

MAKING THE CONNECTION

Fostering Community-School Interaction through Environmental Design and Project-Based Curriculum



**THE FOLLOWING ARE PROHIBITED
ON SCHOOL GROUNDS:**

- SPEAKING OF MOTOR VEHICLE NOISES
- DRIVING ONLY ON PRACTICE BALLS
- THROWING BATTERS IN GYMNASIUM
- CLIMBING POSTS OR FENCES
- LOITERING OR HANG AROUND BUILDINGS
- WEAPONS INCLUDING BB AND PELLET GUNS
- USE OF BASEBALL, SOFTBALL EXCEPT IN GYMNASIUM
- USE OF MET ATHLETIC SHOES
- **NO DOGS ALLOWED**
- VOLUNTARILY, BOLLER GUNTS OR BOLLER BLANDS
- BOTTLE, ALCOHOL, AND ANY OTHER CONTROLLED SUBSTANCES INCLUDING TOBACCO PRODUCTS

PARENTS WILL BE RESPONSIBLE FOR DAMAGE DONE BY THEIR CHILDREN.

UNIVERSITY OF CALIFORNIA, DAVIS
LANDSCAPE ARCHITECTURE

DYLAN BUTERBAUGH

MAKING THE CONNECTION

Fostering Community-School Interaction through Environmental Design and Project-Based Curriculum

DYLAN BUTERBAUGH

June 5, 2014

A senior project presented to the faculty of the Landscape Architecture Program at the University of California, Davis
in partial fulfillment of the requirements for the Degree of Bachelors of Science in Landscape Architecture.

Accepted and Approved by:

Senior Project Faculty Advisor, UC Davis Landscape Architecture

ELIZABETH BOULTS

Professor and Program Chair, UC Davis Landscape Architecture

PATSY OWENS

5th Grade Teacher, Donaldson Way Elementary School

MAUREEN MCCULLOUGH

Parks and Recreation Director, City of American Canyon

CREIGHTON WRIGHT

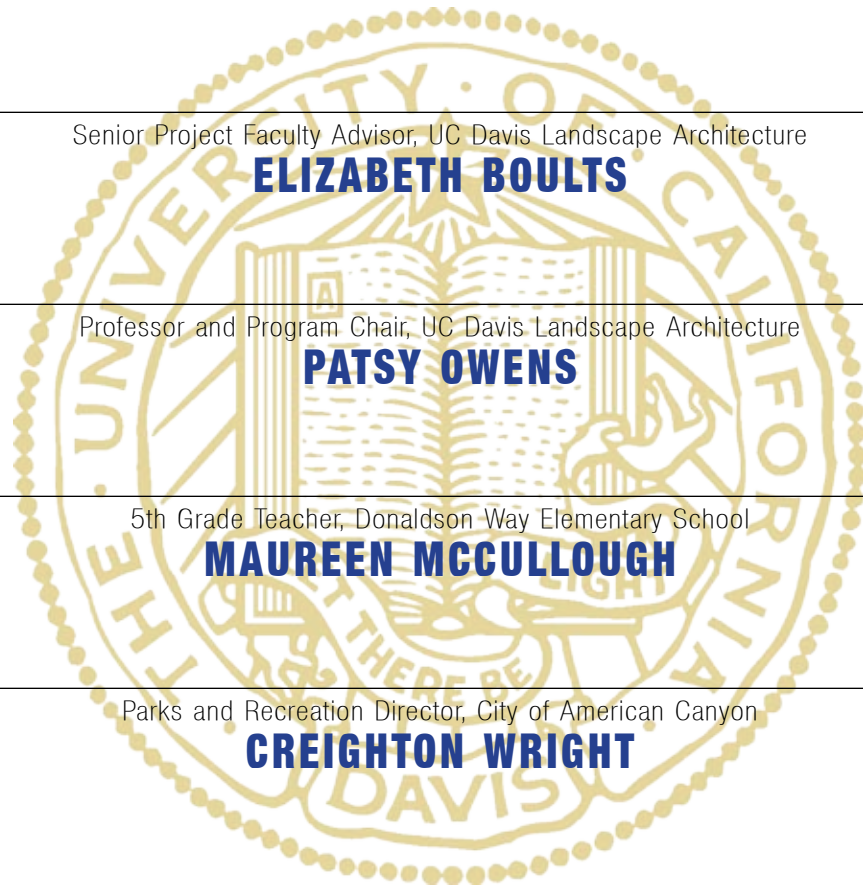




FIGURE 01

ABSTRACT

Researchers agree that learning and play are the same thing for young children. Natural curiosity leads children to explore the world around them, and through exploration they develop problem solving skills, self confidence, and independence. However, today's children have far fewer opportunities to learn in an unstructured way, which often leads to frustration and disengagement from school.

The recent Creek Rescue Project undertaken by Donaldson Way Elementary School embeds science standards into a real restoration project at the local creek. Students collaborate with community members and are challenged to apply abstract concepts to local issues that they can experience and care about.

This senior project proposes a vision for a joint use community-school space that could be slowly built by each successive class of students. In its final form, this space would serve to physically connect community and school, and would facilitate educational and recreational experiences for students and community members.



FIGURE 02

ACKNOWLEDGEMENTS

This project would not have been possible without the guidance and insight from my senior project committee. Thank you, Patsy Owens, for your inspiring ideas and your spot on recommendations to relevant literature. Thank you, Creighton Wright, for giving me a realistic perspective on this project, while always keeping an open mind about my ideas. Thank you, Maureen McCullough, for graciously inviting me into your classroom to work with your wonderful 5th grade class.

Additional thanks goes to Marilyn Abelon, the principal of Donaldson Way Elementary School, and to the rest of the 5th grade teaching team Amanda Collinson and Scott Thomason for your support and encouragement as I worked with your students.

Finally, thank you to Elizabeth Boult, Gayle Totton, and Gerrie Robinson for your guidance as I progressed from an inkling of an idea to a comprehensive senior thesis.

CONTENTS

Committee Approval.....	i
Abstract.....	iii
Acknowledgement.....	v
List of Figures.....	viii

INTRODUCTION

Donaldson Way Elementary	03
Creek Rescue Project	05
Student Landscape Designs.....	06
School Priorities.....	13
City Priorities	14
The Idea	16
Goals.....	18

RESEARCH

Joint Use.....	22
Potential Partners.....	23
Community-Based Learning	24
School Safety	27
Crime Prevention	29
Lack of Access to Nature.....	31
Outdoor Classrooms	33
School and Community Gardens.....	34
Outdoor Lesson Ideas.....	36

FIGURE 03



PRECEDENT STUDIES

American Canyon Community Garden	40
Edible Schoolyard Berkeley	42
Healthy Works San Diego.....	44
Boston Schoolyard Initiative	46

DESIGN

Site Analysis	50
Opportunities and Constraints	52
Plans.....	54
Sections.....	60
Perspectives.....	62
Phasing.....	70
Future Considerations.....	72
Conclusion.....	74
References.....	76

LIST OF FIGURES

FIGURE 00 **DWES Entrance**

Photo taken by Dylan Buterbaugh

FIGURE 01 **DWES Entrance Path**

Photo taken by Dylan Buterbaugh

FIGURE 02 **DWES Perimeter Fence**

Photo taken by Dylan Buterbaugh

FIGURE 03 **DWES Creek**

Photo taken by Dylan Buterbaugh

FIGURE 04 **DWES Front Landscaping**

Photo taken by Dylan Buterbaugh

FIGURE 05 **DWES Demographics**

Created by Dylan Buterbaugh

FIGURE 06 **DWES Context Map**

Created by Dylan Buterbaugh

FIGURE 07 **Creek Erosion**

Photo taken by Dylan Buterbaugh

FIGURE 08 **Creek Rescue Project**

Michael Waterson American Canyon Eagle

FIGURE 09 **Creek With Water!**

Artwork from DWES 5th grader Maddy

FIGURE 10 **The Future Creek Area**

Artwork from DWES 5th grader Mimi

FIGURE 11 **The New AC Creek!**

Artwork from DWES 5th grader Berke

FIGURE 12 **DWES School Garden**

Photo taken by Dylan Buterbaugh

FIGURE 13 **DWES Sports Field**

Photo taken by Dylan Buterbaugh

FIGURE 14 **ACMS Track Facility**

Photo taken by Dylan Buterbaugh

FIGURE 15 **Unused City Property**

Photo taken by Dylan Buterbaugh

FIGURE 16 **Context Map**

Created by Dylan Buterbaugh

FIGURE 17 **Community Park 1**

Photo taken by Dylan Buterbaugh

FIGURE 18 **Napa RCD Logo**

Napa RCD Website <http://www.naparcd.org>

FIGURE 19 **UC Master Gardener Logo**

<http://ucanr.edu/sites/sacmg/>

FIGURE 20 **Point Blue Logo**

<http://pointblue.org/>

FIGURE 21 **Napa/Solano Audobon Society**

<http://napasolanoaudubon.com/>

FIGURE 22 **Coalition for Community Schools**

<http://www.ccspartnership.org>

FIGURE 23 **Newsweek Article**

<http://acolumbinesite.com>

FIGURE 24 **Standard Speaker Article**

www.poynter.org

FIGURE 25 **Kentucky Enquirer Article**

www.poynter.org

FIGURE 26 **School Fencing**

Photo taken by Dylan Buterbaugh

FIGURE 27 **CPTED Diagram**

www.emeraldinsight.com

FIGURE 28 **Local Creek**

Photo taken by Dylan Buterbaugh

FIGURE 29 **Outdoor Teaching**

www.ctwoodlands.org

FIGURE 30 Natural Classroom

www.village12.org

FIGURE 31 Formal Outdoor Space

d.lib.ncsu.edu

FIGURE 32 Learning Pyramid

Adapted from the National Teaching Lab, Maine

FIGURE 33 School Garden

www.georgeweigel.net

FIGURE 34 Amcan Garden

Photo taken by Dylan Buterbaugh

FIGURE 35 Edible Schoolyard

www.sunisandarone.com

FIGURE 36 Healthy Works Fruit

www.eastcountymagazine.org

FIGURE 37 Boston Schoolyard

www.bostongreenschools.org

FIGURE 38 Site Analysis

Created by Dylan Buterbaugh

FIGURE 39 Existing Photo Collage

Photos taken by Dylan Buterbaugh

FIGURE 40 Master plan

Created by Dylan Buterbaugh

FIGURE 41 Site Plan A

Created by Dylan Buterbaugh

FIGURE 42 Site Plan B

Created by Dylan Buterbaugh

FIGURE 43 Section A

Created by Dylan Buterbaugh

FIGURE 44 Section B

Created by Dylan Buterbaugh

FIGURE 45 Section C

Created by Dylan Buterbaugh

FIGURE 46 Perspective A

Created by Dylan Buterbaugh

FIGURE 47 Perspective B

Created by Dylan Buterbaugh

FIGURE 48 Perspective C

Created by Dylan Buterbaugh

FIGURE 49 Perspective D

Created by Dylan Buterbaugh

FIGURE 50 Phasing 1

Created by Dylan Buterbaugh

FIGURE 51 Phasing 2

Created by Dylan Buterbaugh

FIGURE 52 Phasing 3

Created by Dylan Buterbaugh

FIGURE 53 Phasing 4

Created by Dylan Buterbaugh

FIGURE 54 Phasing 5

Created by Dylan Buterbaugh

FIGURE 55 Phasing 6

Created by Dylan Buterbaugh

FIGURE 56 School Creek View

Photo taken by Dylan Buterbaugh

FIGURE 57 Skate Park

Photo taken by Dylan Buterbaugh

INTRODUCTION



FIGURE 04

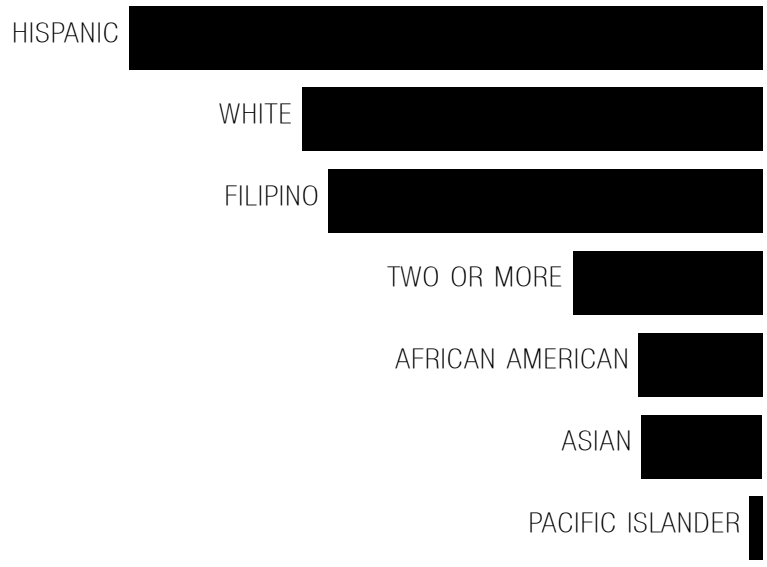


FIGURE 05
(CDE, 2014)

