

The Cal Poly Organic Produce Center Analysis

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by
Charlotte Bell
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Abstract

The erection of the Cal Poly Organic Produce Center will be the first building of the Sustainable Crops Center; therefore, it is important that the correct processes are taken to ensure a quality product. With a team of interdisciplinary students working on the project including architects, landscape architects, and architectural engineers, the building is slowly taking shape. The following document addresses the existing procedures of the organic farm and some existing conditions of the project site. In addition, two farm markets in California were analyzed to understand the programming and architecture of similar entities. The document also uses community outreach as a tool to validate the building of a market for Cal Poly organic vegetables. Finally, as with any project, the current transportation patterns and parking opportunities were considered, as well as the permitting and facilities process.

The Cal Poly Organic Produce Center Analysis

Surrounded by some of the finest agricultural land in the state, California Polytechnic State University in San Luis Obispo has always put an emphasis on the education of agricultural processes. Although the University now has a strong reputation in many different fields, the College of Agriculture, Food, and Environmental Sciences is still one of the main focuses on campus. The college has embodied the university's "learn by doing" mission through the production and sale of Cal Poly ice cream, wine, chocolate, nuts, eggs, meat, honey, flowers, fruit, and vegetables.

To showcase this skill and educational technique the college hopes to create the Sustainable Crops Center at the corner of Highland Avenue and Mount Bishop Road, expanding around the existing Crops Unit, see Figure 1. The Cal Poly Master Plan, presented by EuroLandscape - a design firm of landscape architects and urban planners, expands on this concept. The first step the college is taking in the development of the Sustainable Crops Center is with the Cal Poly Organic Produce Center. The center will house an area to wash, store, and sell all the organic products to both students and community members, as well as provide a classroom.

An interdisciplinary class of students, including architects, landscape architects, and architectural engineers, is currently working with the Horticulture and Crop Science Department to make this future vision a reality. This document has been created to apply my education in City and Regional Planning in an effort to advise this interdisciplinary class of the existing conditions and processes, as well as some potential issues or concerns that the project may face.

Chapter One: Vision

Although the Cal Poly Organic Farm has a mission and vision, the project itself needed a base of identity. The following vision and goals are a result of the many opinions of different stakeholders including, the client, farm workers, students, designers, and other agricultural representatives.

Vision

The Cal Poly Organic Produce Center will support a “field to fork” initiative by providing a space for the holistic management of organic produce, including the processing, storing, and selling of organic vegetables. The market will also provide an educational and community-building environment for both students and community members.

Goal One

Increased student learning through a holistic understanding of organic farming

Goal Two

A farm experience that promotes community involvement and education

Goal Three

A closer relationship between the Cal Poly student body and the food that is produced on campus by their peers



Figure 1: Cal Poly Organic Farm site map

Chapter Two: Current Processes

There are five major stages in the production and sale of the Cal Poly organic vegetables: seeding and plant growth, harvesting, processing and washing, storing, and selling.



Figure 2: Cal Poly Organic Farm process diagram

2.1 Produce Process

The first and second steps, seeding, growth, and harvesting, currently occur in three fields, outlined below. The vegetables, either in seed form or transplants from the

greenhouse, are put into the ground for maturation and are then harvested a few months later. As shown on the location map (Figure 1), the three fields, the Student Experimental Farm, Field 34, and the Homegarden, are quite spread out, which makes the farm dependent on vehicular transportation.

2.1.1 The Student Experimental Farm

This two acre piece of land is the site of the original Cal Poly Organic Farm. It is the site from which the previous Community Supported Agriculture program was run. The major facilities on this land are the greenhouse, the wash station, and the tool shed. The student experimental farm is more topographically challenging, so traditional farming techniques, especially with heavy machinery, cannot be used. This leaves room however, for students to try new crops at a smaller scale. There are also future plans for the Experimental Farm to be graded and turned into an Organic Apple Orchard.

With the wash station here, the third step of processing and washing is completed at the Experimental Farm. The vegetables are rinsed, soaked in a diluted chlorine bath for about two minutes, and then rinsed once more. This process follows the California Certified Organic Farmers guidelines, while maintaining a consciousness of food safety.

2.1.2 Field 34

Field 34 is the largest field that is certified organic with about seven acres of prime farmland, but it is rarely used to its capacity. With a more efficient system and a larger staff, the organic farm could expand the amount of production on this field.



Figure 3: Panoramic view of Field 34

2.1.3 The Homegarden

2.4 This field accounts for about 2.5 acres of the organic farm. Located along Highland, it is the closest field to campus and the Crops Unit. It is on the edge of this field that the proposed Organic Farm Market would be built. This field has been recently certified organic and put into more intensive use. There are currently plans to route potable water to this field, which will provide sufficient water for the market.



Figure 4: Panoramic view of the Homegarden

The fourth step of the organic farm process is storage. Just a few hundred feet from the Homegarden is the Crops Unit, the home of the coolers. There are two different coolers, which maintain different temperatures. They are currently shared with the Fruit Science Department.

