LAFAYETTE
ENGINEERING COMPANY

Department of Civil and Environmental Engineering
Lafayette College
-
CE473 – Senior Capstone Design II
Spring 2015

SUSTAINABILITY REPORT

Date: Tuesday, May 12, 2015

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Group: Sustainability Committee

Title: **SUSTAINABILITY REPORT**

Executive Summary:

This report outlines the sustainability evaluation for the Senior Capstone Design project. To begin this evaluation, each project team's sustainable considerations are introduced. The sustainable development philosophy of the project is broken down and explained in three main categories: environmental sustainability, economic sustainability, and social and cultural sustainability. These categories are further explained through the evaluation of the superstructure's materials, the distribution of transportation modes traveling between campuses, and the operation costs comparisons of the structure to pre-existing transportation routes.

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1. Introduction

In today's society, sustainability is becoming increasingly important with the growing concerns of global climate change. The goal of the "Elevating Easton" project was to increase the connectivity between Lafayette College main campus, the new and developing arts campus, and Downtown Easton. This project was designed to fit into the Lafayette College 10-year Master Plan while keeping in accordance with the Easton Historic District zoning that is in close proximity to the site. The proposed site location was not only in close proximity to the Historic District of Easton and Lafayette College; it is within the flood plain of the Bushkill Creek, a high quality river. This emphasizes the importance of considering sustainability in the design process to limit the necessary treatment of any additional runoff and contamination created by the project. With the intent of this project to increase the pedestrian traffic between Lafayette College and Downtown Easton, special attention was given to understanding the potential economic benefits to the area as well as possible safety concerns that could arise.

Sustainability was a major consideration in the design of this project by all project teams. Examples of how sustainability was considered by the project teams are provided in Table 1.

Table 1: Examples of how sustainability has been considered in the design process

Project Team	Consideration of sustainability during design
Structural and Geotechnical Design Team	Steel was selected over concrete for the elevator track superstructure to reduce the design loads required to be carried by the pier supports and foundations, saving materials, energy, and cost.
Construction Management Team	Construction of the elevator track was designed to proceed from the base using the completed sections as means to move equipment and materials up the hillside. This approach reduces disturbance along the steep hillslope and eliminates the need for a heavy crane.

Marketing Team	Students interviewed numerous businesses and Easton Police to determine the benefits of this project to the surrounding area businesses and maintaining/improving safety.
Site Civil and Transportation Team	The introduction of the elevator helps to increase the pedestrian friendly environment Lafayette College is trying to promote. The increased pedestrian traffic will reduce the number of vehicular trips made to and from the Arts Campus and Downtown Easton.
Environmental Team	The Environmental Team worked to manage the current and predicted runoff by constructing infiltration gardens and green roofs. They also worked to manage the sediment loading and erosion of the steep slope during and after construction.

Rather than describe all examples of how sustainability has been applied to this project, this report focuses on three aspects where a more in-depth investigation was performed to make a particular design decision. The three aspects that will be focused on are:

1. The material selection for the track superstructure
2. Comparing the current distribution of transportation usage between main campus and the arts campus with a desired distribution for a forecasted future demand
3. Comparing the costs to maintain and operate the elevator compared to the Lafayette College Area Transportation (LCAT) shuttle

A main concern in this project was that a large portion of Downtown Easton is zoned within the Historic District. Even though the project site was not zoned historic, the project was kept in accordance with most of the guidelines to ensure a seamless integration of the project into the Easton community. This information can be found in the Historic District Report. A further in-depth analysis of how each team incorporated sustainability into their aspect of the project can be found in each individual report.

2. Sustainable Development Philosophy

According to the Bruntland Commission, sustainable development meets the needs of current generations without compromising the ability of future generations to meet their own needs. Sustainability can be broken down into three pillars: environmental, economic, and social & cultural. These three combine to ensure that the project and the local environment can meet the demand the project was introduced to address, without substantial degradation. The various combinations that these three pillars can create are shown in Figure 1 below.

