

▶ LAFAYETTE COLLEGE TECHNOLOGY CLINIC

FINAL REPORT



RE-ENVISIONING
A FUTURE FOR THE
BUSHKILL CORRIDOR

December 8, 2017



THE TECHNOLOGY CLINIC TEAM

The Lafayette College Technology Clinic (TC) is a two-semester course in which teams of students work together to develop imaginative solutions to real-world problems for clients. Teams are multidisciplinary and include students and faculty mentors from the Humanities, Social Sciences, Sciences, and Engineering Divisions.



FRANCESCA BLOOD
ENGLISH MAJOR
ITALIAN STUDIES MINOR
2018



ANDREW CHUMA
ECONOMICS MAJOR
FINANCE MINOR
2019



SYDNEY EDELSON
PSYCHOLOGY MAJOR
PHILOSOPHY MINOR
2019



ALEXANDER HOMSI
MECHANICAL ENGINEERING
MAJOR
2019



LEXI KELLEY
INTERNAT'L AFFAIRS MAJOR
CHINESE MINOR
2019



LAURA STRANG
CIVIL ENGINEERING MAJOR
MATHEMATICS MINOR
2018



KAYLA ZOLA
ENVIRONMENTAL STUDIES
MAJOR
2018

ADVISORS

DAVID BRANDES
CIVIL & ENVIRONMENTAL
ENGINEERING DEPARTMENT

JIM TOIA
ART DEPARTMENT

TECH CLINIC DIRECTOR

LAWRENCE MALINCONICO
GEOLOGY AND ENVIRONMENTAL
GEOSCIENCES DEPARTMENT

TABLE OF CONTENTS

Table of Contents

CHARGE	1
CLIENTS	2
SUMMARY OF PRELIMINARY ANALYSIS	3
THEMES	4
AREA OF INTEREST	7
AREA 1: BUSHKILL DRIVE ROAD REALIGNMENT	9
AREA 2: STREET IMPROVEMENTS	11
AREA 3: IRON WORKS PARK	13
AREA 4: TRESTLE BRIDGE	15
AREA 5: RIVER VIEW NATURE TRAIL	17
AREA 6: RESIDENTIAL PROPERTIES	19
AREA 7: THE ROPE WALK	20
AREA 8: BUSHKILL ENVIRONMENTAL COMMUNITY CENTER	24
AREA 9: CENTER FOR ENTREPRENEURSHIP	28
AREA 10: INFORMATION CENTER	35
RESOURCES FOR FUTURE PLANNING	38
TIMELINE	39
ACKNOWLEDGEMENTS	41
REFERENCES	43
APPENDIX A	44
APPENDIX B	54

CHARGE

TECHNOLOGY CLINIC CHARGE

The 2017 Technology Clinic (TC) team was charged with the task of examining the functionality of a specific area in Easton, PA, as it pertains to the interests of the team's clients, the City of Easton and Lafayette College. The specified area of interest has been labeled the Bushkill Corridor (BC) and includes Bushkill Drive beginning at North 13th Street continuing towards Lafayette College. While the TC team considered many other relevant areas throughout the project, the decision was made to focus on properties lining Bushkill Drive spanning from North 13th Street to Detrich Road. The BC has unique potential due to the large number of underutilized lots and the potential opportunities for improvement. The team therefore identified several redevelopment opportunities as part of a future vision of the BC.

The project involved significant research and analysis of various components of the BC as well as the creation of potential redevelopment opportunities. The TC by nature requires an interdisciplinary approach, allowing the team to consider all aspects and perspectives of the BC. The team's recommendations are intended to fulfill the task as defined above and to address the desires of the clients.



CLIENTS

The two clients that the TC team worked with throughout the project are the City of Easton and Lafayette College. Both clients have significant interest in the BC as it pertains to the redevelopment of the area and future outlook of each client.

CITY OF EASTON



The City of Easton is represented by Dave Hopkins. Mr. Hopkins is the Director of Public Works for the City and is highly involved in projects of redevelopment and planning. Mr. Hopkins charged the team with proposing ideas and solutions throughout the BC to allow for the city's more efficient use of the land.

LAFAYETTE COLLEGE



Lafayette College is represented by Roger Demareski. Mr. Demareski is the Vice President of Finance and Administration for the college and is highly involved with the college's long term plans. Mr. Demareski charged the team with improving the BC in an effective way that will complement the college's projected expansion.

Both clients were helpful in providing the team with expectations and perspective. The TC team was therefore able to gauge an area of interest for both clients. The TC team was given freedom to examine and analyze any part of the area in order to effectively suggest improvements for redevelopment.

SUMMARY OF PRELIMINARY ANALYSIS

The preliminary analysis, or phase one of the charge, was completed and presented to the clients during the spring of 2017. The first phase of the project was dedicated towards research and analysis of the BC. The TC team spent significant time in an “information gathering” stage in order to understand the entirety of the area. Last semester’s report therefore included critical information about the area, which was collected through surveys, meetings, and further general research. With phase one complete, the TC team began to focus on phase two, a more developmental approach including imaginative thinking, solutions, and recommendations in regards to the BC.

Before discussing these recommendations, it is important to revisit the main takeaways from phase one, in which the TC team identified problems, priorities, and themes that should be addressed in the following recommendations.

Phase One Summary (January – May 2017):



Focus

- Areas that contribute to the BC, including the Silk Mill, Karl Sterner Arts Trail, Bushkill Creek, and Bushkill Drive.



Research

- First person interactions, discussions, and surveys to create a “community outreach” approach that gave information and perspective from many different resources.



Conclusion

- The BC was an isolated stretch of land which has problems with signage, accessibility, aesthetic appeal, unity, and coherence.



Suggestions

- The team identified that the BC has untapped potential as it resides in a unique location with natural and intrinsic assets that can benefit both the City of Easton and Lafayette College. Some of the recommendations included: a cleaner and more aesthetically appealing space, proper signage to provide clarity, and identifying themes across the BC to provide cohesion across the development of the corridor.

The TC team’s second phase approach has attempted to capitalize on the information and potential discovered in phase one.

THEMES

After dedicating phase one towards research of the BC, the TC team discovered consistent themes. The TC team determined it as critical to identify these themes and use them throughout our proposal in order to provide a consistent and coherent vision.

Our method towards identifying themes was completed in three steps:

1 Step One: Identify the problems that each respective client is facing

The TC team took significant strides towards this first step throughout phase one of the project. It is important to first determine the problems with the area in order to have perspective with which to provide solutions. The recommendations are meant to contribute to solve the problems of each client. Using the information gathered in phase one of our project, the team carefully considered the issues that each client group was facing.



Lafayette College

- **Lack of available space for potential expansion projects;**
As Lafayette College continues to expand, one thing becomes evident: College Hill is crowded. With little space on the main campus, Lafayette College is searching for places to grow and the BC has been identified as one of those locations.
- **Absence of connectivity and accessibility of College Hill and the BC**
As Lafayette College focuses on the BC as a target for expansion, another problem becomes evident: there is poor connection between them. The geography of the area creates a natural block between College Hill and the BC which disincentives use of the BC by College Hill residents.
- **Lack of outdoor activities for students on campus**
Lafayette College lacks outdoor activities on campus. As Lafayette continues to become more populated, it is important that there is more space and activities for students.



City of Easton

- **Lack of shared community space**
Easton does not have many parks or outdoor attractions for its residents. Although it is a densely populated city, Easton could benefit from space that the entire community could use for leisure.

- **Inefficient use of the Bushkill Corridor space**

The BC is currently comprised of several vacant and underutilized plots of land. Especially for a crowded city, it is bad to have unproductive or inefficient land use. Although the corridor once thrived on its industrial businesses, these companies no longer stand as the most beneficial use of that area.

- **Lack of connectivity between Lafayette and Easton communities**

The TC team has identified that the relationship between Easton and Lafayette is underutilized. There is a certain level of disconnect between the two communities which further emphasizes the physical separation between College Hill and the city.

2

Step Two: Determine the priorities of each client

In order to make the proposal effective for the clients, the TC team decided to determine priorities of each client. The priorities are meant to be what the client most wants addressed in the proposal. The problems that were addressed in step one contribute to identifying these priorities. Using the problems from step one, the team identified the top priorities of each client.



Lafayette College

- **Connection of College Hill with Bushkill Corridor**

In order for the BC to be an effective area for the college, Lafayette needs to find a way to connect the areas regardless of the challenging geographic barriers. One priority is to find a way to create a better connection that encourages College Hill's use of the area and vice versa.

- **Functional uses of the BC that coincide with Lafayette expansion**

The College will benefit from receiving recommendations that complement their potential expansion. Therefore, another priority of Lafayette is to review recommendations that keep the expansion aspect in mind.

- **College Hill community benefit of Bushkill Corridor**

Due to its proximity to the school, the BC can benefit Lafayette's community immensely. Another of Lafayette's priorities is to see a BC vision which serves its community more effectively.



City of Easton

- **General effectiveness and functionality of the BC**

The BC has great opportunity and potential for the City of Easton. Easton therefore prioritizes seeking solutions and visions that maximize BC's opportunities to make it an effective area.

- **Use of Easton Iron & Metal**

Easton sees significant potential in this plot of land. The city seeks suggestions to utilize the area in the most efficient and effective way possible.

- **The ability of BC to benefit the greater Easton community**

Similar to that of Lafayette College, the City of Easton seeks solutions that will serve its community. The TC team has determined that creating space that allows residents to enjoy Easton's natural beauty is of interest.

3

Step 3: Identify themes that the proposal will use

The team determined several themes that address providing a coherent vision of the BC. These themes are a product of the problems and priorities previously identified. The team used these themes to develop recommendations for various areas of the BC.

- **Service of the community**

Lafayette desires to benefit its College Hill residents and Easton desires to benefit its city residents. On several occasions, both clients have noted that they desire a stronger relationship between the city and the school because of the untapped potential of that partnership. The TC team proposals will benefit each community separately and also create a stronger connection through shared community space.