2.2 Sales

The fifth, and final, step of the process is getting the produce to the customer. The organic farm currently has two outlets of sales: wholesale and markets. The farm sells much of

their produce to different grocery stores and restaurants in San Luis Obispo and surrounding cities at a wholesale price. These relationships create a more reliable, constant source of income for the farm.

The other facet of sales is at various farmers markets; the farm currently partakes in five markets (six in the summer):

Cal Poly U-Pick: Wednesday, 2pm – 5pm

Morro Bay Farmers Market: Thursday, 3pm – 6pm

Downtown San Luis Obispo Farmers Market: Thursday, 6pm – 9pm

Avila Fish and Farmers Market: Friday, 4pm – 8pm (April – September)

San Luis Obispo Farmers Market: Saturday, 8am – 10:30am

Cal Poly U-Pick: Saturday, 11am – 2pm

Chapter Three: Existing Conditions

3.1 Aesthetics

The design and placement of this project is very important because it will be the first building seen while entering the campus on Highland Drive. The Cal Poly Master Plan eventually envisions campus with only two entrances, one on Grand Avenue and one on Highland. This exaggerates the importance of this building because it may be the first impression of Cal Poly to a visitor. The following image is a panoramic view from across Highland Avenue. The photograph highlights the visibility of the project site from one of the campus's main entrances.



Figure 5: Panoramic view of the project site and parking lot from Highland Drive

3.2 Agriculture

The Organic Produce Center site location is currently underused. The area used to have blueberry plants, but they have not been maintained in recent years. The remains of these plants were recently torn out and the space has been cleaned up. Agricultural resources are located just west of the project site in the Homegarden. This is the most productive and impressive field that the organic farm uses.



Figure 6: Cal Poly Organic Produce Center site map with waterlines

3.3 Water Supply

The location of the proposed center has connections to the irrigation water that is being used for the fields. The process is currently underway to change the irrigation water to potable water. This will give clean water access to the building site.

3.4 Community Benefits and Education

Cal Poly already has a great relationship with the surrounding San Luis Obispo community, providing many entertainment and educational services to the nearby residents. The Cal Poly Organic Produce Center will be an additional resource for the community at large, with both the classroom and purchasing opportunities.

The Cal Poly Organic Produce Center will service the community in the present and the future by supporting the regional food systems and increasing food security. Both of these ideas are rooted in the concern of a changing climate and unpredictable future. The Cal Poly Organic Produce Center can be an interesting advancement in both of these current issues. Food security is defined by the World Health Organization as “existing when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life” (World Health Organization 2011). This vision stands on three concepts: food availability, food access, and food use. The Cal Poly Organic Produce Center is an important addition to the campus’ and San Luis Obispo’s food security. In the future, it may be important to have on site agricultural land in which the students can buy produce.

The second concept is a regional food system. Professionals from many fields, including city planning, have recently expressed the importance of documenting and supporting their local food systems. With the Green Revolution in the past, many officials are

realizing that local agriculture is not only a healthier alternative, but it is also better for the environment and local economy. With a heightened awareness of these two trends, local residents are more inclined to buy local, organic produce. The Cal Poly Organic Produce Center will not only act as an educational source for students and the community, but it will also promote food security and contribute to the San Luis Obispo regional food system.

3.5 Health and Organic Produce

International interest in organic farming and organic vegetables has recently increased because of their environmental and human health benefits. Despite a new rise in their popularity, many people still resist buying and eating organic vegetables. According to their article in the American Journal of Agriculture Economics, Thompson and Kidwell expand on the difficulties of selling organic produce. Entitled *Explaining the Choice of Organic Produce: Cosmetic Defects, Prices, and Consumer Preferences*, the article covers many of the issues that the Cal Poly Organic Farm faces with sales. Despite the health benefits, many consumers are uncomfortable with buying organic produce with small defects on it, compared to the conventional counterpart. "The surprising result is which of the cosmetic defects influenced the probability of purchasing organic produce. The surprise likely owes to the fact that certain defects such as insect damage are rarely observed. Hence, the defects observed more often such as flowering bud clusters in broccoli can affect shoppers' choices between organic and conventional broccoli" (Thompson and Kidwell 1998, 286). This explains the difficulty of selling organic produce to restaurants and grocery stores. The article also indicates that it is much simpler to sell these defected vegetables at local cooperatives or produce stands. What is evident by this article is the need to educate the public and change public opinion of the

defects that accompany organic produce.

Chapter Four: Case Studies

The Organic Produce Center, and potential entrepreneurial center, will be a unique aspect of Cal Poly, San Luis Obispo. There are some examples in California, however, that will assist in the proper design and functionality of the space. Both the Farm Store at Kellogg Ranch at Cal Poly Pomona and McGrath Family Farms in Oxnard, CA have specific qualities that should be implemented in the design and management of the Cal Poly Organic Farm.