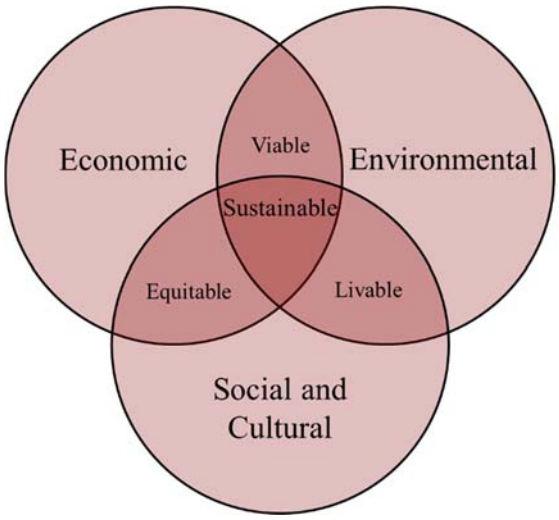

Figure 1: Venn diagram showing the relationships between the three pillars of sustainability

To help integrate the philosophy of sustainability into design, environmental, economic, and social/cultural sustainability were defined in the context of the "Elevating Easton" project:

Environmental Sustainability: The direct and indirect consequences to the built and natural environment associated with the materials selected for the project, the methods used for construction, and impacts of operating the completed facility are in compliance with regulations and in harmony with the overall physical setting.

Economic Sustainability: The costs the build, operate, and maintain the facility over its lifespan are in balance with the anticipated funding or revenue.

Social and Cultural Sustainability: The social and cultural goals of the project are welcomed by the affected communities. This aspect of sustainability also explores the possibility for unintended social impacts.

3. Evaluation of Materials for Elevator Superstructure

In designing the elevator and track system, a superstructure was recommended to reduce damage to the tracks and prevent people from interfering with the system. In designing this superstructure, two materials were primarily considered, COR-TEN Steel and Concrete.

3.1 Approach

In order to compare the two materials quantitatively, we modeled a rating system off numerous sustainability scoring systems like LEED, BREEM, and Envision. After researching each rating system, we concluded that none were simple enough to directly apply to the Elevating Easton project. Therefore, we developed a project-specific personal rating system was developed. This rating system quantifies parts of the structure, which reveals why certain materials were chosen. The rating system was broken down into five categories that could receive a value of one through five. The five categories considered in the rating system are:

1. Embodied Energy

   Embodied energy is the amount of energy used in the production of a material. This energy includes the removal of raw materials, manufacturing, transport, delivery, construction, maintenance, and disposal. In other words, the life cycle

of the material is taken into account when examining embodied energy. When comparing materials for the project, their embodied energies would be analyzed.

2. Recyclability

   Recyclability involves the reuse of a material. There are various benefits to using recyclable materials, such as reducing the amount of waste sent to landfills, conserving natural resources, saving energy, and reducing greenhouse gas emissions.

3. Weight

   The lightness of a material is important to evaluate. Structures constructed using lighter materials may require a less extensive foundation, which reduces the amount of materials and energy expended on the project. Lightweight materials are also better for transportation purposes; it is more fuel efficient to move a lighter vehicle when transporting materials to the site.

4. Lifecycle Costs

   The lifecycle costs analysis determines the real cost over the lifespan of the material from beginning to end. This includes the costs to both purchase and maintain the material.

5. Aesthetics

   The aesthetics category involves the materials' ability to fit in with the surrounding areas of Lafayette College and Downtown Easton. Downtown Easton is part of the historic district, which involves staying true to the history of the area. Additionally, Lafayette College is in the process of implementing the Lafayette College Master plan, which involves the creation of new buildings and

structures with an emphasis on maintaining the school's identity. The material that contributes to both the historic nature of Downtown Easton and the identity of Lafayette College would be ranked higher than the other material.

3.2 Description of Materials

When choosing materials for the superstructure, the two most common materials for structures were investigated: steel and concrete. When looking further into both materials, COR-TEN steel emerged as a suitable candidate. It is a more sustainable alternative when compared to traditional steel, more specifically in terms of painting. Traditional steel must be painted in order to be maintained, but COR-TEN steel does not need to be repainted because it forms its own protective rust. Thus, the following sections will describe the significant features of COR-TEN steel and concrete.