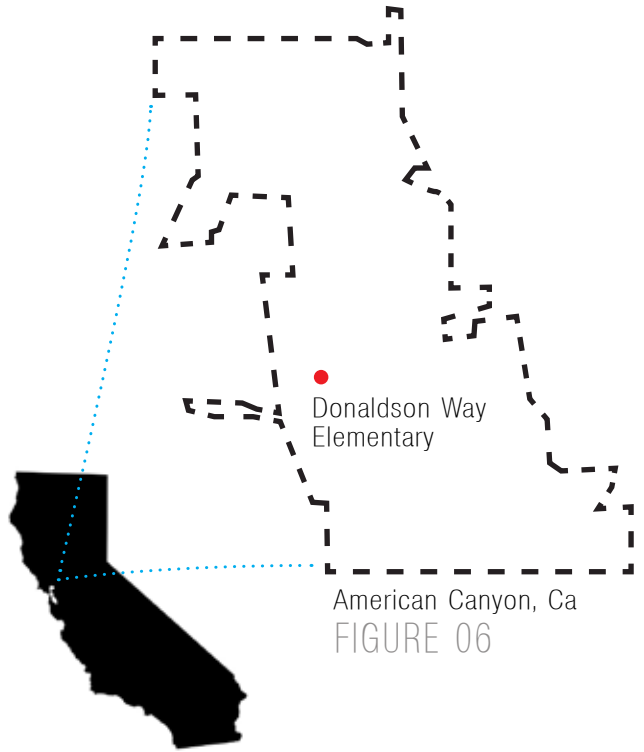


FIGURE 06

DONALDSON WAY ELEMENTARY

School Information

Donaldson Way Elementary School (DWES) is one of twenty elementary schools in the Napa Valley Unified School District (NVUSD), and is located in the city of American Canyon, California. According to the California Department of Education, DWES had a total of 606 students spanning kindergarten through fifth grade during the 2013-2014 school year (CDE, 2014). Furthermore, DWES has an active parent-teacher association, and prides itself on the close-knit community that exists within the school. In addition, DWES has a strong emphasis on diversity, technology and project based learning in order to provide a well rounded education to students and ensure they are college and career ready (DWES website, 2014).

34% STUDENTS ELIGIBLE OR ENROLLED IN FREE AND REDUCED LUNCH PROGRAMS

(CDE, 2014)

District Context

Within the NVUSD, five elementary schools have transitioned to the title of magnet schools, offering special programs and a unique community support network to their students. According to the Alta Heights Magnet School website, the system can be likened to “a village coming together to raise a child” (Alta Heights, 2014). While DWES is not a magnet school, its teachers have recently implemented a similar approach through their Creek Rescue Project.

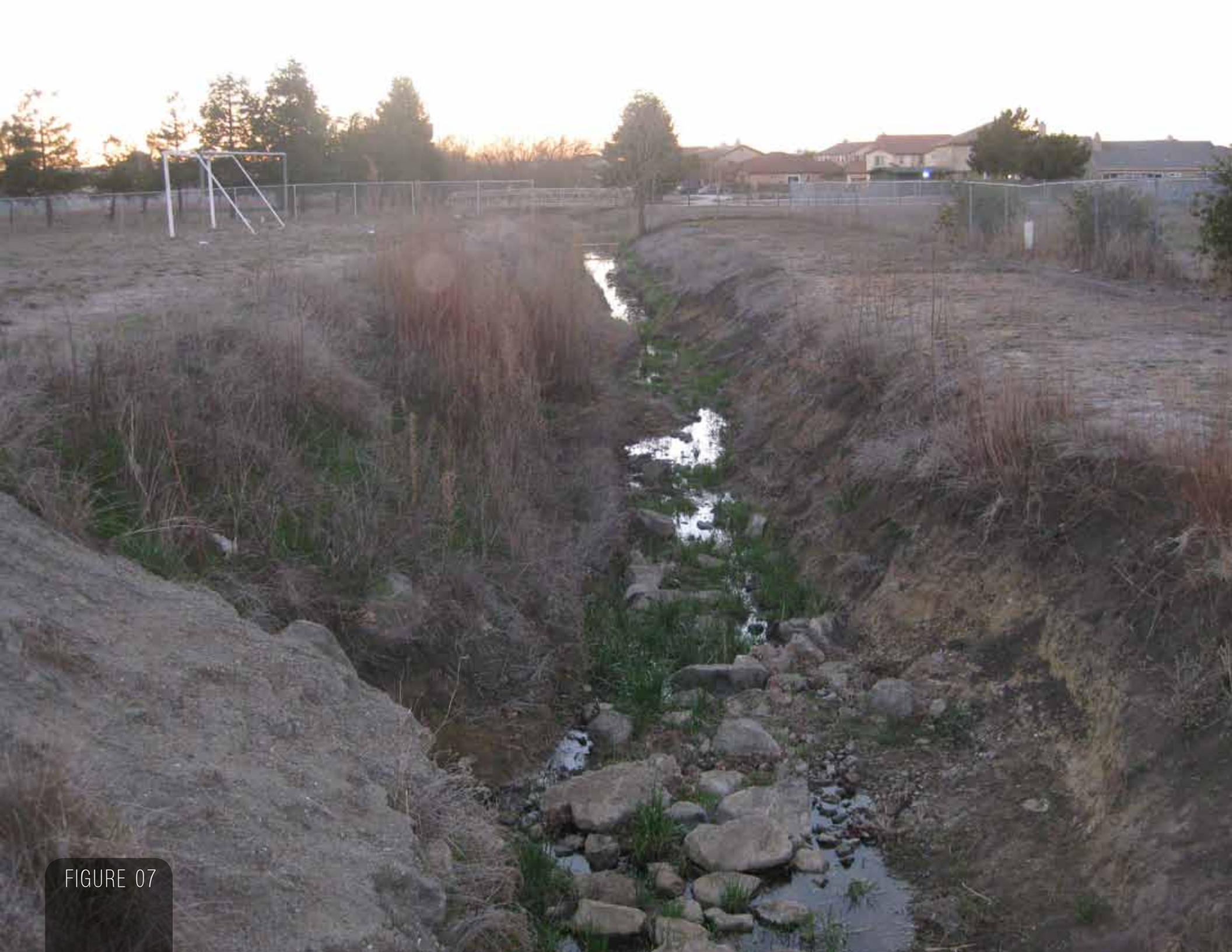


FIGURE 07

CREEK RESCUE PROJECT

Background

Earlier this year, the 5th grade teaching team at DWES devised a project-based learning experience for their students that embedded as many science standards as possible into a restoration project for a creek that runs through campus. The project was officially named the Creek Rescue Project and received the support of various city staff, community members, local organizations, and environmental professionals in order to keep things running smoothly.

Project Specifics

The Creek Rescue Project allowed teachers to present various science standards in the context of creek restoration, and promoted frequent visits from various experts involved in the project. After students had time to explore the different aspects of creek restoration they were given the chance to become a “specialist” in a subject area of their choice. The project excelled by generating enthusiasm in the students, and provided insight about their role within the community, as well as how knowledge about the sciences could be applied to environmental problems. The creek rescue project culminated with an environmental fair, in which students engaged with visitors, and represented their chosen specialty. For this project, restoration entailed removal of trash and invasive plants, as well as the planting of a dozen new native plants.

The actual restoration site was located to the northwest of the school along a reach of the creek that has had restoration work completed in the past. However, one group of students who assumed the role of landscape design specialists for the project focused on the reach of the creek that is actually on campus, and imagined creative uses for the land that surrounds the creek. Samples of student landscape designs can be found on the pages that follow.



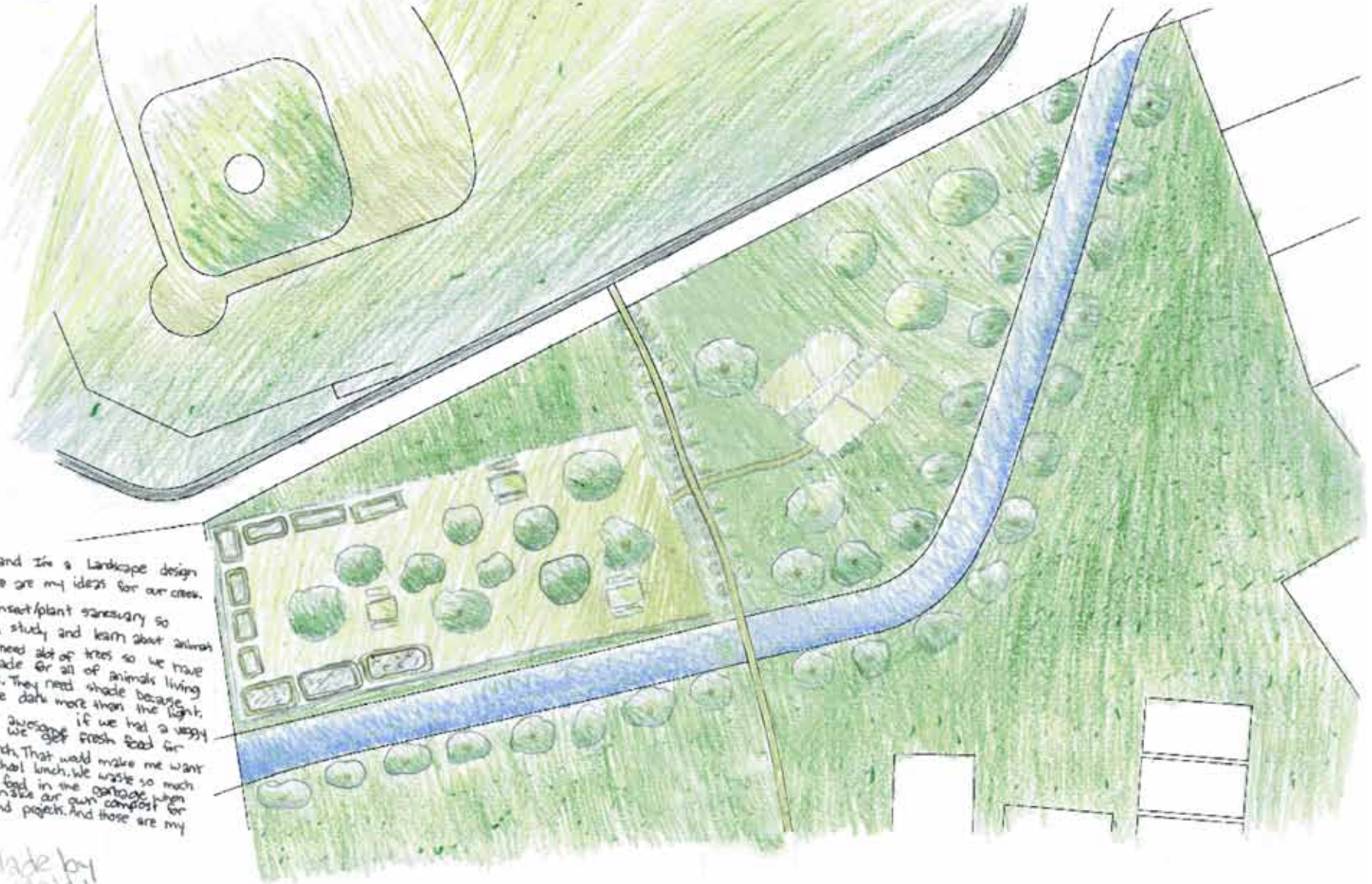
FIGURE 08

CREEK WITH WATER!

Hi, I'm Maddy and I'm a Landscape Design Specialist and here are my ideas for our creek. We need an insect/plant sanctuary so people/kids can study and learn about animals and plants. We need a lot of trees so we have oxygen and shade for all of animals living in the creek. They need shade because they like the dark more than the light. It would be awesome if we had a veggie garden so we get fresh food for our school lunch. That would make me want to eat our school lunch. We waste so much of our old food in the garbage when we could make our own compost for new crops and projects. And those are my ideas.

A small, handwritten note in black ink that reads "Made by Maddy". The text is written in a casual, slightly slanted cursive style.

CREEK WITH Water!



Hi, I'm Maddy and I'm a Landscape design specialist and here are my ideas for our creek.

- We need an insect/plant sanctuary so people/kids can study and learn about animals and plants. We need a lot of trees so we have oxygen and shade for all of animals living in the creek. They need shade because they like the dark more than the light. It would be awesome if we had a veggie garden so we get fresh food for our school lunch. That would make me want to eat our school lunch. We waste so much of our old food in the garbage when we could make our own compost for new crops and projects. And those are my ideas!

