

THE WATER COOLER

...an environmental conversation

Volume 1 • Number 2 • October 2008

Calendar of Events Happenings-Celebrate & Learn

October

Energy Awareness Month
www.energystar.gov

No Drugs Down the Drain Week:
October 4-11
www.nodrugsdownthedrain.org

World Rainforest Week:
October 16-22

November

America Recycles Day:
November 15, 2008
www.nrc-recycle.org/americarecycles.aspx

Geography Awareness Week:
November 16-22, 2008
www.nationalgeographic.com/geographyaction/index.html

GIS Day:
November 19, 2008
www.gisday.com

December

Claudia (Lady Bird) Johnson:
1912 - 2007
December 22
First Lady, Environmentalist,
Founder of National Wildflower
Research Center

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Storm Drain, Wastewater &
Water Divisions of



...conserving resources today
for Redding's tomorrow.

530-224-6068

www.ci.redding.ca.us/rmu/index.html

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Steroids and Sunscreen and Soap... Oh My!

Pharmaceuticals and Personal Care Products (PPCPs) have been discovered in our Nation's waters at very low concentrations and in fact, have probably been present in water and the environment for as long as humans have been using them. Though research has found no evidence of adverse human health effects, some PPCPs have been found to have negative effects on fish and other aquatic life; still others can pose risks to the environment. Further research is needed to determine the extent of any ecological harm.

Pharmaceuticals refer to prescription drugs, over-the-counter therapeutic drugs, veterinary drugs, and vitamins. The pharmaceuticals that humans ingest are not entirely absorbed by our bodies, and are excreted and passed into the wastewater stream. Some pharmaceuticals are easily broken down and processed in the human body; others are not. Some degrade quickly in the environment; others do not. The amount of any one biologically unused or unprocessed drug depends on both the ability of an individual's body to break down the drug and the drug composition itself. Disposal of expired or unused medicines by flushing them down the drain into the sewer contribute to the problem of PPCPs finding their way into wastewater treatment plants.

Personal Care Products refer to products used for personal and cosmetic reasons such as soaps, fragrances, make-up, and sunscreen. Externally applied products wash down the shower drain or wash off in surface water such as lakes and rivers. Simple activities such as shaving, doing laundry, or taking a shower contribute to PPCPs in the environment.

Why should you be concerned? PPCPs are used in large quantities by people. And currently, no municipal sewage treatment

plant is engineered or equipped to remove PPCPs from the wastewater. Removal of individual PPCPs varies by the type of plant and technology available. In addition to antibiotics and steroids, there are over 100 more PPCPs that have been identified in environmental and drinking water.

The Environmental Protection Agency (EPA) is responding to the issues of PPCPs in water with a strategy aimed at:

1. improving science;
2. improving public understanding;
3. identifying partnership and stewardship opportunities;
4. taking regulatory action when appropriate.

With advances in technology that improve the ability to detect and quantify these chemicals, researchers and scientists can now begin to identify the possible effects these chemicals have on human and environmental health.

To mitigate some of the effects PPCPs may have in the environment, be aware of all the different products you use and consider whether you really need them. When a pharmaceutical take-back event takes place, bring your unused medicines, except controlled substances, and dispose of in a collection bin. The City of Redding will have one such event at the Solid Waste Household Hazardous Waste Facility, 2255 Abernathy Lane on October 9, 10, and 11. Finally, support legislation that will adequately address the proper disposal of pharmaceuticals to keep them out of groundwater, drinking water, and recreational waters.

Please Remember!

Fall is a good time to ready your home and garden for changing weather. Please remember to reset your irrigation timers to reflect the change in temperature and rainfall as the seasons progress. Take some time to become more familiar with the plants in your landscape. Start a journal where you can record the watering and soil requirements of your lawn, shrubs, trees, and flowers. You might be surprised to find out how much water you may be wasting.

If you are thinking about changing your landscape, October is a GREAT time to do it. Your local nurseries can help direct you to plants that are well-suited to Redding's unique climate. Your Water Utility has a Waterwise Landscaping CD available to help you plan that new eco-friendly yard and we are happy to send you one. Call us at 530-224-6068 for more information.

What in the World?