- **Use of Bushkill Corridor's natural and intrinsic assets**

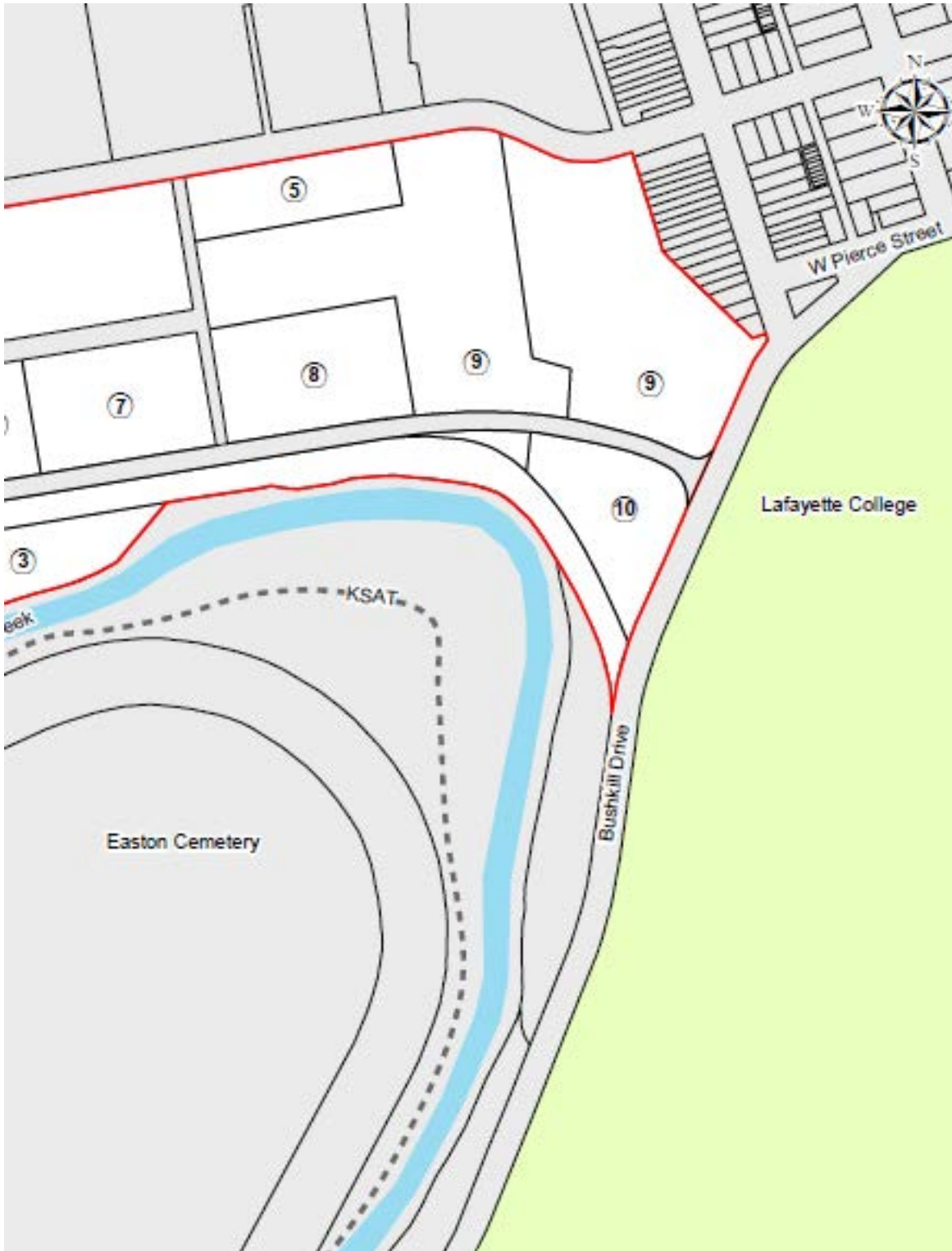
The TC team has identified that the BC has significant underutilized assets such as its industrial history and proximity to the Karl Stirner Arts Trail and Bushkill Creek. On several occasions, both clients have shown appreciation for these amenities and have expressed their desire to preserve and use what is already there. The proposals will utilize much of what the BC already has to offer with the goal of optimizing the area's natural amenities.

- **Functionality and efficiency**

Both clients have expressed disappointment at BC's general functionality. The BC is an underutilized area, which both clients desire be put to better use. The TC team has determined that both clients will benefit from recommendations that suggest functional and efficient uses of the property.

AREA OF INTEREST





AREA 1: BUSHKILL DRIVE ROAD REALIGNMENT



EXISTING

The portion of Bushkill Drive that we focused on spans about half a mile of straight roadway along the BC. After significant research and speaking with people in the area, the team is concerned that these dimensions encourage speeding, which discourages pedestrians from using the area. With the intention of creating a more user-friendly space along the BC, the team considered various options to slow down traffic.

VISION



The team proposes a curve along the road that would make the BC more safe and appealing to visitors. The proposal is that the road curves north towards West Lafayette Street and then continues straight through what is now the Easton Iron & Metal property. Some of the benefits the team identified are outlined below:

- **Connect Easton Iron & Metal properties on either side of the current road**
As it currently stands, Bushkill Drive essentially slices Easton Iron and Metal in half. By curving the road, Easton Iron and Metal becomes a bigger single property space therefore giving it greater potential.
- **Slow down incoming traffic making the area more user friendly**
As the report will highlight, the team intends to develop a community aspect to the area which encourages use of the space by pedestrians such as kids and families.

AREA 2: STREET IMPROVEMENTS



EXISTING

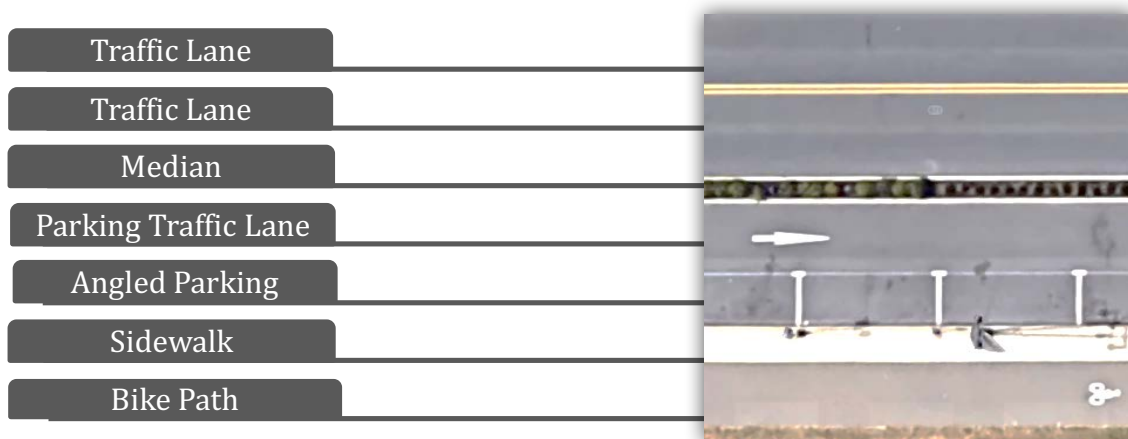
The City of Easton currently owns a right-of-way that extends 54 feet away from the south edge of Bushkill Drive. The right-of-way has been identified as a key opportunity along BC however it crosses several other privately owned lots. The right-of-way currently spans through Easton Iron & Metal, Deiter Brothers, and Integrated Automotive Services.



VISION

In continuum with the recommendations from Area 1, the team identified the right-of-way as an opportunity to make the BC more user-friendly with the addition of a bike and pedestrian path as well as parking along part of the area. The TC bases its proposal for this on a portion of Larry Holmes Drive, which allows cars, bikers, and pedestrians to share the area. The addition of a safer area for pedestrians and bikers to travel will enhance the safety and accessibility of the area. The area should also include access to public transportation. The team proposes this idea because it will aid the overall connection and coherence of the corridor.

The team's vision for the right of way is as follows:



AREA 3: IRON WORKS PARK



EXISTING

Parcel 3 consists of Easton Iron & Metal and Deiter Brothers. Easton Iron & Metal was crucial to the city's urbanization, development, and industrialization. The TC team believes these properties have strong potential given the large amounts of land where they currently reside. Both clients have expressed significant interest in the team's vision of this area.

VISION

The TC team has proposed a green space that expands across the plot of land that is connected by moving Bushkill Drive (see Area 1). The team believes that a green space would be the best use of this land based on research that shows community need for increased recreational space. Having a more aesthetically pleasing and useful area will increase the overall amount of visitors. This new space will create a more inclusive and welcoming area in which visitors will be more inclined to spend time. When considering this specific area's surroundings, implementing a green space would further enhance its natural feel and connectivity.

The green space, with a proposed name of *Iron Works Park*, will function as a park for all visitors. Its name will commemorate the company that occupied this space for many years. The team does not want to simply tear down structures that have played important roles in Easton's past. Instead, the team proposes to emulate the industrial aspects of the Easton Iron & Metal property, the nearby Rinek Rope Factory, and historic railroad system.

Some of the specific ideas are as follows:

- Picnic tables, bocce ball court, terraced garden
- Sports field, amphitheater
- Wooden play structure



AREA 4: TRESTLE BRIDGE



EXISTING

Situated at the West end of the BC is an abandoned train trestle bridge that crosses the Bushkill Creek. During the industrial peak of the Lehigh Valley (late 19th to early 20th centuries), a railroad once existed along present day Bushkill Drive. As part of the rail system, the trestle bridge carried trains over the creek. The trestle bridge is the only remnant of the rail system in the BC and is a valuable artifact to the industrial history of the area.

The trestle bridge is supported by a steel under truss and anchored in concrete footings. The bridge decking consists of evenly spaced timber boards. The length of the wooden decking is stained where steel tracks were previously laid to guide trains along the bridge. In its current condition, the steel is discolored, the timber is rotting, the decking is covered in moss and weeds, and both entrances to the bridge are surrounded by overgrown vegetation.

Fortunately, the apparent condition of the trestle bridge is misleading; structurally, the bridge has surprising strength. In recent years, both Lafayette College engineering students and professional engineering firms have inspected the trestle to determine if it could safely serve as a pedestrian bridge. The resounding conclusion is that the trestle bridge is capable of supporting pedestrian traffic, at minimum.

