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Final Report
August 2021

THE TREE PROJECT
ENERGY • WATER • AIR • CARBON

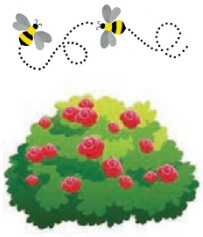
Institute for Environmental Solutions

# 2020 Sheridan Trail Enhancement and Restoration Project

# IMPACT REPORT

## Environment

6 bags of invasive weeds removed



82 shrubs, grasses, and flowers planted

3 planting days implemented

## Community

130+ volunteer hours contributed

8 organizations involved

4 community Tree Stewards involved

## Education

2 educational workshops completed

19 students engaged

2 virtual activities created

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## Many Thanks to our 2020 Sheridan Trail Enhancement and Restoration Project (TERP) Stakeholders

Andrew Rogge, Devin Granbery, and Randy Mourning at the City of Sheridan, for their advice and input.

Sharena Del Brocco and BJ Jeffers at Fort Logan Northgate School, for their support and dedication.

Cyndi Wright at Sheridan School District No. 2 for her support of and input during IES's development and implementation of community space improvements.

Dave Brueggeman at South Suburban Parks and Recreation District for material support and assistance in preparation for project planting days.

Special thanks to the Fort Logan Northgate Leadership Class students and IES Tree Stewards for all their hard work!

## Thank you to our grant funders!

IES appreciates the generous financial support from our project funders

# Executive Summary

The 2020 IES Sheridan Trail Enhancement and Restoration Project (TERP) took place along the Sheridan Quincy Trail (SQT) in Sheridan, CO in fall of 2020. This project marked the seventh year of collaboration with the City of Sheridan (COS), Sheridan School District No. 2 (SSD2), South Suburban Parks and Recreation District (SSPRD), and the Fort Logan Northgate (FLN) School Leadership Class to implement education-based environmental improvements and activities at the SQT and adjacent community space. The format of the 2020 Sheridan TERP was altered from previous years due to the global COVID-19 pandemic. However, despite difficulties, IES completed most of its goals and objectives. Objectives that were not accomplished will be moved to future projects and will be discussed in greater detail in this report.

IES was in the early planning stages of the Sheridan TERP when the pandemic surfaced towards the end of the 2019-2020 academic school year. IES monitored the situation and closely followed announcements and regulations from the state and federal governments in addition to SSD2 and FLN protocols during spring and summer 2020. Throughout the summer, multiple project scenarios were discussed until SSD2 released official information regarding the upcoming school year. Scenarios IES had to consider ranged from holding two in-person planting days and two in-person workshops to holding entirely virtual workshops with no students at all during the planting days. This preparation allowed IES to proceed with project planning and implementation as soon as the format of the school year and any restrictions were announced. Once it was determined that the Leadership Class would be taught entirely remotely during the 2020-2021 school year and could attend planting days and weekly site maintenance with smaller in-person groups, IES was able to move forward with its project plans quickly and efficiently. IES successfully implemented two planting days with FLN students in addition to completing two educational virtual workshops. For the first time ever, the IES Chemical Footprint Project (CFP) team collaborated with the Tree Project to host one of the workshops with the Leadership Class.

On September 12, 2020, IES hosted the Xcel Energy Day of Service for the fourth consecutive year. Unlike previous years, this event was limited to IES team members and Xcel Energy employees so as to limit the spread of COVID-19. Xcel Energy family members and Sheridan community members were prohibited from participating so that the event could be carried out with a smaller group size. Ten Xcel Energy employees helped IES plant 12 new plants and re-mulch a pathway in the community space and provided maintenance through watering, mulching, and pulling weeds. Although the group of volunteers was small, the event was a success and the team accomplished a significant amount of work.

IES communicated regularly with all of its project partners to develop and implement the 2020 Sheridan TERP in addition to ensuring the health and safety of all students and volunteers during unprecedented circumstances. IES is grateful for the continued partnership and support from FLN, SSD2, COS, and SSPRD. Contributions from each stakeholder will be described later in this report.

This report provides information on the project's development, design, planning, implementation, outcomes, and continued COVID-19 response by IES. The project's goals and objectives are described along with the steps taken to ensure the health and safety of students, stakeholders, and volunteers. Also included in this report are recommendations to improve future projects in Sheridan as well as a complete project evaluation.

Despite the unusual situation brought on by the COVID-19 pandemic, the 2020 Sheridan TERP was a success. The 82 plants planted at the SQT will decrease erosion and stormwater runoff along a mid-trail slope while revitalizing the soil and increasing the native plant diversity and natural habitat along a heavily-trafficked trail.

# Chapter 1: Introduction and Overview

## Introduction and Overview

This report will detail the development and implementation of the 2020 Sheridan Trail Enhancement and Restoration Project (TERP). This initiative took place along the Sheridan Quincy Trail (SQT) between Federal Boulevard and Irving Street. The SQT is an artery for pedestrians and students and is susceptible to flooding and erosion due to storm drainage. Using tree science, IES and stakeholders worked to mitigate this environmental hazard through the 2020 Sheridan TERP while creating a more inviting and usable outdoor public space for the community.

IES continued its collaboration with project stakeholders to implement two in-person planting days and two virtual educational workshops. The Fort Logan Northgate (FLN) Leadership Class students and IES Tree Project team members planted 70 native species of shrubs, grasses, and flowers at the site while following COVID-19 safety protocols and regulations. Strategic planting near the western entrance and the installation of a rain garden towards the center of the trail were coordinated efforts implemented by IES to encourage the use and the health of an important local greenspace.

For the first time, the IES Chemical Footprint Project team collaborated with the Tree Project to host a virtual do-it-yourself workshop with the FLN Leadership Class. After completing this workshop, the Tree Project implemented an original four-part virtual grant writing workshop with the students. This unique workshop provided Leadership students with a chance to showcase what they learned about grant-writing to their peers and introduce them to the critical skills needed to work in the non-profit sector.

