IES 2016-2017
Sheridan Quincy Trail Project

Institute for Environmental Solutions

Final Report
January 2018

THE TREE PROJECT

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IES 2016-2017 Sheridan Quincy Trail Project

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Thank you to our Sponsors!

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2. Executive Summary

The 2016 Sheridan Quincy Trail (SQT) Project took place along the Sheridan Quincy Trail between Federal Boulevard and Irving Street. It was collaboration among IES, the City of Sheridan (COS), Sheridan School District No. 2, South Suburban Parks and Recreation District (SSPRD), Fort Logan Northgate 3-8 School (FLN) Leadership class, DesignWorkshop, and Denver Water. SQT is the second year of a multi-year project to rehabilitate an important, non-motorized transpiration route by improving the aesthetics of the trail while preventing stormwater runoff, and giving the FLN Leadership class the opportunity for a hands-on environmental leadership education. This project builds on the success of the 2015 IES Sheridan Quincy Tree Project, where 60 native trees were planted just north of the Quincy Trail on school district property.

This report provides the project's origins, planning process, implementation, and outcomes. It documents project goals, objectives, stakeholders, and stakeholder contributions. The project's design and implementation are described in detail to serve as a model for future programs. The report also makes recommendations to improve future projects.

The FLN Leadership Class, which consisted of hard working and civic-minded students, participated in two workshops and one planting day during the fall of 2016. The students planted 144 native shrubs along the Quincy trail based on a design developed by DesignWorkshop. The FLN students visited the site once a week and cared for the plants during the school year. There was a banner ceremony at the end of the school year, where students were presented with a banner they designed to hang on the fence next to the trail. The banner presented the project to the Sheridan community. Students spoke about how important the project was to them, and community leaders spoke about how the leadership class' involvement in the Sheridan Quincy Trail project was appreciated by the community. To help ensure high survival rates, IES Associates and Tree Stewards cared for the new planting site along the trail and last year's planting on school property during the summer.

This year's project was a success. IES and project stakeholders planned and completed two workshops and a planting day, where students received hands-on environment and community improvement lessons, and more than 120 native shrubs were planted on the Quincy Trail. There were some challenges to the project. Denver water constructed a water vault along the trail, and soil conditions made digging holes for plants challenging.

IES encourages comments and questions. Please contact IES at Solutions@i4es.org or visit our website at www.i4es.org.

3. Introduction and Overview

This Report: *IES Sheridan Quincy Trail Project*

This report details the 2016-2017 *IES Sheridan Quincy Trail* Project. The Institute for Environmental Solutions (IES) created and implemented this program in Sheridan, Colorado to improve the environmental quality of the Quincy Trail, while providing opportunities for local students to receive hands-on science and leadership lessons.

This final report documents the program's development, planning, implementation, outcomes, and suggestions for future projects. The project is the second year of planting and third year of collaboration among IES and stakeholders in the Sheridan community. This report and appendices provide the details about the ecological improvements along the Quincy Trail and the involvement of Fort Logan-Northgate 3-8 School (FLN) leadership students. The program was designed to improve stormwater runoff, erosion, and the walkability of the trail, while training the next generation of community-minded environmental leaders. The project and this report will provide a model for future environmental education programs, volunteer planting events, and maintenance programs along the Colorado Front Range.

Institute for Environmental Solutions

IES is a non-profit organization based in Denver, Colorado, which delivers scientific solutions to improve our health and environment. IES's vision is to create efficient ways of dealing with environmental problems. IES strives to prevent waste and unwanted side effects, provide opportunities to optimize environmental improvements, and reduce energy consumption and greenhouse gas emissions through a unique technical, multi-disciplinary approach. By engaging a broad spectrum of participants in examining these problems on a project basis, IES will develop sound, cost-effective solutions.

The IES Tree Project

The IES Tree Project's mission is to improve the environmental quality of Colorado cities using tree science. It helps communities, businesses, and individuals achieve multiple environmental improvement projects. Project graduate interns and IES Associates work on several initiatives to optimize the environmental, social, and economic benefits of urban trees. Tree Project initiatives include developing and implementing community tree planting programs, climate change mitigation through urban forest carbon credits, presenting workshops describing the benefits of urban forestry, conducting research on tree science, involving students and community members in community and urban environmental improvement, and outreach to achieve greater understanding of urban forestry.

The Tree Project has three major goals:

1. Improve the urban environment through strategic tree planting
2. Facilitate collaboration among many community groups and individuals to find solutions to urban environmental challenges with trees
3. Advance urban forestry science through increased collaboration with academic researchers and local experts

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The IES Tree Project has completed eight planting programs along Colorado's Front Range. The first planting program, *Trees for Healthy Kids and Community Project*, occurred during the fall of 2010 and spring of 2011 in Golden, Colorado. IES partnered with Mitchell Elementary School and the City of Golden to plant 40 trees on school property to mitigate air pollution, wind, and noise pollution, while aiding in stormwater and erosion control.