3.2.1 COR-TEN Steel

COR-TEN steel is a weathering steel. It forms a protective rust that slows its rate of corrosion, which both creates an array of color changes and also extends the lifespan of the material. COR-TEN steel has a life expectancy rate of at least 80 years. It is made up of about 95%-recycled

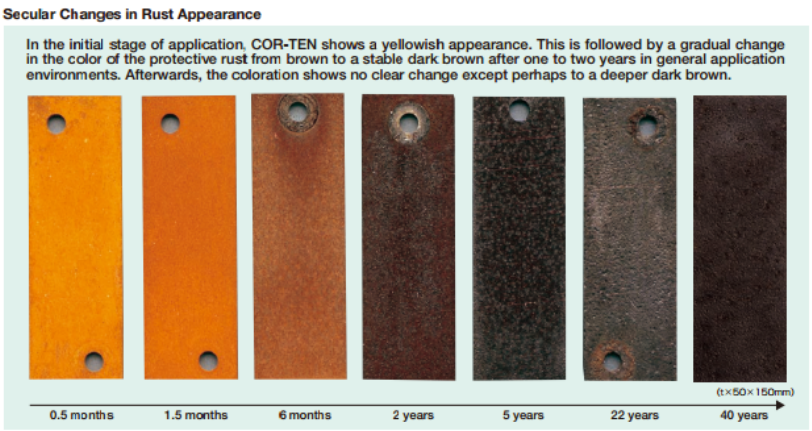

Figure 2: Color changes of COR-TEN steel over a time span of 40 years.

material, does not require weatherproofing, and can be used without being painted. COR-TEN steel also reduces tool damage and requires less power for fabrication purposes reducing the embodied energy associated with the material.

3.2.2 Concrete

Concrete is one of the most commonly used structural materials for frames in buildings or in structures. The color of concrete is usually grey but can be changed with the help of stains, tints, and dyes. Concrete can be crushed and reused as fill, but unlike steel, it is not typically recycled into new concrete. Concrete has a high compressive strength, but because it has a low tensile strength, it is typically reinforced. The typical lifespan of concrete is about 80 years.

3.3 Quantitative Evaluation and Discussion of Results

Using the preceding information, COR-TEN steel and concrete were quantitatively evaluated using the personal rating system. Shown below in Table 2, COR-TEN steel was the chosen material for the superstructure based on the quantitative approach.

Table 2: Superstructure Material Rating System

Category	COR-TEN Steel	Concrete
Embodied Energy	1 2 **(3)** 4 5	1 2 3 **(4)** 5
Recyclability	1 2 3 4 **(5)**	1 2 **(3)** 4 5
Weight	1 2 3 **(4)** 5	1 **(2)** 3 4 5
Lifecycle Costs	1 2 **(3)** 4 5	1 2 **(3)** 4 5
Aesthetics	1 2 3 **(4)** 5	1 2 **(3)** 4 5
Final Score	**19**	**15**

The extra energy used for steel production in the manufacturing phase of a structure containing steel offsets the increased energy used for the construction phases for a structure containing concrete. This reveals that steel has a bit more embodied energy when compared to that of concrete. In terms of recyclability, COR-TEN steel prevails over concrete. It is a 95 – 100% recyclable material, whereas concrete is rarely recycled back into concrete. Steel has a higher strength to weight efficiency than concrete, which is why it scored higher in the category. Both materials have roughly the same lifecycle costs, which is why they were assigned the same numerical value for the Lifecycle costs category. COR-TEN steel would also be the better aesthetic choice for the area. This type of steel is already used in the area, and COR-TEN steel blends into wooded environments because of its brown color. By using this type of steel in the construction of this structure, there will be a sense of uniformity in the area.

4. Distribution of Transportation Modes between Campuses

As the number of classes increases on the Third Street Arts Campus, the number of students and trips generated will be increasing to match the increased demand. According to interview data taken in the fall of 2014, the majority of students sampled do not believe that the current pedestrian routes for travelling between campuses are safe to use. They specifically believed that the LCAT Shuttle was inconvenient with very few students utilizing it.