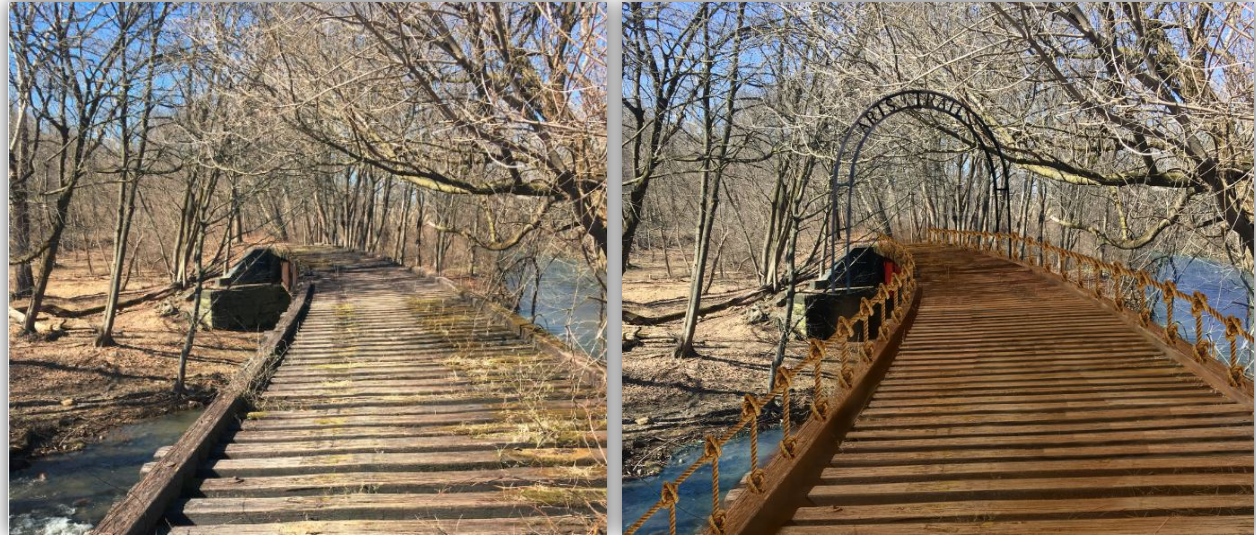
VISION

The TC team proposes to refurbish and convert the abandoned trestle bridge into a pedestrian bridge that celebrates the industrial history of the BC. Located between the proposed Iron Works Park (parcel 3) and the existing Karl Stirner Arts Trail, the trestle bridge is an obvious connection between the two attractions. Converting the structure into a

pedestrian bridge would allow direct access between the proposed park and the existing trail, encouraging Arts Trail users to visit the park, and vice versa. The pedestrian bridge would also create access to Stein Park and the BC from all areas that have access to the Arts Trail. Finally, the bridge would allow Arts Trail users to extend their walks along the proposed trails in the BC, creating longer loop trails.

Converting the trestle bridge into a pedestrian bridge is an idea that has been long discussed. The access benefits are evident and even more valuable with the proposed revitalization of the BC. Though the function of the abandoned trestle has been previously discussed, the TC team proposes a unique design that embraces the industrialism of the area. The vision is to refurbish the trestle bridge with elements that tribute the industries that flourished in the BC throughout its history.

In the rendering below, the team have suggested using elements that represent the Rinek Rope Factory and Easton Iron & Metal Company. The rendering shows the structural components of the bridge have been refurbished: the steel under truss has been painted red and the timber decking has been replaced with new wood beams. For safety reasons, there are no gaps in the new decking and there is a railing on either side of the bridge. The railing is created from rope to honor the Rinek Rope Factory. There are steel arches at either end of the bridge that welcome pedestrians to the Karl Stirner Arts Trail (KSAT) and Stein Park.



AREA 5: RIVER VIEW NATURE TRAIL

EXISTING

As identified by the team through research, residents desire additional recreational opportunities. Currently, the only existing trail near the BC is the KSAT, which provides beneficial recreational space and access to nature for the community as it runs along Bushkill Creek. There is underutilized land in the BC that could enhance the existing trails. The area of interest includes part of the current Easton Iron & Metal property as well as the northern part of the BC.

VISION



The proposed trail route, named the River View Nature Trail, is featured below. With access behind the Hummel Building on the corner of Detrich Road and Bushkill Drive, the trail will run parallel to Bushkill Drive with another access point at Iron Works Park.

Simple land clearing can provide access to currently unused land that is well suited for a nature trail. Adding a trail to the BC would expand the current recreational space provided by the KSAT while connecting the College Hill neighborhood to other areas of Easton and to the revitalized BC.



Though the terrain is steep in some areas, it is not too rigorous for a hiking trail. The trail should be integrated into the surrounding nature and would thus be a dirt trail that works with the terrain rather than a landscaped, paved path. Guidelines for sustainable trail construction, published by the National Park Service, should be followed.



Amenities including wood benches, signs, and railing are recommended. Benches provide gathering space for members of the community and add to the trail's aesthetic appeal. While benches can be placed at various locations across the trail, a small picnic area is recommended at the trail entrance near Burke Street. This will create a proximal destination, requiring little physical exertion and allowing community members of all physical ability to enjoy the trail.

Signs and railing should be made of steel and rope to represent and commemorate the industries that historically operated on the BC. The historic cordage factory, dams, Iron Works Park, and Silk Mill will all be visible from the River View Nature Trail.



In order for the River View Nature Trail to fulfill resident's desire for more recreational space, it must be easily accessible from College Hill. For this reason, the TC recommends stairs, an elevator, or another form of access to the BC from the Lafayette College campus, ideally behind Fisher Stadium.

A trail system similar to the one on the right has been proposed on the Lafayette College campus. The trail system would provide further connectivity between College Hill and the BC. Lafayette College has submitted a grant for this trail system and sees it as a critical link between the college and the Easton community. Though recommendations on College Hill are beyond the scope of this project, the TC team supports construction of this trail to enhance BC accessibility.



Map provided courtesy of Professor Michael McGuire

AREA 6: RESIDENTIAL PROPERTIES



EXISTING

Area 6, located next to the existing Easton Iron & Metal Company on Bushkill Drive, contains a series of fourteen residential units. The TC team recognizes that the residents who live in these homes are valued members of the community, as all others who reside on College Hill and in the City of Easton. The TC team feels that envisioning the re-development of Area 6 would violate one of the core themes: service to the community. For this reason, the TC team omits the development of Area 6 from the team's proposal under the assumption the residential units will remain in the future.

AREA 7: THE ROPE WALK



EXISTING

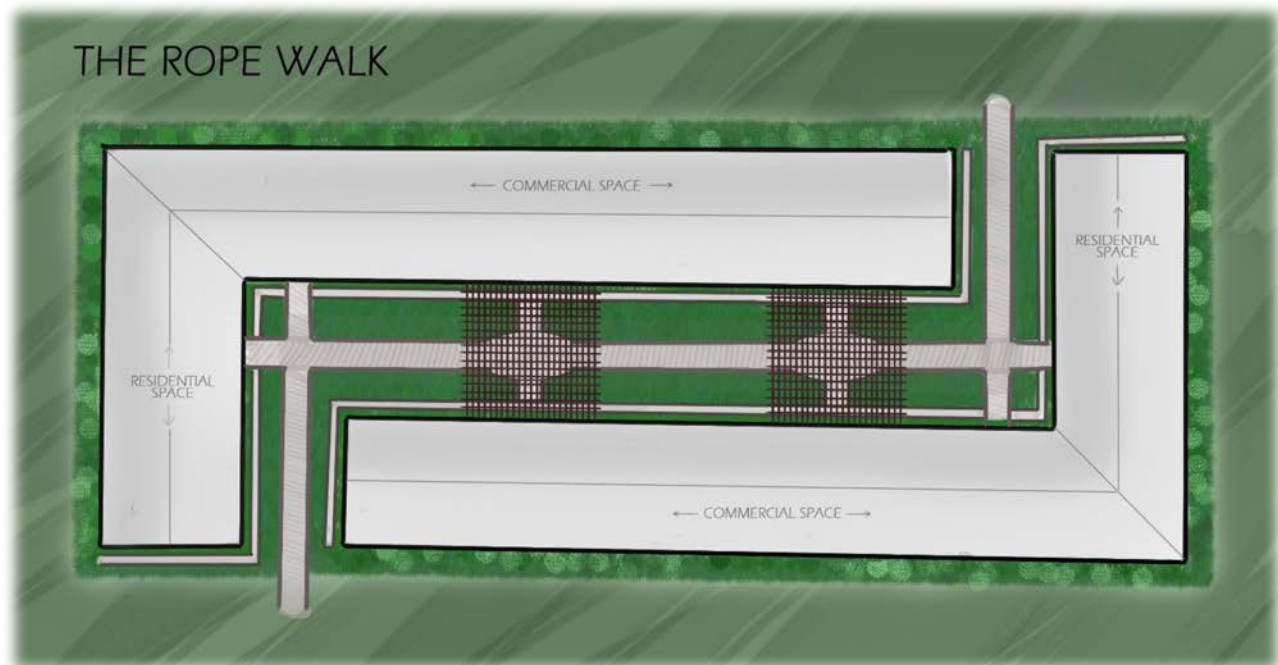
Area 7 currently contains four parcels along Bushkill Drive that are occupied by small businesses. These businesses include Gil Machine & Tool, W.B. Moore Incorporated engineering consultants, Pacific Pride gas station, Trinity Fitness, and R.J. Walker plumbing supply. Trinity Fitness recently relocated to Silk, at which time Lafayette College Facilities Operations moved into the space along Bushkill Drive. The remaining properties are scattered across this long stretch of property. Although it is unknown by the TC as to whether these businesses are functional or see a strong future, the TC believes they can be relocated and still serve the same purpose. The property instead can be used in the team's redevelopment efforts.

VISION

The TC team envisions a mixed-use commercial and residential complex, entitled *The Rope Walk*, to occupy the four properties in Area 7. The design and function of The Rope Walk was inspired by the historic Rinek Cordage Company. The Rinek family founded the Cordage Company in 1840, and by the turn of the century, the company had become one of the most prominent names in the industry. Since the company was established before modern machinery transformed the rope-making industry, Rinek Rope was founded upon traditional rope-making methods.

The most primitive method was to manufacture rope by hand. Craftsmen would suspend individual cords between two posts and twist the cords at one end to create a single strand of rope. The twisting motion was soon accomplished by crude spinning machines, rather than a person. As the cords were spun together, another craftsman would walk the length to ensure it was tight. Hence, the term *ropewalk* was coined to describe the long area within which rope was spun. By the 1850's, cordage factories would produce rope hundreds of feet in length using this method. For extra-long lengths of rope, the Rinek Cordage Company would sometimes use Bushkill Drive as a ropewalk.

The physical layout of The Rope Walk emulates the length that was characteristic of a traditional ropewalk. The complex features two "L" shaped buildings that span the length of four parcels. As shown in the concept plan below, the configuration of the two buildings creates a long courtyard in the center of the complex. A single path extends the length of the courtyard, representing the rope. This path may be paved with stone such that it emulates the pattern created by cords in rope. At the center of the courtyard, the path is covered by two pergolas for added aesthetic appeal.