## Institute for Environmental Solutions

IES delivers scientific solutions to improve health and the environment. IES's vision is to create efficient ways of dealing with complex environmental problems. Through its two project teams, the Tree Project and the Chemical Footprint Project, IES strives to restore natural habitats through a unique multi-disciplinary approach that is socially and ecologically sustainable. By engaging a broad spectrum of participants in examining these problems on a project basis, IES develops sound and cost-effective solutions. Information about the IES Chemical Footprint Project can be found at www.i4es.org.

## The IES Tree Project

The IES Tree Project's mission is to improve the environmental quality of Colorado cities using tree science. The Tree Project helps communities, businesses, and individuals achieve multiple environmental improvement goals using urban forestry. Tree Project Graduate Interns and Institute Associates work on several initiatives to optimize the environmental, social, and economic benefits of urban trees. These initiatives include developing and implementing community tree-planting programs, presenting workshops describing the benefits of urban forestry, conducting research on tree science, and providing outreach to achieve a greater understanding of urban forestry impacts. The Tree Project has been successfully implementing urban forestry and environmental education projects in Sheridan, CO since 2014 and in Wheat Ridge, CO since 2012. Information about IES's work in Wheat Ridge can be found at www.i4es.org. Prior to 2012, IES conducted tree programs in Broomfield and Golden, CO which also has information

available on the website.

The goals of the Tree Project are to:

- Research urban environmental problems and develop sustainable solutions and enhance community health through tree planting and urban forestry.
- Partner with municipalities and actively foster community engagement projects to solve urban environmental challenges.
- Develop replicable educational programs to promote environmental stewardship, especially for students in underserved communities.
- Improve and optimize the survival of IES trees and plants through community-supported maintenance efforts.
- Establish IES as the resource for science-based tree planting capability and related environmental education on Colorado's Front Range.
- Improve objective, data-based assessments of project accomplishments.
- Improve IES through improving volunteer and team member retention and IES-wide team collaboration.

## History of IES Projects in Sheridan

2020 was the seventh year of IES partnerships and project implementation in Sheridan, CO. The main objectives of past initiatives in the Sheridan community have been to reduce erosion and stormwater runoff near the trail, decrease invasive species, increase canopy cover and native plants, and provide ecological education to the next generation of environmental stewards. While this project continued those efforts and acted primarily as an environmental improvement initiative, the 2020 Sheridan TERP undoubtedly improved the overall aesthetic and potential use of the Sheridan Quincy Trail. IES hopes that by creating a more inviting trail and community space, local residents and community members will be encouraged to frequent this area and enjoy the natural benefits that a healthy environment can provide.

# Chapter 2: The 2020 Sheridan Trail Enhancement and Restoration Project

## Project Plan for the 2020 Sheridan TERP

The 2020 Sheridan TERP took place both along the Sheridan Quincy Trail (SQT) where IES partnered with the FLN Leadership Class to implement two planting days, and virtually through two educational workshops. Due to the COVID-19 pandemic, the Leadership Class was held remotely for the 2020-2021 school year and required IES to create a new project format. IES learned about the virtual class mandate and other SSD2 regulations early enough in the planning phase to meet all necessary mandates and precautions in the project plan. The workshops were designed to be taught remotely and the students were separated into small groups during planting days to limit big group interactions. With the help of SSD2 and FLN, IES was able to achieve most of its goals and objectives while following pandemic-related regulations to ensure everyone's safety. On September 12, 2020, IES held the Xcel Energy Day of Service with IES team members and volunteers from Xcel Energy. For more information about this event, please visit Chapter 3: Project Design and Events.

Leadership Class students planted along the SQT during fall 2020.

Listed below are the original goals and objectives IES had for the 2020 Sheridan TERP:

1. Mitigate stormwater runoff and erosion along the Sheridan Quincy Trail through installation of a Zuni bowl and by planting native plants.
2. Increase native plant cover and decrease invasive species during planting days, including the 2020 Xcel Energy Day of Service. Plant native plants, remove invasive plants, weeds, and mulch along the SQT and in the community space.
3. Improve the SQT community space for trail visitors to enjoy the outdoors by installing a community space entrance archway and shade structure. Install an equipment shed to improve security along the trail.
4. Provide environmental education for middle school students through two engaging workshops.
5. Collaborate with community stakeholders throughout the project.
6. Produce a final report and project video after project completion.

## Virtual Workshops

Despite the setbacks and uncertainty caused by COVID-19, IES achieved its educational goals by creating virtual workshops for the FLN Leadership Class. The Tree Project's workshop goals were to teach students how to write a grant application, have the students complete a mock grant application for the upcoming 2021 Sheridan Play, Adapt, Grow and Engage (PAGE) Project, and present their applications to a panel of their class peers. This workshop was split into

three virtual Google Slide presentations with associated worksheets followed by final student presentations via Zoom over four weeks. The Google Slides and worksheets can be found in Appendix A.

The IES Chemical Footprint Project (CFP) team led a workshop with the Leadership Class as well. The CFP team taught the students how to make a DIY contaminant-free personal care product. For more information on the workshops, please visit Chapter 3: Design and Events.

## Planting Days

The first planting day took place on October 29. One group of students planted plants in mechanically dug holes near the center of the SQT to create a xeriscape rain garden. The holes were dug by SSPRD to avoid the same challenges of compact and difficult soil faced during the 2019 Sheridan Community Trail Improvement Project (CTIP). The second group of students started weeding and providing maintenance at the western end of the trail. After 45 minutes, students took a break and then switched tasks. By the end, the students planted 43 of the 70 plants and filled three trash bags with weeds. Please find the debrief notes for Planting Day One in Appendix B.

The second planting day took place on October 30. IES Tree Steward Lloyd Levy deepened existing holes at the rain garden site and began digging new holes for the remaining plants to expedite the planting process for students, as SSPRD had missed digging a few holes. One group of students finished planting the rain garden while the other group of students planted the remaining plants along the western entrance to increase the vegetation at the SQT entrance. After completing the planting, students helped carry water and mulch to the rain garden to complete all planting steps. For the last 45 minutes of the planting day, students weeded and cleaned the tools and supplies. Students successfully planted the final 37 plants and filled five bags of weeds. Please find the debrief notes from Planting Day Two in Appendix C.