4.1 The Farm Store at Kellogg Ranch

As the other California Polytechnic, Pomona also has roots in the agricultural industry. In 1949, W.K. Kellogg donated his winter home and ranch to the California State University system; this land became the home of Cal Poly Pomona.

The Farm Store at Kellogg Ranch provides many of the same services of the conceptual Sustainable Crops Center at Cal Poly. This store allows for the sale of produce, honey, and wine all from the campus. The Farm Store varies, however, because it also offers other products that are not Cal Poly Pomona made. The Farm Store was founded in 2001 by an alumnus from the Plant and Soil Sciences program, and it highlights both alumni and student products.

4.1.1 Products

The Farm Store at Kellogg Ranch offered many products that were grown on campus including vegetables, hydroponic tomatoes and strawberries, honey, and wine from campus grapes. The store also offered products that were labeled with a Farm Store logo, but did not have any real connection to the school, including jams, spreads, snacks, and candy.



Figure 7: The Farm Store at Kellogg Ranch, Cal Poly Pomona – produce collage

4.1.2 Sales

The Farm Store at Kellogg Ranch, like the Cal Poly Organic Farm, has many outlets of sales. For the produce, they sell at the University of California, Irvine Farmers Market, seasonal farmers markets in the area, and at two Kaiser Permanente hospitals (Baldwin Park and Downy). In addition to markets, the Farm Store sells gift baskets all year and holiday boxes during certain times of the year. These packages can be bought online or in the store and they can be shipped for just a small fee. They are much like a Community Supported Agriculture box, which is a program that regularly provides various produce through customer subscription, but they are sent as a gift and can include any products inside the store.

The Farm Store also has U-Picks for persimmons, strawberries, and pumpkins. The persimmons and strawberries are right outside of the Farm Store, so that acts as a great draw and fun activity for both students and the community. This year they are going to try to hold a corn and watermelon U-Pick as well.

The most interesting aspect of the Farm Store at Kellogg Ranch is the demographic that normally shops there. According to the Farm Store Assistant Manager (personal communication 2011), about 60% - 75% of the customers are community members during the school year, and almost 100% during the summer. There are a few reasons for this high community involvement and low student turnout. First, Cal Poly Pomona is primarily a commuter school, this means that many students do not live in the area, so they do not grocery shop in the area. Second, the campus and the Farm Store are very car-oriented, so it is a very long walk or bike-ride from the heart of campus. Finally, the Farm Store does extensive outreach to encourage community involvement, and not as much student outreach. They hold two large community events: the Pumpkin Festival and the Tractor and Car Show/Strawberry Festival. They also hold workshops and Taste of the Farm Store events.

This is an important feature of the Farm Store at Kellogg Ranch that the Organic Farm should try to understand and emulate to increase both community members and students.

4.2 McGrath Family Farms

Located right off Highway 101 in Oxnard, CA, the McGrath Family Farm can serve as a valuable model for the Cal Poly Organic Farm Market. The McGrath Family Farm has functioned since 1868, but under the direction of the fourth generation it has transformed

into a community-based, educational farm. The farm uses sustainable practices, while producing organic fruits and vegetables.

The McGrath Family Farm is doing their part in the education of the community through farm tours. They offer one hour guided tours, primarily Tuesday, Wednesday, and Thursday, to schools, private parties, or the general public. They believe that an education about farming and an interaction with produce will encourage people to protect farmland in California.

The Farm Center is a great architectural example of what the Organic Farm Market could look like. Mario Colletti, a long-time McGrath Family Farm employee, explained that the Farm Center was modeled after a horse barn (personal communication 2011). The high ceilings and large open walls allow for natural ventilation to keep the center cool and fresh. There is one small cooler at the exterior of the building for some overnight storage, but the farm sells only freshly picked produce.



Figure 8: McGrath Family Farms – Farm Center indoor and outdoor

4.2.1 Sales

In 2008, McGrath Family Farms opened their new Farm Center to act not only as a base for tours, but also has a farm stand. The building is open March through December, 7 days a week from 9am to 6pm. Both community members and visitors can have a farmers market all week long to buy fresh, organic fruits, vegetables, and flowers.

In addition to the Farm Center, McGrath sells their produce through a highly subscribed CSA, or community supported agriculture. This program allows for a steady stream of support and a constant connection with the customer. The farm also offers opportunities for restaurants to purchase goods. Finally, customers can also purchase their produce at seven different farmers markets in Los Angeles, Santa Barbara, and Ventura Counties.

4.3 Conclusions

Both of these case studies can be used in successfully opening the Cal Poly Produce Center. Like the Farm Store at Kellogg Ranch, the Cal Poly Produce Center will be funded through an outside donor. This is an important aspect in the managing and highlighting of the great Cal Poly education. The store may also face the similar issue of customer base. Although the community is a consistent customer base, an educational aspect and student emphasis should be placed on this farm. Also, Cal Poly can draw from the Farm Store's use of larger community or campus wide events to draw customers to the center.