As previously mentioned, the Rinek Cordage Company was one of the most prominent names in the rope-making industry. The company primarily supplied anthracite mining operations in northeastern Pennsylvania, but also supplied rope to be used for rigging on ships and other various jobs. The Rinek Cordage Company contributed to the vast success of the rope-making industry, which as a whole, served as a strong revenue generating industry for the country. Locally, Rinek Rope proved to be a valuable asset to the historic BC by producing revenue in

the City of Easton. The TC team envisions The Rope Walk will serve as a modern revenue-generating module for the revitalized BC that will contribute to the overall Easton economy.

The Rope Walk will create approximately 146,000 square feet of building space. According to the team's rough blueprint of the design, 46,000 square feet of the space will be dedicated to commercial use and 100,000 square feet will be dedicated to residential apartment units. The Rope Walk is meant to mimic the concept of the Silk project, which provides residential units and commercial space to create a community feel for the complex.



The Rope Walk's residential aspect is inspired by creating additional housing not only for Easton residents, but also potential College Hill residents such as students, faculty, and staff. Upon seeing the success of the Silk project, the TC thinks that the Rope Walk will be a popular spot for both communities. The Rope Walk as discussed above will incorporate historic aspects while also including modern finishes to the units and useful commercial space. This is meant to attract more people into the corridor. The residential units based on our estimation, will be 100,000 square feet. It is estimated that there will be 30 one bedroom units, 50 two bedroom units, and 30 three bedroom units to total 110 units available.

The breakdown of the units is based on that of the Silk projections and is as follows:

100,000 square feet of residential space:

- One Bedroom: 750 square feet per unit with 30 units at \$1100
- Two Bedroom: 900 square feet per unit with 50 units at \$1500
- Three Bedroom: 1100 square feet per unit with 30 units at \$2000

Note: Lafayette College currently charges \$9,300 for room and board. Students signing a one year lease for a 3 bedroom apartment at the Rope Walk would be paying approximately \$8,000 for the year.



The Rope Walk's commercial square footage spans about 46,000 square feet. The Rope Walk was given commercial and retail space in order to create a community similar to the Silk project which attracts residents as well as outsiders with the desire to use the businesses in the space. Some potential commercial usage could include things like a café, market, gym, bookstore, and other small businesses. Retail space will provide additional tax benefits for the city as well as stimulate the economy to some degree. The TC team believes that not only is this recommendation sound in terms of functionality to the BC area but also in terms of efficiency.



AREA 8: BUSHKILL ENVIRONMENTAL COMMUNITY CENTER



EXISTING

Area 8 of this proposal currently holds the historic Rinek Rope Factory. The building which once housed the Rinek family and their cordage factory, now sits vacant in the Eastern end of Bushkill Drive. The factory was once a vital aspect of the corridor, employing many and adding to Bushkill's industrial theme. However, as the city of Easton modernized, the factory closed and has since been abandoned and sold. The TC team believes that the building can be repurposed to preserve its historic and architectural quality, but we proceeded on the assumption that it would be razed.

VISION



The TC team proposes that in place of the Rinek Rope Factory, the Bushkill Environmental Community Center (BECC) be considered. The vision is to make environmental education accessible and relevant in the community through a joint venture between Lafayette, the city of Easton, and the Easton Area School District (EASD). The learning center will establish environmental competence and literacy through an integrated and multi-faceted curriculum. The center will strive to foster wonderment at the

natural world and motivate young minds to be agents of sustainability by creating awareness of the nature that surrounds them, as well as the robust industrial history of the corridor.

The inspiration behind the BECC comes from Robbins Park Environmental Education Center. Robbins Park, founded in 1975, is a 38-acre park that runs over 25 different programs and activities that regard environmental and outdoor education. Robbins Park has proven as a successful venture through its “hands-on, minds-on” approach and incorporation of



curriculum, which includes PA Common Core Science Standards. Robbins Park currently operates as a joint venture between its township and the local school district, and has



received funding for a director as well as the implementation of comprehensive scientific curriculum. Robbins Park is the staple of the community and is the township’s greatest source of pride. Refer to Appendix A for further information about Robbins Park programming, curriculum and operations.

The BECC would serve as the community’s headquarters for environmental education. The facility itself serves as an environmental experience that allows visitors to unplug and connect with nature. The framework for its operation would be a joint venture between the City of Easton, Lafayette College, and the Easton Area School District (EASD). Designing the curriculum would be a mutually beneficial experience, resulting from the partnership between the College and EASD. Similar to Robbins Park, the township would aid in maintaining the grounds throughout the year.

There are boundless advantages associated with the addition of a college and its students into the BECC design. This allows for expansion of potential in terms of programming, curriculum, volunteering possibilities, mentorship and science camps for the BECC.

The realization of this vision of a Connected Corridor includes:



Lafayette student involvement through Environmental Education Club

- Serve as “Learning Lab Leaders”: responsible for educating, enlightening and engaging students in environmental education
- Develop a Bushkill Buddies program to foster mentorship with EASD

- Responsible for overseeing operations of BECC providing internship and off-campus work study opportunities



Lafayette College curriculum opportunities

- Potential for future Lafayette College Tech Clinics, the IDEAL Center, LaFarm, EcoReps, and individual departments including the History, Engineering, Geology, Biology, Chemistry, and Environmental Studies programs
- Lafayette College Development of CBLR courses built around designing curriculum and volunteering opportunities
- Implementation of QR Code programming (see *Area 9*)
- Enhance the *Education* Major at Lafayette College by having student-interns work side by side with EASD teachers and classrooms, learning to develop curriculum and design lesson plans
- Potential Senior Capstone and Thesis opportunities
- Math Department can collect data and record statistics that track the effectiveness of the BECC



Partnerships

- DaVinci Center and Nature Nurture Center for curriculum expansion
- Boys and Girls Club of Easton
- Easton Recycling Center to improve education about concepts like “Reduce, Reuse, Recycle”, composting, and sustainability
- Community Outreach Programming: Landis Center’s MOSAIC programming with EASD conducts weekly after-school enrichment programs in *Connective Corridor* for elementary students including:
 - Academic Programs
 - Athletic Programs: Landis vans could transport students to the Easton Iron and Metal Park where Bushkill Buddies (Lafayette student volunteers) teach kids to play different sports
 - Themed Programs (Geology, Food and Nutrition, Gardening)

The BECC capitalizes on the needs of both Lafayette College and the city of Easton by providing opportunities for revenue generation, educational growth, and family activities. The BECC contributes to our vision of a *connected corridor* that encompasses the identified themes as it serves both communities at large, and utilizes the corridor’s natural and intrinsic assets thus increasing the general functionality and efficiency of the corridor.

The TC team believes that Lafayette College and Easton can benefit from a symbiotic relationship. The BECC meets the cities needs for more shared community space where kids can learn, grow and develop in a healthy, safe and productive way. To accommodate the college's needs to enhance student life opportunities and activities, students would assume the responsibility for overseeing the BECC and participating as volunteers.

If the suggestions made by the TC team are actualized, then the Riverview Nature Trail, Bushkill Creek, KSAT, and Iron Works Park will play a critical role because of their proximity to the BECC. In addition, the corridor is laden with historical relics and industrial remnants that would be incorporated into the BECC's curriculum. The sheer location of the corridor is the perfect placement for such a collaborative venture, as it is the gateway between both the College and the City. The BECC bridges the gap between the two communities, serving as the unifying factor that enables the Connected Corridor vision.

It is the team's hope that the precious and invaluable land in Parcel 8 be dedicated to the preservation of the unique primitive assets which presently exist in the corridor. At a time when environmental education and awareness is critically important, Easton as a community can become a leader. By developing an environmental education center and outdoor learning lab within our own community, the team can guarantee that Easton is home to an active citizenry that is equipped with learning tools and a natural sanctuary right in our backyard.



AREA 9: CENTER FOR ENTREPRENEURSHIP



EXISTING

Area 9 is currently a Lafayette owned property allocated towards additional parking for the college. Area 9 is a large area that expands far North and also to the West behind area 8. The Bushkill parking lot is currently about 75,000 square feet. Although the TC team acknowledges that parking is a necessity for the school, the property's proximity to the school and other features of the BC could make it useful for other functions as well. In an effort to be imaginative, the TC team proposes that a new academic building be put in place of part of the current parking on Bushkill Drive.

VISION

As Lafayette College's future points towards expansion, it is important that the TC team considers potential new academic buildings to host the wave of additional students. While the team considered multiple different academic options, it was finally determined that it would be most beneficial to create a new academic opportunity that does not currently exist at Lafayette.

The opportunity that the team determined would have the least presence on campus was entrepreneurship. Although this discipline is most often associated with a business or economics major, the TC team seeks to create a space that serves the entire College Hill community. In an environment today, where employers seek self-learning, forward thinking, and unique individuals, the TC believes it is important that the College further develop this concept into its curriculum. The team therefore proposes that Area 9 become the Lafayette College Center for Entrepreneurship.

Lafayette College's dedication to entrepreneurship currently lives with the IDEAL Center. The IDEAL Center at Lafayette College is an office which provides students interested in innovation and entrepreneurship with space and resources to pursue opportunities. Although the IDEAL Center runs effectively at the College, the TC team believes that there is more potential to the concept given its popularity in today's environment.

The team believes that an entrepreneurial space works in the BC not only because of Lafayette's need for new academic space but also because of the Rinek family's passion for entrepreneurship. Keeping in mind the theme of preserving and utilizing BC's natural assets, the TC team believes that it is appropriate to suggest a building dedicated to entrepreneurship given the fact that several member of the Rinek family were pioneers of entrepreneurship.