All IES team members and volunteers took COVID-19 protocols seriously, following state and federal guidelines throughout both planting days. IES altered in-person activities to ensure personal and group safety while planting on the trail. All staff members, students, project partners, and volunteers who participated properly wore face masks, used gloves when appropriate, and washed their hands or used sanitizer frequently. Students either did not share tools or sanitized them after each use and were socially distanced whenever possible.

Leadership students planted 70 plants along the Sheridan Quincy Trail.

FLN Leadership students planted xeriscape plants near the SQT to help prevent flooding on the trail.

## Maintenance

The students will provide weekly maintenance to all new plants while the school year is in session, unless there are more COVID-19 interruptions. During the summer, maintenance will be taken over by Tree Stewards until school starts again in the fall 2021. IES Tree Stewards are dedicated volunteers from the local community who provide much-needed care to plant sites including watering, mulching, and weeding.

## Project Donors

The 2020 Sheridan TERP was generously funded by a variety of donors, including the Xcel Energy Foundation, Great Outdoors Colorado through the City of Sheridan, Trees Forever, and the Chalet General Federation of Women's Club. Funding provided for the project was used to support contractual labor for IES team members, purchase plants, tools, equipment, t-shirts, and snacks for the students. The success of the 2020 Sheridan TERP was due to the generous support of these donors and led to the environmental education and native species planting critical to improving our environment.

# Chapter 3: Project Design and Events

## Project Planning

IES began brainstorming project events for the 2020 Sheridan TERP during the 2019 project's evaluation meetings in winter 2020. Once COVID-19 surfaced and disrupted IES's spring Wheat Ridge project, IES put all official planning on hold until summer 2020. IES then began brainstorming how to implement the fall project while taking the pandemic's limitations into account before any official information about the school year was released. Once information was released in August about the virtual format of the Leadership Class and students' ability to participate in planting days and maintenance, IES moved forward with some of its prepared project options, including implementing virtual workshops and in-person planting days that would adhere to COVID-19 protocols. IES had prepared for a virtual workshop and, in the event that the Leadership Class would not be able to participate at all, developed a structure for an "environmental club" format with FLN students. Direct communication with the Leadership Class teacher Sharena Del Brocco was essential in developing virtual workshops and in following Sheridan School District No. 2 (SSD2) restrictions during planting days. Virtual meetings with Ms. Del Brocco helped IES develop an outline and timeline for the workshops and ensured that the activities were appropriate for the students' curriculum and capabilities. Collaboration with SSD2 was also critical to meeting the school district safety requirements due to COVID-19 regulations.

## Xcel Energy Day of Service

On September 12, 2020, IES was honored to host the fourth consecutive Xcel Energy Day of Service with Xcel Energy employees along the Sheridan Quincy Trail (SQT). The Xcel Energy Day of Service is an annual event hosted by Xcel Energy where employees, families, and friends participate in volunteer opportunities at organizations across Colorado for one Saturday in September in an effort to give back to the community. This annual event is held to commemorate the victims of September 11, 2001.

This year the event was limited to IES team members and ten Xcel Energy employees to follow the rules and regulations of the COVID-19 pandemic. Throughout the day, volunteers re-mulched the path inside the community space, watered plants, and took out many invasive weeds. Six new native plants were planted at the entrance of the community space and six native plants were planted inside the community space. Volunteers learned about the trail and prepared the site for the TERP Project days with FLN students. Even though unprecedented events changed the traditional nature and size of the Xcel Energy Day of Service event, IES was impressed with the work accomplished by the smaller group in just three hours.

## Planting Days

IES created a planting design for the SQT which added 70 new native plants to the site during two planting days. Planting occurred at the western entrance, near the kiosk installed during the 2019 Sheridan CTIP, and towards the sloped middle of the trail as a rain garden feature. SSPRD staff members assisted by visiting the site prior to the planting days to mechanically dig the holes for the plants, making the planting days easier for the students. Plant species added to the SQT include western sage, rabbitbrush, gro-low sumac, bee balm, blanket flower, gloriosa daisy, and little bluestem grass. All plants have xeriscape and erosion control qualities and are

Students loaded their wagon with plants to haul them to the planting site.

native to Colorado, a quality which increases survival rates as they are accustomed to the natural climate.

Digging holes before the planting days eliminated the unforeseen challenges of the 2019 Sheridan CTIP when it was discovered that the soil was too compact and required three additional planting days with community volunteers to complete all the scheduled planting. IES's 2020 planting design was based on University of Colorado Denver Master of Urban and Regional Planning student Nicole Bush's Stormwater Management Capstone that was researched and finalized during winter/spring 2019/2020. IES took Ms. Bush's Stormwater Management Capstone planting suggestions for the Sheridan Quincy Trail and incorporated them into the 2020 Sheridan TERP project plans. See Appendix G for Planting Plans of Ms. Bush's Capstone.

## Planting Day One Events

During Planting Day One, students met in the community space prepared with masks and properly socially distanced from their peers. After introductions, a third of the students began working along the western end of the SQT by Irving Street with Tree Project Manager Carrie Martin-Haley while another third provided maintenance to the overall SQT site with Graduate Intern Emmalee Benson. The last third of the students walked halfway down the trail to begin planting the rain garden with Sheridan Tree Steward Lloyd Levy. About 45 minutes into the planting day, the students took a socially distanced snack and water break in the community space. After their break, the students rotated groups and finished planting a little over half of the plants. Ms. Benson's group, providing trail maintenance, was able to fill three trash bags full of weeds. Forty-three of 70 plants were planted.

Two FLN Leadership Class students dug the holes deeper for their plants while maintaining social distance regulations.

