

**PHARMACEUTICAL
DRUG DISPOSAL SITES**

Police Station
1040 West 700 South
Salt Lake City, UT
(801) 799-4601

Police Station
315 East 200 South
Salt Lake City, UT
(801) 799-3000

Herriman Sheriff Substation
13272 South 5600 West
Herriman, UT 84096
(801) 302-2080

Cottonwood Heights Sheriff Substation
7480 South 2700 East
Cottonwood Heights, UT 84121
(801) 944-1830

Holladay Sheriff Substation
4570 South 2300 East
Holladay, UT 84117
(801) 270-0426

DON'T MEDICATE OUR STREAMS!!

While many people have unused medications in their cabinets, they don't know what to do with them. There is not an ideal answer, but one thing is for sure, it is no longer recommended to flush them down the sink or toilet. Wastewater treatment plants weren't designed to remove these chemicals, and many drugs are showing up in our surface and groundwater.

Many prescription and over-the-counter drugs pass through the wastewater treatment process largely unchanged, and when they enter the streams, they can affect fish and other organisms that live there. A similar problem exists when some personal care products (PCPs), such as lotions and make-up, go down the drain.

There are various sources of unwanted pharmaceutical drugs that can lead to water contamination (e.g. residential homes, hospitals, and agricultural operations). At a May 22, 2007 convention in California, the pharmaceutical industry presented that, according to their best estimate, about 3% of prescribed drugs are unused and

disposed of via the trash or sewer. Of that, they estimate about 66% is attributed to individual use.

The main paths by which pharmaceutical drugs enter waterways are: excretion after use, disposal in the trash, and being flushed down the toilet. A United States Geological Survey (USGS) study found pharmaceuticals, hormones, and other organic wastewater contaminants in 80% of the 139 streams sampled in 30 states.



Pharmaceuticals disposed in solid waste landfills escape in the form of leachate, the liquid that has passed through or emerged from landfill waste.

While newer landfills are designed with a leachate collection system, older landfills can leak pollutants, including PCPs and pharmaceuticals into the ground and/or surface water systems.

How does this affect fish and other aquatic species? There are concerns regarding synthetic hormones, endocrine disruptor compounds (EDCs), and antibiotics that enter our waterways. An example of an EDC is Clofibrate, a drug commonly used to lower cholesterol. For an example of how these can affect fish, just look at the Potomac River. Just downstream from a wastewater treatment plant on the Potomac River, the USGS discovered male fish producing eggs due to the contamination from hormones in birth control pills. One study found that 79% of the male fish sampled had sexual abnormalities.

Another USGS study in the Boulder Creek Watershed in Colorado detected pharmaceutical compounds detected in over half of the samples analyzed. Additionally, studies of native fish populations in Boulder Creek found that contamination came from wastewater treatment facilities and ultimately from local homes.

While many countries have a pharmaceutical take back or return program, the U.S. federal government does not have such a program. Furthermore, with the legal restrictions associated with controlled prescription drugs, such as OcyContin® and Percocet, pharmacies are not legally able to take back many unneeded drugs.

What can you do?

How can you be a good steward and properly dispose of old and unused medications? Well, fortunately for Salt Lake County, we have a Pharmaceutical Drug Disposal Program. With this easy program, take all unused and old medications, both controlled and non-controlled prescriptions, to one of the five police station/sheriff's office drop off facilities listed above.

Unused medications are secured and then later incinerated. This wonderful program helps protect our water quality and also prevents accidental and intentional misuse of medications.

If you are unable to use the Pharmaceutical Drug Disposal Program, use the Federal Guidelines to dispose of old medications. Only buy the amount of a medication that you can use before it expires and consider buying fewer personal care products and using those you do buy sparingly.

For additional information on the Pharmaceutical Drug Disposal Program, contact the Salt Lake Valley Health Department at 801-313-6745.



Salt Lake County Public Works
Flood Control & Engineering Division
2001 South State Street, Suite N3100
Salt Lake City, Utah 84190
801-468-2711

Digital copies available online at
www.waterresources.slco.org
We welcome submissions!

**Promoting Stewardship
First annual Watershed Symposium**

Thanks to everyone who participated in the first annual Salt Lake Countywide Watershed Symposium this past fall! Approximately 120 participants attended this two-day event in which technical and non-technical watershed issues were discussed. Participants chose from 19 presentations and four field trips as we collectively explored ways to improve watershed stewardship. We are thrilled by the discussions that came out of this event and couldn't have asked for better presenters or participants. Thank you! With your assistance, the next Watershed Symposium will be as successful as the first.



