

CHAPTER 7: ELEMENT E. - PUBLIC INFORMATION AND EDUCATION

A limited outreach and education program will include the continuation of quarterly email newsletters, website updates, and social media blasts via MBG and DCWA outlets as chloride is a major pollutant of concern that cannot be addressed through plant-based implementation projects. It is apparent that the most effective chloride reduction strategy is to reduce the amount of road salt used since the largest exceedances of state water quality standards are observed in the cold-weather months. Applying brine or a 23% dissolved salt water mixture to roads as an anti-icing pretreatment practice to get roadways ready for winter storms can dramatically decrease the amount of salt used, expense, and the amount of salt that ends up in streams. According to the Public Works Department in the city of Webster Groves, which is partially located in the Deer Creek Watershed, approximately 200 tons less of rock salt was used due to their voluntary efforts to brine before winter storms in 2019-2020.

During a recent study, the contributions to chloride in urban stormwater from winter brine and rock salt application were compared by monitoring stormwater runoff from residential areas in six paired cities in St. Louis County during the winters of 2016–2017 and 2017–2018. One of the three cities included in this study that has adopted the use of brine is Webster Groves. The study concluded that the use of brining by city governments resulted in a 45% average reduction of chloride loads conveyed to streams, demonstrating that brining is a highly viable BMP for local municipal operations (Haake and Knouft 2019). Likewise, the state of Michigan's Chloride and Sulfate Implementation Plan states that during-storm direct liquid application (DLA) or applying a brine solution (23% salt/ 77% water) has been found to require 50% less salt.

<https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/NPDES/chloride-sulfate-implementation-plan.pdf?rev=07c3a64eed2849a6aae7130eda1fe384>

Therefore, a brining training workshop will be offered in the Deer Creek Watershed to share experience and insight among area professionals and municipalities. An annual article on salt alternatives and other de-icing tips will be included in the winter email newsletter to achieve additional removal rates needed by educating residential landowners in the watershed.

Articles on the importance of picking up pet waste to reduce *E. coli* and lawn care tips for the fall to reduce yard waste from being disposed of in creeks will also be included in Deer Creek Watershed Alliance email newsletters with links to website content annually. In addition, there will be focused attempts to continue to build the email newsletter list, which are informative email newsletters that are mailed out 4 times per year.

Public engagement projects will involve the public in hands-on opportunities to engage in improving stream health beyond their own property boundaries. These field days will include at least three annual stream trash clean-ups and three annual Honeysuckle Sweeps, removing invasives along riparian corridors and replacing them with more deeply rooted, stormwater management effective trees, shrubs, and grasses. Citizen engagement projects have included a creek clean up with 571 citizens participating and a creek naming project resulting in fourteen newly named Deer Creek Tributaries. Interactive activities focusing on the water quality benefits of trees, booths at public festivals, hands-on invasive species removal, tree planting projects, and more.

Media outreach has included press releases when warranted and regular social media postings on Facebook. Leveraged partnerships will be utilized wherever possible to increase the effectiveness of outreach campaigns.

Outreach through schools is an additional public info and education strategy.

7.1 EDUCATION OUTREACH GOALS AND OBJECTIVES

1. Identify and obtain contact information for key citizen landowners in each municipality who are interested in clean and healthy rivers. Grow the contact list in 3 years by 300 names by tabling at festivals, encouraging peer-to-peer networking, making PowerPoint presentations, conducting media outreach campaigns, and/or sending out letters as publicity for the Rainscaping Cost-Share Program.
2. Educate, grow the interest of, and motivate to action this core group of citizens through quarterly email newsletters, website updates, and educational public meetings.
3. Plan and develop citizen-led public engagement projects as prioritized by citizens in the watershed.
4. Support municipalities in conducting outreach in motivating their citizens to take positive voluntary action in their own yards, resulting in at least 18 landowners with demonstration projects over a six-year period.
5. Facilitate communication between municipalities regarding stormwater master planning, model ordinances, incentives, pilot projects, and barrier removal mechanisms.
6. Identify key schools to implement demonstration projects that can be a source of ongoing education for students, parents, and the local community, resulting in at least 3 schools in the watershed with implemented demonstration projects over a nine-year period.
7. Conduct workshops for area professionals as identified in the plan to improve project implementation success rates, resulting in at least one professional training workshop per year for a three-year period.

7.2 TARGETING THE AUDIENCE

Individual landowners

Sixty-seven percent of the land use in the watershed is single-family private residences, making this target audience the top priority to reach.

Municipal representatives

With twenty-one different municipalities operating within the watershed, each with their own ordinances and governmental structure, communication with and between municipal representatives in the watershed is vital. In addition, municipal parks in the watershed can be developed to protect the riparian corridor and educate the public about stream dynamics. This is the second most important audience to reach.

Professionals and consultants working in the watershed in related fields

Upgrading the knowledge base of engineers, horticulturalists, landscape architects, biologists, arborists, hydrologists, and other related professionals is a key ingredient to a successful watershed implementation strategy.