Made by Maddy

FIGURE 09

THE FUTURE CREEK AREA

Hi, I'm Mimi and this is my landscape design. Just know that you should feel free to ask me any questions. Okay so I want some more trees over here, which is my picnic area. It also has a water fountain and picnic tables. Next door is my fruit garden. Now we will cross the bridge. There's a play-ground and volley ball court. And then there's an outdoor learning area for the school. Next to it is an insect sanctuary. On the rest, I added some bushes and flowers. This would bring shade and wildlife. Thank you for listening!

Mimi

THE FUTURE CREEK AREA



Hi! I'm Mimi and this is my landscape design. Just know that you should feel free to ask me any questions. Okay so I want some more trees over here, which is my picnic area. It also has a water fountain and picnic tables. Next door is my fruit garden. Now we will cross the bridge. There's a playground and volleyball court. And then

there's an outdoor learning area for the school. Next to it is an insect sanctuary. On the rest, I added some bushes and flowers. This would bring shade and wildlife. Thank you for listening!

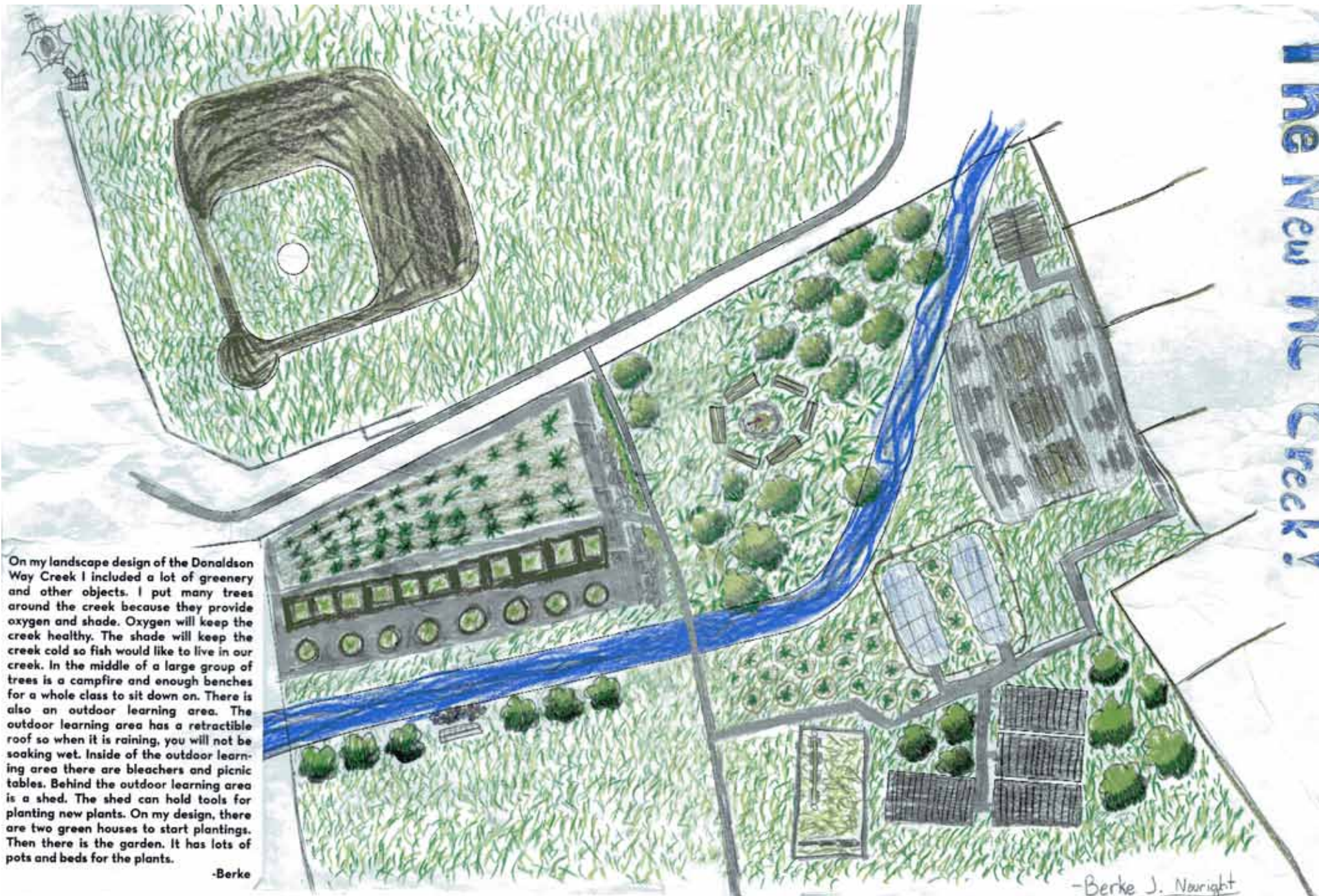
FIGURE 10

THE NEW AC CREEK!

On my landscape design of the Donaldson Way Creek I included a lot of greenery and other objects. I put many trees around the creek because they provide oxygen and shade. Oxygen will keep the creek healthy. The shade will keep the creek cold so the fish would like to live in our creek. In the middle of a large group of trees is a campfire and enough benches for a whole class to sit down on. There is also an outdoor learning area. The outdoor learning area has a retractable roof so when it is raining, you will not be soaking wet. Inside of the outdoor learning area there are bleachers and picnic tables. Behind the outdoor learning area is a shed. The shed can hold tools for planting new plants. On my design, there are two green houses to start plantings. Then there is a garden. It has lots of pots and beds for the plants.

-Berke J. Nauright

The New NC Creek!



On my landscape design of the Donaldson Way Creek I included a lot of greenery and other objects. I put many trees around the creek because they provide oxygen and shade. Oxygen will keep the creek healthy. The shade will keep the creek cold so fish would like to live in our creek. In the middle of a large group of trees is a campfire and enough benches for a whole class to sit down on. There is also an outdoor learning area. The outdoor learning area has a retractable roof so when it is raining, you will not be soaking wet. Inside of the outdoor learning area there are bleachers and picnic tables. Behind the outdoor learning area is a shed. The shed can hold tools for planting new plants. On my design, there are two green houses to start plantings. Then there is the garden. It has lots of pots and beds for the plants.

-Berke

-Berke J. Nauright

FIGURE 11



FIGURE 12

SCHOOL PRIORITIES

Future Plans

According to DWES Principal Marilyn Abelon, one of the possibilities for this area is to convert it into additional sports fields for the school. This idea has not been officially pursued or proposed, and would likely require significant economic investment and environmental alteration. Currently, the existing open field on the DWES campus is used for various activities such as soccer, baseball, and running. In addition, Community Park 1 already has a baseball field, a softball field, a football field, a walking loop available, and the adjacent middle school has an all-weather track that is open to the public after school hours. Given the existing recreation opportunities that already surround the school, investing in new sports fields or organized recreation facilities would have very little additional benefit to the school. Instead, it is worth repurposing existing facilities, and seeking joint use agreements for additional uses.

School Garden Facility

DWES already has a school garden facility located on the North West portion of campus. However, the garden is underutilized, and there is very little support or active leadership for it at the moment. However, the success of the Creek Rescue Project could be used to inspire renewed support and funding for the garden.



FIGURE 13



FIGURE 14

CITY PRIORITIES

Unused Land

According to Parks and Recreation Director Creighton Wright, the space adjacent to the DWES school garden is currently minimally maintained, and although there were previous plans to incorporate it into the rest of the community park, nothing has come of those plans. This plot of land is currently zoned as public open space, although at the moment it is unused, and provides no beneficial use to the public. In addition, due to the current layout of the Community Park, and lack of connection with other spaces, this plot of land requires careful planning in order to promote beneficial activities.

Parks and Community Services Master Plan

The difficulty of incorporating this space is echoed by the fact that it is not an immediate priority for the City of American Canyon in its Parks and Community Services Master Plan. Currently, the city is focused on providing residents access to trails in the Newell open space preserve, and is in planning stages for other spaces such as Clarke Ranch West, located in a northwestern portion of the city. Furthermore, the city must first complete maintenance and repairs for the sports facilities of Community Park 1, improvements to the picnic area adjacent to the sports fields, and planning for land next to the skate park (City of American Canyon Parks and Recreation Department, 2012).

Community Garden Demand

Since the establishment of the American Canyon community garden in 1986, there has been increasing demand as the population increased, and people gained interest in growing their own food according to a news article by the American Canyon Eagle (Hankins, 2005). The garden has since grown to 72 plots, but still fails to meet the large demand for community gardening in the city (City of American Canyon Parks and Recreation Department, 2014). In addition, during community visioning discussions about the development of Clarke Ranch West, residents placed community gardening as one of the uses that they would support or have an interest in (City of American Canyon, 2012). Furthermore, during a meeting of the Napa County Local Food Advisory Council in 2012, a motion to support community gardening for public health, child development, and food security was passed unanimously (Local Food Advisory Council, 2012). Based on local residents' interest in community gardening, and support from the food advisory council and the city, a garden located in Community Park 1 would be a highly beneficial use, and could complement the existing school garden and Creek Rescue Project, taking place in the same area.



FIGURE 15

THE IDEA

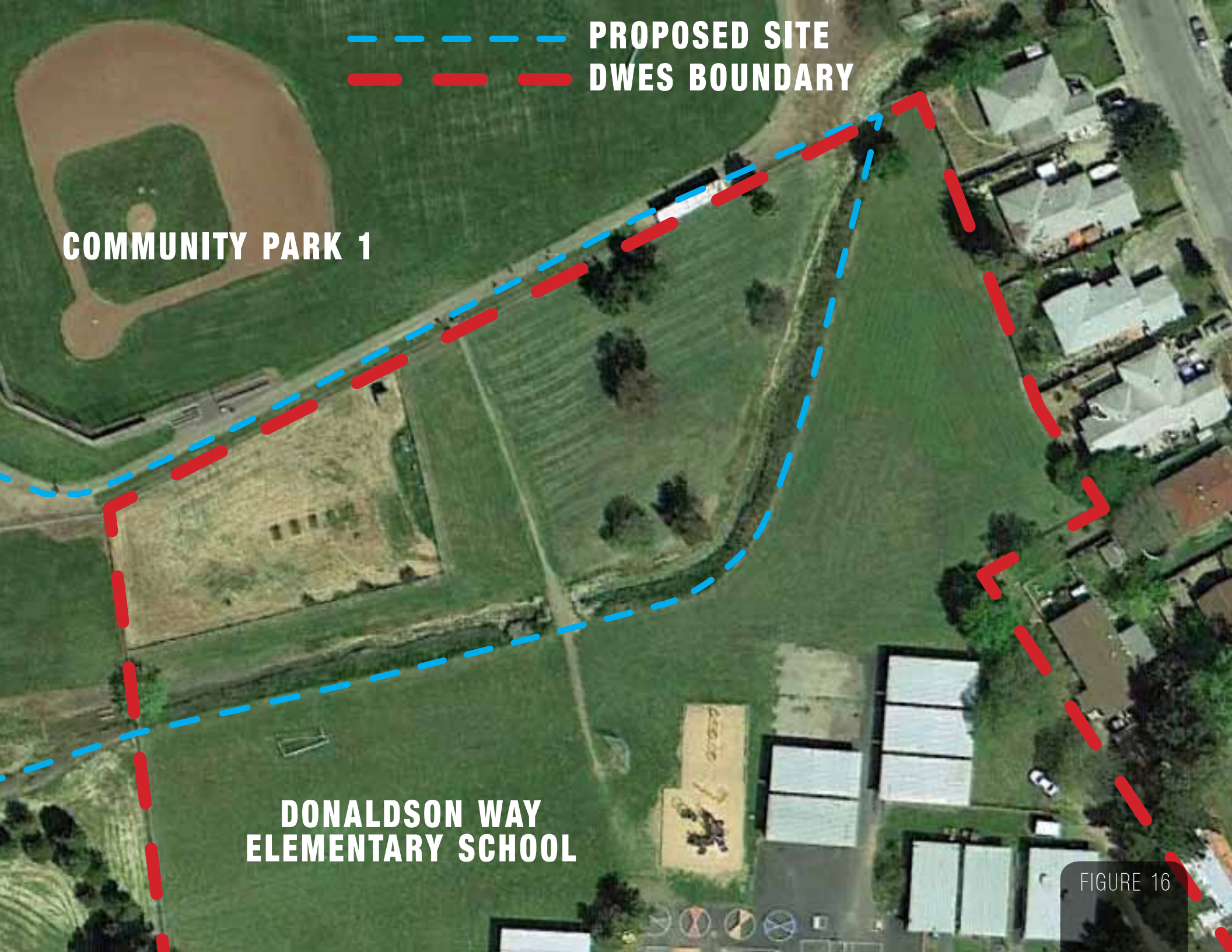
Success

The first iteration of the Creek Rescue Project was highly successful at engaging students, and garnered extensive community support. Given the success of this project, and the demand for an expanded community garden network in American Canyon, there is great potential for the Creek Rescue Project to not only become a recurring tradition for students in their 5th grade year, but also an opportunity to establish a joint-use community space between the school district and the city of American Canyon.

