



BUTTE COLLEGE

ENVIRONMENTAL HORTICULTURE

Program Research and Recommendation Report

Submitted by: Bonnie Baxter – October 27, 2025

This program vitality analysis is a holistic, data-informed review of the health, currency, and viability of the Butte College Environmental Horticulture Program. This review, supported by the Program Advisory Team (PAT), evaluates key aspects such as curriculum relevance, industry alignment, student engagement, faculty expertise, resources, and long-term viability. The goal is to identify strengths, challenges, and opportunities for growth to ensure the program remains aligned with industry needs and supports student success.

BACKGROUND

In November of 2019, the Butte College Agriculture Department Chair requested to initiate the program revitalization or discontinuance process for the Environmental Horticulture Program, sighting the following indicators:

√	MULTIPLE INDICATORS (please check multiple indicators below and be prepared to explain each)
x	Weak enrollment trend
x	Insufficient availability of courses for students to complete the program within its stated duration
	Poor retention within courses
x	Poor term-to-term persistence for those students in courses in the major
x	Changes in the job market
x	Changes in community/student needs or interests
	Change in transfer requirements
	Diminished outside funding resources
	Program creates financial hardship for the institution
x	Lack of available qualified program personnel
x	Outdated curriculum
	Outdated equipment
x	Outdated facilities
x	Lack of full-time faculty leadership
	Other

STATUS

Declining Enrollment

In fall 2019, the Environmental Horticulture program enrolled 247 students, with 16 graduates or certified students. By fall 2024, enrollment decreased to 161 students, and only 8 students had

graduated or earned certification that academic year. This significant decline in both enrollment and graduation rates clearly signals that the Environmental Horticulture Program requires urgent and substantial revitalization.

It should be noted that the 2018 Paradise Camp Fire and the 2020 COVID-19 pandemic significantly impacted enrollment at Butte College, with a particularly notable effect on Environmental Horticulture, in part due to the absence of full-time faculty leadership from 2020 to 2024.

Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025
247	111	209	118	188	114	136	129	253	125	161	116

Limited Personnel

Over the past twenty-five years, Environmental Horticulture has had a dedicated full-time faculty member from 2001 to 2020, alongside an average of 3-4 intermittent associate faculty. Between 2012 and 2017, there were a total of two full-time faculty members; however, the program has lacked dedicated full-time faculty leadership since 2020. In August 2024, a full-time instructor was hired to teach Environmental Horticulture courses and assess program revitalization. Additionally, a second full-time instructor continues to teach a combination of Environmental Horticulture and Agriculture courses. Currently, there is one full time nursery technician and no associate faculty assigned to Environmental Horticulture.

Curriculum

Butte College's Environmental Horticulture curriculum is outdated, relying on Course Outlines of Record that have not been revised in over a decade. It is essential to revitalize the program's curricular structure and review courses to ensure content remains relevant and effective, and aligns with current educational standards, goals, and labor market needs.

Preliminary Labor Market Assessments prepared by the Far North Center of Excellence suggest that California's former boom in new construction turfgrass installation has plateaued, shifting focus towards water conservation efforts and irrigation technology. In response to water scarcity, the state has implemented restrictions and regulations on commercial turfgrass planting. Many regions now prioritize or promote replacing traditional turf with drought-tolerant, native, or California-friendly plants to conserve water. Therefore, a certificate in Sustainable Irrigation and Water Management Technology would be more relevant and in demand than Butte Colleges' Landscape Turfgrass Technician certificate.

Redefining curriculum will allow for establishing relevant Environmental Horticulture CTE certifications at Butte College and significantly benefit both enrollment and the workforce. These programs can attract diverse students interested in green industries, sustainability, and landscaping careers by offering specialized, hands-on training that is accessible and affordable. It is essential that program requirements and their associated maps be reviewed and

restructured to create clearer and more effective pathways. This approach will enhance student achievement and better promote relevant career preparedness. Clearly defined certification pathways motivate students to enroll by illustrating tangible employment opportunities and opportunities for career advancement.