McGrath Family Farms functions in a very similar way as the Cal Poly Organic Farm, but the most applicable information is the building design and architecture of the Farm Center. The client has expressed a desire for a traditional or barn-like structure. McGrath's Farm

Center delivers this aesthetic, while also introducing some modern lines and details. The building also provides for cross-ventilation and natural light with the permanence and strength of a foundation. The Cal Poly Organic Produce Center design team should really consider these two case studies as outlines for both programming and design.

Chapter Five: Community Outreach

The Organic Farm currently has two groups of students working on different business aspects: the marketing and advertisement and a full market study of input and output. Both of these will be useful in future sales and production of the farm, but it is important to understand the current interest and demand of the product. To understand the potential market that would frequent the Cal Poly Organic Produce Center, a quick survey was created and distributed to both students and community members. A total of forty students were surveyed from 1pm to 2pm, March 9th on Dexter Lawn and in the University Union Plaza. Additionally, forty community members were surveyed from 6pm – 7:30pm at Farmers Market, downtown San Luis Obispo, on March 10th.

The student survey asked some preliminary demographic questions: “What year are you in school?” and “Do you live on campus”, where the community survey asked, “What age bracket are you in?” and “Do you live in San Luis Obispo?” (see Tables 1-4). The substance of the survey, however, is in the following two questions: “Would you buy Cal Poly organic vegetables sold at a permanent farm store on campus?” and “When would you buy them?” (see Tables 5-11). These two questions gage the interest in the Cal Poly Organic Produce Center and set up information for potential programming of the center (C.J. Bell, survey, March 9&10, 2011).

Table 1: What is your year in school?

What is your year in school?		
Year in School	Number of Respondents	Percent
1	9	23%
2	16	40%
3	5	13%
4	9	23%
5	1	3%
Total	40	100%

(C.J. Bell, student survey, March 9, 2011)

Table 2: Do you live on the Cal Poly Campus?

Do you live on the Cal Poly Campus?		
Response	Number of Respondents	Percent
Yes	14	35%
No	26	65%
Total	40	100%

Table 3: What is your age bracket?

What is your age bracket?		
Age	Number of Respondents	Percent
Under 18	0	0%
18-29	8	20%
30-49	16	40%
50-64	12	30%
65+	4	10%
Total	40	100%

(C.J. Bell, community survey, March 10, 2011)

Table 4: Do you live in San Luis Obispo?

Do you live in San Luis Obispo?		
Response	Number of Respondents	Percent
Yes	21	53%
No	19	48%
Total	40	100%

As shown in Tables 5-7, there is definitely support for the organic produce center on campus. Both community members and students responded positively, a total of 73% (58 votes) of the combined respondents said that they would buy Cal Poly organic produce if there were a permanent farm store on campus. An even amount of support came from both the students and the community members.

Table 5: Community Response

Community: Would you buy Cal Poly organic vegetables sold at a permanent farm store on campus?		
Response	Number of Respondents	Percent
Yes	29	73%
No	9	23%
Maybe	2	5%
Total	40	100%

Table 6: Student Response

Students: Would you buy Cal Poly organic vegetables sold at a permanent farm store on campus?		
Response	Number of Respondents	Percent
Yes	29	73%
No	11	28%
Total	40	100%

Table 7: Total Response of Market Interest

Combined: Would you buy Cal Poly organic vegetables sold at a permanent farm store on campus?		
Response	Number of Respondents	Percent
Yes	58	73%
No	20	25%
Maybe	2	3%
Total	80	100%

Source: Would you Buy Cal Poly Organic Vegetables Sold at a Permanent Farm Store on Campus? (C.J. Bell, survey, March 9&10, 2011).

Additionally, it was important to look at certain groups of respondents. Because the student outreach is such an important aspect of the Cal Poly Organic Produce Center, the following figure highlights the on-campus students' interest. According to the survey, 86% (12 votes) of the students that currently live on campus, in either freshman dorms or sophomore apartments, said that they would buy produce on campus.

Table 8: On Campus Student Interest

Would you buy Cal Poly organic vegetables sold at a permanent farm store on campus?		
Response	Number of Respondents	Percent
Yes	12	86%
No	2	14%
Total	14	100%

Source: Would you Buy Cal Poly Organic Vegetables Sold at a Permanent Farm Store on Campus? – On Campus Students Only (C.J. Bell, survey, March 9&10, 2011).

In terms of programming, or hours of operation, the respondents were asked to choose any of the times that they would buy the produce (more than one answer was accepted). With one hundred total responses, the most popular option was the weekends, with 44% (44 votes) of the votes. The second most common choice was weekdays from 4pm to 7pm with 26% (26 votes) of the total votes. This indicates that students may want the center open at this time to buy produce after their day of classes and community members may stop at the center after work. The most popular time for students, however, was weekdays from 1pm – 4pm, with 29% (14 votes) of the votes.