Vision

These two underutilized spaces could be redesigned into a cohesive school and community space which programs project-based learning and environmental education into the landscape, improves connectivity between school and community, and provides beneficial uses to students and local residents. In addition, the space could be built up alongside or as part of the creek rescue project. This process would give children a renewed vision of their role within the community as individuals, as well as show them their power to inspire and be a part of positive change. In the end, this space could have a rich layered history, and a legacy of stewardship and community that children could be proud of as they pursue their future goals.





PROPOSED SITE

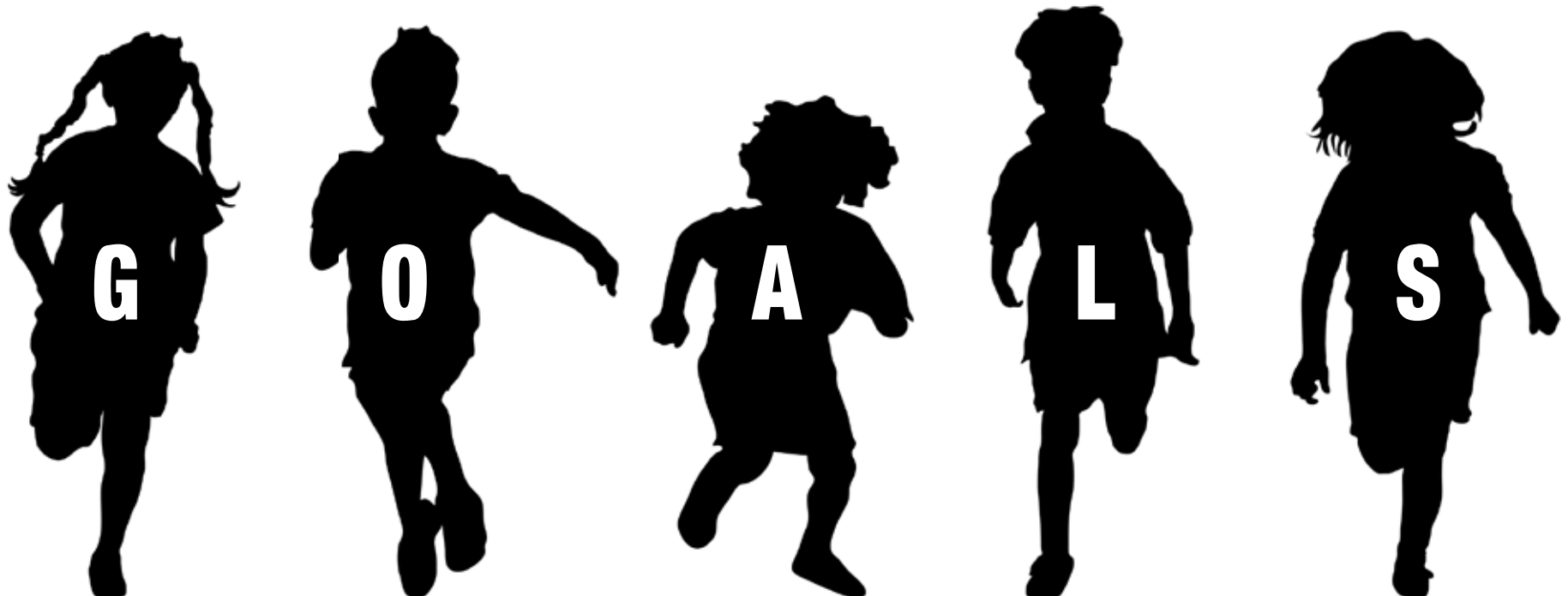
DWES BOUNDARY

COMMUNITY PARK 1

**DONALDSON WAY
ELEMENTARY SCHOOL**

FIGURE 16

**REIMAGINE UNDERUSED LAND OWNED BY DONALDSON WAY SCHOOL
AND THE CITY OF AMERICAN CANYON IN ORDER TO**



1 IMPROVE CIRCULATION AND CONNECTION BETWEEN DONALDSON WAY ELEMENTARY AND COMMUNITY PARK 1.

2 OFFER EDUCATIONAL, RECREATIONAL AND SOCIAL OPPORTUNITIES TO STUDENTS AND THE COMMUNITY.

3 ACCOMMODATE PROJECT-BASED LEARNING AT DONALDSON WAY ELEMENTARY

RESEARCH

JOINT USE

School Development

Joint use agreements involve two or more entities which agree to share facilities and resources in order to keep costs down, accomplish larger goals, and benefit a wide user group (Obesity Prevention Institute, 2014). Furthermore, according to Tamar Cooper, and Jeffrey M. Vincent from the UC Berkeley Center for Cities and Schools, joint use agreements have the potential to provide expanded amenities to schools and the community, improve the built environment for public health, increase interaction between the school district and various stakeholders, and efficiently utilize public space (Cooper and Vincent, 2008). When schools enter into a joint use agreement, the agreement generally falls into one of four categories including the following (Cooper and Vincent 2008):

- 1 COMMUNITY EVENT USES EXISTING FACILITIES
- 2 SCHOOL FACILITIES OPEN TO PUBLIC AFTER SCHOOL
- 3 A PORTION OF SCHOOL PROPERTY IS ALWAYS OPEN
- 4 SCHOOL PROPERTY RUN BY OUTSIDE ENTITY

The primary impediments to successful joint use agreements are disputes between parties. While informal agreements are common, written agreements clearly outline the rights and responsibilities of each party (Cooper and Vincent, 2008).

Why Joint Use?

While Joint use agreements provide a multitude of benefits to students, teachers, and community members, the primary goal is often to reduce the costs associated with specific development. (Cooper and Vincent, 2008). Furthermore, since 1996, the state of California has offered funding for specific types of joint use projects, in order to remove barriers to projects which would provide extensive benefits (California Office of Public School Construction). According to Cooper, the California Office of Public School Construction has awarded over 190\$ million to schools throughout the state since it began providing funding (Cooper and Vincent, 2008). However, the program is funded on a yearly basis on a first come first serve basis (California Office of Public School Construction, 2014)



POTENTIAL PARTNERSHIPS

Background

The Community and School Garden Intervention program of San Diego claims that joint use agreements are stronger when they have more community support. (Healthy Works, 2014). With more partners, programs are less likely to collapse when a single contributor withdraws from the agreement. In addition, programs are simply more content rich with the inclusion of outside organizations because students get an idea of how the content they learn in school could translate into a future career according to Atelia Melaville in *Community-Based Learning: Engaging Students for Citizenship and Success* (Melaville, Berg and Blank, 2014). There are a variety of organizations within Napa County that could work with DWES and aid in the establishment of a joint-use garden space.



FIGURE 18



FIGURE 19

UC MASTER GARDENERS OF NAPA COUNTY

Provide educational programs for Napa County gardeners.

NAPA COUNTY RESOURCE CONSERVATION DISTRICT

Promote watershed-based land stewardship of natural resources.

CHILDREN AND WEIGHT COALITION OF NAPA COUNTY

Establish collaboration to reduce childhood obesity.

POINT BLUE

Promote conservation through partnership and outreach.

NAPA-SOLANO AUDOBON SOCIETY

Promote conservation through engaging science education.



FIGURE 20



FIGURE 21

COMMUNITY-BASED LEARNING

Background

According to Riane Eisler in *Tomorrow's Children: A Blueprint for Partnership Education in the 21st Century*, our nation's schools were once the centers of community in towns and cities, and provided a nurturing collaborative support network for students during and after school hours (Eisler, 2000). In fact, the modern version of community-based learning stems from this ideal, as well as the idea that children are more engaged in their education when it has personal meaning to them, and can be applied tangibly (Melaville, Berg and Blank, 2014). In addition, community-based learning responds to the fact that students have different learning styles, and are growing up in a world which requires systems thinking about problems. Overall, community-based education is one model of teaching and learning which incorporates community interaction into the core curriculum of students. However, schools do not have to completely restructure in order to utilize this approach. There are various tools which can be adapted by teachers to enhance lessons, and provide a diverse experience for their students (Melaville, Berg and Blank, 2014). Tools which can be relatively easily adapted by teachers include environmental education, place-based learning, and project-based learning which may or may not have a community component.

Benefits

Whether utilized as a segment of a lesson, or as a framework for a comprehensive curriculum, learning that engages students in the community has been shown to improve student performance on standardized tests, reduce behavioral problems, increase future selection of science and math courses, improve awareness of current events, and foster an overall personal sense of independence (Melaville, Berg and Blank, 2014). This is extremely important because according to Robert Blum in *School Connectedness Improving Students Lives*, 40% to 60% of students are disengaged from their education by the time they reach high school (Blum, 2005).



FIGURE 22

Communtiy-Based Learning Strategies

ACADEMICALLY-BASED COMMUNITY SERVICE

College and public school students come together to work on community revitalization projects. In this way, students in elementary, middle, and high school can develop aspirations for college, and participate in real projects (Melaville, Berg and Blank, 2014).

ENVIRONMENTAL EDUCATION

The school's surroundings are used to facilitate student learning, and makes use of children's curiosity about the natural environment. While this strategy uses the environment, it does not necessarily mean that students are actually learning about nature (Melaville, Berg and Blank, 2014).

PLACE-BASED LEARNING

The unique history, culture, environment, or even economy of a specific location is used to provide a context for learning. Stakeholders that have interest in the learning area become partners and mentors to students throughout the learning process (Melaville, Berg and Blank, 2014).

SERVICE LEARNING

Students identify a specific area of interest, as well as a problem associated with it. Then, the student completes community service which is tied to some academic goal. This allows students to see the direct link between educational content and the service or skill that is applicable in the community (Melaville, Berg and Blank, 2014).

WORK-BASED LEARNING

Children and young adults spend time with professionals either in a mentorship position, or role model situation. This allows kids to begin exploring different careers and thinking about their interests. In addition, this could also refer to vocational education in which student learning is functional and teaches them a specific vocational skill. Ideally, this would be a continuous program ranging from K-12 all the way to a pre-career apprenticeship (Melaville, Berg and Blank, 2014).

SPECIAL REPORT

MASSACRE IN COLORADO

Newsweek

Why?

PORTRAITS OF THE KILLERS

THE SCIENCE OF TEEN VIOLENCE

FIGURE 23



SLAUGHTER

Gunman kills 26, including 20 kids, at Conn. school

FIGURE 24



A GANNETT COMPANY

NKY

SATURDAY, DECEMBER 15, 2012

THE KENTUCKY ENQUIRER



SCHOOL MASSACRE SORROW, ANGER, FEAR ...

AGONY

'It's sheer terror, a sense of imminent danger, to get to your child and be there to protect him.'

FIGURE 25

Gunman kills 26, including

INSIDE

The shooter: Profile of the al

SCHOOL SAFETY

Violent Media

A quick look at the headings and stories of news articles and prime time news programs will lead a person on a depressing tirade through sensational headlines and emotionally charged descriptors such as slaughter, massacre, rage and frustration. While it is certainly true that these are horrible tragedies that should never have occurred in the first place, the dramatic and ever present messages in the media leave people in a state of fear according to Tamra Orr, in her book *Violence in Our Schools: Halls of Hope, Halls of Fear* (Orr, 2003).

Parade of Possibilities

With all the possible dangers that could occur on a day to day basis, parents and schools have responded through more stringent school safety procedures according to Richard Louv in his book *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder* (Louv, 2008). The intensity of intervention has ranged from perimeter fencing to armed guards stationed on school campuses (Orr, 2003). However, safety measures which prepare for worst case scenarios inadvertently isolate schools from the community, and create a tense atmosphere for students. Given that most school shootings occur from within the school it is healthier for a school to address these concerns individually, and maintain emergency protocols for emergencies only (Orr, 2003).

Community Solution

Activities which promote collaboration and team work can help build a sense of community and shared purpose within a school, and can allow troubled students to gain self esteem and a sense of belonging (Orr, 2003). However, according to Jonathon Lane, schools alone cannot address all safety concerns. Community members must act as positive role models, and demonstrate that safety is a priority. Orr takes this further, and claims that programs which help youth develop relationships with community members, and participate in constructive projects are especially effective at diffusing negative attitudes about school and life (Lane, 2001).