4.1 Current Conditions

There are three main ways to move between the main campus and the expanding arts campus: walk via either the stairs, College Ave, or Sullivan Trail; take the Lafayette shuttle, the LCAT; or drive in a personal vehicle.

Based on an interview project conducted in the fall of 2015 by the Lafayette Engineering Company, the following breakdown (Table 3) of student trip distribution was determined.

Table 3: Surveyed Trip Distribution among 30 Students

Average Trips per Month per Student	% Walking	% Driving	% LCAT
4.74	40.5%	58.7%	0.8%
% of Trips per Season (during the school year)	**Fall**	**Winter**	**Spring**
	38.0%	25.8%	36.2%

4.1.1 Walking

According to the collected data, about 40.5% of student trips are made on foot. The three route most commonly taken between Lafayette College and Downtown Easton are shown below in Figure 3.

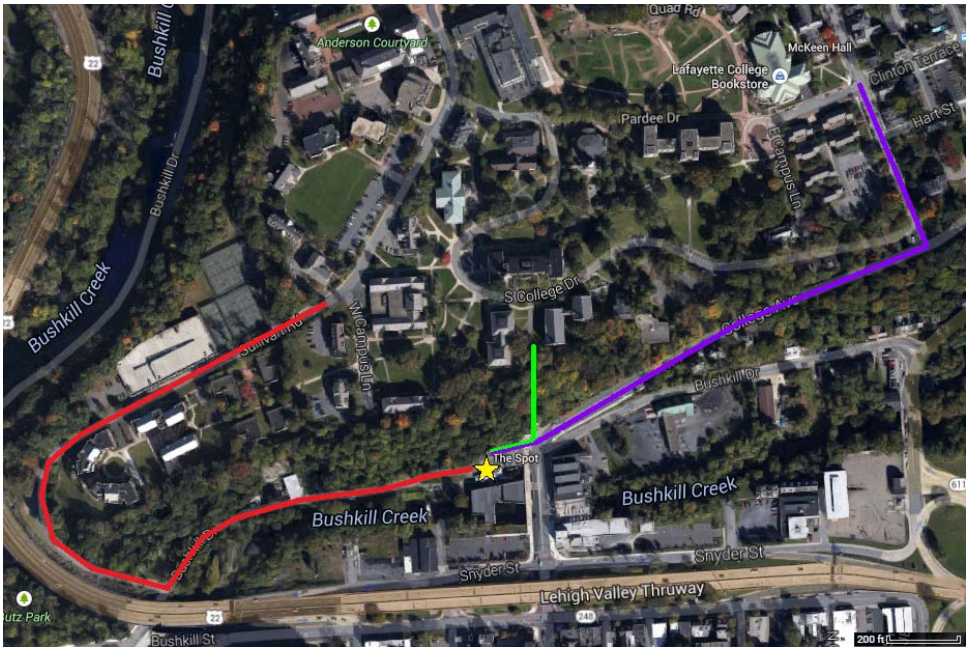

Figure 3: Three Possible Routes to the Spot landing site. Image from Google Maps. Red: Sullivan Trail. Green: The Stairs. Purple: College Ave

The most challenging aspect of this trip is the approximately 150 feet drop in elevation over a distance of 250 feet, making the slope incredibly steep. This makes the walk down the hill manageable, but the return trip can be treacherous. The stairs were built in the late 1800s to connect the top and bottom of the hill and have had few repairs to them since. Due to age and wear, the stone and masonry on the stairs is worn, weathered, and uneven. The steps also have long stretches on a steep incline. This, however, is the shortest way to climb the hill. Examples of the condition of the stairs are shown in Figures 4 and 5.

Figure 4: The entrance to the Lafayette stairs

Figure 5: Example segment of the stairs

Photos from Lafayette College Flickr

The other two methods require detouring around the edge of campus up more gently sloped roads. However, both the Sullivan Trail and College Ave routes have pedestrian safety issues. Sullivan Trail is a sharply curved road with no sidewalk. Because of this and the grade of the road, people tend to speed around the curve close to the shoulder where pedestrians walk. This road is shown in Figure 6. There is a similar issue on College Ave. Even though there is a sidewalk on the southern edge of the road, pedestrians must cross the high traffic, PennDOT road just west of a sharp curve with insufficient stopping sight distance, making this crosswalk very unsafe. This road is shown in Figure 7.