Table 9: Student Response, Purchasing

Students: When would you buy them?		
Response	Number of Responses	Percent
Weekdays 9am-12pm	3	6%
Weekdays 1pm-4pm	14	29%
Weekdays 4pm-7pm	11	22%
Weekends	21	43%
Total	49	100%

Table 10: Community Response, Purchasing

Community: When would you buy them?		
Response	Number of Responses	Percent
Weekdays 9am-12pm	9	18%
Weekdays 1pm-4pm	4	8%
Weekdays 4pm-7pm	15	29%
Weekends	23	45%
Total	51	100%

Table 11: Combined Response, Purchasing

Combined: When would you buy them?		
Response	Number of Responses	Percent
Weekdays 9am-12pm	12	12%
Weekdays 1pm-4pm	18	18%
Weekdays 4pm-7pm	26	26%
Weekends	44	44%
Total	100	100%

Source: When would you buy them? (C.J. Bell, survey, March 9&10, 2011).

Chapter Six: Permitting and Facilities

As with any project, there are rules and regulations that the Cal Poly Organic Produce Center will have to follow in the construction of the building. Because Cal Poly is a California State University, it is officially on California state land and does not follow the zoning codes, building codes, or architectural guidelines of the City or County of San Luis Obispo. The campus has its own master plan and guidelines that are managed by Facility Services.

6.1 Cal Poly Campus Building Permit Process

According to Cal Poly Facility Services, the construction of a building on campus is accomplished in the following ways: “a Public Works contract administered by Facilities Planning, a non-maintenance construction project built by Facility Services and charged back to the requesting department, or a building permit issued to departments and auxiliaries who wish to undertake projects with their own resources” The Cal Poly Organic Produce Center lies under the last option because the College of Agriculture, Food, and Environmental Sciences, specifically the Horticulture and Crop Science Department, is using outside donors to fund this project.

Facility Services also outlines the activities or projects that do require a Campus Building Permit, one of which is any “activity involving building or roof structures” (Facility Services Work Control, 2009). In addition to meeting the conditions to need a permit, the applicant must determine whether their project is a minor or major capital project. The Cal Poly Organic Produce Center is going to be about a million dollar project, so it is considered a major capital project (\$400,000 or more). Once the project is determined to need a campus

building permit, the requester, or applicant, must obtain the department's approval – academic or non-academic.

The next step is the design processes, but before then, it may be beneficial to speak with representatives from facility services. The design process can be very long and expensive for the applicant, so if some initial issues are resolved beforehand, costs can be reduced. The applicant then submits the plans with a completed application to the building and safety department of Facility Services. With a good project, the plans are approved and the campus building permit is issued. With an approved permit, the project is constructed and inspected to receive a certificate of occupancy. As with any project, open communication and flexible responsiveness between both parties make the process run much smoother. It is important that the Cal Poly Organic Produce Center work closely with Facility Services to avoid future issues.

6.2 Building Codes

The code search, completed by Nick Watry the advising professor for the Organic Produce Center, revealed that the existing design needs to include more amenities than previously planned. The most important result of the building code search involved the required plumbing, including restrooms and drinking fountains. The plumbing standards are based off of occupancy loads. In the food processing section of the Cal Poly Organic Produce Center, the total occupancy load is 60 people, which translates to four men and four women water closets (toilets). In addition, the indoor and outdoor market section has an occupancy load of 280 people, which requires three men and three women water closets (Watry 2011). In

addition to the water closets, the new produce center will require three drinking fountains (total 341 occupancy load / 150 drinking fountain standard = 2.27).

The parking standards are determined by the City of San Luis Obispo Zoning Regulations and are expanded on in section 7.2 Parking.

Chapter Seven: Transportation and Traffic

One of the most important aspects of analyzing a new project site is understanding the transportation, traffic, and parking.

7.1 Traffic

The Cal Poly campus currently has three access roads, California Boulevard, Grand Drive, and Highland Drive. Highland Drive, the main artery that passes the proposed Organic Produce Center, is one of the most heavily traveled routes to campus because of its proximity to parking lots. It is important to analyze the traffic patterns of the surrounding roads to better understand the impact that the produce center may have. The intersection of Highland Drive and Mount Bishop Road is a well-used area, but it by no means has a poor level of service.

7.1.1 Traffic Counts

As seen in the following traffic counts, there is a significant amount of traffic along Highland Drive, but Mount Bishop Road has much less. The traffic counts were completed at two different times. The first traffic count was taken on Thursday, April 21, 2011 from 12:35-1:35pm. This shows a base level of traffic on a weekday afternoon. Most of the traffic on the side road by the Crops Unit was state vehicles that work in the agricultural areas. This was different on Saturday, April 30, 2011 from 12:13-1:13pm, when most of the travel on that road was U-Pick customers. There was also an increase of pedestrians on that road on Saturday. The focus intersection may not be as impacted, but the one-way side street to the parking lot may become an issue.