## Planting Day Two Events

Planting Day Two focused on planting the remaining 37 native plants at the Sheridan Quincy Trail. The majority of the work consisted of planting the larger shrubs along Irving Street at the western entrance to the trail with Carrie Martin-Haley, Emmalee Benson, and Graduate Intern Hailey Smalley. A few remaining plants were planted in the rain garden with the help of Tree Project Coordinator Laura Prickett and Tree Steward Lloyd Levy. Again, students were separated into smaller groups to ensure safe distances. Once the remaining plants were planted, the students took a break for snacks and water. When the students were finished, they went back into their groups and watered the plants, added mulch, and pulled out weeds around the new vegetation. By the end of the second planting day, all of the plants had been planted, mulched, and watered, and more than five bags of weeds were collected by the students.

## CFP Workshop Design and Events

After completing the late October planting days, the IES CFP implemented virtual Workshop One via Zoom with the FLN students in November. During this innovative workshop, students learned about contaminants of emerging concern (CECs), participated in a DIY product-making activity, and identified the CECs in products they had in their households. The CFP team provided the students with kits of supplies, and IES led students through a step-by-step guide for how to create their own contaminant-free hand sanitizer to demonstrate the ease of creating clean, affordable products. Students were taught how to read product labels on household and personal care products in their homes to determine if they contain CECs, and discussed how to avoid CECs while shopping. CFP team members provided a pre- and post-

workshop survey to students to gather data on information acquired through the workshop. For more information about this workshop and for a comprehensive evaluation of the results, visit www.i4es.org/ to read the Chemical Footprint Project's "Fort Logan Northgate Workshop Final Report".

## Tree Project Workshop Design

The Tree Project's workshop was created for a virtual setting over four weeks in December. This virtual workshop taught students how to write a grant application, why grant funding is important to nonprofits like IES, and asked students to present their applications in front of their classmates, who acted as a grant review panel. FLN students spent the first three weeks creating and preparing for their virtual presentations that took place during the final week of the workshop.

IES Tree Project team members developed embedded videos for the students to follow, which aided student comprehension of the covered material and walked students through prompts and examples. Team members created explanatory videos for each week's workshop activity that could be shared with the class to educate them on how to develop their own grant-writing skills. The associated activity worksheets were created by IES and reviewed by Ms. Del Brocco. The Tree Project team designed the final workshop activity, where students were asked to present their work to the class. Please reference the Appendix A for workshop content.

## Tree Project Workshop Events

IES sent out the first virtual activity of the Tree Project Workshop to students on November 30, 2020. The first activity included a Google Slides presentation on the basics of grant writing. The presentation incorporated an embedded video of Tree Project team members explaining different terms, such as what a "grant" is, who can be considered a "funder", and what makes a "non-profit organization" different from a business. The students were then asked to start filling out the first section of a blank grant application that had been created through Google Docs by IES team members as part of the necessary materials for the workshop to give students real-world practice for applying their new grant-writing skills. Students followed the instructions and used the information from the videos to complete the grant application.

The second virtual activity was sent to the Leadership Class on December 7. In this virtual presentation, the Tree Project explained several goals and objectives for the 2021 Sheridan Play, Adapt, Grow, and Engage (PAGE) Project to help students with their applications. Students were then expected to participate in an online activity in which they completed their grant application by using this information presented in the videos. For example, students listened to information about the project that IES sought funding for, and then used the information they learned about the project to answer questions such as "Please give an overview of the program or project that funding will support" and "Please explain how you will use funding from the General Grant Application to implement your project."

The third Google Slides presentation and associated activity were sent to FLN on December 14 for the students to work on remotely throughout the week. The objectives of this activity were to have students complete a self-evaluation of their grant applications on their own outside of class and to prepare the students for their final mock grant application presentations to a small group of their classmates during the final live Zoom meeting. For the mock grant application presentations, students were asked to independently watch a video about how to take their grant application content and create it into bullet-pointed lists so they would present only the most significant information to their peers for an allotment of three minutes each during the final Zoom meeting. They then created bullet-pointed lists of their content for their grant application questions so they could easily present to their peers.

The final virtual activity took place via Zoom on December 18, 2020 during the Leadership Class period at 1:20 pm. This workshop involved five Tree Project team members; Carol Lyons, Carrie Martin-Haley, Laura Prickett, Sarah Turner, and Catherine Trowbridge. These team members facilitated breakout rooms for students to present their grant applications

to their peers. After initial introductions and an explanation of events by Project Manager Carrie Martin-Haley, the groups separated into their four different breakout rooms, a small-group Zoom feature, to share their grant presentations. Breakout rooms allowed each IES team member to individually hear three to four FLN student presentations, followed by questions or comments from both the Tree Project team members and fellow classmates. While some students were initially nervous to present to their break-out group, most were successful in explaining to the "grant panel" who IES is, how much they requested in funds, and what they planned to do with the funding.

IES team members were prepared with a list of questions and discussion topics so that breakout group time was spent discussing the workshop, asking for feedback, and ensuring that students' critical thinking skills were put to good use. There were instances in all breakout groups where IES team members needed to help guide the conversation by prompting further discussion or asking different questions. This preparation by IES mitigated awkward silences and helped boost students' confidence in their ability to answer questions and state their ideas. After all of the students presented in their breakout rooms, all workshop participants met in the main Zoom call and provided some final reflections on the workshop and associated activities. After the workshop, the FLN students had the opportunity to provide feedback to IES during our last workshop as to what was successful and what could be improved for future IES virtual workshops. It should be noted that due to a last-minute scheduling conflict, the FLN students had one less day to prepare for their presentations than planned. Ms. Del Brocco mentioned to IES that the students had lost a day to prepare, but she was still impressed by the amount of work and originality they came up with.

IES led a Zoom call with the Leadership Class from FLN for students to present their grant content

# Chapter 4: Project Partners and Community Collaboration

While IES is the program manager and director, the success of the 2020 Sheridan TERP depended on valuable support and feedback from IES partners and stakeholders. The partnerships among IES and FLN, SSD2, COS, and SSPRD have been fostered since 2014. These partnerships were vital in developing and implementing IES's 2020 planting and educational project in Sheridan, particularly in light of the COVID-19 pandemic and constantly changing circumstances. The 2020 Sheridan TERP provided meaningful environmental education to students and strengthened their sense of community connection. Students were able to safely work outdoors, side by side with their peers, which was significant as the COVID-19 pandemic prompted many schools to switch their curriculum to remote learning. Since many students rarely saw their classmates in person, working together on the Sheridan TERP reinforced social ties that were otherwise missing from their school experience.