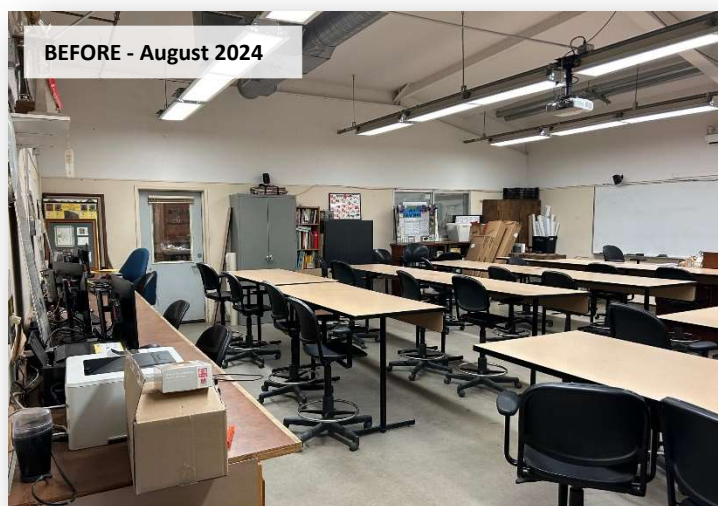
Facilities and Equipment

CLASSROOM (PHASE I) :

The Environmental Horticulture program benefits from a dedicated classroom and horticulture facility that was once the flagship feature of the college campus. Originally constructed in 1975, this facility has long been a central hub for horticultural education and activities, reflecting the college's commitment to environmental and agricultural sciences. Over time, it has maintained its significance, continuing to serve as an important resource for students and faculty in the field of environmental horticulture. Recognizing its importance, the college undertook repair and renovation work during the summer of 2025 to ensure it remains a vital resource for students and faculty.

The first phase of classroom facility improvements involved several key upgrades to enhance the learning environment. These included upgrading lighting, electrical systems, and technology infrastructure to support modern classroom needs. The project also involved painting the space, installing both upper and lower storage options for microscopes/supplies, and reroofing to ensure the building's integrity.

Additionally, holes in the walls were sealed to prevent rodent intrusion, and ventilation was rerouted for the walk-in floral cooler to eliminate the continuous distracting murmur. Students are very excited about these improvements to their classroom and take pride and ownership in the opportunity to be a part of such significant change.



Ultimately, a clean, safe, and updated college classroom enhances the overall learning environment, making our college more attractive to prospective students. It boosts student satisfaction, encourages retention, and fosters positive word-of-mouth. This classroom upgrade demonstrates the institution's commitment to quality education and safety, which when coupled with further program revitalization, holds the potential to increase program growth.

Facilities and Equipment

CLASSROOM STORAGE (PHASE I)



Prior to the phase one renovation of the classroom, storage in EH107 was limited. The renovation added upper and lower cabinets at the back of the classroom, providing designated space for microscopes and supplies. Upper cabinets were installed at a higher level to maximize lab countertop space. Electrical outlets were also added to support microscopes and laptops. These upgrades will benefit students and instructors by improving workspace organization and providing easy access to essential tools. The increased storage capacity facilitates better inventory management, reduces clutter, and fosters a more effective learning environment. Additionally, the enhanced electrical infrastructure supports modern technology, enriching the teaching and learning experience.

CLASSROOM TECHNOLOGY (PHASE I)



Instructor technology upgrades have been made to the classroom; however, there is currently no classroom technology available for student use. Laptops are available for checkout from LS137, but this presents challenges: rolling the cart down the hill is dangerous, and coordinating shared laptop cart use can conflict with other instructors' schedules or with instructors occupying the classroom in which they are stored.

Facilities and Equipment

OFFICE SPACE - (PHASE II)



The second phase of facility renovations aim to focus on the office and retail horticulture area adjacent to the classroom. Currently, this space consists of several irregularly shaped offices (above) that lack flow and functionality. To enter back offices (top right), you must walk directly through front offices (top left). Due to their lack of functionality, most of these offices are currently vacant, with only one being occupied. Funding for Phase II office and retail space renovations has not yet been secured.