IES partnered with the City and County of Broomfield on the *Trees for a Healthy Community and Economy Project* in 2011-2012, developing and implementing a plan to protect the environment while improving the local economy in Broomfield's emerging civic center.

IES Tree Project members plant a tree in Broomfield, spring 2012

In 2012-2013, the IES *Revive the Greenbelt!* program initiated a successful partnership between IES and the City of Wheat Ridge. During the program, over 200 volunteers planted more than 200 trees, invasive weed species, replaced canopy gaps, implemented strategies to improve the long-term health of the riparian ecosystem, and increased the local community's awareness of urban forestry in the Wheat Ridge Greenbelt.

In 2013-2014, IES implemented its pilot education program, the *Preserve the Greenbelt Elementary Education Program*. The program combined innovative hands-on classroom workshops, educational planting days, and volunteer tree stewardship to engage students, educators, and families from Kullerstrand Elementary, Mountain Phoenix Community, and Wheat Ridge High Schools. More than 120 students participated in the workshops and planting days, resulting in over 200 native trees and shrubs planted in the Greenbelt. The survival rate of these new trees is currently over 85%. The Colorado Alliance for Environmental Education awarded the *Preserve the Greenbelt Elementary Education Program* with its 2014 Environmental Education Award for Excellence.

IES Associates and volunteers plant in the Greenbelt, spring 2015

In 2014-2015, IES returned to the Greenbelt and extended its collaboration with the City of Wheat Ridge to carry out the *Growing the Greenbelt Education and Environmental Health Project*. Through interactive, hands-on classroom workshops and a planting day, this program taught students from Wheat Ridge High School's Career Exploration Class about local ecology and careers in science. *Growing the Greenbelt* also united community members to remove noxious invasive vegetation and to plant over 150 new trees, shrubs, grasses, and forbs in the Greenbelt.

Since 2015, IES has planned and implemented two planting programs with students from Kullerstrand Elementary School. The projects, the 2016 and 2017 *IES Greenbelt Restoration and Environmental Education Network* (GREEN), have resulted in hands-on education for students with learning disabilities and over 300 native trees, shrubs, and grasses planted along a new trail section in the Greenbelt.

Based on this experience, IES has determined that five critical factors go into successful tree planting and survival:

- Collaboration with the full range of interested stakeholders
- Careful planning of the education and planting program
- Careful selection of the planting sites and plant species to optimize survival
- Good instruction and proper planting with well-organized volunteer participation
- Appropriate maintenance plants and implementation

Kullerstrand Elementary students after planting, spring 2017

The history of IES projects in Sheridan (2015 Sheridan Quincy Tree Project)

IES began working in the Sheridan community in 2014 with an initial partnership between IES and the City of Sheridan. Project stakeholders grew during 2014 to include Fort Logan Northgate 3-8 School, Sheridan School District No. 2, DesignWorkshop, and South Suburban Parks and Recreation. IES met with stakeholders initially to plan and implement a planting program along the Quincy Trail. However, due to planting restrictions along the trail, IES and the project stakeholders decided to move the first planting to just north of the trail and onto school property.

The Cube, spring 2015

The Sheridan Quincy Project was initiated at the beginning of the school year in 2015. IES conducted three hands-on classroom events with Leadership Class students at Fort Logan Northgate 3-8 School, which taught them about tree science, Colorado's ecology, and the importance of community improvement programs. Students also participated in a tree planting event where 60 native trees, including catalpa, big-tooth maple, and hackberry species, were planted on school property. After the planting day, students continued to work at the site to care for the trees throughout the school year. In spring 2016, IES and Design Workshop installed a shed structure at the planting site to house a 275-gallon water tank and provide project information to the Sheridan Community. Currently, due to careful work by FLN students, IES volunteers, and Institute Associates, the survival rate at the 2015 planting site is 96%. For more information about the Sheridan Quincy Tree Project, you can visit the IES website and find its Final Report on the Tree Project Publications page.

4. IES Sheridan Quincy Trail Project

Project Goals

The goals for the Sheridan Quincy Trail Project were:

- Improve the Sheridan Quincy Trail corridor by planting drought-tolerant native plants to improve storm water quality and reduce erosion. Other trail improvements include noxious and invasive species removal and trash pickup. These improvements are aimed at making the trail more aesthetically pleasing so more people can enjoy using the trail.
- Provide Sheridan students the opportunity to effectively plan and implement a community-planting program.
- Engage community stakeholders to collaborate on the planting plan and implementation
- Build on the success of the 2015 Sheridan Quincy Tree project to focus environmental improvement to the Quincy Trail.

Project Objectives

The Sheridan Quincy Trail Project objectives were:

1. Engage stakeholders including businesses, nonprofits, schools, local government entities, and community members to form a Stakeholder Project Advisory Committee.
2. Analyze the needs of the Quincy Trail and establish priorities for remediation and improvement.