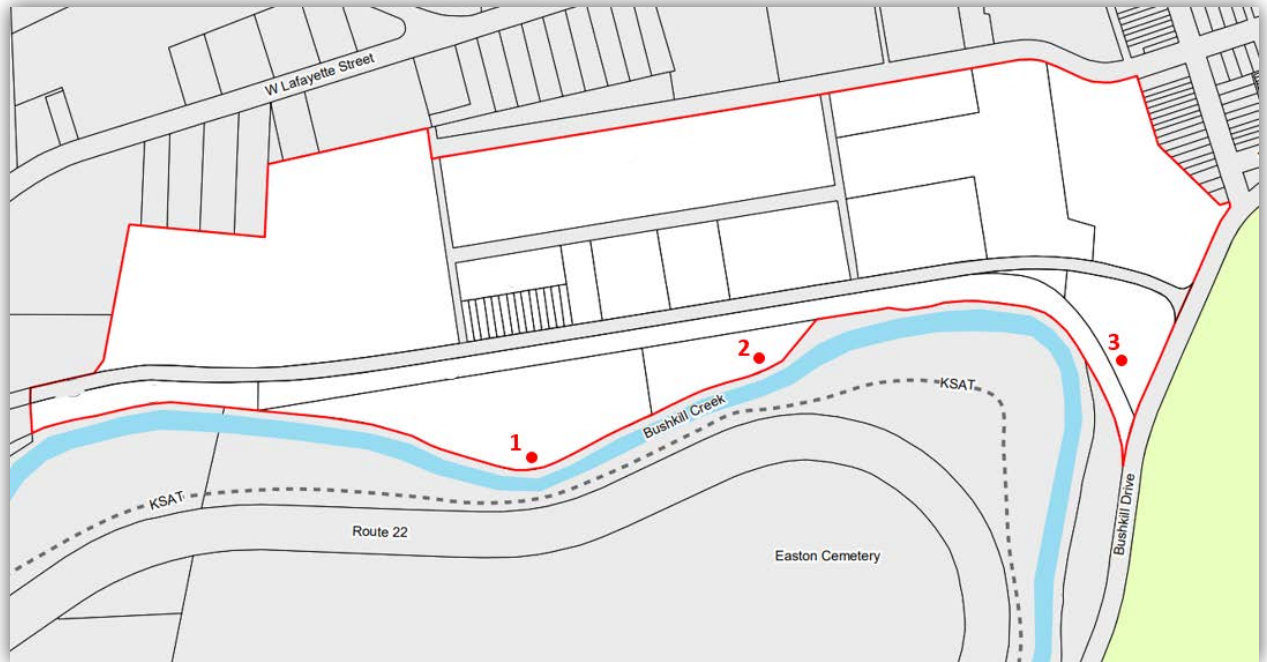
The TC team believes that due to its existing progress, the Center for Entrepreneurship can be spearheaded by the IDEAL Center at Lafayette College. The College Hill community will benefit greatly from this proposal as students will now have resources and space to pursue their opportunities and ideas. The Center for Entrepreneurship will become a multifaceted program that serves various functions. Some of the ideas we had for space within the center are as follows:

1 Tech Incubator

The TC team proposes that a portion of the Lafayette College Center for Entrepreneurship become a technology incubator space. Given the recent rise in technology, an incubator will provide a space for students to use and learn about technology in practical ways. This space will also provide students with opportunities to potentially perform research and intern during interim semesters.

The Tech Incubator can be implemented and useful throughout the BC because it will serve as the headquarters of the proposed QR code system throughout the corridor. As has previously been identified, it is important to maintain the historical significance and integrity of the area. By creating and employing QR Codes throughout the BC we can combine the BC's past and future in a technologically savvy and aesthetically pleasing way. With the recommendation of a technology incubator, the team hopes that the QR Codes will be easily maintained and updated, providing new and relevant information. Since the Tech Incubator will be housed nearby the QR Codes, students, faculty, and Easton residents will have easy access to the system.

The ability to update the Codes will ensure that any new information found after the completion of the Codes can be included. Those who take part in the updating will be able to learn new skills and take part in the revitalization of the BC. Hopefully this space not only teaches people more about QR Codes as a resource, but also about the history of the area. Additionally, the Tech Incubator will provide students and local Easton residents with a reason to frequent the BC. The TC team believes that Lafayette College can benefit from the Tech Incubator by supplementing curriculum in the engineering, history, and environmental studies departments. These departments can add information to the Codes, engaging students and providing hands-on experience outside of the classroom setting. The TC team believes that the QR code system will create a museum out of the entire BC area, showcasing its historical significance as well as its connection to nature. A brief description of the applicability of the codes in the BC and their benefits are as follows. For additional information, see Appendix B.



The red dots refer to potential QR code locations along the BC. Please see page 33 for a complete guide to examples of the QR codes

▶ Visitors can easily use QR Codes by simply scanning the barcode with a barcode reader application on their smartphone device. Once the barcode is scanned it will recognize the unique code and bring up the information that is encoded for this particular QR Code.



▶ QR Codes were identified as a way to preserve the historical integrity of the BC area in a technologically savvy way in order to appeal to the fast growing technological community. QR Codes are a practical way to integrate these ideas within the BC because Codes are used daily on things like coupons, magazines, billboards, and websites. The QR Code implementation in the BC will be an aesthetically pleasing way to view information about the BC in a PDF-like format. This will include large text with embedded pictures and videos. We would like to include historical photographs scanned into the application in order to achieve our goal of maintaining the historical significance of the area.



▶ The QR Codes will be created under one large QR platform, housed and managed by the technology incubator. This program will be able to pull all the information together in one format and include as much or as little information as needed. Different curriculums, pictures, and videos can be continually added over the years to keep the information relevant and current.

▶ The TC team envisions that this space, with the help of students, faculty, staff, and other employers will be able to manage the information encoded in the QR Codes. This partnership would be fruitful and informative for both parties and will allow for the most amount of attention and upkeep of the Codes. QR Code campaigns have an account sharing option in order to allow several users to access and edit the information that is stored in each Code. This will help the team divide the



responsibility of updating the encoded information among different employers, teachers, and students and streamline our program in order to make cross-departmental cooperation simpler and easier.



After a QR Code is created, statistics can be tracked, for example, how many times, when, where, and with what devices the Codes have been scanned. This information is important because as the area continues to grow, it is possible to study information about users of the BC. QR Codes can also include pictures prior to BC renovations, historic photos, information about the Bushkill Creek, information about wildlife in the area, and more. This project has the capability of bringing new life and excitement to the BC by enhancing the community and using the BC's past to help build its future.



QR Code image examples on the Bushkill Creek

EXAMPLE 1



EXAMPLE 2



Historic photos in examples 1 and 2 were taken from Ethan Allen Weaver's "Forks of the Delaware Illustrated"

EXAMPLE 3



Historic photo provided by David Drinkhouse

2

INNOVATION LAB

The Innovation Lab is an idea that the team believes will fit well in the entrepreneurial center. The Innovation Lab will serve as simply empty classroom and work space that provides resources for students to use. The Innovation Lab will not be dedicated to any department or



function, but instead will be open space for students to come work on different ideas, hold meetings, and practice creativity. The TC believes that this will be a popular space on campus because of the number of self-started and student-run clubs and groups at Lafayette. For example, Lafayette's investment club is a nationally recognized investment club in which students manage and maintain a portfolio of \$300,000. This club could definitely use the Innovation Lab as space to meet, do research, and perform other functions which could help the club's success. The TC envisions using this space to benefit students with the desire to pursue education past the ordinary curriculum.

3

MAKER SPACE

The TC also imagines part of the center being used as maker space for the college. A portion of that space will be inside the facility while another portion will be outside. This space would be for product testing and development, experiments, and educational aspects such as providing a space for students to put practical use to concepts learned in engineering and other departments.



AREA 10: INFORMATION CENTER



EXISTING

Area 10 currently contains Integrative Automotive Services. Although the land is potentially contaminated, its proximity to the College and connection to other assets on the BC makes it a vital piece of land to consider for the redevelopment efforts. The TC team therefore proposes that the corner lot in the BC become an information center which will showcase the BC as well as its connection to the college and the city.

As identified in the initial report, Lafayette College lacks proper signage and accessibility, especially from the Bushkill Drive entrance to the college. As it stands now, the entrance to Lafayette College lacks aesthetic appeal and clarity about the location of the school. One step towards this is providing a sufficient entrance in the BC for both Lafayette College and the city of Easton.

VISION

The TC team recommends that Area 10 be used as an information center for visitors of the BC. Given its location, Area 10 has potential to fulfill Lafayette's and Easton's need for a more sufficient entrance from Bushkill Drive. Area 10 will have an information center, short-term visitor parking, as well as trail access to the KSAT and Riverview trail system. The area will also contain a bike share program in which community members can rent a bike and ride along the various trails in the area. The TC team believes that this recommendation is critical because it truly connects Lafayette College and Easton with the BC and allows the school and city to showcase the amenities of the BC.

The vision for the information center is that it will serve as headquarters for the BC. The corner lot is a valuable property because users have easy access to the College to the West, City to the East, and BC to the South. Therefore, the information center will connect each of these entities, improving things like accessibility, clarity and coherence between the three.

The Information Center's design will be a simple structure which provides short term parking for visitors, maps, and directions towards College Hill and the rest of Easton. The area will also contain a bridge which provides access to the KSAT. The Information Center will highlight and focus on aspects of the Bushkill Corridor campus such as the KSAT connection, Iron Works Park, Rope Walk and Silk complex, and Bushkill Environmental Education Center. This will help with the vision of a connected corridor in that each community will benefit greatly by having a center dedicated towards providing visitors with resources and directions to various attractions and spots in Easton and the College, especially along the BC.

The actual structure of the building will look similar to an outdoor information center found outside a national park or trail system. The building is meant to have 24 hour access for visitors and will serve as a kiosk promoting different businesses and amenities in Easton as well as the College.



Equally important to providing a better entrance from the BC, proper landscaping and signage will greatly improve the area as well as incentivize its use. Especially for first time visitors, the drive down Bushkill Drive is lackluster. The TC team has identified poor signage and lack of clarity as an issue and believes it is important that the area at the intersection of Bushkill Drive and Detrich Road be cleaned up with landscaping and appropriate signage. The team proposes significant landscaping in the area as well as the addition of a large sign that is built or carved into the cliff, reading “LAFAYETTE COLLEGE” and “EASTON.” Similar to the sign at the other side of campus and on the highway which reads “Welcome to Easton”, the proposal to create a better entrance will give users more confidence about where they are, where they want to go, and how to get there.