RETAIL SPACE – (PHASE II)



Having an upgraded retail space for a college horticulture program offers several benefits. It provides students with hands-on, real-world experience in marketing, sales, and customer service, which enhances their learning and prepares them for future careers. An improved retail

space serves as a practical classroom, allowing students to apply horticultural knowledge in a commercial setting. Additionally, such upgrades can significantly enhance the development of soft skills such as communication, teamwork, problem-solving, and professionalism—abilities that Advisory Committees and Industry representatives have identified as critical yet often lacking in many college graduates. By fostering a dynamic environment for interaction with customers and real-world business operations, the upgraded retail space helps students build confidence, emotional intelligence, and adaptability. These soft skills are essential for success in today's competitive job market and can lead to better career readiness. Upgrades are also needed to this dedicated retail space to better foster educational growth, community involvement, and financial sustainability for the program.

Facilities and Equipment

GREENHOUSES:

Butte College Environmental Horticulture has a diverse greenhouse infrastructure, with four operational greenhouses of varying ages and conditions, along with one condemned structure, the Comet House. The oldest greenhouse dates back to the 1970s, indicating a long history of horticultural activity, while the newest was completed recently in 2024, showcasing recent updates and expansions. The differences in size, quality, and functionality among these greenhouses impact their efficiency and suitability for teaching, research, and horticultural production.



The Comet greenhouse (top) has been condemned due to its deteriorating glass roof, posing a serious safety hazard. Its location directly across from the students' lower lab space further exacerbates concerns, as it occupies valuable greenhouse real estate. In contrast, the newly completed "Pole Barn" greenhouse of 2024 is thriving, bustling with student propagation projects that generate income through department plant sales. Other existing greenhouse and shade-house structures remain operational; however, their age necessitates regular maintenance and incur additional costs to maintain efficient production.

EQUIPMENT:

A successful college environmental horticulture program depends on high-quality equipment to promote student and program success. Reliable, well-maintained tools enable students to practice proper industry techniques, resulting in improved skills and greater confidence. Additionally, effective tools enhance productivity, allowing students to complete tasks efficiently and maximize learning opportunities, which in turn benefits the department's project outcomes and the student-run facility. Investing in durable, high-quality equipment is cost-effective over time, as it reduces the need for frequent repairs and replacements.

Currently, the equipment essential for teaching landscape design, landscape construction, and irrigation needs urgent replenishment. Without quality shovels and tools, instruction becomes less efficient and less effective. Maintaining high standards for equipment and storage reflects the professionalism of the program, attracting students, faculty, and potential partners. It also fosters a safe, efficient, and professional environment that supports student success and enhances the overall effectiveness of the horticulture program.

EQUIPMENT STORAGE:

Proper equipment storage is vital because it protects tools from damage, ensures safety by reducing hazards, and enhances efficiency by making supplies easily accessible. Organized storage helps maintain equipment in good condition, reducing costs associated with repairs and replacements, while also facilitating accurate inventory management. Currently Environmental Horticulture storage is in need of roof and siding repairs in order to protect tools from weather and keep wildlife out.



ABOVE: Current equipment storage repairs needed, failing or unsafe equipment and wildlife entry from holes in equipment storage area.

NEEDS & JUSTIFICATION

Curriculum and Personnel

ACTION ITEM #1 – Hire additional faculty to accommodate for the revised curriculum load. Offer current EH faculty reassign time allowing for full revision and resurrection of curriculum.