Symposium Participants During Luncheon

UPCOMING EVENTS

Public workshops to discuss the Water Quality Stewardship Plan will be held:
April 8, 2008, 4 – 8 p.m., Whitmore Library
[2197 East Fort Union Boulevard]

May 1, 2008, 4 – 8 p.m., Riverton Library,
[12860 South Redwood Road]

Call [(801) 468-3656] for more information.



the **Watershed Watch**

Spring 2008 Vol 2 . Issue 1 .

Restoring the Jordan River

Challenges and Accomplishments

In environmental communities, the term restoration is often thrown around casually, as an activity that simply requires brief construction and a few Saturday volunteer plantings. Long-term stewardship needs are often overlooked amidst the immediate rewards of freshly planted ground and photo shoots. However, the realities of enhancing our existing resources are wrought with subtle complications and

and organizations.

In early 1994, Salt Lake County lobbied Congress and acquired \$ 2.0 million in funding for six ecosystem restoration projects along the Jordan. In 1996, Salt Lake County sought \$7 million through section 206 of the Water Resources Development Act (WRDA), and through collaboration with the Jordan River Watershed Council, developed site plans for 18

continued to implement Jordan River ecosystem restoration, using its own funding over the past three years.

Both the EPA and 206 projects used an "emergent bench" concept to develop site plans for degraded areas along the Jordan River. The emergent bench concept focuses on lowering the stream bank to allow for: an expanded zone of seasonal saturation, increased access to the water table, and an expanded floodplain. After physical alteration of the stream channel,

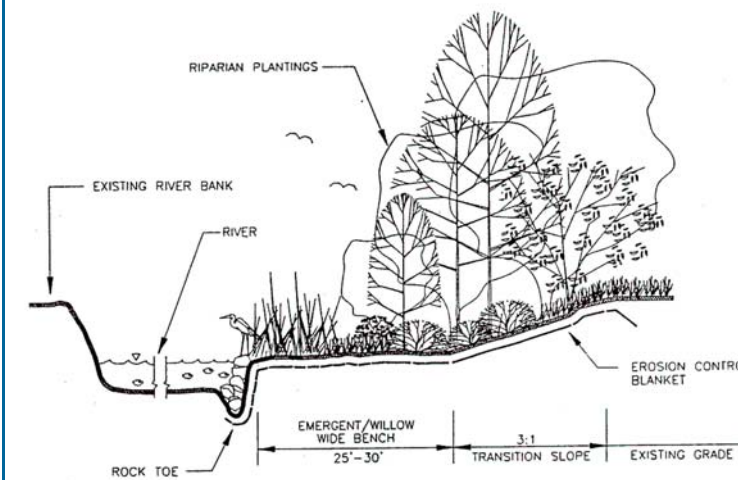


Jordan River Site Before and After Restoration

obstacles. As Salt Lake County has worked with numerous municipal partners over the past 15 years to restore areas along the Jordan River, many lessons have been learned. Previous efforts have raised questions and identified potential solutions. Although some of these solutions apply to initial construction, the overall message is that stewardship is a lengthy, time-consuming activity that demands involvement from individuals

additional project sites. These sites are commonly referred to as the "206 project sites". In 1995-96, approximately 150 acres of wetlands along the Jordan River were purchased with the funds acquired through the Central Utah Water Completion Act, and additional property was purchased through the Utah Reclamation Mitigation Conservation Commission. Despite the recent loss of federal support, Salt Lake County has

previous efforts have used broadcast seeding and tree plantings to establish a diverse vegetation community. However, unpredictable flows coming out of Utah Lake often induce sheet erosion along the emergent benches. Sheet erosion exposes carefully planted tublings and may wash broadcast seeds downstream. Additionally, beaver activity has often undermined tree-planting efforts. Last year, the County has tried to address these concerns by using pole plantings – burying branches of willows and cottonwoods at substantial depths to protect them from seasonal high flows. Pole plantings were installed this past summer at restoration sites near Oxbow Jail, Riverton Park, Draper, and West Jordan. This year will tell if these pole plantings are successful.



Emergent Bench Conceptual Design

JRWC Mission:

The Jordan River Watershed Council is dedicated to the ecological and economic sustainability of the Salt Lake Countywide Watershed through the promotion of stakeholder involvement.

SPRING CLEANING?