The first two objectives were designed to complete the third goal of the project to collaborate with stakeholders on the planting plan and implementation of the project.

Students from Leadership Class completing a matching game about symbiotic relationships

3. Plan and develop an education program for students of Fort Logan Northgate 3-8 School's Leadership Class
4. Develop a planting program that improves the ecology and aesthetic appeal of the Sheridan Quincy Trail.
5. Implement an education, planting, and maintenance program to provide long-term plant care and trail maintenance. Recruit and organize students and local volunteers to care for the plants on the trail. Obtain trees, shrubs, plant materials, and equipment.

Objectives 3 and 5 were designed to complete the second goal of the program. The program included hands-on workshops, a planting day, and maintenance events held throughout the school year. Objective 4 was designed to complete the first goal of the program. IES and Marcus Pulsipher of Design Workshop created a plan that included planting native shrubs and seeding with grass and wildflowers to improve the ecological health and aesthetic appeal of the Quincy Trail.

6. Evaluate the project and prepare a final report and project video.

The last objective was designed so IES could evaluate the project and provide suggestions on how to improve future

projects in the Sheridan community and along Colorado's Front Range. The final report and video provide public documentation of the project for community and professional information, and for potential replication.

FLN Teacher Sharena Del Brocco and student at SQT planting day

Planting Plan and Partnership with DesignWorkshop

IES continued its partnership with DesignWorkshop to plan the planting design for SQT. The planting plan built on the 2015 Sheridan Quincy Tree Project Plan. The initial spiral design from the tree planting site was continued along the trail, with four bands of shrubs and three bands of flower and grass seed. The four shrub bands had species chosen that would attract pollinators, including wood's rose, three-leaf sumac, rubber rabbitbrush, and mountain mahogany. Grass and flower species from the seeding bands included buffalo grass, blue grama, little bluestem, plains coreopsis, and prairie coneflower. The Tree Project did not plant trees during the project due to planting restrictions along the Quincy Trails. According to Denver Water's pipeline easement over the entire trail, only low-rooting plants and non-permanent structures are allowed along the trail. The full planting plan can be found in Appendix F.

Fall Planting Days and Maintenance Program

SQT had two planting days in fall 2016. The first planting day occurred on Friday, October 7. Students, IES Associates, community volunteers, and employees from SSPRD planted three of the four shrub bands, and laid 16,000 square feet of grass and wildflower seeds. Due to time constraints and compact soil, IES and South Suburban Parks and Recreation finished planting the rubber rabbitbrush band on a second planting day on November 4. More information about the planting days can be found in the Project Events chapter of this report.

During the school year, students visited the site and watered and mulched both the tree and trail planting sites. Students conducted maintenance at the site from February through the end of May, weather permitting. Students walked to the planting site during their class period, which meant they had about 20 minutes on site each visit. Maintenance continued during the summer. IES volunteers, under the supervision of IES Associates, watered and mulched both sites from the beginning of May to the start of the next school year in August.

FLN Students and IES Associate Mike Smith at the SQT planting day

FLN Students watering at 2015 Sheridan Quincy Tree Project planting site

Education and FLN Leadership Class

The education program focused on providing students with the skills to create community improvement programs and the opportunity to work with IES to plan and implement all aspects of the program. Students learned how to develop planting plans, account for planting easements along the trail, and understand the importance of selecting native species to improve environments.

Students completed two classroom workshops, which bookended the planting day. The workshops consisted of lecture, small group work, and student presentations to the class. During the second workshop, students designed a project banner that was placed along the trail to present the project to the Sheridan community. The banner was unveiled during a special ceremony attended by representatives from all project stakeholders. This was an important educational component because the students saw how important their work was to the City of Sheridan.

FLN Students planning part of the SQT Project Banner

Project Donors

IES received direct funding from the Colorado Garden Foundation and Xcel Energy Foundation. SQT also benefitted from Xcel Energy during its Day of Service, a volunteer day to honor the memory of victims of September 11, 2001. The day of service occurred on September 10. Volunteers from Xcel Energy and IES Associates helped prepare the trail for the fall planting days. Activities included light grading, trash pick-up, and mulching and watering the 2015 tree planting site.

Xcel Energy FOUNDATION

COLORADO GARDEN FOUNDATION

5. Project Organization

Project Stakeholder Involvement

The 2016 IES Sheridan Quincy Trail Project (SQT) was made possible because of the generous time and material donations from the project's stakeholders. Stakeholders contributed to all aspects of the projects. The following is a list of contributions from stakeholders involved in SQT.

Fort Logan Northgate 3-8 School (FLN): Project partner and host. FLN provided valuable in-kind contributions to the project including staff time to review all education materials, the planting event schedule, and maintenance scheduling. FLN hosted both classroom workshops in fall 2016 and the unveiling ceremony for the project banner in spring 2017. Students worked hard to plan three bands and grass seeds at the planting day.