## Importance of Partnership between IES and South Suburban Parks and Recreation District

The partnership between IES and SSPRD was essential for the success of this project. The SSPRD staff visited the site prior to planting days to dig the holes for the native plants. SSPRD also provided IES with mulch for the planting days to help the plants retain moisture and guard against inclement weather. SSPRD ensures the safety and usability of the Sheridan Quincy Trail throughout the year by maintaining it and monitoring the area for vandalism and other deterrents for community members. IES is grateful for SSPRD's commitment to make the Sheridan Quincy Trail as pedestrian-friendly as possible year-round and help to encourage community space use.

## Importance of Partnership between IES and Fort Logan Northgate School

The Sheridan TERP was implemented through two planting days at the Sheridan Quincy Trail with the students and two virtual workshops which included weekly remote lessons and two live Zoom meetings. Both workshops, held in November and December 2020, were conducted virtually due to the online structure of the Leadership Class to keep students safe during the COVID-19 pandemic. The FLN Leadership Class teacher Ms. Del Brocco provided information to IES on class objectives and reviewed workshop lessons and activities that IES had prepared for students prior to distributing the materials. Ms. Del Brocco managed student behavior during all project activities, including the two planting days at the Sheridan Quincy Trail.

Students gathered in the SQT Community Space to learn more about Planting Day 1 and their tasks for the day.

During the entire Sheridan TERP, Ms. Del Brocco, students, and participating volunteers were required to follow COVID-19 protocols and regulations set by SSD2 and the state. These modifications involved a mix of virtual learning and socially distanced in-person activities, which included prohibiting indoor activities, maintaining small group sizes during outside events, and requiring that face masks be properly worn at all times. Ms. Del Brocco offered input to assist IES in factoring in and enforcing all of the school district's mandates. After all project events were completed, Ms. Del Brocco also provided IES with some valuable feedback on how to improve future programs, which will be discussed in Chapter 9: Project Evaluation. For details about

feedback and recommendations provided by Fort Logan Northgate, please see Chapter 9: Evaluation found in Appendix F.

## Importance of Partnership between IES and Sheridan School District No. 2

SSD2, who owns the community space property, participated in planning and debrief meetings for the project, guiding the focus of the project and providing essential feedback for future projects. Ms. Cyndi Wright, SSD2 Chief Operations Officer, helped provide necessary maintenance supplies for the Sheridan Quincy Trail by arranging to fill the water tanks weekly for FLN students and IES Tree Stewards.

Sheridan School District No. 2 also helped IES establish contact with Wold Architects & Engineers. IES began collaborating with Wold Architects & Engineers after SSD2 and Wold established a comprehensive erosion plan on school property, since erosion has been a considerable problem in Sheridan for many years. IES had planned to install a Zuni Bowl just across the SSD2 property line on COS property. These plans were shifted into 2020 from the 2019 Sheridan CTIP. After further discussion however, IES and SSD2 agreed that the best course for IES to take in furthering its plan for the Zuni Bowl was to communicate with the same consulting company to develop a plan that built on SSD2 erosion mitigation plans. IES then consulted with Wold. In the end, the Zuni Bowl was not implemented during this project. The initiative has been tabled as a potential future project while Wold and SSD2 partner to address the stormwater runoff and drainage issues on SSD2 property. SSD2's project will occur upstream of the proposed Zuni Bowl location and might therefore negate the need for a Zuni Bowl located downstream. SSD2, COS, and IES plan to communicate regularly about this project and proceed as needed. IES will help where possible once the plans for erosion mitigation have been formalized.

## Importance of Partnership between IES and the City of Sheridan

COS was an integral stakeholder in the 2020 Sheridan TERP. COS owns the SQT itself in addition to the land directly north and south of the trail where the majority of new planting occured this year. COS permits IES to implement planting projects on the SQT with the FLN Leadership students. All potential erosion installations and natural features require permitting by COS. The City of Sheridan participated in initial planning and post-project debrief meetings and provided crucial feedback to IES for future projects.

Three FLN Leadership Class students worked on the finishing touches to their new native plantings by adding compost, mulch, and water.

## Importance of Community Collaboration

IES stakeholders were integral to the success of the 2020 Sheridan TERP. Stakeholders participated in all aspects of the project, including stakeholder meetings, joint planning, implementation, and evaluative feedback. FLN helped IES plan and implement a successful environmental education program despite unprecedented obstacles brought on by COVID-19. SSPRD prepared the site by mechanically digging the holes to facilitate easier planting during both planting days. Communication from all stakeholders supported the FLN Leadership Class students in applying their leadership skills to environmental stewardship. Through this multifaceted program, students learned about Sheridan ecology and made a lasting impact in their community by participating in planting days and educational workshops.

# Chapter 5: Project Organization

## Project Stakeholder Involvement

The 2020 Sheridan TERP was made possible through collaboration with key stakeholders who assisted in the planning and implementation of two virtual workshops and two planting days at the Sheridan Quincy Trail, as described in detail in Chapter 4.

IES Tree Steward and Steering Committee member Lloyd Levy taught a Leadership student about proper mulching techniques.

Plants sat in holes along the Sheridan Quincy Trail, ready for planting.

## The Tree Project Steering Committee

Comprised of volunteers from various backgrounds, including former Tree Project members and field experts, the Tree Project Steering Committee assists IES in project decisions through expertise and ecological knowledge. The Tree Project conducts quarterly meetings with the Steering Committee to provide advice and guidance throughout all project phases.

## The Chemical Footprint Project Team

The 2020 Sheridan TERP project was the first project where both IES teams conducted workshops with the same class of students. The CFP planned and implemented the first of two virtual workshops with the FLN Leadership Class and contributed to the success of this project. For more information about the CFP virtual workshop, please see Chapter 8 or read the CFP FLN Final Report, available on the IES website.