School representatives

Identifying and working with interested schools in the watershed can provide key focal organizing points. In addition, when teachers involve students, this informs not only the next generation of community members, but also often reaches parents and grandparents. The Litzsinger Road Ecology Center is located in the center of the watershed where it introduces students to natural stream systems influenced by urban development. In addition, there are many schools in the watershed and several of them border sections of the creek or its tributaries. Teacher education and strategies for using the creek to teach biology and the natural sciences can increase public awareness of the importance of streams in an urban environment as natural means of carrying stormwater and as important systems to support a diversity of plant and animal life. Topics of study can range anywhere from basic stream ecology and understanding of watershed principals to raising awareness about water quality and human impacts on our water resources.

Commercial/Industrial landowners

Although not as primary an audience as the other sectors identified, commercial/industrial landowners are none-the-less an important audience to reach.

7.3 CREATING A MESSAGE

Key messages:

Clean and Safe Water

When we have clean water, everyone wins. This results not only in improved habitat and species diversity, but also improvements in recreational opportunities and in human and pet health. There are also added economic benefits as well such as improved property values, reduced damage to infrastructure, homes and businesses, and reduced property loss from creek widening.

Rain Gardens

Improve public understanding of what a rain garden is, what purpose it serves, how it functions, and how to design one.

Trees

Increase public awareness of the beneficial impact of trees on water quality.

Empowerment

Motivated individuals can make a difference through voluntary efforts in their own yards and neighborhoods.

Aesthetics, Effectiveness, Survivability

Successful rainscaping projects have visual appeal, as well as meeting water quality goals over the long term.

Good Neighbors

Good neighbors pick up after their pets, manage stormwater on site, make sure their downspouts are not inappropriately connected to sanitary sewers, and don't put trash or organic debris in the creek.

Ongoing professional enhancement

Quality professionals regularly educate themselves regarding new information in a rapidly changing field.

We all live downstream

Responsible municipalities take into consideration the impact of their procedures on other municipalities downstream.

7.4 PACKAGING AND DISTRIBUTING THE MESSAGE FOR VARIOUS AUDIENCES

Mass Media

Develop and distribute press releases to the media as appropriate. The mass media will be targeted with outreach ideas as they arise and/or as opportunities become available. The Deer Creek Watershed Alliance will coordinate with others to contribute to the greater population in regards to PSAs, press releases and radio discussions.

Online Materials

Develop a web-based presence with interactive websites, publish quarterly email newsletter, and engage citizens on social networking sites, such as Facebook, LinkedIn, Twitter, etc.

Events

Events include: organize educational meetings; implement annual public engagement projects; deliver PowerPoint presentations to community and other groups; table at festivals, farmers markets, and other events; provide professional enhancement workshops for professionals; and share results at conferences to a national audience.

Leverage resources

Partner with other groups who would like to develop and disseminate print materials, such as the Ladue Garden Club's development of a tree planting guide for elementary students. Partner with municipalities to conduct outreach to local citizens through municipal newsletters, public meetings, and other tools for communicating with local citizenry.

There are a lot of educational and outreach opportunities that can be found throughout the St. Louis region. Some of these educational efforts can be coordinated. That is the benefit of a large city. EPA, MSD and other entities have lots of information and brochures posted to their websites that can be used with permission. This information can be made available at various venues, (e.g. workshops, festivals, public forums, etc.). In many cases, it may not be necessary to develop materials, but only print or disseminate information as needed/pertains to a particular area. Some examples of resources that would benefit the watershed are:

EPA NPS outreach toolbox: <http://water.epa.gov/learn/resources/adulttrn/npsout/index.cfm>

The University Extension: <http://healthyyards.missouri.edu/>

Similar Extension programs: <http://extension.missouri.edu/cole/Programs/ag/Healthyyardsbro.pdf>

The City of Columbia: http://www.gocolumbiamo.com/PublicWorks/StormWater/show_me_yards.php

The James River Basin: <http://www.jamesriverbasin.com/pages/programs>

HEC-TV Interview and video: <http://new.hectv.org/programs/ser/liquidlight/ep65.php>

Video only: <http://hectv.org/programs/spec/program.php?specialid=17>

Corresponding curriculum: <http://hectv.org/education/cur/science/swr.php>

7.5 EVALUATING EDUCATION AND OUTREACH PROGRAMS

Watershed outreach implementation should include both formative and summative evaluation components. Formative tools will provide a feedback mechanism for ongoing improvement of the outreach efforts. Summative evaluation will provide indicators of education and outreach success.

Formative Tools

Email newsletter surveys will be used to improve education and outreach efforts. Surveys will include measurements of gaps in citizen knowledge base, information on efforts landowners have undertaken and problems they have encountered, and preferences/priority interests of the target audiences. These formative surveys will be used as tools for improving the education and outreach program.

Summative Tools

These tools include documentation and measurement of effective products produced, and if the project was successful in reaching its outreach effort goals. These metrics may include: 1,000 people on email newsletter list and social networking sites achieved; increasing website “hits” per week over time; 6 festivals/farmers markets/events tabled per year; 6 PowerPoint programs delivered per year; at least 50% open rates on email newsletters; at least 100 participants in annual citizen engagement projects; at least 30 participants in annual professional enhancement workshops, etc. In addition, summative surveys that measure knowledge gained among target audiences as contrasted with formative survey baselines will provide conclusive metrics on the success of education efforts.

An evaluation can also include the number of people who participate in activities and /or implement management measures as a result of the Educational/outreach efforts.

To view annual reports and summative education and outreach progress to date, visit https://www.deercreekalliance.org/reports_and_summative_progress.