Sheridan Quincy Trail prior to planting

City of Sheridan (COS): Project partner and host. COS provided the time and expertise to review and approve all planning along the trail through attendance at stakeholder meetings. COS staff members attended the student planting day and banner unveiling ceremony. COS is the owner of the trail property.

South Suburban Parks and Recreation District (SSPRD): Project partner. SSPRD provided materials for the project, including tools for both planting days, a rototiller and augur (attached to a tractor and backhoe respectively), and mulch for the planting site. SSPRD staff members attended stakeholder meetings and approved plans for the trail. SSPRD is responsible for maintenance of the SQT paved trail. SSPRD also operated the tractor and backhoe to assist in planting along the trail.

Sheridan School District No. 2 (SSDN2): Project Partner. SSDN2 filled the water tanks at the planting sites during the maintenance program and helped weed the tree planting site. The primary water tank is on SSDN2 property, just north of the trail. SSDN2 staff members provide assistance with trail access and other related activities.

DesignWorkshop's Marcus Pulsipher and IES Associates preparing for planting day

DesignWorkshop: Project partner. DesignWorkshop staff members worked with IES Associates to develop the planting plan and coordinate planting day activities with FLN students.

Denver Water: Project stakeholder. Denver Water reviewed and approved all plans for planting along the trail to ensure that the plans did not violate the terms of its easements and planting restrictions. The IES Tree Project sent planting plans to Denver Water representatives for approval.

The IES Tree Project Steering Committee

IES drew from the expertise of the IES Tree Project Steering Committee members during the development and implementation of the SQT Project. The Steering Committee is a group of dedicated volunteers with diverse backgrounds in professional fields that aid the Tree Project. IES Tree Project members took advantage of quarterly meetings with the Steering Committee

Group photo from Xcel Energy Day of Service

to receive input on program planning and implementation. Agendas for the Tree Project Steering Committee meetings are in Appendix B.

Collaborative Funding

SQT was funded through grant support and in-kind contributions from project stakeholders. Direct monetary funding was provided by the Colorado Garden Foundation. The Xcel Energy Foundation generously helped to fund and provided volunteers for a planting preparation day on Xcel Energy's annual Day of Service. The success of the project depended on material donations from project partners including water from Sheridan School District No. 2 and heavy equipment provided by South Suburban Parks and Recreation.

IES worked diligently to raise funds for the program. This included grant writing and a business outreach program. We were unsuccessful in engaging Sheridan community businesses or in obtaining grant funding from additional organizations other than the ones listed above. Due to limited funds, IES relied on the generous donations from our stakeholders and volunteers to complete the project.

Project Plan

The SQT Project Plan presents the timeline for the project with each aspect of the project from the planning stages to the project events, evaluation, and production of the final report. The plan was created by Tree Project Team Manager, John Kelly, and can be found in Appendix C. For guidance, the IES used past project plans to brainstorm project activities to ensure success. The Project Plan was presented to project stakeholders and the Tree Project Steering Committee for approval and advice on ways to improve the initial planning of all project components.

The project had six major components:

- Project organization and scheduling
- Planting organization and implementation
- Education program organization and implementation
- Site maintenance program
- Public relations / communications
- Project documentation

FLN students participate in a classroom activity about planting day safety with IES Tree Stewards Manager Don Mangus

The project plan was used by the team and project partners during the project. The IES Tree Project followed the plan through project planning and implementation, using the steps laid out in each component to ensure that all goals and objectives were met. When planning for a project of this size, it is important to be realistic with the time and resources available.

The project timeline is shown in the project plan. Planning for the SQT project began in the summer of 2016 when IES met with Sharena Del Brocco, FLN Leadership Class teacher, to discuss expectations for the classroom during project workshops and maintenance plan during the school year. IES met with Marcus Pulsipher of DesignWorkshop to develop the planting plan and schedule project events. Finally, IES met with the City of Sheridan, South Suburban Parks and Recreation, and Denver Water to have the planting plan approved. These meeting agendas can be found in Appendix A. Meeting multiple times with all stakeholders was key to the success of the project during the planning and implementation process to discuss all aspects of the program.

6. Community Collaboration

The Sheridan Quincy Trail Project relies on the contributions and support of stakeholders in the Sheridan Community. Many community organizations aided in the development and implementation of SQT. The collaborating organizations provided valuable knowledge, expertise, and material donations to the project. SQT was built on successful partnerships started in 2015 and focused on the rehabilitation of an important community trail owned by the City of Sheridan and maintained by South Suburban Parks and Recreation.