Figure 6: Sullivan Drive

Figure 7: College Ave
Photo from Google Maps Street View

4.1.2 LCAT Shuttle

The LCAT Shuttle is a free shuttle provided to all students to transport them to various places off-campus on a regular schedule. There are three main routes, with an additional airport shuttle around breaks, which the LCAT travels daily: the Metzgar Express, the weekday/Easton route, and the Arts Campus and Downtown route. The Metzgar Express runs to take student athletes to and from the off-campus sports complex. The weekday/Easton route takes students to various stores and locations like Giant, Walmart, and the movie theatre. In the past year or two, the school added an additional shuttle to begin the effort to better connect the two campuses. This shuttle runs every ten minutes during scheduled class times. A full schedule can be found on the Lafayette College Public Safety website. Even though the shuttle is available to all students as a method to travel downtown and to the Arts Campus, the survey data showed that less than 1% of the surveyed student trips are via the LCAT. In an attempt to increase the number of users who take the LCAT, the school created a website and smartphone app that can be used to track the

current location of the shuttle. It can found at www.lafayetteshuttle.org/ or by downloading the app, *Ride Systems.*

An example of one of the buses Lafayette College employs for the LCAT is shown below as Figure 8. A full schedule for the Arts Campus/Downtown route is provided as Appendix 1.

Figure 8: One of the LCAT Shuttles in the fleet. Photo from Lafayette College Public Safety

4.1.3 Personal Vehicle

Driving anywhere on your own schedule is typically much more appealing and convenient in areas outside of large metropolitan areas. As Easton's population was 27,073 as of 2013, it does not qualify as a large metropolitan area with blossoming public transportation system. Based on the surveyed students, over half of student trip are made via personal vehicle. Based on the current parking demand by the students, faculty, and staff, the supply of parking spaces provided near the Arts Campus is sufficient. The current number of parking spaces available by lot near the Arts Campus is shown in Table 4 with a map of the corresponding locations of the lots is shown in Figure 9.

Table 4: Current Parking Spaces Available by Lot for the Arts Campus

Parking Lot Name	Number of Spaces
1. The Spot	25
2. Synder Street	42
3. Williams Visual Arts	9
4. 219 N. Third Street	36
5. 228 N. Green Street	5
Total	117

Figure 9: School-owned parking for the Arts Campus.

Map provided by Lafayette College Public Safety and Google Maps.

4.2 Forecasted Demand

As part of the Lafayette College Master Plan, a new Film and Media Studies building is being completed on the corner of Snyder Street and N. Third Street. This new building is scheduled to be completed and open for classes in January 2016. With this new space being utilized for classes, the total volume of student traffic is set to increase. In a personal communication, Mary Wilford-Hunt, indicated that she expects the number of students and faculty using the 3rd Street campus to double from current levels by Fall 2016.

4.3 Desired Condition using Forecasted Demand

One of the main goals of the Elevating Easton project was to increase the connectivity between the main campus and the new arts campus. With the number of students travelling between the two campuses doubling, the percentage of personal vehicle trips must decrease. The current number of vehicle trips appears to be sustainable, even with the diminished number of spaces available.

Estimating that double the traffic translates to double the classes located down the hill, this indicates that the number of trips during the peak class hours (8am-4pm) will greatly increase. The size of the elevator car is set to hold 20 people. With a five-minute travel time, this indicates that two elevator cars could simultaneously travel down to the Williams Visual Arts building on-demand. With this in place, this should help increase the ease of travelling down for class, reducing the number of personal vehicle trips.

With the further development and adjustment of the LCAT, the number of students riding the LCAT should increase. The Arts Campus/Downtown route is still relatively new and the school is working to improve the functionality and the schedule to best fit the student need.