Revitalizing Butte College’s outdated Environmental Horticulture curriculum will necessitate the hiring of additional personnel to effectively develop, implement, and sustain the revised courses. This expansion of faculty will help cover current courses effectively while accommodating future course offerings. As the curriculum is modernized and aligned with current industry standards, labor market needs, and educational goals, additional personnel will be essential to ensure quality instruction, provide student support, and manage the increased administrative and academic responsibilities associated with curriculum enhancement. Curriculum revitalization considerations and modifications include but are not limited to:

- a. Removal of Certificate of Achievement in Landscape/Turfgrass Technician
- b. Implementation of Certificate of Achievement in Sustainable Irrigation and Water Management Technology
- c. Reinstitution of Floral Design; strategically tied to program pathways
- d. Removal of outdated Viticulture course offerings
- e. Modification of overall pathway offerings to better align with Student Learning Outcomes (SLO’s), Program Learning Outcomes (PLO’s), industry advancements, and labor market demands

Facilities and Equipment

As previously indicated, improved facilities and equipment are an essential part of the Environmental Horticulture Programs revitalization. Program research supports the following recommendations:

ACTION ITEM #2 - Provide a classroom set of laptops, specifically designated for Environmental Horticulture students in EH107 in order to offer the following benefits:

- a. **Equal Access to Technology:** Ensure all students have the opportunity to develop digital literacy, reducing the digital divide and promoting equitable learning experiences.
- b. **Exposure to Emerging Technologies:** Facilitate hands-on training in the latest tools and software used in horticulture, such as landscape design programs, irrigation management systems, or environmental monitoring devices.
- c. **Enhanced Career Readiness:** Prepare students for the evolving job market by familiarizing them with industry-relevant technologies, making them more competitive for horticultural internships and employment. Irrigation students would be able to complete industry recognized certifications giving them a competitive edge when entering the workforce.

- d. **Improved Engagement and Motivation:** Interactive, technology-based activities can increase student interest, motivation, and confidence in their skills.
- e. **Support for Diverse Learning Styles:** Laptops enable a range of instructional methods, including simulations, videos, and self-paced learning, which benefit varied student needs.
- f. **Fostering Critical Thinking and Problem-Solving:** Using technology encourages innovative thinking and enable students to solve real-world environmental and horticultural challenges.

ACTION ITEM #3 - Fund the replacement of the condemned “Comet” greenhouse with a state-of-the-art greenhouse that can offer numerous benefits for Butte College, including:

- a. **Enhanced Educational Opportunities:** A modern greenhouse provides advanced technology and facilities that facilitate hands-on learning, research, and experimentation for students in horticulture, agriculture, environmental science, and related fields. This can improve the college's academic reputation and attract prospective students interested in these disciplines. Such changes directly support both Student Learning Outcomes (SLO's) and Program Learning Outcomes (PLO's)
- b. **Increased Enrollment:** A new greenhouse can serve as a unique selling point in marketing materials and campus tours, highlighting the college's commitment to cutting-edge facilities and practical learning. This appeal can attract prospective students looking for strong STEM or horticulture programs, thereby increasing college enrollment.
- c. **Interpersonal and Professional Skills:** Replacing the Comet House offers a hands-on, interactive environment where students can cultivate critical interpersonal and workplace skills. This experience helps them build competencies such as effective customer service, retail sales techniques, communication, teamwork, and problem-solving—skills that are valuable both in their academic pursuits and future career endeavors.
- d. **Research and Innovation:** State-of-the-art greenhouses support research initiatives that can lead to new plant varieties, sustainable practices, and environmental innovations. Positive research outcomes can enhance the college's reputation and attract partnerships and funding.
- e. **Community Engagement and Outreach:** Modern greenhouses can serve as a hub for community programs, sustainability initiatives, and partnerships with local schools, businesses, and organizations, fostering goodwill and community support. Examples include hosting industry short courses and facilitating High School FFA competitions – increasing overall program marketing and exposure.

ACTION ITEM #4 - Fund Phase II of facility renovation in order to update retail and office spaces.

As previously noted, upgraded office and retail spaces are a key part of the Environmental Horticulture Program's overall revitalization efforts and directly support Program and Student Learning Outcomes based on program curriculum changes.

ACTION ITEM #5 - Fund additional operating expenses as outlined in Facility and Equipment Acquisition Proposal.