Importance of partnership among IES, FLN and SSDN2

The partnership between IES and Fort Logan Northgate 3-8 School was paramount to project development and success. The 2016 SQT is the second project and third year of partnership between these organizations. Sharena Del Brocco, Leadership Class Teacher, and Vice Principal Amy Kolquist provided valuable input for students to improve their education and community. Both reviewed all project materials, and helped IES plan the workshops, planting events, and maintenance program. Their dedication to the program is key to project success and the high level of leadership education that the partnership provides to students at FLN. Ms. Del Brocco and Ms. Kolquist are always ready and willing to support and advance the project by providing school facilities as needed, scheduling project activities, and organizing students. As in previous years, IES's work is successful thanks to the great participation of FLN staff members and students.

FLN students watering 2015 Sheridan Quincy Tree Planting site, spring 2016

IES also collaborates with Sheridan School District No. 2 (SSDN2) to ensure the survival of plants after planting. Cyndi Wright, Director of Facilities and Transportation for the School District, is an active project partner who helps the project by filling water tanks for both the Quincy Trail tank and the Cube, located at the 2015 tree planting site. Without this vital donation by the school district, survival rates at both sites would be much lower than the almost 100% rate.

Importance of partnership between IES and SSPRD

SSPRD tilling the trail during Xcel Energy Day of Service

The partnership between IES and South Suburban Parks and Recreation District (SSPRD) has allowed for successful planting and site maintenance for the two years of the partnership. Shawn Wissel, Grounds, Trails and Natural Open Space Supervisor, has been incredibly helpful to the project. He often goes above the requests of IES to provide project materials and SSPRD employees to help during events. Without his dedication and the heavy equipment provided for the Xcel Energy Day of Service and the second planting day, the program may not have finished implementing the planting plan. Mr. Wissel tilled the entire trail section during preparation and his crew dug holes for the rubber rabbitbrush band for the second planting day. As soils in the planting areas were heavily compacted, the pre-planting work completed by SSPRD made it easier for volunteers to install plants and complete the planned design within the time constraints. In the first year of the project, IES also received advice from SSPRD Forestry and Horticulture Supervisor Greg Howe for the 2015 SQT project.

Importance of partnership between IES and COS

The City of Sheridan's (COS) partnership with IES is one of the most important for ensuring project success as the City owns the trail section and is IES's oldest partner in the Sheridan community. IES works diligently to make sure that project plans comply with the city's long-term needs for the trail. COS Planner, Jennifer Henninger, and Randy Mourning, Superintendent of Public Works, approve all planting plans along the trail. COS also provided equipment during the planting events including gloves and shovels.

Partnership with DesignWorkshop Foundation

SQT marks the second collaboration with the DesignWorkshop Foundation in Sheridan. The continuation of the 2015 SQT project relied on DesignWorkshop to provide a planting plan that complied with the COS trail vision and Denver Water's planting restrictions, while continuing the vision from the 2015 planting program on school property. IES welcomed Marcus Pulsipher for his first year of work in Sheridan, and worked with him to move the ideas from the school planting site onto the trail section. DesignWorkshop's dedication to the program also shows students the importance of careful planning when improving community spaces.

Community Outreach: Banner, t-shirts, fall school picnic, community involvement

IES understands that community outreach is key to introducing the project to stakeholders and community members, and recognizing the project's impact on and introducing the new project to the Sheridan community. IES prepared and initiated a community outreach program during the program, including contacting local businesses and placing maintenance fliers in the library and recreation center. IES also invited Sheridan High School to help students accrue volunteer hours assisting at the planting on-site; however, this part of the program did not materialize. IES Associates John Kelly and Patti Venneman attended the fall school picnic to inform the wider Sheridan community about the project.

SQT Project Banner along the Quincy Trail

IES showcased the hard work that the Leadership students from FLN invested in SQT. IES helped students design a project banner as a presentation to the Sheridan community. To thank the students, IES created t-shirts to recognize the students' contributions to the project and get them excited about their continued participation in the project.

Project Video

IES hired Jesse Johnson of IOTK Media to record all project events and create a project video. Mr. Johnson was present at all workshop and planting events to record activities during the events and interviews with IES Associates, project stakeholders, and students from FLN. Interviews were conducted with IES team members John Kelly, Patti Venneman, and Carol Lyons, Jennifer Henninger, and Sharena Del Brocco. To ensure the accuracy of the project documentation, IES worked closely with Mr. Johnson to develop the video. Mr. Johnson created a short and long version of the video designed to reach different audiences in the Sheridan community, on the Internet, and social media. The short video is intended to be a promotional video to increase awareness about the project, and the long video is meant to be an in-depth presentation of the project. The video was sent to all project stakeholders in DVD format and can be found on the IES YouTube channel and website.

Project Communication

IES issued press releases announcing project successes and produced articles about the project on a quarterly basis. Press releases were sent to all IES media contacts. Articles were written for the quarterly IES newsletter and the Sheridan City newsletter in December.