With the placement of the proposed Intermodal and Welcoming Center at the bottom of the elevator, the Spot parking lot will be removed. This will reduce the amount of parking spaces along N. Third Street by 25 spaces. This new parking space distribution can be seen in Table 5.

Table 5: Parking Spaces Available by Lot for the Arts Campus after Elevator Construction

Parking Lot Name	Number of Spaces
1. The Spot	Removed
2. Synder Street	42
3. Williams Visual Arts	9
4. 219 N. Third Street	36
5. 228 N. Green Street	5
Total	**92**

This data is justified by a parking study computed for the new Film and Media Studies building. This study, completed by an engineering consulting firm contracted by the college in 2013, looked into the parking spaces required by zoning based on the square footages of the buildings. This study can be found in Section 8.2 of this report.

Based on the data collected, two Venn diagrams were created to represent the current and desired distribution of transportation modes, shown in Figures 10 and 11. The overlap in the diagrams represents the fluctuations in a given person's travel mode. This could vary depending on different factors like weather and time available for transit. The current distribution is predominantly personal vehicle trips with slightly less walking trips. The current usage of the LCAT is significantly less than the other modes of transportation. The desired Venn diagram represents the distribution of transportation modes considered to be sustainable without requiring the need for additional parking lots. The increased size of the total diagram represents the increased traffic in the system. The majority of the trips in this new distribution are taken up by walking and LCAT trips. This creates not only a more sustainable campus, it also helps support the initiatives of the Master Plan. In other words, Lafayette College would like to limit the use of cars on campus.

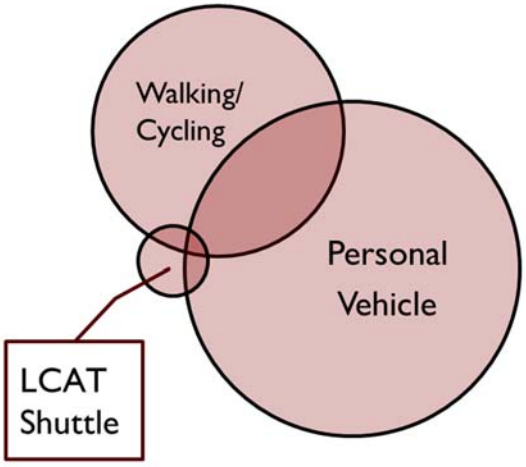

Figure 10: Current Transportation Mode Distribution

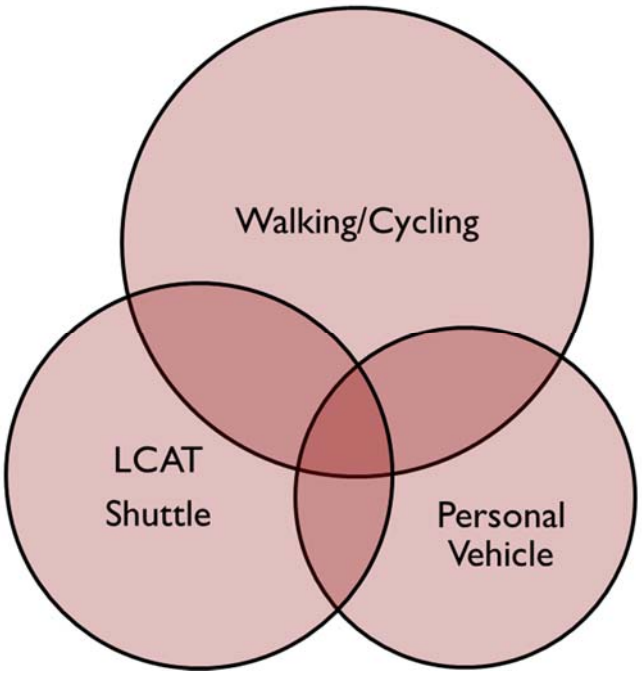

Figure 11: Desired Future Transportation Mode Distribution

5. Operations Cost Comparison

One of the major design alternatives the Lafayette Engineering Company considered during the initial stages of this investigation and design was improving the LCAT schedule. This would have included the addition of a vehicle to the fleet and an increased number of daily trips. For this cost comparison, the initial construction and acquisition costs were ignored. Currently, Lafayette College contracts out the LCAT shuttles to Palmeri Transportation. In the fall of 2014, a group of students in the Engineering Studies Capstone (ERGS 451) investigated the different methods of increasing the connectivity.