In 1854, British physician John Snow used spatial analysis, or geographical data analysis, as a way to prove his theory that Cholera was a water-borne disease and not transmitted through contaminated air. As a Cholera epidemic swept through London, Dr. Snow investigated each death and plotted this information on a map of the city. There were two water companies that supplied the city with water; one was located upstream and one was located downstream. The incidence of Cholera was much higher in the area served by the company who drew water from downstream and Dr. Snow believed that the water could have been contaminated by sewage. His map showed that in one particular area, approximately 500 people had died from Cholera within a ten day period. Dr. Snow convinced public officials to remove the water pump in that neighborhood and the epidemic was contained. Contemporary geographers point to this early example of using geographical data analysis to solve a social problem as evidence of the power of GIS.

Did You Know?

A Geographic Information System (GIS) is a computer-based tool for mapping and analyzing things that exist and events that happen on earth. Modern computer-based GIS models trace their beginnings to the early 1960s when it was discovered that maps could be programmed into a computer, stored, and modified when necessary. Until that time, maps had to be re-created by hand, so the emergence of computer cartography was revolutionary. Hardware, software, and people are essential elements to any GIS; however, data is key. A GIS takes geographical data, such as maps, and links that data to attributes - longitude, latitude, and elevation for instance. This creates a database that can be referenced, studied, searched, analyzed, and modified.

So, how do we use GIS in the real world? If you've ever used an internet mapping program to get directions, you've used GIS. Historical water conditions, such as streamflow or drought, can be mapped and even animated to show changes in weather patterns. Utility infrastructure components - water mains, manholes, storm drain pipes - can be layered onto maps of the City with all associated data such as pipe size, pipe depth, pipe material, and age. FEMA uses GIS to track the path of a hurricane in order to save lives and then again to assess damage after the fact. In fact, GIS technology is being used in many business and government applications and its powerful capabilities allow us to see the world in different ways. GIS reminds us that more informed decision-making can take place because geography matters in our daily world.

GIS - Working For You

Geographic Information Systems (GIS) is working for Redding Municipal Utilities by providing services which assist in routing crews more efficiently through the city, saving time and fuel.

- Storm Drain crews have had digital maps via laptops and Pocket PCs in the field supporting inlet and outfall inspections for several years. This system eliminates the need to input data back at the office, as inspection information is captured in the field and downloaded back at the office into the GIS.
- Industrial Waste now has laptops in each truck with the spatial data to aid in decision-making. Grease and oil trap inspections are routed throughout the city using GIS to minimize the time and maximize efficiency. These routes are updated monthly due to the fluctuation of the number of restaurants and other businesses.
- Wastewater just recently added laptops to their trucks. Training was provided to help the crews understand and navigate through the GIS software. The information found on the hardcopy atlas is now available on the laptops and all the other utilities are depicted as well so that crews can understand, spatially, the proximity of other pipes and systems. Because of this, if and when a sewer overflow occurs, they can identify which stream and storm drain inlet will be affected.
- Water valves and hydrants should be inspected and exercised periodically to ensure a working system. GIS was used to break the system into manageable routes and systematically move the crews through each route to maximize efficiency. Each valve is inspected and noted if additional work needs to be done.

For a look into how GIS serves the City of Redding, go to our webpage at <http://ci.redding.ca.us/> and click on Interactive Maps. You can see GIS at work!

GIS Day is November 19th. Help us celebrate! More information will be posted on the City's website at <http://ci.redding.ca.us> in the near future.

How Much Water?

Match the number of gallons to each action. Turn the page upside down for the answers
So, how did you do?

- | | |
|--|-------------------|
| 1. Taking a shower | A. 30 gallons |
| 2. Watering the lawn | B. 180 gallons |
| 3. Washing the dishes | C. 4-7 gallons |
| 4. Washing clothes | D. 1/2 gallon |
| 5. Flushing the toilet | E. 39,090 gallons |
| 6. Brushing teeth | F. 62,600 gallons |
| 7. Drinking | G. 15-30 gallons |
| 8. Needed to produce one ton of steel | H. 9.3 gallons |
| 9. Needed to process one can of fruit or vegetables | I. 1 gallon |
| 10. Needed to manufacture a new car and its four tires | J. 9-20 gallons |

Answers: 1-G, 2-B, 3-J, 4-A, 5-C, 6-I, 7-D, 8-F, 9-H, 10-E