Jesse Johnson planning to record at the SQT planting day

Importance of Community Collaboration

IES projects rely on community members and organizations willing to participate in the planning and implementation of a project. Community collaboration helped make SQT a success as it provided students with hands-on science and leadership education, the Quincy trail received much needed improvements for erosion and stormwater control through green infrastructure, and the Sheridan community was strengthened by locally-based partnerships. The strong partnerships created among IES, COS, SSPRD, FLN, SSDN2 and DesignWorkshop will ensure that future projects in Sheridan will continue to be successful.

7. Project Design and Events

The 2016 SQT Project design includes information about project and event planning, implementation of workshop ad planting events, maintenance scheduling and activities, and the banner unveiling ceremony.

Volunteer during Xcel Energy Day of Service

Project planning

The planning for the project began in spring of 2016 with the initial contact of stakeholders to introduce the initial project plan from DesignWorkshop. Stakeholder meetings focused on project details and logistics.

Stakeholder meetings

Representatives from the City of Sheridan, SSPRD, DesignWorkshop, and Denver Water met with IES Associates in early May 2016 to introduce the project plan. IES then met with the City of Sheridan to discuss the plan and gain approval. Denver Water has an easement underneath the Quincy trail, which meant that IES held special meeting with Brandon Ransom of Denver Water to plan for any work along the trail section. During the first meeting, IES learned that Denver Water was planning to install a new water vault to help with stormwater management along the trail, which moved the planting site further east along the Quincy trail.

IES also met with Sharena Del Brocco, FLN Leadership class teacher, to discuss workshop curriculum material and workshop and planting dates. IES needed to ensure that workshop and planting dates did not interfere with school events and holidays. IES, City of Sheridan, FLN, SSPRD, and DesignWorkshop met to finalize the project plan before the first workshop. Stakeholder meeting agendas can be found in Appendix A.

Xcel Energy Day of Service

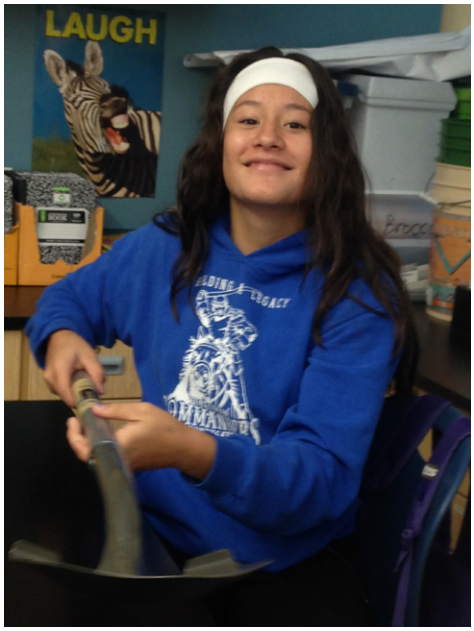
Volunteers weed during Xcel Energy Day of Service

The Xcel Energy day of Service was held on September 10, 2016. IES hosted 20 employees from Xcel Energy, the Sheridan City Planner, and SSPRD, and local community members in a community service event to prepare the SQT site for planting day. Volunteers watered and mulched the 2015 project site, weeded, picked up trash, and SSPRD tilled the dirt along the SQT path. SSPRD and the City of Sheridan provided materials and equipment, and SSPRD provided a tractor and tilled the planting area.

Workshop One design

Workshops took place during the Leadership Class period. The objectives of the first workshop were to introduce students to the planting site, the plants, and the goals and objectives of the plants. It was a combination of lecture and hands-on activities. The activities included and introduction to the planting plan, the plants they were going to be planting, the tools they were going to use, and how to use them, as well as a lesson on the different types of symbiotic relationships in nature. IES presented the workshop using PowerPoint and that can be found in Appendix H. The content outline can be found in Appendix G.

Workshop One event



Student holding shovel at workshop one.

The first workshop took place on September 6, 2016. Tree Project Manager, John Kelly, introduced the 2016 SQT project to the students. He then went into detail about the planting plan, and how the plants were going to be planted along the trail. IES graduate intern, Lindsay Nerad, then discussed the different plants the students were going to plant and asked the students to choose between two different types of grass mixes. IES Tree Stewards Coordinator, Don Mangus, went over the tools that the students would use and how to use them safely. He then passed the tools around the class, so the students could feel the weight of the tools and get a close look at them. Mr. Mangus then explained to the students that they should be prepared for planting day with the appropriate clothing and wrapped up his section by asking the students to come up with the rules everyone should follow for planting day.

IES Project Coordinator, Patti Venneman, led the next section of the workshop where she discussed native plants and why it was important to plant native plants along the trail. Ms. Venneman then discussed the different types of symbiotic relationship in nature. The students broke up into six different small groups and played a symbiotic matching game, where they further learned about the relationships between plants, animals, and fungus in nature. The matching game can be found in Appendix I. Photos from the workshop can be found in Appendix J.