5.1 Overview of Costs to Operate LCAT Shuttle to Williams Arts Campus

The approximate number of students that can travel on the LCAT per trip is about 20 students, enough to ensure that at least one entire class can travel between campuses at any given time.

The shuttle, on the current schedule, has a turn-around time of 10 minutes. The schedule starts at 8:30 am and stops at 4:30 pm, which reveals the peak school hours. There are approximately 42 trips during class hours, or the time when students would be travelling to class, with about 76 trips per day. This makes the potential total traffic flow during peak hours of about 840 students and 1,520 people per day. According to the study completed by the Engineering Studies Capstone, the costs of operating the current shuttle on a daily basis is are follows.

> "The vehicles used by Palmeri are not efficient getting 12-14 mpg, and maybe less considering the terrain. On a continuous loop at that mpg, taking 76 trips a day on a 1.2 mile loop assuming $3.00 per gallon for gas the rough cost in gas per day is $21, $105 per week (weekdays), $420 per month and $1,600 per semester [without overhead and profit]."

5.2 Overview of Anticipated Costs to Operate the Inclined Elevator

Based on the size and power of the elevator design, the car will have a capacity of twenty students. With an approximate trip length, including loading and unloading, of 5 minutes and two elevator cars, the elevator system is capable of transporting around 480 people per hour or 24 trips per hour. The total potential traffic flow during the peak class times (from 8:30 am to 4:30 pm) is about 3,840 students. With the elevator running continuously, the maximum number of people that can be transported is about 11,520 students in 24 hours.

Based on the motor specifications calculated for the size and length of the system, the 25 horsepower motor using a 2:1 roping system to increase efficiency, the approximate electricity cost per trip is around $0.08. This equates to a daily cost of around $23.04 per day.

5.3 Comparison of LCAT to Elevator Operation Costs

To compensate for the expansion of the Arts Campus, the number of shuttles should be doubled. Taking into the addition of a second shuttle, the cost and trip comparison is proved below in Table 6. The table reveals that it will cost 1.82 times more to run the two LCAT shuttles and will only make round a quarter of the trips the elevator will make.

Table 6: Cost Comparison of Two Shuttles versus the Proposed Elevator

	Capacity	Trips per day	Cost per day
Two Shuttles	20 people per shuttle	152	$42.00
Two Elevator Cars	20 people per elevator car	576	$23.04

6. Summary

The assessment of materials for the superstructure, the various transportation modes traveling between campuses, and the evaluation of costs for different transportation methods were completed to validate the sustainable nature of the Senior Capstone design project. When evaluating the materials for the superstructure using the personal rating system developed by the Sustainability Team, COR-TEN steel was chosen based on the five categories that were developed. The future projection of students down the hill was also looked into to see its effects on current transportation modes. It became apparent that this increased projection would call for an increase in transportation, and the current modes of transportation would become impractical, especially with a decrease in parking spots and the lack of use of the LCAT. In terms of cost, current modes of transportation revealed themselves as unsustainable when compared to the

inclined elevator system. All evaluations were done to choose the most sustainable materials for the project as well as evaluate the system's sustainability for the future.

7. References

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8. Appendices

8.1 LCAT Arts Campus Schedule

Effective:
Monday 3/30/15

Lafayette College Area Transportation LCAT

Arts/Downtown - *morning and afternoon*

Monday - Friday

McCartney and Clinton	Snyder Street Lot	Sullivan Rd (near Kamine)	Easton Bus Terminal
8:30 am	8:33	8:36	-
8:40	8:43	8:46	-
8:50	8:53	-	9:03
-	-	9:13	-
9:17	9:20	9:23	-
continues every 10 min until			-
9:47	9:50	9:53	-
continues every 10 min until			-
10:17	10:20	-	10:35
-	-	10:42	-
10:46	10:50	10:53	-
continues every 10 min until			-
11:47	11:50	11:53	-
11:57	driver change		-
12:07	12:10	12:13	-
continues every 10 min until			-
1:38	1:41	-	1:55
-	-	2:02	-
2:06	2:09	2:12	-
2:16	2:19	2:22	-
2:26	2:30	2:33	-
2:37	2:40	-	2:55
-	-	3:02	-
3:06	3:09	3:12	-
continues every 10 min until			-
3:56	4:00	-	4:10
-	-	4:17	-
4:21	4:24	4:27	-
4:30 pm			