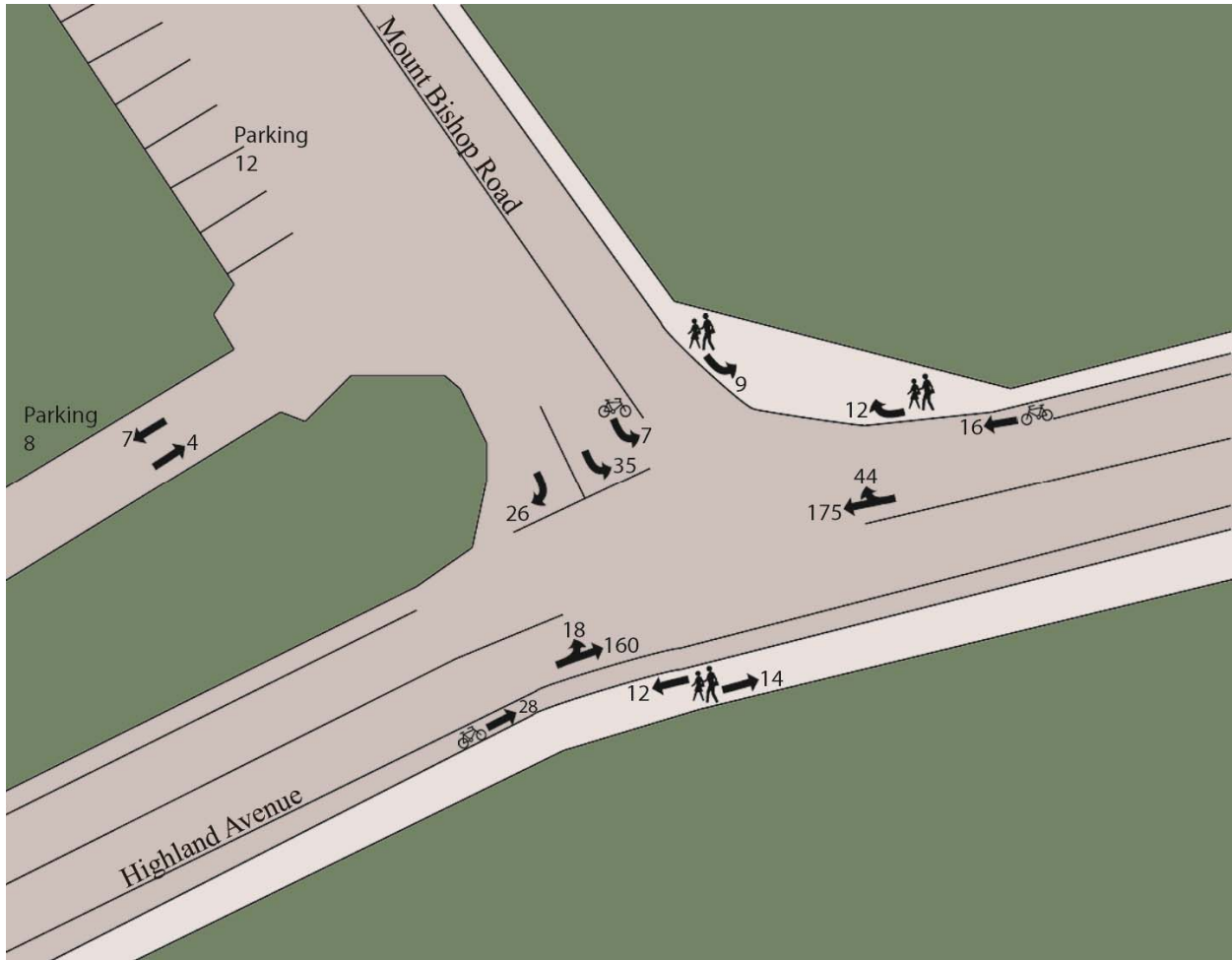


Figure 9: Highland Avenue/ Mount Bishop Road Traffic Count: Thursday, April 21, 2011 at 12:25-1:25pm