## Funding

Xcel Energy, Go Outdoors Colorado through the City of Sheridan, Trees Forever, and the General Federation of Women's Clubs provided generous support through funding for the 2020 Sheridan TERP. Initiatives like the 2020 Sheridan TERP are also made possible by in-kind contributions and volunteer time from Tree Project team members, IES Tree Stewards, SSPRD, SSD2, and FLN students, and staff.

## Project Plan

An Xcel Energy employee helped cage a new plant during the 2020 Xcel Energy Day of Service.

The 2020 Sheridan TERP project plan located in Appendix E was created by IES Sheridan Project Manager Carrie Martin-Haley. This plan underwent several modifications throughout the year in response to the COVID-19 pandemic. To ensure the safety of all participants and to accommodate restrictions from the school district, IES modified the final project plan to accommodate social distancing guidelines and school closures. Further details about IES's response to COVID-19 can be found in Chapter 6 of this report.

The 2020 Sheridan TERP final project plan included two workshops, two planting days, stakeholder evaluation meetings, a three-year Tree Steward maintenance plan, a project video, and the final report. The first virtual workshop was implemented by IES's CFP team, which focused on contaminants of emerging concern (CEC). Under the guidance of CFP team members, students learned about common CECs, identified CECs in the everyday products they use at home, and made their own contaminant-free hand sanitizer by following a CFP Do-it-Yourself recipe. More information about this workshop can be found in the CFP Final Report. The second virtual workshop, presented by the IES Tree Project, guided students through grant writing techniques and allowed them to construct a final mock grant application for review by their peers. For more information about project workshops, please see Chapter 8. During the planting days, a variety of shrubs and grasses were planted to decrease erosion and improve the ecology of the Sheridan Quincy Trail. A comprehensive review of project planting days can be found in Chapter 8.

## Project Timeline

Initial planning for the 2020 Sheridan TERP began in late 2019 through IES team planning and stakeholder meetings. IES presented the first workshop to the FLN Leadership Class as a remote learning activity in November 2020. Planting days were initially planned for October 27 and October 29. However, due to inclement weather, the planting days were moved to October 29 and October 30. During these two days, small groups of students planted 70 shrubs and grasses along the Sheridan Quincy Trail and performed routine maintenance including weeding and watering. The second virtual workshop was held in December, in which students watched videos describing the grant writing process and why grant funding is important to non-profit organizations, then wrote mock grant applications and presented them to their peers for review. Final evaluation debrief meetings with FLN, SSPRD, SSD2, and COS took place in January 2021. These meeting notes can be found in Appendix F. Jesse Johnson of IOTK Media created a project video depicting the 2020 Sheridan TERP, available on the IES website and on YouTube. Continued maintenance for the SQT site will be supported by IES volunteer Tree Stewards. More information regarding IES's maintenance plan can be found in Chapter 2.

# Chapter 6: COVID-19 Modifications

## Pandemic Background

The COVID-19 pandemic had far-reaching effects for the Sheridan community and the Institute for Environmental Solutions throughout the 2020 Sheridan TERP. Governor Jared Polis announced the mandated shutdown of Colorado schools from March 23 to April 17, 2020 to fight the spread of the COVID-19 virus. This was extended to April 30 as cases continued to increase throughout Colorado, until the decision was made to hold the remainder of the school year remotely.

## Changes to Original Plans

The original 2020 project plan was intended to complete objectives from the 2019 Sheridan CTIP plan, in which IES postponed the installation of certain features due to permitting issues and inclement weather at the end of 2019. The original project plan had an emphasis on improving the physical infrastructure at the SQT such as installing a shade structure and a Zuni Bowl. However, after consultation with Wold Architects & Engineers, the suggestion was made to further postpone the natural stormwater management feature. Similarly, under tight budget constraints and ever-changing COVID-19 restrictions, IES decided not to begin the process of planning a shade structure until 2021.

Official planning for the outdoor planting days with students was put on hold until SSD2 released information regarding the school year and field trip capabilities. IES spent the summer preparing for any of the possible scenarios the new school format could take: 100% remote, 100% in-person, hybrid learning, the absence of a Fort Logan Northgate Leadership Class, and the possible creation of an environmental club accessible to all students at FLN. In late August, as the 2020-2021 school year began, IES was informed that by following proper safety protocols, planting days and workshops could commence. While the FLN Leadership students would be able to attend in-person planting days, their class was switched to virtual learning, which required IES workshops to follow suit.

## Adapted Project Plan

These educational adaptations required IES to implement safe and creative ways to work with students. This came through socially-distanced in-person planting days and educational virtual workshops. IES modified the original project plan to include the project's initial objectives while ensuring the students' and volunteers' safety. The 2020 Sheridan TERP objectives included planting native and xeric plants to decrease erosion, mitigating stormwater runoff, and increasing native species, while engaging students and community members to become part of their environment's restoration process. In September, IES took steps to ensure that Xcel Energy volunteers could safely participate in the annual Xcel Energy Day of Service by modifying elements of the event, such as requiring face masks to be worn and limiting group sizes. At the end of October, students from FLN followed similar precautions to safeguard their safety during the two planting days. There were, however, bumps in the road due to a contact-traced quarantine of the FLN Leadership Class. Fortunately, IES's proposed backup planting days were suitable alternatives, and weekly site maintenance days, occurring two days each week by the 7th and 8th grade students separately, ensured safe group sizes.

Since the FLN Leadership Class started its school year remotely, Leadership Class teacher Sharena Del Brocco and her class were already prepared to engage in a virtual workshop. This workshop was designed to give students an introduction into the non-profit sector and grant writing. Although there were technical difficulties and a lack of in-person connection, students learned how organizations like IES function. See Appendix D for the worksheets, grant applications, and other deliverables that the students produced during their remote activities.

IES successfully carried out two virtual workshops, and used the virtual format to innovate new activities for the FLN Leadership Class that would have otherwise been difficult to implement. For example, the IES Tree Project collaborated with the IES Chemical Footprint Project to host a virtual workshop on CECs. This meant that members of both teams were able to work together and encourage environmental stewardship as a collective. In the past, such close collaboration between teams would have been more difficult to manage in an in-person setting.