FIGURE 26

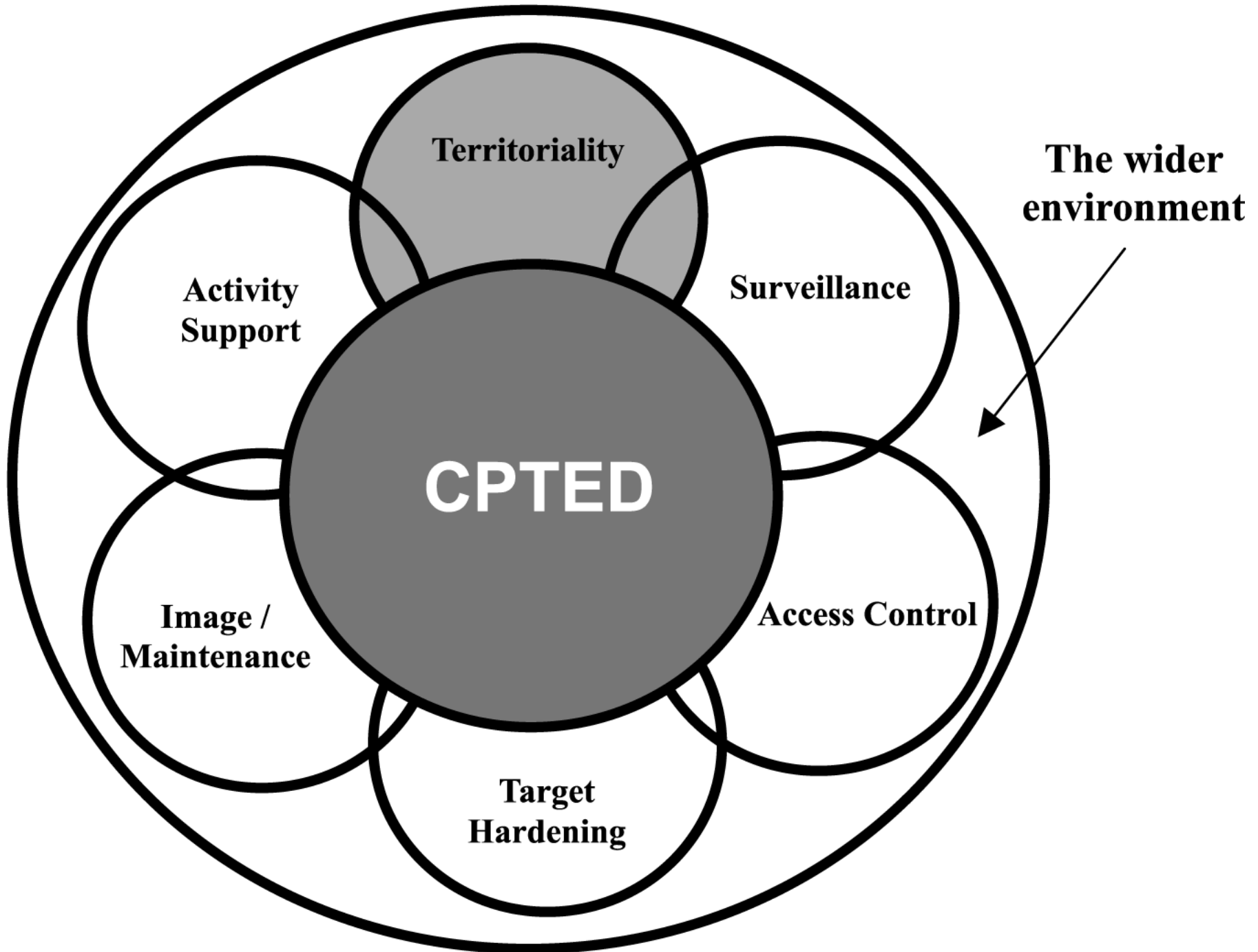


FIGURE 27

CRIME PREVENTION

Through Environmental Design

It would seem that the goal of increasing community-school interaction would come at the cost of reducing overall school security because the school would be more open. On the contrary, according to Timothy Crowe and Diane Zahm in *Crime Prevention Through Environmental Design*, Crime Prevention through Environmental Design (CPTED) is a multi-disciplinary method for reducing the possibility of crime in virtually any location (Crowe and Zahm, 1994). CPTED operates on six core principles which work with each other to discourage criminals from targeting specific areas (Crowe and Zham, 1994, and Atlas, 2008).

Territoriality

Defining the boundaries of a private space to create a sense of ownership, and to make intruders stick out more if they encroach on the space. This can be accomplished through the use of vegetation, signs, and scheduled activity (Crowe and Zahm, 1994).

Surveillance

Create a feeling that people can easily be seen by positioning all programmatic elements in accessible visible locations, or within the context of a positive activity.

Access Control

Limiting access to a space by strategically placing entrances, vegetation, lighting and fences.

Target Hardening

Using one or more of the previously mentioned CPTED principles to greatly reduce the possibility of crime occurring (Atlas, 2008).

Maintenance

Ensuring the positive physical appearance of a space by keeping vegetation tidy and replacing broken furniture or lighting (Atlas, 2008).

Activity Support

Programming a passive or active beneficial use in a space to promote natural surveillance, and discourage criminals (Atlas, 2008).

Application

All of these principles can be applied to the design of a joint use space to reduce the possibility of crime while maintaining a pleasant community-oriented space (Atlas, 2008 and Crowe and Zham, 1994).

“AS A CHILD, ONE HAS THAT MAGICAL CAPACITY TO MOVE AMONG THE MANY ERAS OF THE EARTH; TO SEE THE LAND AS AN ANIMAL DOES; TO EXPERIENCE THE SKY FROM THE PERSPECTIVE OF A FLOWER OR A BEE; TO FEEL THE EARTH QUIVER AND BREATHE BENEATH US; TO KNOW A HUNDRED DIFFERENT SMELLS OF MUD AND LISTEN UNSELF- CONSCIOUSLY TO THE SOUGHING OF THE TREES.”

VALERIE ANDREWS

LACK OF ACCESS TO NATURE

Disconnected

Children today are simply spending less time outside engaging with nature and instead have an intense focus on electronic entertainment such as television, videogames, computers, and phones. In addition, many children are often over scheduled by their parents in an attempt to ensure they are well-rounded and prepared for the increasingly competitive nature of college admissions. Finally, the increase in school shootings, as well as the obsessive media coverage of violence has resulted in paranoia in which parents fear to let their children roam free the way previous generations did (Louv, 2008). Furthermore, Louv would argue that an aspect of childhood has been lost now that children can no longer explore nature in a care-free way.

Stewardship

The most obvious problem resulting from lack of genuine access to nature during development is that children may not develop a bond to the natural world, and will have no desire to protect it. While children are being taught about abstract problems such as global climate change, and a host of other environmental problems associated with human development, it is hard for children to appreciate or care about these problems when they have little experience with what is at stake (Louv, 2008).

Effect on Learning

While diminishing the next generation of environmentalists is an important issue, lack of access to nature may also have a negative effect on learning and mental health in children and adults. Children who do not engage with nature are missing out on opportunities for cognitive development that may be difficult to attain otherwise. When children interact with electronic media there is less opportunity for creative thinking and problem solving than when children play outside. When a child plays outside they must use their imagination, solve problems, and explore in an unstructured way. Researcher and lecturer Judith Roden even likens exploratory play as learning and a basic version of the scientific method in which children hypothesize and learn through repeated trials (Louv, 2008).

Environmental Education

Because children are living in an ever-faster paced world filled with electronic distractions and far less time to interact with nature, environmental education is becoming an important facet of schools. In this new paradigm, schools can provide access to nature through the use of outdoor classrooms, and school gardens, and can provide students with a context for learning the skills they may have missed growing up. (Louv, 2008).



FIGURE 28



FIGURE 29



FIGURE 30



FIGURE 31

OUTDOOR CLASSROOMS

Benefits

While outdoor classrooms are commonly thought of as settings for conservation and environmental education, they can be used to teach almost any subject, and have multiple benefits for students that are more difficult to achieve in an indoor lecture setting (Logan, 1999). The type of learning in outdoor classrooms is nearly always hands on, which according to the figure below provides a baseline of 75% retention. In addition, children's natural curiosity for nature can be used constructively to engage them in lessons, as well as to allow for unstructured learning that they may have lacked growing up (Holt, 1990).

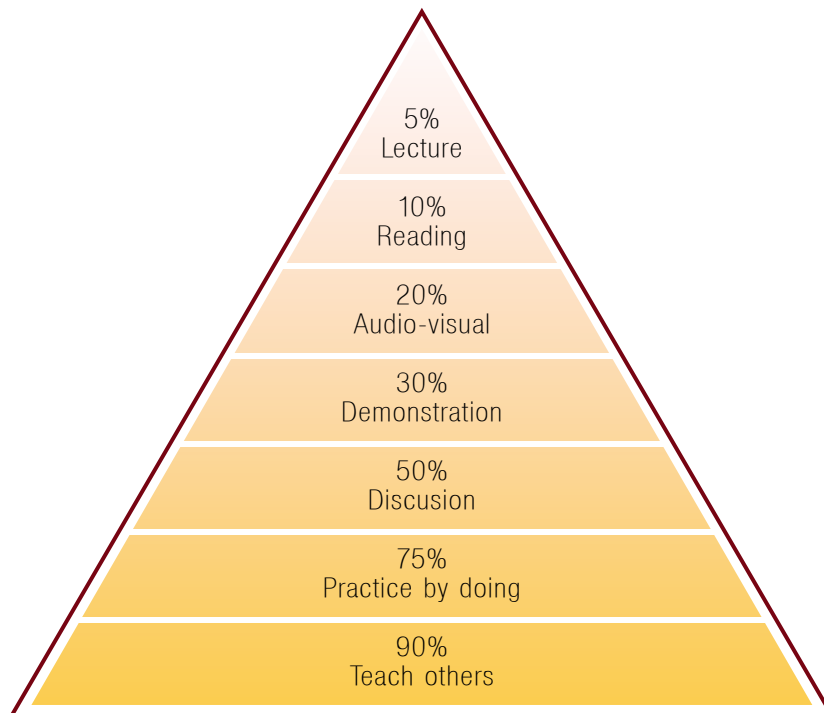


FIGURE 32

Common Outdoor Classroom Features

Outdoor classrooms can refer to a specially designed outdoor educational space, school gardens, or even a natural area by a school (Logan, 1999). However, according to Dorothy Blair in *The Child in the Garden: An Evaluative Review of the Benefits of School Gardening* in all cases, outdoor classrooms tend to benefit from emulating wild nature because children can explore like they would if they were interacting with nature (Blair, 2009). Furthermore, according to the outdoor classroom design guide produced by the Boston Schoolyard Initiative, the following are important features that should and have been included in outdoor classrooms in the past (BSI, 2014).

SEATING FOR A FULL CLASS

DISPERSED SEATING FOR SMALLER GROUPS

PRIMARY CIRCULATION

SECONDARY CIRCULATION

NATURAL AREAS

EXPERIMENTAL AREAS

GARDEN AREAS

STORAGE

NATURAL FURNITURE

SCHOOL & COMMUNITY GARDENS

Food Systems Awareness

Most children and a striking number of adults have no idea where their food actually comes from or that there is a significant process required to produce it. Food is just considered another commodity that is bought, sold and consumed like anything else at the store (Blair, 2009). However, school and community gardens allow those involved to make an intimate connection with the earth, and see firsthand exactly what is required to grow the food that they eat (Blair, 2009). In addition, through interaction with the school garden, students quickly learn about the seasonality of different fruits and vegetables, sustainability issues related to food, and the benefit of fresh produce over processed food. Once students make these connections, they are more likely to prefer eating healthy foods, which will stay with them later in life according to Shawn Mark Somerset, in the article *School-Based Community Gardens: Re-establishing Healthy Relationships with Food*. (Somerset et. al, 2005). This is extremely important given that, according to the Center for Disease Control, childhood obesity has roughly doubled in children, and quadrupled in adolescents in the last 30 years (CDC, 2014).

Learning Benefits

In addition to the numerous health and lifestyle benefits that school gardens have for children, they can also be used as outdoor classrooms, and tied to curriculum (Blair, 2009). Gardens have the possibility to show students concepts of “growth and decay, predator–prey relations, pollination, carbon cycles, soil morphology, and microbial life” all through working in the garden (Blair, p. 17). However, many more school subjects can be presented through school garden curriculum, including writing, science, math, english, and art (Blair, 2009). The primary limiting factors of school gardens are the cost, maintenance and expertise required to keep a garden running smoothly. However, this can often be solved with a joint use agreement (Cooper and Vincent, 2008). Given the exceptional learning opportunities associated with community-based learning and joint use in schools, shared use gardens could actually benefit students while reducing burden on the school (Healthy Works, 2014). Blair further argues that school gardens may have a larger educational benefit than other structured experiential learning, specifically because of the many unplanned learning opportunities that could take place within the garden setting at any given time (Blair, 2009).