Spring may be the time for cleaning, but stewardship should be practiced all year long. When cleaning out your garage, attic, or neglected kitchen drawer, be aware that household items need to be disposed of properly. Have you ever asked yourself, "What should I do with this old paint, pesticide, cleaner, battery, oil, light bulbs, etc.?" Well, the answer is simple, there are numerous locations throughout Salt Lake County that are equipped to dispose of these hazardous materials properly.

product, please take the following precautions:

- Substitute a hazardous product with a non-hazardous alternative. For example, instead of using toilet bowl cleaner, use a brush with vinegar or baking soda.
- Use up all of a product or donate it to someone who can.
- Think about the end before you begin and buy the smallest amount of material needed to get the job done.

If these are not options, then dispose of HHW properly to minimize the impact on health and the environment. There are facilities throughout Salt Lake County where HHW can be taken

and will be disposed of properly. Furthermore, fluorescent lights can be recycled at select Salt Lake County Libraries.

For information on alternatives to HHW products and disposal of HHW and fluorescent light bulb recycling, check out the following resources:

- www.slvhealth.org/
- www.slco.lib.ut.us/
- www.hazardouswaste.utah.gov/

Never pour HHW material down the drain, on the ground, or into storm sewers.



Common household products containing hazardous materials may pose a threat to people and the environment, especially when handled and managed improperly. According to the Environmental Protection Agency, Americans generate 1.6 million tons of household hazardous waste (HHW) per year. The average home can accumulate as much as 100 pounds of HHW annually.

If you need to use a HHW

Locations that accept HHW in Salt Lake County

**Salt Lake County Health Department
Salt Lake Valley HHW Facility**
6030 West 1300 South
Salt Lake City, UT.
Open Mon thru Sat from 8 AM to 4 PM.
Contact Bryce Larsen at (801) 313-6697 for more information.

Trans-Jordan Landfill
10873 South 7200 West
West Jordan, Utah
Open Mon thru Sat from 8 AM to 4 PM.

**Become "Enlightened"
Recycle Your
Fluorescent Light Bulbs**



The following locations accept both long and short fluorescent light bulbs

Whitmore Library 2197 E Ft. Union Blvd.
Draper Library 1136 E Pioneer Rd.
R.V. Tyler Library 8041 E 3300 S
C.S. Smith Library 810 E 3300 S
South Jordan Library 10673 S Redwood Rd
Bingham Creek Library 4934 W 9000 S
Hunter Library 4740 W 4100 S
Magna Library 8339 W 3500 S

Salt Lake County North Building
2001 S. State St. (Info. Desk)

Salt Lake City Building
400 S. State St. (Main Floor Info. Desk)

Does Water Quality = \$

Can we really put a price tag on clean water and healthy streams? In some strange way we can. In terms of the Dollar, clean water and healthy streams are worth much more than one could imagine. High water quality not only affects the environment, it affects the public well being, private individuals and businesses. The result of these benefits is an overall positive economic impact that is distributed throughout communities.

Existing research shows these benefits exist for both use and non-use activities. Use activities include fishing and hiking along stream corridors. Non-use activities are based on aesthetic value (e.g. viewshed). Surveys conducted in Colorado and California found individuals were willing to pay for additional ecosystem and environmental services on their water bill.

Furthermore, existing research in California concluded that increased "water quality can result in increased property values of at least three percent for bank stabilization and up to 11 percent for improving fishing habitat." A different California survey found homes located on a restored river had a three to 13 percent higher value than similar properties located along unrestored stream corridors.

Closer to home, here in Utah a study completed for West Jordan indicated that property owners near or adjacent to natural open space also see an increase in property values.

Businesses also benefit from increased water quality. It is estimated that 5.9 percent of household income is spent on outdoor retail. Creating more recreational opportunities can create a larger market for outdoor retail sales and a critical mass of open space can be used to increase tourism. According to the EPA, nature-based tourism is increasing by 30 percent annually in

the U.S. This increase contributes dollars and tax revenue directly to our economy.

We all enjoy and benefit from clean water, but let's not forget that there are economic ramifications to poor water quality. This is something New York City found out the hard way. At one time the beautiful Catskill Mountains watershed provided New York City with water ranked among the best in the nation by Consumer Reports. However, a combination of rampant development and failing septic systems in the Catskills began degrading the quality of the water that served the City. By 1992, the EPA warned that unless water quality improved, it would require the city to build a filtration plant. This would cost the City an estimated \$6 to \$8 billion to build and between \$350 and \$400 million a year to operate.

report by the U.S. Fish and Wildlife Service, more than 1.5 million people enjoyed fishing in New York during 2001. This yielded an economic benefit to the state of more than \$2 billion and generated the equivalent of 17,468 full-time jobs and more than \$164 million in state, federal, sales and motor fuel taxes.

Ecological economists maintain that ecosystems are capital assets that, if managed well, provide benefits just as any investment does. Gretchen Daily, a Stanford University researcher states, "We need to be creative and innovative in changing social institutions so we are aligning economic forces with conservation."