RESOURCES FOR FUTURE PLANNING

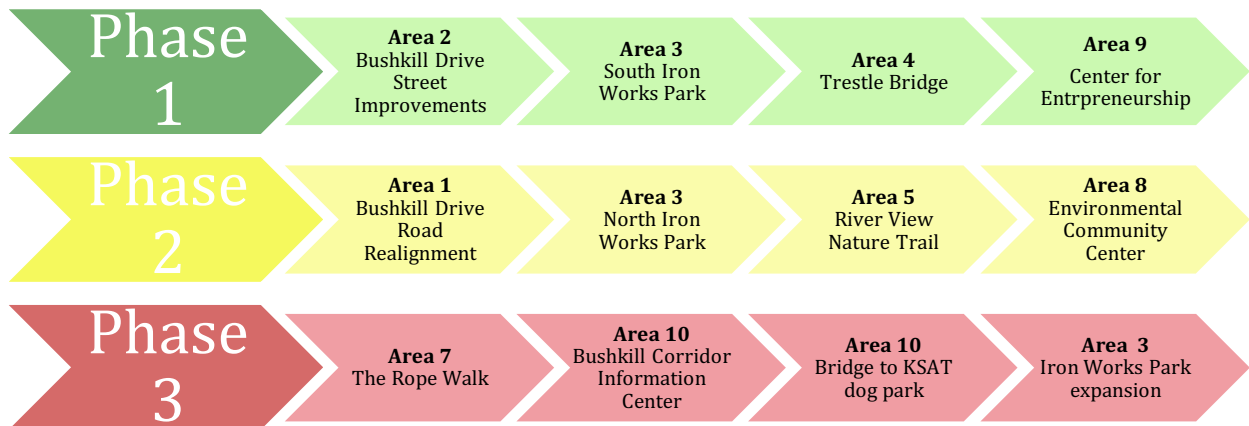
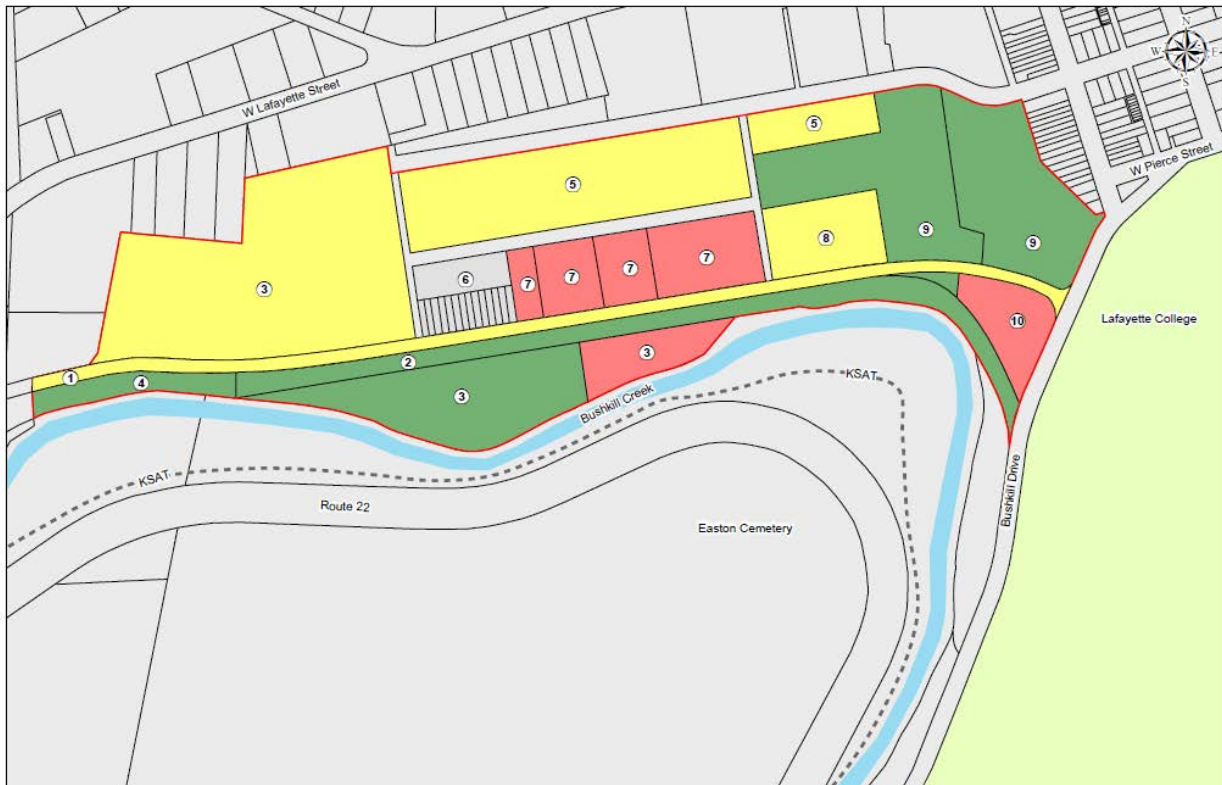
Although the TC team will no longer be pursuing the Bushkill Corridor project, we hope aspects of the recommendations will be taken into consideration. The TC team encourages the use of Lafayette and City resources to further develop our proposal in the future, or other ideas that may be inspired by it.

Continued research and development may be conducted by Lafayette College students of all majors. Engineering students may produce detail site plans for the proposed development areas as their senior year capstone project, for example, or economics majors may produce a financial plan to accomplish select phases of the development. Future TC teams can be charged to further refine a single concept that has been proposed. The TC team anticipates there will be numerous opportunities for continued Lafayette College involvement in revitalization efforts of the BC.

Likewise, the TC team envisions opportunities for city involvement and new partnerships. As development of the BC progresses, we encourage the involvement of the Nature Nurture Center to offer expertise in innovative programming and curriculum. The TC team also encourages a partnership with the Da Vinci Science Center to expand the horizons of the proposed learning center. Finally, the TC team urges local business and new startup companies to inhabit the available commercial space at The Rope Walk to support the entrepreneurial spirit of the revitalized BC.

As the team wraps up the project of re-envisioning a future for the BC, we have found that our best ideas involve the concept of a connected corridor. The location of the BC and its connection to historic and natural assets, give it an interesting dynamic in which the corridor can provide benefits to many different parties. Therefore, the final recommendation to the City and College is that the two continue to foster the relationship that currently exists. Many of the solutions are made even better by allowing both communities to reap the benefits of the other. While the two clients have an obvious connection in that Lafayette is a part of Easton, the TC team believes that more partnerships and programs between the two will benefit the redevelopment and creation of the future of the BC.

TIMELINE



Phase 1

The team identified that these proposals should be addressed initially:

- **Street improvements:** The right of way is currently owned and accessible to the city of Easton and is crucial to creating a connected corridor.
- **Iron Works Park:** Splitting the Easton Iron & Metal property into two phases, the north and the south sections, will help make it a more manageable project. The town must first purchase the property and begin cleaning up potential land contamination.
- **South Iron Works Park:** The southern part of Iron Works Park will provide the corridor with a green space that is much needed. Implementing this part of the park will not require significant investment or construction.
- **The Lafayette College Center for Entrepreneurship:** Given that this parcel of land is currently owned by Lafayette, it is intuitively the next step in the expansion process.

Phase 2

The team identified that these proposals should follow phase one of development:

- **Road Realignment:** Changing the road will take significant planning and construction. However, it is important in creating the Iron Works Park.
- **North Iron Works Park:** Upon completion of the road realignment, the park will become a single entity and the northern amenities of the park may be developed.
- **Riverview Nature Trail:** Although the trail system will not be expensive nor difficult to construct, it relies heavily on the development of Iron Works Park.
- **Bushkill Environmental Community Center:** Lafayette College owns the proposed space for the center, although its location puts its development second behind the Center for Entrepreneurship.

Phase 3

The team identified the long term goals for the vision. These parcels are not all owned by a single entity and thus will require more collaboration and time for implementation. These proposals should be considered and developed last:

- **Bushkill Corridor Information Center:** This parcel is currently privately owned and likely contaminated. Its creation requires further development of the BC.
- **The Rope Walk:** This parcel is currently owned by various private entities therefore the purchase and construction of it will require significant time and investment.
- **Iron Works Park (Deiter Brothers portion):** This parcel is currently privately owned and also likely contaminated.

ACKNOWLEDGEMENTS

Thank You

The Technology Clinic team would like to thank those who have been involved in this project. Grateful acknowledgement is made to our two clients, The City of Easton and Lafayette College for allowing the team the opportunity to work on the project. The team would like to specifically thank Roger Demareski and Dave Hopkins for their time and attentiveness to our project and recommendations. The TC team would also like to acknowledge Jared Mast, Richard McCateer, Gretchen Rice, Mike McGuire, David Drinkhouse, Mayor Panto and others for speaking to the team and contributing to the revitalization effort. Sincere thanks are extended to Dan Bauer and Lawrence Malinconico for their dedication to the Technology Clinic program and for their mentorship throughout the semester. Finally, the members of the Technology Clinic team would like to thank their advisors, David Brandes and Jim Toia, for their guidance and effort throughout the project. To all others, we appreciate and thank you for your time and consideration towards the redevelopment efforts of the BC.

Lafayette College Technology Clinic

December 8, 2017

REFERENCES

“2016 Annual Report.” *Children and Nature*, www.childrenandnature.org/annual-reports/2016-annual-report/.

Arnold, Katie. “500 Simple, Creative Strategies for Getting Kids Outdoors.” *Outside Online*, 10 Mar. 2017, www.outsideonline.com/2059661/5-ways-get-kids-nature.

“A CLEAR VISION - Why Children Need to Be Taught Outdoors and How to Do It.” *Children & Nature Network*, 26 Jan. 2016, www.childrenandnature.org/2016/01/22/a-clear-vision-why-children-need-to-be-taught-outdoors-and-how-to-do-it/.

“Home Page.” *Greenheartsinc*, www.greenheartsinc.org/.

Louv, Richard. “Ten Reasons Why Children and Adults Need Vitamin N - Richard Louv.” *Richard Louv Blog Full Posts Atom 10*, Richard Louv, richardlouv.com/blog/Ten-Reasons-Why-Children-and-Adults-Need-Vitamin-N/.

Louv, Richard. “VitaminN.” *Children & Nature Network*, www.childrenandnature.org/vitaminn/.

“Science Fair.” *RobbinsPark Environmental Education Center*, Tangient LLC, robbinspark.wikispaces.com/History.

“VitaminN.” *Children & Nature Network*, www.childrenandnature.org/vitaminn/#.

APPENDIX A

Environmental Education:

- (1) Environmental education (EE) is the teaching of individuals, and communities, in transitioning to a society that is knowledgeable of the environment and its associated problems, aware of the solutions to these problems, and motivated to solve them. The United Nations Educational, Scientific and Cultural Organization (UNESCO) states that EE is vital in imparting an inherent respect for nature amongst society and in enhancing public environmental awareness. UNESCO emphasizes the role of EE in safeguarding future global developments of societal quality of life (QOL), through the protection of the environment, eradication of poverty, minimization of inequalities and insurance of sustainable development (UNESCO, 2014a).
- (2) According to the Environmental Protection Agency (EPA) : Environmental education is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions.

The components of environmental education are:

- **Awareness and sensitivity** to the environment and environmental challenges
- **Knowledge and understanding** of the environment and environmental challenges
- **Attitudes** of concern for the environment and motivation to improve or maintain environmental quality
- **Skills** to identify and help resolve environmental challenges
- **Participation** in activities that lead to the resolution of environmental challenges

Environmental education does not advocate a particular viewpoint or course of action. Rather, environmental education teaches individuals how to weigh various sides of an issue through critical thinking and it enhances their own problem-solving and decision-making skills.