FIGURE 33

OUTDOOR LESSON IDEAS

Background

According to Susan Jacobson, Mallory D. McDuff, and Martha C. Monroe in *Conservation Education and Outreach Techniques*, informal learning settings such as zoos, parks, museums, farms, and camps have advantages over formal classroom settings because they can nurture curiosity, increase knowledge, improve motivation, and engage the audience through participation (Jacobson, 2006). However, there is no reason why these qualities must be immediately ruled out of a school setting. Activities in outdoor classrooms, natural landscapes, or even at the school garden space can emulate the benefits of informal learning (Learning Through Landscapes, 2014). The following lessons were derived from the UK based organization Learning Through Landscapes, which provides outdoor lessons and tips to teachers.

Sciences

FIELD STUDIES (5TH)

Send each student outside with a paper and pencil and have students conduct field studies around different parts of the school campus to identify general plant and animal species, compare and contrast different areas, and look for evidence of interdependence and ecosystems. Additionally, students can compare a natural area to a more human-made area of campus (Learning through Landscapes, 2014).

SEED DISPERSAL (3RD - 5TH)

In groups, have students collect as many different types of seeds as they can from an outdoor space, and once done return to the classroom. Students will then work with their group to organize the seeds into different categories of their choice (size, shape, dispersal type, etc.) on their poster board, and present to the class on their findings (Piche, 2000).

Mathematics

MAP MAKING AND MEASURING (3RD - 5TH)

Give each student an 8.5 x 11 sheet of paper and instruct them to draw a map of an outdoor space. Students will need to devise a way to measure distances either by pacing or using relationships with other things. Once back in the classroom have students compare their map to a printed map of the area to see how accurate they were (Learning through Landscapes, 2014).

COUNTING AND ESTIMATION (4TH - 5TH)

Split students into groups of 2 or 3 and give each group a hula hoop and a worksheet for writing down data. Each group will walk around a large field throwing their Hula Hoop down at random. At each location students need to identify as many different plants or objects as possible, count them, and estimate a rough percentage of the hula hoop that they fill. This forces students to identify differences, estimate area, and correlate numbers to percentages (Learning through Landscapes, 2008).

Language Arts

DESCRIPTIVE WRITING (3RD - 5TH)

Let students choose a spot somewhere outdoors, and instruct them to write, using as many descriptive words as possible, exactly what they are hearing/seeing/smelling/feeling for 5-10 minutes. After everyone is done writing, have students switch with a classmate so that they can try to find the spot based on the descriptions provided to them (Learning through Landscapes, 2014).

GROUP POETRY (3RD - 5TH)

Send groups of students to an interesting feature in the landscape. Tell students to spread out so that they are all perceiving the landscape feature from a unique perspective. Have students write a description from their location, and then have them come together to make a poem that captures all aspects of their assigned landscape feature from each different perspective (Learning through Landscapes, 2014).

PRECEDENTS

AMERICAN CANYON COMMUNITY GARDEN

2235 ELLIOT DRIVE, AMERICAN CANYON, CA 94503

According to the American Canyon Community Garden facts sheet provided by the American Canyon Parks and Recreation Department, the American Canyon Community Garden was established in 1986, and now contains 72 15' x 20' plots which can only be accessed by renters who pay a yearly 20\$ fee. The garden is owned by the city of American Canyon, and managed by the parks and recreation department. The garden is not open to the public, and is bounded on all sides by a chain-link fence. The garden was originally not fenced off from the public, but continued vandalism and theft forced the city to take measures to protect the garden. Despite these issues as well as the lack of open public access, the garden provides a number benefits such as exercise, recreation, social interaction, and community.





FIGURE 34

EDIBLE SCHOOLYARD BERKELEY

1781 ROSE STREET, BERKELEY, CA 94703

The Berkeley Edible Schoolyard is located on the Martin Luther King middle school campus, and was established in 1995 from collaboration between Alice Waters, and various landscape architects, chefs, gardeners, and teachers. The garden is approximately 1 acre in size, and is the basis for the robust kitchen classroom program at the school. The garden is open to the public after school hours, but does not offer plots to the public. The garden is owned by Martin Luther King Middle School, but funded by the Edible Schoolyard project. The garden is well integrated with the school curriculum, and teachers have scheduled some time every day for lessons in or related to the garden or kitchen facilities. Finally, the garden also actively engages the community with outreach, work days, and occasional lunches in the garden (ESY, 2014).





FIGURE 35

HEALTHY WORKS SAN DIEGO

SAN DIEGO, CA

Healthy Works is program to help create safe, healthy, and thriving communities in the city of San Diego (Healthy Works, 2014). The program engages community leaders, businesses, residents, and schools in order to complete projects that encourage good nutrition, physical activity, and overall mental health. The School and Community Gardens program increases access to fresh produce as well as providing gardening education to children and adults. This program has initiated two community and school gardens in San Diego, and continues to provide community members with enriching learning activities for their daily lives. According to the County of San Diego, the program is funded from a 16\$ million grant received by the American Recovery and Reinvestment Act to combat the obesity epidemic (Healthy Works, 2014).





FIGURE 36

BOSTON SCHOOLYARD INITIATIVE

BOSTON, MA

The Boston Schoolyard Initiative (BSI) was a public/private partnership that launched in 1995. The BSI wanted to improve Boston schoolyards in order to promote student education, provide attractive public spaces for recreation, and cultivate public participation in the design and stewardship of schoolyards. BSI has completed 88 schoolyard projects, and prior to closing down had expanded to incorporate the development of outdoor classrooms. Up until December 2013, the Initiative was funded primarily through a partnership with the Boston Schoolyard Funders Collaborative. However, that partnership has ended and it is now up to the city of Boston, and the Boston public school system to continue the legacy of the BSI. (BSI, 2014).



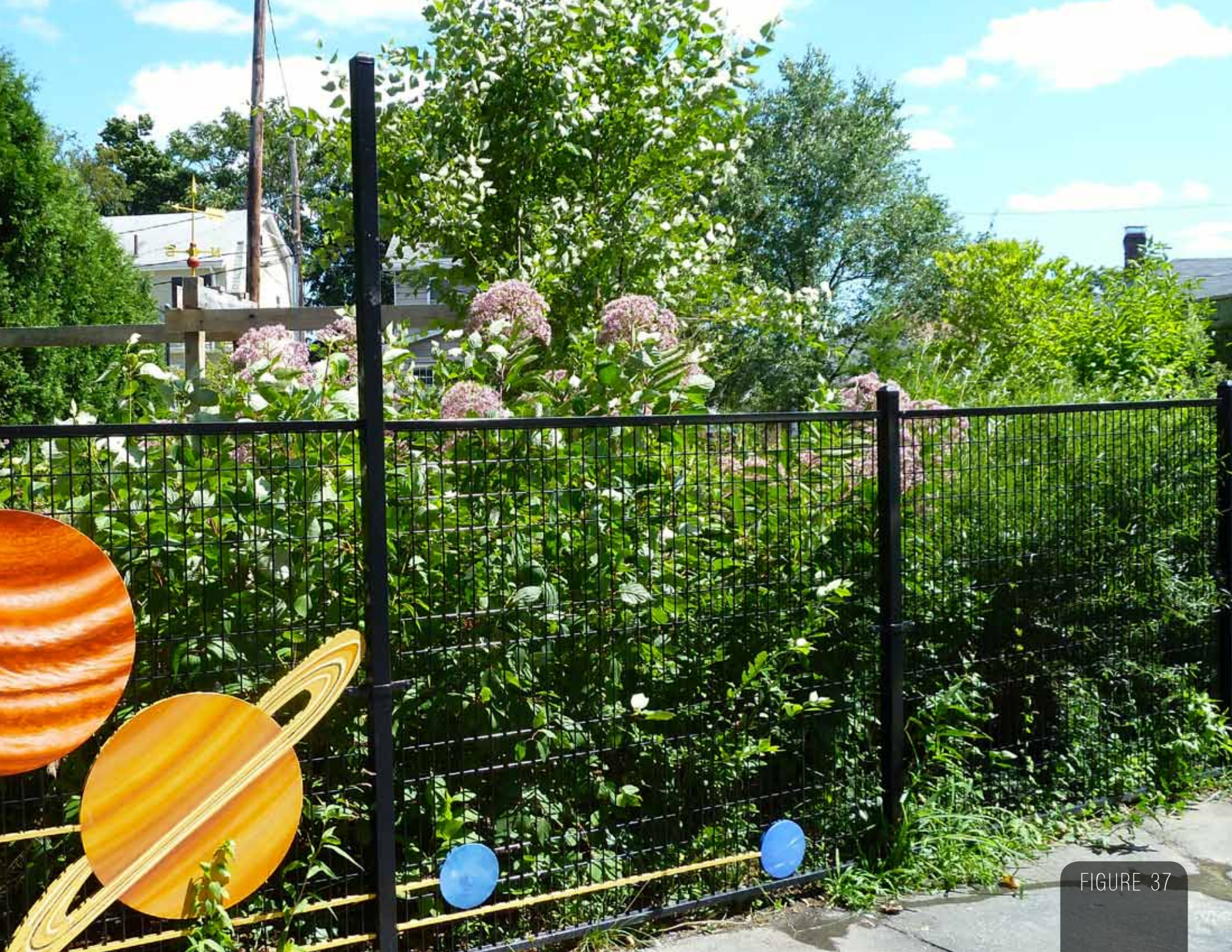


FIGURE 37

DESIGN

SITE ANALYSIS & INVENTORY

Analysis

Overall, this site currently lack connectivity with surrounding areas, an internal circulation network, and beneficial public uses. While there is an existing school garden area, and an open field, both are minimally maintained and could be improved. Because the site is surrounded by fences and the creek, and lacks connection to the adjacent pathway this site is isolated and underperforming. The only people who take this pathway are the occasional adults coming to pick up their kids, and some kids who walk to school. However, the vast majority use the front entrance of the school to access the school. This site has no formal pathway, and the creek is currently barren of trees except for a handful in the open grass field. There is a connection for water in the middle of the garden area that could be utilized for an expanded garden.

