Soaked to the Gills or Dry as a Bone

By Shawn Stevenson, Source Water Specialist

Oregon is known for its lush green forests and its beautiful landscapes. However, these benefits do come at somewhat of a cost, primarily in the form of the significant amount of rainfall that the residents of the Northwest endure on an annual basis. Each year the differences in the weather affects the lives of the people who reside here, sometimes the results are so subtle that they are hardly noticed; other times you can do nothing to ignore them. The dependency for the right amount of rain and the results associated with them shape our lives in everything from recreation to individual livelihood.

In the span of one year, weather conditions in this state went from fairly dry to the opposite end of the spectrum. This wet season thus far has brought with it record amounts of rain, thereby creating management concerns of different levels throughout the state.

Most of us are familiar with the phrase "feast or famine" and in many ways our reliance on water mirrors this statement. Not enough rain results in meager snow pack and potential drought conditions that can splay a gamut of repercussions. Of course the flipside of that coin is too much water causes the multitude of problems associated with flooding.

When an emergency occurs, your methodology needs to already have been established. The relevant time scale of the situation dictates a specific action in most cases. But, as previously stated, many problematic situations arise without a hammer clad BANG! Take the occurrence of a drought year for instance, initially the problem is intangible. A short series of dry weather is not a concern, but compounded as a several month period and the table is set with a dust bowl as the main course.

Since the ability to control the weather is still beyond our reach, what can be done to address the situation of water shortage? Other than the fact that having a plan in place for water conservation is a conscientious practice, it is a pending requirement. The "Municipal Water Management and Conservation Planning Program" provides a process for municipal water suppliers to develop plans to meet future water needs. Many municipal water suppliers are required to prepare plans under water right permit conditions. In addition, with the revision of the permit extension rules in fall 2002, communities seeking long-term permit extensions will be required to prepare plans *(ORWD, 2006)."*

With a requirement lurking over the horizon a water system can take several steps along the way before drafting an entire plan. The first of which is identifying who receives proprietary service and incorporating a set of standards into the Daily Operations Manual and Emergency Response Plan. Since previous articles have discussed conservation in terms of efficiency and monetary structure, the strategies presented will stress curtailment and conservation based on an emergency event.

These recommendations could be executed when the system undergoes a disruption of service or is faced with drought conditions and can provide an initial basis for key elements and concerns.

Categorized Conservation/Curtailment Measures:

- **Municipal:** Activities requiring water shall be deemed vital and typical operations will be altered or ceased.
- **Residential:** Residents will restrict water usage to only drinking and food usages. Typical conservation methods include lawn watering and vehicle washing being suspended.
- **Commercial:** Water usage should be restricted to only businesses providing food preparation or health provisions.

Specific Measure Examples:

- *Premises having odd numbered street addresses use only on certain time of day.*
- *Premises having even numbered street addresses use only on certain time of day.*
- *Recommended that no potable water from the City's system shall be used for*

construction purposes such as dust control, compaction, or trench jetting.

- *Landscape irrigation shall be reduced or not be allowed based on scope of interruption.*
- *Based on need, industrial users are required to reduce or cease all water use, subject to evaluation.*
- *Facilitate a preventative conservation plan for businesses in the area.*
- *Distribute mail-out flyers with statements, to inform residents about conservation needs during emergencies.*

The alternate side of water shortage is an excess in the form of a flood. This scenario yields a course of action that is considerably swifter. Within each Drinking Water Protection Plan that the OAWU staff produces, the inclusion of a 100-year flood map and information to the relevant Flood Mitigation Plan at the county level is presented. The state of Oregon learned several lessons from the floods of 1996. Many of these are addressed throughout the varying levels of government. Based upon the current flood related problems, water systems and public works departments can acquire the tools to help manage possible scenarios.

Flood risk or probability is generally expressed by frequency of occurrence. It is measured as the average recurrence interval of a flood of a given size and is stated as the percent chance that a flood of a certain magnitude or greater will occur in any given year *(FEMA, 2005).*

Goal 7 of the statewide planning goals, administered by Department of Land Conservation and Development (DLCD), requires local governments to adopt flood protection policies and controls. DLCD also administers the National Flood Insurance Program (NFIP) in Oregon, and every community with identified flood hazards is a member of this program. Thus, these local governments are required to adopt the NFIP's minimum requirements. The NFIP is comprised of a flood hazard mapping component, an enforcement component, technical assistance, and insurance which provides a financial safety net for owners of improved property. Together, all four components of the NFIP work together to reduce flood losses (*State of Oregon Natural Hazards Mitigation Plan, June 2000).*

Many of these references have a direct impact on the flood planning practices of individual water systems. However, in terms of specific needs each system should utilize the necessary actions based on the severity of the occurrence. As many water systems do not have the resources in terms of heavy equipment etc, the need for updated contact information is paramount for contractors, state and federal agencies. Mutual Aid agreements with municipalities and neighboring systems can also speed up reaction times during a flood or water-shortage event. Help is available to those in need, but there is something to be said for being prepared and taking control of what is controllable.

Shawn Stevenson- *Source-Water Specialist OAWU*