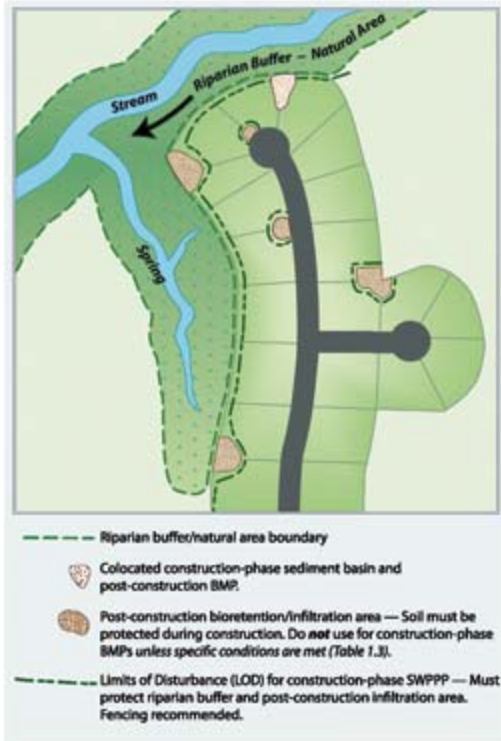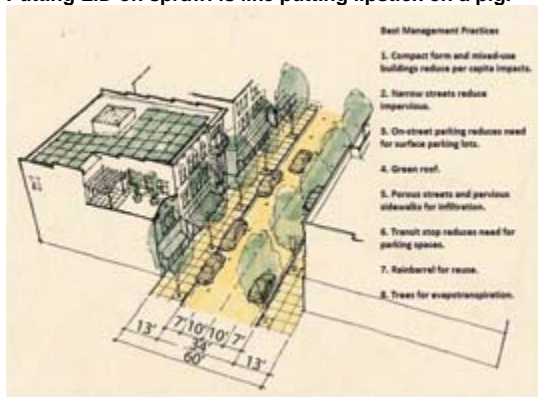
Figure 1.3. Construction stormwater and post-construction stormwater plans must be coordinated to protect post-construction design features and BMPs

Putting LID on sprawl is like putting lipstick on a pig.

Credit: Dreiling Terrones Architecture and Crabtree Group
This exemplar depicts LID BMPs for a smart growth neighborhood.

**Traditional, compact village preserving agricultural
lands**