Key



Single Family Residential



Unused Public Open Space



Existing School Garden Space



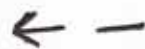
Creek Channel / Bank Extent



School Boundary



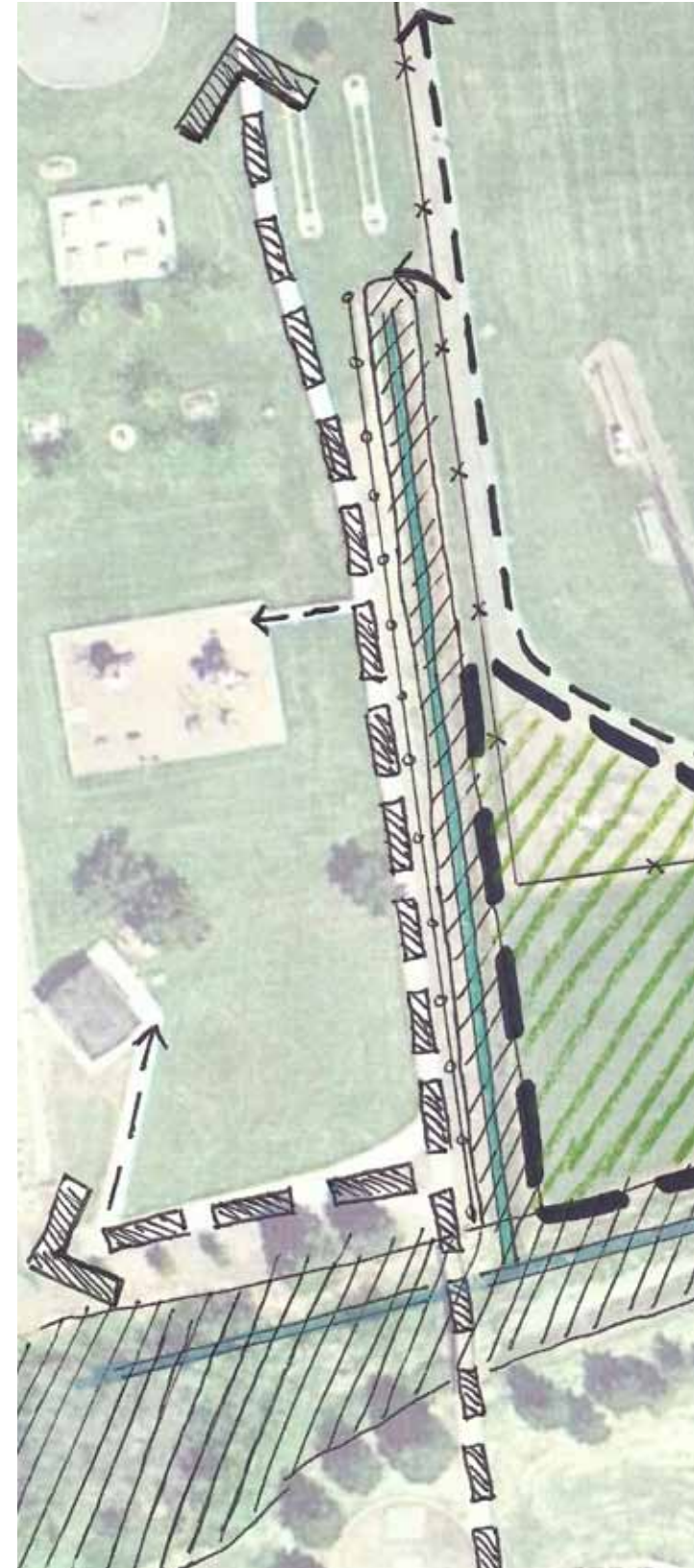
Heavy Pedestrian Traffic

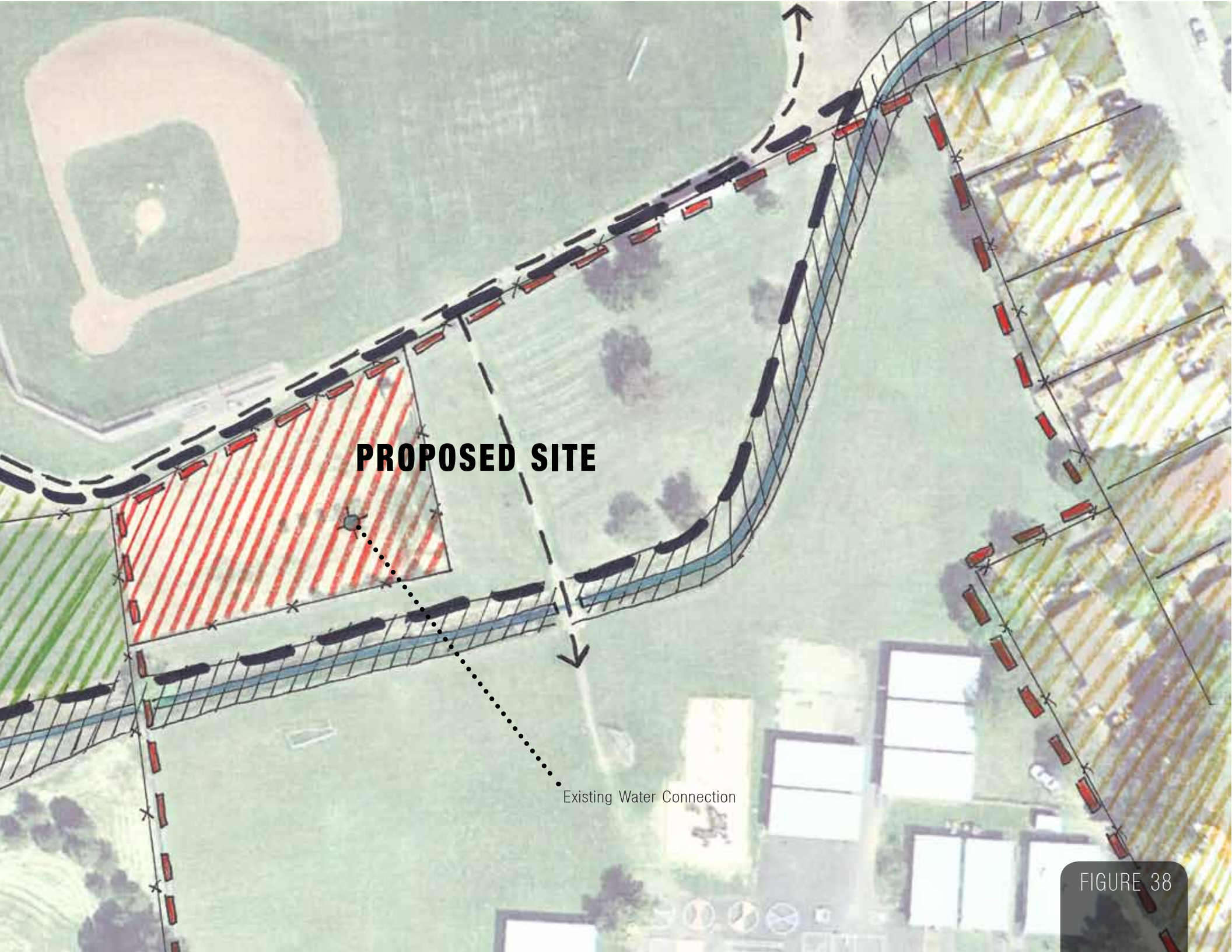


Light Pedestrian Traffic



Fence





PROPOSED SITE

Existing Water Connection

FIGURE 38

OPPORTUNITIES

IMPROVE CIRCULATION AND CONNECTIVITY

By redesigning this interstitial space into a cohesive whole, it will be possible to create a logical circulation network which connects this space to the school, community park and existing pathways.

RESTORE THE CREEK

The creek can be restored over time through the Creek Rescue Project framework and will eventually result in a healthier vegetated creek.

RENOVATE THE SCHOOL GARDEN

The currently underused school garden can be re-imagined into a joint use garden which serves students and the community, and has a resilient support network.

ACCOMMODATE OUTDOOR EDUCATION

This space can potentially be used to accommodate outdoor lessons.

BEAUTIFY THE CAMPUS

Reimagining and reinvigorating this minimally maintained portion of campus will beautify the campus and create a more inviting image.



CONSTRAINTS

LONG TERM SUPPORT

This project will take time to complete, perhaps even a decade, and needs proper funding and consistent support to remain viable. In addition, the American Canyon community must first decide how they want to move forward with this vision.

LOW PRIORITY

There are other campus improvements, such as expansion of classroom facilities, and existing sports field maintenance that has priority over a joint use area.

POTENTIAL SAFETY CONCERNS

Creating a more permeable boundary between campus and public property conflicts with the fact that DWES is a closed campus during school hours.

JOINT USE AGREEMENT

Terms for a joint use agreement must be worked out before the space can be developed to avoid misunderstandings, and outline expectations for use.



FIGURE 39

MASTER PLAN

Donaldson Way Community Garden

- 1 COMMUNITY GATHERING SPACE
- 2 COMMUNITY GARDEN PLOTS
- 3 SCHOOL TEACHING GARDEN
- 4 OUTDOOR CLASSROOM
- 5 OUTDOOR REFLECTION AREA
- 6 EXPERIMENTAL PLANTING AREA
- 7 CREEK RESTORATION

IMPROVEMENTS

Pathway Connection

New bridge connects the site with existing pathways within the community park

Shade Structure

A large shade structure marks the entrance of the community garden to create a sense of ownership and defensible space in this area.

Central Axis

Wide central axis accommodates vehicle use for supplies, and promotes a logical circulation network within the garden.

Community Park Edge Connection

The edge condition between the ball fields and the community garden are permeable to promote connectivity and shared recreational use.

Bridge Onto DWES Campus

Bridge serves as a controlled entrance onto the rest of the campus, and is large enough to accommodate maintenance vehicles.



FIGURE 40

SITE PLAN A

Community Gathering Space

- ① SHADE STRUCTURE
- ② NEW STORAGE SHED
- ③ BLEACHERS
- ④ FLEXIBLE LOUNGING/EVENT SPACE
- ⑤ COMMUNITY GARDEN PLOTS



FIGURE 41

SITE PLAN B

Outdoor Learning Space

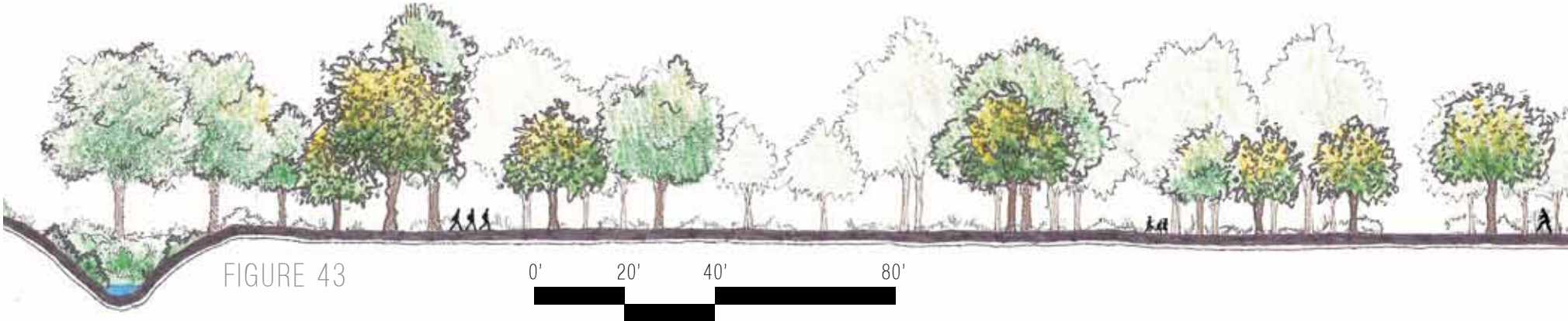
- ① OUTDOOR CLASSROOM SPACE
- ② STUDENT GARDEN SPACE
- ③ POLLINATOR ATTRACTING PLANTS
- ④ EXPERIMENTAL PLANTING AREA
- ⑤ SMALL GROUP SPACES
- ⑥ OPEN FIELD
- ⑦ CREEK RESTORATION
- ⑧ DEFINED CAMPUS ACCESS POINT



FIGURE 42

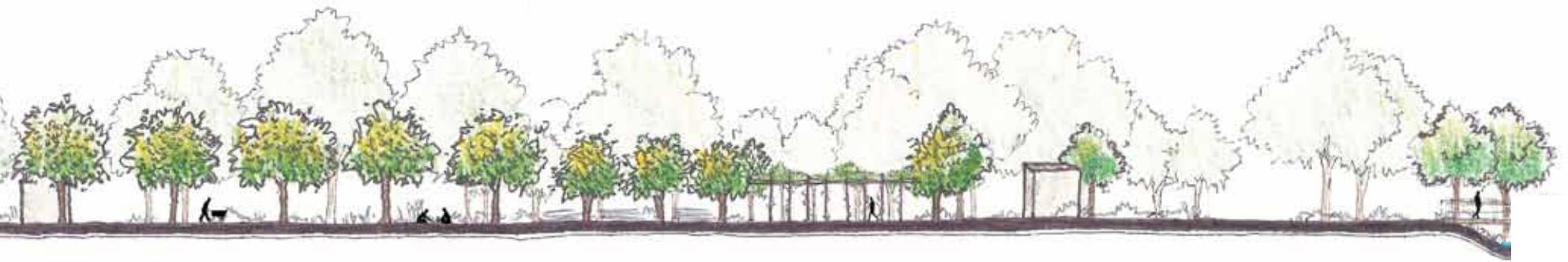
SECTIONS

Section A



Section B





Section C



FIGURE 45 0' 10' 20' 40'

PERSPECTIVE A

Communtiy Garden Plots

The Western side of the community garden will be set aside as plots for local residents, and a pathway will run along the creek, and through the garden. The pathway will connect to existing pathway infrastructure, and will better connect Community Park 1 with Community Park 2. In addition, the new community uses occurring in this area will attract more users, and will serve to enliven the Community Park.





FIGURE 46

PERSPECTIVE B

Community Gathering Space

This community gathering space will be a focal point of the shared garden, and will simultaneously provide social opportunities within the garden, as well as seating and viewing into the ball fields during games and events such as 4th of July festivities. This gathering space will allow for a permeable boundary between the garden and the park, but will also control the space to demonstrate ownership and territoriality.





FIGURE 47

PERSPECTIVE C

Outdoor Learning Space

The establishment of an outdoor classroom space will promote outdoor learning before and after school, and can also be used as a type of amphitheater for public events. This area will also beautify this entrance to campus and will promote a sense of community on the campus. This area will also serve as an experiment student garden space where kids can grow their own plants, or relax and enjoy nature.





FIGURE 48

PERSPECTIVE D

Creekside Pathway

A new trail connection along the creek will serve as a pleasant nature walk for park users or children walking to school, and will provide spaces for classes to interact with plants and the creek. In addition, this pathway connection will complete the circulation network between the garden and Community Park in order to provide more recreation options for park users.





FIGURE 49

PHASING

Priorities

Assuming that the Creek Rescue Project is repeated for each successive class of 5th grade students, the creek would be a part of every phase of development. As the creek rescue project gains more support, and becomes a recurring undertaking, restoration can become a portion of the project, along with some design and construction phases. The primary difficulty with phasing will be the fact that the project will take so long to reach completion. The phasing begins with a focus on outdoor classroom areas, and gradually incorporates community garden space, until finally the central gathering space is completed and a new pathway connects the site.