The National Environmental Education Act of 1990 requires EPA to provide national leadership to increase environmental literacy. EPA established the Office of Environmental Education to implement this program.

- (3) According to Robbins Park, “Environmental education (EE) teaches children and adults how to learn about and investigate their environment, and to make intelligent, informed decisions about how they can take care of it. EE is taught in

traditional classrooms, in communities, and in settings like nature centers, museums, parks, and zoos. Learning about the environment involves many subjects—earth science, biology, chemistry, social studies, even math and language arts—because understanding how the environment works, and keeping it healthy, involves knowledge and skills from many disciplines. EE works best when it is taught in an organized sequence. In schools, EE often reflects state and national learning standards. "Done right," EE not only leads to environmentally literate people, but also helps increase student academic achievement.

Environmentally literate persons know:

- That their daily choices affect the environment,
- How those choices can help or harm the environment, and
- What they need to do—individually or as part of a community—to keep the environment healthy and sustain its resources, so that people enjoy a good quality of life for themselves and their children.

Environmental literacy promotes human health and environmentally literate people act on their beliefs.*

Inspiration: Robbins Park

Robbins Park Model:

Robbins Park Environmental Education Center began as a dream in 1970. Science students and faculty saw the need for an undisturbed area within the township to carry out environmental education programs. There was also the desire to build an attitude of ecological concern within the community. Through negotiations between Upper Dublin School District and Township, the Robbins Park area was chosen because of its accessibility to our schools, and its relatively undisturbed state. The School District and Township joined together to provide funds to support and develop Robbins Park. The 38 acre park supports over 25 different programs and activities for environmental and outdoor education. They are designed to supplement and enrich Upper Dublin classroom lessons and are aligned with PA Standards. Kindergarten through twelfth grades and community groups may explore the natural world around them through observation and hands-on experience. The park fosters integration of other subjects such as field research, photography, creative drawing, creative writing, history, social studies, and language. Our mission is to empower our students and community to be lifelong stewards of the environment. We teach conservation of natural resources and promote “eco-friendly” tips for recycling, composting and repurposing items. Students are charged to take ownership and responsibility for the protection of Robbins Park, and the environment. Robbins Park educators also sponsor special peer instruction by high school students in the Environmental Education Club (EEC) to mentor sixth and second graders.

The sixth graders develop team building skills and participate in a comprehensive environmental education camp for two days at the park. Second graders receive a classroom lesson on a butterfly life cycles from high school student.

Robbins Park Mission: To provide hands-on, minds-on understanding of our environment as an interconnected system. We connect the school classroom to our ecosystem through integrating curriculum (including PA Common Core Science Standards). We strive to promote an awareness and appreciation of our natural world and create stewards of sustainability for life.



Dear Upper Dublin Parents,

Fall 2014

Has your child been telling you about Robbins Park? We are sure you have heard about the cool animals, the bird blind and the pond. Maybe your child has planted a seed, tapped a Maple tree or learned about our local watershed by tracing the path of the north branch of the Rose Valley Creek. Perhaps you are alumni, or have enjoyed birding, hiking or picnicking at Robbins Park. Let us tell you more!

Robbins Park is 38 acres of parkland administered by a unique partnership between School District of Upper Dublin and Upper Dublin Township. Over the years, through mutual agreement with the Township, School District of Upper Dublin has generously provided funding for a director and staff for this unique, fully integrated science curriculum. The Township maintains the grounds throughout the year, as well as out-sourced science camps in the summer.

Robbins Park has developed into a vital extension of the K-6 science curriculum for every student. The high school environmental science teachers bring classes for data collection and field work. K-5 grades come to the park a minimum of three times per school year. We don't call it a field trip because it is an extension and enrichment of their classroom. *It is their outdoor classroom!* Your child will develop special skills documented in studies of outdoor education. These skills are developed through engaging critical thinking, learning personal/social skills, and increasing academic performance. "The outdoor experience can motivate learning, awaken senses and renew a sense of wonder." (www.neefusa.org)

This real-world, hands-on, minds-on, outdoor experience has been proven to be a crucial component to a child's comprehension and development. Today, educators know there are four main ways that children learn. Each lesson captures the attention of students in a variety of ways: auditory, visual, read-write and kinesthetic. A RP science journal is utilized in summarizing and integrate many subjects.

Robbins Park Environmental Education Center is one of the academic points of pride of School District of Upper Dublin. No other surrounding district has such a vital resource. Be sure to make Robbins Park a topic of discussion at the dinner table. Ask your scientists about their lesson and come for a visit. Your student can teach you what they learned!

Check the Park at www.robbinspark.wikispace.com

1419 E. Butler Pk Ambler PA 19002 (across from Meetinghouse Rd & Temple Ambler)

215-641-0921 robbinspark@gmail.com

Lisa Fantini, Director of Robbins Park

Robbins Park Curriculum:

- Curriculum: Progressive by Grade
 - Kindergarten:
 - Senses (Psychology/Biology)
 - Hibernation (Biology Department)
 - Animal Habitats (Environmental Studies)
 - "Green", Planting, Gardening, Soil/Flowers (LaFarm/EcoReps)
 - First Grade:
 - Seasons (Seasonal detective)
 - Weather station
 - Second Grade:
 - Plants and Animal Classification (Bio Dept)
 - Dinosaurs and Fossils (Geology Dept)
 - Pond Study/Water Cycles (Geology/Environmental Studies)
 - Patterns in Nature (Geology/Environmental Studies)
 - Third Grade:
 - Insects (Biology Department)
 - Rocks and Minerals (Geology)
 - Animal adaptations
 - Plants and Wetlands (Biology Department)
 - Fourth Grade:
 - Populations (Darwin-Bio and Sunderlin)
 - Tree Adaptations (Sunderlin)
 - PA Agriculture (LaFarm-Sustainability)

- Fifth Grade:
 - Ecosystems (Geology/Environmental Studies)
 - Watersheds (Geology/Environmental Studies)
 - Artists and Science (Karl Stirner Arts Trail, Art Department)
 - Colonial Life (History Department)

Sixth Grade Science Camp: “The Environmental Education Club’s mission is to promote getting outdoors, stewardship, awareness & educate members about sustainability and the environment; who in turn, learn to teach these important concepts through exciting activities to students and the community. It is educating the people on the profound effects their daily choices can have on the environment today, and for future generations. The hope is that 9th grade students start as members and get more involved as board members as they get older & experienced. The members are responsible for disseminating knowledge and facilitating Single Stream Recycling, Energy Conservation & “No-Waste” Lunch to other High School and elementary students and teachers. The students have the opportunity to be teachers and peer counselors for the sixth grade science camps at Robbins Park. Members of the “EEC” go into the elementary classrooms and school assemblies to teach children about sustainability. The sixth grade science camp involves: Team Building Challenges, Water Studies – Macro-Invertebrates & Chemistry, How to ID Trees, Geocaching: Survival & Orienteering, Adaptations, Sustainability and Weather”.

- High School Curriculum
 - EEC (Environmental Education Club)
 - Soil Testing
 - Water Study
 - Energy & Green Building; Scavenger Hunt

Additional Related Research:

There is astounding research being done that investigates the frightening phenomenon that is pervasive in today’s youth. The rising generation is severely deprived of outdoor exploration, natural stimulation, and enriching learning experiences. As obesity levels rise due to the increasingly sedentary lifestyles of young people, experts notice that children spend an exorbitant amount of time indoors and in front of screens. This severely limits their creativity, wonderment, attention span, academic performance and social skills.

One of the powerhouses behind this initiative is Green Hearts Incorporated.

Green Hearts is a nonprofit conservation organization dedicated to restoring and strengthening the bonds between children and nature. We teach, train, and speak nationwide about the importance of nature play and how it can be restored. Green Hearts is also developing our first play-focused “children’s nature center” near our headquarters in Omaha, Nebraska.

Greenhearts identifies that *nature play* has been the staple of development during childhood for generations. Since one in five four year olds in the U.S is clinically obese, Greenhearts reaches the positive effects of outdoor play for young kids. They identify that habits of playing outdoors serves as a predictor of active adults. They talk about the benefits for school children in that “school children who use playgrounds with trees, fields, shrubs and vegetated edges show more creative play, better concentration, and more inter-gender play that peers with equipment focused playgrounds”. They note that outdoor play in green settings reduces the symptoms of ADHD in children as well as that “according to the ‘hygiene hypothesis’, early exposure to plants, animals, and soil helps children’s immune systems to develop properly”. The BECC & Outdoor Learning Lab in conjunction with the Easton Iron and Metal Park and the Historic Easton Nature Trails will satisfy the recommendations of Greenhearts perfectly. In addition, Greenhearts shares that “frequent, unstructured childhood play in natural settings has been found to be the most common influence on the development of lifelong conservation values”. If this goal is achieved, then one of the main outcomes of the BECC will be satisfied, as young children become stewards of a sustainable future. “We have unintentionally removed a life force that has been at the center of children’s physical, social, emotional, creative, and intellectual development throughout the history of humankind” (Greenhearts).

In Greenhearts, *A Parent’s Guide to Nature Play*, the family experience is explored as it could be actualized at the BECC. Ideas like planting a veggie garden, building bird houses, creating discovery boards, gathering leaf piles and teaching kids about leaf types, educating children about decomposition and composting, horticulture, rocks and boulders, tree climbing, hydraulics, campouts, how to build a fire, and walks in the creek are all feasible objectives. The BECC would provide tools such as nets, cameras, bug cages and binoculars to create an optimal experience.

Another branch of research known as “Vitamin N” is being conducted by Richard Louv of the Children and Nature Network. Richard Louv is Co-Founder and Chairman Emeritus of

the Children & Nature Network, an organization supporting the international movement to connect children, their families and their communities to the natural world. Louv remarks that “children in nature are an endangered species”, but he’s optimistic that no act is too small and every child and family can make a difference. His new book *vitamin N*, serves as a manual that provides over 500 suggestions for how to create a connection between kids and the natural world, “It’s no longer enough to strive for a sustainable future for our children and their children, he argues. We must create a nature-filled world, starting now—in our families, neighborhoods, and communities”. He believes, “the whole family-and whole communities- can become happier, healthier and smarter through more contact with the natural world”.

He outlines ten principles that are so relevant to the BECC and both communities it serves. They are as follows:

1. Get to know the research. Environmental literacy is essential, but that’s only part of the story. A growing body of evidence suggests that time spent in more natural environments (indoors or outdoors) can reduce the symptoms of attention disorders, and improve cognitive functioning as well as creativity, socialization and mental and physical health. Abstracts and links to original research for more than 200 studies on children and nature can be found at the Children & Nature Network (C&NN) Web site, as well as C&NN’s downloadable report on the specific educational benefits.