Workshop Two design

The second workshop focused n the post-planting agenda, including the proper way to care for plants, the maintenance program for the school year, and group work to develop the project banner. IES and the students discussed techniques to care for the plants and the watering and maintenance schedule before the students were broken up into groups to design different aspects of a banner that would be hung up along the Quincy Trail.

Workshop Two event

The second workshop was held on November 7. Executive Director, Carol Lyons, began the workshop with a reminder of the workshop rules, thanking the students for their hard work on planting day, and an update on the planting area. John Kelly talked with the students about site maintenance and handed out a calendar detailing dates and times for maintenance for the rest of the fall. He talked about how the students would be watering through November and possibly during December if the weather was warm and dry.

Students working together during Workshop Two

Patti Venneman led the activity about the project banner where she introduced the students to the concept of a banner, and explained that students would design the banner before IES took the concept to a graphic designer. The students were broken into several groups, each tasked with designing a component of the banner. Students then came together and each group presented their part of the banner to the entire class. The content of the workshop can be found in Appendix K, the PowerPoint presentation is in Appendix L, the banner brainstorm sheets are located in Appendix M, and the photos from the second workshop are in Appendix N.

Planting Day design

DesignWorkshop developed the planting plan for the Sheridan Quincy Trail project. It is a multi-year plan designed around the spiral of the 2015 Sheridan Quincy Tree planting plan. The spiral expands out along the trail, with bands of grasses and shrubs. The plants were selected because they are attractive to pollinators. The volunteer list is in Appendix P and the agenda is in Appendix Q.

Volunteer and students planting.

Planting Day event

The planting day took place on October 7. IES associates, volunteers, and a City Council member joined the students. They were given an overview of how to plant and went over the planting day rules. The students were broken up into four groups and rotated between the bands under the supervision of IES associates and Tree Stewards where the planted bands of mountain mahogany, Wood's rose, and three-leaf sumac. Students also seeded native wildflowers and grasses in between the plant bands.

Rabbitbrush

The ground was hard and difficult to dig. Because of this, we were unable to plant the rabbitbrush. IES and SSPRD planned to follow up a week later to plant the rabbitbrush. Planting day photos can be found in Appendix R.

Second planting day

IES and SSPRD met at the trail a week after the initial planting day to plant the rabbitbrush. SSPRD provided an auger to dig the holes. Digging the holes remained a difficult task because of the poor soil conditions. However, IES and SSPRD were successful in planting the rabbitbrush. Photos of the second planting day can be found in Appendix S.

Spring maintenance schedule

Students watered and mulched the 2015 and 2016 SQT sites once a week under the supervision of IES associates. They received hands-on lessons from Don Mangus, where he led them through demonstrations about how to properly much and water trees and shrubs. It was challenging because the students had to walk to and from the Fort Logan Northgate campus, which left approximately 20 minutes for maintenance activities. The spring maintenance schedule can be found in Appendix V.

Planting rabbit brush with South Suburban Parks and Recreation District.

Banner design and construction

Leadership students were responsible for designing the banner that is hung on the fence along the

Quincy trail. The students were broken into groups during the second workshop and were asked to design different elements of the banner. Some students designed the overall look of the banner, and some students designed different written sections of the banner. Banner brainstorm sheets are found in Appendix M. After the workshop, the ideas from the students were put together into a rough draft, where it was sent to the students for final approval. Once the students gave their approval, the banner design was sent to a graphic designer who created the final design of the banner. The text of the banner was also translated into Spanish. The design was sent to a printer, where it was printed onto a sheet of vinyl.

Banner Ceremony

Banner unveiling ceremony

The banner unveiling ceremony took place on May 18, 2017. The original plan was to have the ceremony along the Quincy trail. However, a snowstorm forced IES to move the ceremony indoors into a room at Fort Logan Northgate. The leadership teacher and student, IES, and members of the City of Sheridan Government attended and spoke at the event. The banner was unveiled to the students and can be found on the north side of the trail, near the band of rabbitbrush. The agenda can be found in Appendix T. Photos can be found in Appendix U.

Summer watering and maintenance

Maintenance during the summer was scheduled for Wednesdays at 6 pm and Saturdays at 9 am. There are two water tanks on the site to water both the 2015 and 2016 sites. There was only one tank early in the summer, so each site was only watered once a week. IES Associates and Tree Stewards mulched and watered the site as needed. This summer was the introduction of adding newspaper under the mulch to offer extra protection to the plants. IES developed and printed fliers to put on the Cube at the 2015 SQT site and to distribute to the schools and community. IES continues to recruit Tree Stewards for the SQT planting site. The summer maintenance schedule can be found in Appendix W.

8. Sheridan Quincy Trail Project Evaluation

This section discusses the accomplishments, challenges, and recommendations for the 2016 SQT Project.

Project evaluation - meeting objectives

The first objective was to engage stakeholders, including businesses, nonprofits, schools, local government entities, and community members to form a Stakeholder Project Advisory Committee.