- 1** OUTDOOR CLASSROOM SPACE
- 2** EXPERIMENTAL GARDEN SPACE
- 3** STUDENT AND COMMUNITY GARDEN PLOTS
- 4** GATHERING SPACE AND PATHWAY
- 5** COMMUNITY GARDEN PLOT EXPANSION
- 6** PERMEABLE BOUNDARY COMPLETED

1



FIGURE 50

2

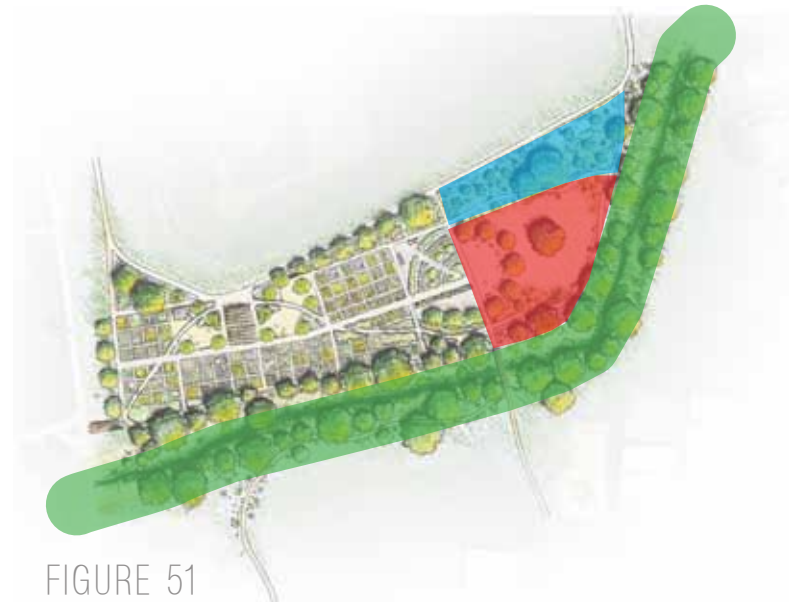


FIGURE 51

3



FIGURE 52

5

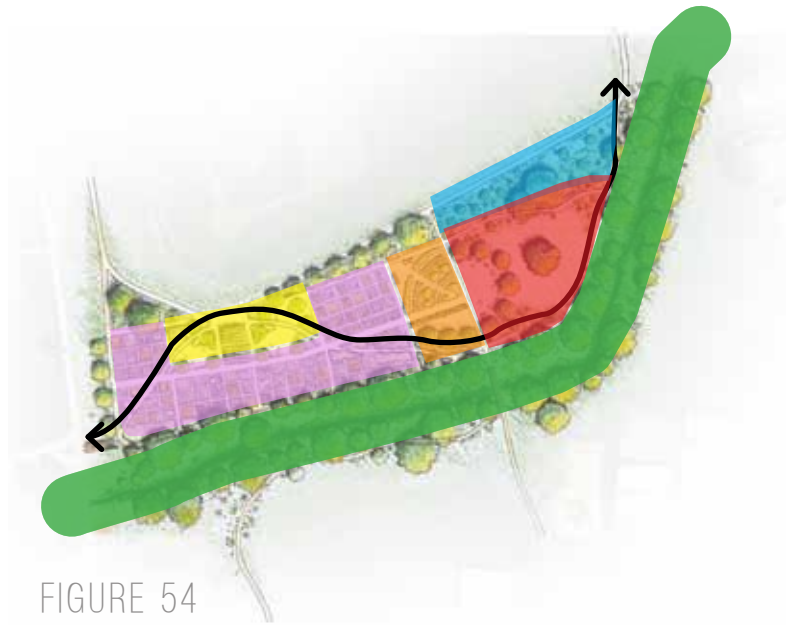


FIGURE 54

4

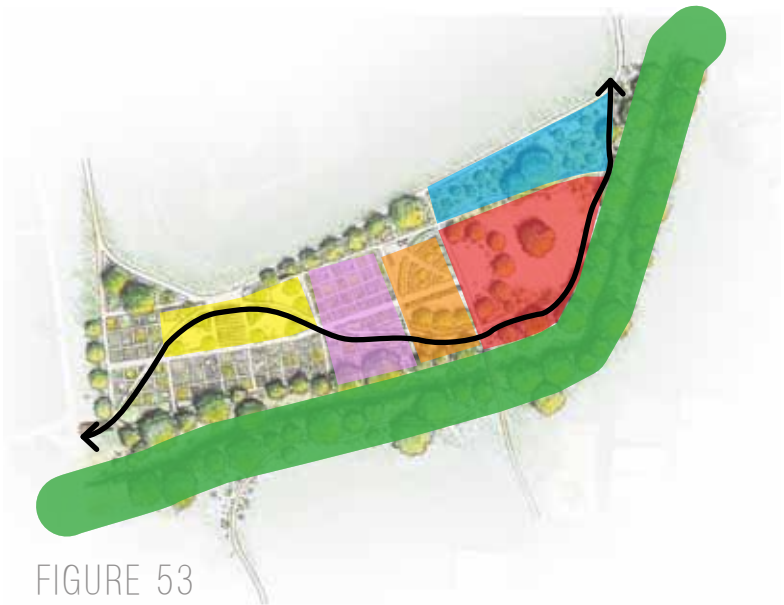


FIGURE 53

6

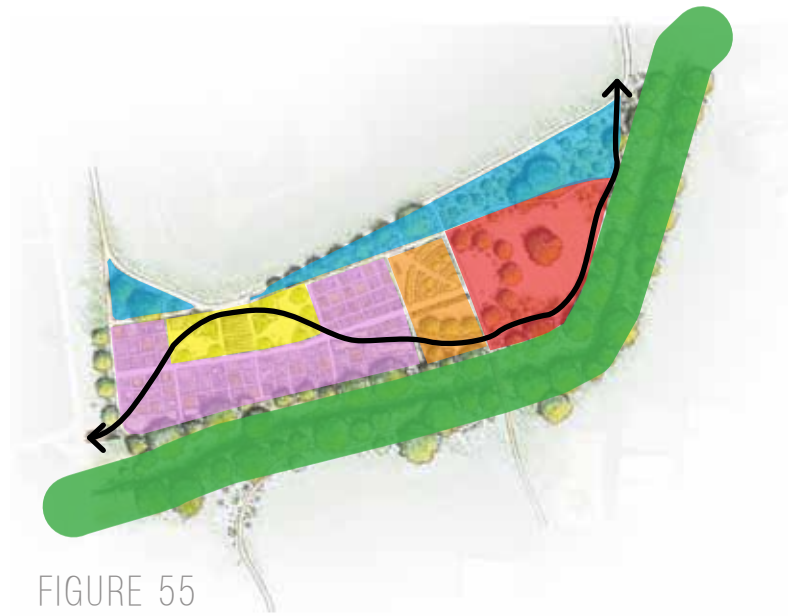


FIGURE 55

FUTURE CONSIDERATIONS

Creek Geomorphology

While the current scope of restoration work is beneficial to the creek, and will continue to be so over time, it may eventually become feasible and desirable to reintroduce a slight meander to the creek as well as making the slopes of the banks more gradual to prevent erosion. The primary barrier to extensive creek restoration will be the extensive legal framework surrounding environmental alteration in California. Despite restoration potentially benefitting the creek, a variety of permits, and studies must be conducted to understand the varieties of impacts that might occur (Griggs, 2009).

Adjacent Spaces

The success of this project will not only lie with the support it garners, and the stewards that emerge, but the users that it attracts, and the way in which adjacent spaces around the site are programmed and designed. Given that part of the site is located in an area that currently has very little natural surveillance, there is a higher potential for crime, vandalism, or conflict. However, according to Creighton Wright, and the principles of CPTED, careful planning of the land between the skate park and the creek could address this issue by encouraging transitory use, rather than loitering. It may also be possible to program a passive recreation use here that would encourage natural surveillance from positive user groups. Consideration of this area is highly recommended, despite not directly being addressed in this project.



FIGURE 56



FIGURE 57

CONCLUSION

Moving Forward

The Creek Rescue Project was an exciting experience for everyone involved, and eloquently demonstrated the power of community members working together under a common goal. The enthusiastic support for the project empowered students, and allowed them to fully immerse in an engaging learning opportunity. Overall, the Creek Rescue Project has revealed the possibility of creating a vibrant joint-use community space which would promote student learning, physically bring the community into DWES, and provide beneficial uses to local residents. The ideas presented in this project are not meant as a final plan of action, but rather as an overarching vision of what could be possible under the right circumstances. My hope is that this senior project and its message can be passed to the American Canyon community, where it will continue to evolve and build momentum.

THANK YOU

REFERENCES

- Alta Heights Magnet School. *About Alta Heights*. 2014. Web.
- Atlas, Randall. *21st Century Security and CPTED: Designing for Critical Infrastructure Protection and Crime Prevention*. Boca Raton: CRC Press, 2008. Print.
- Blair, Dorothy. *The Child in the Garden: An Evaluative Review of the Benefits of School Gardening*. Journal of Environmental Education. Winter 2009. Vol. 40 No. 2. PDF.
- Blum, Robert. *School Connectedness: Improving Students' Lives*. Military Child Initiative. 2005. PDF.
- Boston Schoolyard Initiative. *About Us*. 2014. Web.
- California Department of Education. *Donaldson Way Elementary School Profile Report*. DataQuest. 2013. PDF.
- California Office of Public School Construction. *Joint Use Program*. 2014. Web.
- Centers for Disease Control and Prevention. *Childhood Obesity Facts*. 2014. Web.
- City of American Canyon. *American Canyon Parks and Community Services Master Plan*. Parks and Community Services Commission. 2012. PDF. 20 January 2014.
- City of American Canyon. *American Canyon History*. Historical Committee. PDF. 5 February 2014.
- City of American Canyon. *Clark Ranch Community Visioning*. May, 2012. PDF.
- Coeytaux et Al. *A Community Garden Start-up Guide for Residents of Napa Valley*. 2010. PDF.
- Cooper, Tamar and Jeffrey M. Vincent. *Joint Use School Partnerships in California: Strategies to Enhance Schools and Communities*. Berkeley Center for Cities and Schools. August 2008. PDF.
- Crowe, Timothy and Diane L. Zahm. *Crime Prevention Through Environmental Design*. 1994.
- Donaldson Way Elementary School. *Mission and Vision*. 2014. Web.
- Edible Schoolyard Project. *About Us*. 2014. Web.
- Freeman, Bonnie. *School Garden Start-up Guide*. Common Ground Garden Program. University of California Extension Program. 2003.
- Griggs, Thomas. *California Riparian Habitat Restoration Handbook*. River Partners. 2009.
- Hankins, Scott. *Community Garden Grows Good Neighbors*. American Canyon Eagle. May, 2005. Web.
- Healthy Works San Diego. *School and Community Gardens*. City of San Diego. 2014. Web.
- Holt, John Caldwell. *Learning all the time*. Reading, Mass.: Addison-Wesley, 1989. Print.
- Jacobson, Susan Kay, Mallory D. McDuff, and Martha C. Monroe. *Conservation Education and Outreach Techniques*. Oxford: Oxford University Press, 2006. Print.

REFERENCES

Johnson, Julie. *Design for Learning: Values, Qualities and Processes of Enriching School Landscapes*. Landscape Architecture Technical Information Series. 2000. PDF.

Lane, Jonathan. *Schools Can Take Steps to Reduce School Shootings*. Published in *School Shootings*. Edited by Egendorf, Laura K. San Diego, Calif.: Greenhaven Press, 2002. Print.

Learning Through Landscapes. *Lesson Resources*. 2014. Web.

Logan, Priscilla. *Outdoor Classroom*. 1999. Web.

Louv, Richard. *Last child in the Woods: Saving Our Children from Nature Deficit Disorder*. Chapel Hill, NC: Algonquin Books of Chapel Hill, 2008. Print.

Melaville, Atelia, Amy C. Berg, and Martin J. Blank. *Community Based Learning: Engaging Students for Success and Citizenship*. Coalition for Community Schools. 2014. PDF.

Napa County GIS. Parcel Data for 058040009000. Napa County GIS. 2014. PDF.

Napa County Local Food Advisory Council. *Meeting Minutes of the Napa County Local Food Advisory Council: Special Meeting*. August 22, 2012. PDF.

Orr, Tamra. *Violence in Our Schools: Halls of Hope, Halls of Fear*. New York: F. Watts, 2003. Print.

Prevention Institute. *Joint Use 101*. 2014. Web

Piche, Gerald. *Outdoor Education Activities for K- 12 Educators*. Agriscience Program. Michigan State University. 2000. DOC.

Somerset, Shawn, et. al. *School-Based Community Gardens: Re-Establishing Healthy Relationships with Food*. Journal of the HEIA. 2005, Vol. 12 No. 2