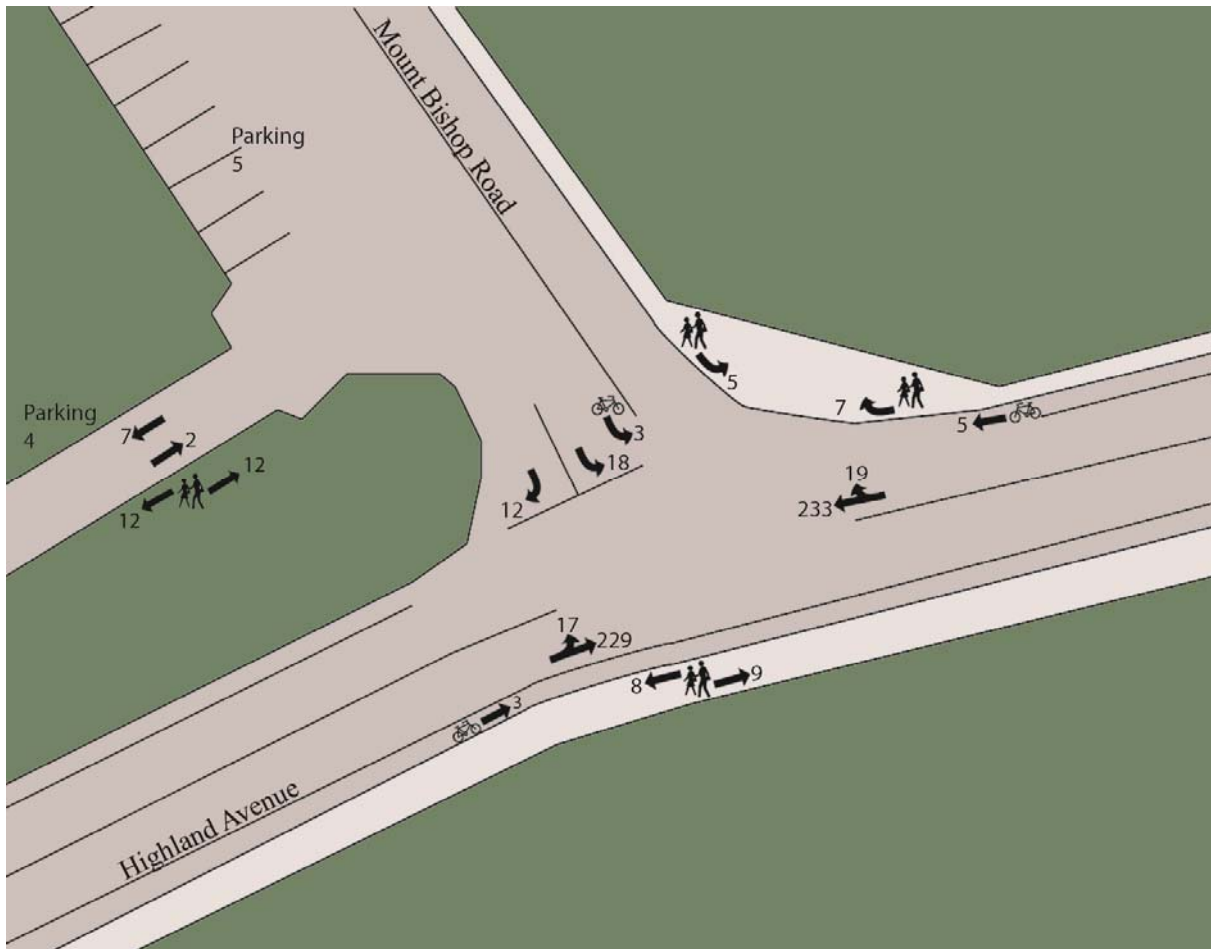


Figure 10: Highland Avenue/ Mount Bishop Road Traffic Count: Saturday, April 30, 2011 at 12:13-1:13pm

7.1.2 Public Transportation

The Cal Poly Master Plan envisions a transit stop across the intersection from the Crops Unit. This will allow for increased access to both the market and classrooms in the Sustainable Crops Center. Currently, the San Luis Obispo Regional Transit Authority Bus 12A has a designated stop at Highland Drive and Mount Bishop Road, but it rarely stops. Unfortunately the RTA buses are not free for Cal Poly students. The SLO Transit System, which does offer free rides to students, supports the 6B bus line along Highland Drive, which has a stop at Mount Bishop Road while leaving campus. In addition, Bus 4, Bus 5, and Bus 6A with SLO Transit and Bus 9 and Bus 10 with the RTA all stop at the nearby Robert Kennedy Library.

7.2 Parking



Figure 11: Highland Drive and Mount Bishop Road – Potential Parking for Organic Produce Center

With the additional travel to the Cal Poly Organic Produce Center caused by community members, students, and visitors, it is important to supply sufficient parking. The Cal Poly campus does not have their own parking requirements, so the following calculation assumes that facility services would reference the City of San Luis Obispo parking requirements. The City of San Luis Obispo, in their zoning regulations, has a parking standard of one parking spot for 300 square feet of produce stand, an average amount for most commercial designations. With the proposed center at around 11,000 square feet (indoor and outdoor space), the design team must take into consideration space for about thirty-seven parking spots. As detailed in the Cal Poly Master Plan concept book, the parking for the Sustainable Crops Center will be supported by the H1 lot along Mount Bishop Road (seen in Figure 11). This is an underused parking lot in close proximity to the proposed center.