Rules Photo

Accomplishments

- Consistently engaged stakeholders through regular stakeholder meetings to discuss project plans and the acquisition of materials.
- Invited organizations to join IES as a SQT project partner.
- Maintained a positive relationship with project partners.

Challenges

- Difficult to elicit responses from many businesses.
- Lack of material or monetary funding from any businesses, even the few that expressed interest in the project.

Recommendations

- Refocus business outreach to a few select businesses that are aligned with our organizations mission.

The second objective was to analyze the needs of the Quincy Trail and establish priorities for remediation and improvement.

Accomplishments

- Worked with stakeholders to determine the needs of the trail.
- Site walkthroughs with City of Sheridan and South Suburban Parks and Recreation District.
- Selection of native low-rooting shrubs and grasses along the trail to meet easement requirements.

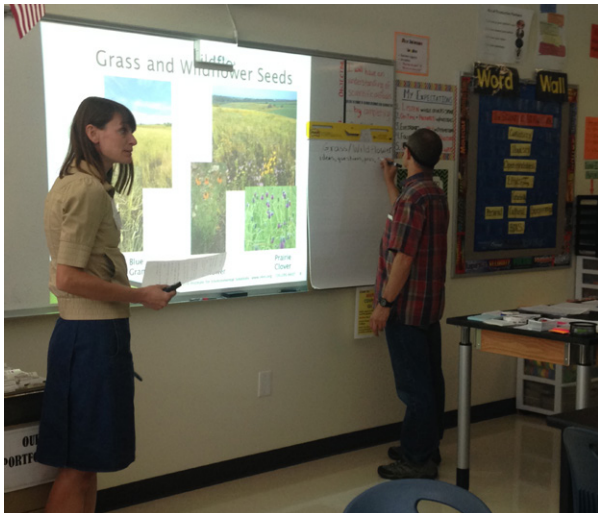
Challenges

- Easement restrictions from Denver Water prevented the planting of trees along the trail.
- Denver Water construction on the west end of the trail forced IES to move planting down the trail toward the east end.

Recommendations

- Continue to plant low rooting plants along the trail.
- Maintain communication with Denver Water regarding planting plans and any future construction plans.

The third objective was to plant and develop an education program for students of Fort Logan Northgate 3-8 School's Leadership Class.



Workshop One

Accomplishments

- Developed two workshops where the students learned about local plants, symbiotic relationships, and how to plant and care for shrubs.

Challenges

- Some students did not participate, and the lecture model was detrimental to keeping students engaged.

Recommendations

- Implement a modular workshop module.

The fourth objective was to develop a planting program that improved the ecology and aesthetic appeal of the Sheridan Quincy Trail.

Accomplishments

- Worked with DesignWorkshop to design a planting plan for the Sheridan Quincy Trail.
- Gained input and approval from stakeholders.

Challenges

- Denver Water construction of a water vault along the west end of the trail forced us to change the focus area of the project to the eastern part of the trail.

Recommendations

- Maintain contact with Denver Water so we can be notified of any further upcoming construction projects.

The fifth objective was implement an education, planting, and maintenance program to provide long-term plant care and trail maintenance. Recruit and organize students and local volunteers to care for the plants and trail. Obtain trees, shrubs, plant materials and equipment.

Students collaborating during workshop.

Accomplishments

- Planted 144 shrubs along the trail.
- Implemented two classroom workshops and a planting day for the Fort Logan Northgate Leadership Class.

- Recruited Tree Stewards to water, weed, and mulch along the trail.
- Worked with Colorado State Forest Service Nursery and Alameda Wholesale Nursery to source shrubs.
- Planned summer maintenance program, which included twice weekly site visits and a new maintenance technique: using newspaper at the base of the shrubs under a layer of mulch to retain water and prevent weeds.

Challenges

- Poor soil conditions made for difficulties in digging holes for plants.
- Equipment delivery did not happen because of communication challenges with stakeholders.
- The number of plants and challenges digging holes made planting day feel rushed.
- Lack of student and community volunteers for summer maintenance.
- It took half of the summer of 2017 to get a second tank on the trail, making watering more difficult since we had to attach hoses from the Cube.

Recommendations

- Dig the holes or get the dirt tilled prior to planting day.
- Follow up emails with phone calls to ensure that equipment is delivered by planting day.
- Be more realistic about the number of plants that can be planted on planting day.
- Step up recruitment of volunteers from Sheridan to ease the work for the Tree Project team.
- Research local groups that could participate and increase attempts to get students involved in the summer.
- Get a tank to the trail sooner.

The sixth objective was to evaluate the project and prepare a final report and video.

Banner Unveiling

Accomplishments

- IES received stakeholder feedback.
- Evaluation is ongoing throughout the program to make immediate adjustments as needed.
- IES hired Jesse Johnson of IOTK Media to record and edit a final video.
- This final report also fulfills the sixth objective.