Eye on the Environment for 5/15/11

Low Impact Development Can Help Local Water Needs

By Arne Anselm

May 15 through 21 is National Public Works Week, a chance for the public sector to shed light on the seldom noticed infrastructure, efforts and policies that keeps our civilization moving, working and safe. Most known for roads and flood protection, another major task of Public Works is the protection of our environment through wastewater treatment and stormwater pollution prevention.

Future efforts will change the way we think of rain water. The state has recently required development projects in Ventura County to use new concepts to manage rain runoff.

As cities grow they cover raw land with asphalt, concrete and rooftops. Rain that was once able to soak into the ground is given a direct path to a creek or barranca. When this change is made water is no longer able to soak into the ground to replenish groundwater and then slowly feed back into creeks. Water also runs off much quicker, hitting a creek for a short period of time and with much more energy. A gentle rainstorm can create a torrent if the watershed is mostly concrete. This can lead to hydromodification, a seven syllable word meaning erosion due to changes in the flow of water. Hydromodification can cause loss of habitat, and in extreme cases even property. Public Works engineers are aware of these problems and design drainage ways to reduce the energy in water by disrupting and slowing flows when possible.

If cities were built with the idea of holding onto water and preventing any increase in runoff there would be less hydromodification. This idea is called Low Impact Development or LID. The effect of impervious areas (concrete and rooftops) that shed water to a storm drain system or creek is reduced by keeping most of that water on site. This can only be done for smaller storms. Water from larger but less frequent events will run off a site just as it would before.

New projects will be required to effectively limit impervious areas to only five percent. That doesn't mean that only five percent can be concrete or rooftops, but that the runoff will need to be held back. Once water is captured it can soak into the soil and benefit groundwater, or it could be held in a cistern (water tank) and used later to water landscaping. Some creative engineers have even figured out how to use that undrinkable water where drinkable water is used but not needed - to flush toilets.

Even with out-of-the-box solutions not every project will be able to meet the requirement to contain 95% of a small storm. The option for off-site mitigation of water is possible for certain projects, but they will still need to clean the water that leaves the site. Managing the volume of water off-site creates a big

opportunity because the site for that water can be chosen wisely. A wise choice would be for a multi-beneficial project that also addresses flood protection, pollution, sea water intrusion, groundwater recharge, recreation and future water needs. Work is underway over the next year to identify potential multi-beneficial projects to use that water, and the partners who can help make it happen.

Management of rain water and other run-off is just one of the many ways the Ventura County Public Works Agency keeps its “eye on the environment.” To learn more, come view the displays in the atrium of the Government Center’s Hall of Administration this week, with presentations and special events on Tuesday. Displays will highlight many of Public Work’s efforts including monitoring stormwater to detect pollution and provide flood warnings, operations and maintenance of streets (which are paved with recycled tire-based asphalt) and recycling programs.

Arne Anselm is Water Quality Manager for the Ventura County Watershed Protection District. If you have an idea for local environmental efforts that should be featured in this column, contact David Goldstein at 658-4312 or david.goldstein@ventura.org