2. Join the Natural Teachers Network. “What teachers need to do is network on these issues, get ideas from each other, gripe about what is not working, and brainstorm solutions,” says Tamra L. Willis, Ph.D., assistant professor in the Graduate Teacher Education Program at Mary Baldwin College in Staunton, Virginia. “There are many challenges related to taking kids outdoors, such as curriculum/standards integration, discipline, materials management, safety, etc. By networking, teachers can share ideas, support each other, and know they are not alone.”

Here's how to join C&NN's Natural Teachers Network. And download the free Natural Teachers eGuide, which describes programs that your school can emulate.

3. Teach the teachers — and the principals, superintendents, and school board members, too. Many teachers feel inadequately trained to give their students an outdoors experience, and all educators need to know about the benefits to education and the opportunities that already exist. In challenging economic times, community resources may be tapped. For example, many wildlife refuges provide professional development programs that have been correlated to public school curriculum standards. But long-term progress will depend on higher education and the incorporation of nature experience into teacher education curricula.

Two great programs lead the way. The new Nature-Based Early Childhood Certificate program at Antioch New England even includes a Business Planning course by nature preschool pioneer Ken Finch. And Mary Baldwin College offers an environment-based learning (EBL) graduate programs designed specifically for educators.

4. Create a Natural Teacher Club. Robert Bateman, the famous Canadian wildlife artist, suggests that teachers and other educators create their own clubs that would organize weekend hikes and other nature experiences for teachers. Such clubs would not only encourage teachers experienced in the natural world to share their knowledge with less-experienced teachers, but would help improve the mental and physical health of teachers. These experiences can be transferred to the school.

Added note: one study shows that educators who get their students outside are more likely to retain their enthusiasm for teaching. It can be an antidote to teacher burnout.

5. Green your schoolyard. Studies suggest that school gardens and natural play spaces stimulate learning and creativity, and improve student behavior. To get started, download the U.S. Fish and Wildlife Service's Schoolyard Habitat Project Guide. Tap the knowledge of such programs as Evergreen in Canada, and the Natural Learning Initiative in the United States. Also, see a worldwide list of schoolyard greening organizations, including ones in Canada, Norway, Sweden, the United Kingdom, and the United States.

6. Bring nature to the classroom. Start a Salmon in the Classroom project or similar endeavor. In Washington State, participating students in over six hundred schools have

received hundreds of hatchery eggs to care for in classrooms. Students learn about life histories and habitat requirements and later release the salmon into streams they have studied. Similar programs exist in other states and countries, including Alaska and Canada. (Some schools, worried about salmonella contamination, don't allow any animals in classrooms. Still, hands-on nature teaching can offer teaching moments, such as: Wash your hands.)

7. Create nature-based community and family classrooms. An outdoor classroom is much less expensive than building a new brick-and-mortar wing. Schools, families, businesses and outdoor organizations can work together to encourage parents to create family nature clubs, introduce students to nature centers and parks, and sponsor overnight camping trips. Or, school districts can follow Norway's lead and establish farms and ranches as "the new schoolyards," not incidentally creating a new source of income to encourage a farming culture.) See the Farm-Based Education Network and an overview of agriculture and the classroom.

8. Help start a nature-based preschool or charter school. Help increase the number of nature-based preschools as well as public, charter, or independent K-12 schools that place community and nature experience at the center of the curriculum. Resources include Green Hearts and Antioch's Center for Place-based Education.

9. Establish an eco-club. One example: Crenshaw High School Eco Club (led by the remarkable natural teacher Bill Vanderberg), has been among the most popular clubs in the predominately African-American high school in Los Angeles. Students have gone on weekend day hikes and camping trips in nearby mountains, and on expeditions to Yosemite and Yellowstone national parks. Community service projects have included coastal cleanups, nonnative invasive plant removal, and hiking trail maintenance. Past members become mentors for current students. Student grades improved. Lives were changed. To learn more, see the CBS Early Show report on Crenshaw's Eco Club.

Unfortunately, Vanderberg has been transferred to another school, and the Crenshaw club no longer officially exists. Plans are afoot to revive it, in a new form outside the school. Which brings us to the next point.

10. Help grow the children and nature movement. While educators can't change the society alone, the truth is that too many schools and school districts fail to start or support

good programs to get kids outside. That's one reason why the regional and state No Child Left Inside campaigns around the country are so important: by building community support, they bring social and political heft to the table. These campaigns, especially with teacher support, also encourage parent-teacher groups can support schools and educators financially and by presenting annual Natural Teacher awards to educators who have engaged the natural world as an effective learning environment.

Just think what teachers, school administrators, superintendents and other educators could accomplish with a little help from, say, business schools — and from the rest of us.

He goes on to provide ten reasons children and adults (Lafayette College students) need nature:

1. **The more high-tech our lives become, the more nature we need.**
2. **Humans are hard-wired to love and need exposure to the natural world.**
3. **We suffer when we withdraw from nature**
4. **Nature brings our senses alive.**
5. **Individuals and businesses can become nature smart.**
6. **Nature heals.**
7. **Nature can reduce depression and improve psychological well-being.**
8. **Nature builds community bonds.**
9. **Nature bonds families and friends.**
10. **The future is at stake.**

APPENDIX B

What is a QR Code?

A QR Code is the abbreviated way to refer to a Quick Response Code, which is a type of matrix barcode. A barcode is a unique group of lines that is “machine-readable optical label that contains information about the item to which it is attached. A QR Code consists of black squares arranged in a square grid on a white background, which can be read by an imaging device such as a camera. The required data is then extracted from patterns that are present in both horizontal and vertical components of the image”.

QR Codes were originally made for the automotive industry, however, due to QR Codes’ fast readability and large storage capacity, they became increasingly more popular for other applications, such as “product tracking, item identification, time tracking, document management, general marketing,” and more.

How are QR Codes used?

Handlers easily use QR Codes by simply scanning the barcode with a barcode reader application on an iPhone, iPad, or other smartphone device. Once the barcode is scanned it will recognize the unique code and bring up the information that is encoded for this particular QR Code.

Why QR Codes?

QR Codes were identified as a way to preserve the historical integrity of the area in a technologically savvy way in order to appeal to the College community of millennials, as well as the fast and growing technological community. QR Codes are a practical way to integrate these ideas within the BDC because Codes are used daily on coupons, magazines, billboards, websites, barcodes, and more, therefore downloading a QR Code scanning application will not only serve a purpose on the BDC, but also in everyday life. We also believe that this medium is perfect for this area because it will be able to easily be updated and modernized with time.

In line with this idea, these QR Codes will be created under one large QR platform, housed and managed by the technology incubator. This program will be able to pull all the

information together in one format and include as much or as little information as needed. Different curriculums, pictures, and videos can be continually added over the years to keep the information relevant and current.

As for the actual visualization of the application, it will be an aesthetically pleasing way to view information in a PDF-like format. This will include large text with embedded pictures and videos. We would like to include historical photographs scanned into the application in order to achieve our goal of maintaining the historical significance of the area, whether or not the buildings are kept or taken down and rebuilt.

This idea also aligns with our phased approach for the BDC; we first want to create Codes for the key areas. As more buildings are constructed, we can add to our collection of Codes. Later on in our plan, we can also print Codes on pre-existing photos and signs in the area to provide more detailed information and context. We also want the Learning Center facility to be a part of this initiative and by allowing teachers and local Easton schools to send information and quiz-element questions to the technology incubator, we hope that the BDC can be integrated into the local school system and other community organizations. The goal is to add both an academic and a scavenger hunt flavor to the Codes, eliciting excitement and mystery.

What will a QR Code in the area look like?

A QR Code can be downloaded in several different high-resolution file formats, for example, JPEG, PNG, EPS, or SVG, which will allow for flexibility when printing and implementing QR Codes in the area. Codes can also be printed in any size, color, or on any medium without compromising the quality of the Code. As the area becomes more populated and more QR Codes are added to the area, we can print Codes on new signs or add them to pre-existing signs.

How is a QR Code created?

A QR Code is made and customized with a QR Code generator. By selecting colors and shapes, a unique QR Code can be made and a company logo or other image can even be inserted within the QR Code if needed. There are also many ready-made design templates that can be found online. QR Codes come in many forms and can include flashy additions, in order to motivate users to scan the Codes. As previously mentioned, there are also a variety of functions for QR Codes, which may impact the look of the Code.

Can QR Codes be changed?

Dynamic QR Codes encode a short URL that links to the content so there is full flexibility to modify the stored links or files without having to generate and print new Codes. This saves resources and will ensure that we can respond to any needed changes to the Codes. This will also help us guarantee that our users are viewing new content and if there are changes in the area, those changes will be reflected in the Code information as well. We hope to use Dynamic QR Codes when partnering with the Learning Center, in order to implement quiz questions for the students and allow different users to submit information that may be educational for the users, which will be reviewed and then added to the most applicable Code.

Who will be in charge of the QR Codes?

With our suggestion of adding a technology incubator in the area, we hope that this space, with the help of students, faculty, and staff, in addition to other employers will be able to manage the information encoded in the QR Codes. We think that this partnership would be fruitful and informative for both parties and will allow for the most amount of attention and upkeep of the Codes. Additionally, QR Code campaigns have an account sharing option in order to allow several users to access and edit the information that is stored in each Code. There is an option to add administrators or give certain people the ability to view the statistics. This will help us divide the responsibility of updating the encoded information among different employers, teachers, and students and streamline our program in order to make cross-departmental cooperation simpler and easier.

What is the impact of QR Codes?

After a QR Code is created, the scan statistics can be tracked, for example, how many times, when, where, and with what devices the Codes have been scanned, via raw data tables that are compiled. This information is important because as the area continues to grow, we can see how many users are utilizing our Codes and add more information to those that are highly frequented and think about moving the location of those that only receive a few scans a week. Additionally, this can help us make sure that there are no problems with the Codes or changes in performance.

When will this be implemented?

In the beginning, we hope that we can start to implement these QR Codes in the parks first and then as this initiative continues to succeed, we hope to increase the number of Codes, adding Codes along the trails in the area and other popular destinations along the BDC. Once initial implementation occurs, the Codes can be executed in a phased approach.

What will be encoded on the QR Codes?

QR Codes can include pictures prior to BDC renovations, historic photos, information about the Bushkill Creek, information about wildlife in the area, and more. For example, a QR Code placed at the start of the trestle bridge could include a photo prior to improvements and other relevant information