How does this affect us personally? According to the



Picnickers in Sugarhouse Park

Wasatch Front Regional Council (WFRC), Salt Lake County is expected to increase in population nearly 42% by 2030. As we face this dramatic population increase, it is important that we promote both economic and watershed health. By maintaining and preserving our stream corridors and headwater areas, we will not only enhance

water quality, but we will also support a healthy economy. Few people want to live in an area devoid of natural beauty where streams are lined with concrete and sidewalks, not trees. As we move forward with watershed stewardship, let's remember that not only will our quality of life increase with a healthy watershed, but our wallets may also reap the benefits of increased property values and tourism dollars.

When asked, most residents (52%) said they would like to see more stream and river corridors in their natural condition in Salt Lake County. However, there are no easy answers to restoration dilemmas. Preservation and development are often in conflict with one another. One thing is clear, as the population of Salt Lake County continues to grow, open space and natural areas will become increasingly scarce unless we work together to restore and preserve our resources.

Many opportunities exist to improve the Jordan River ecosystem. However, true stewardship cannot be accomplished overnight or over a season. Establishing an ongoing stewardship effort is a priority for many in the restoration community. The answer is not clear, but it is obvious that cooperation is key to accomplishing meaningful stewardship of the Jordan River. Cities, the County, communities, and developers need to work together to assure that as our economy continues to grow, our connection with the land is not lost, our watershed preserved. Compromises will need to be made on all sides.

For more information on current river restoration projects, contact Steve Jensen [sfjensen@slco.org or (801) 468-3630].

Restoring the Jordan River—Continued

avoid invasion, proper irrigation and maintenance are required. Currently, no entity is set up to provide long-term stewardship activities.

In addition to difficulties and questions associated with re-vegetation, a major obstacle to effective stream restoration is the cost of land. Over the past 15 years, the average price of an acre of land along the Jordan River has increased from approximately \$20,000 per acre in the 1990's to over \$150,000 per acre. With private land owners eager to develop these areas, opportunities to preserve and enhance the Jordan River are increasingly limited.

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Beaver Damaged Tree

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Council has extended the public comment period for 180 days.

The Water Quality Stewardship Plan (WaQSP) recommends that similar ordinances be passed in other areas of the County. We will be meeting with city officials and community councils over the next few months to discuss these recommendations.

Preserving stream corridors is an essential component of watershed health! To learn more about the SLC ordinance, visit <http://www.slco.gov/council/>.

WHAT'S GOING ON IN THE STATE LEGISLATURE?

The 2008 Utah State Legislative Session ended on March 5th. Several bills passed that could significantly effect water quality and watershed function in Salt Lake County. Below are summaries of a few bills of interest:



Safe Drinking Water Revisions, H.B. 40—Sponsor Rep. Andersen S. H.B. 40 passed on February 29th and was sent to Legislative Research and General Counsel for enrolling on March 3rd. This bill requires that Counties adopt an ordinance to protect sources of drinking water, namely wells, through regulation of land use. It will require Salt Lake County to adopt such an ordinance by May 3, 2010. It also allows a county or municipality to change the zoning designation in an industrial protection area and designate drinking water source protection zones, management areas, or groundwater recharge areas. A few cities in Salt Lake County have already adopted source water protection ordinances. In anticipation of this bill, Salt Lake County has worked with the Groundwater Protection Coalition to refine a draft ordinance that was developed in the early 2000's. The Salt Lake County Council took a position to officially support this bill.

Instream Flow to Protect Trout Habitat, H.B. 117—Sponsor Rep. Sandstrom, S. H.B. 117 passed on February 21st and was sent to the Legislative

Research and General Council for enrolling on February 22nd. H.B. 117 authorizes individuals or groups to temporarily change a water right for instream flow to protect or restore native trout habitat. Currently, the Division of Wildlife Resources (DWR) is the only entity that may hold water rights for instream flow. Outside of DWR, water rights in Utah are granted only for consumptive uses such as irrigation and drinking water. This bill will allow the preservation of instream flows by granting a water right for a non-consumptive use.

Phosphorus Limit in Dishwashing Detergent, H.B. 303—Sponsor Rep. Johnson, C.