## Safety Protocols

Throughout the 2020 Sheridan TERP, IES maintained its strict requirements to follow health regulations set in place by the state and SSD2. Masks were worn at all times during the in-person planting days, and educational activities were held either entirely outdoors or virtually. In addition to masks, participants maintained a minimum of six feet between students whenever possible during planting days. IES provided students with their own equipment during the planting days to eliminate the sharing of equipment as much as possible. When this was not feasible, sanitizing supplies were available to clean the tools and equipment between users. Keeping the students in smaller groups of 4-6 was another key to increasing the project's safety.

Similar protocols were applied to our community Tree Stewards program to keep our volunteers and community members safe. Communication with Tree Stewards was increased to ensure they were comfortable and felt safe using the tools to take care of the plants in Sheridan. Resources such as surplus tools and personal protective equipment (PPE) were provided by IES to give IES Tree Stewards peace of mind.

# Chapter 7: Evaluation

Although smaller than usual, several plants were planted and bags of weeds were filled during the annual XEDOS.

Despite the COVID-19 pandemic and related regulations and restrictions, IES adapted and remained flexible throughout the 2020 Sheridan TERP and successfully completed most of its objectives. Since the pandemic prompted school closures and restrictions at the beginning of the initial project planning phase, IES was able to spend the summer of 2020 following state and school district announcements and brainstorm project possibilities. IES spent the summer planning for situations ranging from the traditional two in-person workshops and two in-person planting days to an all-virtual format with no students at the planting days. Because of this open-mindedness and preparation, IES adapted quickly to develop an official plan once the school announced that normal planting days could occur and the FLN Leadership Class could participate in virtual workshops. The IES Tree Project successfully planned and implemented two planting days and one virtual workshop with FLN Leadership Class students, and collaborated with the IES Chemical Footprint Project to present one virtual workshop. In addition to completing these four project events with FLN, IES successfully hosted the fourth consecutive Xcel Energy Day of Service (XEDOS). Although the XEDOS event was much smaller than usual, several environmental improvements were made to the community space and near the western trail entrance.

## Planting Days and Workshops

FLN students successfully planted 70 plants at two locations at the SQT during the TERP planting days. Students planted a rain garden near the middle of the trail, on a slope that leads to a drainage area near the original proposed Zuni bowl location. This rain garden consists of 54 plants and will help control stormwater runoff and erosion on the southern side of the trail, just uphill from the drainage area. Leadership students planted 16 plants at the western entrance of the SQT to revitalize soil, increase native vegetation, and create an inviting trail entrance to promote trail and community space use. In addition to these improvements, Xcel Energy volunteers planted 12 plants in the community space, re-mulched the trail that runs through the community space, and filled several large garbage bags with invasive weeds removed along the SQT during the XEDOS event.

During all events, safety was a top priority. Face masks were worn at all times, small group sizes were maintained, and social distancing and gloves were encouraged as frequently as possible. These regulations did not present any issues and ensured a safe and successful project. If necessary, future in-person project events will not be an issue if similar regulations remain in place.

During the 2020-2021 school year, the Leadership Class was held in a fully remote format, via the Zoom video platform, until they returned to in-person learning during April 2021. IES prepared for the virtual format over summer 2020 and easily developed virtual activities to replace the traditional classroom workshops. The Tree Project recruited the IES Chemical Footprint Project team to present one of the two workshops, which took place in November and December.

## Communication with Stakeholders

IES strengthened its relationship with project stakeholders, as frequent communication and collaboration was necessary in planning and implementing the project while adhering to COVID-19 safety standards. Regular communication with FLN Leadership Class teacher Sharena Del Brocco was an important aspect in successfully implementing events. Ms. Del Brocco provided information and feedback relating to safety precautions that IES proposed to fulfill school district requirements. She was a source of advice and feedback about the development and implementation of both workshops.

Face masks and social distancing in the great outdoors allowed this project to take place.

Since learning that SSD2 is planning erosion mitigation for its property, IES has increased communication with SSD2 and with SSD2's engineering and consulting firms. This increased communication will allow IES and SSD2 to create a plan that complements one another's efforts rather than negating efforts across the COS/SSD2 property line. During the January 26, 2021 evaluation meeting, SSD2 offered additional ideas to deter vandalism in the area, a recurrent problem, such as moving the water tank out of the storage Cube so that IES can store wheelbarrows inside. Another idea SSD2 presented was to cut out a panel of the Cube and replace it with bars or plexiglass. This was proposed with the hope that vandals will be able to see that there is nothing of value to steal in the Cube, and will therefore not continue attempting to open or damage the structure to gain access. Debrief notes from this meeting can be found in Appendix F.

During the final evaluation meeting with COS on January 26, COS suggested that its staff members be included in IES's communication with SSD2 regarding the erosion control efforts. Communication among stakeholders will help optimize effectiveness. This will further the development of a comprehensive erosion control plan that includes both SSD2 and COS property. COS invited IES to present information about current and future projects during an upcoming Sheridan City Council meeting. COS offered to help IES promote the Tree Stewards program through several outreach initiatives. This will be tremendously helpful, as IES typically lacks sufficient Tree Stewards in Sheridan. More information and debrief notes can be found in Appendix F.

IES met its objectives of increasing collaboration with SSPRD during the Sheridan TERP. IES avoided the challenges that were faced during the 2019 CTIP by requesting additional help from SSPRD before planting days. When IES discovered that the SQT soil was too hard and compact to easily dig holes into during the planting days in 2019, requiring multiple additional planting days to finish, IES requested that SSPRD mechanically dig holes for the plants in 2020 to facilitate easier planting. SSPRD followed through with this request. SSPRD staff provided much-needed labor for planting days. A debrief of this meeting can be found in Appendix F.