POTENTIAL

Labor Market Demand

The role of the Environmental Horticulture Program at Butte College is to prepare students for career readiness to meet California's increasing labor demand, arising from the state's focus on sustainable landscaping, urban green spaces, and environmental conservation. Statewide, demand is driven by various sectors including public agencies, private landscaping companies, nurseries, botanical gardens, and environmental consulting firms. California's commitment to sustainability and green initiatives support continued efforts to prepare students for ongoing job opportunities in Environmental Horticulture. According to the Far North Center for Excellence, there is a steady occupational demand for employment in these areas, showing a 2% increase from 2023 to 2028. Although this growth may be modest, it is consistent and indicates a stable need for graduates seeking employment. Emerging technologies in water conservation and irrigation are anticipated to further increase this occupational demand.

Factors influencing demand include:

- Growing interest in sustainable and eco-friendly landscaping practices
- Expansion of urban green infrastructure projects
- An increase in private and public sustainable landscaping projects
- Educational and environmental conservation initiatives

Untapped Potential

The successful revitalization of the Butte College Environmental Horticulture program highlights the importance of establishing strong connections with nearby secondary and post-secondary institutions. These relationships have the potential to significantly increase both program-specific and overall college enrollment.

DUAL ENROLLMENT & ARTICULATION

According to the Agricultural Experience Tracker (AET), during the 2024-2025 school year, over 106,000 California high school students enrolled in agriculture courses statewide. Of these students, more than 14,000 took floral courses, and 9,000 pursued horticulture pathways. The

strong popularity of these horticultural Career Technical Education (CTE) courses makes them excellent candidates for dual enrollment and articulated coursework. Overall, enhancing Environmental Horticulture dual enrollment and articulation agreements in our area will streamline the transfer process for prospective students, promote student success, and increase the accessibility and affordability of higher education in our community.

TEACHER PREPARATION

Butte College, due to its proximity (approximately 14 miles), serves as a natural feeder school to California State University, Chico. In 2024, approximately 850 students were enrolled in the CSU, Chico College of Agriculture. Among them, 130 students were majoring in Agricultural Education and Communication, with 115 on track for the teacher preparation program to become high school agriculture teachers.

As part of the prerequisite requirements for teaching, teacher candidates must complete both upper- and lower-division agriculture coursework. Currently, Chico State does not offer a Floral Design course; however, 55% of high school agriculture programs include floral programs. This underscores a significant need for aspiring agriculture teachers to receive training in floral design—training that could be facilitated through a partnership with Butte College. Faculty leadership within the Chico State Agricultural Education program has repeatedly emphasized this strong student interest and the importance of career preparedness in this area by way of reinstating a floral design course within Butte College Environmental Horticulture Program.

Alignment with the Butte College Strategic Plan

The revitalization of the Environmental Horticulture Program at Butte College directly supports the college's strategic plan by fostering a culture of completion and goal achievement through collaboration with local high schools, creating clearer pathways for student success and community engagement. It also enhances student, faculty, and staff success by utilizing advanced facilities and technology that promote learning and retention. Additionally, this initiative aligns with the college's commitment to maximizing resources by aligning funding streams with student success and retention efforts. Lastly, it embodies the college's dedication to sustainability by integrating sustainable practices into the curriculum, reinforcing the college's role as a leader in environmental stewardship.

CONCLUSION

Summary

Support for Butte College's Environmental Horticulture program will provide innovative training for careers in the "Green Industry," including nursery and greenhouse management, landscape design and maintenance, emerging irrigation technology, and fruit and nut production. The Butte

College Environmental Horticulture Program has the potential to become a community college leader; featuring up-to-date, cutting-edge curricula in plant science, propagation, pest management, and business operations. Improvements that will support the training of students for positions that support over 2,000 employers in the North State alone. These facility upgrades, advanced technology, and strategic curriculum revisions will establish the program as a vibrant career technical education hub—driving increased college enrollment and providing significant benefits to the local community.

Recommendation

Revitalization of the Environmental Horticulture program through a firm commitment by Butte College to fully address the necessary personnel, facilities, and equipment as outlined in this report. This includes a three-year commitment to support the proposed action items and ongoing efforts to maintain a sustainable, viable program. Please refer to the attached Facility and Equipment Acquisition Proposal spreadsheet for a projected cost analysis of the proposed actions.