H.B. 303, which was passed and sent to the Legislature Research and General Council for enrolling on March 5th, will prohibit the sale of household dishwashing detergent that contains 0.5 percent or more phosphorus by weight. It will be enforced by July 1, 2009 in first or second class counties, such as Salt Lake County, and July 1, 2011 in all other counties in the state. As phosphorus becomes a greater concern both on a local and national stage, this bill is one of many steps being taken to reduce phosphorus loads to our streams and rivers. Currently, wastewater treatment facilities in Salt Lake County do not actively remove phosphorus. Therefore, the majority of the phosphorus that is washed down your drain ends up in the Jordan River. If

excess phosphorus enters our waterways, algae and aquatic plants often grow rapidly, use large amounts of oxygen, and ultimately choke other aquatic



Phosphate-Free Detergent

organisms that need oxygen to survive (e.g. fish and insects). Phosphorus is a concern in the Jordan River. The Salt Lake County Council took a position to officially support this bill.

Regulation of Riparian Overlay Zones, H.B. 454—Sponsor Rep. Morley, M.

H.B. 454 would have prohibited municipalities from adopting ordinances to restrict the use of land within an existing residential area because of its proximity to a stream or other body of water. Although this bill was not passed during the 2008 session, Riparian Overlay Zone(s) are on a list of subjects that the legislature wants to study over the interim between sessions. Some legislators may continue to be interested in this bill.



Please visit the Utah Legislature website for more information on these and other bills: <http://le.utah.gov/>.



Beaver Dam in Big Cottonwood Canyon

PROMOTING URBAN FORESTRY

On September 6, 2007, Mayor Peter Corroon and fifteen of the county's municipal mayors signed a resolution to promote the Million Trees for A Million People campaign.

The goal of this campaign is to plant one million trees by 2017, that's one tree for every resident now living in Salt Lake County. This unified effort will create and enhance an urban forest in the valley and establish a strong urban forestry program.

Trees provide a wealth of benefits. From higher property values and reduced crime rates, to energy savings, cleaner air, improved water quality, and flood control, trees enhance the beauty, comfort, health, and sustainability of our neighborhoods and communities. Specifically, trees improve water quality by absorbing and filtering rainwater. As trees absorb precipitation, the total amount of runoff may be reduced which consequently reduces flood potential and prevents pollutants from entering our water systems. Trees also reduce demand for outdoor watering by reducing evaporation and replacing thirsty

turf areas. As our County anticipates a 42% increase in population by the year 2030, it is vital that we maintain and enhance our existing urban forest.

The success of this campaign is based on community partnerships and collaboration. Mayor Corroon and his staff want to involve every resident of Salt Lake County in projects designed to beautify our neighborhoods, bring us together, and reduce the impacts of living in a rapidly growing area. When we plant a young tree we are making a commitment to provide proper stewardship for its lifetime. As you consider the benefits of planting a tree, consider what you will do to make sure that tree lives a long and healthy life.



Tree-lined Street in Salt Lake City

To start this project off right, Salt Lake County and its partners aim to plant 10,000 trees during September, October, and November of 2008.

The ecological and economic benefits of a healthy urban forest are irrefutable. As our population continues to grow and our County

Preserving Our Stream Corridors



Home Near Big Cottonwood Creek

On January 15, 2008, the Salt Lake City Council voted 6-1 to pass

the Riparian Corridor Overlay District ordinance. This ordinance places building restrictions within 100 feet of the streams in Salt Lake City. The Riparian Corridor ordinance was passed to "...minimize erosion and stabilize stream banks, improve water quality, preserve fish and wildlife habitat, moderate stream temperatures and reduce potential for flood damage....."

Although controversial, this ordinance is a great step toward preserving stream corridors in the City. However, preservation is not without cost. Many citizens expressed concern that this ordinance will limit their ability to develop private land. In response to these concerns, Salt Lake City has agreed to conduct a detailed study of Red Butte and Emigration Creek. Additionally, the City

Water Quality Stewardship Plan

Salt Lake County has recently published a draft of our Water Quality Stewardship Plan (WaQSP). This draft is two years in the making and examines issues from wastewater planning and stormwater runoff, to instream flows and aquatic habitat. Additionally, the WaQSP will serve as an update to the existing Area-Wide Water Quality Management Plan. In order to get feedback on the WaQSP, specifically the recommendations that are made in the WaQSP, we are taking the show on the road. Over the next few months, we will be meeting with local government officials, community councils and key stakeholder groups to review and get input on the WaQSP. We will also be working with stakeholders to identify some demonstration projects.

The entire WaQSP document is available on our website at www.waterresources.slco.org. To receive a hard or CD copy of the Plan, let us know [Natalie Rees (468-3656 or nrees@slco.org)]. We will be taking comments on the WaQSP through.....

May 31, 2008

becomes more urbanized, we can enhance watershed function by promoting urban forestry. To learn more about the Million Trees for a Million People project visit <http://www.milliontrees.slco.org/>.