## Program Challenges and Recommendations

Although COVID-19 did not prevent IES and FLN from completing the Sheridan TERP, some setbacks occurred during the project. IES initially planned for two planting days in mid- and late-October; however, the Leadership Class was required to quarantine for two weeks around that time due to possible COVID-19 exposure. The planting days were then rescheduled to October 27 and 29, with back-up dates on October 28 and 30. Due to inclement weather on October 26, however, IES moved the planting days one final time to October 29 and 30. The warmer weather had melted the

FLN students used shovels to deepen holes to fit the plants.

snow by October 29, so planting days could commence. In the future, IES should schedule planting days earlier in the season to account for potential inclement weather and unforeseen events. This was the second year where mid- to late-October inclement weather disrupted planting days.

During the first planting day, IES team members and students discovered that the holes dug by SSPRD were not as deep as they had hoped. They were often too shallow, and nine holes were missing. Students and volunteers had to deepen the existing holes and dig nine new holes, although they were able to do this relatively quickly. The shallow holes proved to be beneficial to successful planting. If IES requests SSPRD to mechanically dig holes for future projects, IES will plan to have a team member present to ensure appropriate hole sizes and that all holes are dug.

A significant issue during the planting days was that the port-o-potty was never delivered. It had been scheduled to arrive on Monday, October 26. IES did not check to ensure delivery and realized that it was not there upon arrival on October 29. IES attempted contacting the company to inquire about it multiple times throughout both planting days, although it proved difficult to get in contact with the company to address the issue. IES was finally able to reach the company and request that it be dropped off for the Friday, October 30 planting day. That also did not occur. IES team members and FLN students who needed to use the restroom walked a block down the street to Alice Terry Elementary School and used the school restroom, so the lack of bathroom facilities on-site did not significantly impact the event. In the future, IES should schedule port-o-potty delivery for a day or two before planting days and check to make sure it is delivered. Another option would be to forgo the port-o-potty altogether. Since Alice Terry Elementary School is part of SSD2 and near the SQT, IES could request permission for students and volunteers to use its restrooms during designated planting events. Only a handful of students and IES team members required a restroom break this year, so it is a potential option which could lower future project expenses.

Minor issues occurred during the Tree Project's virtual workshop. During the final Zoom meeting on December 18, IES asked students to provide thoughts and feedback about the workshop activities. Students were confused by the instructions and would have liked to see examples of what IES was requesting to help guide their work. Students were nervous to present in front of their peers, especially due to lack of guidance by IES team members on presentation skills prior to the presentation date. During the final evaluation meeting on January 15, Ms. Del Brocco reinforced the feedback provided by students. She commented that she was very impressed with their work. The students had limited class time to work on the workshop activities, and so had to collaborate and communicate with partners on their own time, in addition to juggling other school assignments. If IES implements similar virtual activities in the future, IES should provide examples and guidance during each step. At least one team member should attend a weekly Leadership Class Zoom meeting to answer questions and offer clarification. During the evaluation meeting, Ms. Del Brocco discussed that the general idea and curriculum worked well with developing the students' critical thinking and public speaking skills and how she would approve of similar activities in the future. Leadership students enjoyed brainstorming future projects for the SQT and community space. They would still like to see an entryway arch, in addition to more flowers and colorful plants, more grass in the rocky areas, and additional trees. IES will use students' feedback and ideas while creating the future projects. Debrief notes from this evaluation meeting can be found in Appendix F.

Although IES did not face issues implementing planting days and virtual workshops, the proposed shade structure, Zuni Bowl, and community space entryway arch were unable to be installed. The shade structure and Zuni Bowl were

postponed tasks from the 2019 Sheridan CTIP, while the entryway arch was a new objective proposed by FLN students for 2020. Through the recommendation of SSD2 to assist with planning and permitting, IES initiated discussions with Wold Architects & Engineers and JVA Consulting about the Zuni Bowl and shade structure in fall 2020. During a site visit with Wold and JVA on January 12, 2021 Wold and JVA noted that the Zuni Bowl might be unnecessary and ineffective in the proposed location because SSD2 is preparing for a large stormwater runoff and drainage project upstream of the proposed location. IES decided to table the Zuni Bowl feature indefinitely and potentially cancel it. The shade structure is in the planning phase and, with the help of Wold, will be installed by the end of 2021. The entryway arch is postponed until IES has the adequate funds and permits to complete it.

Before planning any significant structure, IES should communicate with all stakeholders and relevant consulting firms to discuss the plans and feasibility of proposed installations. This will avoid IES spending time planning for an installation that may not be effective. Contacting relevant architectural and engineering firms at the very beginning of the planning phase would be helpful to avoid unnecessary planning.

## Conclusion

The IES Tree Project was able to safely implement one planting and maintenance day with XEDOS volunteers, two planting days with students, one virtual workshop with students, and to collaborate with the CFP team to implement another virtual workshop with FLN students. IES, students, and volunteers made several environmental improvements both along the SQT and in the community space during the 2020 Sheridan TERP. IES will increase communication with SSD2 and COS to collaborate on a comprehensive erosion mitigation plan. The addition of a rain garden on the SQT slope will provide natural stormwater runoff. The shade structure and the entryway arch will move forward with the assistance of a professional architect and consulting company. IES had adequate time to consider COVID-19 regulations to plan ahead and prepare for compliance with pandemic safety measures. IES remained flexible during the project's planning and implementation. IES increased communication with stakeholders and will include more collaboration in future project planning. Evaluation meetings with all stakeholders have been conducted and IES will use this feedback to prepare for next year's project.

## Project Video and Report Distribution

IES videographer Jesse Johnson filmed both planting days at the SQT with the FLN students and the XEDOS event. Since the workshops were remote activities, there are no video clips of these activities. Long and short versions of the video can be found on IES's website at https://www.i4es.org/videos/ and on IES's YouTube channel at https://www.youtube.com/channel/UCfvC8v-AXKH-U2aJFrF7yfA.

This report and its appendices will be available electronically via the IES website, www.i4es.org, through its publications login page. A limited number of printed and bound copies will be distributed to project stakeholders. If you would like a printed copy of the report, please email Solutions@i4es.org.

IES welcomes comments and questions on our report and project. Please contact IES at Solutions@i4es.org.

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# 2020 Sheridan Trail Enhancement and Restoration Project

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Appendices are available on the IES website, www.i4es.org, and on request at Solutions@i4es.org.

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