



Did Noah have a plan?

By Laura Morland, PE, Water resources engineer

"Flood plain development" sounds like an oxymoron. If these areas flood with water regularly, who wants to build their business or home there?



With increasing frequency community leaders find they must evaluate the need for growth in flood plains. In some cases, they may not even be aware that the area they are considering for expansion is in a flood plain. While the National Flood Insurance Program (NFIP) set the regulations regarding flood plains, most states require that the community administer them. This can be confusing and daunting without skilled guidance.

Communities use maps, typically Flood Insurance Study Rate Maps (FIRMs), to administer the flood plain ordinances. Most FIRMs were initially developed in the 1970s and 1980s by the NFIP to identify areas prone to flooding. For detailed studies, hydrologic and hydraulic models were developed to determine the level of flooding each river or stream might experience. To read these maps you need to understand the terminology. Here are a few definitions to help you:

- **Flood plains:** Areas subject to inundation during flooding, usually based on some specific event, such as the 100-year occurrence. It can include ponded or other ineffective flow areas, such as upstream or downstream of some bridges.
- **Flood way:** The area where flood waters flow – river channel and adjacent portions of flood plain required to carry flood flows.
- **Flood fringe:** The area within the floodplain, outside the floodway. In most communities the ordinances allow you to fill in this area.
- **Flood storage:** These are areas that are considered as retention or storage of flood waters. If a community develops in a flood storage area, the community must compensate for the volume of lost storage.

Communities are beginning to look at areas that were identified as flood prone, but where a detailed study has not yet been completed. Hydraulic studies will compute flood elevations and delineate flood plains and flood ways, so that your community can make informed decisions about where and how to grow. Community planning, as described in related articles in this newsletter, need to integrate flood plain regulations into their water resources planning elements. For more information about flood plain studies, please contact [Laura Morland, PE](#), water resources engineer at 1-888-364-7272.

Non-point pollution news

Non-point pollution – including animal waste and pet waste, construction and agricultural derived sediment, pesticides, oil and greases – threatens our water quality.

In January, the Wisconsin Department of Natural Resources Board approved holding statewide hearings on the proposed non-point pollution regulation. This regulation, which requires legislative approval, is intended to control non-point pollution from agricultural and urban sources.

Phase 1 of the federal non-point source abatement program, administered in Wisconsin under NR 216, has mandated many initiatives for larger urban areas through the permitting of storm water discharges. The proposed rule package (particularly NR 151) would include smaller communities through setting standards. Municipalities, developers and others would have to meet these standards to control sediment, heavy metals, grease and oil runoff from new and existing development, and urban areas under redevelopment. These new rules would set compliance standards for the infiltration of runoff to minimize the effects of development on

groundwater levels.

These rules have the potential to affect almost everyone. Meetings are scheduled for March 2000. We are tracking this regulation for you – please contact [Laura Morland](#) or [Rick Dodds](#) with questions, concerns and scheduled meeting dates.

Water resources planning

By Perry Rossa, PH, Project Scientist-Wetlands

Streams, lakes, ponds, wetlands, and waterways help form the core of a community's identity. Proper management, enhancement, or restoration of these assets can be a powerful magnet for desirable business and community development.

In the past, the impacts of development on these resources were often not addressed. As watersheds became "hardened" by new development, rainwater became polluted. The concentrated and accelerated runoff turned into a powerful agent for waterway erosion and the silting of ponds, lakes, and impoundments. With developments emerging, many municipalities have been confronted with having to manage runoff.

The traditional waterway and storm water solutions include channelizing or paving drainages to shunt water away to unimproved ponds or dry basins. While these measures solve flood problems and provide basic water quality treatment, the opportunity to promote community aesthetics is often missed.

An alternative to the traditional solution incorporates both function and aesthetics. "Conservation development" restores riverine, upland, and wetland habitats in public drainage corridors while providing for development needs. Recent public initiatives in comprehensive planning reward such value-added approaches to managing water resources in the face of development. In Minnesota, local government units can sell mitigation credits generated by wetland restoration to developers. Wisconsin has a new river planning/protection grant program that can help fund land purchases, ordinance development or restoration of in-stream and shoreland habitat.

In some cases, these efforts can be "piggybacked" onto normal storm water or floodplain studies.

Contact [Perry Rossa](#) today to learn how Mead & Hunt's integrated water resources planning services can help your community.