Arts/Downtown - *evening*

Monday				Tuesday and Wednesday			
McCartney and Clinton	Snyder Street Lot	Sullivan Rd (near Kamine)	Easton Bus Terminal	McCartney and Clinton	Snyder Street Lot	Sullivan Rd (near Kamine)	Easton Bus Terminal
6:30 pm	6:33	6:36	-	6:30 pm	6:33	6:36	-
continues every 10 min until			-	*continues every 10 min until*			-
7:00	7:03	-	7:15	7:00	7:03	-	7:15
-	-	7:22	-	-	-	7:22	-
7:26	7:29	7:33	-	7:26	7:29	7:33	-
7:47	7:50	7:54	-	7:47	7:50	7:54	-
7:58	8:01	-	8:11	7:58	8:01	-	8:11
-	-	8:18	-	-	-	8:18	-
8:22	8:25	-	8:35	8:22	8:25	-	8:35
-	-	8:42	-	-	-	8:42	-
8:46	8:56	8:59	-	8:46	8:56	8:59	-
9:03	9:06	9:09	-	9:03	9:06	9:09	-
9:12	9:15	9:18	-	9:12	9:15	9:18	-
9:22	9:25	-	9:35	9:22	9:25	-	9:35
-	-	9:42	-	-	-	9:42	-
9:45	9:50	9:53	-	9:45	9:50	9:53	-
9:57	10:00	10:03	-	9:57	10:00 pm		
10:07	10:10	-	10:20				
-	-	10:27	-				
10:31	10:34	10:37	-				
10:41	10:50	10:53	-				
10:57	11:00	11:03	-				
11:07	11:10	11:15 pm					

Spring 2014 - 2015

January 26, 2014 through May 15, 2015

Arts/Downtown (M-F)
August 25 - October 9
October 15 - November 24
December 1 - December 12
January 26 - March 12
March 23 - May 15

Comments and Questions

(610) 330-5851 or
transportation@lafayette.edu

Emergencies Call

(610) 330-4444

LCAT website: http://publicsafety.lafayette.edu/lcat

LCAT shuttle tracker: http://www.lafayetteshuttle.org

LAFAYETTE COLLEGE

4/20/15

8.2 Parking Space Study

3 June 2013

Parking Calculations for Williams Arts Campus
Mohican Building Renovation
Lafayette College

Item	Building	Area	Reqired by Zoning	Parking Stalls	Business Hours	After 10PM	Typical Uses Mohican Performance	New Case's Peformance	Festival - Both Case's Venues
1.	**Williams Visual Arts**								
	Office / Classroom	48,502	1/400	121	121				
2.	**The Spot**								
	Social Space	11,807	1/300	39		39			
3.	**Mohican Building**								
	Office / Classroom	6,949	1/400	17	17		9		
	Rehearsal Room Performance	78	1/4	20			20		
	Subtotal			197	139	39	28	0	0
4.	**New Case's Buildng**								
	Office/Classroom	4,933	1/400	12	12			6	6
	Screening Room	180	1/4	45					45
	Black Box Theater	200	1/4	50				50	50
	Subtotal New Case's			107	12	0	0	56	101
	Total - All			305	151	39	28	56	101

Existing Parking	
Snyder Street	42
Second Street	36
Williams Visual Arts	9
The Spot	25
Subtotal - Striped Lots	112
New Case's Parking	18
Total - All	130
Second Street Gravel Lot (unstriped)	27
Hubcap Store Lot (unstriped)	21
Subtotal	178