The existing Crops Unit has a parking lot that services their parking needs, but it is mostly underutilized. There are currently 44 staff-designated parking spots in Parking Lot 1, and according to the two traffic counts, less than ten cars park there on average. At the Thursday traffic count, eight cars were counted in the dirt lot and fourteen in Parking Lot 2 (at capacity) along Mount Bishop Road. At the Saturday traffic count, even less parking was taken, however, the people parking in Parking Lot 1 were all there for the fruit and vegetable U-Pick stand. There were three to four cars in Parking Lot 1 at any given time. So the needed thirty-seven parking spots could potentially be accommodated by the unused staff parking lots.

Chapter Eight: Considerations

From this document, there are a few things that should be taken into consideration in the current and future process involving the Cal Poly Organic Produce Center.

8.1 City of San Luis Obispo's Calle Joaquin Agricultural Reserve

In early 2011, San Luis Obispo's Planning Commission and Parks and Recreation Commission both reviewed the Master Plan for the Calle Joaquin Agricultural Reserve. The project is relevant to the Organic Farm Market because it has a very similar educational and community-based focus to the Organic Farm Market. The concept design includes demonstration crop plots, a green house, picnic area, and an educational center. The educational center will house a classroom, demo kitchen, bathroom, and shaded outdoor patio.

This city-owned land will be leased to a non-profit who will oversee the agricultural production as well as the educational programming. The city, with appropriate funding and time, would also like to extend the Bob Jones Bike Trail, possibly add a community garden or native plant nursery, and enhance the riparian habitat on site.

The Cal Poly Organic Farm should determine whether they want to market their new sales opportunities to the students or the community members. When making this decision, they should explore the potential effect that the Calle Joaquin Agricultural Reserve project may produce.

8.2 Traffic and Parking

The addition of the Cal Poly Organic Produce Center to the agricultural section of campus will increase the amount of traffic and demand of parking. The inter-disciplinary class

must take into consideration the stress that will be put on both the parking and intersection. Different alternatives should provide greater access to parking and divert the traffic from the one-way access road. Parking Lot 1, seen in Figure 11, should be restructured to maximize the number of parking spots that can fit into the open dirt area. Because the Organic Produce Center necessitates thirty-seven, an increase of nearby spots would be preferable.

In addition, the H1 Parking Lot should be taken into consideration as overflow parking. A more inviting connection could also be designed by landscape architecture and city and regional planning students to direct pedestrians safely to the Organic Produce Center, and eventually to the Sustainable Crops Center.

In terms of traffic, the SLO Transit and RTA bus routes should be adjusted to accommodate nearby bus stops, both entering and exiting the center of campus.

8.3 Programming and Marketing

The Horticulture and Crop Science Department should use the community outreach results for the most effective programming of the market. By understanding the market and their demands and preferences, the Organic Produce Center can perform its best. The business marketing projects should continue through the next few academic years, not only for the preparation of the Organic Produce Center, but also for the business support once the market opens. The business marketing teams can also assist in the eventual development and support of the Sustainable Crops Center.

8.4 Building Design and Function

Finally, the design team should try to better translate the process of the Cal Poly Organic Farm into the final building design. The current building design, as mentioned

before, has a total of 11,000 sq ft, a much larger space than the current and potentially future farm could even use. The function of having the processing, storing, and selling in one building is a great concept, and it should remain, but the building does not need to be as large as it is currently designed. Also, as shown in the McGrath Family Farm's Farm Center, the building should be open to allow for cross ventilation and natural temperature control. Ultimately, the Cal Poly Organic Farm is limited in its future growth because of the rules and regulations placed on certified organic farms. With difficult regulations on transitioning conventional fields to organic, it will be years before the Cal Poly Farm could even use the proposed Organic Produce Center to its capacity.

Resources

Bell, C.J. "Cal Poly Organic Produce Center Survey," survey, March 9&10, 2011

Colletti, M. personal communication, March 27, 2011

Facility Services Work Control (August 2009). Building Permits. Cal Poly, San Luis Obispo.

http://www.afd.calpoly.edu/facilities/services_buildingpermits.asp

Farm Store at Kellogg Ranch employee, personal communication, February 21, 2011

Headrick, D., Jelks, A, & Murrietta, M. (2010). Organic farming enterprise handbook. San Luis Obispo: Horticulture and Crop Science Department.

Peterson, John C, Ph.D. Dean of Horticulture and Crop Science, personal communication, Winter and Spring 2011.

Thompson, Gary D., and Julia Kidwell. "Explaining the choice of organic produce: cosmetic defects, prices, and consumer preferences." *American Journal of Agricultural Economics* 80.2 (1998): 277+. Expanded Academic ASAP. Web. 19 Apr. 2011.

World Health Organization, Initials. (2011). Food security: trade, foreign policy, diplomacy, and health. Retrieved from <http://www.who.int/trade/glossary/story028/en/>

Watry, Nick. Advisor for the Organic Produce Center interdisciplinary class, personal communication, Winter and Spring, 2011.

Watry, Nick. Cal Poly Farm Market Code Search, Highland Avenue, San Luis Obispo, May 26, 2011.